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अमृत महोत्सव

भारत सरकार GOVERNMENT OF INDIA कोयला मंत्रालय MINISTRY OF COAL शास्त्री भवन, नई दिल्ली–110 001 SHASTRI BHAWAN, NEW DELHI-110 001 www.coal.gov.in



D.O.No.CPAM-43020/15/2021-CPIAM

23.05.2023

Ministry of Coal has prepared "Integrated Coal Logistics Plan for efficient coal evacuation. Copy of the draft document is attached.

2. You are requested to provide comments/observations on this "Integrated Coal Logistics Plan" within 15 days from the date of placing on the website of this Ministry at e-mail id: hitlar.singh85@nic.in.

Yours sincerely,

Encl.: As above.

Sd/-(Amrit Lal Meena)

All Stakeholders (As per list attached)

- 1. CEO, NITI Aayog
- 2. Chairman, Railway Board
- 3. Secretary, DPIIT (Logistics Division and PM Gatishakti))
- 4. Secretary, Power
- 5. Secretary, Port Shipping and Waterways
- 6. Secretary, Ministry of RT&H
- 7. Secretary, Ministry of Mines
- 8. Chairman, CIL
- 9. CMD, SCCL
- 10. CMD, NLCIL
- 11. Captive/commercial coal mine owners [through Director (NA)]

Copy to:

NIC – for placing on website of MoC for stakeholder consultation

23.5.23 (Amrit Lal Meena)

Deloitte.

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449)

Integrated Coal Logistics Plan for Coal Mines/Blocks

(including CIL & Non-CIL)

FINAL REPORT

Coal India Limited

APRIL 2023



^{2528975/2023/CPIAM} of the Report

COVERAGE

- 1 Executive Summary with Approach and State wise Recommendations
- 2 Indian Coal Demand-Supply Scenario in Detail
- 3 Power-Plant level Coal Demand Estimates for FY30
- 4 Deep Dive Analysis for Coal Logistics Odisha
- 5 Deep Dive Analysis for Coal Logistics Chhattisgarh
- 6 Deep Dive Analysis for Coal Logistics Jharkhand
- 7 Deep Dive Analysis for Coal Logistics West Bengal
- 8 Deep Dive Analysis for Coal Logistics Madhya Pradesh & Uttar Pradesh
- 9 Deep Dive Analysis for Coal Logistics Maharashtra
- 10 Deep Dive Analysis for Coal Logistics Telangana
- 11 Smart Coal Logistics

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2528975/2023/CPIAM Glossary

Abbreviation	Description
~	Approximately
Rs.	Indian Rupee
%	Percentage
BCCL	Bharat Coking Coal Limited
BT	Billion Tonnes
CCL	Central Coalfields Limited
CF	Coalfield
СНР	Coal Handling Plant
CIL	Coal India Limited
CMPDI	Central Mine Planning and Design Institute
ECL	Eastern Coalfields Limited
FMC	First Mile Connectivity
MCL	Mahanadi Coalfields Limited
MGR	Merry-Go-Round
MT	Million Tonnes
NEC	North Eastern Coalfields
NCL	Northern Coalfields Limited
ОСР	Opencast Project
RCR	Rail-cum-Road

Abbreviation	Description
RLS	Rapid Loading System
Rly.	Railways
SCCL	Singareni Collieries Company Limited
SECL	South Eastern Coalfields Limited
TPD	Tonnes per day
UG	Underground
TPD	Tonnes per day
WCL	Western Coalfields Limited
WhWall	Wharfwall

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Executive Summary

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Our Approach

Coal Demand from Power Sector

- Multiple demand scenarios created based on Indian economic growth scenarios, triangulated with CEA's projections
- Coal's share in India's electricity generation mix to drop down to ~62% from current 70%
- Power-plant level coal demand established for FY30, including demand from under-construction power plants
- Coal demand from power sector expected to be 1037
 MTPA to 1160 MTPA based on asset-level PLF analysis

Coal Demand from Non-Regulated Sectors Sector wise correlation analysis conducted

based on projected Indian Macro-economic growth

- Primary and secondary research conducted to understand expansion plans of NRS Assets
- Establishment of ~521 MT Coal demand from NRS based on analysis.
- Out of ~521, ~140 MT of coking coal demand established based on inputs from Ministry of Coal



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²⁵²⁸⁹ Detailed approach for coal demand estimation encapsulates a multi-pronged philosophy leveraging Market intelligence, Primary and Secondary Data validations and Bottoms Up Analysis

				_
Non-Regulated Sector	Top-Down Approach for Power Sector		Bottoms-up Approach for Power Sector	
Top-Down Analysis using Indian Macro-economic Forecasts for Non-Regulated sectors such as CPPs, Cement, Steel, Sponge Iron, and Others	 Top-Down Analysis using Indian Macro-economic Forecasts for Power Sector Historical correlation analysis of sector wise production (output) vorsus 		 An optimal PLF-Distance model analysis was conducted on a power plant level to established asset wise coal demand forecasts till 2030 	 Analysis of Under Construction capacities fit with the clustered model to estimate coal demand from these power plants at expected PLF levels
Historical correlation analysis of sector wise production (output) versus Indian GDP growth rate to come up with correlation elasticity (long-term) Using forecasts of more than 14 analysts / investment banks, government bodies, think tanks to normalize India's projected GDP till 2030	 production (output) versus Indian GDP growth rate to come up with correlation elasticity (long-term) Using forecasts of more than 14 analysts / investment banks, government bodies, think tanks to normalize India's projected GDP till 2030 Utilizing CEA's National Electricity Plan 2022 and 20th 	Image: main state and state an	 Establishing current sourcing mix (Volumes and distance) of all the operational power plants in the country along with analysis of PLF >140 Power plants mapped for the analysis. Multi- variate regression models conducted for each power plant 	~106 MTPA coal demand from UC Capacities ~931 - 1046 MTPA coal demand from existing power
Analyzing the growth in sectors and translating that to expected coal consumption for both thermal as well as coking coal	EPS survey for long-term state wise electricity demand forecasts and analyzing coal's generation share in the mix.		 A clear inverse correlation established with models established (Inverse linear and logarithmic models) for each of the states 	
Triangulating coal demand from primary / secondary research of capacity expansion plans, expert committee reports for coking coal and other such market intelligence sources.	 Translating the overall electricity generation required to coal-based generation required in the country and subsequently the coal consumption required using assumptions on Specific coal consumption and other losses 	<section-header></section-header>	 each of the states Realistic and optimistic PLF scenarios built, and coal demand established for each of the power plants for future. 	demand from power sector in 2030 Input for O-D Mapping Analy

²⁵²⁸⁹ Detailed for formulation of **optimal coal logistics plan** for the country is distributed across four key pillars

(3)

Current O-D Mapping Analysis

(1)

- Subsidiary wise, Area wise and Mine-wise analysis of current and future production plans upto 2030
- Aggregation of supplies on a state level.
- Analysis of current siding wise despatch to various consumers and Origindestination mapping of rail traffic on major trunk lines
- Analysis of captive and commercial blocks including actual despatches for FY22 and estimated consumer-wise despatches for future
- Identification of currently congested rail junctions and sections along with mapping current capacity utilizations
- Specific focus on despatches via RSR mode (from Talcher CF of MCL) to various power plants in India
- Analyzing current road despatches along with first mile connectivity analysis of all the coal blocks in the country – Current as well as future

Establishing future optimal Supply mix

- Analysis of power plant level mapping to probable sources based on availability of coal and distance of source from the power plants
- Analysis of Long-term linkage commitments and likely despatches at a power plant level as per the future asset wise demand estimates
- Detailed **study of all the captive blocks (operational and in pipeline)** to understand likely despatch to destination
- Analysis of Rail mode Push vs pull models and establishing a surplus coal scenario where volumes would have to be pushed into the market without clear indication of plausible destinations
- Estimation of despatches for various OD pairs across all modes including, **Road, RCR, MGR, Belt etc**. in line with NGT guidelines
- Creating a wish-list solution for marketing of coal to exports along with likely coal despatches via E-Auctions through rail mode

Future O-D Mapping Analysis

- Analysis of future despatches from each of the mines, areas, subsidiaries as well as all the Non-CIL blocks including captive and commercial blocks
- Mapping of coal volumes to each of the consumers and understanding the estimated coal traffic under various scenarios i.e. push vs pull scenarios
- Estimation of despatches to unknown destinations of commercial coal blocks using a dynamic excel based model along with despatches excess coal from CIL's sources
- Analyzing Coal flow via Rail mode for each of the origindestination pairs and highlighting the plausible choke points
- Inclusion of all the key railway augmentation projects in the pipeline in the O-D mapping, including but not limited to impact of DFCs
- Analysis of future Road mode evacuation in terms of volumes and formulating the basis to further understand the motive blanind road offtake











Analyzing capacity constraints and recommendations

- Analysis of the entire section wise coal traffic in future incorporating passenger traffic, other freight traffic etc.
- Quantifying the incremental line capacity addition in pipeline and understanding the over-utilized rail sections for future
- Detailed mapping of all major coalfields along with mapping of all modes including MGR, Belt etc. Mapping of Road Infrastructure in all major coalfields
- Analysis of the **impact of imported coal in future on major sections** (using O-D analysis) and adding the traffic to the railway load for final recommendations
- Analysis of Port Capacities (for e.g. **detailed study of Paradeep,dhamra port capacities** for enabling coastal shipping etc.)
- Final recommendations on a Pan-india level along with the entire future coal flow of the country mapped. Model is kept dynamic for any future changes.

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²⁵²⁸⁹⁷⁵ Our key findings include increase in railway traffic for all major coal producing areas



West Bengal



Complete production mapping with plausible consumers, current and future for CIL and Non-CIL blocks along with mapping of coal imports





Madhya Pradesh



Odisha & Chhattisgarh

FY21-22 Line Capacity Utilization



Telangana







Establishing future mode wise despatch portfolio to all supply hubs and to all demand hubs. Articulating optimization model's benefits for each of the clusters.

Analyzing capacity constraints and opportunities across all modes of transportation. Recommendations on new infrastructure required to achieve 2030 despatch target

Based on our detailed Pan-India analysis of coal traffic movement, the major coal producing triangle of **Odisha-Chhattisgarh-Jharkhand is projected to see congestion** due to bulk of capacity expansion taking place in this region

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Summary of Pan-India Supply-Demand Analysis

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Year on Year coal supply snapshot till FY30

	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
CIL	574.48	661.89	703.22	780	850	1000	1030	1055	1090	1120
SCCL	48.51	65.53	67.14	70	74	79	84	89	94	100
Captive & Others (Commercial)	68.4	90.72	122.38	162	224	241	259	276	279	281**
Total Domestic Coal Despatch (Including Coking)	691.39	818.14	892.74	1012	1148	1320	1373	1420	1463	1501
Non-Coking Coal Imports (Bituminous & Steam Coal)	175.16	136.45	136.45	130	110	110	110	105	105	95
Coking Coal Imports	53.16	68.4	76.00	77	74	78	83	87	91	96
Total Coal Imports	228	205	212.45	207	184	188	193	192	196	191
Total Coal Supply (Production View)	919.71	1022.99	1105.19	1219	1332	1509	1565	1612	1659	1692

Key Highlights

- **Captive and Commercial coal production forecasts are as per the projections of Ministry of coal, but it shall be noted that the figure could reach in excess of 400 MTPA by FY30 based on Deloitte Analysis. State wise Non-CIL block production values for FY30 have been taken as per deloitte analysis in detailed section.
- *95 Million Tonnes of Non-Substitutable G1-G8 grade Steam and Bituminous coal would still be imported in near to medium term future.
- CIL's share of supply in the domestic production portfolio will decrease from current ~79% in FY23 to ~75% in FY30 due to expected exponential capacity expansion increase in commercial/captive coal mining.

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Source: Monthly Statistical Reports, Ministry of Coal, Provisional Coal Statistics, National Rail Plan 2020, National Electricity Plan by CEA, 20th EPS Survey by CEA

^{2528975/2023/CPJAM} Electricity generation in India to grow at a substantial CAGR of ~6.1% to 7.8% till 2030, owing to strong demand growth



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- In FY23, coal-based generation rose 10.1% to reach 1145.86 Bus, total generation grew ~9% Y-o-Y
- Electricity generation, closely linked to demand, is estimated to be ~2451 to 2742 BU for FY30
- The share of coal in the domestic electricity generation has hovered around ~71% in the last decade.
- It is likely to decline to 62% by FY30 which translates to coal demand ranging from 1037 to 1160 MTPA by FY30

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Pan-2 Thdia Coal demand analysis – Power Sector – Realistic Demand Scenario

Bottoms-Up Analysis of Coal Demand	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Electrical Energy Requirement - Ex Bus (TWh)	1275.88	1381.646	1508.14	1600.21	1694.63	1796.63	1907.84	2021.07	2139.13	2279.68
% Change in Electricity Consumption		8.29%	9.16%	5.13%	5.90%	6.02%	6.19%	5.94%	5.84%	6.57%
Average Demand/Generation Ratio	0.93		La	st 6-year ave	erage has be	en 92.92%, I	FY22 Actual	was 92.84%		
Estimated Grid Generation (TWh) Required	1381.8	1482.78	1621.6	1739.36	1822.19	1931.86	2051.44	2173.20	2300.13	2451.26
Coal Based Generation/Total Generation	68%	70.24%	70.66%	70.73%	68.56%	66.40%	65.00%	64.00%	63.00%	61.61%
Coal Based Generation (TWh)	939.62	1041.46	1145.86	1230.24	1249.37	1282.74	1281.05	1353.85	1429.51	1519.78
Estimated Specific Coal Consumption	0.653	0.678	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Realistic Coal Consumption from Power Sector including 1% Transit Losses (MT)	613.27	706.1	793.56 (55.6 Imports)	844.93	858.01	880.99	915.80	955.23	995.23	1037.20
Domestic Despatch to Power sector	544.07	677.67	737.93							
Coal Imports by power Sector	69.2	<mark>28.43</mark> Power sector's ii	55.63	e increased t	o 7% in FY23	8 from 4% in	FY22, mainly	/		
Derived Coal Consumption CAGR (FY22-FY30)	4.02%	4.02% attributable to significant increase in electricity demand and reliance on coal-based power generation.								

Key Highlights

- In FY23, the electricity demand grew 9.16% Y-o-Y to ~1508 Billion Units (Historic high of >1.5 Trillion Units)
- The Specific Coal Consumption values on Pan-India basis have been kept constant at ~0.68, because of addition of Super-Critical and Ultra-Super Critical capacities coupled with import substitution efforts, which are assumed to negate each others impact.
- Coal consumption by power sector to reach at ~ 1037 Million Tonnes, growing6at ~ 4.02% CAGR (over FY23 base reference year)

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Pan-India Coal demand analysis – Power Sector – Optimistic Demand Scenario

Bottoms-Up Analysis of Coal Demand	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Electrical Energy Requirement - Ex Bus (TWh)	1275.88	1381.646	1508.14	1600.21	1726.36	1862.44	2009.25	2167.64	2338.51	2522.85
% Change in Electricity Consumption		8.29%	9.16%	5.13%	7.88%	7.88%	7.88%	7.88%	7.88%	7.88%
Average Demand/Generation Ratio	0.93		La	st 6-year ave	erage has be	en 92.92%,	FY22 Actual	was 92.84%		
Estimated Grid Generation (TWh) Required	1381.8	1482.78	1621.6	1739.36	1876.47	2024.39	2183.97	2356.13	2541.86	2742.23
Coal Based Generation/Total Generation	68%	70.24%	70.66%	70.73%	68.56%	66.40%	65.00%	64.00%	63.00%	61.61%
Coal Based Generation (TWh)	939.62	1041.46	1145.86	1230.24	1286.51	1344.20	1419.58	1507.92	1601.37	1689.46
Estimated Specific Coal Consumption	0.653	0.678	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Realistic Coal Consumption from Power Sector including 1% Transit Losses (MT)	613.27	706.1	793.56 (55.6 Imports)	844.93	883.58	923.19	974.97	1035.64	1099.82	1160.22
Domestic Despatch to Power sector	544.07	677.67								
Coal Imports by power Sector	69.2	28.43	55.63							
Derived Coal Consumption CAGR (FY22-FY30)	5.70%									

Key Highlights

- This scenario assumes a higher growth rate in electricity demand in India @ ~8% as compared to ~6.5% in case of realistic scenario. The rate of penetration of renewables and the share of coal in the portfolio remains the same for both the scenarios
- Coal consumption by power sector to reach at ~ 1160 Million Tonnes, growing at ~ 5.70% CAGR (over FY23 base reference year)

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Source: Monthly Statistical Reports, Ministry of Coal, Provisional Coal Statistics, National Rail Plan 2020, National Electricity Plan by CEA, 20th EPS Survey by CEA

Pan-India Coal demand analysis – Power Sector – From Bottoms-Up approach

All figures in million tonnes

Consuming State	FY22: Actual Consumption	FY30 Base	FY30 Realistic	FY30 Optimistic	Consuming State	FY22: Actual Consumption	FY30 Base	FY30 Realistic	FY30 Optimistic
Bihar	30.0	48.4	52.2	54.4					
Madhya Pradesh	83.7	92.2	104.3	111.7	Maharashtra	81.9	103.8	111.3	131.4
Uttar Pradesh	84.3	114.5	121.3	149.9	Odisha	45.3	53.1	57.6	65.2
Chhattisgarh	103.9	130.5	145.3	147.0	Telangana	30.6	56.0	59.2	59.6
West Bengal	54.2	74.5	76.8	79.5					
Gujrat	22.0	32.7	36.5	43.8	Andhra Pradesh	40.2	62.0	64.1	72.0
Punjab & Haryana	30.2	47.0	49.9	56.9	Karnataka	18.4	22.6	22.7	43.2
Jharkhand	19.3	37.0	37.9	39.1	Rajasthan	22.8	29.2	32.2	37.7
Assam	2.5	2.7	3.0	3.1					
Tamil Nadu	27.9	51.5	56.6	65.7	Grand Total	704.9	963.6	1037.2	1160.2

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In FY23 consumption is estimated to be ~794 MT

^{2528975/2023/CPIAM} Improvement in PLFs of existing power plants would cater to the increased demand from coalbased power generation by FY30

Existing Capacities with Improved PLF: FY30											
State	FY22 Coal Consumption (MTPA)	FY30 Base (MTPA)	FY30 Realistic (MTPA)	FY30 Optimistic (MTPA)	Max Increase Anticipated (MTPA): FY22 to FY30						
Odisha	45.33	53.10	57.61	59.30	13.98						
Chhattisgarh	103.90	130.55	145.29	147.02	43.13						
Uttar Pradesh	84.26	96.21	98.82	120.30	36.04						
Madhya Pradesh	83.72	92.20	104.28	111.72	28.00						
Gujarat	22.03	32.69	36.53	43.81	21.78						
Andhra Pradesh	40.16	55.57	57.44	64.94	24.78						
Rajasthan	22.80	29.25	32.19	37.70	14.90						
Maharashtra	81.92	101.10	108.31	128.25	46.33						
Karnataka	18.43	21.81	21.84	41.59	23.16						
Punjab	15.25	24.54	25.34	28.98	13.72						
Harayana	14.98	22.47	24.57	27.90	12.91						
Telangana	30.57	35.13	37.13	38.80	8.24						
Bihar	29.98	37.10	40.00	42.79	12.81						
West Bengal	54.19	71.56	73.78	76.61	22.42						
Jharkhand	19.26	21.16	21.63	22.87	3.60						
Tamil Nadu	27.95	39.54	43.43	50.46	22.52						
Assam	2.49	2.67	3.00	3.12	0.63						
rated from exitice by N R	ALESWARA RAO MOCSOTORR)-CPLAM MOC-SOU	NRR) Ministry 016665 on 17/05/20	13 931.18	1046.08	348.95						

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^{2528975/2023/CPIAM} Maharashtra – Sample state for understanding demand estimation approach (1/3)



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^{2528975/2023/CPIAM} Maharashtra – Sample state for understanding demand estimation approach (2/3)

Name of TPS	Power Utility	State	Installed Capacity (MW)	Coal Consumed (MT): FY22	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
TIRODA	ADANI POWER MAHARASHTR A LTD.	Maharashtra	3300.00	14.18	74.88	80.23	80.23	95	15.20	15.20	17.99
ADANI DAHANU	ADANI ELECTRICITY MUMBAI LIMITED	Maharashtra	500.00	1.99	76.21	80.23	80.23	95	2.09	2.09	2.48
DHARIWAL INFRASTRUCT URE Ltd.	DHARIWAL INFRASTRUCT URE LIMITED	Maharashtra	600.00	2.72	75.93	80.23	80.23	95	2.88	2.88	3.40
GMR WARORA ENERGY LTD.	GMR WARORA ENERGY LTD.	Maharashtra	600.00	2.32	66.18	73.16	80.23	95	2.56	2.81	3.33
RATNAGIRI	JSW ENERGY LIMITED	Maharashtra	1200.00	2.73	47.14	73.16	80.23	95	4.23	4.64	5.50
BHUSAWAL	MSPGCL	Maharashtra	1210.00	4.74	58.10	73.16	80.23	95	5.97	6.55	7.76
CHANDRAPUR	MSPGCL	Maharashtra	2920.00	11.57	58.61	73.16	80.23	95	14.44	15.84	18.76
KHAPARKHEDA	MSPGCL	Maharashtra	1340.00	6.20	60.83	73.16	80.23	95	7.46	8.18	9.69
KORADI	MSPGCL	Maharashtra	2190.00	8.19 SO(NBB) Ministry	58.42	21 73.16 5/2023 04:45 PM	80.23	95	10.25	11.24	13.31

^{2528975/2023/CPIAM} Maharashtra – Sample state for understanding demand estimation approach (3/3)

Name of TPS	Power Utility	State	Installed Capacity (MW)	Coal Consumed (MT): FY22	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
NASHIK	MSPGCL	Maharashtra	630.00	1.68	36.49	73.16	80.23	95	3.36	3.69	4.37
PARLI	MSPGCL	Maharashtra	750.00	1.97	44.90	73.16	80.23	95	3.20	3.51	4.16
PARAS	MSPGCL	Maharashtra	500.00	2.00	60.15	73.16	80.23	95	2.43	2.67	3.16
MOUDA SUPER TPS	NTPC LTD.	Maharashtra	2320.00	8.69	60.06	73.16	80.23	95	10.58	11.60	13.74
SOLAPUR SUPER TPS	NTPC LTD.	Maharashtra	1320.00	3.25	43.94	73.16	80.23	95	5.42	5.94	7.03
AMARAVATI TPS	RATTANINDIA POWER LTD.	Maharashtra	1350.00	5.90	75.10	80.23	80.23	95	6.31	6.31	7.47
TROMBAY	THE TATA POWER COMPANY LIMITED	Maharashtra	750.00	2.31	69.26	73.16	80.23	95	2.44	2.68	3.17
SAI WARDHA POWER Ltd., WARORA	SAI WARDHA POWER GENERATION PVT LTD.	Maharashtra	540.00	1.48	47.77	73.16	80.23	95	2.26	2.48	2.93
				81.92		2:	2		101.10	108.31	128.25

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^{2528975/2023/CPIAM} Under Construction Power Plants and Fuel linkages – Central Sector

#	Project Name	State	Implementing Agency	Units No	Capacity (MW)	Anticipated Yea Commissioni	ar of Fuel Security / Linkage	Coal Quantum (MTPA)	Source from State
1	Barh STPP-I	Bihar	NTPC	Units 2 & 3 - 660x2	1320	2024	Letter of Assurance dtd. 18.11.2010 from CCL, securing 10 MMTPA coal for 03 Units. FSA of Unit-1 (3.333 MTPA) already signed with CCL(all operative mines, G8-G10) as per MoC PD dtd. 17.07.2013. FSA of Unit-2 & 3 to be signed after commissioning in terms of para 1A(i)of SHAKTI-2017 policy.	6.97	Jharkhand
2	Buxar TPP	Bihar	SJVN	Units 1 & 2 - 660x2	1320	2024	Allocated Mine - CCL, Magadh-Amrapali; Distance from mine - 465 km (non pithead). Letter of Assurance (LoA) for 4.976 MTPA of G9 to G14 grade coal issued by Central Coalfields Ltd. (CCL) on 10.12.2018. Coal may be supplied either from Amrapali coal block or Magadh coal block.	5.20	Jharkhand
3	North Karanpura STPP	Jharkhand	NTPC	Units 1,2 & 3 - 660x3	1980	2024	Letter of Assurance dtd. 24.03.2015 from CCL, securing 7.039 MTPA coal (G7-G11) for 03 Units. FSA to be signed after commissioning in terms of para 1A (i) of SHAKTI-2017 policy.	7.05	Jharkhand
4	Patratu STPP	Jharkhand	PVUNL	Units 1,2 & 3 - 800x3	2400	2025	12 MTPA for Ph-I from Banhardih Coal Mine at a distance of about 110 km. Banhardi Coal Mine transferred to PVUNL vide deed of adherence signed on 02.06.2017. Bridge allocation granted by SLC(LT) upto 24-06-2024; Allocation from CCL; Coal quantity quantified is 9.17 MTPA.	9.19	Jharkhand
5	Talcher TPP St-III	Odisha	NTPC	Units 1 & 2 - 660x2	1320	2027	Available. (SLC(LT), MOM dt: 10.04.2018); FSA Agreement with MCL under process; Source: Bhuwaneswari/Jagannath mines of MCL Grade: G-12 Quantity: 5.854 MMTPA	6.36	Odisha
6	Ghatampur TPP	Uttar Pradesh	NUPPL	Units 1,2 & 3 - 660x3	1980	2023	Allocation Date- 03.10.2016. Allocated Mine (Source) - Pachwara South Coal Block (9 MTPA) Grade - G10 Quantity- Net Geological Reserve 373.52 MT. Extractable reserve - 262.84MT; Pachwara South Coal Block will be fully functional by the end of Financial Year 2026-27 and will be able to meet the coal requirement of NUPPL. Hence, NUPPL is seeking coal under bridge linkage by the time Pachwara South Coal Block will be fully functional.	6.83	Jharkhand
7	Khurja SCTPP	Uttar Pradesh	THDC	Units 1 & 2 - 660x2	1320	2024	For Coal linkage, Ministry of Coal, Gol vide allotment order dtd.17.01.2017 has allotted Amelia Coal Mine in District Singraulli, Madhya Pradesh to THDCIL to meet out fuel requirements of the project. Grade of Coal: G9 (Avg. GCV = 4746 Kcal/Kg). Net Geological Reserve in Amelia Coal Mine is 162.05 Million Ton (OC) out of this Extractable Coal Reserve is 139.48 Million Ton.	4.25	Madhya Pradesh
8	Telangana STPP St-I	Telangana	NTPC	Units 1 & 2 - 800x2	1600	2023	Linked with Mandakini-B captive coal mine (PRC-20 MMTPA); however, NTPC has approached MoC on 26.12.2020 for surrendering the coal mine. Tapering linkage against the linked coal mine was initially allocated from WCL cost-plus. In July'2020, the linkage has been shifted to SCCL. Coal quantity quantified by the Coal Controller is 6.846 MTPA.	7.26	Telangana
	Tota	al Central Se	ector		13240		20	53.10	

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^{2528975/2023/CPIAM} Under Construction Power Plants and Fuel linkages – State Sector

1	Dr Narla Tata Rao TPS St-V	Andhra Pradesh	APGENCO	Unit 1	800	2023	Allocated Mine - MCL (non-pithead); Distance from mine - 930 km (non pithead); MCL issued LoI for supply of 3.548 MTPA vide letter dated 12-11-2018. Grade of coal - G13;	3.32	Odisha
2	Sri Damodaram Sanjeevaiah TPP St-II	Andhra Pradesh	APPDCL	Unit 1	800	2023	Allocated Mine - MCL, Talcher (Odisha); Distance from mine - 1225 km (non pithead); MCL has issued LoA to supply 3.548 MTPA vide letter dated 04-03-2018.	3.32	Odisha
3	Jawaharpur STPP	Uttar Pradesh	UPRVUNL	Units 1 & 2 - 660x2	1320	2023	Allocated Mine - Saharpur Jamarpani mines, Jharkhand; Distance from mine - 1190 km (non pithead) Bridge Linkage from CCL/ECL for 4.461 MTPA	3.39	Jharkhand
4	Obra-C STPP	Uttar Pradesh	UPRVUNL	Units 1 & 2 - 660x2	1320	2023	Allocated Mine - Saharpur Jamarpani mines (15 MTPA), Jharkhand; Distance from mine - 651 km (non pithead); Allocation Date: 13.08.2015. Grade of Coal -G10	5.32	Jharkhand
5	Panki TPS Extn	Uttar Pradesh	UPRVUNL	Unit 1	660	2024	Allocated Mine - Saharpur Jamarpani mines (15 MTPA), Jharkhand; Distance from mine - 896 km (non pithead); Allocation Date: 13.08.2015. Grade of Coal -G10. FSA on 30.01.2017	2.68	Jharkhand
6	Ennore SCTPP	Tamil Nadu	TANGEDCO	Units 1 & 2 - 660x2	1320	2024	Allocated Mine - Chandrabila Coal Block, Odisha; Distance from mine - 1300 km (non pithead); Total requirement is 5.95MTPA, comprising of indigenous 3.68 MTPA & imported 2.26 MTPA respectively MoU has already been signed between MMTC & TANGEDCO on 25.06.2012 for the supply of Import coal for this project. Bridge Linkage with SCCL available for indigenous coal.	5.12	Odisha & Imported
7	North Chennai TPP St-III	Tamil Nadu	TANGEDCO	Unit 1	800	2023	Allocated Mine - SCCL; Distance from mine - 606 km (non pithead);. Ministry of Coal recommended for long-term coal linkage for 1.971 MTPA Indigenous coal to SCCL. FSA Executed between TANGEDCO and SCCL for indigenous coal. MoU has been entered with M/s. MMTC for supply of Imported coal of 1.450 MTPA on 25.05.2015.	2.94	Telangana & Imported
8	Udangudi STPP St-I	Tamil Nadu	TANGEDCO	Units 1 & 2 - 660x2	1320	2024	Allocated Mine - Chandrabila Coal Block for indigenous coal of G13 Grade for 3.647 MTPA and MDO selection is under process. Distance from mine (appx) : Railway distance for movement of coal through Rail-cum-Sea route via Paradip port is 200 km.(Chandrabila to Paradip port), from Paradip port to Udangudi captive Port, sea distance is 1224 Nautical Miles. Total requirement is 5.893 MTPA with Indigenous coal of 3.647 MTPA and import coal of 2.246 MTPA. Import coal (2.246 MTPA) will be procured to the requirements. Bridge Linkage with SCCL available for indigenous coal	5.07	Odisha & Imported
9	Yadadri TPS	Telangana	TSGENCO	Units 1,2,3,4 & 5 - 800x5	4000	2024	Allocated Mine - SCCL; Distance from mine - 270 km (non pithead); Ministry of Coal vide File No.23014/1/2018-CLD, Dt:15-02-2018 has granted coal linkage from SCCL for supply of 14 MTPA of coal (grade-G9).	14.85	Telangana
10	Yelanhaka CCPP	Karntaka	KPCL	Unit 1	370	2023	NA - Could Source from Mandakini	0.84	Odisha
11	Bhusawal TPS	Maharash tra	MAHAGENC O	Unit 1	660	2023	Allocated Mine - WCL, Umred/Ghugus; Distance from mine – 403/430km; Allocation Date: 11-09-2020, Source: WCL mines ,Grade: G9/G10, Quantity : 3.18 million tonne.	3.00	Maharashtra
12	Sagardighi TPP, Ph-III	West Bengal	WBPDCL	Unit 1	660	2024	Allocated Mine - Pachhwara (North) Captive Coal Mine of WBPDCL. Distance from mine - 150 km (non pithead); Coal will be sourced mainly from captive coal mines of WBPDCL	3.07	Jharkhand
	Tot	al State Se	ctor		14030		24	52.92	
	Grand Tota	Grand Total - Under Construction					24	106.03	

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^{2528975/2023/CPIAM} Power Plants in Pipeline and Fuel linkages (1/2)

#	Project Name	State	Implementing Agency	Capacity (MW)	Anticipated Year of Commissioning	Fuel Security / Linkage	Coal Quantum (MTPA)	Source from State
1	Lara STPP	Chhattisgarh	NTPC	1600	2027-28	Coal linkage available. NTPC has a captive block, Talaipalli with a PRC of 18 MTPA. Talaipalli has become operational in FY23	8.53	Chhattisgarh
2	Singrauli STPP- III	Uttar Pradesh	NTPC	1600	2027-28 & 2028-29	Singrauli is a pit-head power plant in Uttar Pradesh primarily supplied coal by Northern Coalfields. Long term linkage granted by Standing Linkage Committee (Long-Term) in 10.04.2018 from CIL. In minutes dt. 15.05.2018, CIL shall consult and allocate coal based on coal availability & transportation facility. Expected supply by NCL.	8.53	Uttar Pradesh/Madhy a Pradesh
3	Darlipalli-II STPP	Odisha	NTPC	800	2028-29	Application for Long Term linkage under Shakti B(i) yet to be filed as on Jan-2023. NTPC's coal sourcing from Dulanga to meet current capacity of Darlipalli. Additional capacity addition likely to be sourced from MCL	4.26	Odisha
4	Sipat-III, STPP	Chhattisgarh	NTPC	800	2028-29	Application for Long Term linkage under Shakti B(i) yet to be filed. (After FR Approval) Sipat is a pithaed plant with supplies from SECL via MGR.	4.26	Chhattisgarh
5	Meja-II STPP	Uttar Pradesh	NTPC	1320	2028-29 & 2029-30	Application for Long Term linkage under Shakti B(i) yet to be filed. (After FR Approval) Currently Meja has FSAs with both NCL & CCL. However, due to limited growth of NCL, Meja is likely to be allotted coal from CCL	7.08	Jharkhand
6	Raghunathpur TPS, Phase-II	West Bengal	DVC	1320	2027-28 & 2028-29	Long term Linkage granted by SLC (LT) in 08.08.2022. Recommendations on allocation of coal from same source/subsidiary. ECL & CCL currently supplies to Raghunathpur.	7.08	West Bengal/Jharkha nd
7	Durgapur TPS	West Bengal	DVC	800	2027-28	Application for Long term linkage under Shakti B(i) yet to be filed. DVC is also considering to participate in coal mine auction. Current FSAs are with MCL & CCL which expire in 2029. Expected new allotment from CCL.	4.29	Jharkhand
8	Koderma TPS	Jharkhand	DVC	1600	2027-28 & 2028-29	Application for Long term linkage under Shakti B(i) yet to be filed. DVC also considering to participate in coal mine auction. Current FSAs are with ECL & BCCL which expire in 2034. Expected new allotment from CCL.	8.58	Jharkhand
9	TPS-II 2nd Expansion	Tamil Nadu	NLC	1320	2027-28 & 2028-29	Basket of Mines in Neyveli. Plant is lignite-based and lignite is to be sources via 25 conveyors from NLC's mines to the proposed power plant.	Not applicable, Lignite based	Tamil Nadu

^{2528975/2023/CPIAM} Power Plants in Pipeline and Fuel linkages (2/2)

#	Project Name	State	Implementing Agency	Capacity (MW)	Anticipated Year of Commissioning	Fuel Security / Linkage	Coal Quantum (MTPA)	Source from State
10	NLC Talabira STPS	Odisha	NLC	2400	2027-28 & 2028-29	Coal to be sources from Talabira II & III captive coal block (PRC: 23 MTPA)	12.79	Odisha
11	Buxar TPP-II STPP	Bihar	SJVNL	660		Application for Long Term linkage under Shakti B(i) yet to be filed. (After DPR Approval). For Buxar Unit 1 & 2, Allocated Mine - CCL, Magadh-Amrapali; Distance from mine - 465 km (non pithead). Letter of Assurance (LoA) for 4.976 MTPA of G9 to G14 grade coal issued by Central Coalfields Ltd. (CCL) on 10.12.2018. Coal may be supplied either from Amrapali coal block or Magadh coal block.	3.54	Jharkhand
12	Super Critical TPP, Korba (W)	Chhattisgarh	CSPGCL	1320	2028-29 & 2029-30	FSAs of decommissioned / proposed to be decommissioned Units are available. Matter proposed to be discussed in SLC.	7.04	Chhattisgarh
13	Yamuna Nagar TPP Unit 3	Haryana	HPGCL	800	2027-28	Coal Block yet to be surrendered. Recommendations for Grant of Long Term Linkage already submitted by CEA on HPGCL request. Allocation of coal likely to be from CCL	4.29	Jharkhand
14	Amarkantak TPS	Madhya Pradesh	MPPGCL	660	2027-28	Long term Linkage granted by SLC (LT) in 18.11.2019. Amarkantak is a pithead plant located near Sohagpur & Johilla areas of SECL in Madhya Pradesh. Coal likely to be allocated from these areas	3.54	Madhya Pradesh/ Chhattisgarh
15	Satpura TPP	Madhya Pradesh	MPPGCL	660	2027-28	Long term Linkage granted by SLC (LT) in 18.11.2019. Likely allocation from WCL.	3.54	Maharashtra
16	Chandrapur TPP	Maharashtra	Mahagenco	1320	2029-30	Application for Long Term linkage under Shakti B(i) yet to be filed. (After DPR Approval) Coal likely to be allocated from WCL	7.08	Maharashtra
17	Koradi TPS Replacement	Maharashtra	Mahagenco	660	2027-28	Application for Long Term linkage under Shakti B(i) yet to be filed. Coal currenty sourced from WCL & SECL. Likely additional allocation from SECL due to WCL's continuing supplies and limited growth	3.54	Chhattisgarh
18	Ukai TPC, Tapi	Gujarat	GSECL	800	2027-28	Application for Long Term linkage under Shakti B(i) yet to be filed. Major coal supplies currently from SECL. Allocation likely to be from SECL	4.29	Chhattisgarh
19	Singareni Unit 3	Telangana	SCCL	800	2027-28	Naini captive coal block with PRC of 10 MTPA	4.29	Odisha
		Total		21,240		26	106.55	

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All India demand of thermal coal from power sector in FY30

Existing Capacities with Improved PLF: FY30					
State	FY22 Coal Consumption (MTPA)	FY30 Base (MTPA)	FY30 Realistic (MTPA)	FY30 Optimistic (MTPA)	Max Increase Anticipated (MTPA): FY22 to FY30
Odisha	45.33	53.10	57.61	59.30	13.98
Chhattisgarh	103.90	130.55	145.29	147.02	43.13
Uttar Pradesh	84.26	96.21	98.82	120.30	36.04
Madhya Pradesh	83.72	92.20	104.28	111.72	28.00
Gujarat	22.03	32.69	36.53	43.81	21.78
Andhra Pradesh	40.16	52.57	54.33	64.84	27.17
Rajasthan	22.80	29.25	32.19	37.70	14.90
Maharashtra	81.92	101.10	108.31	128.25	46.33
Karnataka	18.43	21.81	21.84	41.59	23.16
Punjab	15.25	24.54	25.34	28.98	13.72
Harayana	14.98	22.47	24.57	27.90	12.91
Telangana	30.57	35.13	37.13	38.80	8.24
Bihar	29.98	37.10	40.00	42.79	12.81
West Bengal	54.19	71.56	73.78	76.61	22.42
Jharkhand	19.26	21.16	21.63	22.87	3.60
Tamil Nadu	27.95	39.54	43.43	50.46	22.52
Assam	2.49	2.67	3.00	3.12	0.63
Total	704.91	863.65	928.07	1046.08	+ 351.35
		Upcom	ing Capacities by FY30		
Bihar	0	11.29	12.17	11.65	11.65
Uttar Pradesh	0	18.32	22.46	29.60	29.60
Jharkhand	0	15.88	16.24	16.21	16.21
Andhra Pradesh	0	6.43	6.65	7.10	7.10
Odisha	0	5.62	6.36	5.85	5.85
Karnataka	0	0.84	0.84	1.60	1.60
Telangana	0	20.91	22.12	20.85	20.85
West Bengal	0	2.96	3.07	2.85	2.85
Maharashtra	0	2.74	3.00	3.18	3.18
Tamil Nadu	0	11.96	13.14	15.26	15.26
Total	0	96.95	27 106.03	114.14	+ 114.14
ated Grand Totaly N R	AJESWARA RAO, MO 7(34(91 R)-CPIAM, MOC-SO(NF	R), Ministry @60.59 on 17/05/202	3 04:45 PM 1034.10	1160.22	+ 465.49

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Pan-India Coal demand analysis – Non-Regulated Sector

Total Non-Coking Coal demand from NRS

Total Non-Coking Coal Consumption from NRS: MTPA	244.90	240.36	257.54	273.36	290.40	307.18	324.07	341.90	360.71	380.56
Coal Consumption from Others Sector (Bricks, Paper, Fertilizer et c.): MTPA	37.44	7.71	8.16	8.64	9.15	9.68	10.25	10.85	11.49	12.17
Coal Consumption from DRI/Sponge Iron Sector : MTPA	48.13	54.64	58.21	61.48	64.99	68.44	71.90	75.53	79.35	83.36
Coal Consumption from Cement Sector : MTPA	38.59	47.49	51.02	54.29	57.82	61.32	64.85	68.58	72.54	76.72
Coal Consumption from CPPs : MTPA	120.74	130.52	140.15	148.95	158.44	167.74	177.07	186.93	197.33	208.31
	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30

Steel

	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Real GDP Growth Rate	-6.60%	8.70%	8.00%	6.90%	7.00%	6.50%	6.20%	6.20%	6.20%	6.20%
Correlation (Elasticity Factor)	0.72	0.72 Historical analysis of last 11 years								
Crude Steel Peoduction (Million Tonnes)	104	120	127	137	148	160	173	187	202	219
Coking coal Consumption / Crude Steel Production	0.59	0.64			Ass	uming ~0.64	1 ratio to pr	evail		
Coking coal Demand (Million Tonnes)	62	77	81	88	95	103	111	120	130	140

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Summary of Key Rail Projects Identified

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹ Major^{PI} Railway Lines catering to Coal Traffic in India

Major coalfields are located in eastern and central parts of India. Kanpur Varanasi Patna Jhans Bhagalpur Guna Pakur Sonenagai Chanbad Katni Bhopal Bilaspur Ranchi **Kolkata** Wardha Jharsuguda Nagpur Cuttack Akola Paradeep Chandrapur Nanded Bhubaneswar Warangal/Kazipet Vishakhapatnam Dornakal Vijaywada Under Construction railway works Proposed Major Railway Wroks Existing Rail Line Major Stations Major Coalfields



The major coal producing states of Odisha, Chhattisgarh & Jharkhand along with parts of Madhya Pradesh are the major clusters for coal evacuation, accounting for ~75% of the total domestic raw coal dispatch

Major Growth Areas for Coal Traffic in India



While the major three areas fall under the divisions of East Coast Railways (ECoR), South East Central Railways (SECR) and East Central Railways (ECR), origin-destination mapping has been analyzed for all divisions and minor additional works have been proposed to debottleneck coal traffic movement on a pan-India basis

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Key Insights and Recommendations for Indian Railways – Consolidated (1/8)

#	Recommendation	Way Forward
1	Doubling (for Sardega – Bhalumunda line) and Tripling (for Jharsuguda Barpali line) for hassle free movement of coal along with additional proposed works such as Automatic Signaling etc.	Captive and Commercial miners, who have been allotted blocks in Ib-Valley CF may initiate dialogues with Ministry of Railways (SECR) to understand possible evacuation arrangements from this cluster. SECR to take up proposed doubling and tripling.
2	For making evacuation of coal feasible via coastal shipping (Jharsuguda to eastern ports) from Ib-valley, it is proposed that Indian Railways should provide freight concessions for RSR traffic to achieve freight parity. Currently, only <5 Million Tonnes of coal is being transported to ports other than Paradeep (~30 MT in FY22). As these shipments usually have a ~ INR 300 / Tonne economic disadvantage as compared to Talcher – Paradeep route, Indian Railways should evaluate freight concessions to those eastern ports to achieve freight parity.	Indian Railways should evaluate freight concessions to all eastern ports having economic disadvantage
3	3 rd line from Jharsuguda Jn to Rourkela is under construction. However as per future O-D coal flow mapping, the capacity won't be sufficient. Therefore 4 th line has to be planned from Jharsuguda Jn to Rourkela.	Indian Railways
4	High congestion expected on railway lines to enable coastal shipping Concerned lines: Budhapank to Rajatgarh and Cuttack to Paradeep. Heavy Haul Rail Corridor from Salegaon to Cuttack being shelved due to economic constraints. It is of utmost importance to add a third line (Survey under process) and in future a fourth line from Cuttack to Paradeep. MCRL Outer Corridor to be executed to bypass load on Talcher. Timely execution of MCRL inner corridor by FY26 to enable evacuation on Sambalpur – Talcher Rd Section. Also, Doubling of Angul-Balram line is required to be taken up for despatch of ~25-30 Rakes/Day by FY30.	Indian Railways (ECoR)
5	Dhamra Port has plans to increase capacity of coastal shipping + exports to around 20 MTPA. This would lead to diversion of around 14 R/D from Dhamra, via Angul-Sukinda Rd line. Other ports such as Gopalpur, Vizag and Gangavaram should be explored by consumers. Under Construction line from Rairakhol to Gopalpur port should be utilized, subject to adequacy of coastal shipping capacity at ports and favorable economics of coastal movement. 31	End Consumers / Power Plants, Dhamra Port (DPCL)

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Key Insights and Recommendations for Indian Railways – Consolidated (2/8)

#	Recommendation	Way Forward
6	Although Auto-Signaling works between Korba and Champa along with Korba Yard modification is underway, a third line between Korba and Champa is required for future evacuation of coal from Korba CF towards Bilaspur.	Indian Railways (SECR)
7	Rail line connectivity exists from Gevra to NTPC Seepat (MGR circuit) and from NTPC Seepat (MGR circuit) to Gatora station on the Champa-Bilaspur main line. Connectivity from Junadih siding (Gevra area) to NTPC Seepat (MGR circuit) -700 m, is underway. Collaboration with NTPC to evacuate coal from Korba CF to Champa-Bilaspur main line bypassing Korba-Champa rail line should be developed to provide additional alternate route.	Commercial terms to be expedited for usage of link
8	4 th Line between Pendra Rd to Anuppur & Anuppur to New Katni should be planned	Indian Railways (SECR)
9	Proposed CRCL Lines have to be finalized and executed on priority for diversion of loads directly towards Raipur (for feed to Maharashtra, Karnataka, Gujarat etc.) bypassing Bilaspur.	Indian Railways (SECR). CRCL
10	CERL is expected to join CEWRL at Urga (Korba) via the CERL Phase-II. Therefore, CERL Phase-II needs to be expedited for coal evacuation to northern India from the coalfields of Ib Valley and Mand Raigarh. 32	Expediting CERL Phase-II. Dialogues may be initiated by coal miners who have been allotted blocks in the Ib Valley region and Mand Raigarh region for future evacuation plans with Ministry of Railways

2528975/2023/CPIAM

Key Insights and Recommendations for Indian Railways – Consolidated (3/8)

#	Recommendation	Way Forward
11	Triple Line from Anuppur to Ambikapur will be required in future as volumes from CIC CF increases. Auto Signaling of the entire section from Anuppur to Ambikapur has to be taken up for easing the evacuation from the cluster	Indian Railways (SECR)
12	4 th Line between Pendra Rd to Anuppur & Anuppur to New Katni has to be planned	Indian Railways (SECR)
13	Ambikapur – Garhwa Rd rail corridor is being planned by railways. After the analysis of current and future coal traffic and O-D mapping, it was found that this line would may not have sufficient coal traffic. Plans for development of this corridor should be re-analyzed by the Indian Railways.	Indian Railways (SECR)
14	Nagpur-Wardha line is currently running at 158%. Due to increased supplies from Chhattisgarh to Maharashtra along with traffic from Odisha and WCL's own traffic, tripling of this line to be expedited.	Tripling of Nagpur-Wardha to be expedited, Indian Railways
15	Tripling of Itarsi-Nagpur (both Itarsi-Amla & Amla-Nagpur currently at >100%) and Chandrapur-Majri (current utilization ~140%) should be expedited to enable future coal evacuation from these areas	Tripling of Chandrapur-Majri-Sonegaon line to be expedited, Indian Railways

Key Insights and Recommendations for Indian Railways – Consolidated (4/8)

#	Recommendation	Way Forward
16	Proposed chord line from Chandrapur to Chanda Fort station in the Wardha Valley region to be expedited for traffic moving from Wardha Valley CF to Nagbhir	Chandrapur-Chanda Fort Chord line to be expedited
17	Double Line from Mahadiya to Katni (Bypassing Sanjay tiger Reserve) along with Katni Grade separator project to be executed at the earliest. Singrauli to Mahadiya section double line already commissioned.	Indian Railways (WCR & ECR)
18	Doubling of Anpara to Krishnashila may be executed at the earliest.	Indian Railways (WCR & ECR)
19	Upcoming new BG line between Lalitpur – Singrauli (estimated TDC: 2025-26) shall provide a vital link between northern India and NCL region avoiding Katni junction. This work should be expedited.	Indian Railways (WCR)
20	Doubling of Chopan to Chunar Section should be planned as capacity augmentation of an important feeder line for DFC	Indian Railways (NCR)

Key Insights and Recommendations for Indian Railways – Consolidated (5/8)

#	Recommendation	Way Forward
21	Shaktinagar-Mahadiya new BG line feasibility must be explored by Indian Railways	Indian Railways (ECR)
22	Shivpur-Kathautia new BG line is under construction for coal evacuation from North Karanpura CF towards Koderma. Doubling of Shivpur-Kathautia line should be taken up keeping in view future requirements of evacuation from this area	Focused approach to speed up ongoing works & doubling of Shivpur-Kathautia may be explored. Indian Railways
23	Proposed Tori-Chatra is expected to join Chatra-Gaya line for coal evacuation to northern India from the coalfield of North Karanpura. From Gaya, coal traffic may be diverted to the planned extension of Dedicated Freight Corridor (DFC) line for ease of coal evacuation	Expediting of commissioning lines of Tori-Chatra, Chatra-Gaya and Gaya-Sonenager DFC line. Indian Railways
24	Additional line should be planned to connect Non-CIL Blocks of Badam Dipside, Babupara, Dipside of Rohne Rautpara, Rohne to Hazaribagh-Arigada line with a common Public Freight Terminal	Production commencement plans to be finalized for under exploration blocks in North Karanpura region to aid in planning for additional FMC projects and BG rail line link to Hazaribagh – Arigada line
25	Y-Curves should be planned for lines from Magadh, Amrapali & Sanghamitra joining on the Tori-Shivpur line to facilitate coal traffic towards Kathautia.	Y-curves to be planned from major coal mines of CCL to facilitate coal traffic towards Kathautia.
2528975/2023/CPIAM

Key Insights and Recommendations for Indian Railways – Consolidated (6/8)

#	Recommendation	Way Forward
26	Tripling of Barkakhana-Garhwa Road is under progress along with Hazaribagh-Arigada Surface Crossing. Y- connection between Kuju & Ranchi Rd, surface crossing at Arigada and Rail over Rail flyover at Patratu have been proposed to further facilitate coal traffic in this region.	These ongoing works should be expedited
27	Additional line should be planned to connect Hazaribagh and Barkakhana/Arigada as an alternate to Barkakhana/Arigada – Garhwa Road to reach Gaya via Koderma	Additional evacuation route for under exploration blocks in the region and Kuju area of West Bokaro coalfield, among others
28	Eastern DFC's works may be expedited till Gomo to facilitate coal evacuation from all coalfields of CCL, BCCL & ECL	DFC works may be expedited till Gomo
29	Doubling of Bhojudih-Pradhan Khunta line should be taken up to facilitate BCCL's coal evacuation from the area	Doubling of Bhojudih-Pradhan Khunta line may be taken up
30	New BG line between Godda and Pakur should be expedited to reduce reliance on road transport from the Pachwara blocks to Pakur and Dumka.	Expediting of new line Godda-Pakur

Key Insights and Recommendations for Indian Railways – Consolidated (7/8)

#	Recommendation	Way Forward
31	Proposed projects of Murari-Pakur 3 rd and 4 th line to be expedited due to increased coal traffic from Pakur along with Bardhman-Shaktigarh 5 th line	Proposed 3 rd & 4 th line to be expedited
32	New BG line from Saharpur-Jamarpani block to Harisingh station to be taken up. This may be extended in future to cater to coal traffic from Deocha-Pachami and other non-operational blocks	New line to Harisinghpur from southern blocks
33	MGR line from Rajmahal to NTPC Farakka may be extended to cover coal evacuation from Chupervita of ECL along with doubling of the NTPC Farakka MGR line. Hura C to Rajmahal MGR (~12 Kms) is being constructed by NTPC for taking coal to either Kahalgaon and Farakka Plants	Doubling of MGR Line and expedition of connectivity from Hura C to Rajmahal. NTPC
34	Expediting of Chitra-Basukinath line works along with doubling of Rampurhat-Dumka line to facilitate coal traffic in the Rajmahal CF	Doubling of Rampurhat-Dumka line
35	Due to increased coal production from SCCL's Bhupalpally region, the line connecting Ramagundam to Manuguru via Jayashankar Bhupalpally region which is under contruction to be expedited on priority. Joining of this line will ease traffic on Kazipet-Peddapalli section	Manuguru-Ramagundam (via Bhupalpally) line may be expedited
	37	

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Key Insights and Recommendations for Indian Railways – Consolidated (8/8)

#	Recommendation	Way Forward
36	Ongoing tripling works on sections Vijaywada-Motumari-Dornakal-Kazipet-Odella (near Peddapalli) and section Mandamarri-Manikgarh shall further ease evacuation for congested sections in this region.	Tripling work in the region to be expedited. Additional lines should be evaluated for Peddapalli- Manchiryal section (4 th line)
37	Tripling of Kazipet-Bibinagar should be evaluated for easing traffic flowing from SCCL's blocks to southern states	Tripling work for Kazipet-Bibinagar should be evaluated
38	Automatic signaling implementation across all major coalfields	Indian Railways
39	All doubling/tripling/new line should take into account creation of sufficient yard capacities at major junction points. Works similar to Katni Grade Separator should be planned to cater to enhanced yard capacity requirement.	Indian Railways

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²⁵²⁸⁹Estimated Wagons procurement required by Indian Railways for Coal Traffic by FY30 – Bottoms Up Approach

Production Cluster / Concerned Railway Division	FY22 Avg Lead (KMs)	FY30 Avg Lead (KMs)	% Reduction in Lead due to Network Optimization	Optimized Turnaround Time (Days) for FY30	Additional Rakes / Day Despatch Envisaged	Total Number of Wagons Required to be Procured by FY30 for coal movement	Reduced TAT due to FMC loading	Number of Wagons Required – FMC scenario	Additional Wagons required during Peak Season	Total Wagons to be Procured over Base year 2022
ECoR (For supply from Odisha to all destinations)	428.32	406.09	5.19%	3.03	235	41,299	2.86	39023	2927	41949
SECR (For Supply from Chhattisgarh to all destinations, including supply from Sohagpur CF in MP)	656.44	592.64	9.72%	4.42	154	39,482	4.25	37990	2849	40840
ECR, SER, & ER (For Supply from Jharkhand and West Bengal)	525.8	515.86	1.89%	3.85	108	24,032	3.68	22989	1724	24713
SCR (For Supply from Telangana)	372.07	306.29	17.68%	2.28	18	2,380	2.11	2206	165	2371
Total					515	1,07,193		1,02,208	7,666	1,09,874
Due to efforts on Import c	substitution, t oal from ports	he overall coal to Various des	imports will deo tination. Assum	cline to ~170 MTF ing a TAT of 4 Day	PA or ~118 R/D k s, the number c	by FY30 – This will leac of wagons that will red	l to a reducti uce will be ~	ion of 27 R/D dail 6,264.	y despatch of	1,03,610
As 13,690 Wagons (BOXN + BOBRN) have already been procured by Indian Railways in FY23. We assume that out of these around 48% would be for Coal movement Perated from eoffice by N RAJESWARA RAO, MOC-SO(NRR), MOC-S									97,038	

²⁵²⁸⁹ Estimated Wagons procurement required by Indian Railways for Coal Traffic by FY30 – Top Down Approach

Course of Doomotol		2022	203	0	Additional Requirement				
Source of Despatch	Million Tonnes	Rakes / Day	Million Tonnes	Rakes / Day	Million Tonnes	Rakes / Day			
Total Despatch of Coal via Rail - Domestic Coal	541	376	1287	894	746	518			
Total Despatch of Coal via Rail - Imported Coal	128	89	89	62	-39	-27			
Total Volume Handled via Rail Mode	669	465	1376	956	707	491			
Estimated Number of Rakes required to be procured over and a	above the FY2 p	2 despatch levels. As rojects	suming 5% Reduction	1 TAT due to deploy	ment of various FMC	467			
Total Number of Rakes to be Procured assuming an average	Turnaround t	time of 3.9 Days per I	Rake (Assumed based	on consultations v	vith Stakeholders)	1.821			
Total Number of Wa	agons to be Pi	rocured assuming 58	Wagons per Rake			1,05,618			
As 13,690 Wagons (BOXN + BOBRN) have already been proc	ured by India	n Railways in FY23. W	e assume that out of	these around 48%	would be for Coal	00.046			
movement j.e. ~ 6572 Wagons. So we will reduce these wagons from the estimated procurement projection, as they have already been procured									
% Deviation betwee	n estimates o	f Bottoms Up and To	p-Down Approach	· · · · ·		2 %			

Therefore, Wagon procurement estimates using both the approaches seem to be within the same range. Therefore, it shall be noted that an estimated 95,000 to 100,000 wagons would need to be procuted in order to cater to the coal sector by FY30.

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State-wise key findings and recommendations

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Thermal Coal Supply Analysis summary for Odisha

	-	Actuals					Projections			
Coal Supply	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY
Talcher CF	83.9	96.7	112.7	111.8	125.1	165.1	174.1	174.1	181.6	18
IB Valley CF	64.1	71.4	80.6	92.2	99.9	124.9	129.3	137.3	143.3	14
Total MCL (CIL)	148	168	193	204	225	290	303	311	325	33
Captive & Commercial - Talcher CF	0.0	0.0	0.0	7.5	19.8	26.4	35.3	47.1	62.8	83
Captive & Commercial - IB Valley CF	6.7	16.9	25.20	25.20	29.3	35.3	42.5	51.1	61.4	73
Total Non-CIL	6.7	16.9	25.20	32.7	49.1	61.7	77.7	98.1	124.2	15
Total Coal Production in Odisha	155	185	219	237	274	352	381	410	449	4:

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deal . The

MCL has ambitious production capacity expansion plans

Odisha

БНА		FY22 Actual Despatch (MTPA)						Y25-26	5 1 BT PI	an (MTPA)	FY29-30 Anticipated Dispatch (MTPA)				
Area	Linked Mines	Rail	RCR	Pure Road	MGR & Others	Total	Rail	RCR	Pure Road	MGR & Others	Total	Rail	RCR	Pure Road	MGR & Others	Total
IB Valley	Samaleshwari & Lajkura	7.68	0.00	1.42	0.00	9.10	17.81	0.00	1.69	0.00	19.50	17.81	0.00	1.69	0.00	19.50
Lakhanpur	Lakhanpur, Belpahar & Lilari	20.45	0.00	3.65	4.00	28.10	34.19	0.00	1.81	0.00	36.00	37.99	0.00	2.01	0.00	40.00
Basundhara & Mahalaxmi	Kulda, Garjanbahal, Siarmal, Basundhara (W) Extn	20.01	0.00	16.83	0.00	36.84	48.60	0.00	23.00	0.00	71.60	79.50	0.00	7.50	0.00	87.00
Orient	Hirakhand-Bundia , Orient 1,2,3	0.00	0.00	0.24	0.00	0.24	0.82	0.00	0.00	0.00	0.82	0.78	0.00	0.00	0.00	0.78
IB Valley & B	asundhara CF	48.14	0.00	22.14	4.00	74.04	101.42	0.00	26.50	0.00	127.92	136.08	0.00	11.20	0.00	147.28
Lingaraj	Lingaraj OCP	18.89	0.00	2.21	0.00	21.10	18.89	0.00	1.11	0.00	20.00	17.00	0.00	0.00	0.00	17.00
Bhubaneswari, Kaniha, Jaganath, Bharatpur, Hingula, Talcher, Balabhadra, Subhadra	Bhubaneswari, Ananta, Kaniha, Jaganath, Bharatpur, Hingula, Nandira, Balram, Balabhadra, Subhadra	48.90	0.00	23.13	9.24	81.27	123.3	0.00	13.31	10.5	147.08	145.3	0.00	15.7	10.50	172.00
Talch	ner CF	67.79	0.00	25.34	9.24	102.36	142.2	0.00	14.42	10.5	167.08	162.8	0.00	15.7	10.50	189.00
Tota	I MCL	115.93	0.00	47.48	13.24	176.41	248.6	0.00	40.92	10.5	295.00	298.88	0.00	26.9	10.50	336.28

MCL's despatch is progressing towards higher share of rail from current 66% to a target of 88% by FY30. Ensuring that the evacuation capacity exists is a crucial aspect of the holistic logistics policy.

As pure road despatches would decline from ~47 MTPA to ~27 MTPA (a decrease of 20 MTPA), no new NH and SH level road infrastructure are envisaged. 44

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²⁵²⁸⁹O-D³Source cluster Mapping – Despatch of Coal from Odisha: FY22 snapshot

All figures in million tonnes



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~87 MTPA is conducted and presented in the next sections

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 2528975/2023/CPIAM O-D Source cluster Mapping – Consolidated Coal Traffic from Odisha to all states - RDS

RDS: Realistic Demand Scenario



Note: The increase in average number of rakes indicated above shall be further escalated by ~7.5% to cater during November to March Power Demand

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹⁷⁵ Our key findings based on detailed analysis of railway traffic for Odisha

	20	022			2030			Other Planned Works	Utilization after	
Sub-Section	Capacity	% Utilization	Ongoing Works	Passenger	Freight Total	Capacity	% Utilization	(New Energy/Other Corridors)	of All planned works	
Talcher to Talcher Rd	50	139%	4 th line	53	142 (~116 to 125 R/d is coal)	98	190% to 199%	Planned MCRL Inner Corridor via Jarapada/Angul to bypass Talcher- Talcher Rd. section, significant offloading of Non-CIL rakes via MCRL. With Angul-Balram Doubling, more rakes can be moved directly via Angul, rather than routing through Talcher road. Corridor won't have impact on sections beyond Angul/Jarapada	s <100%	
Sambalpur to Titlagarh	50	129%	Doubling	54	78 (~51 to 55 R/d is coal)	102	125% to 129%	Nil	125% to 129%	
Jharsuguda Jn to Rourkela	144	122%	3 rd line in progress. 4 th line planned for Tatanagar-Rourkela won't impact this section.	80	188 (~30 to 32 R/d is coal)	214	124% to 125%	Nil	124% to 125%	
Jharsuguda Rd to Sambalpur	98	133%	Nil	69	173 (~115 to 124 R/d is coal)	98	236% to 246%	3rd & 4th line from Jharsuguda to Sambalpur planned as part of Energy Corridor	<100%	

All numbers (Except Capacity utilization) represent

The higher range (for capacity utilization estimates) are based on increase of

Note: Capacity refers to Capacity of line with Maintenance Block (MB)

average two-way traffic in Trains/Rakes per day. Generated from eoffice by N. BAIESWARA RAO, MOC SO(NRR)-CPIAM, MOC-SO(NRR), MiTias of Coal Gakes 59 yes base walue, attributable to Peak Power Demand Passenger also includes others

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- Coastal shipping capacity from Eastern ports exceeds 120 MTPA
- 80-90 MTPA is the realistic coastal shipping volumes for FY30 based on demand-based analysis of power plants and landed cost economics.
- Additional capacity of ~30 MTPA can be utilized for exports to Bangladesh & Sri Lanka. Hence, no idle capacity is envisioned.
- Around ~20 25 MTPA, or 14-17 R/d of coastal shipping volume to NRS assets (Steel + Cement) have also been considered
- nerated from early from Paradeep Port, Dhamra, Gong Inur, Vizag and Gangayaram shall be explored for coastal shipping.

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) Probable Coastal shipping to NRS Assets (Steel)



Unloading Ports could be Krishnapatnam or Karaikal





MCL Talcher to Paradip Port and Costal Shipping to Southern Steel Clusters										
From	То	Traffic (Tonnes)	Rakes / Day							
Talcher	Budhapank	22080000	15.33							
Budhapank	udhapank Rajatgarh 22080000									
Rajatgarh	Rajatgarh Barang 22080000									
Barang	15.33									
Cuttack	15.33									
Steel Plant			Capacity (MTPA)							
JSW Steel Vijaynagar	12									
JSW Steel Vijaynagar BF &	BOF Expansion		6.80							
BMM Ispat Steel Plant			2.20							
Kalyani Steels Hospet Plar	nt		0.86							
JSW Steel Salem Plant			1.03							
JSW Steel Salem Plant Bf	& BOF Expansion		0.23							
Arjas Steel Tadipatri Plant			0.33							
Arjas Steel Expansion	0.62									
Total Capacity (Probable f	24.07									
Estimated Steel Product	19.25									
Estimaț g d Thermal Coal	on) 22.08									

Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry of COAL on 17/05/2023 04:45 PM The loading and offloading ports shall be studies (Asset Level) by respective asset owners to make the decision based on feasibility of coastal shipping vs all rail

^{2528975/2023/CRIAM} Computer No. 350449) Probable Coastal shipping to NRS Assets (Cement)

Other Loading ports such as Dhamra, Gopalpur, Vizag, Gangavaram could also be explored by Cement Players based on Asset level landed cost economics

Unloading Ports could be any of the ports on Eastern Coast based on offloading capacity and unit economics, Delivery Timelines etc.



Talcher ,Budhapank, Rajatgarh, Barang, Cuttack, Paradeep

MCL Talcher to Paradip Port and Costal Shipping to Coastal Cement Clusters										
From	То	Traffic (Tonnes)	Rakes / Day							
Talcher	Budhapank	1200000	1							
Budhapank	Rajatgarh	1200000	1							
Rajatgarh	Barang	1200000	1							
Barang	Cuttack	1200000	1							
Cuttack	Paradeep	1200000	1							

Out of the total 8 MTPA coal requirement from Coastal Cement Assets, ~15% (1.2 MTPA) is considered from domestic sources with G9-G14 Grade, that could be supplied by MCL. Remaining would be either imports or High-Grade coal from SECL, ECL, WCL.



To produce ~98 MTPA of cement by coastal capacities, around 13.23 MTPA of thermal coal was consumed. Around ~60% of these volumes are towards southern and western india which can leverage coastal shipping.

Hence, there seems to be a potential to supply these power plants around 1 MTPA, for which costal shipping could be utilized. But at the same time as these are coastal assets, they are more likely to rely on imported coal than MCL's low grade coal

MCL's marketing team shall hold consultations with the Cement Industry

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²⁵²⁸⁹⁷⁵ Our key findings based on detailed analysis of railway traffic for coastal shipping

	20	022			2030					Utilization
Sub-Section	Capacity	% Utilization	Ongoing Works	Passenger	Freight	Total	Capacity	% Utilization	Other Planned Works (New Energy/Other Corridors)	after of All planned works
Talcher / Talcher Rd to Budhapank	168	126%	3rd Line from Talcher to Budhapank, Talcher – Bimalgarh new BG Line	101	287 (~162 to 174 R/d is coal)	375 to 387	280	134% to 138%	Planned MCRL Inner Corridor via Jarapada/Angul to bypass Talcher-Talcher Rd. section, significant offloading of Non- CIL rakes via MCRL. With Angul-Balram Doubling, more rakes can be moved directly via Angul, rather than routing through Talcher road.	<100%
Budhapank to Rajatgarh	130	122%	3rd and 4th Lines planned between Budhapank – Salegaon.	52	238.79 (~ 148 to 159 R/d is coal)	291 to 302	218	134% to 139%	Re-routing coal to Dhamra and Paradeep Port via Angul – Sukinda New BG Line. Also Routing some coal from Angul to Rairakhol to Gopalpur Port	127% to 132%
Cuttack to Paradeep	100	72%	Planned auto- Signaling, Additional loop line at Badabandha.	24	149 (~122 to 131 R/d is coal)	173 to 182	100	173% to 182%	Doubling of Paradeep to Haridaspur Line Siju – Paradip Flyover Dhanmandal to Chandikhol Chord. Routing of 20 MTPA coal from Dhamra via Angul – Sukinda Line Routing of coal to Paradeep via Angul – Sukinda Rd – Haridaspur section could further decrease load on Cuttack to Sambalpur and Budhapank to Rajatgarh Sections. Salegaon to Paradip HHRC shelved due to economic unviability	162% to 171%
All numbers (Except Capacity utilization) represent average two-way traffic in Trains/Rakes per day. Enerated from eoffice by N_RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Mi7i5% in coal Gakes of Capacity utilization estimates) are based on increase of with Maintenance Block (MB) Presented from eoffice by N_RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Mi7i5% in coal Gakes of Capacity base walue, attributable to Peak Power Demand with Maintenance Block (MB)										

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Proposed evacuation plan for IB-Valley CF



Key Insights and Recommendations – **IB Valley Coalfields**

#	Recommendation	Way Forward
1	Evacuation Capacity of Jharsuguda-Barpali Rail Line + Sardega-Bhalumunda Rail Line cumulatively accounts to ~100 MTPA. This is neck to neck with CIL's planned evacuation capacity from IB and Basundhara Coalfields by 2030. In order for commercial and captive players like Vedanta, GMDC, OCPL (surplus coal for commercial sales), to also leverage these lines for evacuation in future, Doubling (for Sardega – Bhalumunda line) and Tripling (for Jharsuguda Barpali line) for hassle free movement of coal along with additional proposed works such as Automatic Signaling etc.	Captive and Commercial miners, who have been allotted blocks in Ib-Valley CF may initiate dialogues with Ministry of Railways (SECR) to understand possible evacuation arrangements from this cluster. SECR to take up proposed doubling and tripling.
2	Additionally, Captive and Commercial miners shall plan to develop First Mile Connectivity projects like Rapid- Loading System with Silos along with Railway connectivity (to nearby major rail lines like Jharsuguda-Bilaspur, Jharsuguda Rd to Sambalpur etc.). Captive and commercial players along with Indian Railways shall jointly conduct a feasibility study for establishing Public Freight Terminals with Mechanized loading and evacuation systems.	Captive and Commercial miners, who have been allotted blocks in Ib-Valley CF shall initiate dialogues with Ministry of Coal regarding their future evacuation plans. Detailed Investment and works plan may be submitted by these miners at the earliest.
3	Automatic Signaling shall be proposed across all major rail sections in the vicinity of IB Valley CF	Indian Railways (SECR)
4	For making evacuation of coal feasible via coastal shipping (Jharsuguda to eastern ports) from Ib-valley, it is proposed that Indian Railways should provide freight concessions for RSR traffic to achieve freight parity. Currently, only <5 Million Tonnes of coal is being transported to ports other than Paradeep (~30 MT in FY22). As these shipments usually have a ~ INR 300 / Tonne economic disadvantage as compared to Talcher – Paradeep route, Indian Railways should evaluate freight concessions to those eastern ports to achieve freight parity.	Indian Railways should evaluate freight concessions to all eastern ports having economic disadvantage
5	3 rd line from Jharsuguda Jn to Rourkela is under construction. However as per future O-D coal flow mapping, the capacity won't be sufficient. Therefore 4 th line has to be planned from Jharsuguda Jn to Rourkela.	Indian Railways
C	Under-construction FMC Projects of MCL IB-Valley (Including Phase 1,2 & 3) with combined evacuation capacity of	Coal India Limited is continuously monitoring and

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 **Proposed evacuation plan for Talcher CF**



Key Insights and Recommendations – Talcher Coalfields

#	Recommendation	Way Forward
	High congestion expected on railway lines to enable coastal shipping Concerned lines: Budhapank to Rajatgarh and Cuttack to Paradeep. Heavy Haul Rail Corridor from Salegaon to	
1	Cuttack being shelved due to economic constraints. It is of utmost importance to add a third line (Survey under process) and in future a fourth line from Cuttack to Paradeep. MCRL Outer Corridor to be executed to bypass load on Talcher. Timely execution of MCRL inner corridor by FY26 to enable evacuation on Sambalpur – Talcher Rd Section. Also, Doubling of Angul-Balram line is required to be taken up for despatch of ~25-30 Rakes/Dav by FY30.	Indian Railways (ECoR)
	Additionally, Captive and Commercial miners shall plan to develop First Mile Connectivity projects like Rapid- Loading System with Silos along with Railway connectivity.	Captive and Commercial miners, who have been allotted blocks in Talcher CF shall initiate dialogues
2	Captive and commercial players along with Indian Railways shall jointly conduct a feasibility study for establishing Public Freight Terminals with Mechanized loading and evacuation systems. PFTs shall connect Non-CIL mines to MCRL Outer and Inner Corridors for evacuation.	with Ministry of Coal regarding their future evacuation plans. Detailed Investment and works plan may be submitted by these miners at the earliest.
3	Automatic Signaling shall be proposed across all major rail sections in the vicinity of Talcher CF	Indian Railways (ECoR)
4	Paradeep Port expected to handle ~90 Rakes/Day for coastal shipping and exports On a best-effort basis with Expansion works in Pipeline, ~65-72 R/d can be handled by the Port (MCHP + PEQP). While this is sufficient for RSR, coal exports will require further capacity addition. Capacity addition of ~ 15-20 R/d is required. Commitments from end-users of coal may be required to take up the investments for additional capacity addition. Additionally, avenues of notification of policies may be explored to make RSR mode attractive to power consumers.	Paradeep Port Trust, Ministry of Coal
5	Execution of National Waterway 5 to execute coastal shipping via inland waterways (Mahanadi River) ~80-90 MTPA or ~55 to 60 R/d could be moved from Talcher to Pardeep and Dhamra Ports for Evacuation via Coastal Shipping. Transaction Advisor has been appointed which will also conduct detailed traffic study. End to End construction of NW-5 is a challenge, although the target for completion is 2030, delays could be expected beyond the stipulated timelines	IWAI, Ministry of Shipping
6	Dhamra Port has plans to increase capacity of coastal shipping + exports to around 20 MTPA. This would lead to diversion of around 14 R/D from Dhamra, via Angul-Sukinda Rd line. Other ports such as Gopalpur, Vizag and Gangavaram should be explored by consumers. Under Construction line from Rairakhol to Gopalpur port should be utilized, subject to adequacy of coastal shipping capacity at ports and favorable economics of coastal movement.	End Consumers / Power Plants, Dhamra Port (DPCL)
7	Under-construction FMC Projects of MCL Talcher (Including Phase 1,2 & 3) with combined evacuation capacity of ~130 MTPA shall be executed at the earliest to enable coal loading from Talcher_CF.	Coal India Limited is continuously monitoring and solving various issues to expedite this

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) Estimated Wagon Procurement requirement by Indian Railways (ECoR - Odisha)

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Source: Sagarmala Report, Ministry of Ports, Shipping & Waterways, Comprehensive Action Plan for Port Connectivity on Gatishakti NMP 2022, DPIIT]

Additional ~3,094 Wagons would be required for despatches

during peak demand period from November to March

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Thermal Coal Supply Analysis summary for Chhattisgarh

Ch	hatticgarh
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All figures in million tonnes

	←	Actuals		•		Pr	ojections			
Coal Supply	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Mand Raigarh SECL - CIL	12.91	12.8	13.2	15.6	16	31	40	40	43	45
CIC and Korba CF	137.55	129.43	153.8	184	204	228	227	229	231	234
Total SECL	150	142 (156 Despatch)	167	200	220	260	267	269	274	279
Captive & Commercial - MandRaigarh CF	1.25	7.26	9.99	13.65	18.72	25.67	35.20	48.26	66.18	105
Captive & Commercial - Hasedo Anand CF	15	15	12.79	17.84	19.45	21.21	23.13	25.23	27.51	30.00
Total Non-CIL	16.25	22.26	22.78	31.49	38.17	46.88	58.33	73.49	93.69	145
Total Coal Production in Chhattisgarh	167	165	190 <u>58</u>	231	263	306	327	345	371	430

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SECL has ambitious production capacity expansion plans

Chhattisgarh

		FY22 A	ctual Despatc	h (MTPA)		FY25-26 1 BT Plan (MTPA)					FY29-30 Anticipated Dispatch (MTPA)				
Area	Rail	RCR	Pure Road	MGR & Others	Total	Rail	RCR	Pure Road	MGR & Others	Total	Rail	RCR	Pure Road	MGR & Others	Total
Baikunthpur	2.07	0.00	0.00	0.00	2.07	2.74	0.00	0.00	0.00	2.74	2.74	0.00	0.00	0.00	2.74
Bhatgaon	2.54	0.16	0.57	0.00	3.27	4.92	0.00	3.96	0.00	8.88	14.91	0.00	0.57	0.00	15.48
Bisrampur	0.00	0.00	0.34	0.00	0.34	3.40	0.00	0.28	0.00	3.68	3.87	0.00	0.32	0.00	4.19
Chirmiri	1.55	0.02	0.93	0.00	2.49	2.89	0.00	0.00	0.00	2.89	6.09	0.00	0.00	0.00	6.09
Dipka	5.35	12.15	6.23	13.18	36.91	21.00	6.00	3.00	15.00	45.00	21.00	6.00	3.00	15.00	45.00
Gevra	19.02	7.30	4.94	13.74	44.99	39.50	12.00	4.00	14.50	70.00	39.50	12.00	4.00	14.50	70.00
Hasdeo	1.91	0.03	0.39	0.00	2.33	4.00	0.00	1.26	0.00	5.26	5.57	0.00	0.39	0.00	5.96
Jamuna-Kotma	1.48	0.00	0.73	0.00	2.20	3.42	0.00	1.08	0.00	4.50	5.77	0.00	0.73	0.00	6.50
Johilla	1.14	0.11	0.41	0.00	1.67	2.75	0.00	1.08	0.00	3.83	2.75	0.00	0.00	0.00	2.75
Korba	3.46	0.61	2.72	0.64	7.42	4.90	0.00	2.78	1.07	8.75	6.56	0.00	2.99	0.00	9.55
Kusmunda	21.52	1.80	3.73	6.72	33.78	55.50	0.00	0.00	7.00	62.50	55.50	0.00	0.00	7.00	62.50
Raigarh	1.96	0.20	11.98	0.00	14.14	30.00	0.00	5.00	0.00	35.00	38.14	0.00	6.36	0.00	44.50
Sohagpur	1.69	0.20	1.41	0.86	4.15	3.78	2.23	0.93	0.00	6.94	5.46	2.00	1.34	0.00	10.03
Total	63.68	22.58	34.37	35.14	155.77	179	20	23	38	260	203	20	19	37	279

SECL's despatch is progressing towards higher share of rail from current 55% to a target of 80% by FY30 (including RCR). Ensuring that the evacuation capacity exists is a crucial aspect of the holistic logistics policy. Additional 90 R/d despatch is envisaged from SECL.

²⁵²⁸⁹O-D Source cluster Mapping – Despatch of Coal from Chhattisgarh: FY22 snapshot

All figures in million tonnes



²⁵²⁸⁹⁷⁵ Ongoing works to ensure rail evacuation capacity to trunk lines – Adding rail load of CIL on CERL & CEWRL) 193.7 MTPA out of which

Korba CF: 140.56 MTPA



Trunk Line	Section	Anticipated Traffic for FY30 (MTPA)	Rakes/Day
CERL Ph-I	Raigarh CF-Kharsia	30.0	21.3
CERL Ph-II	Raigarh CF-Gevra Rd.	8.1	5.8
CEWRL	Gevra RdPendra Rd.	65.0	46.3
Existing Infra with Modifications	Gevra RdChampa	83.7	59.6

 CIL blocks in Mand-Raigarh coalfield to use CERL Ph-I and subsequently CERL Ph-II to join CEWRL at Gevra Road for traffic bound for Anuppur-Katni

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Rail Evacuation from Korba &

ort	oa, Dipka, Gevra & Kusmunda	Rail: 140.56 MTP							
Evacuation Enabler for coal flow towards Champa									
	Proposed Solution	/Enabler							
1)	Korba yard Modification (Work in pro	ogress)							
2)	Automatic Signalling from Gevra F already done by SECR(IR)).	Road to Champa (Tendering							
3)	Doubling of Line from Dipka to Jun under consideration of SECL)	adih (Currently single line –							
4)	700m Connectivity from Dipka Sidin for directly evacuating to Gatora (SECR(IR) and NTPC, under conside terms to be expedited	g to NTPC Seepat MGR bulb station, bypassing Champa ration of SECL). Commercial							
5)	Speed Enhancement of Trains, renewal) (works under progress by S	Ballasting (Complete track ECR(IR) and SEC)							

evacuation capacity via Rail, which will take up the realistic evacuation capacity from ~223 MTPA to ~260 MTPA

²⁵²⁸⁹O-D Source cluster Mapping – Consolidated Coal Traffic on railways from Odisha & Chhattisgarh (including SECL areas in MP) to all states with addition of CERL/CEWRL network - ODS

ODS: Optimistic Demand Scenario



²⁵²⁸⁹⁷⁵ Our key findings based on detailed analysis of railway traffic for major coal producing states (3/7)

	20	22								
Sub-Section	Capacity	% Utilization	Ongoing Works	Passenger	Freight	Total	Capacity	% Utilization	Other Planned Works (New Energy/Other Corridors)	officiation after of All planned works
Champa to Bilaspur	206	115%	4 th line CERL & CEWRL in progress	117	255 (~152 to 163 R/d is coal)	372 to 383	250	149% to 153%	CRCL line from Jharsuguda- Balodabazaar-Raipur and Katghora – Salka Rd - Donghargarh Coal traffic from Odisha and Chhattisgarh going towards MH/GJ/KA shall be diverted.	149% to 153%
Pendra Rd to Anuppur	98	88%	Khodri-Anuppur Line Doubling with F/O at BSP Pendra RdAnuppur 3rd line & Automatic Signaling: Bilaspur- Uslapur-Ghutku are in progress.	71	120 (~65 to 70 R/d is coal)	191 to 196	142	134% to 138%	With CEWRL line catering to 65 MTPA (Bypassing Champa) load from BSP to APR will drastically reduce. Congestion will be after Pendra Rd.	, 134% to 138%

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²⁵²⁸⁹⁷⁵ Our key findings based on detailed analysis of railway traffic for major coal producing states (4/7)

	20	22			2030				Other Planned Works	Utilization
Sub-Section	Capacity % Utilization		Ongoing Works Passe		Freight	Total	Total Capacity l		(New Energy/Other Corridors)	after of Al planned works
Anuppur to Shahdol to Katni	116	98%	Anuppur – Katni 3rd Line (166.52 Km) in progress	78	158 (~119 to 128 R/d is coal)	235 to 244	164	143% to 149%	Nil	143% to 149%
Bilaspur to Urukura (Raipur)	206	158%	Nil	105	501 (~129 to 138 R/d is coal)	606 to 615	206	294% to 296%	CRCL line from Jharsuguda-Balodabazaar- Raipur and Katghora – Salka Rd - Donghargarh Further load shedding on East-West DFC post	<100%
Surajpur Rd (Kotma) to Anuppur	116	48%	Ambikapur to Boridand Doubling in Progress	42	82 (~52 to 56 R/d is coal)	124 to 128	116	107% to 110%	commissioning Nil	107% to 110%

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²⁵²⁸⁹ Dedicated Freight Corridors – Implications of DFC on Odisha and Chhattisgarh cluster

DFC Name	DFC Connector Station / Node	Total Traffic - 2031 (Rakes/Day)	Coal Traffic	Others			E-W DFC		E-Co DFC		
E-CO DFC	Bilaspur	241	5	255.77	Commodity						
E-W DFC	Durg	31	4.65	26.35		2031	2041	2051	2031	2041	2051
E-W DFC	Nagpur	36	2.16	33.84							
E-W DFC	Jharsuguda Jn	80	11.2	68.8	Coal	6.21	30.16	31.05	11.16	18.18	19.21
E-W DFC	Rourkela	15	0.75	14.25							
				Andal	Cement	2.07	12.76	14.85	5.58	9.09	11.3
				_	Fertilizers	1.84	3.48	5.4	3.1	5.05	4.52
	Bilaspur	Rourkela	مر ۲	Kharagpur	Food Grains	0.92	3.48	4.05	2.48	4.04	3.39
Nagp	bur	Jharsugu da Jn	Bhadrak		Iron Ore	0.46	5.8	6.75	4.96	8.08	14.69
	Durg		Barang		Pig Iron	3.45	10.44	12.15	3.72	6.06	6.78
	5	K	hurda Rd		Pol	0.46	5.8	6.75	4.34	7.07	7.91
					Other RM for Steel	0.23	1.16	6.75	0.62	1.01	10.17
	م م م				Container	0.23	9.28	12.15	2.48	4.04	4.52
					BoG	7.36	32.48	33.75	24.18	39.39	30.51
				65	Maximum nos of Rakes / Day	23	116	135	62	101	113
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Source: National Rail Plan December 2020

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Proposed evacuation plan for Korba CF



Key Insights and Recommendations

#	Recommendation	Way Forward
1	Although Auto-Signaling works between Korba and Champa along with Korba Yard modification is underway, a third line between Korba and Champa is required for future evacuation of coal from Korba CF towards Bilaspur.	Indian Railways (SECR)
2	Rail line connectivity exists from Gevra to NTPC Seepat (MGR circuit) and from NTPC Seepat (MGR circuit) to Gatora station on the Champa-Bilaspur main line. Connectivity from Junadih siding (Gevra area) to NTPC Seepat (MGR circuit) -700 m, is underway. Collaboration with NTPC to evacuate coal from Korba CF to Champa-Bilaspur main line bypassing Korba-Champa rail line should be developed to provide additional alternate route.	Commercial terms to be expedited for usage of link
3	Additionally, Captive and Commercial miners shall plan to develop First Mile Connectivity projects like Rapid- Loading System with Silos along with Railway connectivity (to nearby major rail lines like Korba – Champa , CERL Ph-I, or CEWRL)	Captive and Commercial miners, who have been allotted blocks in Ib-Valley CF may initiate dialogues with Ministry of Coal regarding their future evacuation plans. Detailed Investment and works plan may be submitted by these miners at the earliest.
4	Alternatively, options for commissioning of Public Freight Terminals with facilities of mechanized loading of coal may be evaluated for providing rake loading services to non-CIL blocks to reduce road movement of coal from these regions	Exploration of Public Freight Terminals for mechanized coal loading and coal transport through rail for non- CIL blocks
5	4 th Line between Pendra Rd to Anuppur & Anuppur to New Katni should be planned	Indian Railways (SECR)
6	Proposed CRCL Lines have to be finalized and executed on priority for diversion of loads directly towards Raipur (for feed to Maharashtra, Karnataka, Gujarat etc.) bypassing Bilaspur.	Indian Railways (SECR). CRCL



Key Insights and Recommendations

#	Recommendation	Way Forward
1	The Jharsuguda-Barpali Rail Line + Sardega-Bhalumunda Rail Line has been planned to join CERL at Gharghoda. Expediting this connectivity along with doubling of the said line to be taken explored for improved coal evacuation.	Expediting Sardega-Bhalumunda rail line along with works for doubling may be taken up for easing of coal traffic towards northern India on the Jharsuguda- Bilaspur line
2	CERL is expected to join CEWRL at Urga (Korba) via the CERL Phase-II. Therefore, CERL Phase-II needs to be expedited for coal evacuation to northern India from the coalfields of Ib Valley and Mand Raigarh.	Expediting CERL Phase-II. Dialogues may be initiated by coal miners who have been allotted blocks in the Ib Valley region and Mand Raigarh region for future evacuation plans with Ministry of Railways
3	Automatic Signaling shall be proposed across all major rail sections in the vicinity of Mand Raigarh	Indian Railways (SECR)
4	Additional FMC projects may be planned for the additional coal blocks under CIL/SECL (north-east of Durgapur coal block) which are currently at various stages of exploration. The same may be planned based on production commencement plans for these blocks.	Production commencement plans to be finalized for under exploration blocks in Mand Raigarh region to aid in planning for additional FMC projects link to CERL Phase I/Phase II
5	Options for commissioning of Public Freight Terminals with facilities of mechanized loading of coal may be evaluated for providing rake loading services to non-CIL blocks to reduce road movement of coal from these regions	Exploration of Public Freight Terminals for mechanized coal loading and coal transport through rail for non- CIL blocks

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Proposed evacuation plan for CIC CF



Under Construction

Key Insights and Recommendations

#	Recommendation	Way Forward
1	Triple Line from Anuppur to Ambikapur will be required in future as volumes from CIC CF increases. Auto Signaling of the entire section from Anuppur to Ambikapur has to be taken up for easing the evacuation from the cluster	Indian Railways (SECR)
2	Additionally, Captive and Commercial miners shall plan to develop First Mile Connectivity projects like Rapid- Loading System with Silos along with Railway connectivity (to nearby major rail lines like Ambikapur – Anuppur – New Katni)	Captive and Commercial miners, who have been allotted blocks in CIC CF may initiate dialogues with Ministry of Coal regarding their future evacuation plans. Detailed Investment and works plan may be submitted by these miners at the earliest.
3	4 th Line between Pendra Rd to Anuppur & Anuppur to New Katni has to be planned	Indian Railways (SECR)
4	Ambikapur – Garhwa Rd rail corridor is being planned by railways. After the analysis of current and future coal traffic and O-D mapping, it was found that this line would may not have sufficient coal traffic. Plans for development of this corridor should be re-analyzed by the Indian Railways.	Indian Railways (SECR)
5	Options for commissioning of Public Freight Terminals with facilities of mechanized loading of coal may be evaluated for providing rake loading services to non-CIL blocks to reduce road movement of coal from these regions	Exploration of Public Freight Terminals for mechanized coal loading and coal transport through rail for non- CIL blocks
²⁵²⁸⁹Estimated Wagon Procurement requirement by Indian Railways (SECR – Chhattisgarh)

Destination State	Million Tonne - Kms	Volume (Million Tonnes)	Weighted Avg Distance of Despatch (KMs)	Destination State	Million Tonne - Kms	Volume (Million Tonnes)	Weighted Avg Distance of Despatch (KMs)
Rajasthan Madhya Pradesh Maharashtra Gujarat Punjab & Haryana Odisha Uttar Pradesh Chhattisgarh	19766.71 8188.32 13852.53 10989.08 4200.03 146.15 492.28 4471.94	18.93 13.97 18.94 8.51 3.02 0.79 0.77 29.61	1044.20 586.14 731.39 1291.31 1390.74 185.00 639.33 151.03	Rajasthan Madhya Pradesh Maharashtra Gujarat Punjab & Haryana Odisha Uttar Pradesh Chhattisgarh Additional Push Volumes + Commercial	31848.10 25614.14 41250.40 27375.86 3894.07 259.00 639.33 14347.66	30.5 43.7 56.4 21.2 2.8 1.4 1 95	1044.20 586.14 731.39 1291.31 1390.74 185.00 639.33 151.03
Other States Total	110.06 62217.09 Average Lead for Coa	0.24 94.78 Million Tonnes al Supply in FY22 (SE by Odisha 656.44 KMs	458.58 CR) for supplies	Even as per FY22 avg Leads FY30 - Rail	42373.01 187601.56 ead for Coal S	316.55 Mil Supply in FY30 (S by Odisha 92.64 KMs	llion Tonnes ECR) for supplies
Average Lead of coal Desp Estimated Average Turn	patch from Chhattisgarh (around time of Rakes (Da	FY22 (KMs) 656.44 ays) 4.89	FY30 592.64 4.42	Additional Rakes/Day Despatch Envisaged Estimated Improved TAT (Days) Total Number of Rakes Required			154.01 4.42 671.89
Rakes / Day Despatch by Rail + RCR + RSR Mode65.82219.83				Estimated Wagons to be Procured for Coal till FY	30		38,969

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Source: Sagarmala Report, Ministry of Ports, Shipping & Waterways, Comprehensive Action Plan for Port Connectivity on Gatishakti NMP 2022, DPIIT]

Additional ~2,923 Wagons would be required for despatches during peak demand period from November to March

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NCL has ambitious growth plans

All figures in million tonnes	- Actu	ials	•		F	Projections —			
Name of Mine / Project	Actual 21-22	2022-23 (Act)	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Bina	9.00	10.50	10.50	12.00	12.00	13	14	14	14
Block-B	5.47	5.47	7.50	7.50	7.50	8	8	8	8
Dudhichua	22.06	23.03	23.50	23.50	23.50	24	24	24	24
Jayant	24.75	26.66	28.00	29.00	30.00	30	30	30	30
Khadia	14.00	15.00	15.00	16.00	16.00	16	16	16	16
Nigahi	21.00	22.50	22.50	23.00	24.00	25	25	25	25
Amlohri	14.00	15.00	15.00	15.00	15.00	15	15	15	15
Krishnashila	7.00	7.50	7.50	6.00	5.00	4	3	3	3
Kakri	2.41	2.26	1.00	0.00	0.00	0	0	0	0
Jhingurdah	2.74	3.25	2.50	2.00	2.00	0	0	0	0
	122	131	133	134	135	135	135	135	135

• NCL has a coal evacuation ramp up plan from **131.2 MTPA in FY23** to **135 MTPA by FY30** – an additional ramp-up of **4.9 MTPA** planned.

- 9 FMC projects (1 Project under Phase-II) have been identified as critical projects to ramp up the evacuation capacity for NCL by FY24-26.
- Out of these, 1 project has been commissioned Krishnashila OCP CHP Silo
- Block B rail Connectivity completed

Non-CIL blocks Pipeline in Madhya Pradesh – Singrauli Coalfields

Madhya Pradesh

All figures in million tonnes

			Details of	Non-CIL blocks in Si	ngrauli Coalfields			
#	Name of the Block	Block Owner	PRC	Operational Status	Proposed Loading Point	EUP and other remarks	Actual FY23 Production	Actual FY22 Production
1	Amelia	THDC India Ltd.	5.6	Non - Operational	Shahdol Railway Station (Mine to Station via NH-39)	Khurja STPP, Bulandshahar, U.P., 856 Kms from mine	~0.05	0.0
2	Amelia North	Jaiprakash Power Ventures Limited	2.8	Operational	Majauli Railway Station (Mine to Station via NH-43)	Jaypee Nigrie Super Thermal Power Plant, Singrauli 37 Kms from mine	2.8	2.8
3	Suliayri	Andhra Pradesh Mineral Development Corporation	6	Non - Operational	Gajrabahra Railway Station (Mine to Station via NH-39)	Nearest port Varansi, U.P., 295 Kms from mine	~1.5	0.0
4	Bandha	EMIL Mines and Mineral Resources Limited	3	Non - Operational	Deoragram Railway Station (Mine to Station via NH-39)	Nearest port Paradip., 849 Kms from mine	0.0	0.0
5	Bandha North	Jaiprakash Power Ventures Limited	NA	Non – Operational	Deoragram Railway Station (Mine to Station via NH-39)	Nearest port Paradip., 849 Kms from mine	0.0	0.0
6	Dhirauli	Stratatech Mineral Resources Private Limited	5	Non - Operational	Gajrabahra Railway Station (Mine to Station via NH-39)	Essar Power MP Limited, M.P., 35 Kms from mine	0.0	0.0
7	Moher & Moher-Amlohri Ext.	Sasan Power Ltd.	20	Operational	Overland conveyor system	Sasan UMPP, M.P., 109 Kms from mine	~16.0	18.4
8	Gondbahera Ujheni (Recent 16th tranche)	- MP Natural Resources	4.12	Non - Operational	Majauli Railway Station (Mine to Station via NH-43	Commercial Sales	-	-
9	Mahan	-	1.2	Non- Operational	Significant area under dense forest cover. Loacting point to be finalized post auction	Coal block expected to be auctioned in 7 th tranche	-	-
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²⁵²⁸⁹O-D²Source cluster Mapping – Despatch of Coal from MP + UP (NCL): FY22 snapshot

All figures in million tonnes

	Consuming State	Rail + RCR	Pure Road	MGR & Others	Total
	Uttar Pradesh	25.41	4.07	37.41	66.89
	Madhya Pradesh	17.06	2.77	21.25	41
7.74	Rajasthan	7.74			7.74
the second second second	Punjab & Haryana	5.19			5.19
41	Gujrat	0.86			0.86
.74	Chhattisgarh	0.76			0.76
Sand and S	Odisha	0.74			0.74
En and a second	Other States	2.23			2.23
	Total Despatch from NCL (MP+UP) to destination state (MTPA)	59.98 (48%)	6.84 (5%)	58.66 (47%)	125.49
FY22: Despatch of Coal from NCL (MP+UP) to destination state (MTPA) Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on	76 Origin – Destination Mapp 17/05/2023 04:45 PM lines for ~60 MTPA is cond	bing and the coa	I al flow analysis ented in the n	of rail trunk ext sections	

²⁵²⁸⁹O-D³Source cluster Mapping – Consolidated Coal Traffic from Singrauli Coalfields to all states

2030 – NCL's coal flow							
State	Rail + RCR	Pure Road	MGR & Belt	Total			
Uttar Pradesh	38.59	4.07	39.89	82.55			
Madhya Pradesh	13.12	2.77	26.92	42.81			
Rajasthan	3.26			3.26			
Punjab & Haryana	5.19			5.19			
Gujrat	0.32			0.32			
Uttarakhand	0.36			0.36			
Total	60.84	6.84	66.81	134.49			

FY22 Actual and FY30 (Estimated) coal traffic in major sections for Despatch of coal from Madhya Pradesh to various destinations

From	То	Traffic (MT): 2022	Rakes / Day: 2022	Traffic (MT): 2030	Rakes / Day: 2030	Increase in Coal Traffic (Rakes / Day)
Shakti Nagar	Anpara	59.98	41.65	60.84	42.25	+ 0.60
Anpara	Karaila Rd	46.37	32.20	44.31	30.77	- 1.43
Karaila Rd	Obradam	14.02	9.74	35.73	24.81	+ 15.07
Obradam	Billi Jn	14.02	9.74	35.73	24.81	+ 15.07
Billi Jn	Chopan	12.16	8.44	35.73	24.81	+ 16.37
Chopan	Chunar	12.16	8.44	35.73	24.81	+ 16.37
Chunar	Prayagraj	12.16	8.44	35.73	24.81	+ 16.37
Karaila Rd	Singrauli	32.34	22.46	35.20	24.44	+ 1.98
Singrauli	Mahadiya	32.34	22.46	35.20	24.44	+ 1.98
Mahadiya	Majhauli	32.34	22.46	35.20	24.44	+ 1.98
Majhauli	Gajara Bahara	32.34	22.46	38.00	26.39	+ 3.93
Gajara Bahara	Niwas Road	32.34	22.46	38.00	26.39	+ 3.93
Niwas Road	Katni	27.38	19.01	32.17	22.34	+ 3.33

8.4435.7324.81+16.37Coal Traffic includes supply from Non-CIL blocks such as Amelia (5.6 MTPA) of
THDC to Khurja STPP, Amelia North (2.8 MTPA) of Jaiprakash power ventures
limited to Jaypee Nigrie TPP from Majhauli.22.4635.2024.44+1.98Equal distribution of loads towards Chunar and Katni have been assumed for
other blocks which probably will sell in the commercial market. These blocks

other blocks which probably will sell in the commercial market. These blocks include Suliyari (6 MTPA APMDC), Bandha (3 MTPA Emil Mines & Minerals), Dhirauli (5 MTPA Stratatech Mineral Resources), Gondbahera Ujheni (4.12 MTPA MP Natural Resources)



²⁵²⁸⁹⁷⁵ C²⁰²³ Source cluster Mapping – Current and Future line capacity utilization of major sections

	2022					2030							
Sub-Section	Passenger	Freight	Others	Total	Capacity (with MB)	% Utilization	Passenger	Freight	Others	Total	Capacity (with MB)	% Utilizati on	Comments
Billi to Obradam	17.14	37.4	20.8	75.34	60	126%	18.54	52.47 (25 is coal)	20.80	91.81	120.00	77%	Capacity Sufficient after Patch Doubling
Obradam to Karaila Rd	17.14	45.6	13.6	76.34	60	127%	18.54	60.67 (25 is coal)	13.60	92.81	120.00	77%	Capacity Sufficient after Patch Doubling
Karaila Rd to Singrauli	12	35.8	7.7	55.5	88	63%	13.98	61.10 (25 is coal)	7.70	82.77	176.00	47%	Capacity Sufficient after Patch Doubling
Singrauli to Mahadiya	11.7	42.4	17.6	71.7	106	68%	15.59	55.20 (25 is coal)	17.60	88.39	212.00	42%	Capacity Sufficient after Patch Doubling
Billi to Chopan	12.84	23.6	14.4	50.84	108	47%	18.26	43.44 (25 is coal)	14.40	76.10	216.00	35%	Capacity Sufficient after Patch Doubling
								55 27					Capacity Insufficient –.
Chopan to Chunar	24.28 38.9 12	12	75.18	44	171%	26.26	(25 is coal)	12.00	93.53	44.00	213%	Doubling of Chopan to Chunar Line is required – North Central Railway	

- All numbers (Except Capacity utilization) represent average two-way traffic Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/202-04:45 PM In Trains/Rakes per day



Key Insights and Recommendations

#	Recommendation	Way Forward
1	Double Line from Mahadiya to Katni (Bypassing Sanjay tiger Reserve) along with Katni Grade separator project to be executed at the earliest. Singrauli to Mahadiya section double line already commissioned.	Indian Railways (WCR & ECR)
2	Doubling of Anpara to Krishnashila may be executed at the earliest.	Indian Railways (WCR & ECR)
3	Additionally, Captive and Commercial miners shall plan to develop First Mile Connectivity projects like Rapid- Loading System with Silos along with Railway connectivity (to nearby major rail lines like Singrauli - Katni). Captive and commercial players along with Indian Railways shall jointly conduct a feasibility study for establishing Public Freight Terminals with Mechanized loading and evacuation systems.	Captive and Commercial miners, who have been allotted blocks in Singrauli CF may consult with Ministry of Coal regarding their future evacuation plans. Detailed Investment and works plan may be submitted by these miners at the earliest.
4	Upcoming new BG line between Lalitpur – Singrauli (estimated TDC: 2025-26) shall provide a vital link between northern India and NCL region avoiding Katni junction. This work should be expedited.	Indian Railways (WCR)
5	7 under-construction FMC Projects of NCL with combined evacuation capacity of ~63 MTPA shall be executed at the earliest to enable coal loading from NCL.	Coal India Limited is continuously monitoring and solving various issues to expedite this
6	Doubling of Chopan to Chunar Section should be planned as capacity augmentation of an important feeder line for DFC	Indian Railways (NCR)
7	Shaktinagar-Mahadiya new BG line feasibility must be explored by Indian Railways	Indian Railways (ECR)

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²⁵²⁸⁹⁷⁵ CCL has ambitious growth plans

A	ll figures in million tonnes		tuals —				Projections			
#	CCL Coalfields	FY21-22	FY22-23	FY23-24	FY24-25	FY25-26	FY26-27	FY27-28	FY28-29	FY29-30
1	North Karanpura	45.34	47.87	52.0	65.5	84.62	91.52	97.92	106.92	113.92
2	South Karanpura	5.41	6.76	8.0	6.98	10.98	11.7	11.7	12.5	12.5
3	East Bokaro	12.58	14.46	16.4	21.82	24.82	25.1	27.15	28.15	29.15
4	West Bokaro	4.54	5.48	5.8	8.9	11.78	10.33	10.33	12.33	12.33
5	Ramgarh	0.88	1.33	1.5	2.5	2.5	3.0	3.0	3.0	3.0
6	Giridih	0.10	0.20	0.3	0.3	0.3	0.1	0.1	0.1	0.1
	Total	68.85 (dispatch of 71.86)	76	84	106	135	142	150	163	171

- North Karanpura & East Bokaro are the major coalfields contributing to current production of CCL.
- Till FY30, CCL is expected to grow from current ~76 MT (FY23) to ~171 MT (FY30), with a CAGR growth of ~12.3%
- CCL's planned growth from ~72 MT dispatch in FY22 to ~171 MT in FY30 is majorly based on production ramp-up from its North Karanpura coalfields, which shall contribute ~73% of the additional coal production for CCL

²⁵²⁸⁹O-D Source cluster Mapping – Despatch of Coal from Jharkhand (CCL & Non-CIL): FY22 snapshot

All figures in million tonnes

		Consuming State	Rail	Road + RCR	MGR & Others	Total
	7 states account for 98% of	Jharkhand	13.07	7.76	0	20.83
11	(CCL+Non-CIL)	Uttar Pradesh	24.77	3.01	0	27.78
28 Jan Januar		Bihar	13.79	0.44	0	14.23
	21013	Punjab & Haryana	7.30	3.51	0	10.81
- Esterna		West Bengal	10.82	2.16	0	12.98
and the second sec	not a	Madhya Pradesh	1.57	0.45	0	2.02
	ther states include Assam (0.4 MT),	Others	1.46	0.29	0	1.76
Ai M M M M	ndhra Pradesh (0.3 MT), Uttarakhand (0.2 1T), Tamil Nadu (0.2 MT), Odisha (0.1 1T), Maharashtra (0.1 MT), Rajasthan (~0 1T), Delhi (~0 MT), Meghalaya (~0 MT)	Total Despatch from Jharkhand (Including CCL & Non-CIL blocks)	72.79	17.61	0	90.41
FY22: Despat	tch of Coal from Jharkhand to		. ↓ 		c	

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²⁵²⁸⁹CCL would need to push certain volumes in order to match the production levels

Figures in million tonnes

Destination State	North Karanpura CF	South Karanpura CF	East & West Bokaro and Ramgarh CF	Total CCL			
Jharkhand	22.45	1.88	11.68	36.01			
Bihar	22.73	1.02	2.14	25.89			
Uttar Pradesh	24.72	1.19	1.77	27.69			
Punjab & Haryana	30.08	1.25	1.37	32.70			
Total for 2030	99.97	5.35	16.96	122.38			
Dispatch Plan for CCL	115	13	44	171			
Identified Potential Gap	15.03	7.65	27.04	48.62			
Assuming all plants sourcing from CCL run at 95% PLF (optimistic scenario) & additional demand from those plants in these states are sourced from CCL				28.83			
E-auction Sales Rail Mode @50% of 10% of Long-term rail mode commitment for FY30				~ 5			
Remaining Potential Gap		14.79					
A proactive marketing strategy needs to be articulated by the marketing team to further push surplus production volumes from CCL. Strict competition from captive &							

commercial mines as well as CIL's other subsidiaries expected.

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 **Proposed evacuation plan for North Karanpura CF**



Key Insights and Recommendations

#	Recommendation	Way Forward
	Shivpur-Kathautia new BG line is under construction for coal evacuation from North Karanpura CF towards	Focused approach to speed up ongoing works &
1	Doubling of Shivpur-Kathautia line should be taken up keeping in view future requirements of evacuation from this area	doubling of Shivpur-Kathautia may be explored. Indian Railways
2	Proposed Tori-Chatra is expected to join Chatra-Gaya line for coal evacuation to northern India from the coalfield of North Karanpura. From Gaya, coal traffic may be diverted to the planned extension of Dedicated Freight Corridor (DFC) line for ease of coal evacuation	Expediting of commissioning lines of Tori-Chatra, Chatra-Gaya and Gaya-Sonenager DFC line. Indian Railways
3	Automatic Signaling may be proposed across all major rail sections in the vicinity of North Karanpura CF	Indian Railways (ECR)
4	Additional line should be planned to connect Non-CIL Blocks of Badam Dipside, Babupara, Dipside of Rohne Rautpara, Rohne to Hazaribagh-Arigada line with a common Public Freight Terminal	Production commencement plans to be finalized for under exploration blocks in North Karanpura region to aid in planning for additional FMC projects and BG rail line link to Hazaribagh – Arigada line
5	Y-Curves should be planned for lines from Magadh, Amrapali & Sanghamitra joining on the Tori-Shivpur line to facilitate coal traffic towards Kathautia.	Y-curves to be planned from major coal mines of CCL to facilitate coal traffic towards Kathautia.
6	Major junctions at Tori & Garhwa Road shall witness substantial coal traffic passing through these stations. Grade separator works (similar to Katni Grade Separator) or bypass works may be planned to ease congestions at junctions	Additional works (such as Katni Grade Separator etc.) to be planned at Tori & Garhwa Road to ease traffic at junctions
7	Options for commissioning of Public Freight Terminals with facilities of mechanized loading of coal may be evaluated for providing rake loading services to non-CIL blocks to reduce road movement of coal from these regions 86	Exploration of Public Freight Terminals for mechanized coal loading and coal transport through rail for non-CIL blocks

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 **Proposed evacuation plan for South Karanpura CF**



Key Insights and Recommendations

#	Recommendation	Way Forward
1	Tripling of Barkakhana-Garhwa Road is under progress along with Hazaribagh-Arigada Surface Crossing. Y- connection between Kuju & Ranchi Rd, surface crossing at Arigada and Rail over Rail flyover at Patratu have been proposed to further facilitate coal traffic in this region.	These ongoing works should be expedited
2	Proposed Tori-Chatra is expected to join Chatra-Gaya line for coal evacuation to northern India from the coalfield of North Karanpura. From Gaya, coal traffic may be diverted to the planned extension of Dedicated Freight Corridor (DFC) line for ease of coal evacuation	Expediting of commissioning lines of Tori-Chatra, Chatra-Gaya and Gaya-Sonenager DFC line. Indian Railways
3	Additional line should be planned to connect Hazaribagh and Barkakhana/Arigada as an alternate to Barkakhana/Arigada – Garhwa Road to reach Gaya via Koderma	Additional evacuation route for under exploration blocks in the region and Kuju area of West Bokaro coalfield, among others
4	Automatic Signaling may be proposed across all major rail sections in the vicinity of South Karanpura CF	Indian Railways (ECR)

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Proposed evacuation plan for East Bokaro, West Bokaro & Ramgarh CF



Key Insights and Recommendations

#	Recommendation	Way Forward
1	Tripling of Barkakhana-Garhwa Road is under progress along with Hazaribagh-Arigada Surface Crossing. Y- connection between Kuju & Ranchi Rd, surface crossing at Arigada and Rail over Rail flyover at Patratu have been proposed to further facilitate coal traffic in this region.	These ongoing works should be expedited
2	Additional line should be planned to connect Hazaribagh and Barkakhana/Arigada as an alternate to Barkakhana/Arigada – Garhwa Road to reach Gaya via Koderma	Additional evacuation route for under exploration blocks in the region and Kuju area of West Bokaro coalfield, among others
3	Eastern DFC's works may be expedited till Gomo to facilitate coal evacuation from all coalfields of CCL, BCCL & ECL	DFC works may be expedited till Gomo
4	Doubling of Bhojudih-Pradhan Khunta line should be taken up to facilitate BCCL's coal evacuation from the area	Doubling of Bhojudih-Pradhan Khunta line may be taken up
5	Options for commissioning of Public Freight Terminals with facilities of mechanized loading of coal may be evaluated for providing rake loading services to non-CIL blocks to reduce road movement of coal from these regions	Exploration of Public Freight Terminals for mechanized coal loading and coal transport through rail for non- CIL blocks
6	Automatic Signaling may be proposed across all major rail sections in the vicinity of East Bokaro, West Bokaro & Ramgarh CF	Indian Railways (ECR)

BCCL has ambitious production capacity expansion plans

Jharkhand

	Act	tuals 🔶				Projections -		All figures in n	nillion tonnes
Coal Supply from BCCL	FY22 Actual	FY23 Actual	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Barora	1.94	2.45	3.90	4.87	5.20	5.57	5.90	6.00	6.27
Block II	3.70	4.68	4.57	4.90	5.40	5.61	5.71	6.53	6.91
Govindpur	0.79	0.85	1.45	2.06	2.08	2.36	2.71	2.85	2.86
Katras	4.25	3.95	4.95	5.05	5.10	5.20	5.81	5.81	5.81
Sijua	3.43	3.76	4.12	4.29	4.31	4.78	4.78	4.78	4.99
Kusunda	5.05	6.13	5.70	5.78	5.78	5.80	5.80	6.00	6.00
Pootkee Balihari (PB)	0.23	0.17	0.25	0.26	0.27	0.27	0.27	0.27	0.27
Bastacolla	5.11	6.17	5.50	5.62	5.62	5.70	5.70	5.80	6.20
Lodna	3.81	6.05	4.57	4.58	4.60	4.63	4.83	4.83	4.90
Eastern Jharia	0.67	0.79	1.20	1.39	1.39	1.53	1.88	1.88	2.08
Chanch Victoria (CV)	0.94	0.63	0.90	1.90	1.95	2.05	2.69	2.85	2.85
Western Jharia (WJ)	0.59	0.55	0.90	2.30	3.30	3.50	3.92	4.41	4.86
Total BCCL (CIL) in Jharkhand	31	36	41	45	50	50	50	52	54

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25289 29/2 2023 Some cluster Mapping – Despatch of Coal from BCCL in Jharkhand: FY22 snapshot

All figures in million tonnes



to destination states (MTPA) Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:45 PM

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O-D Source cluster Mapping – Consolidated Coal Traffic from Jharkhand to all states (Incl. CIL and Non-CIL Blocks)

FY22 Actual and FY30 (Estimated) coal traffic in major sections for Despatch of coal from Jharkhand to various destinations

From	То	Traffic (MT): 2022	Rakes / Day: 2022	Traffic (MT): 2030	Rakes / Day: 2030	Increase in Coal Traffic (Rakes / Day)
Koderma	Barh	0.00	0.00	7.44	5.29	5.29
Demu	Barkakana	0.00	0.00	11.00	7.83	7.83
Koderma	Deen Dayal	15.04	10.71	38.95	27.71	17.01
Deen Dayal	Varanasi	13.94	9.92	27.84	19.81	9.89
Deen Dayal	Chunar	1.14	0.81	11.15	7.93	7.12
Varanasi	Ayodha	6.16	4.39	15.87	11.29	6.91
Varanasi	Unchahar	6.49	4.62	10.30	7.33	2.71
Gomoh	Koderma	3.51	2.49	9.95	7.08	4.59
Chandil	Jharsuguda	0.49	0.35	6.61	4.70	4.36
Garwa Road	New Katni	0.49	0.35	7.52	5.35	5.00
Dhanbad	Asansol	4.54	3.23	12.90	9.18	5.95
Tori	Garwa Rd	30.43	21.65	69.14	49.20	27.55
Patratu	Tori	3.05	2.17	8.16	5.81	3.64
Hazaribagh	Gaya	3.15	2.24	6.55	4.66	2.42
Varanasi	Prayagraj	12.41	8.83	23.92	17.02	8.19
Gumia	Chandrapura	10.28	7.32	20.48	14.57	7.26
Patna	Muzzaffarpur	5.64	4.01	14.13	10.06	6.04
Prayagraj	Kanpur Goods	12.41	8.83	23.92	17.02	8.19
Kanpur Goods	Shikohabad	12.41	8.83	23.92	17.02	8.19

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Nadu, Karnataka

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²⁵²⁸⁹⁷⁵ Our key findings based on detailed analysis of railway traffic for major coal producing states (5/7)

		20)22			2030					Utilization
-1	Sub-Section	Capacity	% Utilization	Ongoing Works	Passenger	Freight	Total	Capacity	% Utilization	Other Planned Works (New Energy/Other Corridors)	after of All planned works
	Sonnagar to Sasaram	168	135%	Nil	80	213	293	168	174%	Eastern DFC planned to cover Sonnagar-Sasaram- DDU section. Coal traffic	<100%
	Sasaram to Deen Dayal Upadhaya	150	152%	Nil	82	213	294	150	196%	could be diverted onto DFC network as per NRP 2020.	<100%
	Purulia to Chandil	110	100%	Chandil-Anara- Burnpur 3rd line in progress (DPR stage)	75	110	185	110	168%	Nil	168%
Gei	All numbers (Except Capacity utilization) represent average two- Generation of line with a second best of the second best of t										

²⁵²⁸⁹⁷⁵ Our key findings based on detailed analysis of railway traffic for major coal producing states (6/7)

	Sub-Section	2022 Capacity Vilization		2030 Ongoing Works Passenger Freight To			Total	Capacity	% Utilization	Other Planned Works (New Energy/Other Corridors)	Utilization after of All planned
	Gaya to Sonnagar	134	110%	Nil	91	110	201	134	150%	Nil	150%
	Garhwa Road to Sonnagar	116	124%	3 rd Line in progress	34	150	183	156	117%	Nil	117%
	Tori to Barwadih	84	147%	Patratu-Garhwa RdSonnagar 3 rd line in progress	29	107	136	110	123%	Nil	123%
	Barwadih to Garhwa Road	78	175%	Patratu-Garhwa RdSonnagar 3 rd line in progress	39	139	178	118	151%	Nil	151%
Ge	All numbers (ner Mayotratfice in T	Except Cap	acity utiliza 88, PBE-SLAVAR	ation) represent averag 2ลรรคุทธุยรุสโรค, includes	e two- cotheris/05/20	95 23 04:45 PM		1	Note: Capacit Mai	y refers to Capacity of line wi ntenance Block (MB)	th

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²⁵²⁸⁹⁷⁵ Our key findings based on detailed analysis of railway traffic for major coal producing states (7/7)

	Sub-Section	20 Capacity)22 % Utilization	Ongoing Works	Passenger	2030 Freight	Total	Capacity	% Utilization	Other Planned Works (New Energy/Other Corridors)	Utilization after of All planned
										,	works
	Gomoh to Chandrapura	70	112%		41	55	96	70	137%		137%
	Gomoh to Koderma	94	121%		59	88	147	94	156%		156%
	Koderma to Bandhua	94	129%	NIL (as per ECR Line Capacity Statement FY2022)	59	95	155	94	164%	Nil	164%
	Bandhua to Manpur	94	112%		59	73	132	94	140%		140%
	Manpur to Gaya	154	138%		129	132	261	154	170%		170%
Ge	All numbers (Except Capacity utilization) represent average two- Sener Way traffice in Trains/Rakes, per-stake, per-stak										

ECL has ambitious production capacity expansion plans

West Bengal	← Act	uals	•			Projections		All figures ir	n million tonnes
Coal Supply from ECL	FY22 Actual	FY23 Actual	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Deoghar/Saharjuri Coal Field	0.99	1.03	1.6	2.0	2.5	2.7	2.5	2.5	2.5
Mugma-Salanpur Coal Field	5.18	4.86	7.1	8.1	8.9	9.5	10.3	10.3	11.4
Rajmahal Coal Field	5.47	5.62	16.4	14.0	22.5	22.5	22.5	23.5	23.5
Raniganj Coal Field	20.78	23.50	25.9	28.9	31.0	32.2	32.6	32.6	32.5
Total ECL (CIL) in West Bengal	32	35	51	52	60	65	68	69	70

- Currently, Raniganj Coal Field is the primary source of coal for ECL. However, for FY30 Rajmahal CF is expected to become the largest source of coal for ECL
- Other major coal fields are Deoghar/Saharjuri CF and the Mugma-Salanpur CF.
- ECL has set an ambitious target towards achieving the 1 BT programme of Coal India Limited, and further augment the production till FY 2030.

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O-D Source cluster Mapping – Consolidated Coal Traffic from West Bengal to all states

FY22 Actual and FY30 (Estimated) coal traffic in major sections for Despatch of coal from West Bengal to various destinations								
From	То	Traffic (MT): 2022	Rakes / Day: 2022	Traffic (MT): 2030	Rakes / Day: 2030	Increase in Coal Traffic (Rakes / Day)		
Andal	Damodar	4.84	3.44	8.59	6.11	2.67		
Damodar	Ramkanali	5.41	3.85	9.27	6.60	2.75		
Ramkanali	Purulia	3.24	2.30	5.10	3.63	1.32		
Purulia	Chandil	3.20	2.28	5.04	3.59	1.31		
Chandil	Sini	3.01	2.14	4.72	3.36	1.22		
Sini	Rajkharsawan	3.01	2.14	4.72	3.36	1.22		
Andal	Khana	4.20	2.99	7.36	5.24	2.25		
Bhimgara	Sainthia	10.48	7.46	18.55	13.20	5.75		
Asansol	Andal	6.69	4.76	10.42	7.42	2.66		
Andal	Bhimgara	6.59	4.69	12.84	9.14	4.44		
Sainthia	Nalhati	8.63	6.14	14.91	10.61	4.47		
Nalhati	Barharwa	7.77	5.53	13.49	9.60	4.07		
Andal	Bardhamann	2.74	1.95	4.54	3.23	1.28		
Asansol	Deen Dayal Upadhaya	3.65	2.60	6.05	4.31	1.71		

New Jalpaiguri Feed to Assam, Meghalaya, Tripura, Nagaland Feed to Jharkhand, UP, Punjab and Haryana, Madhya Bhimgara Pradesh, Rajasthan **Deen Dayal** Feed to Bihar Upadhaya Nalhati Andal Dhanbad Sainthia 129% Asansol Coal Bearing Purulia Khana 105% Areas of 110% West Bengal 75% Damodar Durgapur 84% Dumdum 101% Rajknarsawan Kolkata Budge Budge Feed to Tamil Nadu, Odisha, Andhra Pradesh, Maharashtra, Telangana, Chattisgarh XX % FY21-22 Line Capacity Utilization

^{2528975/2023 (CPIAM} Logistical Outlook – Eastern Coalfields Limited (ECL)

Generate

ECL's despatch is progressing towards higher share of rail from current 67% to close to 88 % by FY30. Ensuring that the evacuation capacity exists is a crucial aspect of the holistic logistics policy

	FY 22 ACTI	JAL DISPA	ATCH (MT)		F	FY 26 DISPATCH 1 BT PLAN (MT)			FY 30 ANTICIPATED DISPATCH (MT)				IT)	
RAIL	ROAD	MGR	OTHERS	TOTAL	RAIL	ROAD	MGR	OTHERS	TOTAL	RAIL	ROAD	MGR	OTHERS	TOTAL
1.9	0.18	0	0	2.08	2.14	0	0	0	2.14	5.4	0	0	0	5.4
3.59	0.05	0	0	3.64	3.5	0	0	0	3.5	5	0	0	0	5
0.72	0.72	0	0	1.44	1.83	0	0	0	1.83	1.6	0	0	0	1.6
0.84	0.17	0	0	1.01	3.46	0	0	0	3.46	2.8	0	0	0	2.8
0.58	0.12	0	0	0.7	0.97	0	0	0	0.97	1.3	0	0	0	1.3
0.17	0.02	0	0	0.19	0.75	0	0	0	0.75	0.5	0	0	0	0.5
0.74	0.1	0	0	0.84	1.81	0	0	0	1.81	1.8	0	0	0	1.8
2.28	0.94	0	0	3.22	5.2	0	0	0	5.2	9.4	0	0	0	9.4
1.54	0.29	0	0	1.83	2.11	0	0	0	2.11	2	0	0	0	2
0.88	0.23	0	0	1.11	2.5	0	0	0	2.5	2.5	0	0	0	2.5
9.75	0.48	0	0	10.23	12	0	0	0	12	12	0	0	0	12
1.35	0.23	0	0	1.58	2.82	0	0	0	2.82	2	0	0	0	2
0	0.08	8.21	0	8.29	-	0	22.5	0	22.5	14.4	0.1	9	0	23.5
0.31	0.1	0	0	0.41	0.31	0	0	0	0.31	0.3	0	0	0	0.3
24.65	3.71	8.21	0	36.57	39.4	0	22.5	0	61.9	61	0.1	9	0	70.1
FY2	22	66%				FY26	64	%			FY30	,	87%	
	RAIL 1.9 3.59 0.72 0.84 0.58 0.17 0.74 2.28 1.54 0.88 9.75 1.35 0 0.31 24.65	FY 22 ACT RAIL ROAD 1.9 0.18 3.59 0.05 0.72 0.72 0.84 0.17 0.58 0.12 0.17 0.02 0.74 0.1 2.28 0.94 1.54 0.29 0.88 0.23 9.75 0.48 1.35 0.23 0 0.08 0.31 0.1 24.65 3.71	FY 22 ACTUAL DISPA RAIL ROAD MGR 1.9 0.18 0 3.59 0.05 0 0.72 0.72 0 0.84 0.17 0 0.58 0.12 0 0.17 0.02 0 0.74 0.1 0 2.28 0.94 0 1.54 0.29 0 0.88 0.23 0 9.75 0.48 0 1.35 0.23 0 0.31 0.1 0 24.65 3.71 8.21	FY 22 ACTUAL DISPATCH (MT) RAIL ROAD MGR OTHERS 1.9 0.18 0 0 3.59 0.05 0 0 0.72 0.72 0 0 0.84 0.17 0 0 0.58 0.12 0 0 0.17 0.02 0 0 0.74 0.1 0 0 1.54 0.29 0 0 0.88 0.23 0 0 9.75 0.48 0 0 0.31 0.1 0 0 24.65 3.71 8.21 0	FY 22 ACTUAL DISPATCH (MT) RAIL ROAD MGR OTHERS TOTAL 1.9 0.18 0 0 2.08 3.59 0.05 0 0 3.64 0.72 0.72 0 0 1.44 0.84 0.17 0 0 1.01 0.58 0.12 0 0 0.7 0.17 0.02 0 0 0.19 0.74 0.1 0 0 0.84 2.28 0.94 0 0 3.22 1.54 0.29 0 0 1.11 9.75 0.48 0 0 1.23 1.35 0.23 0 0 1.58 0 0.08 8.21 0 8.29 0.31 0.1 0 0 0.41 24.65 3.71 8.21 0 36.57	FY 22 ACTUAL DISPATCH (MT) RAIL ROAD MGR OTHERS TOTAL RAIL 1.9 0.18 0 0 2.08 2.14 3.59 0.05 0 0 3.64 3.5 0.72 0.72 0 0 1.44 1.83 0.84 0.17 0 0 1.01 3.46 0.58 0.12 0 0 0.77 0.97 0.17 0.02 0 0 0.19 0.75 0.74 0.1 0 0 0.84 1.81 2.28 0.94 0 0 3.22 5.2 1.54 0.29 0 0 1.11 2.5 9.75 0.48 0 0 1.23 12 1.35 0.23 0 0 1.58 2.82 0 0.08 8.21 0 8.29 - 0.31 0.1 0 0 36.57	FY 22 ACTUAL DISPATCH (MT) FY 26 DISPAT RAIL ROAD MGR OTHERS TOTAL RAIL ROAD 1.9 0.18 0 0 2.08 2.14 0 3.59 0.05 0 0 3.64 3.5 0 0.72 0.72 0 0 1.44 1.83 0 0.84 0.17 0 0 1.01 3.46 0 0.58 0.12 0 0 0.7 0.97 0 0.17 0.02 0 0.19 0.75 0 0.74 0.1 0 0.84 1.81 0 2.28 0.94 0 0 3.22 5.2 0 1.54 0.29 0 0 1.83 2.11 0 0.88 0.23 0 0 1.58 2.82 0 0 0.88 2.1 0 8.29 - 0 <t< td=""><td>FY 22 ACTUAL DISPATCH (MT) FY 26 DISPATCH 1 BT P RAIL ROAD MGR OTHERS TOTAL RAIL ROAD MGR 1.9 0.18 0 0 2.08 2.14 0 0 3.59 0.05 0 0 3.64 3.5 0 0 0.72 0.72 0 0 1.44 1.83 0 0 0.84 0.17 0 0 1.01 3.46 0 0 0.58 0.12 0 0 0.77 0.97 0 0 0.17 0.02 0 0 0.19 0.75 0 0 0.17 0.02 0 0 1.83 2.11 0 0 1.54 0.29 0 0 1.83 2.11 0 0 1.54 0.23 0 0 1.11 2.5 0 0 1.35 0.23 0 0 <td< td=""><td>FY 22 ACTUAL DISPATCH (MT) FY 26 DISPATCH 1 BT PLAN (MT) RAIL ROAD MGR OTHERS TOTAL RAIL ROAD MGR OTHERS 1.9 0.18 0 0 2.08 2.14 0 0 0 3.59 0.05 0 0 3.64 3.5 0 0 0 0.72 0.72 0 0 1.44 1.83 0 0 0 0.84 0.17 0 0 1.01 3.46 0 0 0 0.58 0.12 0 0 0.77 0.97 0 0 0 0.17 0.02 0 0.19 0.75 0 0 0 0.74 0.1 0 0 0.84 1.81 0 0 0 1.54 0.29 0 0 1.83 2.11 0 0 0 1.35 0.23 0 0 1.58</td><td>FY 22 ACTUAL DISPATCH (MT) FY 26 DISPATCH 1 BT PLAN (MT) RAIL ROAD MGR OTHERS TOTAL RAIL ROAD MGR OTHERS TOTAL 1.9 0.18 0 0 2.08 2.14 0 0 0 2.14 3.59 0.05 0 0 3.64 3.5 0 0 0 3.5 0.72 0.72 0 0 1.44 1.83 0 0 0 3.46 0.84 0.17 0 0 1.01 3.46 0 0 0 9.97 0.17 0.02 0 0.77 0.97 0 0 0.97 0.17 0.02 0 0.19 0.755 0 0 0 2.11 1.74 0.29 0 0 3.22 5.2 0 0 2.11 0.88 0.23 0 1.11 2.5 0 0 2.5 <</td><td>FY 22 ACTUAL DISPATCH (MT) FY 26 DISPATCH 1 BT PLAN (MT) FY RAIL ROAD MGR OTHERS TOTAL RAIL ROAD MGR OTHERS TOTAL RAIL ROAD MGR OTHERS TOTAL RAIL 1.9 0.18 0 0 2.08 2.14 0 0 0 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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Proposed evacuation plan for Rajmahal CF areas cluster achievable



Total Evacuation of 23.5 MTPA from 4 mines of ECL by FY30

Proposed 14.4	FMC Projects: 23 MTPA (~16.27 rakes per day) capacity will exist by FY30					
rail mode ~ 10.25 r/d	Evacuation via Wharf Wall/Railway Sidings would not be required					
Proposed 9 MTPA evacuation via MGR mode ~ 6.4 r/d	Existing evacuation to NTPC Kahalgaon and Farakka in FY 2022 has been 8.2 MTPA. It is expected to evacuate upto 9 MTPA in FY 2030.					

Remaining Smaller Quantities by Road

Evacuation of 36.5 MTPA from Non-CIL Mines by FY30

For Saharpur Jamarpani (UPRVUNL), the evacuation would be from Rampurhat and would move towards dumka – Bhagalpur to power plants in Uttar Pradesh.

For Pachwara Central (PSPCL), Pachwara North (WBPDCL), and Pachwara South (NUPL) will leverage Pakur Railway Station for loading. Godda – Pirapainti can also be leveraged for north movements by PSPCL and NUPL. These coal block owners have formed a SPV with equity participation for development of coal siding at Pakur for shared use.

WBPDCL currently taking coal via road to both Dumka and Pakur stations for despatch to its power plants

Detailed evacuation routes for under exploration blocks have been mapped in the list attached

Expected commissioningGodda-Pirpainti LineGodda-Pakur Lineof railway works:TDC by FY28-FY29TDC by FY28-FY29

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Proposed Doubling of Rajmahal – NTPC Farakka MGR Line



Key Insights and Recommendations

#	Recommendation	Way Forward
1	New BG line between Godda and Pakur should be expedited to reduce reliance on road transport from the Pachwara blocks to Pakur and Dumka.	Expediting of new line Godda-Pakur
2	At the same time, FMC projects with requisite capacities may be planned by block owners for the Pachwara blocks for efficient loading of coal	FMC projects to be taken up/expedited
3	Proposed projects of Murari-Pakur 3 rd and 4 th line to be expedited due to increased coal traffic from Pakur along with Bardhman-Shaktigarh 5 th line	Proposed 3 rd & 4 th line to be expedited
4	New BG line from Saharpur-Jamarpani block to Harisingh station to be taken up. This may be extended in future to cater to coal traffic from Deocha-Pachami and other non-operational blocks	New line to Harisinghpur from southern blocks
5	MGR line from Rajmahal to NTPC Farakka may be extended to cover coal evacuation from Chupervita of ECL along with doubling of the NTPC Farakka MGR line. Hura C to Rajmahal MGR (~12 Kms) is being constructed by NTPC for taking coal to either Kahalgaon and Farakka Plants	Doubling of MGR Line and expedition of connectivity from Hura C to Rajmahal. NTPC
6	Expediting of Chitra-Basukinath line works along with doubling of Rampurhat-Dumka line to facilitate coal traffic in the Rajmahal CF	Doubling of Rampurhat-Dumka line
7	Options for commissioning of Public Freight Terminals with facilities of mechanized loading of coal may be evaluated for providing rake loading services to non-CIL blocks to reduce road movement of coal from these regions	Exploration of Public Freight Terminals for mechanized coal loading and coal transport through rail for non- CIL blocks
8	Automatic Signaling may be proposed across all major rail sections in the vicinity of Rajmahal CF 102	Indian Railways

²⁵²⁸⁹ Estimated Wagon Procurement requirement by Indian Railways (ECR, SER, ER – Jharkhand & West Bengal)

	Destination State	Million Tonne - Kms	Volume (Million Tonnes)	Weighted Avg Distance of Despatch (KMs)	Destination State	Million Tonne - Kms	Volume (Million Tonnes)	Weighted Avg Distance of Despatch (KMs)
	Jharkhand	3075.80	19.04	161.54	Jharkhand	6671.76	41.30	161.54
	West Bengal	8097 04	38 18	212 07	West Bengal	12490.92	58.90	212.07
	West Deliga	8037.04	56.16	212.07	Uttar Pradesh	45803.46	56.00	817.92
	Uttar Pradesh	25024.23	30.60	817.92	Bihar	13982.70	38.70	361.31
	Bihar	7128.65	19.73	361.31	Punjab & Haryana	45407.04	33.00	1375.97
	Punjab & Haryana Others	17924.77 7181.25	13.03 9.58	1375.97 750	Additional Push Volumes + Commerc Despatches to be taken as per FY22 a Leads	ial vg 22726.64	57.22	397.18
	Total	68431.74	130.15 Mil	lion Tonnes	Total	147082.53	285.12 Mil	lion Tonnes
	FY22 - Rail Average Lead for Coal Supply in FY22 for supplies by Jharkhand & West Bengal 525.80 KMs		FY30 - Rail	Average Lead for Coal Supply in FY30 for supplies b Jharkhand & West Bengal 515.86 KMs				
			FY22	FY30	Additional Rakes/Day Despatch Envisaged			107.62
	Average Lead of coal Despatch from JH + WB (KMs) Estimated Average Turnaround time of Rakes (Days)		∕ls) 525.8	0 515.86	Estimated Improved TAT (Days)			3.85
			ays) 3.92	3.85	Total Number of Rakes Required			414.34
	Rakes / Day Despatch b	y Rail + RCR + RSR Mod	e 90.38	3 198	Estimated Wagons to be Procured for Coa	l till FY30		24,032
					Additional %1	902 Wagana wa	Id he required f	or docestables

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Source: Sagarmala Report, Ministry of Ports, Shipping & Waterways, Comprehensive Action Plan for Port Connectivity on Gatishakti NMP 2022, DPIIT]

Additional ~1,803 Wagons would be required for despatches during peak demand period from November to March

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WCL has ambitious production capacity expansion plans

Maharashtra (WCL) All figures in million tonnes Coal Supply from WCL FY22 FY23 FY24 FY25 FY26 FY27 FY28 FY29 FY30 Pench Kanhan & Tawa Valley CF 2.97 2.84 3.3 3.71 4.59 4.59 4.59 4.59 4.59 Wardha Valley, Umrer, Kamptee & Bander CF 54.74 61.426 64.30 65.42 65.42 63.7 65.42 65.42 65.42 Total WCL (CIL) 64 70 70 58 67 68 70 70 70

- Wardha Valley, Umrer, Kamptee and Bander coalfields are the major coalfields contributing to current production of WCL.
- Till FY30, WCL is expected to grow from current ~64 MT (FY23) to ~70 MT (FY30), with a CAGR growth of ~1.3%
- WCL's major coal producing area of Wardha Valley has produced ~40 MT in FY23 with plans to produce ~40 MT in FY30. Hence, this area has already reached its target of FY30 with existing evacuation infrastructure.

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^{2528975/2023/CPIAM} Manarashtra's coal-based power generation clusters



Major Coar Based Power Plants III Manarashtra								
Name of TPS	Power Utility	Installed Capacity (MW)	Coal Consumed in FY22 (MMT)					
Tiroda	Adani Power Maharashtra Lttd	3300	14.1826					
Adani Dahanu	Adani Electricity Mumbai Ltd	500	1.989					
Dhariwal	Dhariwal Infrastructure Ltd	600	2.721					
GMR Warora	GMR Warora Energy Ltd	600	2.3192					
Ratnagiri	JSW Energy Ltd	1200	2.7286					
Bhusawal	MAHAGENCO	1210	4.7446					
Chandrapur	MAHAGENCO	2920	11.5712					
Khaparkheda	MAHAGENCO	1340	6.2042					
Koradi	MAHAGENCO	2190	8.1874					
Nashik	MAHAGENCO	630	1.6781					
Parli	MAHAGENCO	750	1.9664					
Paras	MAHAGENCO	500	1.9981					
Mouda Super TPS	NTPC Ltd	2320	8.6862					
Solapur Super TPS	NTPC Ltd	1320	3.2532					
Amravati TPS	RattanIndia Power Ltd.	1350	5.9049					
Trombay	The TATA Power Company Ltd	750	2.31					
Sai Wardha Power Ltd, Warora	Sai Wardha Power Generation Pvt Ltd	540	1.4753					
	Total	22020	81.92					

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹⁷⁵ CPIAM (Computer No. 350449) ²⁵²⁸⁹⁷⁵ CPIAM (Computer No. 350449)

All figures in million tonnes



destination state (MTPA) Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:45 PM ~47 MTPA is conducted and presented in the next sections
File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ^{2528975/2023} CPIAM Consolidated Coal Traffic from Maharashtra to all states

FY22 Actual and FY30 (Estimated) coal traffic in major sections for Despatch of coal from Maharashtra to various destinations

From	То	Traffic (MT): 2022	Rakes / Day: 2022	Traffic (MT): 2030	Rakes / Day: 2030	Increase in Coa Traffic (Rakes / Day)
Wardha	Nagpur	12.81	9.12	16.74	11.91	+2.80
Chandrapur	Majri	10.70	7.61	13.98	9.95	+2.34
Wardha	Akola	13.49	9.60	17.63	12.55	+2.94
Nagpur	Akola	6.54	4.65	8.54	6.08	+1.43
Akola	Bhusaval	14.15	10.07	18.49	13.15	+3.09

Major sections are already witnessing significant coal traffic and is estimated to further increase in the coming decade.

Currently. Almost all of these sections are operating at >100% capacity utilization levels and hence solutions shall be in place to ensure seamless coal flow in future\.



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^{2528975/2023/CPIAM} Outlook – Western Coalfields Limited (WCL)

WCL's despatch is expected to continue its share of rail from current ~71% to ~71%-72% by FY30 with sufficient existing evacuation capacity

		FY22 A	ctual Despatch	(MTPA)		FY25-26 1 BT Plan (MTPA)					FY29-30 Anticipated Dispatch (MTPA)				
Area	Rail	RCR	Pure Road	MGR & Others	Total	Rail	RCR	Pure Road	MGR & Others	Total	Rail	RCR	Pure Road	MGR & Others	Total
Ballarpur	4.68	0.66	2.16	0.00	7.50	10.26	0.70	3.29	0.00	14.25	10.26	0.70	3.29	0.00	14.25
Chandrapur	1.13	0.00	1.34	1.99	4.47	2.13	0.00	1.00	2.50	5.63	2.13	0.00	1.00	2.50	5.63
Kanhan	0.34	0.00	0.36	0.00	0.70	0.22	0.00	0.21	0.00	0.43	0.22	0.00	0.21	0.00	0.43
Pench	0.65	0.55	0.07	0.00	1.27	1.98	0.00	0.41	0.00	2.39	1.98	0.00	0.41	0.00	2.39
Majri	3.67	0.11	1.96	0.00	5.74	4.14	0.15	1.46	0.00	5.75	4.14	0.15	1.46	0.00	5.75
Nagpur	4.09	4.80	0.00	0.06	8.95	6.78	0.00	1.28	2.50	10.56	6.78	0.00	1.28	2.50	10.56
Patherkhera	0.00	1.10	0.00	0.02	1.12	0.00	0.00	1.77	0.00	1.77	0.00	0.00	1.77	0.00	1.77
Umrer	8.67	0.00	3.45	0.00	12.12	9.95	0.00	2.25	0.00	12.20	9.95	0.00	2.25	0.00	12.20
Wani	11.76	0.60	5.83	0.00	18.19	7.74	1.50	1.51	0.00	10.75	7.74	1.50	1.51	0.00	10.75
Wani North	2.99	0.09	1.02	0.00	4.10	4.52	0.10	1.66	0.00	6.28	4.52	0.10	1.66	0.00	6.28
Total	37.99	7.90	16.20	2.07	64.16	47.72	2.45	14.84	5.00	70.00	47.72	2.45	14.84	5.00	70.00



File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Proposed evacuation plan for Wardha Valley CF



File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Proposed evacuation plan for Bander, Kamptee, Katol & Umrer CF



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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 **Proposed evacuation plan for Pench-Kanhan CF**



Key Insights and Recommendations

#	Recommendation	Way Forward
1	Nagpur-Wardha line is currently running at 158%. Due to increased supplies from Chhattisgarh to Maharashtra along with traffic from Odisha and WCL's own traffic, tripling of this line to be expedited.	Tripling of Nagpur-Wardha to be expedited, Indian Railways
2	Tripling of Itarsi-Nagpur (both Itarsi-Amla & Amla-Nagpur currently at >100%) and Chandrapur-Majri (current utilization ~140%) should be expedited to enable future coal evacuation from these areas	Tripling of Chandrapur-Majri-Sonegaon line to be expedited, Indian Railways
3	Proposed chord line from Chandrapur to Chanda Fort station in the Wardha Valley region to be expedited for traffic moving from Wardha Valley CF to Nagbhir	Chandrapur-Chanda Fort Chord line to be expedited
4	Options for commissioning of Public Freight Terminals with facilities of mechanized loading of coal may be evaluated for providing rake loading services to non-CIL blocks to reduce road movement of coal from these regions	Exploration of Public Freight Terminals for mechanized coal loading and coal transport through rail for non- CIL blocks
5	Automatic Signaling may be proposed across all major rail sections in the vicinity of coal blocks in Maharashtra	Indian Railways (CR)

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Telangana (SCCL and Non-SCCL) - Production Capacity Expansion Plans

SCCL

7								All figures in mi	illion tonnes
Coal Supply from SCCL	FY22 Actual	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Ramp-up from Existing Mines	~65	~67	70	72	74	81	82	82	80
Mahaveer Khani OC (Telangana)	0	0	0	0.2	0.8	1.5	1.8	2	2
Naini (Odisha)	0	0	5	7.5	10	10	10	10	10
Other New Mine(s)	0	0	0	0	0	2	3	4	6
Total SCCL	65	67	75	80	85	94	97	98	100

Note: New Patrapara coal block in Odisha has been surrendered by SCCL. The block has a PRC of 15 MTPA and SCCL had ramp-up plans up to 8 MTPA within the period FY27 to FY30. However, due to the surrender, a gap of 8 MT for SCCL's growth vision is existing, which can be fulfilled by either ramp-up from existing blocks & participation in new coal block auctions.

Non-SCCL blocks in Telangana

#	Name of the Block	Block Owner	PRC	Operational Status	Proposed Loading Point	EUP and other remarks	Actual FY23 Production	Actual FY22 Production
1	Tadicherla-I	Telangana State Power Generation Corporation Limited. (TSGENCO)	2.5	Operational	Conveyor belt of 17.2 km in length has been proposed as an evacuation method Currently coal is being evacuated through road	Kakatiya Thermal Power Project (1 X 600 MW) EUP is 54 km from mine by road	2.48 MT	2.21 MT
	Total PRC		2.5	115	mode			

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Coal Blocks to be Auctioned in 7th Tranche

Telangana (including blocks in Pranhita Godavari CF, Andhra Pradesh) All figures in million tonnes Block Name Coalfield PRC (MT) State Chintalpudi Sector A1 (NW Part) Pranhita Godavari Valley Andhra Pradesh 0.3 Chintalpudi Sector A1 (SE Part) Pranhita Godavari Valley Andhra Pradesh 0.5 Penagaddppa Godavari Valley Telangana 1.5 Somavaram East Godavari Valley Andhra Pradesh 0.12 Somavaram West (Northern Part) Pranhita Godavari Valley Andhra Pradesh 0.5 Somavaram West (Southern Part) Pranhita Godavari Valley Andhra Pradesh 0.5 Sravanapalli (Revised) Godavari Valley Telangana 2.3 Total 5.72

Due to smaller PRC of mines to be auctioned in Telangana (including blocks in Pranhita Godavari CF, Andhra Pradesh), coal from these blocks are expected to be commercial sales in nature and hence road transport is envisioned for blocks except Penagaddppa and Statanapalli (Revised). For these two blocks, rail traffic is expected to increase by ~3.8 MTPA Generated from eoffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:45 PM

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²⁵²⁸⁹O-D³Source cluster Mapping – Despatch of Coal from Telangana: FY22 snapshot

Quantity in million tonnes



File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹⁷⁵ 2023 (CPIAM O-D Source cluster Mapping – Consolidated Coal Traffic from Telangana to all states

FY22 Actual and FY30 (Estimated) coal traffic in major sections for despatch of coal from Telangana to various destinations											
From	То	Traffic (MT): 2022	Rakes / Day: 2022	Traffic (MT): 2030	Rakes / Day: 2030	Increase in Coal Traffic (Rakes / Day)					
Manuguru	Bhadrachalam Road	6.76	4.81	7.65	5.45	+0.63					
Bhadrachalam Road	Karepalli	12.71	9.04	13.30	9.47	+0.42					
Karepalli	Dornakal	15.90	11.32	17.66	12.57	+1.25					
Dornakal	Warangal	5.62	4.00	10.22	7.27	+3.27					
Dornakal	Motumari	11.16	7.94	13.67	9.73	+1.79					
Warangal	Peddapalli	2.16	1.54	5.53	3.94	+2.40					
Peddapalli	Kazipet	5.68	4.04	21.70	15.45	+11.40					
Peddapalli	Manchiryal	8.62	6.14	25.15	17.89	+11.76					
Manchiryal	Mandamari	10.43	7.42	23.66	16.83	+9.41					
Kazipet	Bibinagar	8.83	6.28	25.85	18.39	+12.11					
Motumari	Vijaywada	11.16	7.94	13.38	9.52	+1+ 58					

Major sections are already witnessing significant coal traffic and is estimated to further increase in the coming decade.

Increase in traffic majorly expected in sections serving the state of Telangana for which coal supply has been allocated to SCCL for upcoming power plants



In addition, the **line connecting Manuguru with Ramagundam via Jayashankar Bhupalpally** shall further ease coal evacuation from this area. The construction of this **new BG line is to be expedited**

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Key Insights and Recommendations

#	Recommendation	Way Forward
1	Due to increased coal production from SCCL's Bhupalpally region, the line connecting Ramagundam to Manuguru via Jayashankar Bhupalpally region which is under contruction to be expedited on priority. Joining of this line will ease traffic on Kazipet-Peddapalli section	Manuguru-Ramagundam (via Bhupalpally) line may be expedited
2	Ongoing tripling works on sections Vijaywada-Motumari-Dornakal-Kazipet-Odella (near Peddapalli) and section Mandamarri-Manikgarh shall further ease evacuation for congested sections in this region.	Tripling work in the region to be expedited. Additional lines may be evaluated for Peddapalli- Manchiryal section (4 th line)
3	Tripling of Kazipet-Bibinagar should be evaluated for easing traffic flowing from SCCL's blocks to southern states	Tripling work for Kazipet-Bibinagar should be evaluated
4	Automatic Signaling may be proposed across all major rail sections in the vicinity of coal blocks in Telangana	Indian Railways (SCR)

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²⁵²⁸⁹Estimated Wagon Procurement requirement by Indian Railways (SCR - Telangana)

Destination State	Million Tonne - Kms	Volume (Million Tonnes)	Weighted Avg Distance of Despatch (KMs)		Destination State		Million Tonne - Kms	Volume (Million Tonnes)	Weighted Avg Distance of Despatch (KMs)
Telangana	2198.58	16.02	137.24		Telangana		5386.67	39.25	137.24
Karnataka	5766.82	9.32	618.76		Karnataka		5816.32	9.4	618.76
Andhra Pradesh	1699.57	6.87	247.39		Andhra Pradesh		2152.29	8.7	247.39
Maharashtra	1301 05	3 86	337.06		Maharashtra		0.00	0	337.06
Wana ashtra	1301.03	5.00	337.00		Tamil Nadu		3846.56	3.94	976.28
Tamil Nadu Others	3055.77 2858.85	3.13 6.17	976.28 463.35		Additional Push Volumes + Con Despatches to be taken as per I Leads	nmercial FY22 avg	4633.46	10	463.35
Total	16880.64	45.37 Milli	on Tonnes		Total		21835.30	71.29 N	1illion Tonnes
FY22 - Rail	Average Lead for (Coal Supply in FY22 372.07 KMs	(SCR) by Telangana	1	FY30 - Rail	Average	Lead for Coal Su	pply in FY30 5.29 KMs	(SCR) by Telangana
		FY2	2 FY30		Additional Rakes/Day Despatch Envisa	nged			18
Average Lead of coal [Despatch from SCCL (K	(Ms) 372.	07 306.29		Estimated Improved TAT (Days)				2.28
Estimated Average Turn	around time of Rakes	(Days) 2.7	7 2.28		Total Number of Rakes Required				41
Rakes / Day Despatch	by Rail + RCR + RSR M	lode 31.5	51 49.51	1	Estimated Wagons to be Procured for 0 20	Coal till FY	′30		2,384
					A ddition	al ~170 \	Nagane would h	a required f	or docnotaboa

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Source: Sagarmala Report, Ministry of Ports, Shipping & Waterways, Comprehensive Action Plan for Port Connectivity on Gatishakti NMP 2022, DPIIT]

Additional ~179 Wagons would be required for despatches during peak demand period from November to March 2528975/2023/CPIAM

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Detailed Report

2528975/2023/CPIAM

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Detailed Demand-Supply Analysis

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449)

²⁵²⁸⁹Coal Production Centers in India



5 states viz., Odisha, Chhattisgarh, Madhya Pradesh, Jharkhand & Telangana contribute $\sim 87\%$ of the domestic coal production of the nation

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- CIL accounts for >80% of the domestic coal production with its subsidiaries MCL, SECL, CCL & NCL producing ~65% of the domestic coal production in FY22
- Captive coal production has grown tremendously in the last 5 years registering a CAGR of ~19% over the period of FY19-FY22 owing to recent coal block auctions

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹ Major Coal Despatch Centers in India

Willion Tonnes

FY18



Major coalfields are located in eastern and central parts of India. In addition, only 6 ports viz., Dhamra, Mundra, Gangavaram, Paradeep, Krishnapatnam & Jaigad handle $\sim 48\%$ of coal imports

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FY21

Coal Supply Scenario in India

FY20

■ CIL ■ SCCL ■ Captives ■ Imports

FY19

1,028

FY22

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹ Major Coal Consumption Centers in India



9 states, viz., UP, Chhattisgarh, MP, Jharkhand, WB, Odisha, Maharashtra, AP & Telangana, cumulatively consume $\sim 85\%$ of domestic coal supply. Other major consumers such as Gujarat, Tamil Nadu are import reliant



- ~83% of domestic coal consumption was from power sector (barring CPPs)
- Combining the locations of domestic production with locations of domestic consumption, a significant locational mismatch becomes apparent, which has led to demand for strengthened evacuation & transportation infrastructure

r consumers such as Gujarat, Tamil Nadu are t reliant eoffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:45 PM Note: Coking coal includes consumption by steel, coke ovens, private cokeries; Others include sponge iron/DRI, cement & colliery consumption;

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449)

²⁵²⁸⁹ Modal Share of Coal Logistics





■ Rail & RCR ■ Road ■ Belt ■ Rope ■ MGR

Under the PM Gatishakti plan, rail remains the dominant evacuation mode for coal with an aim to expand its current modal share to 75% by FY 2030

Infrastructure boost in evacuation capacity including laying of railway lines, construction of railway sidings and setting up of coal handling plants with Rapid Loading Systems (RLS) shall be instrumental in increasing the modal share of railways

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Coal Computer No. 350449)



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Source: Monthly Statistical Reports, Ministry of Coal, Provisional Coal Statistics, National Rail Plan 2020, National Electricity Plan by CEA, 20th EPS Survey by CEA

^{2528975/2023/CPJAM} Electricity generation in India to grow at a substantial CAGR of ~6.1% to 7.8% till 2030, owing to strong demand growth



- In FY23, coal-based generation rose 10.1% to reach 1145.86 Bus, total generation grew ~9% Y-o-Y
- Electricity generation, closely linked to demand, is estimated to be ~2451 to 2742 BU for FY30
- The share of coal in the domestic electricity generation has hovered around ~71% in the last decade.
- It is likely to decline to 62% by FY30 which translates to coal demand ranging from 1037 to 1160 MTPA by FY30

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Pan-2 Thdia Coal demand analysis – Power Sector – Realistic Demand Scenario

Bottoms-Up Analysis of Coal Demand	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Electrical Energy Requirement - Ex Bus (TWh)	1275.88	1381.646	1508.14	1600.21	1694.63	1796.63	1907.84	2021.07	2139.13	2279.68
% Change in Electricity Consumption		8.29%	9.16%	5.13%	5.90%	6.02%	6.19%	5.94%	5.84%	6.57%
Average Demand/Generation Ratio	0.93		La	st 6-year ave	erage has be	en 92.92%, I	FY22 Actual	was 92.84%		
Estimated Grid Generation (TWh) Required	1381.8	1482.78	1621.6	1739.36	1822.19	1931.86	2051.44	2173.20	2300.13	2451.26
Coal Based Generation/Total Generation	68%	70.24%	70.66%	70.73%	68.56%	66.40%	65.00%	64.00%	63.00%	61.61%
Coal Based Generation (TWh)	939.62	1041.46	1145.86	1230.24	1249.37	1282.74	1281.05	1353.85	1429.51	1519.78
Estimated Specific Coal Consumption	0.653	0.678	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Realistic Coal Consumption from Power Sector including 1% Transit Losses (MT)	613.27	706.1	793.56 (55.6 Imports)	844.93	858.01	880.99	915.80	955.23	995.23	1037.20
Domestic Despatch to Power sector	544.07	677.67	737.93							
Coal Imports by power Sector	69.2	<mark>28.43</mark> Power sector's ii	55.63	e increased t	o 7% in FY23	8 from 4% in	FY22, mainly	/		
Derived Coal Consumption CAGR (FY22-FY30)	4.02%	<i>attributable to significant increase in electricity demand and reliance on coal-based power generation.</i>								

Key Highlights

- In FY23, the electricity demand grew 9.16% Y-o-Y to ~1508 Billion Units (Historic high of >1.5 Trillion Units)
- The Specific Coal Consumption values on Pan-India basis have been kept constant at ~0.68, because of addition of Super-Critical and Ultra-Super Critical capacities coupled with import substitution efforts, which are assumed to negate each others impact.
- Coal consumption by power sector to reach at ~ 1037 Million Tonnes, growing²⁹t ~ 4.02% CAGR (over FY23 base reference year)

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Pan-India Coal demand analysis – Power Sector – Optimistic Demand Scenario

Bottoms-Up Analysis of Coal Demand	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Electrical Energy Requirement - Ex Bus (TWh)	1275.88	1381.646	1508.14	1600.21	1726.36	1862.44	2009.25	2167.64	2338.51	2522.85
% Change in Electricity Consumption		8.29%	9.16%	5.13%	7.88%	7.88%	7.88%	7.88%	7.88%	7.88%
Average Demand/Generation Ratio	0.93		La	st 6-year ave	erage has be	en 92.92%,	FY22 Actual	was 92.84%		
Estimated Grid Generation (TWh) Required	1381.8	1482.78	1621.6	1739.36	1876.47	2024.39	2183.97	2356.13	2541.86	2742.23
Coal Based Generation/Total Generation	68%	70.24%	70.66%	70.73%	68.56%	66.40%	65.00%	64.00%	63.00%	61.61%
Coal Based Generation (TWh)	939.62	1041.46	1145.86	1230.24	1286.51	1344.20	1419.58	1507.92	1601.37	1689.46
Estimated Specific Coal Consumption	0.653	0.678	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Realistic Coal Consumption from Power Sector including 1% Transit Losses (MT)	613.27	706.1	793.56 (55.6 Imports)	844.93	883.58	923.19	974.97	1035.64	1099.82	1160.22
Domestic Despatch to Power sector	544.07	677.67								
Coal Imports by power Sector	69.2	28.43	55.63							
Derived Coal Consumption CAGR (FY22-FY30)	5.70%									

Key Highlights

- This scenario assumes a higher growth rate in electricity demand in India @ ~8% as compared to ~6.5% in case of realistic scenario. The rate of penetration of renewables and the share of coal in the portfolio remains the same for both the scenarios
- Coal consumption by power sector to reach at ~ 1160 Million Tonnes, growing at ~ 5.70% CAGR (over FY23 base reference year)

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Source: Monthly Statistical Reports, Ministry of Coal, Provisional Coal Statistics, National Rail Plan 2020, National Electricity Plan by CEA, 20th EPS Survey by CEA

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Captive Power Generation

	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
CPP Generation (Bus)	239.57	260.83	282.10	301.96	323.52	344.97	366.79	389.98	414.65	440.87
Correlation (Elasticity Factor)	1.02									
Specific Coal Consumption (Kg/Kwh)	0.63									
Coal Based Generation - CPPs (%)	80.00%	79.43%	78.86%	78.30%	77.74%	77.18%	76.63%	76.08%	75.54%	75%
Coal Based Generation - CPPs (BU)	191.65	207.17	222.47	236.42	251.50	266.25	281.07	296.71	313.22	330.65
Realistic Coal Consumption from CPPs (MT)	120.74	130.52	140.15	148.95	158.44	167.74	177.07	186.93	197.33	208.31
Derived Coal Consumption CAGR (FY22-FY30)	6.02%									

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Cement Manufacturing

FY21 FY22 FY23 FY24 FY25 FY26 FY27 FY28 **Cement Production (Million Tonnes)** 284.913 350.595 400.801 426.875 376.648 452.661 478.743 506.328 Correlation (Elasticity Factor) 0.93 Specific Coal Consumption for Cement Industries 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 Realistic Consumption from Cement Sector (MT) 38.59 47.49 51.02 54.29 57.82 61.32 68.58 64.85 Derived Coal Consumption CAGR (FY22-FY30) 6.18%

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FY29

535.502

0.135

72.54

FY30

566.357

0.135

76.72

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Pan-India Coal demand analysis – Non-Regulated Sector

Sponge Iron and Steel

	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Sponge Iron / DRI Production (Million Tonnes)	34.376	39.032	41.577	43.916	46.423	48.884	51.355	53.952	56.679	59.545
Correlation (Elasticity Factor)	0.82									
Specific Coal Consumption for Sponge Iron Industries	1.4									
Realistic Consumption from Sponge Iron Sector (MT)	48.13	54.64	58.21	61.48	64.99	68.44	71.90	75.53	79.35	83.36
Derived Coal Consumption CAGR (FY22-FY30)	5.42%									

Others

	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Coal Consumption from Others Sector (MT)	37.44	7.71	8.160	8.639	9.147	9.684	10.253	10.855	11.492	12.167
Estiamted Growth (Average of other NR industries)	5.87%									

Total Non-Coking Coal demand from NRS

	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Coal Consumption from CPPs	120.74	130.52	140.15	148.95	158.44	167.74	177.07	186.93	197.33	208.31
Coal Consumption from Cement Sector	38.59	47.49	51.02	54.29	57.82	61.32	64.85	68.58	72.54	76.72
Coal Consumption from DRI/Sponge Iron Sector	48.13	54.64	58.21	61.48	64.99	68.44	71.90	75.53	79.35	83.36
Coal Consumption from Others Sector (Bricks, Paper, Fertilizer etc.)	37.44	7.71	8.16	8.64	9.15	9.68	10.25	10.85	11.49	12.17
Total Non-Coking Coal Consumption from NRS (MT)	244.90	240.36	13257.54	273.36	290.40	307.18	324.07	341.90	360.71	380.56

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²⁵²⁸⁹Coking coal demand summary – Steel sector



FY21 FY30 FY22 FY23 FY24 FY25 FY26 FY27 FY28 FY29 **Real GDP Growth Rate** -6.60% 8.00% 6.20% 8.70% 6.90% 7.00% 6.50% 6.20% 6.20% 6.20% Correlation (Elasticity Factor) 0.72 Historical analysis of last 11 years Crude Steel Peoduction (Million Tonnes) 120 127 137 148 173 219 104 160 187 202 Assuming ~0.64 ratio to prevail Coking coal Consumption / Crude Steel Production 0.59 0.64 Coking coal Demand (Million Tonnes) 62 77 81 88 95 103 111 120 130 140



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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Year on Year coal supply snapshot till FY30

	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
CIL	574.48	661.89	703.22	780	850	1000	1030	1055	1090	1120
SCCL	48.51	65.53	67.14	70	74	79	84	89	94	100
Captive & Others (Commercial)	68.4	90.72	122.38	162	224	241	259	276	279	281**
Total Domestic Coal Despatch (Including Coking)	691.39	818.14	892.74	1012	1148	1320	1373	1420	1463	1501
Non-Coking Coal Imports (Bituminous & Steam Coal)	175.16	136.45	136.45	130	110	110	110	105	105	95
Coking Coal Imports	53.16	68.4	76.00	77	74	78	83	87	91	96
Total Coal Imports	228	205	212.45	207	184	188	193	192	196	191
Total Coal Supply (Production View)	919.71	1022.99	1105.19	1219	1332	1509	1565	1612	1659	1692

Key Highlights

- **Captive and Commercial coal production forecasts are as per the projections of Ministry of coal, but it shall be noted that the figure could reach in excess of 400 MTPA by FY30 based on Deloitte Analysis. State wise Non-CIL block production values for FY30 have been taken as per deloitte analysis in detailed section.
- *95 Million Tonnes of Non-Substitutable G1-G8 grade Steam and Bituminous coal would still be imported in near to medium term future.
- CIL's share of supply in the domestic production portfolio will decrease from current ~79% in FY23 to ~75% in FY30 due to expected exponential capacity expansion increase in commercial/captive coal mining.

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Power-Plant level coal demand estimates for FY30

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Snapshot of State-wise coal demand from Power sector: Current FY22 and Future FY30

All figures in million tonnes

Consuming State	FY22: Actual Consumption	FY30 Base	FY30 Realistic	FY30 Optimistic	Consuming State	FY22: Actual Consumption	FY30 Base	FY30 Realistic	FY30 Optimistic
Bihar	30.0	48.4	52.2	54.4					
Madhya Pradesh	83.7	92.2	104.3	111.7	Maharashtra	81.9	103.8	111.3	131.4
Uttar Pradesh	84.3	114.5	121.3	149.9	Odisha	45.3	53.1	57.6	65.2
Chhattisgarh	103.9	130.5	145.3	147.0	Telangana	30.6	56.0	59.2	59.6
West Bengal	54.2	74.5	76.8	79.5					
Gujrat	22.0	32.7	36.5	43.8	Andhra Pradesh	40.2	62.0	64.1	72.0
Punjab & Haryana	30.2	47.0	49.9	56.9	Karnataka	18.4	22.6	22.7	43.2
Jharkhand	19.3	37.0	37.9	39.1	Rajasthan	22.8	29.2	32.2	37.7
Assam	2.5	2.7	3.0	3.1					
Tamil Nadu	27.9	51.5	56.6	65.7	Grand Total	704.9	963.6	1037.2	1160.2

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Pan-India Analysis of PLF(%) vs Distance from Coal Source (Kms)



Inverse Correlation Equation: 1 PLF(%) = 67.968 – 0.0163 x (Weighted Avg Distance of TPS from Coal Mines: Kms)

Inverse Correlation Equation: 2

PLF(%) = 87.897 – 5.067 Loge(Weighted Avg Distance of TPS from Coal Mines: Kgps)

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Pan-India Analysis of more than 140 Power plants spanning across states elucidates a strong inverse correlation between estimated PLF(%) and the distance of TPS from the coal source.

For a power plant at ~534 kms (Weighted Average for India) from the source, estimated PLF comes out to be in range of 57% to 60%. Actual for FY22 was ~58.26%

^{2528975/2023/CPIAM} Improvement in PLFs of existing power plants would cater to the increased demand from coalbased power generation by FY30

	Existing Capacities with Improved PLF: FY30												
State	FY22 Coal Consumption (MTPA)	FY30 Base (MTPA)	FY30 Realistic (MTPA)	FY30 Optimistic (MTPA)	Max Increase Anticipated (MTPA): FY22 to FY30								
Odisha	45.33	53.10	57.61	59.30	13.98								
Chhattisgarh	103.90	130.55	145.29	147.02	43.13								
Uttar Pradesh	84.26	96.21	98.82	120.30	36.04								
Madhya Pradesh	83.72	92.20	104.28	111.72	28.00								
Gujarat	22.03	32.69	36.53	43.81	21.78								
Andhra Pradesh	40.16	55.57	57.44	64.94	24.78								
Rajasthan	22.80	29.25	32.19	37.70	14.90								
Maharashtra	81.92	101.10	108.31	128.25	46.33								
Karnataka	18.43	21.81	21.84	41.59	23.16								
Punjab	15.25	24.54	25.34	28.98	13.72								
Harayana	14.98	22.47	24.57	27.90	12.91								
Telangana	30.57	35.13	37.13	38.80	8.24								
Bihar	29.98	37.10	40.00	42.79	12.81								
West Bengal	54.19	71.56	73.78	76.61	22.42								
Jharkhand	19.26	21.16	21.63	22.87	3.60								
Tamil Nadu	27.95	39.54	43.43	50.46	22.52								
Assam	2.49	2.67	3.00	3.12	0.63								
rated from editice by N R	ALESWARA RAO MOCSOTORD-CPIAM MOC-SOU	NRR) Ministry Off 65 on 17/05/20	130 931.18	1046.08	348.95								

Andhra Pradesh

								MCL			ECL		SCCL		CCL
Name of TPS	Power Utility	Installed Capacity (MW)	Coal Consumed (MT)	Generation (MU)	PLF(%)	Total Sourced (MT)	lb-Valley	Talcher	RSR TLHR to Paradip to Krishnapatna m	Mugma- Salanpur CF (Jharkhand)	Raniganj CF (West Bengal)	Deogarh Cf (Jharkhand	SCCL	East Bokaro CF	Ramgarh CF
Dr. N.T.R TPS	APGENCO	1760.00	9.20	11591.18	75.18	9.30	1272657	3519264					4509000		
RAYALSEEMA	APGENCO	1650.00	5.12	6828.52	47.24	4.83	489319	796082	1400000				2149000		
SRI DAMODARAM SANJEEVAIAH	APPDCL	1600.00	3.62	5672.41	40.47	4.12		1792196	2280000				45000		
Vizag TPP	HINDUJA NATIONAL POWER CORPORATION LIMITED	1040.00	0.21	281.39	3.09	0.10	26318	72488							
SIMHADRI SUPER	NTPC LTD.	2000.00	8.94	11570.21	66.04	9.14	5364536	2621653		136733.57	807483.36	3608.61	198000	3571.63	3909.98
PAINAMPURAM TPP	SEMBCORP ENERGY INDIA LTD.	1320.00	5.65	9331.61	80.70	4.91	147075		4759318.41						
					N	ICL				ECL			SCCL	CC	CL
Name of TPS	Power Utility	Siding Code	Weighted Avg Distance (Km)	Ib-Valley: BOCM	Talcher: TLHR	RSR TLHR to to Krishna	o Paradip patnam	Mugma- (Jharkh	Salanpur CF and): BJSP	Raniganj CF (We Bengal): ACSR	st Deogarh (Jharkhand	n CF): JMT	L: SCRM	East Bokaro CF: JRGD	Ramgarh CF: RWGR
Dr. N.T.R TPS	APGENCO	ТРАК	558.26	940.3	910.53	977.	50					1	75.48		
RAYALSEEMA	APGENCO	RTPM	1032.73	1370.03	1340.26	1221	.09					-	719.3		
SRI DAMODARAM SANJEEVAIAH	H APPDCL	KAPT	1065.09	1221.06	1191.29	977.	50					4	77.44		
Vizag TPP	HINDUJA NATIONAL POW CORPORATION LIMITEI	VER VZP D	567.91	589.75	559.98	681.	36					5	37.62		
MEENAKSHI ENERGY LIMITED	MEENAKSHI ENERGY LIMI	TED													
SIMHADRI SUPER	NTPC LTD.	STDV	643.19	614.63	584.86	0		9	99.08	982.2	1018.4	19 5	41.57	994.03	967.06
PAINAMPURAM TPP	SEMBCORP ENERGY INDIA	LTD. KAPT	984.80	1221.06	1191.29	139 7.	50					4	77.44		

Andhra Pradesh

				Weighted Avg Distance (Km) Line Fit Plot
Name of TPS	Power Utility	PLF(%)	Weighted Avg	80.00
			Distance (Km)	75.00 -
				70.00 - PLF(%)
				65.00 -
Dr. N.T.R TPS	APGENCO	75.18	558.26	y = -0.0609x + 107.48 Predicted PLF(%)
				د المعنى الم المعنى المعنى
				ظ _{50.00} Log. (Predicted
RΔΥΔΙ SEEMΔ	APGENCO	17 21	1032 73	$y = -48.42\ln(x) + 380.47$ PLF(%))
NATALJELIMA	Ardeneo	77.27	1032.73	40.00 -
				35.00 - PLF(%))
				30.00
SRI DAMODARAM SANJEEVAIAH	APPDCL	40.47	1065.09	400.00 600.00 800.00 1000.00 1200.00 Weighted Avg Distance (Km)
				Inverse Correlation Equation: 1
SIMHADRI SUPER	NTPCITD	66 04	643 19	PLF(%) = 107.48 – 0.0609 x (Weighted Avg Distance of TPS from Coal Mines: Kms)
		00.01	010110	Inverse Correlation Equation: 2
				$PLF(\%) = 380.47 - 48.42 \text{ Log}_{e}(\text{Weighted Avg Distance of TPS from Coal Mines: Kms})$
PAINAMPURAM TPP	INDIA LTD.	80.70	984.80	Assuming Best performance under two correlation scenarios, the PLF of AP power plants could increase to ~77% - 79.6%.
				Best Performance scenario is defined at an aspirational level where the TPS in the
Concreted from office by N DAIECIMADA D) Ministry Of COAL or 17	range of 500 to 1000 Kms behaves in a way that it is at ~500 Km distance from
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Andhra Pradesh

#	Name of TPS	Power Utility	State	Installed Capacity (MW)	PLF(%)	Coal Consumed (MT): FY 22	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario FY30
1	Dr. N.T.R TPS	APGENCO	Andhra Pradesh	1760.00	75.18	9.20	77.02	79.60	90.00	9.42	9.74	11.01
2	RAYALSEEMA	APGENCO	Andhra Pradesh	1650.00	47.24	5.12	77.02	79.60	90.00	8.35	8.63	9.76
3	SRI DAMODARA M SANJEEVAIAH	APPDCL	Andhra Pradesh	1600.00	40.47	3.62	77.02	79.60	90.00	6.89	7.12	8.05
4	Vizag TPP	HINDUJA NATIONAL POWER CORPORATIO N LIMITED	Andhra Pradesh	1040.00	3.09	0.21	77.02	79.60	90.00	5.23	5.40	6.11
5	MEENAKSHI ENERGY LIMITED	MEENAKSHI ENERGY LIMITED	Andhra Pradesh	300.00	16.07	0.30	77.02	79.60	90.00	1.46	1.51	1.71
6	SIMHADRI SUPER	NTPC LTD.	Andhra Pradesh	2000.00	66.04	8.94	77.02	79.60	90.00	10.43	10.78	12.19
7	PAINAMPURA M TPP	SEMBCORP ENERGY INDIA LTD.	Andhra Pradesh	1320.00	80.70	5.65	77.02	79.60	90.00	5.39	5.57	6.30
8	SGPL TPP	SEMBCORP ENERGY INDIA LTD.	Andhra Pradesh	1320.00	65.98	4.62	77.02	79.60	90.00	5.39	5.57	6.30
		Tota	al			40.16	141			52.57	54.33	61.43

2528975/2023/CPIAM Uttar Pradesh

Name of TPS	Power Utility	PLF(%)	Weighted Avg Distance (Km)	Weighted Avg Distance (Km) Line Fit Plot 90.00
BARKHERA	Bajaj Energy Limited	25.39	737	
KHAMBHAR KHERA	Bajaj Energy Limited	25.36	630	80.00
KUNDARKI	Bajaj Energy Limited	35.52	815	70.00 - PLF(%)
MAQSOODAPUR	Bajaj Energy Limited	25.16	700	
UTRAULA	Bajaj Energy Limited	30.72	508	60.00
LALITPUR	LALITPUR POWER GENERATION COMPANY LIMITED	55.07	779	$y = -5.303\ln(x) + 80.69$ Predicted PLF(%)
FEROZE GANDHI UNCHAHAR	NTPC LTD.	60.71	627	40.00 - Linear (PLF(%))
TANDA	NTPC LTD.	55.29	621	30.00 -
PRAYAGRAJ TPS	PRAYAGRAJ POWER GENERATION COMPANY LTD.	67.20	506	20.00 - $y = -0.0442x + 72.304$ Log. (Predicted PLF(%))
ROSA TPP	ROSA POWER SUPPLY COMPANY LIMITED	54.92	872	10.00
HARDUAGANJ	UPRVUNL	24.52	1055	Inverse Correlation Equation: 1
PARICHHA	UPRVUNL	37.14	861	PIF(%) = 72.304 = 0.0442 x (Weighted Avg Distance of TPS from Coal Mines: Kms)
MEJA TPP	MUNPL-NTPC JV	65.49	354	$\Gamma \simeq (70) = 72.304 = 0.0442 \times (Weighted Avg Distance of T13 from Coal Willes. Kins)$
DADRI	NTPC LTD.	35.90	985	Inverse Correlation Equation: 2
SINGRAULI	NTPC LTD.	82.50	15	PLF(%) = $80.69 - 5.303 \log_{e}(\text{Weighted Avg Distance of TPS from Coal Mines: Kms)}$
RIHAND	NTPC LTD.	85.26	15	
ANPARA 'A' & 'B'	UPRVUNL	75.65	15	Assuming Best performance under two correlation scenarios, the PLF of UP power
ANPARA 'C' TPS	LANCO ANPARA POWER LIMITED	78.68	51	plants could increase to ~47.4% - 64.5%. Best Performance scenario is defined at an aspirational level where the TPS in the
OBRA	UPRVUNL	48.46	58	range of 500 to 1000 Kms and <500 Kms behaves in a way that it is at ~500 Km

2528975/2023/CPIAM Uttar Pradesh (1/2)

Name of TPS	Power Utility	State	Installed Capacity (MW)	PLF(%)	Coal Consumed (MT): FY 22	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
BARKHERA	Bajaj Energy Limited	Uttar Pradesh	90.00	25.39	0.16	47.7	51.2	85	0.30	0.32	0.54
KHAMBHAR KHERA	Bajaj Energy Limited	Uttar Pradesh	90.00	25.36	0.16	47.7	51.2	85	0.30	0.32	0.53
KUNDARKI	Bajaj Energy Limited	Uttar Pradesh	90.00	35.52	0.21	47.7	51.2	85	0.29	0.31	0.51
MAQSOODAPUR	Bajaj Energy Limited	Uttar Pradesh	90.00	25.16	0.16	47.7	51.2	85	0.30	0.32	0.53
UTRAULA	Bajaj Energy Limited	Uttar Pradesh	90.00	30.72	0.19	47.7	51.2	85	0.29	0.32	0.52
LALITPUR	LALITPUR POWER GENERATION COMPANY LIMITED	Uttar Pradesh	1980.00	55.07	5.87	55.07	55.07	85	5.87	5.87	9.06
ANPARA 'C' TPS	LANCO ANPARA POWER LIMITED	Uttar Pradesh	1200.00	78.68	5.24	82.44	82.44	85	5.49	5.49	5.66
MEJA TPP	MEJA URJA NIGAM PRIVATE LIMITED (NTPC- JV)	Uttar Pradesh	1320.00	65.49	5.05	65.49 143	65.49	85	5.05	5.05	6.55

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Name of TPS	Power Utility	State	Installed Capacity (MW)	PLF(%)	Coal Consumed (MT): FY 22	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
DADRI	NTPC LTD.	Uttar Pradesh	1820.00	35.90	3.70	52.6	64.5	85	5.42	6.65	8.76
SINGRAULI	NTPC LTD.	Uttar Pradesh	2000.00	82.50	9.42	95.00	95.00	95	10.85	10.85	10.85
RIHAND	NTPC LTD.	Uttar Pradesh	3000.00	85.26	13.48	95.00	95.00	95	15.02	15.02	15.02
FEROZE GANDHI UNCHAHAR	NTPC LTD.	Uttar Pradesh	1550.00	60.71	5.53	60.71	60.71	85	5.53	5.53	7.74
TANDA	NTPC LTD.	Uttar Pradesh	1760.00	55.29	5.46	61.50	61.50	85	6.07	6.07	8.39
PRAYAGRAJ TPS	PRAYAGRAJ POWER GENERATION COMPANY LTD.	Uttar Pradesh	1980.00	67.20	7.22	67.20	67.20	85	7.22	7.22	9.13
ROSA TPP	ROSA POWER SUPPLY COMPANY LIMITED	Uttar Pradesh	1200.00	54.92	3.65	64.22	64.22	85	4.27	4.27	5.65
ANPARA 'A' & 'B'	UPRVUNL	Uttar Pradesh	2630.00	75.65	11.39	95	95	95	14.31	14.31	14.31
HARDUAGANJ	UPRVUNL	Uttar Pradesh	1270.00	24.52	1.28	47.7	51.2	85	2.49	2.67	4.44
OBRA	UPRVUNL	Uttar Pradesh	1000.00	48.46	3.45	52.6	64.5	85	3.74	4.59	6.05
PARICHHA	UPRVUNL	Uttar Pradesh	920.00	37.14	2.65	47.7	51.2	85	3.41	3.66	6.07
					84.26	144			96.21	98.82	120.30

2528975/2023/CPIAM Maharashtra

Name of TPS	Power Utility	PLF(%)	Weighted Avg Distance (Km)	Weighted Avg Distance (Km) Line Fit Plot
				80.00 ₇
TIRODA	ADANI POWER MAHARASHTRA LTD.	74.88	396.70	75.00 -
				70.00 - • PLF(%)
ADANI DAHANU	ADANI ELECTRICITY MUMBAI LIMITED	76.21	1394.35	65.00 -
DHARIWAL INFRASTRUCTURE Ltd.	DHARIWAL INFRASTRUCTURE LIMITED	75.93	476.12	$\begin{cases} 60.00 \\ 55.00 \\ 50.00 \\ - \\ 50.00 \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\$
GMR WARORA ENERGY LTD.	GMR WARORA ENERGY LTD.	66.18	308.43	45.00 - Log. (Predicted PLF(%)) $y = -27.78 \ln(x) + 227.42$
RATNAGIRI	JSW ENERGY LIMITED	47.14	N/A	40.00 - Linear (Predicted PLF(%))
BHUSAWAL	MSPGCL	58.10	425.44	35.00 -
CHANDRAPUR	MSPGCL	58.61	115.62	30.00
	MCDCCI	60.02	010.00	200.00 300.00 400.00 500.00 600.00 700.00 800.00 900.00
KHAPARKHEDA	MSPGCL	60.83	818.88	Weighted Avg Distance (Km)
KORADI	MSPGCL	58.42	303.49	
NASHIK	MSPGCL	36.49	666.25	
PARLI	MSPGCL	44.90	346.71	Inverse Correlation Equation: 1
PARAS	MSPGCL	60.15	296.83	
MOUDA SUPER TPS	NTPC LTD.	60.06	354.55	PLF(%) = 84.147 – 0.0549 x (Weighted Avg Distance of TPS from Coal Mines: Kms)
SOLAPUR SUPER TPS	NTPC LTD.	43.94	812.56	Inverse Correlation Equation: 2
AMARAVATI TPS	RATTANINDIA POWER LTD.	75.10	740.21	PLF(%) = 227.42 – 27.8 Log _e (Weighted Avg Distance of TPS from Coal Mines: Kms)
TROMBAY	THE TATA POWER COMPANY LIMITED	69.26	N/A	Assuming Best performance under two correlation scenarios, the PLF of
SAI WARDHA POWER Ltd., WARORA	SAI WARDHA POWER GENERATION PVT LTD.	47.77	34.73	145

2528975/2023/CPIAM Maharashtra

Name of TPS	Power Utility	State	Installed Capacity (MW)	Coal Consumed (MT): FY22	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	e Realistic Scenario: FY30	Optimistic Scenario: FY30
TIRODA	ADANI POWER MAHARASHTR A LTD.	Maharashtra	3300.00	14.18	74.88	80.23	80.23	95	15.20	15.20	17.99
ADANI DAHANU	ADANI ELECTRICITY MUMBAI LIMITED	Maharashtra	500.00	1.99	76.21	80.23	80.23	95	2.09	2.09	2.48
DHARIWAL INFRASTRUCT URE Ltd.	DHARIWAL INFRASTRUCT URE LIMITED	Maharashtra	600.00	2.72	75.93	80.23	80.23	95	2.88	2.88	3.40
GMR WARORA ENERGY LTD.	.GMR WARORA ENERGY LTD.	Maharashtra	600.00	2.32	66.18	73.16	80.23	95	2.56	2.81	3.33
RATNAGIRI	JSW ENERGY LIMITED	Maharashtra	1200.00	2.73	47.14	73.16	80.23	95	4.23	4.64	5.50
BHUSAWAL	MSPGCL	Maharashtra	1210.00	4.74	58.10	73.16	80.23	95	5.97	6.55	7.76
CHANDRAPUR	MSPGCL	Maharashtra	2920.00	11.57	58.61	73.16	80.23	95	14.44	15.84	18.76
KHAPARKHEDA	MSPGCL	Maharashtra	1340.00	6.20	60.83	73.16	80.23	95	7.46	8.18	9.69
KORADI Gene rated from eOffic	MSPGCL e by N RAJESWAR/	Maharashtra A RAO, MOC-SO(2190.00 NRR)-CPIAM, MOC-	8.19 SO(NRR), Ministry	58.42 Of COAL on 17/0	1 73.16 5/2023 04:45 PM	46 80.23	95	10.25	11.24	13.31

2528975/2023/CPIAM Maharashtra

Name of TPS	Power Utility	State	Installed Capacity (MW)	Coal Consumed (MT): FY22	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
NASHIK	MSPGCL	Maharashtra	630.00	1.68	36.49	73.16	80.23	95	3.36	3.69	4.37
PARLI	MSPGCL	Maharashtra	750.00	1.97	44.90	73.16	80.23	95	3.20	3.51	4.16
PARAS	MSPGCL	Maharashtra	500.00	2.00	60.15	73.16	80.23	95	2.43	2.67	3.16
MOUDA SUPER TPS	NTPC LTD.	Maharashtra	2320.00	8.69	60.06	73.16	80.23	95	10.58	11.60	13.74
SOLAPUR SUPER TPS	NTPC LTD.	Maharashtra	1320.00	3.25	43.94	73.16	80.23	95	5.42	5.94	7.03
AMARAVATI TPS	RATTANINDIA POWER LTD.	Maharashtra	1350.00	5.90	75.10	80.23	80.23	95	6.31	6.31	7.47
TROMBAY	THE TATA POWER COMPANY LIMITED	Maharashtra	750.00	2.31	69.26	73.16	80.23	95	2.44	2.68	3.17
SAI WARDHA POWER Ltd., WARORA	SAI WARDHA POWER GENERATION PVT LTD.	Maharashtra	540.00	1.48	47.77	73.16	80.23	95	2.26	2.48	2.93
				81.92		1.	47		101.10	108.31	128.25

2528975/2023/CPIAM Madhya Pradesh

Name of TPS	Power Utility	PLF(%)	Weighted Avg Distance (Km)	Weighted Avg Distance (Km) Line Fit Plot
MAHAN	MAHAN ENERGEN LTD.	32.64	750.00	105.00
JAYPEE BINA TPP	JAIPRAKSH POWER VENTURES LIMITED	57.28	717.39	95.00 • PLF(%)
JAYPEE NIGRIE SUPER TPP	JAIPRAKSH POWER VENTURES LIMITED	72.49	411.76	y = -0.0558x + 89.451 75.00 - Predicted PLF(%)
SATPURA	MADHYA PRADESH POWER GENERATING COMPANY LIMITED	29.61	763.32	65.00 - 55.00 - Log. (Predicted PLF(%))
AMARKANTAK	MADHYA PRADESH POWER GENERATING COMPANY LIMITED	81.97	15.00	45.00 - $y = -10.1 \ln(x) + 117.98$ 35.00 - Linear (Predicted PLF(%))
SHREE SINGAJI TPS	MADHYA PRADESH POWER GENERATING COMPANY LIMITED	42.67	862.31	25.00 0.00 200.00 400.00 600.00 800.00 1000.00 Weighted Avg Distance (Km)
JHABUA POWER LIMITED	JHABUA POWER LIMITED	70.55	550.20	Inverse Correlation Equation: 1
ANUPPUR TPS	MB POWER (MADHYA PRADESH) LIMITED	73.40	266.97	PLF(%) = 89.451 – 0.0558 x (Weighted Avg Distance of TPS from Coal Mines: Kms)
VINDHYACHAL	NTPC LTD.	85.69	15.00	Inverse Correlation Equation: 2
GADARWARA SUPER	NTPC LTD.	56.83	557.88	PLF(%) = 117.98 – 10.1 Log _e (Weighted Avg Distance of TPS from Coal Mines: Kms)
SASAN UMPP TPP	REILIANCE POWER LIMITED	94.19	15.00	
KHARGONE SUPER THERMAL POWER STATION	NTPC LTD.	54.86	830.94	Assuming Best performance under two correlation scenarios, the PLF of Madhya Pradesh power plants could increase to ~62.21% - 75.50%.
SANJAY GANDHI Generated from eOffice by	MADHYA PRADESH POWER NGRIYEBWATANGAGOMBOUSO (MINITEPIAM,	56.49 MOC-SO(NRR), M	225.73 linistry Of COAL on 17/05/2	148 023 04:45 PM

2528975/2023/CPIAM Madhya Pradesh

Name of TPS	Power Utility	State	Installed Capacity (MW)	Coal Consumed (MT): FY22	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: (FY30)ptimistic Scenario: FY30
MAHAN	MAHAN ENERGEN LTD.	Madhya Pradesh	1200.00	2.38	32.64	62.21	75.5	85	4.53	5.49	6.19
JAYPEE BINA TPP	JAIPRAKSH POWER VENTURES LIMITED	Madhya Pradesh	500.00	1.78	57.28	62.21	75.5	85	1.94	2.35	2.65
JAYPEE NIGRIE SUPER TPP	JAIPRAKSH POWER VENTURES LIMITED	Madhya Pradesh	1320.00	4.97	72.49	75.5	75.5	85	5.17	5.17	5.83
SANJAY GANDHI	MPPGCL	Madhya Pradesh	1340.00	4.93	56.49	62.21	75.5	85	5.43	6.59	7.42
SATPURA	MPPGCL	Madhya Pradesh	1330.00	2.22	29.61	62.21	75.5	85	4.67	5.67	6.39
AMARKANTA K	MPPGCL	Madhya Pradesh	210.00	0.99	81.97	81.97	95.00	95	0.99	1.15	1.15
SHREE SINGAJI TPS	MPPGCL	Madhya Pradesh	2520.00	6.88	42.67	62.21	75.5	85	10.04	12.18	13.71
JHABUA POWER LIMITED	JHABUA POWER LIMITED	Madhya Pradesh	600.00	2.55	70.55	62.21	75.5	85	2.25	2.73	3.08
ANUPPUR TPS	MB POWER (MADHYA PRADESH) LIMITED	Madhya Pradesh	1200.00	5.44	73.40	62.21	75.5	85	4.61	5.59	6.29
VINDHYACHA L	NTPC LTD.	Madhya Pradesh	4760.00	24.28	85.69	85.69	95.00	95	24.28	26.92	26.92
GADARWARA SUPER	NTPC LTD.	Madhya Pradesh	1600.00	5.14	56.83	62.21	75.5	85	5.63	6.83	7.69
SASAN UMPP TPP	REILIANCE POWER LIMITED	Madhya Pradesh	3960.00	18.31	94.19	94.19	94.19	95	18.31	18.31	18.47
KHARGONE SUPER THERMAL POWER	NTPC LTD.	Madhya Pradesh	1320.00	3.84	54.86	62.21	75.5	85	4.35	5.29	5.95
STATION		MOGGOWER		83.72		149)		92.20	104.28	111.72
ene <u>rated from eOffi</u>	<u>ce by N RAJESWARA RAO</u>	, MOC-SO(NRR)-CPIAM, MOC-SC	(NKRT. Ministry (of COAL on 17/0	5/2023 04:45 PM					

2528975/2023/CPIAM Chhattisgarh

Name of TPS	Power Utility	PLF(%)	Weighted Avg Distance (Km)
KASAIPALI	ACB (INDIA) Ltd.	39.73	134.03
Atal Bihari Vajpayee TPP	Chattisgarh State Power Generation Company Ltd.	55.11	65.90
Dr. Shyama Prasad Mukharjee TPP	Chattisgarh State Power Generation Company Ltd.	89.23	131.43
Hasdeo TPP	Chattisgarh State Power Generation Company Ltd.	74.78	25.00
BALCO TPP	BALCO	65.41	47.81
O.P.Jindal Super TPP (Stage-I)	JINDAL POWER LIMITED	59.66	101.81
TAMNAR TPP	JINDAL POWER LIMITED	45.60	63.92
KMPCL - NARIYARA	KSK MAHANADI POWER COMPANY LIMITED	57.11	135.75
LANCO AMARKANTAK TPS	LANCO AMARKANTAK POWER LIMITED	76.56	48.71
MCCPL BANDHAKHAR	MARUTI CLEAN COAL AND POWER LIMITED	82.30	134.39
BHILAI PP - III	NTPC - SAIL POWER COMPANY LIMITED (NTPC-JV)	80.31	355.22
KORBA SUPER	NTPC LTD.	93.28	25.00
SIPAT SUPER	NTPC LTD.	81.29	25.00
R.K.M. POWERGEN PVT. LTD	R.K.M. POWERGEN PVT. LTD	54.48	109.86
RAIPUR TPP	RAIPUR ENERGEN LIMITED	73.61	343.86
RATIJA TPS	ACB (INDIA) Ltd.	75.77	134.03
SKS POWER GENERATION (CH) LTD.	SKS POWER GENERATION (CHHATTISGARH) LIMITED	31.66	247.25
RAIGARH TPP	TRN ENERGY PRIVATE LIMITED	13.20	91.33
LARA SUPER TPS	NTPC LTD.	81.09	212.28
RAIGARH TPP	RAIGARH ENERGY GENERATION LIMITED	70.49	134.64
		00 10	105 70



2528975/2023/CPIAM Chhattisgarh

Power Utility	State	Installed Capacity (MW)	Coal Consumed (MT): FY22	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	n Realistic Scenario: FY30	Optimistic Scenario: FY30
ACB (INDIA) Ltd.	Chhattisgarh	270.00	1.55	39.73	83.2	93.88	95	3.25	3.67	3.71
Chattisgarh State Power Generation Company Ltd.	Chhattisgarh	1000.00	3.57	55.11	83.2	93.88	95	5.39	6.09	6.16
Chattisgarh State Power Generation Company Ltd.	Chhattisgarh	500.00	2.81	89.23	89.23	93.88	95	2.81	2.95	2.99
Chattisgarh State Power Generation	Chhattisgarh	1340.00	6.72	74.78	83.2	93.88	95	7.48	8.44	8.54
Company Ltd. BALCO	Chhattisgarh	1200.00	5.31	65.41	83.2	93.88	95	6.75	7.62	7.71
JINDAL POWER LIMITED	Chhattisgarh	1000.00	4.15	59.66	83.2	93.88	95	5.78	6.52	6.60
JINDAL POWER LIMITED	Chhattisgarh	2400.00	7.86	45.60	83.2	93.88	95	14.34	16.19	16.38
KSK MAHANADI POWER COMPANY	Chhattisgarh	1800.00	5.85	57.11	83.2	93.88	95	8.52	9.61	9.73
LANCO AMARKANTAK POWER LIMITED	Chhattisgarh	600.00	2.76	76.56	83.2	93.88	95	3.00	3.39	3.43
COAL AND POWER	Chhattisgarh	300.00	1.52	82.30	^{83.2} 151	93.88	95	1.54	1.73	1.75
	Power Utility ACB (INDIA) Ltd. Chattisgarh State Power Generation Company Ltd. Chattisgarh State Power Generation Company Ltd. Chattisgarh State Power Generation Company Ltd. BALCO JINDAL POWER LIMITED JINDAL POWER LIMITED KSK MAHANADI POWER COMPANY LIMITED LANCO AMARKANTAK POWER LIMITED MARUTI CLEAN COAL AND POWER	Power UtilityStateACB (INDIA) Ltd.ChhattisgarhState Power GenerationChhattisgarhState Power GenerationChhattisgarhJINDAL POWER LIMITED LANCOChhattisgarhMARKANTAK POWER COAL AND POWERChhattisgarhCOAL AND POWERChhattisgarh	Power UtilityStateInstalled capacity (MW)ACB (INDIA) Ltd.Chattisgarh Chattisgarh State Power Generation Company Ltd.Chattisgarh Chattisgarh State Power Generation Company Ltd.Chattisgarh Chattisgarh State Power Generation Company Ltd.Chattisgarh Chattisgarh State Power Company Ltd.Chattisgarh Chattisgarh State Power ChattisgarhState Power Generation Company Ltd.Chhattisgarh ChattisgarhSton.00State Power Generation Company Ltd.Chhattisgarh ChhattisgarhSton.00State Power Generation Company Ltd.Chhattisgarh ChhattisgarhSton.00State Power Generation Company Ltd.Chhattisgarh ChhattisgarhSton.00State Power Generation Company Ltd.Chhattisgarh ChhattisgarhSton.00JINDAL POWER LIMITED LANCO COMPANY LIMITED LANCO AMARKANTAK POWER COAL AND POWERChhattisgarh ChhattisgarhSton.00MARKANTAK POWER COAL AND POWERChhattisgarh ChhattisgarhSton.00	Power UtilityStateInstalled (2pacity (MM)Coal Consumed (MT): FY22ACB (INDIA) Ltd.Chhattisgarh Chattisgarh State Power Generation Company Ltd.Chhattisgarh Chattisgarh State Power Chattisgarh State Power Generation Company Ltd.Chhattisgarh State Power Chattisgarh State Power Chattisgarh State Power Generation Company Ltd.Chhattisgarh Stote Power ChattisgarhStote Power State Power ChhattisgarhStote Power State Power ChhattisgarhStote Power State Power ChhattisgarhStote Power State Power ChhattisgarhStote Power Stote Power ChhattisgarhStote Power Stote Power ChhattisgarhStote Power Stote Power ChhattisgarhStote Power Stote Power ChhattisgarhStote Power Stote Power Stote Power ChhattisgarhStote Power Stote Power Stote Power ChhattisgarhStote Power Stote Power Stote Power Stote Power Stote Power ChhattisgarhStote Power Stote Power Stote Power Stote Power Stote Power Company Ltd.Stote Power Stote Power Stote Power Stote Power Stote Power Stote Power Stote Power COMPANYStote Power Stote Power	Power UtilityStateInstalled Capacity (MM)Cola Consumed (MT): FY22PhEr (M)ACB (INDIA) Ltd.Chattisgarh270.001.5539.73State Power Generation Company Ltd.Chattisgarh1000.003.5755.11Chattisgarh State Power Generation Company Ltd.Chattisgarh500.002.8189.23Chattisgarh State Power Generation Company Ltd.Chattisgarh500.002.8189.23Chattisgarh State Power Generation Company Ltd.Chattisgarh1340.006.7274.78NDAL POWER LIMITEDChattisgarh1200.005.3165.41JINDAL POWER LIMITEDChattisgarh1200.0074.1559.66KSK MAHANADI POWER LIMITED LANCOChattisgarh2400.007.8645.60KSK MAHANADI POWER LIMITED LANCOChattisgarh500.002.7676.56AMARKANTAK POWER LIMITED MARUTI CLEAN POWER LIMITEDChattisgarh600.001.5282.30	Power UtilityStateInstalled Capacity (MM)Cola Consumed (MT: FY22)PLF (%)PLF Base ScenarioACB (INDIA) Ltd.Chhattisgarh270.001.5539.7383.2Chattisgarh State Power Generation Company Ltd.Chhattisgarh1000.003.5755.1183.2Chattisgarh State Power Generation Company Ltd.Chhattisgarh500.002.8189.2389.23Chattisgarh State Power Generation Company Ltd.Chhattisgarh500.002.8189.2389.23Chattisgarh State Power Generation Company Ltd.Chhattisgarh1340.006.7274.7883.2JINDAL POWER LIMITEDChhattisgarh1200.005.3165.4183.2JINDAL POWER COMPANY LIMITEDChhattisgarh1200.007.8645.6083.2JINDAL POWER LIMITEDChhattisgarh1800.005.8557.1183.2KSK MAHANADI POWER LIMITEDChhattisgarh600.002.7676.5683.2LIMITED LANCOChhattisgarh600.002.7676.5683.2MARUTI CLEAN COAL AND POWER LIMITEDChhattisgarh300.001.5282.3083.2	Power UtilityStateInstalled Capacity (M)Coal Consumed (MT): FY22PLF (%)PLF Base ScenarioPLF Realistic ScenarioACB (INDIA (Ld. Chattisgarh State Power Generation Company Utd. Chattisgarh State Power Generation Company Utd. Chattisgarh270.001.5539.7383.293.88Chattisgarh State Power Generation Company Utd. Chattisgarh1000.003.5755.1183.293.88Chattisgarh State Power Generation Company Utd. ChattisgarhAbattisgarh500.002.8189.2389.2393.88State Power Generation Company Utd. ChattisgarhAbattisgarh1340.006.7274.7883.293.88JINDAL POWER LIMITEDChattisgarh1200.005.3165.4183.293.88JINDAL POWER COMPANY LIMITEDChattisgarh1200.007.8645.6083.293.88JINDAL POWER COMPANY LIMITEDChattisgarh1200.005.8557.1183.293.88JINDAL POWER COMPANY LIMITEDChattisgarh180.005.8557.1183.293.88MARKANTAN COMPANY LIMITEDGeneration Company Company LIMITEDGeneration Company Company LIMITEDGeneration Company Company Company Company LIMITEDState Power Company	Power UtilityStateInstalled Capacity (MM)Cal Consume (MT): FY22PLF (M)PLF Base ScenariaPLF Realistic ScenariaPLF Desimistic ScenariaACB (INDIA) (Ld. 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2528975/2023/CPIAM Chhattisgarh

Name of TPS	Power Utility	State	Installed Capacity (MW)	Coal Consumed (MT): FY22	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
BHILAI PP - III	NTPC - SAIL POWER COMPANY LIMITED (NTPC-JV)	Chhattisgarh	500.00	2.66	80.31	83.2	93.88	95	2.76	3.11	3.15
KORBA SUPER	NTPC LTD.	Chhattisgarh	2600.00	13.95	93.28	93.88	93.88	95	14.04	14.04	14.21
SIPAT SUPER	NTPC LTD.	Chhattisgarh	2980.00	14.09	81.29	83.2	93.88	95	14.42	16.27	16.46
R.K.M. POWERGEN PVT. LTD	R.K.M. POWERGEN PVT. LTD RAIPUR	Chhattisgarh	1440.00	5.27	54.48	83.2	93.88	95	8.04	9.07	9.18
RAIPUR TPP	ENERGEN LIMITED	Chhattisgarh	1370.00	6.19	73.61	83.2	93.88	95	6.99	7.89	7.98
RATIJA TPS	ACB (INDIA) Ltd.	Chhattisgarh	100.00	0.82	75.77	83.2	93.88	95	0.90	1.01	1.02
SKS POWER GENERATION (CH) LTD.	SKS POWER GENERATION (CHHATTISGAR H) LIMITED	Chhattisgarh	600.00	1.23	31.66	83.2	93.88	95	3.23	3.65	3.69
RAIGARH TPP	TRN ENERGY PRIVATE LIMITED	Chhattisgarh	600.00	0.55	13.20	83.2	93.88	95	3.47	3.91	3.96
LARA SUPER TPS	NTPC LTD.	Chhattisgarh	1600.00	7.81	81.09	83.2	93.88	95	8.01	9.04	9.15
RAIGARH TPP	RAIGARH ENERGY GENERATION LIMITED	Chhattisgarh	600.00	2.77	70.49	83.2	93.88	95	3.27	3.69	3.73
DB POWER	DB POWER	Chhattisgarh	1200.00	6.47	82.13	83.2	93.88	95	6.56	7.40	7.49
				103.90		152	2		130 55	145 29	147 02
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2528975/2023/CPIAM **Gujarat**

Name of TPS	Power Utility	State	Installed Capacity (MW)	Coal Consumed (MT): FY22	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
MUNDRA TPS	ADANI POWER (MUNDRA) LIMITED	Gujarat	4620.00	6.58	29.56	62.93	70.66	85	14.02	15.74	18.93
MUNDRA UMPP	Coastal Gujarat Power Limited	Gujarat	4150.00	0.37	25.94	62.93	70.66	85	0.90	1.01	1.21
gandhinaga R	Gujarat State Electricity Corporation Limited	Gujarat	630.00	2.22	60.04	62.93	70.66	85	2.33	2.61	3.14
SIKKA	Gujarat State Electricity Corporation Limited	Gujarat	500.00	0.47	21.97	62.93	70.66	85	1.34	1.50	1.81
UKAI	Gujarat State Electricity Corporation Limited	Gujarat	1110.00	3.43	51.71	62.93	70.66	85	4.18	4.69	5.64
WANAKBORI	Gujarat State Electricity Corporation Limited	Gujarat	2270.00	7.58	55.78	62.93	70.66	85	8.55	9.61	11.55
SABARMATI TPS	TORRENT POWER LTD.	Gujarat	362.00	1.38	76.88	76.88	76.88	85	1.38	1.38	1.52
				22.03			154		32.69	36.53	43.81

2528975/2023/CPIAM Telangana



2528975/2023/CPIAM **Telangana**

Name of TPS	Power Utility	State	Installed Capacity (MW)	Coal Consumed (MT): FY22	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
RAMAGUNDA M SUPER	NTPC LTD.	Telangana	2600.00	10.82	76.62	85.27	90.19	95	12.04	12.73	13.41
SINGARENI TPP	SCCL	Telangana	1200.00	5.36	88.97	90.19	95	95	5.43	5.72	5.72
RAMAGUNDA M 'B'	TSPGCL	Telangana	62.50	0.21	49.93	85.27	90.19	95	0.36	0.38	0.40
KOTHAGUDE M-V & VI	TSPGCL	Telangana	1000.00	4.21	72.80	85.27	90.19	95	4.94	5.22	5.50
KOTHAGUDE M-VII	TSPGCL	Telangana	800.00	2.90	83.57	85.27	90.19	95	2.96	3.13	3.30
KAKATIYA (Stage-I&II)	TSPGCL	Telangana	1100.00	4.12	74.11	85.27	90.19	95	4.75	5.02	5.29
Bhadradri TPP	TSPGCL	Telangana	1080.00	2.94	53.89	85.27	90.19	95	4.66	4.93	5.19
				30.57		15	56		35.13	37.13	38.80

2528975/2023/CPIAM **Bihar**



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2528975/2023/CPIAM **Bihar**

Name of TPS	Power Utility	State	Installed Capacity (MW)	Coal Consumed (MT): FY22	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
NABINAGAR- I BRBCL	BHARATIYA RAIL BIJLEE COMPANY LIMITED (NTPC- JV)	Bihar	1000.00	3.94	77.47	82.37	88.81	95	4.19	4.52	4.84
KANTI BIJLEE UTPADAN NIGAM LIMITED	KANTI BIJLEE JTPADAN NIGAM LIMITED	Bihar	610.00	2.06	56.63	82.37	88.81	95	3.00	3.24	3.46
KAHALGAON SUPER	NTPC LTD.	Bihar	2340.00	11.83	78.19	82.37	88.81	95	12.47	13.44	14.38
BARH SUPER TPS	NTPC LTD.	Bihar	1980.00	5.67	50.86	82.37	88.81	95	9.19	9.91	10.60
BARAUNI	NTPC LTD.	Bihar	610.00	1.51	38.76	82.37	88.81	95	3.21	3.46	3.71
NABINAGAR- NPGC	NPGC (NTPC-JV)	Bihar	1320.00	4.95	80.95	82.37	88.81	95	5.04	5.43	5.81
				29.98			158		37.10	40.00	42.79

2528975/2023/CPIAM West Bengal

Name of TPS	Power Utility	PLF(%)	Weighted Avg Distance (Km)	Weighted Avg Distance (Km) Line Fit Plot
				120.00
Budge Budge Generating Station	CESC Ltd.	84.66	287.58	
Southern Generating Station	CESC Ltd.	13.87	221.18	100.00 - PLF(%)
DURGAPUR	Damodar Valley Corporation	11.69	444.24	y = -0.1767x + 110.48
MEJIA	Damodar Valley Corporation	71.22	180.54	● Predicted PLF(%)
DURGAPUR STEEL	Damodar Valley Corporation	70.07	235.09	$40.00 - V = -43.61 \ln(x) + 302.04$
RAGHUNATHPUR	Damodar Valley Corporation	57.85	79.05	20.00 -
THE DURGAPUR PROJECTS POWER STATION	THE DURGAPUR PROJECTS LIMITED	53.29	176.07	 Linear (Predicted PLF(%)) 0.00 0.00 100.00 200.00 300.00 400.00 500.00 Weighted Avg Distance (Km)
HALDIA ENERGY LIMITED	HALDIA ENERGY LIMITED	81.37	493.72	Inverse Correlation Equation: 1
				PLF(%) = 110.48 – 0.1767 x (Weighted Avg Distance of TPS from Coal Mines: Kms)
FARAKKA SUPER	NTPC LTD.	67.52	248.14	Inverse Correlation Equation: 2
KOLAGHAT	WBPDCI	38 70	400 18	PLF(%) = 302.04 - 43.6 Loge(weighted Avg Distance of TPS from Coal Mines: Kms)
	WEDDCL	04.00	111.62	
	WEPDCL	04.80	111.03	
BANDEL	WBPDCL	59.85	414.90	Assuming Best performance under two correlation scenarios, the PLF of West
SANTALDIH TPS	WBPDCL	89.13	161.91	Bengal power plants could increase to ~88.39% - 91.48%.
BAKRESWAR	WBPDCL	90.11	130.42	159

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2528975/2023/CPIAM West Bengal

Name of TPS	Power Utility	State	Installed Capacity (MW)	Coal Consumed (MT): FY22	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
Budge Budge Generating Station	CESC Ltd.	West Bengal	750.00	3.24	84.66	88.39	91.48	95	3.38	3.50	3.63
Southern Generating Station	CESC Ltd.	West Bengal	135.00	0.13	13.87	88.39	91.48	95	0.84	0.87	0.90
DURGAPUR	Damodar Valley Corporation	West Bengal	210.00	0.25	11.69	88.39	91.48	95	1.90	1.96	2.04
MEJIA	Damodar Valley Corporation	West Bengal	2340.00	9.67	71.22	88.39	91.48	95	12.00	12.42	12.90
DURGAPUR STEEL	Damodar Valley Corporation	West Bengal	1000.00	4.12	70.07	88.39	91.48	95	5.20	5.38	5.59
RAGHUNATHPUR Generated from eOffice by	Damodar Valley Corporation	West Bengal	1200.00 0(NRR)-CPIAM, MOC-SC	3.94 D(NRR), Ministry C	57.85	88.39 16 ⁄05/2023 04:45 PM	91.48 6 0	95	6.02	6.23	6.47

2528976/2023/CPIAM West Bengal

Name of TPS	Power Utility	State	Installed Capacity (MW)	Coal Consumed (MT): FY22	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
THE DURGAPUR PROJECTS POWER STATION	THE DURGAPUR PROJECTS LIMITED	West Bengal	550.00	1.78	53.29	88.39	91.48	95	2.95	3.05	3.17
HALDIA ENERGY LIMITED	HALDIA ENERGY LIMITED	West Bengal	600.00	2.94	81.37	88.39	91.48	95	3.19	3.30	3.43
FARAKKA SUPER	NTPC LTD.	West Bengal	2100.00	8.10	67.52	88.39	91.48	95	10.61	10.98	11.40
KOLAGHAT	WBPDCL	West Bengal	1260.00	3.37	38.70	88.39	91.48	95	7.71	7.98	8.28
SAGARDIGHI	WBPDCL	West Bengal	1600.00	7.29	84.80	88.39	91.48	95	7.60	7.86	8.17
BANDEL	WBPDCL	West Bengal	335.00	1.39	59.85	88.39	91.48	95	2.05	2.12	2.20
SANTALDIH TPS	WBPDCL	West Bengal	500.00	2.78	89.13	91.48	91.48	95	2.85	2.85	2.96
BAKRESWAR	WBPDCL	West Bengal	1050.00	5.20	90.11	91.48	91.48	95	5.28	5.28	5.48
				54.19		1			71.56	73.78	76.61

2528976/2023/CPIAM Jharkhand

Power Utility	PLF(%)	Weighted Avg Distance (Km)	Weighted Avg Distance (Ki 88.00	m) Line Fit Plot
			86.00 -	PLF(%)
ADHUNIK POWER & NATURAL RESOURCES LTD.	78.73	252.58	y = -0.0402x + 87.	Predicted PLF(%)
Damodar Valley Corporation	68.42	8.35	80.00 -	Log. (Predicted PLF(%))
Damodar Valley Corporation	87.12	38.36	$y = -4.503\ln(x) + 102.73$	Linear (Predicted PLF(%))
Damodar Valley Corporation	79.11	137.27	0.00 50.00 100.00 150.00 200.00 250 Weighted Avg Distance (Km)	0.00 300.00
MAITHON POWER LIMITED	81.42	137.10	Inverse Correlation Equ PLF(%) = 87.157 – 0.0402 x (Weighted Avg Dis Inverse Correlation Equ	uation: 1 tance of TPS from Coal Mines: Kms) uation: 2
THE TATA POWER COMPANY LIMITED	76.82	246.21	PLF(%) = 102.73 – 4.503 Loge(Weighted Avg D	istance of TPS from Coal Mines: Kms)
TENUGHAT VIDHYUT NIGAM LIMITED	48.03	117.77	Assuming Best performance under two Jharkhand power plants could increase to ~83	correlation scenarios, the PLF of 3.29% - 85.15%.
	Power UtilityADHUNIK POWER & NATURAL RESOURCES LTD.Damodar Valley CorporationDamodar Valley<	Power UtilityPLF(%)ADHUNIK POWER & NATURAL RESOURCES78.73Damodar Valley Corporation68.42Damodar Valley Corporation87.12Damodar Valley Corporation79.11MAITHON POWER LIMITED81.42THE TATA POWER NIGAM LIMITED76.82	Power UtilityPLF(%)Weighted Avg Distance (Km)ADHUNIK POWER & NATURAL RESOURCES78.73252.58Damodar Valley Corporation68.428.35Damodar Valley Corporation87.1238.36Damodar Valley Corporation79.11137.27MAITHON POWER LIMITED81.42137.10THE TATA POWER COMPANY LIMITED76.82246.21TENUGHAT LYDDHYUT NIGAM LIMITED48.03117.77	Power UtilityPLF(%)Weighted Avg Distance (Km)Weighted Avg Distance (Km)ADHUNIK POWER & NATURAL RESOURCES78.73252.58 86.00 Damodar Valley Corporation68.428.35 80.00 Damodar Valley Corporation87.1238.36 76.00 Damodar Valley Corporation79.11137.27Inverse Correlation Equ PLF(%) = 87.157 - 0.0402 x (Weighted Avg Distance (Km)MAITHON POWER LIMITED81.42137.10PLF(%) = 87.157 - 0.0402 x (Weighted Avg Distance QUE PLF(%) = 102.73 - 4.503 Loge(Weighted Avg Distance QUE PLF(%) = 102.73 - 4.5

2528976/2023/CPIAM Jharkhand

Name of TPS	Power Utility	State	Installed Capacity (MW)	Coal Consumed (MT): FY22	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
ADHUNIK POWER & NATURAL RESOURCES LTD.	ADHUNIK POWER & NATURAL RESOURCES LTD.	Jharkhand	540.00	2.55	78.73	83.29	85.15	90	2.70	2.76	2.91
BOKARO	Damodar Valley Corporation	Jharkhand	500.00	1.73	68.42	83.29	85.15	90	2.11	2.15	2.28
CHANDRAPURA	Damodar Valley Corporation	Jharkhand	500.00	2.35	87.12	83.29	85.15	90	2.25	2.30	2.43
KODERMA	Damodar Valley Corporation	Jharkhand	1000.00	4.24	79.11	83.29	85.15	90	4.47	4.57	4.83
MAITHON RIGHT BANK TPP	MAITHON POWER LIMITED	Jharkhand	1050.00	4.58	81.42	83.29	85.15	90	4.68	4.79	5.06
JOJOBERA	THE TATA POWER COMPANY LIMITED	Jharkhand	547.50	2.55	76.82	83.29	85.15	90	2.76	2.82	2.98
TENUGHAT TPS	TENUGHAT VIDHYUT NIGAM LIMITED	Jharkhand	420.00	1.27	48.03	83.29	85.15	90	2.20	2.25	2.38
				19.26		3			21.16	21.63	22.87

2528976/2023/CPIAM Rajasthan



2528976/2023/CPIAM **Rajasthan**

Name of TPS	Power Utility	State	Installed Capacity (MW)	Coal Consumed (MT)	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
KAWAI	ADANI POWER RAJASTHAN LTD.	Rajasthan	1320.00	4.86	72.18	76.86	76.86	90	5.17	5.17	6.05
CHHABRA	RRVUNL	Rajasthan	1000.00	2.96	52.77	68.48	76.86	90	3.84	4.31	5.04
SURATGARH	RRVUNL	Rajasthan	1500.00	2.50	28.32	68.48	76.86	90	6.04	6.78	7.94
KALISINDH SUPER TPP	RRVUNL	Rajasthan	1200.00	4.37	67.97	68.48	76.86	90	4.40	4.94	5.78
KOTA SUPER THERMAL POWER STATION	RRVUNL	Rajasthan	1240.00	4.91	63.56	68.48	76.86	90	5.29	5.94	6.96
CHHABRA SUPER CRITICAL TPP	RRVUNL	Rajasthan	1320.00	3.20	48.72	68.48	76.86	90	4.50	5.06	5.92
				22.80		5			29.25	32.19	37.70

2528976/2023/CPIAM **Odisha**



Name of TPS Power Utility	y State	Installed Capacity (MW)	Coal Consumed (MT): FY22	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
GMR GMR KAMALANGA KAMALANGA TPP ENERGY LTD	A Odisha).	1050.00	5.46	81.87	81.87	92.28	95.00	5.46	6.15	6.33
JINDAL INDI DERANG TPP POWER LIMITED	۹ Odisha	1200.00	5.86	81.42	81.61	92.28	95.00	5.87	6.64	6.83
TALCHER - NTPC LTD. KANIHA	Odisha	3000.00	16.88	84.18	92.28	92.28	95.00	18.51	18.51	19.05
ODISHA POWER IB VALLEY GENERATION CORPORATIO N LIMITED	N Odisha D	1740.00	8.01	66.91	81.61	92.28	95.00	9.77	11.05	11.38
VEDANTA LTD VEDANTA TPP LIMITED	Odisha	2400.00	2.56	30.52	81.61	92.28	95.00	6.85	7.74	7.97
DARLIPALI SUPER TPS NTPC LTD.	Odisha	1600.00	6.56	80.50	81.61	92.28	95.00	6.65	7.52	7.74
			45.33			7		53.10	57.61	59.30

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2528976/2023/CPIAM Karnataka

Name of TPS	Power Utility	State	Installed Capacity (MW)	Coal Consumed (MT): FY22	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
VIJAYANAGAF	JSW ENERGY LIMITED	Karnataka	860.00	1.34	44.94	44.94	44.94	85.00	1.34	1.34	2.54
RAICHUR POWER PLANT	KPCL	Karnataka	1720.00	4.74	44.47	44.55	44.60	85.00	4.75	4.75	9.06
BALLARI	KPCL	Karnataka	1700.00	4.36	44.43	44.55	44.60	85.00	4.37	4.38	8.34
KUDGI	NTPC LTD.	Karnataka	2400.00	3.97	31.91	44.55	44.60	85.00	5.55	5.55	10.58
YERAMARUS TPS	RPCL	Karnataka	1600.00	3.29	38.39	44.55	44.60	85.00	3.82	3.82	7.28
UDUPI	UDUPI POWER CORPORATIO N LIMITED	Karnataka	1200.00	0.73	16.29	44.55	44.60	85.00	1.99	1.99	3.79
				18.43			9		21.81	21.84	41.59

2528976/2023/CPIAM **Punjab**



2528976/2023/CPIAM **Punjab**

Name of TPS	Power Utility	State	Installed Capacity (MW)	Coal Consumed (MT): FY22	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
RAJPURA TPS	NABHA POWER LIMITED	Punjab	1400.00	5.44	78.72	78.72	78.72	90.00	5.44	5.44	6.22
GURU HARGOBIND TPP, LEHRA MOHABAT	PSPCL	Punjab	920.00	1.32	24.91	75.54	78.71	90.00	4.00	4.16	4.76
GURU GOBIND SINGH TPP, ROPAR	PSPCL	Punjab	840.00	1.18	23.57	75.54	78.71	90.00	3.77	3.93	4.49
GVK POWER (GOINDWALSA HIB) LTD.	PSPCL	Punjab	540.00	1.30	39.83	75.54	78.71	90.00	2.47	2.58	2.95
TALWANDI SABO POWER LTD	TALWANDI SABO POWER LTD.	Punjab	1980.00	6.02	51.29	75.54	78.71	90.00	8.86	9.24	10.56
				15.25			11		24.54	25.34	28.98

2528976/2023/CPIAM **Haryana**

				Weighted Avg Distance (Km) Line Fit Plot				
				80.00				
Name of TPS	Power Utility	PLF(%)	Weighted Avg Distance (Km)	70.00 - • PLF(%)				
				60.00				
	ARAVALI POWER	F2.66	1262.07	50.00 - $y = -0.23846x + 358.646$ Predicted PLF(%)				
INDIKA GANDHI	CORPORATION PVT LTD	53.00	1202.87	8 40.00 -				
				$y = -362.4 \ln(x) + 2648.7$ — Log. (PLF(%))				
RAJIV GANDHI TPP,Hissar	HPGCL	25.44	1364.04	20.00 -				
				10.00 Linear (PLF(%))				
				0.00 1260.00 1280.00 1300.00 1320.00 1340.00 1360.00 1380.00 Weighted Avg Distance (Km)				
Deen Bandhu Chhotu Ram TPS, YAMUNANAGAR	HPGCL	49.66	1266.76	Inverse Correlation Equation: 1 PLF(%) = 358.646 – 0.23846 x (Weighted Avg Distance of TPS from Coal Mines: Kms) Inverse Correlation Equation: 2				
				PLF(%) = 2648.7 – 362.4 Log _e (Weighted Avg Distance of TPS from Coal Mines: Kms)				
PANIPAT	HPGCL	44.29	1311.78					
MAHATMA GANDHI TPP	JHAJJAR POWER LIMITED	67.08	1307.61	Assuming Best performance under two correlation scenarios, the PLF of Haryana power plants could increase to ~72.49% - 79.26%.				

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2528976/2023/CPIAM **Haryana**

Name of TPS	Power Utility	State	Installed Capacity (MW)	Coal Consumed (MT): FY22	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
INDIRA GANDHI	ARAVALI POWER CORPORATIO N PVT LTD	Haryana	1500.00	4.67	53.66	72.49	79.26	90	6.31	6.90	7.83
RAJIV GANDHI TPP,Hissar	HPGCL	Haryana	1200.00	1.85	25.44	72.49	79.26	90	5.27	5.77	6.55
Deen Bandhu Chhotu Ram TPS, YAMUNANAG AR	HPGCL	Haryana	600.00	1.84	49.66	72.49	79.26	90	2.69	2.94	3.34
PANIPAT	HPGCL	Haryana	710.00	1.88	44.29	72.49	79.26	90	3.08	3.37	3.82
MAHATMA GANDHI TPP	JHAJJAR POWER LIMITED	Haryana	1320.00	4.74	67.08	72.49	79.26	90	5.12	5.60	6.36
				14.98			13		22.47	24.57	27.90

2528976/2023/CPIAM Tamil Nadu

				Weighted Avg Distance (Km) Line Fit Plot
Name of TPS	Power Utility	PLF(%)	Weighted Avg Distance (Km)	70.00
MUTIARA	COASTAL ENERGEN PVT. LTD	11.62	N/A	65.00 - • PLF(%) 60.00 - • $y = -0.0117x + 72.448$ • Predicted PLF(%)
IL & FS TAMIL NADU POWER COMPANY LTD.	IL & FS TAMIL NADU POWER COMPANY LIMITED	29.43	N/A	
NLC TAMILNADU POWER Ltd	NLC TAMIL NADU POWER LIMITED	47.75	1832.61	45.00 - 40.00 - Linear (Predicted PLF(%)) 1000.00 1200.00 1400.00 1600.00 1800.00 2000.00 Weighted Avg Distance (Km)
VALLUR	NTPC TAMILNADU ENERGY COMPANY LTD (NTECL) (NTPC- JV)	60.22	1128.64	Inverse Correlation Equation: 1 PLF(%) = 72.448 – 0.0117 x (Weighted Avg Distance of TPS from Coal Mines: Kms)
TUTICORIN	TANGEDCO	53.95	1391.60	PLF(%) = 177.43 – 16.78 Log _e (Weighted Avg Distance of TPS from Coal Mines: Kms)
METTUR-I	TANGEDCO	65.18	1611.39	
METTUR-II	TANGEDCO	52.58	1611.39	Assuming Best performance under two correlation scenarios, the PLF of Tamil Nadu power plants could increase to ~66.61% - 73.15%.
NORTH CHENNAI-I & II	TANGEDCO	49.09	1493.79	14

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2528976/2023/CPIAM Tamil Nadu

Name of TPS	Name of TPS Power Utility		Installed Capacity (MW)	Coal Consumed (MT): FY22	PLF (%)	PLF Base Scenario	PLF Realistic Scenario	PLF Optimistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
MUTIARA	COASTAL ENERGEN PVT. LTD	Tamil Nadu	1200.00	0.80	11.62	66.61	73.15	85.00	4.59	5.04	5.86
IL & FS TAMIL NADU POWER COMPANY LTD.	IL & FS TAMIL NADU POWER COMPANY LIMITED	Tamil Nadu	1200.00	1.67	29.43	66.61	73.15	85.00	3.77	4.14	4.81
NLC TAMILNADU POWER Ltd	NLC TAMIL NADU POWER LIMITED	Tamil Nadu	1000.00	3.04	47.75	66.61	73.15	85.00	4.24	4.66	5.42
VALLUR	NTPC TAMILNADU ENERGY COMPANY LTD (NTECL) (NTPC- JV)	Tamil Nadu	1500.00	5.96	60.22	66.61	73.15	85.00	6.59	7.24	8.41
TUTICORIN	TANGEDCO	Tamil Nadu	1050.00	4.28	53.95	66.61	73.15	85.00	5.28	5.80	6.74
METTUR-I	TANGEDCO	Tamil Nadu	840.00	3.86	65.18	66.61	73.15	85.00	3.95	4.33	5.04
METTUR-II	TANGEDCO	Tamil Nadu	600.00	2.16	52.58	66.61	73.15	85.00	2.74	3.01	3.50
NORTH CHENNAI-I & II	TANGEDCO	Tamil Nadu	1830.00	6.18	49.09	66.61	73.15	85.00	8.38	9.20	10.70
				27.95	15				39.54	43.43	50.46

2528976/2023/CPIAM Coal Demand from Under-Construction Capacities – Central Sector

#	Project Name	State	Implementing Agency	Units No	Capacity (MW)	Anticipated Year of Commissioning	PLF Base Scenario	PLF Realistic Scenario	Coal Consumption Base Scenario: FY30	Realistic Scenario: FY30	Optimistic Scenario: FY30
			Central S	Sector							
1	Barh STPP-I	Bihar	NTPC	Units 2 & 3 - 660x2	1320	2024	82.37	88.81	6.46	6.97	6.67
2	Buxar TPP	Bihar	SJVN	Units 1 & 2 - 660x2	1320	2024	82.37	88.81	4.82	5.20	4.976
3	North Karanpura STPP	Jharkhand	NTPC	Units 1,2 & 3 - 660x3	1980	2024	83.29	85.15	6.90	7.05	7.039
4	Patratu STPP	Jharkhand	PVUNL	Units 1,2 & 3 - 800x3	2400	2025	83.29	85.15	8.99	9.19	9.17
5	Talcher TPP St-III	Odisha	NTPC	Units 1 & 2 - 660x2	1320	2027	81.67	92.28	5.62	6.36	5.854
6	Ghatampur TPP	Uttar Pradesh	NUPPL	Units 1,2 & 3 - 660x3	1980	2023	52.6	64.5	5.57	6.83	9
7	Khurja SCTPP	Uttar Pradesh	THDC	Units 1 & 2 - 660x2	1320	2024	52.6	64.5	3.47	4.25	5.6
8	Telangana STPP St-I	Telangana	NTPC	Units 1 & 2 - 800x2	1600	2023	85.27	90.19	6.87	7.26	6.846
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2528976/2023/CPIAM Coal Demand from Under-Construction Capacities – State Sector

1	Dr Narla Tata Rao TPS St-V	Andhra Pradesh	APGENCO	Unit 1	800	2023	77.02	79.60	3.21	3.32	3.548
2	Sri Damodaram Sanjeevaiah TPP St-II	Andhra I Pradesh	APPDCL	Unit 1	800	2023	77.02	79.60	3.21	3.32	3.548
3	Jawaharpur STPP	Uttar Pradesh	UPRVUNL	Units 1 & 2 - 660x2	1320	2023	52.6	64.5	2.76	3.39	4.461
4	Obra-C STPP	Uttar Pradesh	UPRVUNL	Units 1 & 2 - 660x2	1320	2023	52.6	64.5	4.34	5.32	7.009
5	Panki TPS Extn	Uttar Pradesh	UPRVUNL	Unit 1	660	2024	52.6	64.5	2.18	2.68	3.53
c	Ennore SCTPP	Tamil Nadu	TANGEDCO	Units 1 & 2 - 660x2	1320	2024	66.61	73.15	4.66	5.12	5.95
7	North Chennai TPP St-III	Tamil Nadu	TANGEDCO	Unit 1	800	2023	66.61	73.15	2.68	2.94	3.421
	Udangudi STPP St-I	Tamil Nadu	TANGEDCO	Units 1 & 2 - 660x2	1320	2024	66.61	73.15	4.62	5.07	5.893
8											
9	Yadadri TPS	Telangana	TSGENCO	Units 1,2,3,4 & 5 - 800x5	4000	2024	85.27	90.19	14.04	14.85	14
10	Yelanhaka CCPP	Karntaka	KPCL	Unit 1	370	2023	44.55	44.60	0.84	0.84	1.597
11	Bhusawal TPS	Maharashtra	MAHAGENCO	Unit 1	660	2023	73.16	80.23	2.74	3.00	3.180
10	Sagardighi TPP, Ph-II	I West Bengal	WBPDCL	Unit 1	660	2024	88.39	91.48	2.96	3.07	2.848
12	Т	otal State Secto	r		14030	17			48.25	52.92	58.98
Generated fro	om eOffice by Grand To	tal-Under Con	Struction			96.95	106.03	114.14			

^{2528976/2023/CPIAM} Under Construction Power Plants and Fuel linkages – Central Sector

#	Project Name	State	Implementing Agency	Units No	Capacity (MW)	Anticipated Yea Commissioni	ar of Fuel Security / Linkage	Coal Quantum (MTPA)	Source from State
1	Barh STPP-I	Bihar	NTPC	Units 2 & 3 - 660x2	1320	2024	Letter of Assurance dtd. 18.11.2010 from CCL, securing 10 MMTPA coal for 03 Units. FSA of Unit-1 (3.333 MTPA) already signed with CCL(all operative mines, G8-G10) as per MoC PD dtd. 17.07.2013. FSA of Unit-2 & 3 to be signed after commissioning in terms of para 1A(i)of SHAKTI-2017 policy.	6.97	Jharkhand
2	Buxar TPP	Bihar	SJVN	Units 1 & 2 - 660x2	1320	2024	Allocated Mine - CCL, Magadh-Amrapali; Distance from mine - 465 km (non pithead). Letter of Assurance (LoA) for 4.976 MTPA of G9 to G14 grade coal issued by Central Coalfields Ltd. (CCL) on 10.12.2018. Coal may be supplied either from Amrapali coal block or Magadh coal block.	5.20	Jharkhand
3	North Karanpura STPP	Jharkhand	NTPC	Units 1,2 & 3 - 660x3	1980	2024	Letter of Assurance dtd. 24.03.2015 from CCL, securing 7.039 MTPA coal (G7-G11) for 03 Units. FSA to be signed after commissioning in terms of para 1A (i) of SHAKTI-2017 policy.	7.05	Jharkhand
4	Patratu STPP	Jharkhand	PVUNL	Units 1,2 & 3 - 800x3	2400	2025	12 MTPA for Ph-I from Banhardih Coal Mine at a distance of about 110 km. Banhardi Coal Mine transferred to PVUNL vide deed of adherence signed on 02.06.2017. Bridge allocation granted by SLC(LT) upto 24-06-2024; Allocation from CCL; Coal quantity quantified is 9.17 MTPA.	9.19	Jharkhand
5	Talcher TPP St-III	Odisha	NTPC	Units 1 & 2 - 660x2	1320	2027	Available. (SLC(LT), MOM dt: 10.04.2018); FSA Agreement with MCL under process; Source: Bhuwaneswari/Jagannath mines of MCL Grade: G-12 Quantity: 5.854 MMTPA	6.36	Odisha
6	Ghatampur TPP	Uttar Pradesh	NUPPL	Units 1,2 & 3 - 660x3	1980	2023	Allocation Date- 03.10.2016. Allocated Mine (Source) - Pachwara South Coal Block (9 MTPA) Grade - G10 Quantity- Net Geological Reserve 373.52 MT. Extractable reserve - 262.84MT; Pachwara South Coal Block will be fully functional by the end of Financial Year 2026-27 and will be able to meet the coal requirement of NUPPL. Hence, NUPPL is seeking coal under bridge linkage by the time Pachwara South Coal Block will be fully functional.	6.83	Jharkhand
7	Khurja SCTPP	Uttar Pradesh	THDC	Units 1 & 2 - 660x2	1320	2024	For Coal linkage, Ministry of Coal, Gol vide allotment order dtd.17.01.2017 has allotted Amelia Coal Mine in District Singraulli, Madhya Pradesh to THDCIL to meet out fuel requirements of the project. Grade of Coal: G9 (Avg. GCV = 4746 Kcal/Kg). Net Geological Reserve in Amelia Coal Mine is 162.05 Million Ton (OC) out of this Extractable Coal Reserve is 139.48 Million Ton.	4.25	Madhya Pradesh
8	Telangana STPP St-I	Telangana	NTPC	Units 1 & 2 - 800x2	1600	2023	Linked with Mandakini-B captive coal mine (PRC-20 MMTPA); however, NTPC has approached MoC on 26.12.2020 for surrendering the coal mine. Tapering linkage against the linked coal mine was initially allocated from WCL cost-plus. In July'2020, the linkage has been shifted to SCCL. Coal quantity quantified by the Coal Controller is 6.846 MTPA.	7.26	Telangana
Total Central Sector					13240		10	53.10	

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Source: CEA Broad Status Report Nov 2022, Monthly Statistical Reports, Ministry of Coal, Provisional Coal Statistics, National Rail Plan 2020, National Electricity Plan by CEA, 20th EPS Survey by CEA

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^{2528976/2023/CPIAM} Under Construction Power Plants and Fuel linkages – State Sector

1	Dr Narla Tata Rao TPS St-V	Andhra Pradesh	APGENCO	Unit 1	800	2023	Allocated Mine - MCL (non-pithead); Distance from mine - 930 km (non pithead); MCL issued LoI for supply of 3.548 MTPA vide letter dated 12-11-2018. Grade of coal - G13;	3.32	Odisha
2	Sri Damodaram Sanjeevaiah TPP St-II	Andhra Pradesh	APPDCL	Unit 1	800	2023	Allocated Mine - MCL, Talcher (Odisha); Distance from mine - 1225 km (non pithead); MCL has issued LoA to supply 3.548 MTPA vide letter dated 04-03-2018.	3.32	Odisha
3	Jawaharpur STPP	Uttar Pradesh	UPRVUNL	Units 1 & 2 - 660x2	1320	2023	Allocated Mine - Saharpur Jamarpani mines, Jharkhand; Distance from mine - 1190 km (non pithead) Bridge Linkage from CCL/ECL for 4.461 MTPA	3.39	Jharkhand
4	Obra-C STPP	Uttar Pradesh	UPRVUNL	Units 1 & 2 - 660x2	1320	2023	Allocated Mine - Saharpur Jamarpani mines (15 MTPA), Jharkhand; Distance from mine - 651 km (non pithead); Allocation Date: 13.08.2015. Grade of Coal -G10	5.32	Jharkhand
5	Panki TPS Extn	Uttar Pradesh	UPRVUNL	Unit 1	660	2024	Allocated Mine - Saharpur Jamarpani mines (15 MTPA), Jharkhand; Distance from mine - 896 km (non pithead); Allocation Date: 13.08.2015. Grade of Coal -G10. FSA on 30.01.2017	2.68	Jharkhand
6	Ennore SCTPP	Tamil Nadu	TANGEDCO	Units 1 & 2 - 660x2	1320	2024	Allocated Mine - Chandrabila Coal Block, Odisha; Distance from mine - 1300 km (non pithead); Total requirement is 5.95MTPA, comprising of indigenous 3.68 MTPA & imported 2.26 MTPA respectively MoU has already been signed between MMTC & TANGEDCO on 25.06.2012 for the supply of Import coal for this project. Bridge Linkage with SCCL available for indigenous coal.	5.12	Odisha & Imported
7	North Chennai TPP St-III	Tamil Nadu	TANGEDCO	Unit 1	800	2023	Allocated Mine - SCCL; Distance from mine - 606 km (non pithead);. Ministry of Coal recommended for long-term coal linkage for 1.971 MTPA Indigenous coal to SCCL. FSA Executed between TANGEDCO and SCCL for indigenous coal. MoU has been entered with M/s. MMTC for supply of Imported coal of 1.450 MTPA on 25.05.2015.	2.94	Telangana & Imported
8	Udangudi STPP St-I	Tamil Nadu	TANGEDCO	Units 1 & 2 - 660x2	1320	2024	Allocated Mine - Chandrabila Coal Block for indigenous coal of G13 Grade for 3.647 MTPA and MDO selection is under process. Distance from mine (appx) : Railway distance for movement of coal through Rail-cum-Sea route via Paradip port is 200 km.(Chandrabila to Paradip port), from Paradip port to Udangudi captive Port, sea distance is 1224 Nautical Miles. Total requirement is 5.893 MTPA with Indigenous coal of 3.647 MTPA and import coal of 2.246 MTPA. Import coal (2.246 MTPA) will be procured to the requirements. Bridge Linkage with SCCL available for indigenous coal	5.07	Odisha & Imported
9	Yadadri TPS	Telangana	TSGENCO	Units 1,2,3,4 & 5 - 800x5	4000	2024	Allocated Mine - SCCL; Distance from mine - 270 km (non pithead); Ministry of Coal vide File No.23014/1/2018-CLD, Dt:15-02-2018 has granted coal linkage from SCCL for supply of 14 MTPA of coal (grade-G9).	14.85	Telangana
10	Yelanhaka CCPP	Karntaka	KPCL	Unit 1	370	2023	NA - Could Source from Mandakini	0.84	Odisha
11	Bhusawal TPS	Maharash tra	MAHAGENC O	Unit 1	660	2023	Allocated Mine - WCL, Umred/Ghugus; Distance from mine – 403/430km; Allocation Date: 11-09-2020, Source: WCL mines ,Grade: G9/G10, Quantity : 3.18 million tonne.	3.00	Maharashtra
12	Sagardighi TPP, Ph-III	West Bengal	WBPDCL	Unit 1	660	2024	Allocated Mine - Pachhwara (North) Captive Coal Mine of WBPDCL. Distance from mine - 150 km (non pithead); Coal will be sourced mainly from captive coal mines of WBPDCL	3.07	Jharkhand
	Tot	al State Se	ector		14030		10	52.92	
	Grand Tota	l - Under (Construction	n	27270		106.03		

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^{2528976/2023/CPIAM} Power Plants in Pipeline and Fuel linkages (1/2)

#	Project Name	State	Implementing Agency	Capacity (MW)	Anticipated Year of Commissioning	Fuel Security / Linkage	Coal Quantum (MTPA)	Source from State
1	Lara STPP	Chhattisgarh	NTPC	1600	2027-28	Coal linkage available. NTPC has a captive block, Talaipalli with a PRC of 18 MTPA. Talaipalli has become operational in FY23	8.53	Chhattisgarh
2	Singrauli STPP- III	Uttar Pradesh	NTPC	1600	2027-28 & 2028-29	Singrauli is a pit-head power plant in Uttar Pradesh primarily supplied coal by Northern Coalfields. Long term linkage granted by Standing Linkage Committee (Long-Term) in 10.04.2018 from CIL. In minutes dt. 15.05.2018, CIL shall consult and allocate coal based on coal availability & transportation facility. Expected supply by NCL.	8.53	Uttar Pradesh/Madhy a Pradesh
3	Darlipalli-II STPP	Odisha	NTPC	800	2028-29	Application for Long Term linkage under Shakti B(i) yet to be filed as on Jan-2023. NTPC's coal sourcing from Dulanga to meet current capacity of Darlipalli. Additional capacity addition likely to be sourced from MCL	4.26	Odisha
4	Sipat-III, STPP	Chhattisgarh	NTPC	800	2028-29	Application for Long Term linkage under Shakti B(i) yet to be filed. (After FR Approval) Sipat is a pithaed plant with supplies from SECL via MGR.	4.26	Chhattisgarh
5	Meja-II STPP	Uttar Pradesh	NTPC	1320	2028-29 & 2029-30	Application for Long Term linkage under Shakti B(i) yet to be filed. (After FR Approval) Currently Meja has FSAs with both NCL & CCL. However, due to limited growth of NCL, Meja is likely to be allotted coal from CCL	7.08	Jharkhand
6	Raghunathpur TPS, Phase-II	West Bengal	DVC	1320	2027-28 & 2028-29	Long term Linkage granted by SLC (LT) in 08.08.2022. Recommendations on allocation of coal from same source/subsidiary. ECL & CCL currently supplies to Raghunathpur.	7.08	West Bengal/Jharkha nd
7	Durgapur TPS	West Bengal	DVC	800	2027-28	Application for Long term linkage under Shakti B(i) yet to be filed. DVC is also considering to participate in coal mine auction. Current FSAs are with MCL & CCL which expire in 2029. Expected new allotment from CCL.	4.29	Jharkhand
8	Koderma TPS	Jharkhand	DVC	1600	2027-28 & 2028-29	Application for Long term linkage under Shakti B(i) yet to be filed. DVC also considering to participate in coal mine auction. Current FSAs are with ECL & BCCL which expire in 2034. Expected new allotment from CCL.	8.58	Jharkhand
9	TPS-II 2nd Expansion	Tamil Nadu	NLC	1320	2027-28 & 2028-29	Basket of Mines in Neyveli. Plant is lignite-based and lignite is to be sources via 20 conveyors from NLC's mines to the proposed power plant.	Not applicable, Lignite based	Tamil Nadu

^{2528976/2023/CPIAM} Power Plants in Pipeline and Fuel linkages (2/2)

#	Project Name	State	Implementing Agency	Capacity (MW)	Anticipated Year of Commissioning	Fuel Security / Linkage	Coal Quantum (MTPA)	Source from State
10	NLC Talabira STPS	Odisha	NLC	2400	2027-28 & 2028-29	Coal to be sources from Talabira II & III captive coal block (PRC: 23 MTPA)	12.79	Odisha
11	Buxar TPP-II STPP	Bihar	SJVNL	660		Application for Long Term linkage under Shakti B(i) yet to be filed. (After DPR Approval). For Buxar Unit 1 & 2, Allocated Mine - CCL, Magadh-Amrapali; Distance from mine - 465 km (non pithead). Letter of Assurance (LoA) for 4.976 MTPA of G9 to G14 grade coal issued by Central Coalfields Ltd. (CCL) on 10.12.2018. Coal may be supplied either from Amrapali coal block or Magadh coal block.	3.54	Jharkhand
12	Super Critical TPP, Korba (W)	Chhattisgarh	CSPGCL	1320	2028-29 & 2029-30	FSAs of decommissioned / proposed to be decommissioned Units are available. Matter proposed to be discussed in SLC.	7.04	Chhattisgarh
13	Yamuna Nagar TPP Unit 3	Haryana	HPGCL	800	2027-28	Coal Block yet to be surrendered. Recommendations for Grant of Long Term Linkage already submitted by CEA on HPGCL request. Allocation of coal likely to be from CCL	4.29	Jharkhand
14	Amarkantak TPS	Madhya Pradesh	MPPGCL	660	2027-28	Long term Linkage granted by SLC (LT) in 18.11.2019. Amarkantak is a pithead plant located near Sohagpur & Johilla areas of SECL in Madhya Pradesh. Coal likely to be allocated from these areas	3.54	Madhya Pradesh/ Chhattisgarh
15	Satpura TPP	Madhya Pradesh	MPPGCL	660	2027-28	Long term Linkage granted by SLC (LT) in 18.11.2019. Likely allocation from WCL.	3.54	Maharashtra
16	Chandrapur TPP	Maharashtra	Mahagenco	1320	2029-30	Application for Long Term linkage under Shakti B(i) yet to be filed. (After DPR Approval) Coal likely to be allocated from WCL	7.08	Maharashtra
17	Koradi TPS Replacement	Maharashtra	Mahagenco	660	2027-28	Application for Long Term linkage under Shakti B(i) yet to be filed. Coal currenty sourced from WCL & SECL. Likely additional allocation from SECL due to WCL's continuing supplies and limited growth	3.54	Chhattisgarh
18	Ukai TPC, Tapi	Gujarat	GSECL	800	2027-28	Application for Long Term linkage under Shakti B(i) yet to be filed. Major coal supplies currently from SECL. Allocation likely to be from SECL	4.29	Chhattisgarh
19	Singareni Unit 3	Telangana	SCCL	800	2027-28	Naini captive coal block with PRC of 10 MTPA	4.29	Odisha
		Total		21,240		21	106.55	

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All India demand of thermal coal from power sector in FY30

		Existing Capac	ities with Improved PLF: FY30		
State	FY22 Coal Consumption (MTPA)	FY30 Base (MTPA)	FY30 Realistic (MTPA)	FY30 Optimistic (MTPA)	Max Increase Anticipated (MTPA): FY22 to FY30
Odisha	45.33	53.10	57.61	59.30	13.98
Chhattisgarh	103.90	130.55	145.29	147.02	43.13
Uttar Pradesh	84.26	96.21	98.82	120.30	36.04
Madhya Pradesh	83.72	92.20	104.28	111.72	28.00
Gujarat	22.03	32.69	36.53	43.81	21.78
Andhra Pradesh	40.16	52.57	54.33	64.84	27.17
Rajasthan	22.80	29.25	32.19	37.70	14.90
Maharashtra	81.92	101.10	108.31	128.25	46.33
Karnataka	18.43	21.81	21.84	41.59	23.16
Punjab	15.25	24.54	25.34	28.98	13.72
Harayana	14.98	22.47	24.57	27.90	12.91
Telangana	30.57	35.13	37.13	38.80	8.24
Bihar	29.98	37.10	40.00	42.79	12.81
West Bengal	54.19	71.56	73.78	76.61	22.42
Jharkhand	19.26	21.16	21.63	22.87	3.60
Tamil Nadu	27.95	39.54	43.43	50.46	22.52
Assam	2.49	2.67	3.00	3.12	0.63
Total	704.91	863.65	928.07	1046.08	+ 351.35
		Upcom	ing Capacities by FY30		
Bihar	0	11.29	12.17	11.65	11.65
Uttar Pradesh	0	18.32	22.46	29.60	29.60
Jharkhand	0	15.88	16.24	16.21	16.21
Andhra Pradesh	0	6.43	6.65	7.10	7.10
Odisha	0	5.62	6.36	5.85	5.85
Karnataka	0	0.84	0.84	1.60	1.60
Telangana	0	20.91	22.12	20.85	20.85
West Bengal	0	2.96	3.07	2.85	2.85
Maharashtra	0	2.74	3.00	3.18	3.18
Tamil Nadu	0	11.96	13.14	15.26	15.26
Total	0	96.95	22 106.03	114.14	+ 114.14
ated Grand Totaly N R	AJESWARA RAO, MO 7(34(91 R)-CPIAM, MOC-SO(NF	R), Ministry @6059 on 17/05/202	3 04:46 PM 1034.10	1160.22	+ 465.49

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Thermal Coal Supply Analysis summary for Odisha

							D · · ··		All figures in	milli
		Actuals		•			Projections			
Coal Supply	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	
Talcher CF	83.9	96.7	112.7	111.8	125.1	165.1	174.1	174.1	181.6	
B Valley CF	64.1	71.4	80.6	92.2	99.9	124.9	129.3	137.3	143.3	
Total MCL (CIL)	148	168	193	204	225	290	303	311	325	
Captive & Commercial - Talcher CF	0.0	0.0	0.0	7.5	19.8	26.4	35.3	47.1	62.8	
Captive & Commercial - IB Valley CF	6.7	16.9	25.20	25.20	29.3	35.3	42.5	51.1	61.4	
Total Non-CIL	6.7	16.9	25.20	32.7	49.1	61.7	77.7	98.1	124.2	
Total Coal Production in Odisha	155	105	210		274	252	201	410		

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MCL has ambitious production capacity expansion plans

Odisha

All figures in million tonnes

Coal Supply	y from MCL		F١	/21	FY22	FY2	3	FY24	FY2	25	FY26	FY	27	FY28	FY29) [-Y30
Talcher CF			8	34	97	112	.7	111.8	12	3	165	1	74	174	182		189
B Valley Cl	F		6	54	71	80.	6	92.2	10	2	125	1	29	137	143		147
Fotal MCL ((CIL)		1	48	168	193	.3	204	22	.5	290	3	03	311	325		336
Coalfield	AREA	Name of Mine / Project	Distt	Type (UG / OC)	PR Capacity (MTY)	EC Capacity (MTY)	Actual 21-22	2022-23 (T)	2022-23 (Act)	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030
Talcher	Jagannath	Jagannath OCP	Angul	ос	6.00	7.50	7.03	7.50	7.50	7.50	7.50	7.50	7.5	7.5	7.5	7.5	
Talcher	Jagannath	Ananta OCP	Angul	OC	15.00	20.00	13.58	14.00	17.10	16.00	18.70	20.00	20	20	20	20	
Talcher	Jagannath	Bhubaneswari OCP	Angul	OC	40.00	30.00	28.00	28.00	30.00	30.00	30.00	36.00	40	40	40	40	
Talcher	Bharatpur	Bharatpur OCP	Angul	OC	20.00	20.00	9.25	10.00	9.25	10.24	15.00	20.00	20	20	20	20	
Talcher	Lingaraj	Lingaraj OCP	Angul	OC	16.00	20.00	14.46	14.00	16.51	15.00	17.00	20.00	20	17	17	17	
Talcher	Kaniha	Kaniha OCP	Angul	OC	30.00	14.00	10.10	10.00	12.15	13.00	14.00	18.00	24	24	24	25	
Talcher	Hingula	Hingula OCP	Angul	OC	15.00	15.00	7.74	10.00	12.38	12.00	13.00	20.00	18	18	18	18	
Talcher	Hingula	Balaram OCP	Angul	OC	15.00	8.00	6.53	6.50	7.74	8.00	8.00	11.00	12.5	12.5	15	15	
Talcher	subhadra	Subhadra OCP	Angul	OC	25.00	0.00	0.00	0.00		0.00	0.00	5.00	7	10	15	21	
Talcher	Hingula	Balabhadra OCP	Angul	OC	10.00	0.00	0.00	0.00		0.00	0.00	0.00	2	5	5.5	5.5	
Talcher	Talcher	Nandira UG	Angul	UG	0.33	0.33	0.06	0.06	0.06	0.06	0.06	0.06	0.08	0.08	0.08	0.08	
Ib Valley	Ib Valley	Lajkura OCP	Jharsuguda	OC	2.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.5	4.5	4.5	4.5	
Ib Valley	Ib Valley	Samaleswari OCP	Jharsuguda	OC	12.00	15.00	5.19	5.00	6.44	8.00	13.00	15.00	15	15	15	15	
Ib Valley	Lakhanpur	Belpahar OCP	Jharsuguda	OC	8.00	9.00	7.25	7.50	7.51	9.00	9.00		()				
Ib Valley	Lakhanpur	Lakhanpur OCP	Jharsuguda	OC	15.00	22.50	21.00	21.00	22.50	22.50	22.50						
Ib Valley	Lakhanpur	Int. LBL OCP#	Jharsuguda	OC	30.00	0.00	0.00					40.00	40	40	40	40	
Ib Valley	Mahalaxmi	Basundhara West OCP	Sundargarh	OC	7.00	8.00	1.00	0.90	0.95	0.60	3.14	7.54	7	7	7	7	
Ib Valley	Mahalaxmi	Siarmal OCP	Sundargarh	OC	50.00	50.00	0.00	3.00	0.00	8.00	10.00	25.00	25	30	36	40	
Ib Valley	Basundhara	Kulda OCP	Sundargarh	OC	15.00	21.00	18.50	18.50	21.00	21.00	21.00)				
Ib Valley	Basundhara	Garjanbahal OCP	Sundargarh	OC	10.00	18.20	13.55	15.16	17.29	18.20	18.20		[]				
Ib Valley	Basundhara	Kulda Garjanbahal Int.*	Sundargarh	OC	40.00	0.00	0.00				20070000	40.00	40	40	40	40	
Ib Valley	Orient	Orient Colliery - 1&2	Jharsuguda	UG	0.87	0.87	25 ²⁰	0.20	0.19	0.20	0.20	0.20	0.2	0.2	0.2	0.2	
b Valley	Qrient	Hirakhand Bundia Mine	Iharsuguda	UG	0.95	0.95	0.23	0.18	0.19	0.20	0.20	0.20	0.22	0.22	0.22	0.22	

MCL has ambitious production capacity expansion plans

Odisha

БНА			FY22 Actua	al Despat	ch (MTPA)	F	FY25-26 1 BT Plan (MTPA)				FY29-30 Anticipated Dispatch (MTPA)				
Area	Linked Mines	Rail	RCR	Pure Road	MGR & Others	Total	Rail	RCR	Pure Road	MGR & Others	Total	Rail	RCR	Pure Road	MGR & Others	Total
IB Valley	Samaleshwari & Lajkura	7.68	0.00	1.42	0.00	9.10	17.81	0.00	1.69	0.00	19.50	17.81	0.00	1.69	0.00	19.50
Lakhanpur	Lakhanpur, Belpahar & Lilari	20.45	0.00	3.65	4.00	28.10	34.19	0.00	1.81	0.00	36.00	37.99	0.00	2.01	0.00	40.00
Basundhara & Mahalaxmi	Kulda, Garjanbahal, Siarmal, Basundhara (W) Extn	20.01	0.00	16.83	0.00	36.84	48.60	0.00	23.00	0.00	71.60	79.50	0.00	7.50	0.00	87.00
Orient	Hirakhand-Bundia , Orient 1,2,3	0.00	0.00	0.24	0.00	0.24	0.82	0.00	0.00	0.00	0.82	0.78	0.00	0.00	0.00	0.78
IB Valley & B	asundhara CF	48.14	0.00	22.14	4.00	74.04	101.42	0.00	26.50	0.00	127.92	136.08	0.00	11.20	0.00	147.28
Lingaraj	Lingaraj OCP	18.89	0.00	2.21	0.00	21.10	18.89	0.00	1.11	0.00	20.00	17.00	0.00	0.00	0.00	17.00
Bhubaneswari, Kaniha, Jaganath, Bharatpur, Hingula, Talcher, Balabhadra, Subhadra	Bhubaneswari, Ananta, Kaniha, Jaganath, Bharatpur, Hingula, Nandira, Balram, Balabhadra, Subhadra	48.90	0.00	23.13	9.24	81.27	123.3	0.00	13.31	10.5	147.08	145.3	0.00	15.7	10.50	172.00
Talch	ner CF	67.79	0.00	25.34	9.24	102.36	142.2	0.00	14.42	10.5	167.08	162.8	0.00	15.7	10.50	189.00
Total MCL		115.93	0.00	47.48	13.24	176.41	248.6	0.00	40.92	10.5	295.00	298.88	0.00	26.9	10.50	336.28

MCL's despatch is progressing towards higher share of rail from current 66% to a target of 88% by FY30. Ensuring that the evacuation capacity exists is a crucial aspect of the holistic logistics policy.

As pure road despatches would decline from ~47 MTPA to ~27 MTPA (a decrease of 20 MTPA), no new NH and SH level road infrastructure are envisaged. ²⁶

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Non-CIL blocks Pipeline in Odisha – Talcher Region

Odish
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odish	A		[Details of	Non-Cil blocks in Talcher Re	gion			
	#	Name of the Block	Block Owner	PRC	Operational Status	Proposed Loading Point	EUP and other remarks	Actual FY23 Production	Actual FY22 Production
	1	Naini	The Singareni Collieries Co Ltd	10	Not operational (Expected to Produce 5 MTPA in FY24)	Jarpada Railway Station (Mine to Station via SH-63)	Singareni Thermal Power Plant, Telangana, 1185 Kms from the mine	0	0
	2	Utkal E, Utkal D	NALCO	4	Utkal-E Operational, Utkal- D Non-Operational	Angul Railway Siding, feed via MCRL inner corridor	CPP Nalco, Angul, Odisha, 42 Kms from the mine	0	0
	3	Baitrani West	GMDC	15	Not operational	MCRL corridor using Angul Railway Siding, Angul-Budhapank-Paradip line for coastal shipping	Commercial sales, EUP not decided yet	0	0
	4	New Patrapara (Surrendered)	The Singareni Collieries Co Ltd	15	Not operational	MCRL corridor using Angul Railway Siding, Angul-Budhapank-Paradip line for coastal shipping	Commercial sales, EUP not decided yet (Surrendered)	0	0
	5	Mandakini	Karnataka Power Corporation Ltd.	7.5	Not operational	Angul Railway Siding and Coastal shipping from Paradip to New Mangalore Port	Ballari TPS Unit-1, Yeramarus TPS Unit-1 & 2, Karnataka, 1477 & 1556 Kms respectively	0	0
	6	Radhikapur East	EMIL Mines and Mineral Resources Ltd	5	Not operational	Jarpada Railway Station (50 kms from mine)	Commercial Sales, EUP not fixed	0	0
	7	Radhikapur West	Vedanta Ltd	6	Not Operational	Jarpada Railway Station (10 kms from mine)	Jharsuguda Plant, 173 Kms from the mine	0	0
	8	Chandrabila	TANGEDCO	10	Not Operational	Talcher Railway Station (20 Kms from mine)	ETPS (660), Ennore SEZ (2x660) Udangudi Stage – 1 (2x660). 2087, 1359 and 3002 Kms from the mine respectively	0	0
	9	Brahmani	The Orissa Minerals Development Co. Ltd.	NA	Not Operational	Block is under exploration ph	ase, Mining Plan not prepared	0	0
	10 Sarapal-Nuapara Odisha Mineral Development Co Ltd		-	Not Operational	block vide letter dated 09.11.2020	0	0		
	Total PRC			72.5					

Other than those listed above, Utkal-C with 3.37 MTPA PRC of G-12 Grade coal was allotted to JSPL @ 45% FPO, Bankhul partially explored block of G-12 grade coal was allotted to JSPL @ 15.25% FPO. Chendipada and generated for kere and the second second block of G-12 Grade coal was allotted to JSPL @ 15.25% FPO. Chendipada and Generated for kere and the second second block of G-12 Grade coal was allotted to JSPL @ 15.25% FPO. Chendipada and Generated for kere and the second s

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Non-CIL blocks Pipeline in Odisha – Talcher Region – Upcoming 7th Tranche

Odisha		
OD SHA	Details of Non-CIL blocks in Talcher Region – Upcoming 7 th Tranche Auctions – Explored Block	S
#	Name of the Block	PRC
1	Kosala West (Eastern Part)	1
2	Kosala East (Western Part)	1
3	Machhakata (Revised)	30
4	North of Arkhapal Srirampur	12
5	Ramchandi Promotion Block (Revised)	12
6	Saradhapur North (Revised)	6
Total PRC		62 MTPA

Other than the already auctioned and allotted blocks, 6 explored blocks with a cumulative PRC of ~62 MTPA are also up for auctions under the upcoming 7th Tranche of Auctions. These blocks will lead to additional load of ~62 MTPA or 43 R/d coal traffic in rail lines of Odisha.

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Non-CIL blocks Pipeline in Odisha – IB-Valley Region

			Details o	of Non-Cil blocks in	IB-Valley Region			
#	Name of the Block	Block Owner	PRC	Operational Status	Proposed Loading Point	EUP and other remarks	Actual FY23 Production	Actual FY22 Production
1	Dulanga	NTPC Ltd	7	Operational	Dedicated MGR system under construction	Darlipalli TPS, Odisha, 32 Kms from the mine	7	5.29
2	Manoharpur	Odisha Coal & Power Limited	8	Operational	Himgir Railway Siding, dedicated line	OPGCL TPS, Odisha, 47 Kms from the mine	8	5.24
3	Manoharpur Dip Side	Odisha Coal & Power Limited	8	Not operational	Himgir Railway Siding	Commercial sales, EUP not decided yet, coastal shipping also possible via Jharsuguda- Sambalpur-Budhapank- Paradip	0	0
4	Talabira II & III	NLC	20	Operational	Lapanga Railway Siding (40 Kms from the mine). Sambalpur-Angul-Budhapank-Cuttack railway line to Paradip Port	NLC Tamil Nadu TPS, NLC Talabira TPP, 1571 Kms and 5 Kms from the mine respectively	10	6.34
5	Talabira I	GMR Chhattisgarh Energy Limited (Currently under legal dispute)	3	Not- Operational - Under development	Lapanga Railway Siding (40 Kms from the mine).	Ballari TPS Unit-1, Yeramarus TPS Unit-1 & 2, Karnataka, 1477 & 1556 Kms respectively	0	0
6	Jamkhani	Vedanta Ltd	2.6	Not- Operational	Himgir Railway Siding (30 Kms from the mine). Himgir-Jharsuguda Rd Railway line	Jharsuguda, 57 Kms from the mine	0.2	0
7	Kuraloi A North	Vedanta Ltd	8	Not Operational	Belpahar Railway Station (1 kms from mine). Belpahar-Jharsuguda Rd Railway line	Jharsuguda, 35 Kms from the mine and for commercial sales	0	0
otal PRC			56.6				25.20	16.87

Other than those listed above, Bijahan with 5.26 MTPA PRC of G-11 Grade coal was allotted to Mahanadi Mines & Minerals @ 14% FPO and Meenakshi Block with 12 MTPA PRC of G-12 Grade Coal was allotted to Hindalco Industries Limited @ 10.25% FPO.

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Origin – Destination Cluster Mapping for Odisha

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²⁵²⁸⁹⁷O-D³Source cluster Mapping – Despatch of Coal from Odisha: FY22 snapshot

All figures in million tonnes



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~87 MTPA is conducted and presented in the next sections

Odisha to Chhattisgarh total Rail Despatch in FY22 = 14.33 Million Tonnes Jharsuguda Rd, Belpahar, Kharsia, Champa, Akaltara, Baradwar **IB-Valley** Coalfields Bilaspur Bhatapara Talcher Coalfields Raipur Angul Talcher

Major Coal Consuming Districts of Chhattisgarh: 2030 (Estimated)

>15 MTPA Coal Consumption Raipur, Raigarh, Durg

5-10 MTPA Coal Consumption Korba, Bilaspur

1-5 MTPA Coal Consumption Janjgir-Champa, Bijapur-Dantewada- • Na Generated from eOffice by N RAJESWARA RAO, MOC-S©(MRF), Cellsvite)OC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46 PM

Expected Load from Odisha to Chhattisgarh main trunk lines (Excluding load from other states on this line) Chhattisgarh's Coal Demand 2022 ~ 134.2 MTPA Chhattisgarh's Coal Demand 2030 ~ 179.3 MTPA Rail Supply by Odisha 2022 ~ 14.33 MTPA Rail Supply by Odisha 2030 ~ 4 MTPA FY22 **FY30** Traffic Traffic (Tonnes) Rakes / Day Rakes / Day (Tonnes) From То 2022 2022 2030 2030 Talcher Angul 1835057.3 1.3 46140.1 0.03 Jharsuguda Road 1835057.3 1.3 46140.1 0.03 Angul Jharsuguda Road Belpahar 0.03 1835057.3 1.3 46140.1 Belpahar (IB Section) 13392287.2 10411672.2 2.78 Kharsia 4 7119702.9 1995561.7 2.78 Kharsia Champa 4 1995564.0 Bilaspur 7058585.1 2.2 1.42 Champa 574866.2 Bhatapara (Raipur Section) 2.2 0.41 Bilaspur 3112378.9 Bhatapara (Raipur Section) Raipur 2990778.2 2.1 302610.4 0.22 Jharsuguda Jn 9773766.8 6.96 Kharsia 2849891.66 2.0

- Major Consumers in Chhattisgarh sourcing coal from MCL include ACC Bhatapara plant, Sipat STPS, NTPC Sail, Raipur Energen, KSK Mahanadi, DB power, RKM Energen, Korba STPS, BALCO, Lara TPS, Jindal Steel and Power Ltd, Raigarh Energy, JSPL, Mahendra Sponge etc.
- From a O-D cluster perspective, **Block GP IV/1,2,3 & Sector-1 (28 MTPA)**, have been allotted to **Jindal Power limited**, which currently sources ~ 1.1 MTPA from MCL.. In future JPL's reliance on MCL is not foreseen due to captive supply capabilities.
- NAC also despatched 1.65 Million Tonnes to NTPC Lara via road in FY22.

²⁵²⁸⁹O-D'Source cluster Mapping – Chhattisgarh's power plants to reduce reliance on Odisha

Name of TPS	Utility	IB-Valley	Talcher	Total Odisha	All figu SECL	ires in mil Captive	lion tonnes Others	Total Coal Consumed	Estimated Coal Consumption (FY30)	Supply from IB- Valley 2030	Supply from Talcher 2030	Odisha's Supply in FY30	Sourced from SECL/Captive
BALCO TPP	BALCO	0.01	0.00	0.01	5.29	0.00	0.00	5.31	7.62	0	0	0	7.62
O.P.Jindal Super TPP (Stage-I)	JINDAL POWER LIMITED	4.09	0.05	4.15	0.00	0.00	0.00	4.15	6.52	0.00	0.00	0.00	6.52
TAMNAR TPP	JINDAL POWER LIMITED	1.37	0.00	1.37	5.91	0.29	0.29	7.86	16.19	0.00	0.00	0.00	16.19 (GP iv/1,2,3, Sector-I + SECL)
KMPCL - NARIYARA	KSK MAHANADI POWER COMPANY LIMITED	0.57	0.08	0.65	4.34	0.00	0.86	5.85	9.61	1.40	0.04	1.42	8.19
BHILAI PP - III	NTPC - SAIL POWER COMPANY LIMITED (NTPC-JV)	0.40	0.23	0.62	1.48	0.00	0.56	2.66	3.11	0.00	0.00	0.00	3.11
R.K.M. POWERGEN PVT	. R.K.M. POWERGEN PVT. LTD	0.09	0.00	0.09	3.55	0.00	1.62	5.27	9.07	0.00	0.00	0.00	9.07
RAIPUR TPP	RAIPUR ENERGEN LIMITED	0.44	1.47	1.92	1.17	0.00	3.11	6.19	7.89	0.00	0.00	0.00	7.89
SKS POWER GENERATION (CH) LTD.	SKS POWER GENERATION (CHHATTISGARH) LIMITED	0.13	0.00	0.13	1.09	0.00	0.01	1.23	3.65	0.00	0.00	0.00	3.65
LARA SUPER TPS	NTPC LTD.	5.04	1.66	6.70	0.27	0.00	0.83	7.81	9.04	0.00	0.00	0.00	9.04 (Talaipalli)
RAIGARH TPP	RAIGARH ENERGY GENERATION LIMITED	1.51	0.69	2.20	0.56	0.00	0.00	2.77	3.69	2.57	0.00	2.57	1.12
DB POWER	DB POWER LIMITED	2.11	0.42	2.53	3.94	0.00	0.00	6.47	7.40	0.00	0.00	0.00	7.40
KORBA SUPER	NTPC LTD.	0.03	0.00	0.03	13.92	0.00	0.00	13.95	14.04	0.00	0.00	0.00	14.04
SIPAT SUPER	NTPC LTD.	0.43	0.00	0.43 20.83	13.56 55.10	0.00 0.29	0.10 7.37	14.09 83.59	16.27 114.10	0.00 3.99	0.00 0.04	0.00 4.03	16.27 110.07

• It has been assumed that due to increase in availability of coal from SECL, only power plants with binding FSAs with MCL would be sourcing coal from MCL and remaining power plants would prefer SECL's coal due to proximity of assets to SECL mines. Therefore, plants such as DB Power, Raipur Energen, OP Jindal, Bhilai PP, NTPC Lara etc. would stop sourcing coal from MCL altogether. Jindal Power will have sufficient captive capacity by SY30 and would stop sourcing coal from MCL.

Generated from Traffiles to woold such that working so (NRRP CPATA lago ali (Brock (Inst Mand Raigarty Region) + which would further reduce MCL's IB Valley despatch potential.

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ^{2528976/2023} CPIAM O-D Source cluster Mapping – Odisha to Madhya Pradesh



other states on this line)												
MP's Coal Demand 2 Rail Supply by Odisha 2	022 ~ 84.33 MTPA 022 ~ 2.13 MTPA	MP's Coal Demand 2030 ~ 110.20 MTPA Rail Supply by Odisha 2030 ~ 7.436 MTPA										
FY22	2	FY30										
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030							
Talcher	Angul	110740.2	0.08	0.0	0.00							
Angul	Jharsuguda Road	110740.2	0.08	0.0	0.00							
Jharsuguda Road	Belpahar	110740.2	0.08	3336000	2.37							
Belpahar (IB Section)	Kharsia	722762.0	0.51	7432035.7	5.29							
Kharsia	Champa	722762.0	0.51	7432035.7	5.29							
Champa	Bilaspur	722762.0	0.51	7432035.7	5.29							
Bilaspur	Anuppur	313273.9	0.22	6790035.7	4.83							
Anuppur	Burhar	313273.9	0.22	6790035.7	4.83							
Burhar	New Katni	313273.9	0.22	6790035.7	4.83							
New Katni	Jabalpur	225493.4	0.16	6790035.7	4.83							
Jabalpur	Gadarwara (Itarsi section)	225493.4	0.16	0.0	0.00							
Bilaspur	Raipur	409488.1	0.29	642000.0	0.46							
Raipur	Gondiya	409488.1	0.29	642000.0	0.46							
Gondiya	Nainpur	409488.1	0.29	642000.0	0.46							
Nainpur	Chindawar (towards Amla)	409488.1	0.29	642000.0	0.46							

from Odicha to Madhya Dradach

Major consumers include NTPC Gadarwara, Khargone, MB power and Jhabua Power.

₀₂₃ • 4:46</sub> Supply from Meenakshi Block to Hindalco's Mahan Smelter (~3.45 MTPA) considered under this mapping for FY30

²⁵²⁸⁹C-D Source cluster Mapping – Only 2 Power plants to source coal from Odisha in FY30

All figures in million tonnes

Name of TPS	Utility	IB-Valley	Talcher	Total Odisha	SECL	NCL	Others	Total Coal Consumed	Estimated Coal Consumption (FY30)	Supply from IB- Valley 2030	Supply from Talcher 2030	Odisha's Supply in FY30	Sourced from SECL/NCL Others
JHABUA POWER LIMITED	JHABUA POWER LIMITED	0.41	0.00	0.41	1.65	0.50	0.00	2.55	2.73	0.64	0.00	0.64	2.09
ANUPPUR TPS	MB POWER (MADHYA PRADESH) LIMITED	0.00	0.09	0.09	4.77	0.17	0.40	5.44	5.59	0.00	0.00	0.00	5.59
GADARWARA SUPER	NTPC LTD.	0.59	0.02	0.62	0.53	2.60	1.40	5.14	6.83	0.00	0.00	0.00	6.83
KHARGONE SUPER THERMAL POWER STATION	NTPC LTD.	1.02	0.00	1.02	0.80	2.00	0.02	3.84	5.29	3.336	0.00	3.336	1.954
Tota	al			2.13	7.75	5.26	1.83	16.97	20.44	3.976	0.00	3.976	16.464

It has been assumed that due to increase in availability of coal from SECL, and limited from NCL, only power plant with binding FSA with MCL would be sourcing coal from MCL and remaining power plants would prefer SECL's and NCL's coal due to proximity of **as**sets to SECL and NCL mines. Therefore, apart from Jhabua Power and NTPC Khargone, Generated front horitigations with binding FSA with MCL altogether.



²⁵²⁸⁹ O-D Source cluster Mapping – Slight increase of supplies from Odisha to Maharashtra

All figures in million tonnes

Name of TPS	Utility	IB-Valley	Talcher	Total Odisha	SECL	WCL	Others	Total Coal Consumed	Estimated Coal Consumption (FY30)	Supply from IB- Valley 2030	Supply from Talcher 2030	Odisha's Supply in FY30	Sourced from WCL/SECL Others
TIRODA	ADANI POWER MAHARASHTRA LTD.	0.75	0.06	0.81	6.72	3.53	3.12	14.18	15.20	1.03	0.00	1.03	14.17
CHANDRAPUR	MSPGCL	0.01	0.00	0.01	0.61	6.90	4.04	11.57	15.84	0.00	0.00	0.00	15.84 (To be partially supplied by GP-III – 23.6 MTPA PRC)
KHAPARKHEDA	MSPGCL	2.43	0.31	2.73	0.46	2.90	0.11	6.20	8.18	3.57	0.31	3.88	4.30
MOUDA SUPER TPS	NTPC LTD.	1.27	0.38	1.66	0.39	3.98	2.66	8.69	11.60	0.21	0.00	0.21	11.40
SOLAPUR SUPER TPS	NTPC LTD.	0.00	0.24	0.25	0.00	1.27	1.74	3.25	5.94	2.83	0.00	2.83	3.11
	Total			5.46	8.19	18.58	11.67	43.90	56.76	7.64	0.31	7.95	48.82

• It has been assumed that due to increase in availability of coal from SECL and WCL, only power plants with binding FSAs with MCL would be sourcing coal from MCL and remaining power plants would prefer SECL's and WCL's coal due to proximity of assets to SECL mines. Therefore, while some supplies are envisaged from Tiroda, Khaparkheda, Mouda and Solapur Power Plants, no despatch is envisaged to MSPGCL's Chandrapur Power Plant

• Adani Power's Tiroda and NTPC's Mouda power plant, which are sourcing some quantities from SECL's Raigarh area, could be replaced by MCL's IB-Valley supplies. Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46 PM



Expected Load from O	disha to Punjab & other states	Haryana main t s on this line)	runk lines	(Excluding	load from
Pb & Hr Coal Demand 202 Rail Supply by Odisha 2022	2 ~ 33.01 MTPA ~ 5.12 MTPA	Pb & Hr Coal Rail Supply b	Demand 2 y Odisha 20	2030 ~ 43.1 130 ~ 11.47	.3 MTPA ' MTPA
FY22			FY	30	
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030
Jharsuguda Jn	Belpahar	799687.82	0.57	7467895.4	5.31
Belpahar	Kharsia	5124253.2	3.65	11817674.2	8.41
Kharsia	Champa	5124253.2	3.65	11817674.2	8.41
Champa	Bilaspur	5124253.2	3.65	11817674.2	8.41
Bilaspur	Anuppur	5124253.2	3.65	11817674.2	8.41
Anuppur	Katni	5124253.2	3.65	11817674.2	8.41
Katni	Bina Malkhedi	5124253.2	3.65	11817674.2	8.41
Bina Malkhedi	Gwalior	5124253.2	3.65	11817674.2	8.41
Gwalior	Mathura	5124253.2	3.65	11817674.2	8.41
Mathura	Delhi-SJ	4884409.7	3.48	8662538.6	6.16
Delhi-SJ	Rohtak	4884409.7	3.48	8662538.6	6.16
Rohtak	Barwala	325286.7	0.23	900000.0	0.64
Rohtak	Jakhal	4540123.5	3.23	7720000.0	5.49
Talcher	Angul	1457844.0	1.04	3449778.8	2.45
Angul	Jharsuguda Road	1457844.0	1.04	3449778.8	2.45
Jharsuguda Road	Belpahar	1457844.0	1.04	3449778.8	2.45
Mathura	Alwar	239843.5	0.17	3155135.6	2.25
Alwar	Rewari	239843.5	0.17	3155135.6	2.25
Rohtak	Rajupra	18999.5	0.01	42538.6	0.03
Rajupra	Roop Nagar	18999.5	0.01	42538.6	0.03

• Major Consumers in Punjab & Haryana sourcing coal from MCL include Rajiv Gandhi TPS, Indira

Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46 Gandhi TPS, Talwandi Sabo, and Ambuja Cements

²⁵²⁸⁹O-D Source cluster Mapping – Slight increase of supplies from Odisha to Punjab & Haryana

All figures in million tonnes

Name of TPS	Utility	IB-Valley	Talcher	Total Odisha	ECL + CCL	NCL	Others	Total Coal Consumed	Estimated Coal Consumption (FY30)	Supply from IB- Valley 2030	Supply from Talcher 2030	Odisha's Supply in FY30	Sourced from ECL/CCL/NCL Others
INDIRA GANDHI	ARAVALI POWER CORPORATION PVT LTD	0.04	0.20	0.24	0.87	2.29	1.26	4.67	6.90	3.16	0.00	3.16	3.74
RAJIV GANDHI TPP,Hissar	HPGCL	0.33	0.00	0.33	0.29	1.17	0.06	1.85	5.77	0.90	0.00	0.90	4.87
TALWANDI SABO POWER LTD	TALWANDI SABO POWER LTD.	2.54	2.00	4.54	1.01	0.20	0.27	6.02	9.24	4.31	3.41	7.72	1.52
Tot	tal			5.11	2.17	3.67	1.59	12.54	21.90	8.37	3.41	11.78	10.12

• Power Plants such as Rajiv Gandhi TPP and Talwandi Sabo Power currently source coal from MCL and have long standing FSAs (Post NCDP) which are valid and binding till FY30. It is assumed that these power plants will keep on sourcing coal from MCL as per the commitments and the increase in coal consumption throughout P&H would be sourced by NCL, ECL, CCL and MCL.

• For Indira Gandhi TPS, it is assumed that Supplies from IB-Valley would be highly competitive with sourcing from ECL, CCL and BCCL and hence with the right volume push and Generated from Particle Symarketing McL, Would on Release the Source of the Sour

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹⁷⁶ O-D Source cluster Mapping – Odisha to Rajasthan

Odisha to Rajasthan total Rail Despatch in FY22 = 59,243 Tonnes Jharsuguda Rd, Belpahar, Kharsia, Champa, Bilaspur, Anuppur, Burhar, New Katni, Bina malkhedi, Guna, Kota IB-Valley Coalfields Adani Power Rajasthan Angul Talcher Talcher Coalfields Major Coal Consuming Districts of Rajasthan: 2030 (Estimated) >15 MTPA Coal Kota Consumption 5-10 MTPA Coal

Expected Load from C	Ddisha to Rajasthan r on thi	main trunk lines is line)	5 (Excluding	load from other states
Rajasthan's Coal Demand	2022 ~ 28.86 MTPA	Rajasthan's Co	pal Deman	d 2030 ~ 59.1 MTPA
Rail Supply by Odisha 202	22 ~ 0.06 MTPA	Rail Supply	y by Odisha	2030 ~ 0 MTPA
FY22			FY	30
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic Rakes / Day (Tonnes) 2030 2030
Talcher	Angul	59243.0	0.04	No volume is
Angul	Jharsuguda Road	59243.0	0.04	expected to flow
Jharsuguda Road	Belpahar	59243.0	0.04	from Odisha to
Belpahar (IB Section)	Kharsia	59243.0	0.04	Kajastnan in
Kharsia	Champa	59243.0	0.04	rature.
Champa	Bilaspur	59243.0	0.04	SECL, NCL and
Bilaspur	Annupur	59243.0	0.04	RRVUNL Captive
Annupur	Burhar	59243.0	0.04	blocks in
Burhar	New Katni	59243.0	0.04	would be
New Katni	Bina Malkhedi	59243.0	0.04	sufficient to cater
Bina Malkhedi	Guna	59243.0	0.04	to demand of
Guna	Kota	59243.0	0.04	Rajasthan

Major Consumers in Rajasthan sourcing coal from MCL include Adani Power Rajasthan and Lakheri Cement Ltd

Generated from eOfficensy MREDEWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46

Bundi, Baran, Jaipur, Bikaner

Consumption

1-5 MTPA Coal

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Odisha to Uttar Pradesh



UP Cool Demand 2022 ~ 87 MTPA UP Cool Demand 2030 ~ 114 MTPA Rail Supply by Odisha 2022 ~ 0.97 MTPA Rail Supply by Odisha 2030 ~ 4.02 MTPA From To Traffic (Tonnes) 2022 Traffic (Tonnes) 2030 Rakes / Day 2022 Heron To Traffic (Tonnes) 2023 Rakes / Day 2022 Traffic (Tonnes) 2030 Rakes / Day 2030 Jharsuguda In Belpahar 462665.39 0.33 4015707.3 2.86 Champa Bilaspur 434317.6 0.31 Only Meenakshi's supply to Hindalco's Renukoot Katni Bilaspur Anuppur 434317.6 0.31 Only Meenakshi's supply to Hindalco's Renukoot Katni Bilaspur Angul 389259.4 0.28 this traffic. Angul Jharsuguda Road 389259.4 0.28 this traffic. Satna Bansapahar 150602.8 0.11 Pradesh will stop entirely In future as production of CLL and other captive blocks is ramped up Markedi 1992.7 0.36 4015707.3 2.86 Ratri Stona Bansapahar <td< th=""><th>expected Loa</th><th>id from Odisha t</th><th>states on th</th><th>n main trunk his line)</th><th>IINES (Excluding</th><th>load from other</th></td<>	expected Loa	id from Odisha t	states on th	n main trunk his line)	IINES (Excluding	load from other	
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Jharsuguda Jn Rourkela 509029.7 0.36 4015707.3 2.86 Rourkela Ranchi 509029.7 0.36 4015707.3 2.86 Ranchi Lohardaga Bs 509029.7 0.36 4015707.3 2.86 Lohardaga Bs Tori 509029.7 0.36 4015707.3 2.86 Lohardaga Bs Tori 509029.7 0.36 4015707.3 2.86 Garwa Rd Jn S09029.7 0.36 4015707.3 2.86 Garwa Rd Jn Son Nagar 509029.7 0.36 0.0 0.00 Son Nagar Varanasi 509029.7 0.36 0.0 0.00 Varanasi Jaunpur 509029.7 0.36 0.0 0.00 Jaunpur Akbarpur 509029.7 0.36 0.0 0.00 Akbarpur 509029.7 0.36 0.0 0.00	Prayagraj	Unchahar	154193.6	0.11			
Rourkela Ranchi 509029.7 0.36 4015707.3 2.86 Ranchi Lohardaga Bs 509029.7 0.36 4015707.3 2.86 Lohardaga Bs Tori 509029.7 0.36 4015707.3 2.86 Lohardaga Bs Tori 509029.7 0.36 4015707.3 2.86 Garwa Rd Jn S09029.7 0.36 4015707.3 2.86 Garwa Rd Jn Son Nagar 509029.7 0.36 0.0 0.00 Son Nagar Varanasi 509029.7 0.36 0.0 0.00 Son Nagar Varanasi 509029.7 0.36 0.0 0.00 Varanasi Jaunpur 509029.7 0.36 0.0 0.00 Jaunpur Akbarpur 509029.7 0.36 0.0 0.00 Akbarpur 509029.7 0.36 0.0 0.00	Jharsuguda Jn	Rourkela	509029.7	0.36	4015707.3	2.86	
Ranchi Lohardaga Bs 509029.7 0.36 4015707.3 2.86 Lohardaga Bs Tori 509029.7 0.36 4015707.3 2.86 Tori Garwa Rd Jn 509029.7 0.36 4015707.3 2.86 Garwa Rd Jn Son Nagar 509029.7 0.36 4015707.3 2.86 Garwa Rd Jn Son Nagar 509029.7 0.36 0.0 0.00 Son Nagar Varanasi 509029.7 0.36 0.0 0.00 Varanasi Jaunpur 509029.7 0.36 0.0 0.00 Varanasi Jaunpur 509029.7 0.36 0.0 0.00 Jaunpur Akbarpur 509029.7 0.36 0.0 0.00 Akbarpur Tanda 509029.7 0.36 0.0 0.00	Rourkela	Ranchi	509029.7	0.36	4015707.3	2.86	
Lohardaga Bs Tori 509029.7 0.36 4015707.3 2.86 Tori Garwa Rd Jn 509029.7 0.36 4015707.3 2.86 Garwa Rd Jn Son Nagar 509029.7 0.36 0.0 0.00 Son Nagar Varanasi 509029.7 0.36 0.0 0.00 Varanasi Jaunpur 509029.7 0.36 0.0 0.00 Varanasi Jaunpur 509029.7 0.36 0.0 0.00 Jaunpur Akbarpur 509029.7 0.36 0.0 0.00 Akbarpur 509029.7 0.36 0.0 0.00	Ranchi	Lohardaga Bs	509029.7	0.36	4015707.3	2.86	
Tori Garwa Rd Jn 509029.7 0.36 4015707.3 2.86 Garwa Rd Jn Son Nagar 509029.7 0.36 0.0 0.00 Son Nagar Varanasi 509029.7 0.36 0.0 0.00 Son Nagar Varanasi 509029.7 0.36 0.0 0.00 Varanasi Jaunpur 509029.7 0.36 0.0 0.00 Jaunpur Akbarpur 509029.7 0.36 0.0 0.00 Akbarpur 509029.7 0.36 0.0 0.00	Lohardaga Bs	Tori	509029.7	0.36	4015707.3	2.86	
Garwa Rd Jn Son Nagar 509029.7 0.36 0.0 0.00 Son Nagar Varanasi 509029.7 0.36 0.0 0.00 Varanasi Jaunpur 509029.7 0.36 0.0 0.00 Varanasi Jaunpur 509029.7 0.36 0.0 0.00 Jaunpur Akbarpur 509029.7 0.36 0.0 0.00 Akbarpur Tanda 509029.7 0.36 0.0 0.00	Tori	Garwa Rd Jn	509029.7	0.36	4015707.3	2.86	
Son Nagar Varanasi 509029.7 0.36 0.0 0.00 Varanasi Jaunpur 509029.7 0.36 0.0 0.00 Jaunpur Akbarpur 509029.7 0.36 0.0 0.00 Jaunpur Akbarpur 509029.7 0.36 0.0 0.00 Akbarpur Tanda 509029.7 0.36 0.0 0.00	Garwa Rd Jn	Son Nagar	509029.7	0.36	0.0	0.00	
VaranasiJaunpur509029.70.360.00.00JaunpurAkbarpur509029.70.360.00.00AkbarpurTanda509029.70.360.00.00	Son Nagar	Varanasi	509029.7	0.36	0.0	0.00	
JaunpurAkbarpur509029.70.360.00.00AkbarpurTanda509029.70.360.00.00	Varanasi	Jaunpur	509029.7	0.36	0.0	0.00	
Akbarpur Tanda 509029.7 0.36 0.0 0.00	Jaunpur	Akbarpur	509029.7	0.36	0.0	0.00	
	Akbarpur	Tanda	509029.7	0.36	0.0	0.00	

• Major Consumers in Uttar Pradesh sourcing coal from MCL Lalitpur power generation, NTPC O4:46 PQadri, NTPC Tanda, NTPC Unchahar, Hindalco Renukoot and Prayagraj Power generation ltd

Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46 PQadri, NTPC Tanda, NTPC Unchahar, Hindalco Renukoot and Prayagra

²⁵²⁸⁹⁷⁶ O-D Source cluster Mapping – Odisha will not supply to Power plants in Uttar Pradesh

All figures in million tonnes

Name of TPS	Utility	IB-Valley	Talcher	Total Odisha	SECL	CCL	NCL	Captive & Others	Total Coal Consumed	Estimated Coal Consumption (FY30)	Supply from IB- Valley 2030	Supply from Talcher 2030	Odisha's Supply in FY30	Sourced from CCL/NCL/Captive Others
LALITPUR	LALITPUR POWER GENERATI ON COMPAN Y LIMITED	0.09	0.04	0.13	0.95	2.66	2.36	0.00	5.87	5.87	0.00	0.00	0.00	5.87 (SECL, NCL and CCL)
DADRI	NTPC LTD.	0.05	0.10	0.15	0.00	0.63	2.02	0.90	3.70	6.65	0.00	0.00	0.00	6.65 (~ 2MTPA by NCL, remaining by CCL, ECL) 5.53 (Pakri
FEROZE GANDHI UNCHAHAR	NTPC LTD.	0.00	0.15	0.15	0.00	3.33	0.00	2.05	5.53	5.53	0.00	0.00	0.00	Barwadih - 4 MTPA and Remaining by BCCL - 2.3 MTPA
TANDA	NTPC LTD.	0.44	0.06	0.51	0.00	3.38	0.00	1.57	5.46	6.07	0.00	0.00	0.00	FSA in place) 6.07 (To be fed by Kerandari (6 MTPA))
PRAYAGRAJ TP	PRAYAGR AJ POWER SGENERATI ON COMPAN Y LTD.	0.00	0.03	0.03	0.00	0.16	7.25	0.00	7.22	7.22	0.00	0.00	0.00	7.22 (To be fed entirely by NCL)
		0.00	0.00	0.97	0.95	10.16	11.63	42 4.51	27.77	31.33	0.00	0.00	0.00	31.33

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²⁵²⁸⁹⁷O-D²Source cluster Mapping – Odisha to Jharkhand



			on this lin	ne)		om other states
J	Iharkhand Coal Den Rail Supply by Odis	n and 2022 ~ 52.3 1 ha 2022 ~ 0.88 M T	1 MTPA TPA	Jharkhand Coal Rail Supply by	Demand 2030 Odisha 2030 ~ (~ 68.35 MTPA 0.185 MTPA
		FY22			FY30	
	From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030
	Talcher	Angul	150808.24	0.11	0.0	0.00
	Angul	Jharsuguda Jn	150808.2	0.11	0.0	0.00
	Jharsuguda Jn	Rourkela	1039500.6	0.74	185000.0	0.13
	Rourkela	Sini	1039500.6	0.74	185000.0	0.13
	Sini	Kandra	874241.9	0.62	0.0	0.00
	Belpahar	Jharsuguda Jn	265817.6	0.19	149523.1	0.11
	Sini	Tatnagar	165258.7	0.12	185000.0	0.13

Major Consumers in Jharkhand sourcing coal from MCL are TATA Power and Adhunik Power

In Future, supply from Odisha will only be to TATA Power (Jojobera TPS) i.e. 185,000 TPA from Ib-∯alley as per Shakti B(ii) which is valid till 2031.

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Odisha to West Bengal



Metaliks

²⁵²⁸⁹⁷⁶ O-D Source cluster Mapping – Odisha's supply to WB Power plants will reduce

All figures in million tonnes

Name of TPS	Utility	IB-Valley	Talcher	Total Odisha	ECL	BCCL	Captive Blocks	Others	Total Coal Consumed	Estimated Coal Consumption (FY30)	Supply from IB-Valley 2030	Supply from Talcher 2030	Odisha's Supply in FY30	Sourced from ECL/BCCL/Capt ive Others	Possible Sources for Others
Budge Budge Generating Station	CESC Ltd.	0.00	0.25	0.25	0.94	0.31	1.54	0.20	3.24	3.50	0.00	0.00	0.00	3.50	Sarisatolli Coal Block
DURGAPUR	Damodar Valley Corporation	0.64	0.00	0.64	0.02	0.02	0.00	0.00	0.25	1.96	0.28	0.00	0.28	1.68	ECL, BCCL and CCL
MEJIA	Damodar Valley Corporation	1.33	0.18	1.51	1.47	6.24	0.00	0.46	9.67	12.42	0.00	0.00	0.00	12.42	ECL, BCCL and CCL and Tubed block of DVC (6 MTPA)
DURGAPUR STEEL	Damodar Valley Corporation	1.05	0.30	1.34	1.84	0.54	0.00	0.40	4.12	5.38	1.41	0.00	1.41	3.97	ECL, BCCL and CCL
THE DURGAPUR PROJECTS POWER STATION	THE DURGAPUR PROJECTS LIMITED	0.45	0.00	0.45	0.26	0.61	0.49	0.00	1.78	3.05	0.53	0.00	0.53	2.52	1 MTPA Trans Damodar and remaining by ECL/BCCL
HALDIA ENERGY LIMITED	HALDIA ENERGY LIMITED	0.52	1.95	2.48	0.04	0.00	0.00	0.42	2.94	3.30	0.00	2.57	2.57	0.73	ECL and CCL
FARAKKA SUPER	NTPC LTD.	0.53	0.07	0.59	5.97	0.29	0.00	1.26	8.10	10.98	0.00	0.00	0.00	10.98	ECL (9 MTPA) & CCL
KOLAGHAT	WBPDCL	1.07	0.50	1.56	0.32	0.42	0.19	0.88	3.37	7.98	0.00	0.00	0.00	7.98	
BANDEL	WBPDCL	0.13	0.54	0.67	0.25	0.00	0.24	0.23	1.39	2.12	0.00	0.00	0.00	2.12	Pachwara North Baiora
SANTALDIH TPS	WBPDCL	0.42	0.00	0.42	0.03	1.04	0.34	0.95	2.78	2.85	0.00	0.00	0.00	2.85	Bajora North, Gangaramchak
BAKRESWAR	WBPDCL	0.13	0.02	0.15	1.03	0.58	3.22	0.21	5.20	5.28	0.50	0.00	0.50	4.78	C
Hiranmaye	Hiranmaye Energy Limited	0.41	0.47	0.88	0.00	0.00	0.00	0.00 45	0.88	1.90	0.75	0.75	1.50	0.40	ECL, BCCL and CCL
Generated from eOffic	ce by N RAJESW	/ARA RAO, M	40C-SO(NRR	- 1949.	OC-SO	01004L	on 17/059223 04:46	_{PM} 5.02	43.71	60.72	3.48	3.32	6.80	53.93	

²⁵²⁸⁹⁷⁶ O-D Source cluster Mapping – Odisha to Bihar



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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹⁷O-D²Source cluster Mapping – Odisha to Andhra Pradesh

Odisha to Andhra Pradesh total Rail Despatch in FY22 = Expected Load from Odisha to AP main trunk lines (Excluding load from other states on this 25.94 Million Tonnes (Including 8.44 MT RSR) IB-Valley Coalfields Talcher Coalfields Belpahar, Jharsuguda Rd, Sambalpur, Titlagarh, Lanjigarh Rd, Therubali This Analysis excludes Coastal Shipping Routes Analysis Talcher, Budhapank, Rajatgarh, Barang, Khurda Rd, Chatrapur, Naupada Jn, Vizianagaram, Duvvada, Samlkot Jn, Vijayawada, Kondapalli, Motumari Vellore Major Coal Consuming Districts of AP: 2030 (Estimated) Krishna, Visakhapatnam >15 MTPA Coal Consumption 10-15 MTPA Coal Consumption Kadapa

5-10 MTPA Coal Consumption NA

Nellore, East Godavari, Vizianagaram, 1-5 MTPA Coal Consumption

		line)			
AP Coal Deman	d 2022 ~ 40.16 M	ТРА	AP Coal Den	nand 2030 ~ 64	1.10 MTPA
Rail Supply by Odish	na 2022 ~ 25.94 M	ТРА	Rail Supply by (Odisha 2030 ~ 5	0.44 MTPA
	FY22			FY30	
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030
Jharsuguda Jn	Jharsuguda Rd	264497	0.19	7856208	5.59
Belpahar	Jharsuguda Rd	3526125	2.51	477945	0.34
Jharsuguda Rd	Sambalpur	3790622	2.70	8334152	5.93
Sambalpur	Titlagarh	3790622	2.70	8334152	5.93
Titlagarh	Lanjigarh Rd	3790622	2.70	8334152	5.93
Lanjigarh Rd	Therubali	3790622	2.70	8334152	5.93
Therubali	Vizianagram Jn	3790622	2.70	8334152	5.93
Vizianagram Jn	Duvadda	15785032	11.23	14981009	10.66
Duvadda	Samalkot Jn	13508212	9.61	4199572	2.99
Samalkot Jn	Vijayawada Jn	13508212	9.61	4093900	2.91
Vijayawada Jn	Nellore	4906393	3.49	0	0.00
Vijayawada Jn	Guntur	3149117	2.24	0	0.00
Guntur	Yerraguntla	3149117	2.24	0	0.00
Talcher	Budhapank	7375536	5.25	11585302	8.24
Budhapank	Rajatgarh	7375536	5.25	11585302	8.24
Rajatgarh	Barang	7375536	5.25	11585302	8.24
Barang	Khurda Rd	7375536	5.25	11585302	8.24
Khurda Rd	Chatrapur	7375536	5.25	11585302	8.24
Chatrapur	Naupada Jn	7375536	5.25	11585302	8.24
Naupada Jn	Vizianagram Jn	7375536	5.25	11585302	8.24
Samalkot Jn	Rajahmundry	47198	0.03	105672	0.08
Vijayawada Jn	Kondapalli	3945695	2.81	4093900	2.91
Kondapalli	Motumari Jn	608718	0.43	1781900	1.27
Vizianagram Jn	Mallividu	95995	0.07	273851	0.19

Major Consumers in AP sourcing coal from MCL are APGENCO, Sembcorp Energy, Andhra paper,

Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CHAM, MOC-SO(NRR). Ministry Of COAL on 17/05/2023 04:46 RINL, Simhadri STPS, Steel Exchange, Vizag TPS and other consumers of coastal shipping

²⁵²⁸⁹O-D Source cluster Mapping – Significant increase in coastal shipping to Andhra Pradesh

All figures in million tonnes

Name of TPS	Utility	IB-Valley	Talcher	RSR	Total Odisha	SCCL	ECL	Others	Total Coal Consumed	Estimated Coal Consumption (FY30)	Supply from IB- Valley 2030	Supply from (Talcher 2030	Ddisha RSR 2030	Odisha's Supply in FY30	Sourced from SCCL and Imports
Dr. N.T.R TPS	APGENCO	1.27	3.52	0.00	4.79	4.51	0.00	0.00	9.20	9.74	0.61	1.70	0.00	2.31	7.42
RAYALSEEMA SRI	APGENCO	0.00	0.00	1.40	1.40	2.15	0.00	1.57	5.12	8.63	0.00	0.00	7.36	7.36	1.27
DAMODARAM SANJEEVAIAH	APPDCL	0.00	0.00	2.28	2.28	0.05	0.00	0.00	3.62	7.12	0.00	0.00	7.12	7.12	0.00
Vizag TPP	HINDUJA NATIONAL POWER CORPORATION LIMITED	0.03	0.07	0.00	0.10	0.00	0.00	0.11	0.21	5.40	0.00	4.62	0.00	4.62	0.78
SIMHADRI SUPER	NTPC LTD.	5.36	2.62	0.00	7.99	0.20	0.95	0.00	8.94	10.78	7.24	3.54	0.00	10.78	0.00
PAINAMPURA M TPP	SEMBCORP ENERGY INDIA LTD.	0.00	0.00	4.76	4.76	0.00	0.00	0.89	5.65	5.57	0.00	0.00	5.57	5.57	0.00
SGPL TPP	SEMBCORP ENERGY INDIA LTD.	2.31	2.31	0.00	4.62	0.00	0.00	0.00	4.62	5.57	0.00	0.00	5.57	5.57	0.00
		8.97	8.52	8.44	25.94	6.90	0.95	2.58	37.36	52.82	7.86	9.86	25.63	43.35	9.47
Dr Narla Tata Rao TPS St-V	APGENCO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.55	0.00	0.00	3.55	3.55	0.00
Sri Damodaram Sanjeevaiah TPP St-II	APPDCL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.55	0.00	0.00	3.55	3.55	0.00
Total										59.92	7.86	9.86	32.73	50.44	9.47

• 2 Under-Construction power plants namely APGENCO's Dr NTR TPS Unit-V and Sri Damodaram Sanjeevaiah TPP St-II to consume ~7.10 Million Tonnes of Coal for which FSA's are in place with MCL. Coastal Shipping will be more cost effective than transporting directly via rail to these power plants.

From the overall increase in demand from power sector in Andhra Pradesh, majority will be catered by mines of MCL (either via coastal shipping or complete Rail mode) and the remaining to be catered by SCCL. Some quantities being sourced by ECL and SCCL by NTPC Simhadri could also be substituted with MCL's coal. This substitution has been Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM_MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46 PM assumed under the analysis. 1 – 2 Million Tonnes of Imported coal for blending would happen for these power plants.

²⁵²⁸⁹⁷O^{-D³}Source cluster Mapping – Significant increase in coastal shipping to Tamil Nadu

All figures in million tonnes

Name of TPS	Utility	IB-Valley	Talcher	RSR	Total Odisha	SCCL	ECL	Others (Incl Imports)	Total Coal Consumed	Estimated Coal Consumption (FY30)	Supply from IB- Valley 2030	Supply from Talcher 2030	Odisha RSR 2030	Odisha's Supply in FY30	Sourced from SCCL & Imports
MUTIARA	COASTAL ENERGEN PVT LTD	. 0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.80	5.04	0.00	0.00	0.50	0.50	4.54
IL & FS TAMIL NADU POWER COMPANY LTD.	IL & FS TAMIL NADU POWER COMPANY LIMITED	0.00	0.00	0.00	0.00	0.00	0.00	1.67	1.67	4.14	0.00	0.00	0.41	0.41	3.73
NLC TAMILNADU POWER Ltd	NLC TAMIL NADU POWER LIMITED	0.00	0.00	0.97	0.97	0.00	0.42	1.65	3.04	4.66	0.00	0.00	4.66	4.66	0.00
VALLUR	NTPC TAMILNADU ENERGY COMPANY LTE (NTECL) (NTEC- IV)	0.00	0.02	5.57	5.59	0.31	0.06	0.00	5.96	7.24	0.00	0.00	7.24	7.24	0.00
TUTICORIN	TANGEDCO	0.00	0.12	3.27	3.39	0.00	0.01	0.88	4.28	5.80	0.00	0.00	4.61	4.61	1.19
METTUR-I	TANGEDCO	0.00	1.32	3.16	4.48	1.28	0.00	0.00	3.86	4.33	0.00	0.00	3.05	3.05	1.28
METTUR-II NORTH CHENNAI-I & I	TANGEDCO TANGEDCO	0.00	1.32 0.24	1.82 5.18	1.82 5.42	0.00	0.00	0.00 0.76	2.16 6.18	3.01 9.20	0.00	0.00	2.32 9.20	2.32 9.20	0.69
		0.00	1.71	19.96	21.67	2.87	0.49	5.76	27.95	43.43	0.00	0.00	32.00	32.00	11.43
Ennore SCTPP Udangudi STPP St-I	P TANGEDCO TANGEDCO									5.12 5.07	0.00 0.00	0.00 0.00	3.68 3.65	3.68 3.65	1.44 1.42
North Chenna TPP St-III	ⁱ TANGEDCO									2.94	0.00	0.00	0.00	0.00	2.94
										56.56	0.00	0.00	39.32	39.32	17.24

• 2 Under-Construction power plants namely APGENCO's Dr NTR TPS Unit-V and Sri Damodaram Sanjeevaiah TPP St-II to consume ~7.10 Million Tonnes of Coal for which FSA's are in place with MCL. Coastal Shipping will be more cost effective than transporting directly via rail to these power plants.

 From the overall increase in demand from power sector in Andhra Pradesh, majority will be catered by mines of MCL (either via coastal shipping or complete Rail mode) and the remaining to be catered by SCCL. Some quantities being sourced by ECL and SCC49 NTPC Simhadri could also be substituted with MCL's coal. This substitution has been Generated from segmed working out-sook Mailing working anter december of these power plants.

²⁵²⁸⁹⁷O-D²Source cluster Mapping – Odisha to Tamil Nadu



		line)		ng load from other states on this				
TN Coal Deman	d 2022 ~ 27.95 M	ΙΤΡΑ	AP Coal De	mand 2030 ~ 56.56 MTPA				
Rail Supply by Odisł	na 2022 ~ 21.12 N	ΙΤΡΑ	A Rail Supply by Odisha 2030 ~ 47.					
	FY22	FY30						
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030 Rakes / Day 203				
Belpahar	Jharsuguda Rd	470862	0.34					
Jharsuguda Rd	Sambalpur	593711	0.42					
Sambalpur	Titlagarh	593711	0.42					
Titlagarh	Lanjigarh Rd	593711	0.42	The subtraction				
Lanjigarh Rd	Therubali	593711	0.42	i ne entire				
Therubali	Vizianagram Jn	593711	0.42	transportation from				
Vizianagram Jn	Duvadda	2844396	2.02					
Duvadda	Samalkot Jn	2844396	2.02	MCL to Tamil Nadu's				
Samalkot Jn	Vijayawada Jn	2844396	2.02					
Vijayawada Jn	Chirala	2844396	2.02	Power plants would				
Chirala	Venkatachalam	2844396	2.02	chift to coactal				
Venkatachalam	Gudur	2844396	2.02	SHITE LO COASIAI				
Gudur	Renigunta	2262748	1.61	shinning in Near				
Renigunta	Arakkonam	2262748	1.61					
Arakkonam	Katpadi	2262748	1.61	Future.				
Katpadi	Jolarpettai	2262748	1.61					
Jolarpettai	Karuppur	2262748	1.61					
Talcher	Budhapank	2250685	1.60	This has been				
Budhapank	Rajatgarh	2250685	1.60					
Rajatgarh	Barang	2250685	1.60	covered separately				
Barang	Khurda Rd	2250685	1.60					
Khurda Rd	Chatrapur	2250685	1.60	under the Coastal				
Chatrapur	Naupada Jn	2250685	1.60	Shipping Applycic				
Naupada Jn	Vizianagram Jn	2250685	1.60					
Gudur	Ennore	458799.9	0.33					
Ennore	Milavittan	113785.1	0.08					
Jharsuguda Jn	Jharsuguda Rd	122848.6	0.09					
Ennore	Tiruvallur	122848.6	0.09					

• Major Consumers in TN sourcing coal from MCL are TANGEDCO, NTPC-TECL Vallur, NLC Tamil Nadu

Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04: POWer Ltd, Coastal Energen, OPG Power Generation Pvt Ltd. and other consumers of coastal shipping

²⁵²⁸⁹⁷⁶ O-D Source cluster Mapping – Odisha to Karnataka



on this line)										
ataka Coal Den	nand 2022 ~ 18.43	МТРА	Karnataka Coal Demand 2030 ~ 21.84 MTPA							
Supply by Odish	na 2022 ~ 0.593 MT	PA	Rail Supply by Odisha 2030 ~ 0 MTPA							
	FY22		FY30							
From	То	Traffic (Tonnes) 2022	Rakes / Day 202	2 Traffic (Tonnes) 2 2030 Rakes / Day 2030						
Talcher	Budhapank	440297	0.31							
Budhapank	Rajatgarh	440297	0.31	MCL's Talcher would						
Rajatgarh	Barang	440297	0.31	only supply to KPCL						
Barang	Khurda Rd	440297	0.31	Raichur via Coastal						
Khurda Rd	Chatrapur	440297	0.31	Shinning						
Chatrapur	Naupada Jn	440297	0.31	Suibbing.						
Naupada Jn	Vizianagram Jn	440297	0.31							
zianagram Jn	Duvadda	440297	0.31	Supply to NTPC's Kudgi						
Duvadda	Samalkot Jn	440297	0.31	Thermal Power plant						
Samalkot Jn	Vijayawada Jn	440297	0.31	highly unlikely as supply						
jayawada Jn	Guntur	423292	0.30							
Guntur	Dhone Jn	423292	0.30	from SCCL would be at						
Dhone Jn	Guntakal Jn	423292	0.30	almost half the distance						
Guntakal Jn	Raichur	423292	0.30	to assets as compared						
jayawada Jn	Kondapalli	17005	0.01							
Kondapalli	Motumari Jn	17005	0.01	to supply by MCL.						
Aotumari Jn	Warangal	17005	0.01							
Warangal	Bibinagar	17005	0.01	Coastal Shipping						
Bibinagar	Vikarabad	17005	0.01	covered in separate						
Vikarabad	Wadi	17005	0.01	soction						
Wadi	Hotgi	17005	0.01							
Hotgi	Kudgi	17005	0.01							

Major Consumers in Karnataka sourcing coal from MCL are KCPL's Raichur and Kudgi assets

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²⁵²⁸⁹O-D Source cluster Mapping – MCL would only Supply to Raichur and Ballari via Coastal shipping

All figures in million tonnes

Name of TPS	6 Utility	IB-Valley	Talcher	RSR	Total Odisha	SCCL	WCL	Captive Blocks	Others (Incl Imports)	Total Coal Consumed	Estimated Coal Consumption (FY30)	Supply from IB- Valley 2030	Supply from Talcher 2030	Odisha RSR 2030	Odisha's Supply in FY30	Sourced from SCCL, WCL, Captive & Imports
VIJAYANAGAF	JSW R ENERGY LIMITED	0.00	0.00	0.00	0.00	1.55	0.00	0.00	0.00	1.34	1.34	0.00	0.00	0.00	0.00	1.34
RAICHUR POWER PLANT	KPCL	0.00	0.35	0.23	0.58	1.85	0.00	1.11 (Durgapur — Raigarh)	1.21	4.74	4.75	0.00	0.00	4.75	4.75	0.00
BALLARI	KPCL	0.00	0.00	0.00	0.00	1.69	0.13	0.96 (Baranj Blocks in MH)	1.59	4.36	4.38	0.00	0.00	4.38	4.38	0.00
KUDGI	NTPC LTD.	0.00	0.02	0.00	0.02	3.25	0.00	0.00	0.71	3.97	5.55	0.00	0.00	0.00	0.00	5.55
		0.00	0.00	0.00	0.59	8.33	0.13	2.07	3.50	14.42	16.03	0.00	0.00	9.13	9.13	6.90
Yelanhaka CCPP	KPCL										1.60	0.00	0.00	0.00	0.00	1.60 ((Baranj Blocks in MH)
					Tota	al					17.62	0.00	0.00	9.13	9.13	8.49
		TPS					Mandak	ini – Talcher (FY3	0)		MCL-Ta	cher (FY30)		Tota	l (FY30)	
	Raichur 3.74					1.01		2	4.75							
	Ballari 3.76					0.62		2	4.38							
Total RSR from Paradeep 7.50			.63		g	9.13										

• NTPC's Kudgi as well as JSW's Vijayanagar would most probably source from SCCL. Playts such as Yeramarus TPP and Udupi don't source coal from MCL and are dependent on Generated from SCCL fraged Jm RAJESWATA is the Rodies of KRE ted to Monthly further, as SCAL has plays to expand coal production to 100 MTPA by FY30.

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Coastal Shipping traffic from MCL

Consumers	Paradip Port (MT)	Dhamra Port (MT)	Vizag Port (MT)	Total Despatch: FY22 (In MT)
APGENCO/Rayalseema TPP (Andhra Pradesh)	1.40	0	0	1.40
APPDCL-Sri Damodaran Sanjeevaih TPS (Andhra Pradesh)	2.28	0	0	2.28
NTECL-VALLUR (Tamil Nadu)	4.27	1.3	0	5.57
NLC-TPL (Tamil Nadu)	0.97	0	0	0.97
KPCL (Karnataka)	0.23	0	0	0.23
TANGEDCO (Tamil Nadu)	10.92	0	2.5	13.42
SEMBCORP ENERGY INDIA LTD (Andhra Pradesh)	4.75	0	0	4.75
Total	24.84	1.3	2.5	28.64

Consumer / Utility	Paradeep	Dhamra	Vizag	Total	Port of Entry
APGECO - RAYALSEEMA	7.36	0	0	7.36	Krishnapatnam
APPDCL - SRI DAMODARAM SANJEEVAIAH	7.12	0	0	7.12	Krishnapatnam
Sembcorp Energy - PAINAMPURAM TPP	5.57	0	0	5.57	Krishnapatnam
Sembcorp Energy - SGPL TPP	5.57	0	0	5.57	Krishnapatnam
APGECO - Dr Narla Tata Rao TPS St-V	3.55	0	0	3.55	Krishnapatnam
APPDCL - Sri Damodaram Sanjeevaiah TPP St- II	3.55	0	0	3.55	Krishnapatnam
Coastal Energen - MUTIARA	0.50	0	0	0.50	Tuticorin
IL & FS TAMIL NADU POWER COMPANY LTD.	0.41	0	0	0.41	Tuticorin
NLC TAMILNADU POWER Ltd	2.24	0	0	2.24	Tuticorin
VALLUR - NTECL	5.94	1.30	0	7.24	Ennore
TUTICORIN / TANGEDCO	2.11	0	2.50	4.61	Tuticorin
METTUR-I / TANGEDCO	3.05	0	0	3.05	Tuticorin
METTUR-II / TANGEDCO	2.32	0	0	2.32	Tuticorin
NORTH CHENNAI-I & II / TANGEDCO	9.20	0	0	9.20	Tuticorin
KPCL - Raichur TPP	1.01	0	0	1.01	Krishnapatnam
KPCL - Ballari TPP	0.62	0.00	0.00	0.62	Krishnapatnam
	60 13	1 30	2 50	63 93	



²⁵²⁸⁹C²⁰²³Source cluster Mapping – Coastal Shipping traffic on major trunklines - MCL



²⁵²⁸⁹⁷O²⁰²³ Source cluster Mapping – Coastal Shipping traffic on major trunklines: Non-CIL

Captive Block / Owner	Name of Power Plant	Total Despatch: FY22 (In MT)	Total Despatch: FY30 (In MT)	Port of Entry	Type of Asset
Mandakini (Talcher) / KPCL	Raichur & Ballari	0	7.5 (3.74 + 3.76)	Krishnapatnam	Hinterland
Chandrabila (Talcher) / TANGEDCO	Ennore SCTPP, Udangudi STPP Unit 1,2	0	7.327 (3.68+3.65)	Ennore	Coastal
Talabira II & III (IB Valley) / NLC	NLC New Tamil Nadu TPS	1.417	2.42	Tuticorin	Coastal
Total		1.417	17.25		



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²⁵²⁸⁹O-D Source cluster Mapping – Potential INR ~50 Cr per annum savings for KPCL by RSR

Raichur Thermal Power Plant of KPCL					
Costal Shipping	Ennore	Krishnapatnam			
Rail Freight Talcher to Paradip Port	706.1	706.1			
Handling Charges at Paradip Port	190.0	190.0			
Sea Freight	480.0	434.0			
Handling Charges at Unloading Port	442.0	200.0			
Rail Freight from unloading port to Raichur TPS	1468.6	1289.4			
Total Transportation Cost (INR/T)	3286.8	2819.5			
All Rail from Mandakini Coal Block in Talcher	_				
Talcher to Raichur TPS All Rail Freight (INR/T) Total Estimated supply from Mandakini = 3.74 Million To	nnes	2854.95			

Estimated INR 13.25 Crore per Annum Saving in Transportation cost for Raichur Plant if RSR is adopted rather than all rail. eoffice by N RAJESWARA RAD, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46 PM Generated from

Ballari Thermal Power Plant of KPCL					
Costal Shipping	Ennore	Krishnapatnam			
Rail Freight Talcher to Paradip Port	706.1	706.1			
Handling Charges at Paradip Port	190.0	190.0			
Sea Freight	480.0	434.0			
Handling Charges at Unloading Port	442.0	200.0			
Rail Freight from unloading port to Ballari TPS	1289.4	1106.7			
Total Transportation Cost (INR/T)	3107.5	2636.8			
All Rail from Mandakini Coal Block in Talcher Talcher to Ballari TPS All Rail Freight (INR/T) Total Estimated supply from Mandakini = 3.76 Million To	onnes	2725.91			

Estimated INR 33.49 Crore per Annum Saving in Transportation cost for Ballari Plant if RSR is adopted rather than all rail.

²⁵²⁸⁹⁷O-D²Source cluster Mapping – Coastal Shipping traffic on major trunklines – Non-CIL





Major Coal Consuming Districts of Odisha: 2030 (Estimated)



	this line)							
Odisha's Coal Dem	and 2022 ~ 99 M	Odisha's Coal Demand 2030 ~ 147 MTPA						
Rail Supply by Odish	a 2022 ~ 32.35 M	ΤΡΑ	Rail Supply by C	Ddisha 2030 ~ 1 .	24.82 MTPA			
	FY22			FY30				
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030			
Talcher	Talcher Rd	17982389.19	12.80	43808733.7	31.18			
Talcher Rd	Angul	8353929.433	5.94	27082782.4	19.27			
Angul	Sambalpur	17990410.85	12.80	32297324.0	22.98			
Sambalpur	Jharsuguda Rd	23784871.7	16.93	56103364.5	39.92			
Talcher	Budhapank	10056519.4	7.16	51516987.7	36.66			
Budhapank	Rajatgarh	14036430.9	9.99	51247719.5	36.47			
Rajatgarh	Kapilas Rd	6307313.1	4.49	6267866.2	4.46			
Kapilas Rd	Jakhapura	6307313.1	4.49	6267866.2	4.46			
Jakhapura	Bhadrak	95932.7	0.07	214786.8	0.15			
Bhadrak	Rupsa	47966.3	0.03	107393.4	0.08			
Rupsa	Balasore	47966.3	0.03	107393.4	0.08			
Rajatgarh	Barang	95051.8	0.07	212814.7	0.15			
Barang	Cuttack	95051.8	0.07	212814.7	0.15			
Cuttack	Paradeep	95051.8	0.07	212814.7	0.15			
Sambalpur	Titlagarh	4267163.9	3.04	3169307.0	2.26			
Titlagarh	Lanjigarh Rd	4218577.0	3.00	3169307.0	2.26			
Lanjigarh Rd	Therubali	1345372.9	0.96	754036.4	0.54			
Therubali	Tikiri	1345372.9	0.96	754036.4	0.54			
Jharsuguda Jn	Rourkela	4063470.8	2.89	9097837.1	6.47			
Rourkela	Sini	4063470.8	2.89	9097837.1	6.47			
Belpahar	Jharsuguda Rd	19002492.2	13.52	46065370.5	32.78			
Jharsuguda Rd	Jharsuguda Jn	3973020.9	2.83	12963703.1	9.23			

Expected Load from Odisha-to-Odisha main trunk lines (Excluding load from other states or

Coal traffic from Non-CIL blocks of Vedanta (Jamkhani, Kuraloi A North, & Radhikapur West), Nalco (Utkal E & D), JSPL (Utkal C, B1 & B2), and Hindalco (Meenakshi) have also be considered, given that they would be operating at PRC by 2030.

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²⁵²⁸⁹⁷O²O²O²Source cluster Mapping – Odisha's supply to in-state power plants to increase

All figures in million tonnes

Name of TPS	Utility	IB-Valley	Talcher	Total Odisha	Others	Total Coal Consumed	Estimated Coal Consumption (FY30)	Supply from IB- Valley 2030	Supply from Talcher 2030	Odisha 2030	By Rail
GMR KAMALANG A TPP	GMR KAMALAN G GA ENERGY LTD. IINDAI	0.06	5.24	5.29	0.16	5.46	6.15	0.00	6.15	6.15	6.15
DERANG TPP	INDIA THERMAL POWER LIMITED	0.00	5.86	5.86	0.00	5.86	6.64	0.00	6.64	6.64	6.64
TALCHER - KANIHA	NTPC LTD.	0.00	16.88	16.88	0.00	16.88	18.51	0.00	18.51	18.51 (7.5 MTPA supply by MGR, remaining by rail)	11.01
IB VALLEY	ODISHA POWER GENERATI ON CORPORA TION LIMITED	8.01	0.00	8.01	0.00	8.01	11.05	11.05	0.00	11.05 (Supply by Captive blocks – Manoharpur + Dip- side by MGR)	0.00
VEDANTA LTD TPP	VEDANTA LIMITED	1.91	0.48	2.40	0.16	2.56	7.74	6.18	1.56	7.74	7.74
DARLIPALI SUPER TPS	NTPC LTD.	6.56	0.00	6.56	0.00	6.56	7.52	7.52	0.00	7.52 (Supply by Dulanga)	0.00
		16.54	28.46	45.00	0.33	45.33	57.61	24.75	32.85	57.61	31.54
Talcher TPI St-III	NTPC	0.00	0.00	0.00	0.00	0.00	6.36	6.36	0.00	6.36	6.36
		0.00	0.00	0.00	0.00	0.00	63.97	31.11	32.85	63.97	37.90

• OPGC (Pre-NCDP FSA with MCL of 2.7 MTPA would expire in 2029, unlikely to be renevial of and NTPC Darlipalli would be completely reliant on their own captive blocks for fuel Generated second style for NTRAE's Warks here. Knowlise (as nows Talket Not State of the second sec

²⁵²⁸⁹⁷O^{-D³}Source cluster Mapping – Vedanta's sourcing from MCL and Captive blocks

Vedanta Ltd (jharsugud	a and Lanjigarh)	2030 Revised traffic estimates for the O-D pair (Jharsuguda)			
Vedanta Ltd sourced ~ 15113355.53 Tonnes from MCL in FY22		MCL Mahalaxmi, Basundhara (Sardega) & Jamkhani to Jharsuguda - Vedanta Ltd			
Around ~ 10 12 MT was s	Around ~ 10.12 MT was sourced via rail whereas ~5 MT was sourced via read		То	Traffic (Tonnes)	Rakes / Day
		Jharsuguda Jn	Jharsuguda Rd	4657167.825	3.31
		Jharsuguda Rd	damal (Sambalpur Sec	4657167.825	3.31
Vedanta Lanjigarh sourced ~ 0.5 MTPA (0.25 from IB valley and 2 from Talcher)		MCL Lakhanpur, I	B Valley Area and Basundh	ara (kanika) to Unkno	own
		From	То	Traffic (Tonnes)	Rakes / Day
Vedanta Ltd has many co	edanta Ltd has many commercial/captive coal blocks in Pipeline		Jharsuguda Rd	13513858.59	9.62
In IB Valley CF		Jharsuguda Rd	damal (Sambalpur Sec	13513858.59	9.62
Coal Block	PRC (2030)	Radhika	pur West Surplus Coal Sup	oly to Unknown	
Jamkhani	2.6	From	То	Traffic (Tonnes)	Rakes / Day
Kuraloi A North	8	Talcher	Talcher Rd	3742440.368	2.66
Total IB-Vedanta	10.6	Talcher Rd	Angul	3742440.368	2.66
		Angul	Sambalpur	3742440.368	2.66
In Talchor CE		Talcher	Budhapank	3742440.368	2.66
		Budhapank	Rajatgarh	3742440.368	2.66
Coal Block	PRC (2030)				
Radhikapur West	6				
		2030 Revised traffic estimates for the O-D pair (Laniigarh)			

Vedanta Ihars	Vedanta Ibarsuguda Coal consumption Sourcing Portfolio for 2030		MCL Lable server ID Valley, Descending of (here the Valley) to the last server					
vedanta shars		Sourcing Fortiono for 2050			MCL Lakhanpur, IB Valley, Basundhara (kanika) to Unknow			
		Source Quantit	ty (MTPA)		From	То	Traffic (Tonnes)	Rakes / Day
2022	2030	Basundhara Area - Ca	2.6		Belpahar	Jharsuguda Rd	340270.59	0.24
14.5	16.31	Other IB-Valley - Cap	8		Jharsuguda Rd	Sambalpur	340270.59	0.24
		MCL IB-Valley	5.71		Sambalpur	Titlagarh	340270.59	0.24
					Titlagarh	Lanjigarh Rd	340270.59	0.24

Radhikapur West to Lanjigarh and MCL Talcher to Unknown То

Talcher Rd

Angul

Sambalpur

Titlagarh

Lanjigarh Rd

Budhapank

Rajatgarh

From **Talcher**

Talcher Rd

Angul Sambalpur

Titlagarh

Talcher

Budhapank

Traffic (Tonnes)

2353004.69

2353004.69

2353004.69

2075000.00

2075000.00

278004.69

278004.69

Rakes / Day

1.67 1.67

1.67

1.48

1.48

0.20

0.20

Vedanta Lanjigarh Coal consumption		Sourcing Portfolio for 2030				
		Source	Quantity (MTPA)			
2022	2030	Talcher - Captive	2.075			
0.40	2.075	Assuming expansio	n of refinery to 5 MTPA	(0.415 KG coal is consumed per tonne of alumina)		

Remaining Quantity from Radhikapur West to be sold in the open market

3.925 MTPA

1.9625 to be despatched towards Budhapank-Rajatgarh

Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46 PM 1.9625 To be despacthed towards Talcher Rd-Angul-Sambalpur

²⁵²⁸⁹O-D Source cluster Mapping – NALCO's sourcing from MCL and Captive blocks

Nalco (Angul and Damaniadi)	2030 MCL Supply to Other destinations (Currently unknown)					
	MCL Hingula, Bharatpur, Lingaraj, Jagannath, Bhubaneswari to I			Jnknown		
	From	То	Traffic (Tonnes)	Rakes / Day		
Notes Angul coursed & E4E1220 E0 Tennes from MCL in EV22	Talcher	Talcher Rd	1021293.896	0.73		
Naico Aligui Sourceu 5451220.59 Tolliles Holli Mice III Frzz	Talcher Rd	Angul	1021293.896	0.73		
Around ~ 3.021 MT was sourced via rail, ~2.18 MT via MGR, 0.249 MT via Road	Angul	Sambalpur	1021293.896	0.73		
Nalas Angul sourced active superities from Talahan CC	Talcher	Budhapank	1021293.896	0.73		
Naico Angui sourced entire quantitiy from Taicher CF	Budhapank	Rajatgarh	1021293.896	0.73		

Nalco Damanjodi sourced ~ 1060588.99 tonnes from MCL in FY22

Around 52000 was soruced via road from Basundhara and the remaining via rail (out of which 682040.7 soruced from IB va

Vedanta Ltd has many commercial/captive coal blocks in Pipeline

4

Coal Block	PRC (2030)
In Talcher CF	

Utkal E & D (2+2)

	Nalco Angul Coal consumption		Sourcing Portfolio for 2030		
			Source	Quantity (MTPA)	
	2022	2030	Talcher Area Captive	4	
	5.45	10.90	MCL Talcher MGR	2.18	
Smelte	4.72				

Nalco Damanjodi Coal consumption		Sourcing Portfolio for 2030			
		Source	Quantity (MTPA)		
2022	2030	MCL Sardega	0.426		
1.06	1.53	MCL Belpahar/Kanika	0.631		

Refinery Expansion of capacity from 2.275 to 3.27 MCL Talcher 0.470 Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46 PM

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ^{2528976/2023} CPIAM O-D Source cluster Mapping – JSPL's sourcing from MCL and Captive blocks

	2030 Revised traffic estimates for the O-D pair (JSPL Angul)				
JSPL Angui	MCL Talcher and Utkal B1,B2 & C to JSPL Angul and MCL Talcher t			nknown	
	From	То	Traffic (Tonnes)	Rakes / Day	
	Talcher	Talcher Rd	12445933.73	8.86	
JSPL Angul sourced ~ 4485969.46 Tonnes from MCL in FY22	Talcher Rd	Angul	12445933.73	8.86	
Around ~ 0.849 MT was sourced via rail. ~3.64 MTPA sourced via road	Angul	Sambalpur	825933.73	0.59	
	Talcher	Budhapank	825933.73	0.59	
JSPL Angul sourced entire quantitiy from Talcher CF	Budhapank	Rajatgarh	825933.73	0.59	

Almost the entire quantity is sourced from Talcher CF (Only 963.38 Tonnes is sourced via road from Basundhara Area)

JSPL currently has 3 commercial/captive coal blocks in Pipeline

In Talcher CF

Coal Block	PRC (2030)
Utkal-C	3.37
Utkal B1 & B2 (5.5 + 2.2)	8
Total Talcher to JSPL	11.37

JSPL Angul Coal consumption		Sourcing Portfolio for 2030			
		Source	Quantity (MTPA)		
2022	2030	Utkal B1, B2 and C	11.37		
5.53	11.62	MCL Talcher	0.25		

Capacity expansion to 25.2 MTPA from 6 MTPA by 2030, but only Half of it is via BOF route

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹⁷⁶ O-D Source cluster Mapping – Hindalco's sourcing from MCL and Captive blocks

Hindalco

Hindalco Industries Ltd sourced ~ 5146041.05 Tonnes from MCL in FY22	2030 Su	pply from Meenakshi to	o Aditya and Hirakud	
Around ~ 1.347 MT was sourced via rail whereas ~3.799 MT was sourced via road	IB Valley Meenaks	shi Coal Block to Aditya	and Hirakud Smelters -	· Hindalco
Hindalco Smelters, Refineries and CPPs (Except Utkal Alumina) sourced ~ 4.797 MTPA (337926 from IB valley and 1424472.81 from Talcher)	Belpahar	Jharsuguda Rd	4532128.68	3.23
Out of this, 1131685.71 was sourced via Rail and 3665693.1 was sourced via Road	Jharsuguda Rd	Sambalpur	4532128.68	3.23
Utkal Alumina sourced ~ 348622.24 (almost entirely from Talcher)				
Out of this, 214963.76 was sourced via Rail and 133698.48 was sourced via Road				

Hindalco currently has 1 commercial/captive coal block in Pipeline in Odisha

In IB Valley CF	
Coal Block	PRC (2030)
Meenakshi	12

Utkal Alumina Coal	Consumption	Sourcing Portfolio	for 2030					
		Source	Quantity (MTPA)				
2022	2030	Meenakshi	0	Would make more economical s	ense to source from Talcher CF o	of MCL due to logistics cost		
0.88	0.88	MCL Talcher	0.88					
No further capacity expa	nsion plans in near							
Smelter	2022 Capacity	Coal Consumption	State	2030 Capacity	Coal Consumption	Supply From Captive Gare Palma Blocks in Chhattisgarh	Supply from Meenakshi	Remaining supply would be from Jh
Aditya	0.36	4.04	Odisha	0.41	4.61	1.25	3.36	0.00
Mahan	0.36	4.04	MP	0.36	4.04	0	3.45	0.59
Hirakud	0.216	2.43	Odisha	0.216	2.43	1.25	1.18	0.00
Renukoot	0.41	4.61	UP	0.41	4.61	0	4.02	0.59
	1.346	15.12		1.396	15.68 63	2.5	12.00	1.18

²⁵²⁸⁹⁷O-D³Source cluster Mapping – Other Commercial Non-CIL blocks in IB-Valley CF

Option 2: Belpahar – Ib-Valley Coalfields		Option 4: Belpahar – Jharsuguda	Consolidat	Consolidated traffic from 3 Non-CIL blocks in Ib-Valley CF				
Kharsia – Champa – Bila. – Annupur – New Kati	spur ni		Jn – Rourkela – Sini – Purulia - Damodar	From	То	Traffic 2030 (Tonnes)	Rakes/Day	
<u> </u>			lashan thansaide Dd	Belpahar	Kharsia	15420000	10.97	
Sambalpur – Angul – Talcher Rd				Kharsia	Champa	15420000	10.97	
				Champa	Bilapsur	15420000	10.97	
				Bilapsur	Raipur	7710000	5.49	
Optic	n 1: Beipanar – Kna Bilaspur – Raipur	rsia – Champa – - Gondia		Raipur	Gondia	7710000	5.49	
				Bilapsur	Anuppur	7710000	5.49	
				Anuppur	New katni	7710000	5.49	
				Belpahar	Jharsuguda Rd	7710000	5.49	
Owner	Block	PRC (MTPA)	Route Options for	Jharsuguda Rd	Sambalpur	7710000	5.49	
		6 MTPA Commercial (8	• Option 1: Belpahar – Kharsia –	Sambalpur	Angul	7710000	5.49	
Odisha Coal & Power Ltd	Manoharpur Dip Side	MTPA PRC, remaining	Champa – Bilaspur – Raipur - Gondia	Angul	Talcher Rd	7710000	5.49	
	Side	OPGC)	• Option 2: Belpahar – Kharsia –	Talcher Rd	Budhapank	0	0	
Mahanadi Mines &	Biihan	5.26	Champa – Bilaspur – Annupur – New Katni	Budhapank	Rajatgarh	0	0	
Minerals		0.20	• Option 3: Belpahar –	Belpahar	Jharsuguda Jn	7710000	5.49	
NLC	Talabira II & III	20 (17.58 Commercial and 2.42 to NLC New	Jharsuguda Rd – Sambalpur – Angul – Talcher Rd	Jharsuguda Jn	Rourkela	7710000	5.49	
		Tamil Nadu TPS)	Option 4: Belpahar –	Rourkela	Sini	7710000	5.49	
GMDC	Burapahar	6 MTPA Commercial	Jharsuguda Jh – Rourkeia – Sini – Purulia - Damodar	Sini	Purulia	7710000	5.49	
				Purulia	Damodar	7710000	5.49	

As it is not prudent to assume the future EUPs/destination of coal from commercial mines, the estimated traffic has Generated from eOffice theeten distributed on the provide the provided the provided

²⁵²⁸⁹⁷⁶ O-D Source cluster Mapping – Other Commercial Non-CIL blocks in Talcher CF



	Owner	Block	PRC (MTPA)	Route Options for
	GMDC	Baitrani West	15	• Option 1 : Talcher –
	SCCL (Surrendered)	New Patrapara	15	Talcher Rd – Angul – Sambalpur –
	SCCL	Naini	10	Jharsuguda Rd Option 2: Talcher –
E	MIL mines & Minerals	Radhikapur East	5	Budhapank – Rajatgarh – Barang –
	6 Blocks under 7 th Tranche Auctions	6 Blocks under 7 th Tranche Auctions	~62	Cuttack • Option 3: Talcher – Talcher Rd – Angul – Sambalpur – Titlagarh

As it is not prudent to assume the future EUPs/destination of coal from commercial mines, the estimat 🏵 traffic has	
Generated from eoffice been alestival techog wold somand practic large sternart on a level to be block of a system of a pm	

From	То	Traffic 2030 (Tonnes)	Rakes/Day
Talcher	Talcher Rd	96300000.0	68.53
Talcher Rd	Angul	96300000.0	68.53
Angul	Sambalpur	96300000.0	68.53
Sambalpur	Jharsuguda Rd	48150000.0	34.26
Sambalpur	Titlagarh	48150000.0	34.26
Talcher	Budhapank	39400000.0	28.04
Budhapank	Rajatgarh	39400000.0	28.04
Rajatgarh	Barang	39400000.0	28.04
Barang	Cuttack	39400000.0	28.04

Consolidated traffic from 4 Non-CIL blocks in Talcher CF

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹⁷⁶ O-D Source cluster Mapping – Coal Inflow from Paradeep port

Total Coal Imports from Paradip Port Stood at ~24.78 MTPA in FY22

	Total Inflow From Paradip FY22	Volumes (MTPA)	Via Cuttack	Via Haridaspur	From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030
And the second se	State	24.78	14.47	10.31	Paradeep	Cuttack	14472286	10.30	11771716	8.38
	Odisha	17.42	12.22	5.19	Cuttack	Barang	11172286	10 30	11771716	8 38
and the second of the second o	West bengal	2.10		2.10	Cuttack	Darang	14472280	10.50	11//1/10	0.50
	Jharkhand	2.34		2.34	Barang	Rajatgarh	14472286	10.30	11771716	8.38
	Chhattisgarh	2.14	2.14	0	Rajatgarh	Budhapank	8823786	6.28	7177242	5.11
	Bihar	0.51		0.51	Budhapank	Talcher Rd	7076581	5.04	5756071	4.10
Paradeep	Uttar Pradesh	0.14		0.14	Talcher Rd	Angul	7076581	5.04	5756071	/ 10
and the second sec	Madhya Pradesh	0.02		0.02		Aligui	7070581	5.04	5750071	4.10
Highly Utilized	Maharashtra	0.10	0.10		Angul	Sambalpur	4459762	3.17	3627557	2.58
Zone in Odisha	Karnataka	0.01	0.01		Sambalpur	Jharsuguda Rd	4443806	3.16	3614579	2.57
	Assam	0.01		0.01	Jharsuguda Rd	Kharsia	3263046	2.32	2654152	1.89
R	ourkela	Via Harida	aspur towa	rds WB,	Kharsia	Champa	1180760	0.84	960427	0.68
S. /		Jharkhand,	, Bihar, UP,	MP and	Champa	Bilapsur	1180760	0.84	960427	0.68
Bilaspur	~ ·)	Assam		Bilapsur	Raipur	1172782	0.83	953937	0.68
Jharsuguda	🗠 🔒 Harida	ispur			Raipur	Gondia	1124913	0.80	915001	0.65
Gondia	Par	adeep			Gondia	Chandrapur	1124913	0.80	915001	0.65
Chandrapur Sambaipur					Jharsuguda Jn	Rourkela	1180760	0.84	960427	0.68
Raipur					Thermal coa	l imports to de	ecline moderate	ely over long	run due to oking coal i	increased
	Cuttack, Khurda Ro	l, Ganjam,		66	increase mo	derately due t	to lack of domes	stic producti	on of coking	g coal and
<i>Towards Karnataka Composition of the second seco</i>	towards Karne I, MOC-SO(NRR), Ministry	ataka Of COAL on 17	7/05/2023 04:4	6 PM		increase	e in domestic st	eel producti	on	-

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹⁷⁶ C-D Source cluster Mapping – Consolidated Coal Traffic from Odisha to all states

FY22 Actual and FY30 (Estimated) coal traffic in major sections for despatch of coal from Odisha to various destinations							
From	То	Traffic (MT): 2022	Rakes / Day: 2022	Traffic (MT): 2030	Rakes / Day: 2030	Increase in Coal Traffic (Rakes / Day)	
Talcher	Talcher Rd	22.40	15.94	144.04	102.50	+ 86.56	
Talcher Rd	Angul	46.73	33.25	163.75	116.52	+ 83.27	
Angul	Sambalpur	44.11	31.39	151.52	107.82	+ 76.43	
Sambalpur	Jharsuguda Rd	57.81	41.14	137.99	98.20	+ 57.06	
Sambalpur	Titlagarh	11.15	7.94	62.15	44.23	+ 36.29	
Jharsuguda Rd	Kharsia	35.22	25.07	61.88	44.04	+ 18.97	
Kharsia	Champa	21.45	15.27	51.39	36.57	+ 21.30	
Champa	Bilapsur	21.39	15.22	51.39	36.57	+ 21.34	
Bilapsur	Raipur	10.08	7.18	21.81	15.52	+ 8.34	
Bilapsur	Anuppur	7.75	5.51	27.51	19.58	+ 14.06	
Anuppur	New Katni	7.75	5.51	27.51	19.58	+ 14.06	
New Katni	Bina	5.31	3.78	19.66	13.99	+ 10.21	
Jharsuguda Jn	Rourkela	13.79	9.81	29.57	21.04	+ 11.23	
Talcher (Rd + Jn)	Budhapank	74.80	53.23	188.26	133.97	+ 80.74	
Budhapank	Rajatgarh	80.53	57.31	197.08	140.25	+ 82.94	
Rajatgarh	Cuttack	56.97	40.54	143.05	101.80	+ 61.25	
Cuttack	Paradeep	56.97	40.54	145.94	103.85	67 + 63.31	

Major sections are already witnessing significant coal traffic and is estimated to further increase in the coming decade.



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²⁵²⁸⁹ MCL would need to push certain volumes in order to match the production levels

All figures in million tonnes

Destination State	IB Valley (MTPA)	Talcher (MTPA) To	otal MCL Supply via Rail in 2030
Chhattisgarh	3.98	0.05	4.02
Madhya Pradesh	3.98	0.00	3.98
Maharashtra	7.65	0.31	7.95
Punjab & Haryana	8.37	3.45	11.82
Jharkhand	0.00	0.19	0.19
West Bengal	3.48	3.89	7.38
Odisha	43.02	29.82	72.84
Coastal Shipping	2.50	61.43	63.93
Andhra Pradesh	8.33	11.59	19.92
Total for 2030	81.30	110.72	192.02
MCL's 2030 Rail Despatch Plan	136.08	162.8	298.88
Identified Gap	+ 54.78	+ 52.08	+ 106.86
Identified Gap	+ 54.78	+ 52.08	+ 106.86
Rail E-AUCTION Sales @10% of Long-term Sales	- 8.44	- 11.07	- 19.51
Expected FSA COMMITMENT POWER- to GSECL's Ukai and Wanakbori Plants	0	- 1.01	- 1.01
Expected Linkage under SHAKTI B (iii) Long/Medium Term PPA- Tacnhe III	- 2.5	0	- 2.5
Gap still remaining	(+ 44.15	(+40.00)	(+ 84.15)
A Proactive marketin be articulated by the further push surplus from IB-Valley CF. 3 Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAlforn17/05/20230	ng strategy needs to e marketing team to production volumes Strict 68mpetition 04:46 PMnines	~ 25-30 MTPA of Thermal coal from Talcher could be exported to Bangladesh and Sri Lanka by 2030. This would solve the problem for Talcher	This could range from 62 to 84 MTPA for Optimistic or Realistic demand scenarios

^{2528976/2023} GW planned coal based capacities, Bangladesh to scrap cumulative capacity of ~17 GW

Bangladesh's current and upcoming coal based power generation capacity Siliguri • **Planned Capacities** Estimated Annual Coal **Existing Capacity** Capacity (MW) **Requirement (Million Tonnes)** ASS (Uncertain/Scrapped) (Barapukuria Coal Phulbari Coal Project Power Plant) 6000 20.498 Guwahati • (China Gezhouba) ~0.525 GW Patuakali Power Station 2640 9.019 (Ashugani) Rangpur. Patuakali Power Station 1320 4.510 Shillong . (RPCL/NORINCO) Under Sena Kalyan Sangstha Construction 1320 4.510 Power Station (Upcoming) Mirsarai Power Station 1320 4.510 ~5.414 GW (Hangzhou Jinjiang) Silchar • Maheshkali Power Station Mymensingh • 1320 4.510 (Huadian) SYLHET DIVISION BANGLADESH Planned Matarbari Power Station 1200 4.100 Rajshahi• Capacity **Dighipara Power Station** 1000 3.416 ~17.22 GW Matarbari Kohelia Power Agartala Dhaka • 700 2.391 Aizawl • Station Narayanganj • Munshiganj Power Station 400 1.367 Cumilla • **These Planned Capacities** have minimal probability of 17.22 GW 58.83 Million Tonnes Total MIZORAM an• commissioning due to latest INGAL **Under Construction** Estimated Annual Coal announcements of Capacity (MW) Khulna • Capacities **Requirement (Million Tonnes)** Bangladesh's shift away from Barishal • Payra Power Station -1320 Kolkata • coal due to financing and 4.510 Phase 1 Indonesian coal availability Chattogram. Rampal Power Station 1320 4.510 issues etc. Banshkali Power Station laldia. 1224 4.182 (S Alam) Matarbari Power Station 1200 4.100 ~6-7.3 GW **Estimated FY30 Barisal Power Station** 350 1.196 ~2.64 GW **Coal Based Capacity** Total 5.414 GW 18.50 Million Tonnes 69

Gener Steel Of COAL on 17/05/2023 04:46 PM Source: Carbon Brief, Rystad Energy Research and Analysis, Deloitte Analysis

^{2528976/2023/CPIAM} An additional 19-23 Million Tonnes of annual coal export opportunity would exist for international exporters

Bangladesh's current and upcoming coal-based power generation capacity



Gener Steel Of Competitives JON RAGE STORMARTAD, INDIAS OF RR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46 PM Source: Carbon Brief, Rystad Energy Research and Analysis, Deloitte Analysis

^{2528976/2023/CPIAM} Multiple options analyzed to elucidate CIL's coal export economics and price competitiveness with Indonesian exporters



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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) Analyzing landed cost to Bangladesh port for different grades of coal from MCL

Optior	1a: MCL-Paradip-Ch	hatogram			Indonesian Coal Indexed
	G15	G14	G13	G12	Index/Source/Reference Point on ICI3: 4200 GAR
Avg GCV	2950	3250	3550	3850	(USD/T)
Base Price	718	907	990	1073	
Royalty (@14%)	100.52	126.98	138.6	150.22	Index Value (FoB): Average for
DMF (@30%)	30.16	38.09	41.58	45.07	June, approximate (USD/T)
NMET (@2%)	2.01	2.54	2.77	3.00	
Evacuation Facility Charge	50	50	50	50	
Sizing Charges	87	87	87	87	Estimated Promium Charged by
Management Charge	1	1	1	1	Supplier ove the Index (As per 6.675
STC (Estimated average for lead <10 KM)	60	60	60	60	latest Industry Trends) @7.5%
Taxable Ampunt	1048.69	1272.61	1370.95	1469.29	
CGST (@2.5%)	26.22	31.82	34.27	36.73	Estimated EoP Drise Charged
IGST (@2.5%)	26.22	31.82	34.27	36.73	(USD/T) 95.675
GST Compensation Cess	400	400	400	400	(/-/
Toal Ex-works (MCL): INR/Ton	1501.12	1736.24	1839.50	1942.75	Estimated Freight Rate to
Toal Ex-works (MCL): INR/'000kcal	0.51	0.53	0.52	0.50	Bangladesh (USD/T); Panamax 17
Transportation from MCL to Paradip Port	532	532	532	532	benchmark
Port Loading and Handling Cost	201	201	201	201	Insurance Charges taken at
FOB Paradip	2234.05	2469.17	2572.43	2675.68	0.05 USD/T 0.05
Approximate Freight to Chhatogram Port	300	300	300	300	CIF Bangladesh (USD/T) 112.725
CFR Bangladesh: INR/Ton	2534.05	2769.17	2872.43	2975.68	
CFR Bangladesh: INR/'000 Kcal	0.859	0.852	0.809	0.773	CIFBangladesh (INR/'000 Kcal) 2.147

From a landed-cost on an energy basis comparative analysis, the 4 major grades of MCL are well placed to replace Indonesian coal from Bangladesh market and create a long-term sustainable export-oriented coal market

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) Anticipated increase in coastal shipping traffic due to coal exports to Bangladesh



^{2528976/2023/CPIAM} Multiple options analyzed to elucidate CIL's coal export economics and price competitiveness with SA exporters



Gener Steel Of Competitives Jour Rate John Rata B. Indiasd RRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46 PM Source: Carbon Brief, Rystad Energy Research and Analysis, Coal Directory FY20, Deloitte Analysis

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) Analyzing landed cost to Sri-Lanka for different grades of coal from MCL

	Option 1a: MCL-Paradip-C	hhatogram	Distant Des 5-D 4000		
	G15	G14	G13	G12	Index/Source/Reference Point NAR / 5100 GAR (USD/T)
Avg GCV	2950	3250	3550	3850	
Base Price	718	907	990	1073	
Royalty (@14%)	100.52	126.98	138.6	150.22	South Africa (FOB) Richards Bay: Average Sentember 2022 139 57
DMF (@30%)	30.16	38.09	41.58	45.07	(USD/T)
NMET (@2%)	2.01	2.54	2.77	3.00	
Evacuation Facility Charge	50	50	50	50	
Sizing Charges	87	87	87	87	Estimated Premium Charged by
Management Charge	1	1	1	1	Supplier ove the Index (As per 10.47
STC (Estimated average for lead <10 KM)	60	60	60	60	latest Industry Trends) @7.5%
Taxable Ampunt	1048.69	1272.61	1370.95	1469.29	
CGST (@2.5%)	26.22	31.82	34.27	36.73	Estimated EoB Price Charged
IGST (@2.5%)	26.22	31.82	34.27	36.73	(USD/T) 150.04
GST Compensation Cess	400	400	400	400	
Toal Ex-works (MCL): INR/Ton	1501.12	1736.24	1839.50	1942.75	Estimated Freight Rate to
Toal Ex-works (MCL): INR/'000kcal	0.51	0.53	0.52	0.50	Srilanka (USD/T); Panamax 22 benchmark
Transportation from MCL to Dhamra Port	532	532	532	532	
Port Loading and Handling Cost	201	201	201	201	Insurance Charges taken at
FOB Paradip	2234.05	2469.17	2572.43	2675.68	0.05 USD/T
Approximate Freight to Sri Lanka Pvt Jetty	854.31	854.31	854.31	854.31	CIF Sri Lanka (USD/T) 172.09
CFR Sri Lanka: INR/Ton	3088.37	3323.49	3426.74	3530.00	
CFR Sri Lanka: INR/'000 Kcal	1.047	1.023	0.965	0.917	CIF Sri Lanka (INR/'000 Kcal) 2.70

From a landed-cost on an energy basis comparative analysis, the 4 major grades of MCL are well placed to replace current South African Coal from Sri Lankan market and create a long-term sustainable exponst-oriented coal market

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) Anticipated increase in coastal shipping traffic due to coal exports to Sri Lanka



²⁵²⁸⁹⁷O-D³Source cluster Mapping – Additional supply from MCL (IB-Valley) – E-AUCTION Sales +

Duch M							
CUSIL VO Option 2: Bel	pahar – Ib-Val	ley Coalfields	Option 4: Belpahar – Jharsuguda In – Rourkela – Sini – Purulia -	From	То	Traffic 2030 (Tonnes)	Rakes/Day
– Annupur – N	ew Katni		→ Damodar	Belpahar	Kharsia	25851730.93	18.40
		Option 3: Bel	pahar – Jharsuauda Rd –	Kharsia	Champa	25851730.93	18.40
		Sambalpur	– Angul – Talcher Rd –	Champa	Bilapsur	25851730.93	18.40
		Buanc	ірапк — Rajatgarn	Bilapsur	Raipur	12925865.46	9.20
	Option 1: Belpahar – Bilaspur – Bai	Kharsia – Champa – nur - Gondia		Raipur	Gondia	12925865.46	9.20
	Diruspui – Kur			Bilapsur	Anuppur	12925865.46	9.20
				Anuppur	New katni	12925865.46	9.20
Source	Volumes to be pushed	Competition from blocks	Route Ontions for	Belpahar	Jharsuguda Rd	12925865.46	9.20
	in the Market in 2030			Jharsuguda Rd	Sambalpur	12925865.46	9.20
		- Dipside Manoharpur	 Option 1: Belpahar – Kharsia – Champa – Bilaspur – Raipur - 	Sambalpur	Angul	12925865.46	9.20
		(OPCL)	Gondia • Ontion 2: Belpabar – Kharsia –	Angul	Talcher Rd	12925865.46	9.20
	51.70 Million Tonnes per Annum (46.25	Minerals)	Champa – Bilaspur – Annupur	Talcher Rd	Budhapank		0.00
MCL's IB Valley Coalfields	MTPA pushed volumes to the market + 8.17	- Baitrani West (GMDC)	 Option 3: Belpahar – 	Budhapank	Rajatgarh	0	0.00
	MTPA E-AUCTION	 New Patrapara & Naini (SCCL) 	Jharsuguda Rd – Sambalpur – Angul – Talcher Rd –	Belpahar	Jharsuguda Jn	12925865.46	9.20
	Sales via Kail mode)	 Radhikapur East (Emil mines & minerals) 	 Budhapank – Rajatgarh Option 4: Belpahar – 	Jharsuguda Jn	Rourkela	12925865.46	9.20
		- Burapahar (GMDC)	Jharsuguda Jn – Rourkela – Sini – Purulia - Damodar	Rourkela	Sini	12925865.46	9.20
Ac it is not any	dont to accume the future F	LIDe (doctination of this surplus ass		Sini	Purulia	12925865.46	9.20
Generatestage, the	timateditsafficahasoanodis	tributed proportionately among op	stiple to be pushed into the market at this	Purulia	Damodar	12925865.46	9.20

evacuation)

²⁵²⁸⁹⁷O-D Source cluster Mapping – Additional supply from MCL (Talcher) – E-AUCTION Sales + Push Volumes

		Option 2: 7 Rajatgar	From	То	Traffic 2030 (Tonnes)	Rakes/Day	
Option 1: T	alcher Talcher Rd.	Talcher Coalfields	*	Talcher	Talcher Rd	19865958.2	14.14
Angul, Sambo	alpur, Jharsuguda Rd			Talcher Rd	Angul	19865958.2	14.14
	مانو مراجع	Option 3: Talcher ,Talcher Rd, Anaul. Sambalpur. Titlaaarh		Angul	Sambalpur	19865958.2	14.14
				Sambalpur	Jharsuguda Rd	9932979.1	7.07
Source	Volumes to be pushed in the Market in 2030	Competition from blocks	Route Options for	Sambalpur	Titlagarh	9932979.1	7.07
	22.07 Million Tonnes per Annum (11 MTPA	 Dipside Manoharpur (OPCL) Bijhan (Mahanadi Mines & Minerals) Talabira II & III (NLC) Baitrani West (GMDC) New Patrapara & Naini (SCCL) Dipside Manoharpur (OPCL) Option 1: Talcher – – Angul – Sambalpu Jharsuguda Rd Option 2: Talcher – Budhapank – Rajatg Barang – Cuttack Option 3: Talcher – 	 Option 1: Talcher – Talcher Rd – Angul – Sambalpur – Jharsuguda Rd Option 2: Talcher – 	Talcher	Budhapank	9932979.1	7.07
MCL's Talcher Coalfields	pushed volumes to the market + 11.07 MTPA E-AUCTION Sales via		 Budhapank – Rajatgarh – Barang – Cuttack Option 3: Talcher – Talcher Rd 	Budhapank	Rajatgarh	9932979.1	7.07
	Kan Hlodej	 Radhikapur East (Emil mines & minerals) Burapahar (GMDC) 	– Angul – Sambalpur – Titlagarh	Rajatgarh	Barang	9932979.1	7.07
As it is not pru stage, the es	ident to assume the future E stimated traffic has been dis	UPs/destination of this surplus coal tributed proportionately among pos evacuation)	to be pushed into the market at this ssible route options (trunk lines for 78	Barang	Cuttack	9932979.1	7.07

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²⁵²⁸⁹C²⁰²³Source cluster Mapping – Routing of Coastal Shipping / Coal Export volumes from Dhamra via utilizing Angul-Sukinda Rd new line

		From	То	(Tonnes)	Rakes/Day
	Angul, Budhapank, Sukinda,				
	To Coastal Shipping and Exports	Angul	Budhapank	2000000	13.89
Talcher ,Bug Rajata	Dhamra Kapilas Road, Haridaspur, Jakhapura, Bhadrak, Dhamra arh	Budhapank	Sukinda Rd	20000000	13.89
. Injurg	Talcher to Dhamra Port (Via Salegaon) is ~270.2 Kms via Rail, whereas via Sukinda Rd is ~223.82 Kms. Although these values	Sukinda Rd	lajpur Keonjhar Rd	2000000	13.89
	turnaround time would be lesser for the shorter route with lesser congestion. Consumers shall interact with Dhamra Port and conduct landed cost economics for their assets.	Jajpur Keonjhar Rd	Baudpur	2000000	13.89
~20 Million Tonnes of Co be moved from Dhamra,	oal, for coastal shipping as well as exports could utilizing the new Angul – Sukinda BG line.	Baudpur	Bhadrak	2000000	13.89
This would ease the cor Rajatgarh and Cuttack to	ngestion on major lines such as Budhapank to Paradeep.	Bhadrak	Dhamra	20000000	13.89
Dhamra Port can handle export purposes	~20 MTPA of thermal coal for coastal shipping /				
· ·	10				

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ^{2528976/2023} CPIAM Constal shipping to NRS Assets (Steel)



Unloading Ports could be Krishnapatnam or Karaikal





MCL Talche	r to Paradip Port and Cost	tal Shipping to Southern Stee	l Clusters	
From	То	Traffic (Tonnes)	Rakes / Day	
Talcher	Budhapank	22080000	15.33	
Budhapank	Rajatgarh	22080000	15.33	
Rajatgarh	Barang	22080000	15.33	
Barang	Cuttack	22080000	15.33	
Cuttack	Paradeep	22080000	15.33	
Steel Plant			Capacity (MTPA)	
JSW Steel Vijaynagar			12	
JSW Steel Vijaynagar BF &	BOF Expansion		6.80	
BMM Ispat Steel Plant			2.20	
Kalyani Steels Hospet Plan	t		0.86	
JSW Steel Salem Plant			1.03	

Estimated Thermal Coal Requirement (@1.147 MTPA / Crude Steel Production)	22.08
Estimated Steel Production @80% Capacity Utilization	19.25
Total Capacity (Probable for Coal's Coastal Shipping)	24.07
Arjas Steel Expansion	0.62
Arjas Steel Tadipatri Plant	0.33
JSW Steel Salem Plant Bf & BOF Expansion	0.23
JSW Steel Salem Plant	1.03

Generated from, eOffice by N RAJESWARA, RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry of COAL on 17/05/2023 04:46 PM The loading and offloading ports shall be studies (Asset Level) by respective asset owners to make the decision based on feasibility of coastal shipping vs all rail

²⁵²⁸⁹O-D Source cluster Mapping – Probable Coastal shipping to NRS Assets (Cement)

Other Loading ports such as Dhamra, Gopalpur, Vizag, Gangavaram could also be explored by Cement Players based on Asset level landed cost economics

IB-Valley Coalfields

Unloading Ports could be any of the ports on Eastern Coast based on offloading capacity and unit economics, Delivery Timelines etc.



Talcher ,Budhapank, Rajatgarh, Barang, Cuttack, Paradeep

MCL Talche	MCL Talcher to Paradip Port and Costal Shipping to Coastal Cement Clusters										
From	То	Traffic (Tonnes)	Rakes / Day								
Talcher	Budhapank	1200000	1								
Budhapank	Rajatgarh	1200000	1								
Rajatgarh	Barang	1200000	1								
Barang	Cuttack	1200000	1								
Cuttack	Paradeep	1200000	1								

Out of the total 8 MTPA coal requirement from Coastal Cement Assets, ~15% (1.2 MTPA) is considered from domestic sources with G9-G14 Grade, that could be supplied by MCL. Remaining would be either imports or High-Grade coal from SECL, ECL, WCL.



To produce ~98 MTPA of cement by coastal capacities, around 13.23 MTPA of thermal coal was consumed. Around ~60% of these volumes are towards southern and western india which can leverage coastal shipping.

Hence, there seems to be a potential to supply these power plants around 1 MTPA, for which costal shipping could be utilized. But at the same time as these are coastal assets, they are more likely to rely on imported coal than MCL's low grade coal

MCL's marketing team shall hold consultations with the Cement Industry

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 2528976/2023/CPIAM O-D Source cluster Mapping – Consolidated Coal Traffic from Odisha to all states - RDS

RDS: Realistic Demand Scenario



Note: The increase in average number of rakes indicated above shall be further escalated by ~7.5% to cater during November to March Power Demand

²⁵²⁸⁹C²⁰²³Source cluster Mapping – Consolidated Coal Traffic on railways from Odisha & Chhattisgarh (including SECL areas in MP) to all states with addition of CERL/CEWRL network - ODS

ODS: Optimistic Demand Scenario

FY22 Actual and FY30 (Estimated) coal traffic in major sections for despatch of coal from Chhattisgarh (Including Sohagpur and Johilla) to various destinations

Major sections are already witnessing significant coal traffic and is estimated to further increase in the coming decade.





²⁵²⁸⁹⁷Our key findings based on detailed analysis of railway traffic for Odisha (1/3)

ODISHA	20)22			2030				Other Planned Works	Utilization
Sub-Section	Capacity	% Utilization	Ongoing Works	Passenge	r Freight	Total	Capacity	% Utilization	(New Energy/Other Corridors)	after of All planned works
Talcher to Talcher Rd	50	139%	4 th line	53	142 (~116 to 125 R/d is coal)	186 to 195	98	190% to 199%	 Planned MCRL Inner Corridor via Jarapada/Angul to bypass Talcher-Talcher Rd. section, significant offloading of Non- CIL rakes via MCRL. With Angul-Balram Doubling, more rakes can be moved directly via Angul, rather than routing through Talcher road. Corridor won't have impact on sections beyond Angul/Jarapada 	<100%
Sambalpur to Titlagarh	50	129%	Doubling	54	78 (~51 to 55 R/d is coal)	128 to 132	102	125% to 129%	Nil	125% to 129%

²⁵²⁸⁹⁷⁶ ²⁰²³ ^{CPIAM} findings based on detailed analysis of railway traffic for Odisha (2/3)

ODISHA	20)22			2030				Other Planned Works	Utilization
Sub-Section	Capacity	% Utilization	Ongoing Works	Passenger	Freight	Total	Capacity	% Utilization	(New Energy/Other Corridors)	after of All planned works
Jharsuguda Jn to Rourkela	144	122%	3 rd line in progress. 4 th line planned for Tatanagar-Rourkela won't impact this section.	80	188 (~30 to 32 R/d is coal)	266 to 268	214	124% to 125%	Nil	124%
Jharsuguda Rd to Sambalpur	98	133%	Nil	69	173 (~115 to 124 R/d is coal)	232 to 241	98	236% to 246%	3rd & 4th line from Jharsuguda to Sambalpur planned as part of Energy Corridor	<100%

Detailed layout of cluster in following slide

All numbers (Except Capacity utilization) represent average two-way traffic in Trains/Rakes per day. Generated from eoଙ୍କିନ୍ତ ହେମ୍ପରେ ହେମ୍ପରେ ଅନେନ୍ MOC-SO(NRR),

The higher range (for capacity utilization estimates) are based on increase of 47.5% in coal rakes over base value, attributable to Peak Power Demand

Note: Capacity refers to Capacity of line with Maintenance Block (MB)

²⁵²⁸⁹⁷⁶ Our key findings based on detailed analysis of railway traffic for Odisha (3/3)

	20)22			2030						
Sub-Section	Capacity	% Utilization	Ongoing Works	Passenger	Freight	Total	Capacity	% Utilization	Other Planned Works (New Energy/Other n Corridors)	offilization after of All planned works	
Champa to Bilaspur	206	115%	4 th line CERL & CEWRL in progress	117	264 (~116 to 125 R/d is coal)	372 to 381	250	149% to 152%	CRCL line from Jharsuguda-Balodabazaar- Raipur (310 km) Coal traffic from Odisha going towards MH/KA shall be diverted.	138% to 140%	
Bilaspur to Anuppur	98	88%	Pendra Rd Anuppur 3rd line & Automatic Signaling: Bilaspur- Uslapur-Ghutku are in progress.	71	124 (~49 to 53 R/d is coal)	191 to 195	142	131% to 137%	Nil	131% to 137%	

All numbers (Except Capacity utilization) represent

average two-way traffic in Trains/Rakes per day. Generated from eoffice by N BAIESWARA BAO, MOCSO(NRR)-CPIAM, MOC-SO(NRR), Mi7i57% of COAl Jakes 59,201 base per also includes Others

Note: Capacity refers to Capacity of line with Maintenance Block (MB)

^{2528976/2023/CPIAM} Major ongoing works of railways for capacity enhancement





- Coastal shipping capacity from Eastern ports exceeds 120 MTPA
- 80-90 MTPA is the realistic coastal shipping volumes for FY30 based on demand-based analysis of power plants and landed cost economics.
- Additional capacity of ~30 MTPA can be utilized for exports to Bangladesh & Sri Lanka. Hence, no idle capacity is envisioned.
- Around ~20 25 MTPA, or 14-17 R/d of coastal shipping volume to NRS assets (Steel + Cement) have also been considered
- nerated from content from Paradeep Port, Dhamra, Gonalpur, Vizag and Gangayaram shall be explored for coastal shipping.

²⁵²⁸⁹⁷⁶ Our key findings based on detailed analysis of railway traffic for coastal shipping (1/2)

Sub-Section	20 Capacity	22 % Utilization	Ongoing Works	Passenger	2030 Freight	Total	Capacity	% Utilization	Other Planned Works (New Energy/Other Corridors)	Utilization after of All planned works
Talcher / Talcher Rd to Budhapank	168	126%	3rd Line from Talcher to Budhapank, Talcher – Bimalgarh new BG Line	101	287 (~162 to 174 R/d is coal)	375 to 387	280	134% to 138%	Planned MCRL Inner Corridor via Jarapada/Angul to bypass Talcher-Talcher Rd. section, significant offloading of Non- CIL rakes via MCRL. With Angul-Balram Doubling, more rakes can be moved directly via Angul, rather than routing through Talcher road.	<100%
Budhapank to Rajatgarh	130	122%	3rd and 4th Lines planned between Budhapank – Salegaon.	52	238.79 (~ 148 to 159 R/d is coal)	291 to 302	218	134% to 139%	Re-routing coal to Dhamra and Paradeep Port via Angul – Sukinda New BG Line. Also Routing some coal from Angul to Rairakhol to Gopalpur Port	127% to 132%

All numbers (Except Capacity utilization) represent

average two-way traffic in Trains/Rakes per day. Generated from eoffice by N BAIESWARA BAO, MOCSO(NRR)-CPIAM, MOC-SO(NRR), Mi7i57% of COAl Jakes 59,201 base per also includes Others

Note: Capacity refers to Capacity of line with Maintenance Block (MB)

²⁵²⁸⁹⁷⁶ ²⁰²³ ^{CPIAM} findings based on detailed analysis of railway traffic for coastal shipping (2/2)

Sub-Section	20 Capacity	22 % Utilization	Ongoing Works	Passenger	2030 Freight	Total	Capacity	% Utilization	Other Planned Works (New Energy/Other Corridors)	Utilization after of All planned works
Cuttack to Paradeep	100	72%	Planned auto- Signaling, Additional loop line at Badabandha.	24	149 (~122 to 131 R/d is coal)	173 to 182	100	173% to 182%	Doubling of Paradeep to Haridaspur Line Siju – Paradip Flyover Dhanmandal to Chandikhol Chord. Routing of 20 MTPA coal from Dhamra via Angul – Sukinda Line Routing of coal to Paradeep via Angul – Sukinda Rd – Haridaspur section could further decrease load on Cuttack to Sambalpur and Budhapank to Rajatgarh Sections. Salegaon to Paradip HHRC shelved due to economic unviability	162% to 171%

Detailed layout of cluster in following slide

All numbers (Except Capacity utilization) represent average two-way traffic in Trains/Rakes per day. Generated from eomas ହେମନ୍ତ୍ର ମହନା ମାନ୍ତର ନାର ଜଣା ଅନ୍ତର୍ଭ ନାର ଜଣା ଅନ୍ତର (NRR),

The higher range (for capacity utilization estimates) are based on increase of +7.5% in coal rakes over base value, attributable to Peak Power Demand

Note: Capacity refers to Capacity of line with Maintenance Block (MB)

^{2528976/2023/CPIAM} Major ongoing works of railways for coastal shipping enablement


²⁵²⁸⁹⁷⁶ Our key findings based on detailed analysis of coastal shipping (2/2)

	#	Key Findings/Recommendations	Potential Responsibility
	1	 High congestion expected on railway lines to enable coastal shipping Concerned lines: Budhapank to Rajatgarh and Cuttack to Paradeep. Heavy Haul Rail Corridor from Salegaon to Cuttack being shelved due to economic constraints. It is of utmost importance to add a third line (Survey under process) and in future a fourth line from Cuttack to Paradeep. 	Indian Railways/ECoR
	2	 Paradeep Port expected to handle ~90 Rakes/Day for coastal shipping and exports On a best-effort basis with Expansion works in Pipeline, ~65-72 R/d can be handled by the Port (MCHP + PEQP). While this is sufficient for RSR, coal exports will require further capacity addition. Capacity addition of ~ 15-20 R/d is required. Commitments from end-users of coal may be required to take up the investments for additional capacity addition. Additionally, avenues of notification of policies may be explored to make RSR mode attractive to power consumers. 	Paradeep Port Trust, Ministry of Coal
	3	 Execution of National Waterway 5 to execute coastal shipping via inland waterways (Brahmani River) ~80-90 MTPA or ~55 to 60 R/d could be moved from Talcher to Pardeep and Dhamra Ports for Evacuation via Coastal Shipping. Transaction Advisor has been appointed which will also conduct detailed traffic study. End to End construction of NW-5 is a challenge, although the target for completion is 2030, delays could be expected beyond the stipulated timelines 	IWAI, Ministry of Shipping
	4	 Assess Marketability of coal to Bangladesh & Sri Lanka from Talcher Further utilizing Indo-Bangladesh Protocol Route (through Haldia) for delivery to Bangladesh 	IWAI, Ministry of Shipping CIL Marketing team, MoC
	5	 Utilizing other ports such as Dhamra for decongestion of Traffic as well as to reduce load on Paradeep Port Dhamra Port has plans to increase capacity of coastal shipping + exports to around 20 MTPA. This would lead to diversion of around 14 R/D from Dhamra, via Angul-Sukinda Rd line 	Ministry of Shipping
Generate	6 d from e	 Other ports such as Gopalpur, Vizag and Gangavaram shall also be explored. Under Construction line from Rairakhol to Gopalpur port could be utilized for coastal shipping price by ncapacity at the portions sufficient and, coastal broavement, economics work out. 	Ministry of Shipping, Indian Railways, MoC

²⁵²⁸⁹76/2023/CPIAM Inland waterways in Odisha could complement coastal shipping and imports

National Waterway	Status
National Waterway 5	Eol issued by IWAI for developing following stretches of NW-5Padanipal-Paradip (89 Km)Padanipal-Dhamra (50 Km)
National Waterway 64	EoI issued by IWAI for developing • Marshaghai-Paradip (35 km) stretch of NW-64
Sambalpur	Talcher Bahmani & Dhamra Talcher Bahmani & Dhamra Pankapai Padanipai Dhamra Cuttack Paradip Cuttack Paradip
	93

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National Waterway – 5 could also be used in future for Coastal Shipping as well as coal imports

National Waterway 5 (NW5) runs through the states of Odisha and West Bengal along the Mahanadi River. The main rationale for NW5 is its proximity to the Talcher–Paradip region, which is abundant in resources and provides opportunities for evacuation of coal as well as other commodities like coking coal and iron ore. An external study conducted on NW5 established a potential of 80 to 90 MTPA of coal and about 12.5 MTPA of coking coal in back haul in addition to some potential for iron ore transport. While the capacity of the waterway is limited to around 20 MTPA using a conventional system, it can be enhanced if barge trains are

used. The viability of using tugged barges, however, would need to be established through a detailed technical study. Based on high-level estimates, the investment to operationalize NW5 could be INR 5,000 cr for dredging purposes, INR 900 cr for terminal development at Talcher and Paradip and INR 200 cr for annual maintenance. For tugged barges, the overall capital expenditure will be higher. The revenues to the developer—assumed to be the Inland Waterways Authority of India (IWAI)—would consist of a usage fee of INR 1 per tonne km, vessel berthing fee of INR 750 per terminal and cargohandling fees of INR 1 per tonne at each terminal. For barge operators, this revenue would be an operating cost. In addition, they would incur INR 2.4 cr per barge towards fuel, manning and repair and maintenance. On the capex front, operators will need to invest about INR 700 cr. The revenue for barge operators is assumed to be INR 1.2 per tonne km, based on benchmarking with alternative modes of transport. Based on a single barge configuration of 20 MTPA with a draught of 2.5 metres over 55–60 km with five navigational locks and three barge terminals. This yields an estimated return of 13 per cent to the IWAI as the developer, whereas barge operators would earn 18 per cent

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) Paradip Port has sufficient capacity to handle RSR movement of coal by FY30



While Paradip port has sufficient capacity to handle costal shipping to various power plants (65 to 70 R/d), additional capacity could be required in future if coal exports materialize.

Berth	Berth Capacity	v Draft	Berth Len	igth	Stackyard Area
MCHP (2 berths)	41.2 MTPA	14.5 m	520 m (Conti	nuous)	1.22 Lacs Sqm
PEQCTPL- JSW (3 Berths)	30 MTPA	14.5 m	685 m(Cont	inuous)	1.45 Lacs Sqm
IOHP	3/15.6 MTPA	13 m	275 m		1.04 Lacs Sqm
DATE	МСНР	PEQCTPL (JSW)	IOHP	MANUAL	. TOTAL
Optimal Rake Handling Capacity	30	26	3	3	62 Rakes / Day

Mechanized Coal Handling Plant (MCHP)- PPAP Paradip East Quay Coal Terminal (PEQP) **Capacity** 42 MTY i.e., 30 rakes/day **Capacity** 50 MTY i.e., 35 rakes/day Rake Type – BOXN & BOBRN Rake Type - Only BOBRN 2 track hoppers 2 track hoppers Unloading of 4 wagons at a time Unloading of 6 wagons at a time Unloading Speed – 4000 tes/hr Unloading Speed – 7000 tes/hr Unloading Time - 2.5 hrs **Unloading Time** – 2 hrs Unloading Charges Rs 180/te Unloading Charges Rs 210/te 94

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Source: Sagarmala Report, Ministry of Ports, Shipping & Waterways, Comprehensive Action Plan for Port Connectivity on Gatishakti NMP 2022, DPIIT]

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) Estimated Wagon Procurement requirement by Indian Railways (ECoR - Odisha)

Andhra Pradesh 13339642102 14730000 977.920		Despatch (KMs)
		D coputori (itilio)
Bihar 201383543.3 281841.76 714.527 Andhra Pradesh 19480166400	19920000	977.920
Chhattisgarh 3515197174 14330000 245.303 Chhattisgarh 986119514.3	4020000	245.303
Gujarat 113128560 53419.98 2117.720 Jharkhand 58121372.33	185000	314.170
Haryana 891694543.5 565130.25 1577.857 Madbya Pradesh 5560918283	7436000	747.837
Jharkhand 328558191.9 1045798.87 314.170	7050000	042.605
Karnataka 903160784.9 593006.75 1523.019 Manarashtra 7494427888	7950000	942.095
Madhya Pradesh 1051843431 1406513.7 747.837 Odisha 8230920000	72840000	113.000
Maharashtra 5146554552 5459403.88 942.695 Punjab 19394175161	11470000	1690.861
Odisha 982886922.7 32350000 113.000 West Bengal 3531172602	7050000	500.876
Punjab /6/6/1/4/5 4540123.45 1690.861	8000000	192,000
Tamii Nadu 31128310206 116000 1545.960 Coustal shipping volume 200000000		1021000
Uttar Pradesh 1039925024 974464.4 1067.176 Despatches to be taken as per EY22 avg 106651970411	249000000) 428 321
West Bellgal 5042828664 10068027.28 500.876 Despatches to be taken as per 122 avg 100051370111 Coastal Shipping Volume 6712220000 24060000 102.000 leads	213000000	
Total 121 47 Million Tonnes	459.87 N	Million Tonnes
EV22 - Rail Average Lead for Coal Supply in FY22 (East Coast Railway) Average Lead for Coal Sup	ply in FY30 (East	t Coast Railway)
428.32 KMs 406	5.09 KMs	
FY22 FY30 Additional Rakes/Day Despatch Envisaged		235.00
Average Lead of coal Despatch from Odisha (KMs) 428.32 406.09 Estimated Improved TAT (Days)		3.03
Estimated Average Turnaround time of Rakes (Days) 3.19 3.03 Total Number of Rakes Required		711.39
Rakes / Day Despatch by Rail + RCR + RSR Mode 84.35 319.35 Estimated Wagons to be Procured for Coal till FY30		41,261

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Source: Sagarmala Report, Ministry of Ports, Shipping & Waterways, Comprehensive Action Plan for Port Connectivity on Gatishakti NMP 2022, DPIIT]

Additional ~3,094 Wagons would be required for despatches

during peak demand period from November to March

First Mile Connectivity Analysis of MCL

^{2528976/2023/CPIAM} Outlook – Mahanadi Coalfields Limited (MCL)

MCL's despatch is progressing towards higher share of rail from current 66% to a target of 91% by FY30. Ensuring that the evacuation capacity exists is a crucial aspect of the holistic logistics policy

Linked Mines				-					. ,						
	Rail	RCR	Pure Road	MGR & Others	Total	Rail	RCR	Pure Road	MGR & Others	Total	Rail	RCR	Pure Road	MGR & Others	Total
Samaleshwari & Lajkura	7.68	0.00	1.42	0.00	9.10	17.81	0.00	1.69	0.00	19.50	17.81	0.00	1.69	0.00	19.50
Lakhanpur, Belpahar & Lilari	20.45	0.00	3.65	4.00	28.10	34.19	0.00	1.81	0.00	36.00	37.99	0.00	2.01	0.00	40.00
Kulda, Garjanbahal, Siarmal, Basundhara (W) Extn	20.01	0.00	16.83	0.00	36.84	48.60	0.00	23.00	0.00	71.60	79.50	0.00	7.50	0.00	87.00
Hirakhand-Bundia , Orient 1,2,3	0.00	0.00	0.24	0.00	0.24	0.82	0.00	0.00	0.00	0.82	0.78	0.00	0.00	0.00	0.78
Basundhara CF	48.14	0.00	22.14	4.00	74.04	101.42	0.00	26.50	0.00	127.92	136.08	0.00	11.20	0.00	147.28
Lingaraj OCP	18.89	0.00	2.21	0.00	21.10	18.89	0.00	1.11	0.00	20.00	17.00	0.00	0.00	0.00	17.00
Bhubaneswari, Ananta, Kaniha, Jaganath, Bharatpur, Hingula, Nandira, Balram, Balabhadra, Subhadra	48.90	0.00	23.13	9.24	81.27	123.3	0.00	13.31	10.5	147.08	145.3	0.00	15.7	10.50	172.00
her CF	67.79	0.00	25.34	9.24	102.36	142.2	0.00	14.42	10.5	167.08	162.8	0.00	15.7	10.50	189.00
al MCL	115.93	0.00	47.48	13.24	176.41	248.6	0.00	40.92	10.5	295.00	298.88	0.00	26.9	10.50	336.28
FY22 s share ssion for		6			FY26		84%	6			FY3	0	88%		
	Samaleshwari & Lajkura Lakhanpur, Belpahar & Lilari Kulda, Garjanbahal, Siarmal, Basundhara (W) Extn Hirakhand-Bundia , Orient 1,2,3 3asundhara CF Lingaraj OCP Bhubaneswari, Ananta, Kaniha, Jaganath, Bharatpur, Hingula, Nandira, Balram, Balabhadra, Subhadra her CF al MCL	Samaleshwari & Lajkura7.68Lakhanpur, Belpahar & Lilari20.45Kulda, Garjanbahal, Siarmal, Basundhara20.01(W) Extn20.01Hirakhand-Bundia , Orient 1,2,30.00Jasundhara CF48.14Lingaraj OCP Bhubaneswari, Ananta, Kaniha, Jaganath, Bharatpur, Hingula, Nandira, Balram, Balabhadra, Subhadra48.90her CF67.79al MCL115.93	Samaleshwari & Lajkura Lakhanpur, Belpahar & Lilari7.680.00Lakhanpur, Belpahar & Lilari20.450.00Kulda, Garjanbahal, Siarmal, Basundhara (W) Extn Hirakhand-Bundia , Orient 1,2,320.010.00Basundhara CF48.140.00Lingaraj OCP Bhubaneswari, Ananta, Kaniha, Jaganath, Bharatpur, Hingula, Nandira, Balram, Balabhadra, Subhadra18.890.00her CF67.790.00AMCL115.930.00	Samaleshwari & Lajkura7.680.001.42Lakhanpur, Belpahar & Lilari20.450.003.65Kulda, Garjanbahal, Siarmal, Basundhara20.010.0016.83(W) Extn Hirakhand-Bundia , Orient 1,2,30.000.000.24Jasundhara CF48.140.0022.14Lingaraj OCP Bhubaneswari, Ananta, Kaniha, Jaganath, Bharatpur, Hingula, Nandira, Balram, Balabhadra, Subhadra115.930.0023.13her CF67.790.0025.34al MCL115.930.0047.48	Samaleshwari & Lajkura 7.68 0.00 1.42 0.00 Lakhanpur, Belpahar & Lilari 20.45 0.00 3.65 4.00 Kulda, Garjanbahal, Siarmal, Basundhara 20.01 0.00 16.83 0.00 (W) Extn 0.00 0.00 0.24 0.00 Hirakhand-Bundia , Orient 1,2,3 0.00 0.00 0.24 0.00 Jasundhara CF 48.14 0.00 22.14 4.00 Lingaraj OCP 18.89 0.00 2.21 0.00 Bhubaneswari, Ananta, Kaniha, Jaganath, Bharatpur, Hingula, Nandira, Balram, Balabhadra, Subhadra 48.90 0.00 23.13 9.24 Amot L 115.93 0.00 47.48 13.24	Samaleshwari & Lajkura 7.68 0.00 1.42 0.00 9.10 Lakhanpur, Belpahar & Lilari 20.45 0.00 3.65 4.00 28.10 Kulda, Garjanbahal, Siarmal, Basundhara 20.01 0.00 16.83 0.00 36.84 (W) Extn Hirakhand-Bundia, Orient 1,2,3 0.00 0.00 0.24 0.00 0.24 Jasundhara CF 48.14 0.00 22.14 4.00 74.04 Lingaraj OCP 18.89 0.00 2.21 0.00 21.10 Bhubaneswari, Ananta, Kaniha, Jaganath, Bharatpur, Hingula, Nadira, Balram, Balabhadra, Subhadra 48.90 0.00 23.13 9.24 81.27 FY22 66% FY26 FY26 66% FY26	Samaleshwari & Lajkura 7.68 0.00 1.42 0.00 9.10 17.81 Lakhanpur, Belpahar & Lilari 20.45 0.00 3.65 4.00 28.10 34.19 Kulda, Garjanbahal, Siarmal, Basundhara 20.01 0.00 16.83 0.00 36.84 48.60 (W) Extn 0.00 0.00 0.24 0.00 0.24 0.82 Basundhara CF 48.14 0.00 22.14 4.00 74.04 101.42 Lingaraj OCP 18.89 0.00 2.21 0.00 21.10 18.89 Bhubaneswari, Ananta, Kaniha, Jaganath, Bharatpur, Hingula, Nandira, Balram, Balabhadra, Subhadra 67.79 0.00 23.13 9.24 81.27 123.3 FY22 66% FY26 66% FY26 66% FY26	Samaleshwari & Lajkura 7.68 0.00 1.42 0.00 9.10 17.81 0.00 Lakhanpur, Belpahar & Lilari 20.45 0.00 3.65 4.00 28.10 34.19 0.00 Kulda, Garjanbahal, Siarmal, Basundhara 20.01 0.00 16.83 0.00 36.84 48.60 0.00 (W) Extn Hirakhand-Bundia, Orient 1,2,3 0.00 0.00 0.24 0.00 0.24 0.82 0.00 Jasundhara CF 48.14 0.00 22.14 4.00 74.04 101.42 0.00 Lingaraj OCP 18.89 0.00 2.21 0.00 21.10 18.89 0.00 Bhubaneswari, Ananta, Kaniha, Jaganath, Bharatpur, Hingula, Nandira, Bulahadra 48.90 0.00 23.13 9.24 81.27 123.3 0.00 MCL 115.93 0.00 47.48 13.24 176.41 248.6 0.00 MCL 115.93 0.00 47.48 13.24 176.41 248.6 0.00 <td>Samaleshwari & Lajkura 7.68 0.00 1.42 0.00 9.10 17.81 0.00 1.69 Lakhanpur, Belpahar & Lilari 20.45 0.00 3.65 4.00 28.10 34.19 0.00 1.81 Kulda, Garjanbahal, Siarmal, Basundhara 20.01 0.00 16.83 0.00 36.84 48.60 0.00 23.00 (W) Extn Hirakhand-Bundia, Orient 1,2,3 0.00 0.00 0.24 0.00 0.24 0.82 0.00 20.00 Sasundhara CF 48.14 0.00 22.14 4.00 74.04 101.42 0.00 26.50 Lingaraj OCP 18.89 0.00 2.21 0.00 21.10 18.89 0.00 1.11 Bhubaneswari, Ananta, Kaniha, Jaganath, Bharatpur, Hingula, Nandira, Balram, Balabhadra, Subhadra 48.90 0.00 23.13 9.24 81.27 123.3 0.00 14.42 MCL 115.93 0.00 47.48 13.24 176.41 248.6 0.00 40.92</td> <td>Samaleshwari & Lajkura 7.68 0.00 1.42 0.00 9.10 17.81 0.00 1.69 0.00 Lakhanpur, Belpahar & Lilari 20.45 0.00 3.65 4.00 28.10 34.19 0.00 1.81 0.00 Samaleshwari & Kulda, Garjanbahal, Siarmal, Basundhara 20.01 0.00 16.83 0.00 36.84 48.60 0.00 23.00 0.00 (W) Extn Hirakhand-Bundia, Orient 1,2,3 0.00 0.00 0.24 0.00 0.24 0.82 0.00 26.50 0.00 Jasundhara CF 48.14 0.00 22.14 4.00 74.04 101.42 0.00 26.50 0.00 Jagarath, Bharatpur, Hingula, Naniak, Jagarath, Bharatpur, Bubaneswari, Ananta, Kaniak, Jagarath, Bharatpur, Bubandra 0.00 23.13 9.24 81.27 123.3 0.00 13.31 10.5 IMCL 115.93 0.00 47.48 13.24 176.41 248.6 0.00 40.92 10.5</td> <td>Samaleshwari & Lajkura 7.68 0.00 1.42 0.00 9.10 17.81 0.00 1.69 0.00 19.50 Lakhanpur, Belpahar & Lilari 20.45 0.00 3.65 4.00 28.10 34.19 0.00 1.81 0.00 36.00 Siarmal, Basundhara, (W) Extn 20.01 0.00 16.83 0.00 36.84 48.60 0.00 23.00 0.00 71.60 Wi Extn Hirakhand-Bundia, Orient 1,2,3 0.00 0.24 0.00 0.24 0.82 0.00 0.00 0.82 Jasundhara CF 48.14 0.00 22.14 4.00 74.04 101.42 0.00 26.50 0.00 127.92 Jaganath, Bharatpur, Hingula, Nanina, Jaganath, Bharatpur, Hingula, Nandira, Balram, Balabhadra, Subhadra 0.00 23.13 9.24 81.27 123.3 0.00 13.31 10.5 147.08 FY22 66% FY26 84% 0.00 40.92 10.5 295.00</td> <td>Samaleshwari & Lajkura 7.68 0.00 1.42 0.00 9.10 17.81 0.00 1.69 0.00 19.50 17.81 Lakhanpur, Belpahar & Lilari 20.45 0.00 3.65 4.00 28.10 34.19 0.00 1.81 0.00 36.00 37.39 Kulda, Garjanbahal, Siarmal, Basundhara 20.01 0.00 16.83 0.00 36.84 48.60 0.00 23.00 0.00 71.60 79.50 Siarmal, Basundhara 0.00 0.00 0.24 0.00 0.24 0.82 0.00 0.00 0.82 0.78 Jasundhara CF 48.14 0.00 22.14 4.00 74.04 101.42 0.00 26.50 0.00 127.92 136.08 Lingaraj OCP 18.89 0.00 2.21 0.00 21.10 18.89 0.00 1.11 0.00 20.00 17.00 Bhubaneswari, Ananta, Kaniha, Jaganath, Bharatpur, Hingula, Nandira, Balram, Balabhadra, Subhadra 0.00 25.34 9.24 102.36 14</td> <td>Samaleshwari & Lajkura & Lijkura 7.68 0.00 1.42 0.00 9.10 17.81 0.00 1.69 0.00 19.50 17.81 0.00 Lakhanpur, Belpahar & Lilari 20.45 0.00 3.65 4.00 28.10 34.19 0.00 1.81 0.00 36.90 37.99 0.00 Kulda, Garjanbahal, Siarnal, Basundhara 20.01 0.00 16.83 0.00 36.84 48.60 0.00 23.00 0.00 71.60 79.50 0.00 Wirekhand-Bundia, Orient 1,2,3 0.00 0.24 0.00 0.24 0.82 0.00 0.00 127.92 136.08 0.00 Lingaraj OCP 18.89 0.00 2.21 0.00 21.10 18.89 0.00 17.00 0.00 Bhubaneswari, Ananta, Kaniha, Jaganath, Bharatpur, Hingula, Nandira, Bubhadra 0.00 23.13 9.24 81.27 123.3 0.00 13.31 10.5 147.08 145.3 0.00 MCL 115.93 0.00 47.48 13.24</td> <td>Samaleshwari & Lajkura Lakhapur, Belpahar Kulari 7.68 0.00 1.42 0.00 9.10 17.81 0.00 1.69 0.00 19.50 17.81 0.00 1.69 Lakhapur, Belpahar Kulda, Garjanbahal, Siarmal, Basundhara 20.01 0.00 3.65 4.00 28.10 34.19 0.00 1.81 0.00 36.00 37.99 0.00 2.01 Kulda, Garjanbahal, Siarmal, Basundhara 20.01 0.00 16.83 0.00 36.84 48.60 0.00 23.00 0.00 71.60 79.50 0.00 7.50 Vij Extin Hirakhand-Bundia, Orient 1,2,3 0.00 0.24 0.82 0.82 0.00 0.00 127.92 136.08 0.00 11.20 Lingaraj OCP Bhubaneswari, Ananta, Kaniha, Jaganath, Bharathur, Hirgula, Nandira, Baltarn, Balabhadra, Subhadra 0.00 23.13 9.24 81.27 123.3 0.00 13.31 10.5 147.08 145.3 0.00 15.7 Hingula, Nandira, Baltarn, Balabhadra, Subhadra 67.79 0.00 25.34 9.24 1</td> <td>Samaleshwari & Lajkura Lakhanpur, Belpahar Kulda, Garjanbahal, Siarmal, Basundhara (Basundhara L2, 2001 0.00 1.42 0.00 9.10 17.81 0.00 1.69 0.00 19.50 17.81 0.00 1.69 0.00 Kulda, Garjanbahal, Siarmal, Basundhara Batandramer, Baganath, Basundhara Dorient 1,2,3 20.01 0.00 16.83 0.00 36.84 48.60 0.00 23.00 0.00 71.60 79.50 0.00 7.50 0.00 tirakhand-Bundia, Orient 1,2,3 0.00 0.00 0.24 0.82 0.00 0.00 0.82 0.78 0.00 0.00 0.00 tingaraj OCP 48.14 0.00 22.14 4.00 74.04 101.42 0.00 26.50 0.00 127.92 136.08 0.00 11.20 0.00 Lingaraj OCP 48.14 0.00 23.13 9.24 101.42 0.00 13.31 10.5 147.08 145.3 0.00 15.7 10.50 Hungara, Nanira, Barkarn, Balabhadra, Subhadra 67.79 0.00 25.34 9.</td>	Samaleshwari & Lajkura 7.68 0.00 1.42 0.00 9.10 17.81 0.00 1.69 Lakhanpur, Belpahar & Lilari 20.45 0.00 3.65 4.00 28.10 34.19 0.00 1.81 Kulda, Garjanbahal, Siarmal, Basundhara 20.01 0.00 16.83 0.00 36.84 48.60 0.00 23.00 (W) Extn Hirakhand-Bundia, Orient 1,2,3 0.00 0.00 0.24 0.00 0.24 0.82 0.00 20.00 Sasundhara CF 48.14 0.00 22.14 4.00 74.04 101.42 0.00 26.50 Lingaraj OCP 18.89 0.00 2.21 0.00 21.10 18.89 0.00 1.11 Bhubaneswari, Ananta, Kaniha, Jaganath, Bharatpur, Hingula, Nandira, Balram, Balabhadra, Subhadra 48.90 0.00 23.13 9.24 81.27 123.3 0.00 14.42 MCL 115.93 0.00 47.48 13.24 176.41 248.6 0.00 40.92	Samaleshwari & Lajkura 7.68 0.00 1.42 0.00 9.10 17.81 0.00 1.69 0.00 Lakhanpur, Belpahar & Lilari 20.45 0.00 3.65 4.00 28.10 34.19 0.00 1.81 0.00 Samaleshwari & Kulda, Garjanbahal, Siarmal, Basundhara 20.01 0.00 16.83 0.00 36.84 48.60 0.00 23.00 0.00 (W) Extn Hirakhand-Bundia, Orient 1,2,3 0.00 0.00 0.24 0.00 0.24 0.82 0.00 26.50 0.00 Jasundhara CF 48.14 0.00 22.14 4.00 74.04 101.42 0.00 26.50 0.00 Jagarath, Bharatpur, Hingula, Naniak, Jagarath, Bharatpur, Bubaneswari, Ananta, Kaniak, Jagarath, Bharatpur, Bubandra 0.00 23.13 9.24 81.27 123.3 0.00 13.31 10.5 IMCL 115.93 0.00 47.48 13.24 176.41 248.6 0.00 40.92 10.5	Samaleshwari & Lajkura 7.68 0.00 1.42 0.00 9.10 17.81 0.00 1.69 0.00 19.50 Lakhanpur, Belpahar & Lilari 20.45 0.00 3.65 4.00 28.10 34.19 0.00 1.81 0.00 36.00 Siarmal, Basundhara, (W) Extn 20.01 0.00 16.83 0.00 36.84 48.60 0.00 23.00 0.00 71.60 Wi Extn Hirakhand-Bundia, Orient 1,2,3 0.00 0.24 0.00 0.24 0.82 0.00 0.00 0.82 Jasundhara CF 48.14 0.00 22.14 4.00 74.04 101.42 0.00 26.50 0.00 127.92 Jaganath, Bharatpur, Hingula, Nanina, Jaganath, Bharatpur, Hingula, Nandira, Balram, Balabhadra, Subhadra 0.00 23.13 9.24 81.27 123.3 0.00 13.31 10.5 147.08 FY22 66% FY26 84% 0.00 40.92 10.5 295.00	Samaleshwari & Lajkura 7.68 0.00 1.42 0.00 9.10 17.81 0.00 1.69 0.00 19.50 17.81 Lakhanpur, Belpahar & Lilari 20.45 0.00 3.65 4.00 28.10 34.19 0.00 1.81 0.00 36.00 37.39 Kulda, Garjanbahal, Siarmal, Basundhara 20.01 0.00 16.83 0.00 36.84 48.60 0.00 23.00 0.00 71.60 79.50 Siarmal, Basundhara 0.00 0.00 0.24 0.00 0.24 0.82 0.00 0.00 0.82 0.78 Jasundhara CF 48.14 0.00 22.14 4.00 74.04 101.42 0.00 26.50 0.00 127.92 136.08 Lingaraj OCP 18.89 0.00 2.21 0.00 21.10 18.89 0.00 1.11 0.00 20.00 17.00 Bhubaneswari, Ananta, Kaniha, Jaganath, Bharatpur, Hingula, Nandira, Balram, Balabhadra, Subhadra 0.00 25.34 9.24 102.36 14	Samaleshwari & Lajkura & Lijkura 7.68 0.00 1.42 0.00 9.10 17.81 0.00 1.69 0.00 19.50 17.81 0.00 Lakhanpur, Belpahar & Lilari 20.45 0.00 3.65 4.00 28.10 34.19 0.00 1.81 0.00 36.90 37.99 0.00 Kulda, Garjanbahal, Siarnal, Basundhara 20.01 0.00 16.83 0.00 36.84 48.60 0.00 23.00 0.00 71.60 79.50 0.00 Wirekhand-Bundia, Orient 1,2,3 0.00 0.24 0.00 0.24 0.82 0.00 0.00 127.92 136.08 0.00 Lingaraj OCP 18.89 0.00 2.21 0.00 21.10 18.89 0.00 17.00 0.00 Bhubaneswari, Ananta, Kaniha, Jaganath, Bharatpur, Hingula, Nandira, Bubhadra 0.00 23.13 9.24 81.27 123.3 0.00 13.31 10.5 147.08 145.3 0.00 MCL 115.93 0.00 47.48 13.24	Samaleshwari & Lajkura Lakhapur, Belpahar Kulari 7.68 0.00 1.42 0.00 9.10 17.81 0.00 1.69 0.00 19.50 17.81 0.00 1.69 Lakhapur, Belpahar Kulda, Garjanbahal, Siarmal, Basundhara 20.01 0.00 3.65 4.00 28.10 34.19 0.00 1.81 0.00 36.00 37.99 0.00 2.01 Kulda, Garjanbahal, Siarmal, Basundhara 20.01 0.00 16.83 0.00 36.84 48.60 0.00 23.00 0.00 71.60 79.50 0.00 7.50 Vij Extin Hirakhand-Bundia, Orient 1,2,3 0.00 0.24 0.82 0.82 0.00 0.00 127.92 136.08 0.00 11.20 Lingaraj OCP Bhubaneswari, Ananta, Kaniha, Jaganath, Bharathur, Hirgula, Nandira, Baltarn, Balabhadra, Subhadra 0.00 23.13 9.24 81.27 123.3 0.00 13.31 10.5 147.08 145.3 0.00 15.7 Hingula, Nandira, Baltarn, Balabhadra, Subhadra 67.79 0.00 25.34 9.24 1	Samaleshwari & Lajkura Lakhanpur, Belpahar Kulda, Garjanbahal, Siarmal, Basundhara (Basundhara L2, 2001 0.00 1.42 0.00 9.10 17.81 0.00 1.69 0.00 19.50 17.81 0.00 1.69 0.00 Kulda, Garjanbahal, Siarmal, Basundhara Batandramer, Baganath, Basundhara Dorient 1,2,3 20.01 0.00 16.83 0.00 36.84 48.60 0.00 23.00 0.00 71.60 79.50 0.00 7.50 0.00 tirakhand-Bundia, Orient 1,2,3 0.00 0.00 0.24 0.82 0.00 0.00 0.82 0.78 0.00 0.00 0.00 tingaraj OCP 48.14 0.00 22.14 4.00 74.04 101.42 0.00 26.50 0.00 127.92 136.08 0.00 11.20 0.00 Lingaraj OCP 48.14 0.00 23.13 9.24 101.42 0.00 13.31 10.5 147.08 145.3 0.00 15.7 10.50 Hungara, Nanira, Barkarn, Balabhadra, Subhadra 67.79 0.00 25.34 9.

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^{2528976/2023/CPIAM} Outlook – Mahanadi Coalfields Limited (MCL)

MCL's siding-wise despatch summary with destination states for FY21-22

Siding	Despatch in Tonnes	Despatch in Million Tonnes	Estimated Rakes/Day	Andhra Pradesh	Jharkhand	Odisha	Chhattisgarh	Maharashtra	Tamil Nadu	West Bengal	Madhya Pradesh	Karnataka	Bihar	Uttar Pradesh	Haryana	Punjab
Bharatpur Silo 1	2069078.51	2.07	1.47	1.0	0.0	0.1	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bharatpur Silo 2	1193587.9	1.19	0.85	0.5	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spur 1	5904201.36	5.90	4.20	1.5	0.0	0.8	0.1	0.1	1.0	0.4	0.0	0.1	0.0	0.0	0.0	0.2
Spur 2	5818731.5	5.82	4.14	1.3	0.0	0.9	0.1	0.1	0.9	0.5	0.0	0.1	0.0	0.0	0.0	0.2
Spur 3	3477567.73	3.48	2.47	0.9	0.0	0.7	0.1	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spur 4	3411347.37	3.41	2.43	0.8	0.0	0.6	0.2	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spur 5	7189207.65	7.19	5.12	1.8	0.0	0.9	0.1	0.0	1.3	0.7	0.0	0.1	0.0	0.0	0.0	0.2
Spur 6	7215058.76	7.22	5.13	1.6	0.0	0.9	0.2	0.0	1.3	0.7	0.0	0.1	0.0	0.0	0.0	0.2
Spur 7	4476675.51	4.48	3.19	0.9	0.0	1.1	0.1	0.0	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.1
Spur 8	1993386.53	1.99	1.42	0.5	0.0	0.3	0.0	0.1	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Spur 9	6147511.35	6.15	4.37	1.1	0.0	1.2	0.1	0.0	1.5	0.3	0.0	0.0	0.0	0.0	0.0	0.1
Lingaraj Silo	5946739.16	5.95	4.23	1.1	0.0	1.6	0.2	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lingaraj SPUR3- P	1075652	1.08	0.77	0.2	0.0	0.2	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LMGT 1	3829284.66	3.83	2.72	0.1	0.0	2.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LMGT 2	3749139.89	3.75	2.67	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deulbera	4288665.1	4.29	3.05	0.5	0.0	0.5	0.1	0.1	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Talcher CF	67785834.98	67.79	48.24	13.8	0.1	15.0	1.4	0.4	12.4	3.1	0.1	0.5	0.0	0.3	0.1	1.0
BOCM 1	1070288.7	1.07	0.76	0.1	0.0	0.0	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1
BOCM 2	2261600.29	2.26	1.61	0.2	0.0	0.1	0.4	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.2
BOCM 3	6270129.92	6.27	4.46	0.5	0.0	0.5	1.0	0.7	0.6	0.3	0.1	0.0	0.0	0.1	0.0	0.6
BOCM 6	5281325.06	5.28	3.76	0.5	0.0	0.2	1.2	0.5	0.6	0.3	0.1	0.0	0.0	0.1	0.1	0.2
BOCM 7	5571486.23	5.57	3.96	0.5	0.0	0.4	1.3	0.4	0.4	0.3	0.1	0.0	0.0	0.0	0.1	0.4
Kanika	7208433.3	7.21	5.13	0.2	0.0	3.6	0.6	0.2	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Kanika Store	855703.3	0.86	0.61	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SARDEGA SDG	11949861.29	11.95	8.50	0.2	0.4	1.9	2.3	0.3	0.1	2.7	0.0	0.0	0.0	0.1	0.1	0.5
LOCM 1	3271218.13	3.27	2.33	0.2	0.1	0.5	0.7	0.2	0.2	0.4	0.0	0.0	0.0	0.1	0.0	0.0
LOCM 2	279767.01	0.28	0.20	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LOCM 3	4124784.03	4.12	2.94	0.2	0.0	0.2	1.1	0.4	0.3	0.4	0.1	0.0	0.0	0.0	0.0	0.2
Total IB-Valley CF	48144597.26	48.14	34.26	2.7	0.5	8.0	8.8	3.2	2.6	4.8	0.4	0.0	0.2	0.4	0.3	2.3
Total MCL	115930432.2	115.93	82.50	16.5	0.6	23.0	⁹⁰ 10.2	3.6	15.0	7.9	0.5	0.5	0.2	0.7	0.4	3.2

^{2528976/2023/CPIAM} Outlook – Lakhanpur-Belpahar Area

Siding	Despatch in Tonnes	Despatch in Million Tonnes	Estimated Rakes/Day	Andhra Pradesh	Jharkhand	Odisha	Chhattisgarh	Maharashtra	Tamil Nadu	West Benga	I Gujarat	Madhya Prades	h Karnataka	Bihar	Uttar Pradesh	Haryana	Punjab	Rajasthan
BOCM 1	1070288.7	1.07	0.76	0.1	0.0	0.0	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
BOCM 2	2261600.29	2.26	1.61	0.2	0.0	0.1	0.4	0.3	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0
BOCM 3	6270129.92	6.27	4.46	0.5	0.0	0.5	1.0	0.7	0.6	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.6	0.0
BOCM 6	5281325.06	5.28	3.76	0.5	0.0	0.2	1.2	0.5	0.6	0.3	0.0	0.1	0.0	0.0	0.1	0.1	0.2	0.0
BOCM 7	5571486.23	5.57	3.96	0.5	0.0	0.4	1.3	0.4	0.4	0.3	0.0	0.1	0.0	0.0	0.0	0.1	0.4	0.0
Total Lakhanpur- Belpahar	20454830.2	20.45	14.56	1.78	0.11	1.28	4.01	2.09	1.89	0.97	0.00	0.34	0.00	0.10	0.20	0.22	1.55	0.00
			Despatch fro	om	١	NALCO - [DAMONJOI	DI		0.03		VE	DANTA LTI) - BAN	NJARI		0.7	'1
	Consume	r	BOCM Siding	s of	NTPC SAI	L POWEF	R COMPAN	Y LIMITED		0.09		VED/	ANTA LTD	- LANJ	IGARH		0.0)3
			Lakhanpui Belnahar Area	r- ∙ π/⊓	RAIGAR	H ENERG	Y GENERA ⁻	TION LTD		0.51		VIZAG	THERMAL	POWE	R PLANT		0.0)1
ADA	NI POWER MAHAF	RASHTRA LTD	0.53		RAJIV GANI	DHI THER	MAL POW	ER STATION		0.19	A	DHUNIK PO	VER AND	NATUF	RAL RESOUF	RCES	0.0	3
BAKRES	WAR THERMAL P	OWER STATION	0.07		RAYALSEE	MA THER	MAL POW	ER PROJECT		0.30		BHUSHAN	POWER A	ND ST	EEL LIMITED)	0.0)5
BAND	EL THERMAL PO	VER STATION	0.06		RC	DURKELA	STEEL PLA	NT		0.05		BHUSHA	N POWER		STEEL LTD		0.0)1
BARH S	UPER THERMAL P	OWER STATION	0.10		SIMHAD	RISUPF		POWFR		0.63			DB POW)		0.6	0
DAD	RI THERMAL POW	/ER STATION	0.02		SIPAT SUP			R STATION		0.16		HINDA		STRIFS			0.2	8
DR. NA	RLA TATA RAO PO	OWER STATION	0.77							1 55		HIRAN		FRGVI			0.2	0
DURG	APUR STEEL THEF	RMAL POWER	0.33							0.19							0.0	
GADAF	WARA THERMAL	POWER PLANT	0.10		TANDA					0.18							0.0	15
	JHABUA POWE	R LTD	0.24		TUTICORI	N IHERN	AL POWE	RPROJECT		1.41				ALPO		JN	0.0)1
	JINDAL POWER	R LTD	0.61		VEDA	NTA LTD ·	- BHURKAN	/IUNDA		0.05		ККМ	/I POWER	GEN P	VILID		0.3	0
KHAPER	CHEDA THERMAL	POWER STATION	0.80		ARAVAL	I POWER	COMPAN	PVT LTD		0.02		RAIF	PUR ENERG	GEN LI	MITED		0.2	24
KOLAG	HAT THERMAL PC	OWER STATION	0.29		CHANDRA	PUR SUP	ER THERM	AL POWER		0.00		SEMBCO	RP ENERG	iy indi	A LIMITED		0.0	6
KORA			0.12		DURGAPU	JR THERN	/IAL POWE	R STATION		0.10		MSP ST	EEL AND P	OWER	LIMITED		0.0)3
			0.18		GMR	KAMALAI	NGA ENER	GY LTD		0.04		R K M PO	WERGEN	PRIVA	TE LIMITED		0.0	6
			U.13		HIRA	AMAYE E	NERGY LIN	1ITED		0.01		SHYAM N	/IETALICS	AND EI	NERGY LTD		0.0)5
			1.04		NTECL VAL	LUR THEF	RMAL POW	ER PROJECT		0.20	S	OLAPUR SUI	PER THERM	MAL PO	OWER PROJ	ECT	0.0	0
METT		WFR STATION	0.11		RAS	TRIYA ISF	PAT NIG 99	1 LTD		0.01	I	ALITPUR PC	WER GEN	IERATI	ON COMPA	NY	0.0	0
nerated from from the from the first from the first from the first first first first first from the first first first first from the first first first first from the first	CS by ERRAHEST MARA	A ROQVEROPLANNTRR)-CPIAM, MOC- 60), Ministry (of coalthe ta	VTA/2010	ER: COMPA	NY LTD		0.08			Total De	spatch	1		14.	56

^{2528976/2023/CPIAM} Outlook – Samaleswari-Lajkura Area

Siding	Despatch in Tonnes	Despatch in Million Tonnes	Estimated Rakes/Day	Andhra Pradesh Jharkhand Odisha Chhattisgarh Maharashtra 0.2 0.1 0.5 0.7 0.2					Tamil Nadu	West Benga	al Gujarat I	Madhya Prade	sh Karnataka	a Bihar	Uttar Pradesh	Haryana	Punjab	Rajasthan
LOCM 1	3271218.13	3.27	2.33	0.2	0.1	0.5	0.7	0.2	0.2	0.4	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
LOCM 2	279767.01	0.28	0.20	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LOCM 3	4124784.03	4.12	2.94	0.2	0.0	0.2	1.1	0.4	0.3	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0
Total Samaleswar Lajkura	i- 7675769.17	7.68	5.46	0.47	0.08	0.67	1.82	0.59	0.54	0.82	0.00	0.08	0.00	0.04	0.08	0.04	0.23	0.00
			Despatch from		KOLAGHAT 1	THERMA	L POWER	STATION		0.12		TALWA	NDI SABO	POWE	R LTD		0.2	3
	Consumer		LOCM Sidings of	к	ORBA SUPER	THFRM		R STATION		0.01		TANDA TH	IERMAL P	OWER	STATION		0.0	7
			Laikura Area: R/D)				R		0.02	_	THE TATA	A POWER	COMPA	ANY LTD		0.0	1
ADAN	I POWER MAHAR	ASHTRA LTD	0.01							0.02	1			POWE			0.3	7 1
ADHUNIK I	POWER AND NATU	JRAL RESOURCES	0.07	I			AL POWER	STATION		0.83							0.0	L G
BAKRES	WAR THERMAL PC	OWER STATION	0.02		MEJIA TH	HERMAL	POWER P	LANT		0.30					ANI SARH		0.20	0
BARH SI	IPFR THFRMAL PC	OWER STATION	0.04		METTUR TH	HERMAL	POWER S	TATION		0.05		VIZAG TI	HFRMAL F	POWFR	PLANT		0.0	1
BHUSH			0.04	Ν	/IOUDA SUPI	ER THERI	MAL POW	ER PLANT		0.20		ARAVALI P	OWER CO	MPAN	Y PVT LTD		0.0	0
BHU			0.03		MSP STEE	EL AND P	OWER LIN	VITED		0.01			DB POWE	R LTD			0.4	6
СНАИОС			0.00	N	TECL VALLU	R THERM	IAL POWE	R PROJECT		0.12	0	GADARWAR	A THERM	AL POV	VER PLANT		0.0	3
			0.00		ΝΤΡΟ SAIL Ρ		ΟΜΡΔΝΥ			0 13		GMR KA	MALANG	A ENER	GY LTD		0.0	0
			0.01	Р						0.10		JIL	NDAL POV	VER LTE)		0.0	6
			0.10	K.	AJIV GANDH		ALPOWE	K STATION		0.04		KORADI TH	HERMAL P	OWER	STATION		0.02	2
DURG			0.19	R	AYALSEEMA	THERM	AL POWE	R PROJECT		0.04	KSk	(MAHANAI	DI POWER	COMP	ANY LIMITE	D	0.0	5
DURGA		WER STATION	0.19		SEMBCOR	P ENERG	Y INDIA L	IMITED		0.04		NA	LCO - DAN	NONJO	DI		0.0	1
HIN	DALCO INDUSTRIE	ES LIMITED	0.29		SHYAM ME	TALICS A	AND ENER	GY LTD		0.02		RKM	POWER G	EN PV			0.14	4
	JHABUA POWER	R LTD	0.05		SHYAM	STEEL IN	DUSTRIES	LTD		0.00		R K M POV	VERGEN P	RIVATE			0.0	0
JINDAL	STAINLESS LTD J	AJPUR PLANT	0.02		SIMHADRI	SLIPER T	HERMAL	POWFR		0 27		RASTR					0.0	1
	JK PAPER MIL	LS	0.00	c		TUEDAA				0.10		RUU	Total Dec	cci PLA natch			U.U	6
Generate KHARERK	HEDA THERMALR	QXXE,RMSTATIONKR	R)-CPIAM, MOZZO(NRR)), Ministry	OF COAL on 17	705/2023	AL POVVER 04:46 PM	STATION		0.10				μαιτη			5.4	0

^{2528976/2023/CPIAM} Outlook – IB-Valley Area – Kanika Siding

Siding	Despatch in Tonnes	Despatch in Million Tonnes	Estimated Rakes/Day	Andhra Pradesh	Jharkhand	Odisha	Chhattisgarh	Maharashtra	Tamil Nadu	West Benga	l Gujarat	Madhya Prades	h Karnataka	Bihar	Uttar Pradesł	ı Haryana	Punjab	Rajasthar
Kanika	7208433.3	7.21	5.13	0.2	0.0	3.6	0.6	0.2	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kanika Store	855703.3	0.86	0.61	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total IB-Valley Kanika	8064136.60	8.06	5.74	0.26	0.00	4.17	0.65	0.19	0.13	0.27	0.00	0.01	0.00	0.02	0.03	0.00	0.01	0.00
			Despatch fro	om -	MSP S	TEEL AN	D POWER	LIMITED		0.01		VE	DANTA LT	D - LAI	NJIGARH		0.0	08
	Consumer		Kanika Siding IB Valley: R	s in ′D	NTPC SAI	IL POWE	R COMPAN	NY LIMITED		0.18		TAL	WANDI SA	BO PC	WER LTD		0.0	01
DR NARI	ΙΑ ΤΑΤΑ ΒΑΟ ΡΟ	WFR STATION	0.04	_	GADARW	ARA THE	RMAL PO	WER PLANT		0.01		METTU	R THERM	AL POV	VER STATIO	N	0.0	01
RAS	STRIYA ISPAT NI	GAM LTD	0.12		CHANDRA	APUR SUI	PER THERN	MAL POWER	ł	0.00		TUTICOR	IN THERM	1AL PO	WER PROJE	СТ	0.1	12
RAYALSEE	MA THERMAL P	OWER PROJECT	0.01		KHAPERKH	EDA THE	RMAL PO\	WER STATIC	N	0.11		DADRI	THERMA	L POW	ER STATION		0.0	00
SIMHAI	DRI SUPER THER	MAL POWER	0.10		MOUDA S	UPER TH	ERMAL PC	OWER PLAN	г	0.07		TANDA	THERMA	L POW	ER STATION	I	0.0	03
VIZA	G THERMAL POV	VER PLANT	0.00		BAI	RGARH C	EMENT W	ORKS		0.01		BAKRESW	AR THERI	MAL PO	OWER STAT	ON	0.0	00
BARH SUF	PER THERMAL PO	OWER STATION	0.02		BHUSH	IAN POW	/ER AND S	TEEL LTD		0.06		BANDE	L THERMA	AL POW	ER STATIO	N	0.0)2
AMBUJA C	EMENTS LIMITE	D - BHATAPARA	0.02		DAIMIA	CEMEN	T (BHARAT	T) LIMITED		0.00		DURGA	PUR STEE	L THER	MAL POWE	R	0.0	05
JIND	AL STEEL AND PO	OWER LTD	0.07		HIND					0.17		DURGAP	UR THERN	/IAL PO	WER STATI	NC	0.0)2
JSW ISPA	T SPECIAL PROD	OUCTS LIMITED	0.01					וחר		0.28			ISW CEME	ENT LIN	/ ITED		0.0	00
К	SK MAHANADI F		0.01		ı D <i>i</i>					0.20		KOLAGH	AT THERM	1AL PO	WER STATIO	ON	0.1	10
			0.01							1.10		MEJI	A THERMA	AL POV	/ER PLANT		0.0	08
MAHENDR	A SPONGE AND	POWER LIMITED	0.47		VEDAI		101 - 101 101 - 101 - BHURKA	jaki I MUNDA		2.12			Total [Despat	ch		5.7	74

^{2528976/2023/CPIAM} Outlook – IB-Valley Area – Sardega Siding

MCL's siding-wise despatch summary with destination states for FY21-22

Despatch in Mill Siding Despatch in Tonnes Tonnes	ion Estimated Rakes/Day	Andhra Pradesh	ndhra Jharkhand Odisha Chhattisgarh Maharashtra Tamil adesh Nadu							t Madhya Prades	h Karnataka	Bihar	Uttar Pr	adesh H	aryana	Punjab	Rajasthan
SARDEGA SDG 11949861.29 11.95	8.50	0.2	0.4	1.9	2.3	0.3	0.1	2.7	0.0	0.0	0.0	0.0	0. 1	1	0.1	0.5	0.0
Consumer	Despatch from Sardega Siding i IB Valley: R/D	 n	HINDAL	LCO INDU	JSTRIES LI IERGY LIM	MITED		0.02 0.06		NTPC SAIL PC OPG POWER	WER CON GENERAT	/IPANY	(LIMITE /T LTD	D		0.0 0.0	1 9
ADHUNIK POWER AND NATURAL RESOUR	CES 0.33		HIRAN	IMAYE EI	NERGY LIN	MITED		0.26		R K M POWEI	R GEN PVT	LTD				0.2	4
AMBUJA CEMENTS LIMITED - BHATAPAR	A 0.07		J	INDAL PO	OWER LTD)		0.08		RAIPUR ENER	GEN LIMI	TED				1.1	0
ARAVALI POWER COMPANY PVT LTD	0.08		JK PAPER) - JK PAPE	ER MILLS		0.02		ROURKELA ST	EEL PLAN	Т				0.0	3
BAIKUNTH CEMENT WORKS	0.01		KAHALGAC	ON SUPE	R THERMA	AL POWER		0.00		SANTALDIH T	HERMAL	POWE	R STATIO	ON		0.3	0
BANDEL THERMAL POWER STATION	0.01		KHAPERKHE	DA THERI	MAL POW	ER STATION	I	0.05		SHYAM META	LICS AND	ENER	GY LTD			0.0	2
BARGARH CEMENT WORKS	0.03		KOLAGHAT	THERM	AL POWEF	R STATION		0.25		SIMHADRI SU	PER THER	MALF	POWER			0.1	9
BARH SUPER THERMAL POWER STATIO	N 0.01		KORBA SUPE	ER THERN	MAL POW	ER STATION		0.01		SIPAT SUPER	THERMAL	POW	ER STAT	ION		0.0	4
BHUSHAN POWER AND STEEL LIMITED	0.07		ΙΑΙΙΤΡΙ		FR GENER	ATION		0.03		TALWANDI S	ABO POW	ER LTC)			0.4	9
DALMIA CEMENT (BHARAT) LIMITED	0.01							0.02		TANDA THER	MAL POW	ER ST	ATION			0.0	5
DB POWER LTD	0.35						L	0.02		ΤΗΕ ΤΑΤΑ ΡΟ	WER CON	1PANY	LTD			0.0	3
DURGAPUR PROJECTS LIMITED	0.32		LARA SUPEI	RIHERIV	IAL POWE	RSTATION		0.30		TUTICORIN T	HERMAL P	OWE	R PROJE	СТ		0.0	0
DURGAPUR STEEL THERMAL POWER	0.18		MAHENDRA	SPONGE	AND POW	VER LIMITED)	0.07		VEDANTA LTI) - BANJAI	RI				1.1	.1
DURGAPUR THERMAL POWER STATION	I 0.14		MEJIA	THERMA	L POWER	PLANT		0.45		VEDANTA LTI) - BHURK	AMUN	NDA			0.3	7
FARAKKA SUPER THERMAL POWER STATIO	ON 0.38		MOUDA SU	PER THE	RMAL POV	WER PLANT		0.25		ACC LTD						0.0	0
HALDIA ENERGY LIMITED	0.17		MSP STI	EEL AND	POWER L	IMITED		0.01		JK PAPER MIL	LS					0.0	0
HALDIA ENERGY LTD	0.20		NA	ALCO - D	amon10 1	Зı		0.17								8.5	0

^{2528976/2023/CPIAM} Outlook – Talcher Area – Spur Sidings and Bharatpur Silos

Siding	Despatch in Tonnes	Despatch in Million Tonnes	Estimated Rakes/Day	Andhra Pradesh	Jharkhand	Odisha	Chhattisgarh	Maharashtra	Tamil Nadu	West Bengal	Madhya Pradesh	Karnataka	Bihar	Uttar Prades	n Haryana	Punjab
Bharatpur Silo 1	2069078.51	2.07	1.47	1.0	0.0	0.1	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bharatpur Silo 2	1193587.9	1.19	0.85	0.5	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spur 1	5904201.36	5.90	4.20	1.5	0.0	0.8	0.1	0.1	1.0	0.4	0.0	0.1	0.0	0.0	0.0	0.2
Spur 2	5818731.5	5.82	4.14	1.3	0.0	0.9	0.1	0.1	0.9	0.5	0.0	0.1	0.0	0.0	0.0	0.2
Spur 3	3477567.73	3.48	2.47	0.9	0.0	0.7	0.1	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spur 4	3411347.37	3.41	2.43	0.8	0.0	0.6	0.2	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spur 5	7189207.65	7 19	5.12	1.8	0.0	0.9	0.1	0.0	13	0.7	0.0	0.1	0.0	0.0	0.0	0.2
Spur 6	7215058 76	7.25	5.13	1.6	0.0	0.9	0.2	0.0	13	0.7	0.0	0.1	0.0	0.0	0.0	0.2
Spur 7	4476675 51	4 48	3 19	0.9	0.0	1 1	0.2	0.0	0.8	0.7	0.0	0.1	0.0	0.0	0.0	0.2
Spur 8	1993386 53	1 99	1 42	0.5	0.0	03	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1
Spur 0	61/7511 25	6 15	1.42	1 1	0.0	1.2	0.0	0.1	1 5	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total	48896354.17	48.90	34.80	11.95	0.08	7.54	1.01	0.36	9.05	3.02	0.00	0.08	0.44	0.02	0.24	0.05
		Despatch fi	rom MAA MAH	, IAMAYA INDI	ISTRIESLTD	0	01		IK PAPER M		0.02		IINF		ſŊ	0.04
	Consumer	Spur Siding	sin RASTR	IYA ISPAT NIC	GAM LTD	0	.42	NA	LCO - DAM		0.23	R	AIGARH		RATION	0.04
		Talcher: R	/D STEE	EL EXCHANGE	INDIA	0	.00	UTKAL ALU	MINA INTER	RNATIONAL LT	D 0.14			LTD		0.04
APPDCL - SRI DA	APPDCL - SRI DAMODARAM SANJEEVAIAH RAYALSEEMA THERMAL POWER PROJECT		STEEL	EXCHANGE IN	IDIA LTD	0	.01	VEDA	NTA LTD - L	ANJIGARH	0.17	н	INDALCO	INDUSTRIES	LIMITED	0.05
RAYALSEEMA T			VIZAG T	HERMAL POW	/ER PLANT	0	.05	TALWA	NDI SABO F	POWER LTD	0.90		SENDOZ	COMMERCIA	LS PVT	
SEMBCORP	RAYALSEEMA THERMAL POWER PROJECT SEMBCORP ENERGY INDIA LIMITED		11	ND SYNERGY I	LTD	0	.01	OPG POW	/ER GENERA	TION PVT LTD	0.09			LTD		0.03
SIMHADRI S	UPER THERMAL POW	/ER 2.79	KSK	MAHANADI P	OWER	0	.00	DADRI TH	IERMAL PO	WER STATION	0.06		TAT	A STEEL BSL L	TD	0.23
LARA SUPER T	HERMAL POWER STA	TION 0.54	KSK MAHANAI	DI POWER CO	MPANY LIMITED	0 0	.05	FEROZ	E GANDHI U	JNCHAHAR	0.08	L	ALITPUR	POWER GENE	RATION	0.02
NTPC SAIL PO	WER COMPANY LIMI	TED 0.12	ARAVALI P	OWER COMP	ANY PVT LTD	0	.05	LALITPUR PO	WER GENER	ATION COMP	ANY 0.00		PRA	AGRAJ POW	ER	
RKMP	OWER GEN PVT LTD	0.15	KUDGI SUPER	R THERMAL PO	OWER STATION	0	.01	TANDA TH	HERMAL PO	WER STATION	0.04		G	ENERATION		0.02
ADHUNIK POWEI	R AND NATURAL RES	OURCES 0.08	GADARWAR	A THERMAL	POWER PLANT	0	.02	BANDEL T	HERMAL PC	WER STATION	0.36	В	ARH SUP	ER THERMAL	POWER	0.00
RAICHUR TH	ERMAL POWER STAT	ON 0.43	ADANI ELEC		ABAI LIMITED	0	.03		CESC LTI	D	0.18			STATION		0.02
MB POWER ((MADHYA PRADESH)	LID 0.06	ADANI PO			0	.04		R SIEEL IHE		0.15		RAIPUR	ENERGEN LIN	/ITED	0.03
GIVIR KAIV		2.36					.13 1				10N 0.04	A	DANI PO	WER RAJASTI	HAN LTD	0.04
	ALCO - ANGUL	2.UZ				T O	.02				0.08			ITC LTD		0.01
		0.02 0.87	SULAPUR SUPE			1 0	.14				0.20		ORISSA	METALIKS PR	IVATE	0.14
	FRMAL POWER STATI	ON 2.39		MENT (BHAF	AT) LIMITED	0	01	KOLAGHAT	THERMAL P	OWER STATIO	N 0.30			LIMITED		0.14
NORTH CHENNA	I THERMAL POWER S	TATION 3.05	EMA	MI PAPER MI	LLS LTD	0	.03	SHYAM	STEEL INDU	JSTRIES LTD	0.01		LAKHEF	RI CEMENT W	ORKS	0.00
NTECL VALLUR	THERMAL POWER PR	OJECT 1.99	FAC	OR POWER LI	MITED	0	.07	SU	PER SMELTE	ERS LTD	0.02		COASTA	ENERGEN PI	RIVATE	0.00
TUTICORIN TH	HERMAL POWER PRO	JECT 1.52	FACOR PO	OWER LIMITE	D - ODISHA	0	.08	AMBUJA C	EMENTS LI	VITED - ROPA	R 0.01			LIMITED		0.00
HALDI	A ENERGY LIMITED	0.63	INDIAN	I FARMERS FE	RTILIZER	0	.07	ITC LTD - PA	PERBOARD	S AND SPECIAL	IT 0.01	VE	DANTA	TD - BHURKA	MUNDA	0.03
HAL	HALDIA ENERGY LTD		INDIAN MET	ALS AND FER	RO ALLOYS LTD	0	.21	VIMLA II	VFRASTRUC	TURE (INDIA)	0.00	e	ODAVAF		FIES LTD	0.01
MEJIA THE	MEJIA THERMAL POWER PLANT		JINDAL STA	INLESS LTD J	AJPUR PLANT	0	.1µ@3 I	LALITPUR POV	VER GENERA	ATION COMPA	NY L 0.01		ORISSA	METALIKS PV	T LTD	0.01
ANDHI	ANDHRA PAPER LIMITED			STEEL AND PO	OWER LTD	0	.60	SHYAM ST	EEL MANUF	ACTURING LT	0.01		RASHMI	METALIKS LI	VITED	0.01
DR. NARLATA	ናፐ ^{አሃ} ዌ፟፟፟፟፟ል፝፝፝፝፟፝ኯ፟፟፟፟፟፟፟፟፟፟፟፟፟፟፟፟፟፟፟፟፟፟፟፟፟፟	10N ^{MOC-SO(NER1-CP}	JKPAPERI	LIMITED'- 5RF	PAPER MILLS 202	^{5 04:46} 0	.0'4	BHARAT A	LUMINIUM	COMPANY LT	0.02			Total		34.80

^{2528976/2023/CPIAM} Outlook – Talcher Area – Lingaraj & Deulbera Sidings

MCL's siding-wise despatch summary with destination states for FY21-22

Siding	Despatch in Tonnes	Despatch in Million Tonnes	Estimated Rakes/Day	Andhra Pradesh	Jharkhand	Odisha	Chhattisgarh	Maharashtr	a Tamil Nadu	West Benga	I Madhya Pradesh	Karnataka	Bihar	Uttar Pradesh	Haryana	Punjab
Lingaraj Silo	5946739.16	5.95	4.23	1.1	0.0	1.6	0.2	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lingaraj SPUR3- P	1075652	1.08	0.77	0.2	0.0	0.2	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LMGT 1	3829284.66	3.83	2.72	0.1	0.0	2.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LMGT 2	3749139.89	3.75	2.67	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deulbera	4288665.1	4.29	3.05	0.5	0.0	0.5	0.1	0.1	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total	18889480.81	18.89	13.44	1.83	0.00	7.49	0.44	0.08	3.33	0.11	0.00	0.00	0.04	0.00	0.04	0.02
		De	espatch from Lingarai &		HALDIA EN	IERGY LI	ſD	(0.02		RAICHUR THE	RMAL PO\	VER ST	ATION	0.0	4
	Consumer		Deulbera in	н	RAMAYE ENI	ERGY LI	MITED	(0.01		RASTRIYA	A ISPAT NIC	GAM LT	D	0.0	1
		r	alcher: R/D							F	RAYALSEEMA TH	HERMAL P	OWER	PROJECT	0.0	3
ADANI ELE	CTRICITY MUMBA	I LIMITED	0.01	KHAPERK	HEDA THERN	/IAL POV	WER STATIO	N (0.03		SEMBCORP E	ENERGY IN	DIA LIN	1ITED	0.2	2
ADANI PC	WER MAHARASH	TRA LTD	0.00	KOLAG	HAT THERMA	AL POWE	ER STATION	(0.03		SIMHADRI SU	JPER THER	MAL PO	OWER	1.4	.9
ARAVALI P	POWER COMPANY	' PVT LTD	0.02	LARA SU	JPER THERM	AL POW	ER STATION	1 (0.41	SC	LAPUR SUPER	THERMAL	POWEF	R PROJECT	0.0	3
BANDEL T	HERMAL POWER	STATION	0.02	ME.	JIA THERMAL	POWER	R PLANT	(0.01	TA	ALCHER SUPER 1	THERMAL	POWEF	STATION	6.8	3
BARH SUPER	R THERMAL POWE	R STATION	0.00	METT	UR THERMAL	POWE	R STATION	(0.53		TALWAND	I SABO PC	WER L	TD	0.0	6
DADRI TH	HERMAL POWER S	TATION	0.01		NALCO -	ANGUL		(0.13		TUTICORIN TH	ERMAL PO	WER P	ROJECT	0.3	4
DR. NARLA	TATA RAO POWE	R STATION	0.08		NALCO - DA	MONJC	DDI		0.00		VEDAN	TA LTD - B	ANJARI		0.2	3
DURGAPU	IR STEEL THERMA	0.01								LALITPUR P	OWER GE	NERAT	ION	0.0	0	
FARAKKA SUP	ER THERMAL POV	0.01	NORTH CH	IENNAI THER	MAL PO	WER STATIO	ON :	1.00	٦	MOUDA SUPER	THERMAL	POWE	R PLANT	0.0	0	
FEROZ	E GANDHI UNCHA	0.03	NTECL VA	ALLUR THERN	/IAL POV	VER PROJEC	T :	1.46		TANDA THER	MAL POW	'ER STA	TION	0.0	0	
GMR KA		GY LTD	0.29	NTPC S	AIL POWER (MQ4MITED	(0.03			Total			13.4	44

²⁵²⁸⁹ Proposed evacuation plan for Samaleshwari and Lajkura cluster achievable



^{2528976/2023/CPIAM} Proposed evacuation plan for Lakhanpur & Belpahar cluster achievable



Achievable

^{2528976/2023/CPIAM} Proposed evacuation plan for Basundhara CF achievable



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lines

²⁵²⁸⁹Proposed evacuation plan for Spur1-Spur10 cluster achievable



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²⁵²⁸⁹ Details of works in progress for evacuation from Talcher Coalfields



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Achievable

Realistic 145.2 MTPA evacuation via rail mode ~ 102.97 r/d

Out of the total rail evacuation of ~145.2 MTPA or ~103 R/D, around 25-30 R/D will be evacuated Towards Angul directly leveraging the Angul – Balram line. Doubling of Angul Balram Line has already been recommended as part of the key projects identified for evacuation from TCF.

Remaining 75 R/D will be despatched from Talcher for which 3rd an 4th lines from Talcher Rajatgarh to and Doubling of line from Angul to Talcher is already under progress.

For Internal Spur movement of coal, Doubling of Spur lines, 6 RoBs and separate line from Spur 7/8 to Talcher Station is already under progress

^{2528976/2023/CPIAM} Proposed evacuation plan for Lingaraj and Deulbera cluster achievable



^{2528976/2023/CPIAM} Broad Status of MCL's FMC projects (1/2)

SL. NO	PROJECT	PR CAPACITY (MTY)	PR Approval Status	Existing	PH-I Capacity (MTY)	PH-II Capacity (MTY)	PH-III Capacity (MTY)		Anticipated Timelines
1	SARDEGA RLS SIDING	SIDING	Approved	-	20.00	-	-	•	Phase I – 31 st October 2023
2	BHUBANESWARI	40.00	Approved	-	10.00	-	25.00	•	Phase I – 31 st June 2023 Phase III – 31 st March 2029
2	EXPANSION	40.00	Αρριονεά	-	15.00	Anticip (MTY)Capacity (MTY)Capacity (MTY)Capacity (MTY)Anticip (MTY) 20.00 Phase I - 31^{st} October 10.00 - 25.00 Phase I - 31^{st} June 20 Phase III - 31^{st} March 15.00 Phase I - 31^{st} October 10.00 20.00-Phase I - 30^{th} October 10.00 20.00-Phase I - 31^{st} October 10.00 Phase I - 31^{st} October 10.00 Phase I - 31^{st} Decembra 10.00 Phase I - 31^{st} Decembra 10.00 Phase I - 31^{st} Decembra 10.00 25.00Phase III - 31^{st} Decembra	Phase I – 30 th October 2023		
3	LAKHANPUR BELPAHAR LILARI	30.00	Approved	-	10.00	20.00	-	•	Phase I – 31 st October 2023 Phase II – 28 th February 2025
4	GOPALJI-KANIHA EXPANSION	30.00	Approved	-	10.00	-	-	•	Phase I – 31 st December 2023
5	SUBHADRA	25.00	Approved	-	-	-	25.00	•	Phase III – 31 st July 2027
6	BHARATPUR REORGANISATION	20.00	Approved	20.00		111		•	Already existing

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^{2528976/2023/CPIAM} Broad Status of MCL's FMC projects (2/2)

SL. NO	PROJECT	PR CAPACITY (MTY)	PR Approval Status	Existing	PH-I Capacity (MTY)	PH-II Capacity (MTY)	PH-III Capacity (MTY)	Anticipated Timelines
8	BALARAM EXPANSION	15.00	Approved	-	-	-	15.00	• Phase III – 31 st March 2026
9	LINGARAJ	16.00	Approved	-	16.00	-	-	• Phase I – Commissioned on 31 st March 2020
10	ANANTA EXPN	15.00	Approved	-	20.00	-	-	• Phase I – 31 st March 2024
11	LAJKURA- SAMLESWARI	14.50	Approved	-	15.00	-	-	• Phase I – 31 st Oct 2023
12	HINGULA	15.00	Approved	-	10.00	-	-	• Phase I – 30 th June 2023
13	SIARMAL	50.00	Approved	-	-	-	50.00	• Phase III – 31 st August 2026
14	KULDA GARJANBAHAL	40.00	Approved	-	-	-	40.00	• Phase III – 31 st August 2026
15	BALABHADRA*	10.00	Approved	-	-	-	10.00	• Phase III – 30 th June 2028
	Total	320.50		20	126	20 112	165	

²⁵²⁸⁹ The vicinity of Talcher CF

#	Roads	Type of Road	Description
1	National Highway 53 (Previously – NH 6)	National Highway	Connects Surat, Gujarat to Sambalpur then to Paradip port in Odisha
2	National Highway 55 (Previously – NH 42)	National Highway	Highway which connects Angul district to Cuttack
3	National Highway 149	National Highway	Passes through Talcher to Connecting Pallahara and Nuahata near Angul
4	State Highway 63	State Highway	It starts near Budhapal and passed through Chhendipara, Kosala and terminates near Angul
5	State Highway 24	State Highway	SH 24 starts near Reamal and passes through Paikmal, Rendakhol and terminates near Baudhgarh on NH 57
6	State Highway 10	State Highway	It starts near Rourkela and passes through Sundargarh, Jharsuguda and terminates at Sambalpur
7	Angul- Talcher Road	Local Road	Connects Angul to Talcher
8	Angul-Rengali Metalled Road	Local Road	Connects Angul to Rengali
9	Kanihla-Angul Road	Local Road	Connects Angul to Kanihla
10	Chendipada-Jarapada Road	Local Road	Connects Chendipada to Jarapada
11	Kosala-Brahmanbil Road	Local Road	Connects Kosala to Brahmanbil
12	Kosala Road	113 Local Road	Connects Kosala to Kumunda

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹ The portant roads in the vicinity of Talcher CF

- National Highway-6, National Highway-55, National Highway-23, and National Highway-149 pass through the Angul district. National Highway-55 (Previously NH-42) connecting Cuttack-Angul-Sambalpur passes more or less parallel to the southern fringe of the coalfield at about 5 to 7 km. National Highway-23 connecting Talcher-Samal-Pallahara passes through the eastern part of the coalfield.
- Another prominent district road is Angul-Chhendipada-Deogarh road passing through the central part of the coalfield. National Highway-53 originating
 from Chandikhol, also passes through north-eastern part of the coalfield and joins with National Highway-23. Recently a 2-Lane concrete road from
 Basundhara West Extension Check post to Sardega Railway Siding has been completed.
- Paradip is connected to Cuttack, Chandikhole by SH-12 and NH-5A, respectively, which are two of the major cities in Odisha. The following table lists the important roads providing connectivity to Talcher coalfield

In addition to this following are a few projects which are ongoing:

- a) Construction of CT roads with a length of 35 km.
- b) Widening of road from 2 lane to 4 lane from Bankibahal to Kanika Railway Siding for 27 km.
- c) Construction of separate 4-Lane (modified 2-lane) dedicated coal corridor road from Bankibahal to Bhedabhal (on SH-10) in Sundargarh dist. with a length of 33 km.
- d) 4-laning of the Birmitrapur-Barkote section of NH-23 is in progress. This route connects Ranchi to Rourkela, the pre-eminent steel city of Odisha and goes further up to the Angul-Talcher belt, the coal, power, and industrial hub. The corridor crosses NH-6 (New NH No. 49) at Barkote.

As per District Vision Plan 2020, the condition of National Highway-23 is poor and requires immediate attention. In many cases, kuccha road/ Village / Panchayat Road connects the block to State or National highways.

A transport road of length 22 km having at least 7.5meter width through villages has been proposed for movements of coal trucks from mines to State Highways. Accordingly, the strengthening and widening of village road need to be taken up with State Govt. on a priority basis.

Regular maintenance of these roads needs to be taken care as these roads are used by heavy vehicles due to which abrasion of these roads is frequent and thus the road's average life span is low.

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Timportant roads in the vicinity of IB-Valley and Basundhara CF

#	Roads	Type of Road	Description
1	National Highway 53 (Previously – NH 6)	National Highway	Connects Surat, Gujarat to Sambalpur then to Paradip port in Odisha
2	National Highway 49 (combination of old NH 6 and NH 200)	National Highway	The highway which connects Bilaspur, CH to Kharagpur, WB. It passes through Jharsuguda.
3	State Highway 10	State Highway	It starts near Budhapal and passed through Chhendipara, Kosala and terminates near Angul
4	Himgir Road	Local Road	Connects Himgir to Kanika
5	Sundargarh Garjanbahal-Hemgir Road	Local Road	Connects Sundargarh to Hemgir

 National Highway 49 (a merger of the old NH 6 and the new NH 200) is a major highway. This highway runs from Bilaspur in the Indian state of Chhattisgarh to Kharagpur in West Bengal. It runs from NH 130 near Bilaspur to NH 16 near Kharagpur in West Bengal. It provides East-West connectivity to coal blocks in IB Valley and is, on average, only a kilometer away from the mines.

- State Highway 10 runs from Rourkela to Sambalpur. It is part of Biju Expressway (a 650 km dual carriageway route from Chandili, Koraput to Rourkela).
- Hemgir road and Sundargarh-Garjanbahal-Hemgir road (also known as Sundargarh -Raigarh road) are important district roads which give the coal blocks route towards the state and national highways. These roads must be in excellent condition because they may become bottlenecks in evacuation before reaching highways and railway stations.

^{2528976/2023/CPIAM} CIL (MCL) blocks in Odisha – IB-Valley CF

_	#	Name of the Block	Exploration Status	Operational Status	Evacuation Route	Nearest major rail line for evacuation
	1	Belpahar I,II, & III Combined	Explored	Operational	For Samaleswari and Lajkura Cluster, loading points	
	2	Belpahar & Dip Side of Lakhanpur	Partly Explored	Operational	would be LOCM1, LOCM3 and Lajkura RLS (15 MTPA). For Lakhanpur, Belpahar and Lilari Cluster (Integrated),	
	3	Samaleswari Kudopali Combined & Dip Extn	Under Exploration	Operational	loading points would be BOCM 3, 6, 7, Lakhanpur Silo (10 MTPA) and Lakhanpur Silo (Phase-II, 20 MTPA)	<15 Kms from Jharsuguda –
	4	Orient-Lajkura Block IV & Dip Side	Partly Explored	Operational	The cluster lies in proximity of the SECR main line	Bilaspur main line
	5	Orient West (Goutamdhara)	Partly Explored	Non-Operational	Jharsuguda – Bilaspur (Passes through the boundary of Samaleswari and Lajkura blocks) and hence could be	
	6	Madhupur	Explored	Non-Operational	used for evacuation in both the directions	
	7	Kulda-Garjanbahal & Dip Side	Explored	Operational	For loading of coal, Sardega Wharfwall Sidings, Sardega RLS (20 MTPA), Kulda-Garjanbahal Silo Ph-III (40 MTPA),	
	8	Siarmal & Siarmal Extn	Explored	Operational	Laikera Siding, and 70 MTPA Barpali Loading Bulb Complex would be used.	Hemagiri Blocks < 15
	9	Basundhara Combined	Explored	Operational	For ovecuation via railway lines Thereusuda Pernali rail	Kms from Jharsuguda
	10	Hemagiri Sector – I	Under Exploration	Non-Operational	line would be leveraged (Flyover works at Jharsuguda Jn in progress) for evacuation towards West Bengal,	(Kanika Siding) & <30 Kms from Barpali
	11	Hemagiri Sector - II	Regionally Explored	Non-Operational	Jharkhand, Odisha and other Southern States.	Loading Bulb /
	12	Chaturdhara	Explored	Non-Operational	For evacuation towards Chhattisgarh, MP, Maharashtra,	Rail line.
	13	Banapatra	Explored	Non-Operational	Karnataka, UP, Punjab, Haryana, Rajasthan, etc. the proposed new Sardega to Bhalumunda (Pelma) line with	All other blocks n closer to the
	14	Prajapara	Explored	Non-Operational	30 MTPA capacity could be utilized.	Jharsuguda – Barpali Rail line (<15 Kms)
Genera	15 ated from	Prajapara Dip Extn n eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPI.	Explored AM, MOC-SO(NRR), Ministry Of COAL	116 Non-Operational on 17/05/2023 04:46 PM	Doubling of Jharsuguda-Barpali (Along with Auto- Signaling) and Sardega – Bhalumunda lines required for hassle free evacuation	276

Non-CIL blocks in Odisha – IB-Valley CF

#	Name of the Block	Exploration Status	Operational Status	Evacuation Route	Nearest major rail line for evacuation
1	Talabira I	Explored	Non-Operational	Currently having local sales via road. In Future Lapanga Railway Station would be used for transportation via Rail to various EUPS. For Coastal	~15 km from Lapanga Railway
2	Talabira II & III	Explored	Operational (NLC)	Budhapank-Rajatgarh-Cuttack-Paradeep. RLS along with rail connectivity to Lapanga shall be planned for smoother evacuation	Sambalpur rail line)
3	Rohini	Regionally Explored	Non-Operational		
4	Dip Extn of Belpahar	Under Exploration	Non-Operational	Loading Points to be developed by Captive / Commercial player after	
5	Kuraloi A North	Explored	Non-Operational (Vedanta Ltd)	loading. Dedicated RLS (to be developed by Captive / commercial players) along with railway connectivity to main lines (Jharsuguda-Bilaspur and	
6	Bartap	Partly Explored	Non-Operational	Jharsuguda Rd – Sambalpur) shall be planned accordingly.	< 20 Kms from Himgir RS (on Jharsuguda – Bilaspur Main Line)
7	Tangardihi East	Under Exploration	Non-Operational	For transportation towards Jharkhand, Odisha, West Bengal, Southern States, the coal would move towards Jharsuguda Jn and further. For	
8	Tangardihi	Under Exploration	Non-Operational	Haryana, etc. the coal would move towards Bilaspur and further.	
9	Ustali	Under Exploration	Non-Operational		
10	Meenakshi B	Partly Explored	Non-Operational	Loading Points to be developed by Captive / Commercial player after allotment.	
11	Meenakshi Dip-Side	Partly Explored	Non-Operational	For evacuation via railway lines, Jharsuguda-Barpali rail line would be leveraged (Flyover works at Jharsuguda Jn in progress) for evacuation	< 30 Kms from Jharsuguda –
12	Meenakshi West	Under Exploration	Non-Operational	towards West Bengal, Jharkhand, Odisha and other Southern States. For evacuation towards Chhattisgarh, MP, Maharashtra, Karnataka, UP,	Barpali Main Line
13	Meenakshi	Explored	Non-Operational	Punjab, Haryana, Rajasthan, etc. the proposed new Sardega to Bhalumunda (P &17 7a) line with 30 MTPA capacity could be utilized.	

Non-CIL blocks in Odisha – IB-Valley CF

	#	Name of the Block	Exploration Status	Operational Status	Evacuation Route	Nearest major rail line for evacuation
	14	Rampia & Dip Side of Rampia	Explored	Non-Operational (Jhar Mineral Resources)	At this stage, given priority of MCL over Jharsuguda-Barpali and Sardega – Bhalumunda Pelma Lines, and limited capacity of both the lines, it is not	
	15	Budajhoria	Under Exploration	Non-Operational	lines. Doubling works on both these lines is required for hassle free evacuation of coal after significant Captive and Commercial blocks start	
	16	Ghogarpalli & Dip Side	Explored	Non-Operational (Vedanta)	production	
	17	Burapahar	Explored	Non-Operational (GMDC)	Railways in collaboration with players like Vedanta can develop a dedicated line from Northern cluster to Jharsuguda-Bilaspur line, which will help evacuation of coal from these lines.	<15 Kms from proposed Sardega – Bhalumunda (Pelma) line
	18	Bijahan	Explored	Non-Operational (Mahanadi Mines & Minerals)	Coal from these blocks could be taken to Himgir Railway Siding on Jharsuguda-Bilaspur Main line for evacuation (30-35 Kms by Road)	< 30 Kms from Jharsuguda-Barpali Main line
	19	Jamkhani	Explored	Non-Operational (Vedanta Ltd)	For transportation towards Jharkhand, Odisha, West Bengal, Southern States, the coal would move towards Jharsuguda Jn and further. For transportation towards, Chapttisgarh, Maharashtra, UR, MR, Bunjah	
	20	Kendudihi	Regionally Explored	Non-Operational	Haryana, etc. the coal would move towards Bilaspur and further.	
	21	Chhatabar & Dip- Side	Under Exploration	Non-Operational	MCL could also think about leasing the Kanika Siding to some of the private players for their use, which could be a win-win situation for all.	
	22	Dulanga	Explored	Operational (NTPC)	Dedicated MGR system under construction. Presently coal is transported using road as an interim arrangement for two years i.e., till completion of construction of permanent coal evacuation system by MGR. NTPC's Darlipalli plant is 32 Kms from the block.	~32 Kms from Darlipalli Plant
Genera	23 ated from	Manoharpur & Dip- Side	Explored	Operational (OCPL)	Dedicated ~47 Km rail line from the block to OPGC's IB-Valley power plant. For Commercial sales, Himgir / Kanika Siding could be leveraged	~47 Kms from the EUP 278

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Proposed evacuation plan for IB-Valley CF



Key Insights and Recommendations – **IB Valley Coalfields**

#	Recommendation	Way Forward
1	Evacuation Capacity of Jharsuguda-Barpali Rail Line + Sardega-Bhalumunda Rail Line cumulatively accounts to ~100 MTPA. This is neck to neck with CIL's planned evacuation capacity from IB and Basundhara Coalfields by 2030. In order for commercial and captive players like Vedanta, GMDC, OCPL (surplus coal for commercial sales), to also leverage these lines for evacuation in future, Doubling (for Sardega – Bhalumunda line) and Tripling (for Jharsuguda Barpali line) for hassle free movement of coal along with additional proposed works such as Automatic Signaling etc.	Captive and Commercial miners, who have been allotted blocks in Ib-Valley CF may initiate dialogues with Ministry of Railways (SECR) to understand possible evacuation arrangements from this cluster. SECR to take up proposed doubling and tripling.
2	Additionally, Captive and Commercial miners shall plan to develop First Mile Connectivity projects like Rapid- Loading System with Silos along with Railway connectivity (to nearby major rail lines like Jharsuguda-Bilaspur, Jharsuguda Rd to Sambalpur etc.). Captive and commercial players along with Indian Railways shall jointly conduct a feasibility study for establishing Public Freight Terminals with Mechanized loading and evacuation systems.	Captive and Commercial miners, who have been allotted blocks in Ib-Valley CF shall initiate dialogues with Ministry of Coal regarding their future evacuation plans. Detailed Investment and works plan may be submitted by these miners at the earliest.
3	Automatic Signaling shall be proposed across all major rail sections in the vicinity of IB Valley CF	Indian Railways (SECR)
4	For making evacuation of coal feasible via coastal shipping (Jharsuguda to eastern ports) from Ib-valley, it is proposed that Indian Railways should provide freight concessions for RSR traffic to achieve freight parity. Currently, only <5 Million Tonnes of coal is being transported to ports other than Paradeep (~30 MT in FY22). As these shipments usually have a ~ INR 300 / Tonne economic disadvantage as compared to Talcher – Paradeep route, Indian Railways should eright concessions to those eastern ports to achieve freight parity.	Indian Railways should evaluate freight concessions to all eastern ports having economic disadvantage
5	3 rd line from Jharsuguda Jn to Rourkela is under construction. However as per future O-D coal flow mapping, the capacity won't be sufficient. Therefore 4 th line has to be planned from Jharsuguda Jn to Rourkela.	Indian Railways

2528976/2023/CPIAM CIL (MCL) blocks in Odisha – Talcher CF

#	Name of the Block	Exploration Status	Operational Status	Evacuation Route	Nearest major rail line for evacuation
1	Bhubaneswari OCP	Explored	Operational		~8 km from Angul-Balram link
2	Lingaraj OCP	Explored	Operational	Spurs 1 to 10 along with planned FMC projects at Bhubaneswari silos, Bharatpur	~5 km from Talcher station
3	Ananta OCP	Explored	Operational	silo, Anant 2 nos. RLS, Balabhadra RLS, Balram silo, Hingula silo, Kaniha Ph-I, Subhadra RLS (Ph-III) shall be used for loading of coal.	~5 km from Talcher station
4	Kaniha OCP	Explored	Operational	Additionally, 2 nos. MGR – NTPC & NALCO MGR exist for coal evacuation from Kaniha & Bharatpur respectively.	MGR available, Planed MCRL Outer corridor beside mine
5	Bharatpur OCP	Explored	Operational		Angul-Balram link
6	Hingula OCP	Explored	Operational	Coal loaded from FMC projects and wharfwall sidings from this area to be evacuated via Angul-Balram rail link, which has already been commissioned joining the leading Britegraphics at Angul. Other superstation methods in the second	g ~8 km from Angul-Balram link
7	Jagannath OCP	Explored	Operational	station.	~7 km from Angul-Balram link ~7 km from Talcher station
8	Balaram OCP	Explored	Operational	From Angul, traffic bound for North & West India shall move on the Angul- Jarapada-Ibarsuguda line towards Chhattisgarh and beyond	Near Angul-Balram link
9	Balabhadra OCP	Explored	Non-Operational	From Angul, traffic bound for East India as well as coastal shipping to Southern states shall move on the Angul-Talcher-Budhapank line towards eastern Odisha	~9 km from Angul-Balram link, Planed MCRL Inner corridor to be closer to mine
10	Balabhadra West Extn	Explored	Non-Operational	and further towards Paradeep/Dhamra for coastal shipping.	~9 km from Angul-Balram link,
11	Balabhadra North Extn	Under Exploration	Non-Operational	Post development of the MCRL Inner Corridor Phase-II from Balram to Putagadia, traffic bound for Northern and Western states may move on this line and meet	MCRL outer corridor may be used post completion
12	Padma	Explored	Non-Operational	main line at Jarapada to decongest Angul-Jarapada section.	~5 km from Talcher station
13 Prated f	Subhadra OCP	Explored	Non-Operational	121 COAL on 17/05/2023 04:46 PM	Near Angul-Balram link 281

^{2528976/2023/CPIAM} CIL (MCL) blocks in Odisha – Talcher CF

#	Name of the Block	Exploration Status	Operational Status	Evacuation Route	Nearest major rail line for evacuation
14	South Balanda	Explored	Non-Operational		~9 km from Talcher station
15	Talcher	Explored	Non-Operational	Spurs 1 to 10 along with planned FMC projects at Bhubaneswari silos, Bharatpur silo, Anant 2 nos. RLS, Balabhadra RLS, Balram silo, Hingula silo, Kaniha Ph-I, Subhadra RLS (Ph-III) shall be used for loading of coal.	~4 km from Talcher station
16	Handidua	Explored	Non-Operational	Additionally, 2 nos. MGR – NTPC & NALCO MGR exist for coal evacuation from Kaniha & Bharatpur respectively.	Near Talcher station
17	Nandira	Explored	Operational	Coal loaded from FMC projects and wharfwall sidings from this area to be evacuated via Angul-Balram rail link, which has already been commissioned joining the Indian	~6 from Angul-Balram link
18	Natraj	Explored	Non-Operational	Railway main line at Angul. Other evacuation route is via Talcher railway station. From Angul, traffic bound for North & West India shall move on the Angul-Jarapada-	Near Angul-Balram link
19	Gopal Prasad East	Explored	Non-Operational	Jharsuguda line towards Chhattisgarh and beyond. From Angul, traffic bound for East India as well as coastal shipping to Southern states	°9 km from Angul-Balram link, planned MCBL Inner Corridor
20	Gopal Prasad West	Explored	Non-Operational	towards Paradeep/Dhamra for coastal shipping.	beside block
21	Kalinga East	Explored	Non-Operational	Post development of the MCRL Inner Corridor Phase-II from Balram to Putagadia, traffic bound for Northern and Western states may move on this line and meet main line at Jarapada to decongest Angul-Jarapada section	Near Angul-Balram link
22	Kalinga West	Explored	Non-Operational		Near Angul-Balram link
23	Tribira	Under Exploration	Non-Operational		
24	Rabipur	Regionally Explored	Non-Operational	Production from blocks not planned till FY30. RLS/other FMC options may be explored once MCRL outer corridor is commissioning for coal to be evacuated to MCRL outer corridor. Traffic to join Indian Railway main line at Jarapada station	Beside MCRL outer corridor
25	Konark-Subadhra West	Partly Explored	Non-Operational		
26 Generated	Chhendipada OCP Extn (Baitrani East) from eOffice by N RAJESWARA F	Explored RAO, MOC-SO(NRR)-CPIAM	Non-Operational I, MOC-SO(NRR), Ministry	Coal to be evacuated via Tentuloi and onto MCRL Outer Corridor and joining India Railway main line at Jarapada of COAL on 17/05/2023 04:46 PM	~6 km from Tentuloi 282

Non-CIL blocks in Odisha – Talcher CF

#	Name of the Block	Exploration Status	Operational Status	Evacuation Route	Nearest major rail line for evacuation
1	Brahmani	Partly Explored	Non-Operational	Coal from this block is expected use roads to cross the Brahmani river to reach Talcher area for loading onto rakes	~16 km from Talcher
2	Sakhigopal-B & Northern Extn	Partly Explored	Non-Operational	Coal evacuation from these blocks to be evacuated via Talcher-NTPC Kaniha rail line and onward to Talcher.	
3	North of Arkhapal Srirampur	Explored	Non-Operational	From Talcher, traffic bound for northern and western India to move via Talcher-Angul-Jharsuguda to Chhattisgarh and beyond. For eastern bound traffic as well as traffic bound for southern states	
4	Jadunathpur	Under Exploration	Non-Operational	through coastal shipping, traffic projected to move via Talcher- Budhapank-Pradeep/Dhamra line.	All blocks within ~20 km from Talcher-NTPC Kaniha line
5	Jadunathpur North	Regionally Explored	Non-Operational	Post development of the MCRL Inner Corridor Phase-II from Balram to Putagadia, traffic bound for Northern and Western states may move on	
6	Chandrabila	Explored	Non-Operational	this line and meet main line at Jarapada to decongest Angul-Jarapada section.	
7	Chhelia	Under Exploration	Non-Operational		
8	Saradhapur North	Explored	Non-Operational		
9	Saradhapur Jalatap	Under Exploration	Non-Operational	Coal evacuation from these blocks to be evacuated via proposed MCRL	
10	Takua	Under Exploration	Non-Operational	Outer Corridor, which lies north of this cluster, to reach Jarapada via	
11	South of Bramhanbil - Kardabahal	Under Exploration	Non-Operational	Tentuloi and Putagadia From Jarapada, traffic bound for North & West India shall move on the Jarapada-Jharsuguda line towards Chhattisgarh and beyond	All blocks within ~30 km from
12	Kardabahal - Bramhanbil	Explored	Non-Operational	From Jarapada, traffic bound for East India as well as coastal shipping to	Tentuloi
13	Kosala East	Under Exploration	Non-Operational	line towards eastern Odisha and further towards Paradeep/Dhamra for	
14	Kosala West	Explored	Non-Operational	coastal shipping.	
15	Phuljari East & West	Explored	Non-Operational	123	

Non-CIL blocks in Odisha – Talcher CF

	#	Name of the Block	Exploration Status	Operational Status	Evacuation Route	Nearest major rail line for		
				operational status		evacuation		
	17	Bankhui	Partly Explored	Non-Operational				
	18	Alaknanda	Partly Explored	Non-Operational				
	19	Palasbani East	Under Exploration	Non-Operational				
	20	Palasbani West	Under Exploration	Non-Operational				
	21	Mandakini A	Explored	Non-Operational				
	22	Mandakini B	Explored	Non-Operational	Coal evacuation from these blocks to be evacuated via proposed MCRI			
	23	Baitrani West	Explored	Non-Operational	Outer Corridor, which lies south of most of the mine from this cluster, to			
	24	Machakatta	Explored	Non-Operational	reach Jarapada via Tentuloi and Putagadia.			
	25	Naini	Explored	Non-Operational	From Jarapada, traffic bound for North & West India shall move on the			
	26	Chendipada-I	Explored	Non-Operational	Jarapada-Jharsuguda line towards Chhattisgarh and beyond.	All blocks within ~20-25 km from Tentuloi		
	27	Chendipada-II	Partly Explored	Non-Operational	From Jarapada, traffic bound for East India as well as coastal shipping to			
	28	Mahanadi	Partly Explored	Non-Operational	Southern states shall move on the Jarapada-Angul-Talcher-Budhapank line towards eastern Odisha and further towards Paradeep/Dhamra for			
	29	Machhakata	Explored	Non-Operational	coastal shipping.			
	30	New Patrapara	Partly Explored	Non-Operational				
	31	Nuagaon Telisahi	Explored	Non-Operational				
	32	Kudanali Lubri	Regionally Explored	Non-Operational				
	33	Sarapal-Nuapara	Under Exploration	Non-Operational				
	34	Khandanal	Regionally Explored	Non-Operational				
	35	Kankaitoliya	Regionally Explored	Non-Operational	124			
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Non-CIL blocks in Odisha – Talcher CF

#	Name of the Block	Exploration Status	Operational Status	Evacuation Route	Nearest major rail line for evacuation
36	Utkal A	Explored	Non-Operational	Coal evacuation from these blocks to be evacuated via proposed MCRL Inner Corridor, which lies south of this cluster, to reach Jarapada via	All blocks within ~20-25 km from Putagadia
37	Utkal B1 & B2	Explored	Non-Operational		
38	Ramchandi Promotion	Explored	Non-Operational	Putagaula.	
39	Utkal C	Explored	Non-Operational	From Jarapada, traffic bound for North & West India shall move on the Jarapada-Jharsuguda line towards Chhattisgarh and beyond.	
40	Utkal D	Explored	Non-Operational	From Jarapada, traffic bound for East India as well as coastal shipping to Southern states shall move on the Jarapada-Angul-Talcher-Budhapank line towards eastern Odisha and further towards Paradeep/Dhamra for	
41	Utkal E	Explored	Operational		
42	Radhikapur East	Explored	Non-Operational	coastal shipping.	
43	Radhikapur West	Explored	Non-Operational		

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 **Proposed evacuation plan for Talcher CF**



Key Insights and Recommendations – Talcher Coalfields

#	Recommendation	Way Forward		
	High congestion expected on railway lines to enable coastal shipping			
	Concerned lines: Budhapank to Rajatgarh and Cuttack to Paradeep. Heavy Haul Rail Corridor from Salegaon to			
1	Cuttack being shelved due to economic constraints. It is of utmost importance to add a third line (Survey under	Indian Railways (ECoR)		
_	process) and in future a fourth line from Cuttack to Paradeep. MCRL Outer Corridor to be executed to bypass load			
	on Talcher. Timely execution of MCRL inner corridor by FY26 to enable evacuation on Sambalpur – Talcher Rd			
	Section. Also, Doubling of Angul-Balram line is required to be taken up for despatch of ~25-30 Rakes/Day by FY30.			
	Additionally, Captive and Commercial miners shall plan to develop First Mile Connectivity projects like Rapid-	Captive and Commercial miners, who have been		
2	Loading System with Silos along with Railway connectivity.	allotted blocks in Talcher CF shall initiate dialogues		
	Captive and commercial players along with Indian Railways shall jointly conduct a feasibility study for establishing	with Ministry of Coal regarding their future evacuation		
	Public Freight Terminals with Mechanized loading and evacuation systems. PFTs shall connect Non-CIL mines to	plans. Detailed investment and works plan may be		
2	MCRL Outer and Inner Corridors for evacuation.	submitted by these miners at the earliest.		
3	Automatic Signaling shall be proposed across all major rail sections in the vicinity of Taicher CF	Indian Kaliways (ECOR)		
	Paradeep Port expected to handle "90 Rakes/Day for coastal shipping and exports			
	On a best-effort basis with Expansion works in Pipeline, "65-72 R/d can be handled by the Port (MCHP + PEQP).			
4	While this is sufficient for RSR, coal exports will require further capacity addition.	Paradeep Port Trust, Ministry of Coal		
	Capacity addition of * 15-20 R/d is required. Commitments from end-users of coal may be required to take up the			
	myestments for additional capacity addition. Additionally, avenues of notification of policies may be explored to make RSP mode attractive to newer concurrence.			
5	Fraction of National Waterway 5 to execute coastal chinning via inland waterways (Mahanadi River)			
	~80-90 MTPA or ~55 to 60 R/d could be moved from Talcher to Pardeen and Dhamra Ports for Evacuation via			
	Coastal Shipping Transaction Advisor has been appointed which will also conduct detailed traffic study	IWAL Ministry of Shinning		
	End to End construction of NW-5 is a challenge, although the target for completion is 2030, delays could be			
	expected beyond the stipulated timelines			
	Dhamra Port has plans to increase capacity of coastal shipping + exports to around 20 MTPA. This would lead to			
c	diversion of around 14 R/D from Dhamra, via Angul-Sukinda Rd line. Other ports such as Gopalpur, Vizag and			
6	Gangavaram should be explored by consumers. Under Construction line from Rairakhol to Gopalpur port should be	End Consumers / Power Plants, Dhamra Port (DPCL)		
	utilized, subject to adequacy of coastal shipping capacity at ports and favorable economics of coastal movement.			
7	Under-construction FMC Projects of MCL Talcher (Including Phase 1,2 & 3) with combined evacuation capacity of	Coal India Limited is continuously monitoring and		
	$^{\sim}$ 130 MTPA shall be executed at the earliest to enable coal loading from Talcher $_{ m 2G}$ F.	solving various issues to expedite this		
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Thermal Coal Supply Analysis summary for Chhattisgarh

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All figures in million tonnes

	←	Actuals		•		Pro-	ojections			
Coal Supply	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Mand Raigarh SECL - CIL	12.91	12.8	13.2	15.6	16	31	40	40	43	45
CIC and Korba CF	137.55	129.43	153.8	184	204	228	227	229	231	234
Total SECL	150	142 (156 Despatch)	167	200	220	260	267	269	274	279
Captive & Commercial - MandRaigarh CF	1.25	7.26	9.99	13.65	18.72	25.67	35.20	48.26	66.18	105
Captive & Commercial - Hasedo Anand CF	15	15	12.79	17.84	19.45	21.21	23.13	25.23	27.51	30.00
Total Non-CIL	16.25	22.26	22.78	31.49	38.17	46.88	58.33	73.49	93.69	145
Total Coal Production in Chhattisgarh	167	165	190	231	263	306	327	345	371	430

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Chhattisgarh

All figures in million tonnes

Coal Supply from SECL		FY21	FY22	FY23	FY2	4 FY	'25 I	FY26	FY27	FY28	FY29	FY30
Mandraigarh SECL - CIL		12.91	12.8	13.2	15.	6 1	.6	31	40	40	43	45
CIC and Korba CF		137.55	129.43	153.8	184	4 20	04	228	227	229	231	234
Total SECL		150	142 (156 Despatch) 167	200	0 2:	20	260	267	269	274	279
Coalfield	Name of Mine / Project	Type (UG / OC)	PR Capacity (MTY)	Actual 21- 22	Actual 2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Korba	AMBIKA	OC	1.00			0.00	0.50	0.50	1	1	1	1
Korba	BAGDEVA	UG	0.75	0.37	0.34	0.40	0.40	0.50	0.45	0.45	0.45	0.75
Korba	BALGI	UG	0.60	0.08	0.07	0.08	0.08		0	0	0	0
Korba	DHELWADIH	UG	0.27	0.13	0.12	0.15	0.25	0.33	0.33	0.33	0.33	0.33
Korba	MANIKPUR	OC	3.50	4.90	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25
Korba	RAJGAMAR 4&5/6&7	UG	0.30	0.05	0.03	0.15	0.33	0.45	0.33	0.33	0.33	0.33
Korba	SARAIPALI	OC	1.40	1.40	1.57	1.40	1.68	2.10	1.4	1.4	1.4	1.4
Korba	SINGHALI	UG	0.24	0.18	0.13	0.16	0.16	0.66	0.2	0.2	0.2	0.2
Korba	SURAKACHHAR 3&4	UG		0.05	0.03	0.08	0.15	0.15	0.15	0.15	0.15	0.15
Korba	SURAKACHHAR MAIN	UG		0.11	0.03	0.05	0.14	0.14	0.14	0.14	0.14	0.14
Korba	DIPKA EXPN	OC	40.00	34.37	32.15	40.00	40.00	45.00	45	45	45	45
Korba	GEVRA EXPN	OC	70.00	41.45	52.50	60.00	65.00	70.00	70	70	70	70
Korba	KUSMUNDA EXPN	OC	50.00	28.90	43.05	50.00	60.00	62.50	62.5	62.5	62.5	62.5
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Chhattisgarh

										All figu	res in millior	n tonnes
Mand Raigarh	BAROUD EXPN	OC	10.00	2.52	3.50	4.00	5.75	10.00	10	10	10	10
Mand Raigarh	BIJARI	OC		1.03	0.76	2.00			0	0	0	0
Mand Raigarh	CHHAL OC Seam III	OC	6.00	3.34	3.85	3.80	6.00	6.00	7.5	7.5	7.5	7.5
Mand Raigarh	DURGAPUR OC	OC	6.00					3.00	4	4	4	4
Mand Raigarh	GARE PALMA IV/2&3	OC	6.25	2.91	2.05	2.75			0	0	0	0
Mand Raigarh	JAMPALI	OC	2.00	3.00	3.00	3.00	3.00	3.60	3	3	3	3
Mand Raigarh	PELMA	OC	15.00				0.00	7.00	10	10	12	12
Mand Raigarh	PORDA-CHIMTAPANI	OC	10.00					2.00	5	5	6	8
CIC	CHURCHA	UG	1.35	1.29	1.03	1.65	1.72	1.72	1.72	1.72	1.72	1.72
CIC	JHILIMILI	UG	0.50	0.33	0.31	0.35	0.50	0.50	0.5	0.5	0.5	0.5
CIC	KATKONA 1&2 (Coking)	UG	0.27	0.23	0.25	0.25	0.25	0.40	0.27	0.27	0.27	0.27
CIC	PANDAVPARA	UG	0.21	0.23	0.22	0.25	0.25	0.25	0.25	0.25	0.25	0.25
CIC	BHATGAON	UG	0.50	0.26	0.23	0.20	0.20	0.20	0	0	0	0
CIC	JAGANNATHPUR	OC	3.00	1.78	2.26	3.00	3.50	3.50	3.5	3.5	3.5	3.5
CIC	MADAN NAGAR	OC	12.00				0.00	4.00	6	6	8	10
CIC	MAHAMAYA OC	OC	1.50				0.25	1.50	1.5	1.5	1.5	1.5
CIC	NAVAPARA UG	UG	0.36	0.10	0.08	0.12	0.16	0.18	0.18	0.18	0.18	0.18
CIC	SHIWANI	UG	0.27	0.20	0.18	0.25	0.26	0.30	0.3	0.3	0.3	0.3
CIC	AMERA	OC	1.00		0.00	0.20	1.00	1.50	1	1	1	1
CIC	AMGAON	OC	1.00		0.74	1.00	1.00	1.00	1	1	1	1
CIC	BALRAMPUR UG	UG	0.54	0.04	0.10	0.05						
CIC	GAYATRI	UG	0.30	0.12	0.19	0.71	0.85	0.88	0.88	0.88	0.88	0.88
CIC	KETKI	UG	0.87		0.00	0.30	0.30	0.50	0.8	0.8	0.8	0.8
CIC	KUMDA UG	UG	0.60	0.02	0.02	0.05						
CIC	REHAR	UG	0.31	0.10	0.07	0.25	0.25	0.31	0.31	0.31	0.31	0.31
CIC	BARTUNGA HILL	UG		0.13	0.02				0	0	0	0
CIC	CHIRIMIRI OC	OC	1.00	0.92	0.70	1.60	1.70	1.70	1.7	1.7	1.7	1.7
CIC	KURASIA UG	UG		0.21	0.20	0.25						
CIC	N.C.P.H.(NEW)	UG	0.41	0.30	0.24	0.29	0.29	0.29	0.29	0.41	0.41	0.41
CIC	RANI ATARI	UG	0.48	0.41	0.48	0.48	0.48	0.48	0.4	0.4	0.4	0.48
CIC	VIJAY WEST UG	UG	0.50	0.49	0.50	0.50	0.50	0.50	0.5	0.5	0.5	0.5

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Chhattisgarh

	_									All figu	ires in millioi	n tonnes
CIC	BEHRABAND	UG	0.60	0.42	0.56	0.60	0.60	0.60	0.6	0.6	0.6	0.6
CIC	BIJURI	UG	0.48	0.12	0.14							
CIC	HALDI BARI	UG	0.42	0.60	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
CIC	JHIRIA UG	UG	0.33	0.17	0.15	0.25	0.25	0.25	0.33	0.33	0.33	0.33
CIC	JHIRIA WEST	OC	1.50			0.30	0.50	1.50	1.5	1.5	1.5	1.5
CIC	KAPILDHARA UG	UG	0.24	0.14	0.13				0	0	0	0
CIC	KURJA-SHEETALDHARA	UG	0.88	0.54	0.64	0.80	0.80	0.80	0.8	0.8	0.8	0.8
CIC	RAJNAGAR RO	UG	0.72	0.21	0.19	0.20	0.20	0.21	0.2	0.2	0.2	0.2
CIC	RAJNAGAR RPR	OC	1.70		0.00	0.20	0.50	0.80	1	1	1	1.7
CIC	WEST JKD	UG	0.16	0.12	0.12	0.17	0.17	0.17	0.17	0.17	0.17	0.17
CIC	AMADAND RPR	OC	4.00	1.67	0.87	3.00	3.40	4.00	4	4	4	4
CIC	BARTARAI	UG	0.47	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17
CIC	BHADRA 7& 8	UG	0.23	0.10	0.13	0.15	0.15	0.18	0.15	0.15	0.15	0.15
CIC	JAMUNA 1&2/5&6	UG	0.20	0.09	0.06	0.10	0.18	0.18	0.18	0.18	0.18	0.18
CIC	JAMUNA 9&10	UG	0.10	0.17	0.13	0.17	0.17		0	0	0	0
CIC	MEERA	UG	0.60	0.07	0.08	0.08						
CIC	BIRSINGPUR	UG						0.20				
CIC	KANCHAN RPR	OC	2.00	0.75	0.51	1.75	2.00	2.00	2	2	2	2
CIC	NOWROZABAD(W)	UG		0.09	0.10	0.10			0	0	0	0
CIC	PALI	UG	0.50	0.13	0.11	0.10			0	0	0	0
CIC	PIPARIYA	UG	0.24	0.09	0.11	0.12	0.12	0.13	0.13	0.13	0.13	0.13
CIC	UMARIA	UG	0.30	0.11	0.13	0.12	0.12	0.20	0.2	0.2	0.2	0.2
CIC	VINDHYA	UG	0.71	0.51	0.49	0.42	0.42	0.42	0.42	0.42	0.42	0.42
CIC	AMALAI	OC	1.50	1.32	2.03	2.00	2.00	2.00	2	3	3	3
CIC	BANGWAR	UG	0.36	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
CIC	DAMINI	UG	0.48	0.30	0.28	0.35	0.35	0.72	0.35	0.48	0.48	0.48
CIC	KHAIRAHA UG	UG	0.59	0.82	0.88	0.82	0.82	0.82	0.8	0.8	0.8	0.8
CIC	RAJENDRA	UG	0.64	0.16	0.16	0.15	0.20	0.50	0.25	0.25	0.25	0.25
CIC	RAMPUR BATURA OC	OC	4.00		0.05	0.75	2.60	2.60	3	3	3	3
CIC	SHARDA HIGHWALL	UG	0.60	0.32	0.66	0.80	0.85	0.85	0.85	0.85	0.85	0.85
CIC	DHANPURI OC	OC	1.25	0.45	0.52			0.50	0	0	0	0

2528976/2023/CPIAM SECL has ambitious production capacity expansion plans

Chhattisgarh

			283.41	142.34	166.9	200.00	225.00	259.61	268.61	271.26	277.26	285.14	288.14
NOLDA	Surak 304	UG		0.05	0.10	0.10	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Korba	Surak Main	UG		0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Central India	Nowrozabad(W)	UG		0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Central India	Kurasia	UG		0.21	0.24	0.24	0.25	0.00	0.00	0.00	0.00	0.00	0.00
Central India	Jamuna 9&10	UG	0.1	0.17	0.17	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00
Central India	West JKD	UG	0.16	0.12	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Central India	Jamuna 1&2/5&6	UG	0.2	0.09	0.12	0.12	0.15	0.18	0.18	0.18	0.18	0.18	0.18
Central India	Pandavpara	UG	0.21	0.27	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Central India	Bhadra 7& 8	UG	0.23	0.10	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Korba	Singhali	UG	0.24	0.18	0.15	0.16	0.16	0.20	0.20	0.20	0.20	0.20	0.20
Central India	Pipariya	UG	0.24	0.09	0.10	0.10	0.11	0.13	0.13	0.13	0.13	0.13	0.13
Central India	Kapildhara UG	UG	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Korba	Dhelwadih	UG	0.27	0.13	0.23	0.23	0.25	0.33	0.33	0.33	0.33	0.33	0.33
Central India	Shiwani	UG	0.27	0.20	0.26	0.26	0.26	0.30	0.30	0.30	0.30	0.30	0.30
Central India	Katkona 1&2 (Coking)	UG	0.27	0.26	0.25	0.25	0.25	0.27	0.27	0.27	0.27	0.27	0.27
Korba	Rajgamar 4&5/6&7	UG	0.3	0.05	0.10	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33
Central India	Umaria	UG	0.3	0.11	0.00	0.12	0.12	0.20	0.20	0.20	0.20	0.20	0.20
Central India	Gayatri	UG	0.3	0.12	0.30	0.80	0.80	0.88	0.88	0.88	0.88	0.88	0.88
Central India	Rehar	UG	0.31	0.10	0.18	0.25	0.25	0.31	0.31	0.31	0.31	0.31	0.31
Central India	Jhiria UG	UG	0.33	0.18	0.23	0.25	0.25	0.33	0.33	0.33	0.33	0.33	0.33
Central India	Bangwar	UG	0.36	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Central India	Binkara	UG	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.20
Central India	Navapara ug	UG	0.36	0.10	0.16	0.16	0.16	0.18	0.18	0.18	0.18	0.18	0.18
00	Manan	UC	0.30	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Chhattisgarh

		FY22 A	ctual Despatc	h (MTPA)			FY2	5-26 1 BT Plan	(MTPA)			FY29-30 Antic	ipated Dispate	ch (MTPA)	
Area	Rail	RCR	Pure Road	MGR & Others	Total	Rail	RCR	Pure Road	MGR & Others	Total	Rail	RCR	Pure Road	MGR & Others	Total
Baikunthpur	2.07	0.00	0.00	0.00	2.07	2.74	0.00	0.00	0.00	2.74	2.74	0.00	0.00	0.00	2.74
Bhatgaon	2.54	0.16	0.57	0.00	3.27	4.92	0.00	3.96	0.00	8.88	14.91	0.00	0.57	0.00	15.48
Bisrampur	0.00	0.00	0.34	0.00	0.34	3.40	0.00	0.28	0.00	3.68	3.87	0.00	0.32	0.00	4.19
Chirmiri	1.55	0.02	0.93	0.00	2.49	2.89	0.00	0.00	0.00	2.89	6.09	0.00	0.00	0.00	6.09
Dipka	5.35	12.15	6.23	13.18	36.91	21.00	6.00	3.00	15.00	45.00	21.00	6.00	3.00	15.00	45.00
Gevra	19.02	7.30	4.94	13.74	44.99	39.50	12.00	4.00	14.50	70.00	39.50	12.00	4.00	14.50	70.00
Hasdeo	1.91	0.03	0.39	0.00	2.33	4.00	0.00	1.26	0.00	5.26	5.57	0.00	0.39	0.00	5.96
Jamuna-Kotma	1.48	0.00	0.73	0.00	2.20	3.42	0.00	1.08	0.00	4.50	5.77	0.00	0.73	0.00	6.50
Johilla	1.14	0.11	0.41	0.00	1.67	2.75	0.00	1.08	0.00	3.83	2.75	0.00	0.00	0.00	2.75
Korba	3.46	0.61	2.72	0.64	7.42	4.90	0.00	2.78	1.07	8.75	6.56	0.00	2.99	0.00	9.55
Kusmunda	21.52	1.80	3.73	6.72	33.78	55.50	0.00	0.00	7.00	62.50	55.50	0.00	0.00	7.00	62.50
Raigarh	1.96	0.20	11.98	0.00	14.14	30.00	0.00	5.00	0.00	35.00	38.14	0.00	6.36	0.00	44.50
Sohagpur	1.69	0.20	1.41	0.86	4.15	3.78	2.23	0.93	0.00	6.94	5.46	2.00	1.34	0.00	10.03
Total	63.68	22.58	34.37	35.14	155.77	179	20	23	38	260	203	20	19	37	279

SECL's despatch is progressing towards higher share of rail from current 55% to a target of 80% by FY30 (including RCR). Ensuring that the evacuation capacity exists is a crucial aspect of the holistic logistics policy. Additional 90 R/d despatch is envisaged from SECL.

Non-CIL blocks Pipeline in Chhattisgarh – Mandraigarh (1/2)

Chhattisgarh

				Details of N	on-CIL blocks in Mand-Raigarh Region			
#	Name of the Block	Block Owner	PRC	Operational Status	Proposed Loading Point	EUP and other remarks	Actual FY23 Production	Actual FY22 Production
1	Durgapur- II/Taraimar	Karnataka Power Corporation Ltd.	4	Not operational	Dharamjaigarh Railway Siding (Mine to Siding via road - 5 Kms)	Godhna Thermal Power Project, Chhattisgarh, 150 Kms from the mine. KPCL plans to use Janjgir railway siding. Dharamjaigarh-Korba / Dharamjaigarh-Kharsia Route (CERL) to reach Janjgir siding. TPS is 27 Kms from Janjgir/Naila Siding	0	
2	Durgapur-II/Sarya	Karnataka Power Corporation Ltd.	2	Operational	Dharamjaigarh Railway Siding (Mine to Siding via road - 1 Km)	Godhna Thermal Power Project, Chhattisgarh, 150 Kms from the mine. KCPL plans to use Janjgir railway siding. Dharamjaigarh-Korba / Dharamjaigarh-Kharsia Route (CERL) to reach Janjgir siding. TPS is 27 Kms from Janjgir/Naila Siding	1.38	1.11
3	Gare Palma Sector-I	Jindal Power Ltd	15	Non- Operational	Coal expected transported by Cross Country Pipe Conveyor (CCPC) located near Gare Palma IV/1 block	Jindal Power's power plants in Chhattisgarh	0	0
4	Gare Palma Sector-II	Maharashtra State Power Generation Co Ltd.	23.6	Not operational	Raigarh Railway Siding - Kharsia to Pelma rail network of CERL (Mine to Siding via road - 35 Kms)	Chandrapur Super Thermal Power Station (2x500 MW) - 790 KMs from Mine, Koradi Thermal Power Station (3x660 MW) - 585 KMs from Mine, Parli Thermal Power Station (1x250 MW) - 1136 KMs from Mine, All stations in	0	0
5	Gare Palma Sector- III	Chhattisgarh State Power Generation Co Ltd	5	Operational	Robertson Railway Siding (Mine to Siding via road - 80 Kms)	manarashtra. Plants have own railway sidings. Atal Bihari Vajpayee TPP - 155 KMs from Mine. Railway Siding available at plant. Robertson to champa Jn railway line.	3.60	3.58
6	Gare Palma IV/1	Jindal Power Ltd	6	Operational	Coal from mine to mine head CHP is transported by road (5 Km). From CHP to JPL Power Plant, coal is transported by Cross Country Pipe Conveyor (CCPC)	Tamnar Power Plant - 22 Kms from the mine	5.66	0.29
7	Gare Palma IV/4	Hindalco	1.5	Operational	Currently, using road directly to EUPS. In future Bhalumunda Railway Siding could be used which is 15 Kms from the mine. In case of absence of Bhalumunda siding, Raigarh siding could be used which is 50 Kms from the mine	CPP- Aditya Alumina (1MT to be sourced from mine) - 144 Kms from the mine, CPP - Hirakud Smelter (0.5MT to be sourced from mine) - 175 Kms from the mine.	~0.61	0.56

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Non-CIL blocks Pipeline in Chhattisgarh – Mandraigarh (2/2)

Chhattisgarh

#	Name of the Block	Block Owner	PRC	Details of Non-CIL blocks in Mand-Raigarh Region Operational Proposed Loading Point EUP and other remark Status EUP and other remark	s Actual FY23 Production	Actual FY22 Production
8	Gare Palma IV/2 & IV/3	Jindal Power Ltd	7	Non- Dedicated closed conveyor to Jindal Power's Jindal Power's power plants in C	nhattisgarh 0	0
9	Gare Palma IV/5	Hindalco	1	Currently, using road directly to EUPS. In Under future Bhalumunda Railway Siding could be Developmen used which is 15 Kms from the mine. In case t - of absence of Bhalumunda siding, Raigarh Operational siding could be used which is 50 Kms from the mine.	the mine, CPP - 0 the mine.	0
10	Gare Palma IV/7	Sarda Energy and Minerals Ltd	1.2	Operational Evacuation via railways using Raigarh Siding which is 50 Kms from the mine Captive consumption as well as contractional which is 50 Kms from the mine	nmercial sale ~1.15	0.38
11	Gare Palma IV/8	Ambuja Cements Ltd	1.2	Currently road transportation is being used Operational has applied for rail siding plant. Nearest rail siding is Raigarh, 50 Kms from the mine.	m the mine ~1.20	0.81
12	Talaipalli	NTPC Ltd	18.75	Korichhaper Railway Siding, 25 Kms from the Operational mine Kms from the mine MGR under construction Kms from the mine	I (3x800 MW), 62 ~2.26	0.41
13	Banai — Bhalumunda	JSW Steel	12	Nearest rail head options:JSW Steel has works at Dolvi (powerNon-Gharghoda/Raigarh/Kharsia. Coal may becombination of co-generation plants), ToOperational transported via road until dedicated siding isbased CPP) and Salem (~0.5 MTPAcommissionedCommercial usage minimation	red through a orangallu (imported 0 a coal based) e	0
Total PRC			10625		9.99	7.26

Other than those listed above, GP-IV/6 with 4 MTPA PRC of G-10 Grade coal was allotted to JSPL @ 85.25% FPO, Bhaskarpara block of G-7 grade coal was allotted to Prakash Industries @55.75% FPO, and Jhigador and Khargaon Blocks with 4 MTPA was allotted to CG Natural Resources @ 6% FPO, Purunga (partially explored) was allotted to CG Narutal Resources @ 6% FPO 136 Gener@ca020mDecleritiesJourceAge_JourceAge

Non-CIL blocks Pipeline in Chhattisgarh – Hasdeo-Anand

Chhattisgarh

Details of Non-CIL blocks in Hasdeo-Anand Region										
#	Name of the Block	Block Owner	PRC	Operational Status	Proposed Loading Point	EUP and other remarks	Actual FY23 Production			
1	Gidmuhi, paturia	Chhattisgarh State Power Generation Co Ltd	5.6	Not Operational	Surajpur Station is 131 Kms from the mine and the EUP is 24 Kms from the mine so the transportation would be either completely by Road using NH-130 or by a CHP-conveyor system, feasibility of which is cuurently under investigation.	ICPL Premnagar Power Plant - 24 Kms from the mine. Development of End-use plant is still in progress	0*			
2	Parsa	Rajasthan Rajya Vidyut Utpadan Nigam Limited (RRUVNL)	5	Not Operational (Under Developmen t Stage)	Surajpur Road Station/Siding - 5 Kms from the mine	Chhabra Thermal Power Station (Units 3-6 - 1.2 MTPA) - 797 KMs from Mine, Kalisindh Thermal Power Station (Unit 1&2 - 1.1 MTPA) - 1049 KMs from Mine, Suratgarh Supercritical Thermal Power Plant - 1.6 MTPA - 1664 KMs from Mine, All stations in Rajasthan. Plants have own railway sidings. Daritolli- Boridand-Annupur railway line will be used for transportation of coal	0			
3	Parsa East and Kanta Basan	Rajasthan Rajya Vidyut Utpadan Nigam Limited (RRUVNL)	15	Operational	Surajpur Road Station/Siding - 5 Kms from the mine	Chhabra Thermal Power Station (Units 3-6) - 797 KMs from Mine, Kalisindh Thermal Power Station (Unit 1&2) - 1049 KMs from Mine, Suratgarh Supercritical Thermal Power Plant - 1664 KMs from Mine, All stations in Rajasthan. Plants have own railway sidings. Daritolli-Boridand-Annupur railway line will be used for transportation of coal	~11.51			
4	Kente Extension	Rajasthan Rajya Vidyut Utpadan Nigam Limited (RRUVNL)	9	Not Operational (Under Developmen t Stage)	Surajpur Road Station/Siding - 5 Kms from the mine	Chhabra Thermal Power Station (Units 3-6) - 797 KMs from Mine, Suratgarh Supercritical Thermal Power Plant - 1664 KMs from Mine, All stations in Rajasthan. Plants have own railway sidings. Daritolli-Boridand-Annupur railway line will be used for transportation of coal	0			
5	Chotia	BALCO	1	Operational	Transportation of coal via road to EUP. NH130 and NH 149B is used for evacuation of coal	BALCO CPP in Korba, 70 Kms from the mine	~0.92			
6	Madanpur South	APMDCL	5.4	Not- Operational	Surajpur Road Station/Siding or PSRS Railway Siding - 5 Kms from the mine. NH-130 can also be used for road transportation	For commercial use, EUP not decided yet	0*			
7	Datima	Shree Cement	0.36	Not- Operational	Coal to be transported via roadways	Shree Cement plant at Baloda Bazar Bhatapara	0			
<u> </u>	Total PRC		41.36		137		12.43			

*Blocks of CSPGCL and APMDCL is risky as it falls under Lemru Elephant Reserve: https://www.hindustantimes.com/india-news/no-quarrying-in-gidhmuri-paturia-madanpur-south-coal-blocks-baghel-to-centre-101641666361717.html GenerSter Gran Edited Gran

Non-CIL blocks Pipeline in Madhya Pradesh – Sohagpur CF

Block Name	Allocated to	PRC (MT)	Operational Status	Proposed Loading point	EUP and other remarks	FY23 Production (MT)
Bicharpur	Ultratech Cement Ltd	0.75	Operational	Coal is transported through pure road mode via NH 43	Sidhi, Maihar & Bela Cement Works Madhya Pradesh	~0.36
Bikram	Birla Corporation Ltd	0.36	Non-Operational	Coal is transported via roadways to Satna. For Rajasthan, railheads near Sohagpur may be used in future	Birla Vikas Satna MP & Madhav Nagar Rajasthan	0
Sahapur west	Sarda Energy and Mineral Ltd	0.6	Non-Operational	Coal may be transported via NH 43	Commercial Usage	0
Sahapur East	Chowgule and Company Pvt Ltd	0.7	Non-Operational	Coal may be transported via NH 43	Commercial Usage	0
Urtan North	JMS Mining Pvt Ltd	0.6	Non-Operational	Coal may be transported via NH 43	Commercial Use	0
Urtan.	JMS Mining Pvt Ltd	0.65	Non-Operational	Roadways will be used to deliver coal to Kotma Jn(distance from mine is approx 5 Kms)	Commercial use	0
		3.66				~0.36

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Coal Blocks to be Auctioned in 7th Tranche

<u>Chhattisgarh & MP (Sohagpur CF)</u>

Coalfield	State	PRC (MT)
Mand-Raigarh	Chhattisgarh	2
Mand-Raigarh	Chhattisgarh	1.5
Sohagpur	Madhya Pradesh	0.87
Sohagpur	Madhya Pradesh	1
Mand Raigarh	Chhattisgarh	0.87
Korba	Chhattisgarh	1.5
Mand-Raigarh	Chhattisgarh	2
Hasdeo-Arand	Chhattisgarh	6
Sohagpur	Madhya Pradesh	1.5
		19.85
	Coalfield Mand-Raigarh Mand-Raigarh Sohagpur Sohagpur Mand Raigarh Mand Raigarh Mand Raigarh Korba Mand-Raigarh Hasdeo-Arand Sohagpur	CoalfieldStateMand-RaigarhChhattisgarhMand-RaigarhChhattisgarhSohagpurMadhya PradeshSohagpurMadhya PradeshMand RaigarhChhattisgarhMand RaigarhChhattisgarhMand RaigarhChhattisgarhMand RaigarhChhattisgarhMand RaigarhChhattisgarhMand RaigarhChhattisgarhMand RaigarhChhattisgarhMand RaigarhChhattisgarhMand RaigarhChhattisgarhKorbaChhattisgarhMand-RaigarhChhattisgarhSohagpurMadhya Pradesh

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Origin – Destination Cluster Mapping for Chhattisgarh

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²⁵²⁸⁹O-D Source cluster Mapping – Despatch of Coal from Chhattisgarh: FY22 snapshot

All figures in million tonnes



lines for ~95 MTPA is conducted and presented in the next sections

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Chhattisgarh to Rajasthan



RCR mode in 2030 (with 20% of quantity being considered as rejects)

²⁵²⁸⁹ O-D Source cluster Mapping – Significant increase in Chhattisgarh supply to Rajasthan

All figures in million tonnes

Name of TPS	Utility	Korba CF	Raigarh CF	CIC CF	Captive	Total Chhattisgarh	Others	Total Coal Consumed FY22	Total Coal Consumption FY30	Supply from Korba CF	Supply from S Raigarh CF	Supply from CIC CF	Supply form Captive	Total Chhattisgarh	Others
KAWAI	ADANI POWER RAJASTHAN LTD.	0.8	0.0	0.5	0.0	1.3	3.6	4.9	5.2	1.5	0.3	0.5	0.0	2.3	2.9
CHHABRA	RRVUNL	0.7	0.0	0.0	3.2	4.0	0.0	3.0	4.3	0.0	0.0	0.0	4.3	4.3	0.0
SURATGARH	RRVUNL	2.3	0.2	0.3	0.0	2.7	0.0	2.5	6.8	0.0	0.0	0.0	6.8	6.8	0.0
KALISINDH SUPER TPP	RRVUNL	0.0	0.0	0.0	5.4	5.4	0.0	4.4	4.9	0.0	0.0	0.0	4.9	4.9	0.0
KOTA SUPER THERMAL POWER STATION	RRVUNL	0.9	0.4	0.3	0.0	1.6	3.3	4.9	5.9	0.0	0.0	0.0	5.9	5.9	0.0
CHHABRA SUPER CRITICAL TPP	RRVUNL	0.0	0.0	0.0	4.2	4.2	0.0	3.2	5.1	0.0	0.0	0.0	5.1	5.1	0.0
Total		4.7	0.6	1.0	12.8	19.1	6.9	22.8	32.2	1.5	0.3	0.5	27.0	29.3	2.9

Rajasthan Rajya Vidyut Utpadan Nigam Ltd. (RRVUNL) has an operational captive block of PRC 15 MTPA in Chhattisgarh (PEKB). Further, 2 nos. blocks – Parsa (PRC: 5 MTPA) & Kente Extension (PRC: 9 MTPA) are expected to be operational by FY23-24 and FY24-25 respectively. With all three blocks of RRVUNL operational in FY30 with combined PRC of 29 MTPA, RRVUNL is expected to source 100% of its coal requirement from its captive blocks.

• Adani Power's Kawai plant has FSA with NCL (~2.9 MT) and is expected to source the balance quantity from SECL.(FSA with Korea Rewa CF)

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ^{2528978/2023} CPIAM O-D Source cluster Mapping – Chhattisgarh to Madhya Pradesh

Chhattisgarh (including Sohagpur and Johilla areas in MP) to Madhya Pradesh total Rail Despatch in FY22 = 15.11 MT (incl. RCR mode)



Expected L	Expected Load from Chhattisgarh to MP main trunk lines (Excluding load from other states on this line)														
MP's Coal I	Demand 2022	~ 84.33 N	ЛТРА		MP's Coal Der	nand 2030 ~ :	110.20 M ⁻	ТРА							
Total RailS	upply by Chhat ~ 15.11 MTP	tisgarh 20 2 A	22		Total RailS	upply by Chhat ~ 42.5 MTPA	tisgarh 20	30							
	FY22					FY30									
From	То	Traffic (Tonnes)	Rakes / Day		From	То	Traffic (Tonnes)	Rakes / Day							
Surajpur Road	Anuppur	3545858	2.52		Surajpur Road	Anuppur	25057948	17.83							
Anuppur	Katni	11340507	8.07		Anuppur	Katni	36375397	25.89							
Kharsia	Champa	323786	0.23		Kharsia	Champa	0	0.00							
Champa	Bilaspur	9075468	6.46		Champa	Bilaspur	7683110	5.47							
Bilaspur	Anuppur	7406708	5.27		Bilaspur	Anuppur	7683110	5.47							
Katni	Satna	484888	0.35		Katni	Satna	7503420	5.34							
Katni	Bina Malkhedi	1880083	1.34		Katni	Bina Malkhedi	12594642	8.96							
Katni	Jabalpur	1333285	0.95		Katni	Jabalpur	9687893	6.89							
Katni	Billi	118400	0.08	,	Katni	Billi	0	0.00							
Bina Malkhedi	Bhopal	1035952	0.74		Bina Malkhedi	Bhopal	10799361	7.69							
Bhopal	Itarsi	1032023	0.73		Bhopal	Itarsi	10794154	7.68							
Jabalpur	Itarsi	1266747	0.90		Jabalpur	Itarsi	7596482	5.41							
Itarsi	Khandwa	1784987	1.27		Itarsi	Khandwa	5285081	3.76							
Itarsi	Amla	414098	0.29		Itarsi	Amla	5672317	4.04							
Bhopal	Ujjain	3929	0.00		Bhopal	Ujjain	5207	0.00							
Ujjain	Nagda	3929	0.00		Ujjain	Nagda	5207	0.00							
Bilaspur	Raipur	1998044	1.42		Bilaspur	Raipur	0	0.00							
Raipur	Gondiya	1646094	1.17		Raipur	Gondiya	0	0.00							
Gondiya	Nagpur	374334	0.27		Gondiya	Nagpur	0	0.00							
Nagpur	Amla	374334	0.27		Nagpur	Amla	0	0.00							
Gondiya	Nainpur	1623710	1.16		Gondiya	Nainpur	0	0.00							
Nainpur	Chindawar	1623710	1.16		Nainpur	Chindawar	0	0.00							

²⁵²⁸⁹⁷⁸ C²⁰²³ Source cluster Mapping – Significant increase in Chhattisgarh supply to MP

All figures in million tonnes

Name of TPS	Utility	Korba CF	Raigarh CF	CIC CF	Captive	Total Chhattisgarh	Others	Total Coal Consumed FY22	Total Coal Consumption FY30	Supply from Korba CF	Supply from S Raigarh CF	upply from CIC CF	Supply form Captive	Total Chhattisgarh	Others
MAHAN	MAHAN ENERGEN LTD.	0.0	0.0	0.0	0.0	0.0	2.4	2.4	5.5	0.0	0.0	5.5	0.0	5.5	0.0
JAYPEE BINA TPP	JVPL	0.7	0.1	0.0	0.0	0.8	1.0	1.8	2.4	0.0	0.0	1.4	0.0	1.4	0.9
JAYPEE NIGRIE SUPER TPP	JVPL	0.0	0.1	0.0	0.0	0.1	4.8	5.0	5.2	0.0	0.0	1.3	0.0	1.3	3.9
SANJAY GANDHI	MPPGCL	1.8	0.1	3.0	0.0	4.9	0.0	4.9	6.6	0.0	0.0	6.6	0.0	6.6	0.0
SATPURA	MPPGCL	0.4	0.0	0.0	0.0	0.4	1.8	2.2	5.7	0.0	0.0	5.7	0.0	5.7	0.0
AMARKANTAK	MPPGCL	0.0	0.0	1.0	0.0	0.0	0.0	1.0	1.1	0.0	0.0	1.1	0.0	1.1	0.0
SHREE SINGAJI TPS	MPPGCL	2.4	0.0	0.0	0.0	2.4	4.5	6.9	12.2	0.0	0.0	5.1	0.0	5.1	7.1
JHABUA POWER LIMITED	JHABUA POWER LIMITED	1.7	0.0	0.0	0.0	1.7	0.9	2.6	2.7	0.0	0.0	2.1	0.0	2.1	0.6
ANUPPUR TPS	MB POWER (MADHYA PRADESH) LIMITED	4.1	0.2	0.4	0.0	4.8	0.7	5.4	5.6	0.0	0.0	5.6	0.0	5.6	0.0
VINDHYACHAL	NTPC LTD.	0.0	0.0	0.0	0.0	0.0	24.3	24.3	26.9	0.0	0.0	0.0	0.0	0.0	26.9
GADARWARA SUPER	NTPC LTD.	0.5	0.0	0.0	0.0	0.5	4.6	5.1	6.8	2.3	0.0	0.0	0.0	2.3	4.5
SASAN UMPP TPP	REILIANCE POWER	0.0	0.0	0.0	0.0	0.0	18.3	18.3	18.3	0.0	0.0	0.0	0.0	0.0	18.3
KHARGONE STPS	NTPC LTD.	0.2	0.0	0.6	0.0	0.8	3.0	3.8	5.3	5.3	0.0	0.0	0.0	5.3	0.0
Total		11.8	0.6	5.1	0.0	17.5	67.2	83.7	104.3	7.6	0.0	34.4	0.0	42.0	62.3

Chhattisgarh (specifically SECL) has the potential to supply coal due to demand growth for power sector (~42 MT) with coal supply to MP's power plants remaining constant from other sources. Other sources include NCL (~34 MT), Captives (~22 MT from Amelia North for JVPL & Moher for Sasan UMPP), WCL (~4 MT), MCL (~0.6 MT) & CCL (~0.9 MT).

• CIC Coalfield (including Sohagpur & Johilla areas in MP) is expected to be the leading coal supplier to power plants in MP. However, plants like Gadarwara & Khargone may Generated from ACTING South State of the Coalfield (Including Sohagpur & Johilla areas in MP) is expected to be the leading coal supplier to power plants in MP. However, plants like Gadarwara & Khargone may Generated from ACTING State of the Coalfield (Including Sohagpur & Johilla areas in MP) is expected to be the leading coal supplier to power plants in MP. However, plants like Gadarwara & Khargone may Generated from ACTING State of the Coalfield (Including Sohagpur & Johilla areas in MP) is expected to be the leading coal supplier to power plants in MP. However, plants like Gadarwara & Khargone may Generated from ACTING State of the Coalfield (Including Sohagpur & Johilla areas in MP) is expected to be the leading coal supplier to power plants in MP. However, plants like Gadarwara & Khargone may Generated from ACTING State of the Coalfield (Including Sohagpur & Johilla areas in MP) is expected to be the leading coal supplier to power plants in MP. However, plants like Gadarwara & Khargone may Generated from ACTING State of the Coalfield (Including Soft) areas and the Coalfield (Including Soft) areas area

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Expected Lo	from other states on this line)														
Punjab's Coal I Total Rail S	Demand 2022 upply by Chhat ~ 3.47 MTPA	? ~ 18.03 tisgarh 20	MTPA 22		Punjab's Coal De Total Rail Su	emand 2030 apply by Chho ~ 2.81 MTP) ~ 23.56 attisgarh 2(A	MTPA)30							
From	To	Traffic (Tonnes)	Rakes / Day		From	To	Traffic (Tonnes)	Rakes / Day							
Surajpur Road	Anuppur	255898	0.18		Surajpur Road	Anuppur	30006	0.02							
Burhar	Katni	477610	0.34		Burhar	Katni	0	0.00							
Kharsia	Champa	23496	0.02		Kharsia	Champa	0	0.00							
Champa	Bilaspur	2679678	1.91		Champa	Bilaspur	2775000	1.97							
Bilaspur	Anuppur	2679678	1.91		Bilaspur	Anuppur	2775000	1.97							
Anuppur	Katni	2935576	2.09		Anuppur	Katni	2805006	2.00							
Katni	Bina Malkhedi	3413186	2.43		Katni	Bina Malkhedi	2805006	2.00							
Bina Malkhedi	Gwalior	3413186	2.43		Bina Malkhedi	Gwalior	2805006	2.00							
Gwalior	Mathura	3413186	2.43		Gwalior	Mathura	2805006	2.00							
Mathura	Rajpura	3413186	2.43		Mathura	Rajpura	2805006	2.00							

Note: Coal demand of Haryana and estimated consumption covered in later part of report

- **Major Power consumers in Punjab currently taking coal from SECL** include Nabha Power Ltd., Rajpura and Punjab State Power Corporation Limited's plant in Ropar.
- Haryana does not source coal from Chhattisgarh with the exception of Haryana
 5 Khadi & Village Industries Board sourcing ~4 kt coal in FY22.

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²⁵²⁸⁹ O-D Source cluster Mapping – Slight decrease in Chhattisgarh's supply to Punjab & Haryana

All figures in million tonnes

Name of TPS	Utility	Korba CF	Raigarh CF	CIC CF	Captive	Total Chhattisgarh	Others	Total Coal Consumed FY22	Total Coal Consumption FY30	Supply from Korba CF	Supply from Raigarh CF	Supply from CIC CF	Supply form Captive	Total Chhattisgarh	Others
RAJPURA TPS	NABHA POWER LIMITED	2.7	0.0	0.3	0.0	3.0	2.4	5.4	5.4	2.8	0.0	0.0	0.0	2.8	2.5
GURU HARGOBIND TPP, LEHRA MOHABAT	PSPCL	0.0	0.0	0.0	0.0	0.0	1.3	1.3	4.2	0.0	0.0	0.0	0.0	0.0	4.2
GURU GOBIND SINGH TPP, ROPAR	PSPCL	0.0	0.0	0.4	0.0	0.4	0.7	1.2	3.9	0.0	0.0	0.0	0.0	0.0	3.9
GVK POWER (GOINDWALSAHIB) LTD.	PSPCL	0.0	0.0	0.0	0.0	0.0	1.3	1.3	2.6	0.0	0.0	0.0	0.0	0.0	2.6
TALWANDI SABO POWER LTD	TALWANDI SABO POWER LTD.	0.0	0.0	0.0	0.0	0.0	6.0	6.0	9.2	0.0	0.0	0.0	0.0	0.0	9.2
INDIRA GANDHI	ARAVALI POWER	0.0	0.0	0.0	0.0	0.0	4.7	4.7	6.9	0.0	0.0	0.0	0.0	0.0	6.9
RAJIV GANDHI TPP,Hissar	HPGCL	0.0	0.0	0.0	0.0	0.0	1.9	1.9	5.8	0.0	0.0	0.0	0.0	0.0	5.8
Deen Bandhu Chhotu Ram TPS, YAMUNANAGAR	HPGCL	0.0	0.0	0.0	0.0	0.0	1.8	1.8	2.9	0.0	0.0	0.0	0.0	0.0	2.9
PANIPAT	HPGCL	0.0	0.0	0.0	0.0	0.0	1.9	1.9	3.4	0.0	0.0	0.0	0.0	0.0	3.4
MAHATMA GANDHI TPP	JHAJJAR POWER LIMITED	0.0	0.0	0.0	0.0	0.0	4.7	4.7	5.6	0.0	0.0	0.0	0.0	0.0	5.6
Total		2.7	0.0	0.8	0.0	3.5	18.3	21.8	38.0	2.8	0.0	0.0	0.0	2.8	35.0

• SECL in Chhattisgarh is expected to supply coal to only Nabha Power Ltd. in Punjab due to long term commitment in form of FSA of 2.8 MT. No coal is currently supplied to Haryana (except for 1 rake qty for a trader) and the same is projected for FY30.

PSPCL's Pachwara North block in Jharkhand with PRC of 7 MTPA shall be supplying coal to its plants in Lehra Mobabat & Ropar. Other than PSPCL's captive block, CCL is positioned to supply Punjab & Haryana's power sector demand (~9.29 MT). MCL also holds 11.78 MT of FSAs with plants from Punjab & Haryana. Other suppliers include NCL (6.18 MT) & small quantities from ECL due to binding FSA (~1 MT).
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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Chhattisgarh to Maharashtra



Expected Load from Chhattisgarh to Maharashtra main trunk lines (Excluding load from other states on this line)													
MH's Coal Demand 20	122 ~ 85 MTPA	MH's Coal	Demand 20	30 ~ 111	МТРА								
Total Rail Supply by Chl	hattisgarh 2022	Total Rai	l Supply by C	hhattisgar	h 2022								
~ 21.8 MT	"PA		~ 56.38 M	MTPA									
FY22			FY3	0									
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030								
Surajpur Road	Chhulha (Bypassing Anuppur)	514057	0.4	2232179	1.6								
Chhulha (Bypassing Anuppur)	Ghutku (Bypassing Bilaspur)	514057	0.4	2232179	1.6								
Ghutku (Bypassing Bilaspur)	Raipur	514057	0.4	2232179	1.6								
Burhar	Anuppur	101841	0.1	0	0.0								
Anuppur	Ghutku (Bypassing Bilaspur)	101841	0.1	0	0.0								
Kharsia	Champa	95094	0.1	24123479	17.2								
Champa	Bilaspur	20382948	14.5	56305668	40.1								
Bilaspur	Raipur	20382948	14.5	56305668	40.1								
Raipur	Gondia	20382948	14.5	56305668	40.1								
Gondia	Nagpur	14159606	10.1	39247625	27.9								
Nagpur	Wardha	10256097	7.3	33085069	23.5								
Wardha	Warora	2882292	2.1	12493911	8.9								
Wardha	Badera	7373805	5.2	20591158	14.7								
Badera	Akola	1887298	1.3	9608494	6.8								
Akola	Jalgaon	1887298	1.3	7122813	5.1								
Jalgaon	Udhna	1887298	1.3	2448406	1.7								
Udhna	Dahanu	1887298	1.3	2448406	1.7								

- Major Power plants in Maharashtra include that of Adani Electricity, Adani Power, GMR, NTPC and MAHAHENCO.
- MAHAGENCO has a coal block i.e., Gare Palma Sector-II (23.6 MTPA) in Mandraigarh CF of Chhattisgarh, which could start feeding to Chandrapur and Koradih thermal power plants in Maharashtra. This could replace SECL's coal supply to these two power plants post expiry of FSAs in S7/2023 2029 Although the load on the circuits would remain the same.

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²⁵²⁸⁹⁷O-D³Source cluster Mapping – Significant increase in Chhattisgarh supply to Maharashtra (1/2)

All figures in million tonnes

Name of TPS	Utility	Korba CF	Raigarh CF	CIC CF	Captive	Total Chhattisgarh	Others	Total Coal Consumed FY22	Total Coal Consumptior FY30	Supply from Korba CF	Supply from Raigarh CF	Supply from CIC CF	Supply form Captive	Total Chhattisgarh	Others
TIRODA	ADANI POWER MAHARASHTRA LTD.	6.2	0.0	0.5	0.0	6.7	7.5	14.2	15.2	7.2	2.0	2.2	0.0	11.4	3.8
ADANI DAHANU	ADANI ELECTRICITY MUMBAI LIMITED	1.5	0.0	0.1	0.0	1.6	0.4	2.0	2.1	1.6	0.5	0.0	0.0	2.1	0.0
DHARIWAL INFRASTRUCTURE Ltd.	DHARIWAL INFRASTRUCTU RE LIMITED	1.3	0.0	0.0	0.0	1.3	1.4	2.7	2.9	2.2	0.0	0.0	0.0	2.2	0.7
GMR WARORA ENERGY LTD.	GMR WARORA ENERGY LTD.	1.0	0.0	0.0	0.0	1.0	1.3	2.3	2.8	0.4	0.0	0.0	0.0	0.4	2.4
RATNAGIRI	JSW ENERGY LIMITED	0.0	0.0	0.0	0.0	0.0	2.7	2.7	4.6	0.0	0.0	0.0	0.0	0.0	4.6
BHUSAWAL	MSPGCL	0.0	0.0	0.0	0.0	0.0	4.7	4.7	6.6	3.3	0.0	0.0	0.0	3.3	3.2
CHANDRAPUR	MSPGCL	0.6	0.0	0.0	0.0	0.6	11.0	11.6	15.8	0.0	0.0	0.0	9.9	9.9	6.0
KHAPARKHEDA	MSPGCL	0.5	0.0	0.0	0.0	0.5	5.7	6.2	8.2	2.9	0.0	0.0	0.0	2.9	5.3
KORADI	MSPGCL	3.6	0.1	0.0	0.0	3.7	4.5	8.2	11.2	0.0	0.0	0.0	11.2	11.2	0.0
NASHIK	MSPGCL	0.0	0.0	0.0	0.0	0.0	1.7	1.7	3.7	1.3	0.0	0.0	0.0	1.3	2.4
PARLI	MSPGCL	0.0	0.0	0.0	0.0	0.0	2.0	2.0	3.5	0.0	0.0	0.0	2.5	2.5	1.0
PARAS	MSPGCL	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.7	0.0	0.0	0.0	0.0	0.0	2.7

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²⁵²⁸⁹O-D Source cluster Mapping – Significant increase in Chhattisgarh supply to Maharashtra (2/2)

Name of TPS	Utility	Korba CF	Raigarh CF	CIC CF	Captive	Total Chhattisgarh	Others	Total Coal Consumed FY22	Total Coal Consumptior FY30	Supply from Korba CF	Supply from Raigarh CF	Supply from CIC CF	Supply form Captive	Total Chhattisgarh	Others
MOUDA SUPER TPS	NTPC LTD.	0.3	0.0	0.1	0.0	0.4	8.3	8.7	11.6	1.9	0.0	0.0	0.0	1.9	9.7
SOLAPUR SUPER TPS	NTPC LTD.	0.0	0.0	0.0	0.0	0.0	3.3	3.3	5.9	0.0	0.0	0.0	0.0	0.0	5.9
AMARAVATI TPS	RATTANINDIA POWER LTD.	5.6	0.0	0.0	0.0	5.6	0.3	5.9	6.3	6.3	0.0	0.0	0.0	6.3	0.0
TROMBAY	THE TATA POWER COMPANY LIMITED	0.0	0.0	0.0	0.0	0.0	2.3	2.3	2.7	0.0	0.0	0.0	0.0	0.0	2.7
SAI WARDHA POWER Ltd., WARORA	SAI WARDHA POWER GENERATION PVT LTD.	0.0	0.0	0.0	0.0	0.0	1.5	1.5	2.5	0.0	0.0	0.0	0.0	0.0	2.5
Total		20.6	0.1	0.7	0.0	21.4	60.5	81.9	108.3	27.2	2.5	2.2	23.6	55.5	52.8

• It has been assumed that due to increase in availability of coal from SECL, power plants would prefer each area's coal due to proximity of assets to the respective SECL areas and SECL mines.

- With WCL's limited growth potential from current dispatch of ~64 MT in FY22 to ~70 MT in FY30, growth of ~2-3 MT considered as quantity for auctions due to potential of higher premiums. WCL's dispatch to Maharashtra's power plants in FY22 was ~37.5 MT and is expected to increase slightly to ~41 MT for FY30.
- Additional demand from power sector in Maharashtra would have to be catered by SECL (~32 MT) and Mahagenco's captive GP Sector II block (~23.6 MT) from Chhattisgarh
- The balance power sector demand is envisaged to be met by MCL's FSAs (~8 MT) and imported coal for plants like Trombay and blending for JSW Energy Ratnagiri (~3.8 MT)

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Chhattisgarh to Gujarat



Guigrat's Coal Domand 20	22 ~ 20 MTDA	Guiarat's Co	nal Demand	2020 ~ 20	
Gujurut s Cour Demund 20	ZZ SU WITPA	Gujurut s cc	a Demana	2030 33	IVITFA
Rail Supply by Chhattisgarh 20	22 ~ 7.06 MTPA	Rail Supply by C	hhattisgarh 2	2030 ~ 21.	99 MTPA
FY22			FY3	0	
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030
Kharsia	Champa	116570	0.1	414274	0.3
Champa	Bilaspur	5714580	4.1	19658560	14.0
Bilaspur	Raipur	5714580	4.1	19658560	14.0
Raipur	Gondia	5714580	4.1	19658560	14.0
Gondia	Nagpur	5714580	4.1	19658560	14.0
Nagpur	Wardha	5714580	4.1	19658560	14.0
Wardha	Badera	5714580	4.1	19658560	14.0
Badera	Akola	5714580	4.1	19658560	14.0
Akola	Jalgaon	5714580	4.1	19658560	14.0
Jalgaon	Ukai Songadh	5776533	4.1	19658560	14.0
Ukai Songadh	Vadodara	4491588	3.2	15836933	11.3
Vadodara	Anand	4491588	3.2	15836933	11.3
Anand	Ahmedabad	3615604	2.6	9307384	6.6
Ahmedabad	Viramgam	1455836	1.0	5352453	3.8
Viramgam	Gandhidham	1455836	1.0	5352453	3.8
Surajpur Road	Anuppur	1948367	1.4	1964027	1.4
Anuppur	New Katni	1948367	1.4	1964027	1.4
Burhar	New Katni	947881	0.7	370399	0.3
New Katni	Bina Malkhedi	2896248	2.1	2334426	1.7
Bina Malkhedi	Bhopal	2896248	2.1	2334426	1.7
Bhopal	Itarsi	61953	0.0	0	0.0
Itarsi	Khandwa	61953	0.0	0	0.0
Khandwa	Jalgaon	61953	0.0	0	0.0
Bhopal	Nagda	2834296	2.0	2334426	1.7
Nagda	Godhra	2834296	2.0	2334426	1.7
10 Godhra	Anand	1672895	1.2	1341656	1.0
Godhra	Vadodara	132212	0.1	578497	0.4

Expected Load from Chhattisgarh to Gujarat main trunk lines (Excluding load from other

states on this line)

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²⁵²⁸⁹⁷O-D³Source cluster Mapping – Increase in Chhattisgarh's supply to Gujarat

All figures in million tonnes

Name of TPS	Utility	Korba CF	Raigarh CF	CIC CF	Captive	Total Chhattisgarh	Others	Total Coal Consumed FY22	Total Coal Consumptior FY30	Supply from Korba CF	Supply from Raigarh CF	Supply from CIC CF	Supply form Captive	Total Chhattisgarh	Others
MUNDRA TPS	ADANI POWER (MUNDRA) LIMITED	1.5	0.0	0.0	0.0	1.5	5.1	6.6	15.7	5.4	0.0	0.0	0.0	5.4	10.4
MUNDRA UMPP	Coastal Gujarat Power Limited	0.0	0.0	0.0	0.0	0.0	0.4	0.4	1.0	0.0	0.0	0.0	0.0	0.0	1.0
GANDHINAGAR	Gujarat State Electricity Corporation Limited	1.4	0.0	0.4	0.0	1.8	0.4	2.2	2.6	2.6	0.0	0.0	0.0	2.6	0.0
SIKKA	Gujarat State Electricity Corporation Limited	0.0	0.0	0.0	0.0	0.0	0.5	0.5	1.5	0.0	0.0	0.0	0.0	0.0	1.5
UKAI	Gujarat State Electricity Corporation Limited	2.5	0.0	0.1	0.0	2.6	0.9	3.4	4.7	3.8	0.0	0.0	0.0	3.8	0.9
WANAKBORI	Gujarat State Electricity Corporation Limited	5.9	0.1	1.0	0.0	7.0	0.5	7.6	9.6	7.5	0.4	0.4	0.0	8.3	1.3
SABARMATI TPS	TORRENT POWER LTD.	0.0	0.0	1.2	0.0	1.2	0.2	1.4	1.4	0.0	0.0	1.1	0.0	1.1	0.3
Total		11.3	0.1	2.7	0.0	14.1	7.9	22.0	36.5	19.2	0.4	1.5	0.0	21.2	15.4

• Adani Power's Mundra plant sourced ~1.5 MT from SECL and ~1.87 MT from WCL in FY22, accounting for a total domestic coal consumption of ~50% even though the plant is listed as 'Power Plants designed on Imported Coal' by CEA. Further optimizing import to 40% in FY30 by Adani Power-Mundra, SECL has the opportunity to supply additional coal, other than existing FSA with WCL.

Due to presence of import-based & imported coal-blending based power plants, expected coal supply from imports is the majority of the 'Others' at ~8.86 MT followed by WCL (~5.22) and NCL (~1 MT).
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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Chhattisgarh's internal consumption

Chhattisgarh (including Sohagpur and Johilla areas in MP) to Chhattisgarh total Rail Despatch in FY22 = 29.61 Million Tonnes



	other states on this line)													
Chhattisgarh's	Coal Deman	d 2022 ~ 1	24.47 MTPA	Chh	attisgarh's Co	oal Demand 2	2030 ~ 162	.64 MTP						
Rail Supply by	Chhattisgarh	2022 ~ 29.	61 MTPA	Ra	il Supply by C	hhattisgarh 2	030 ~ 93.3	8 MTPA						
	FY22	2				FY30)							
From	То	Traffic (MTPA)	Rakes / Day		From	То	Traffic (MTPA)	Rakes / Day						
Burhar	Anuppur	47866	0.03		Burhar	Anuppur	185860	0.13						
Anuppur	Chhulha	47866	0.03		Anuppur	Chhulha	185860	0.13						
Surajpur Road	Chhulha	1636130	1.16		Surajpur Road	Chhulha	3097028	2.20						
Chhulha	Ghutku	830640	0.59		Chhulha	Ghutku	2015597	1.43						
Chhulha	Bilaspur	814358	0.58		Chhulha	Bilaspur	1215604	0.87						
Champa	Bilaspur	11008090	7.83		Champa	Bilaspur	45592153	32.44						
Champa	Baradwar	10137281	7.21		Champa	Baradwar	25715719	18.30						
Baradwar	Kharsia	18444196	13.13		Baradwar	Kharsia	40936193	29.13						
Kharsia	Jharsuguda	7900239	5.62		Kharsia	Jharsuguda	44561917	31.71						
Ghutku	Raipur	830640	0.59		Ghutku	Raipur	2015597	1.43						
Bilaspur	Raipur	3604064	2.56		Bilaspur	Raipur	14876656	10.59						
Raipur	Gondiya	1787163	1.27		Raipur	Gondiya	4106187	2.92						

Expected Load from Chhattisgarh to Chhattisgarh main trunk lines (Excluding load from

Major Coal Consuming Districts of Chhattisgarh: 2030 (Estimated)

>15 MTPA Coal Consumption Raipur, Raigarh, Durg

5-10 MTPA Coal Consumption Korba, Bilaspur

1-5 MTPA Coal Consumption Janjgir-Champa, Bijapur-Dantewada- • The station of Chnuina, Gnutku a Generated from eOffice by N RAJESWARA RAO, MOC-SO(WKMCCHAMSTER)OC-SO(NRR), Ministry Of COAL on 17/05/20த்தொழர்வி Champa respectively

- Quantities of Lanco Amarkantak, BALCO, NTPC Sipat, Korba West and NTPC Korba have not been considered in trunk line analysis as these are located in Korba district
- Chhattisgarh Steel & Power Ltd., located in Janjgir-Champa district, quantity has not been considered in trunk line analysis as it located on the Champa-Korba line (*Quantity: 43.93 kT*)
- Traffic on Baradwar-Champa, Kharsia-Baradwar & Champa-Bilaspur sections have been considered for both ways
- The stations of Chhulha, Ghutku and Baradwar considered for traffic bypassing junctions of Anuppur, _{7/05/20}Bilaspur, and Champa respectively

²⁵²⁸⁹⁷O²O²Source cluster Mapping – Significant increase in Chhattisgarh's internal consumption (1/2)

All figures in million tonnes

Name of TPS	Utility	Korba CF	Raigarh CF	CIC CF	Captive	Total Chhattisgarh	Others	Total Coal Consumed FY22	Total Coal Consumption FY30	Supply from Korba CF	Supply from Raigarh CF	Supply from CIC CF	Supply form Captive	Total Chhattisgarh	Others
KASAIPALI	ACB (INDIA) Ltd.	0.5	0.0	0.0	0.0	0.5	1.1	1.6	3.7	3.7	0.0	0.0	0.0	3.7	0.0
Atal Bihari Vajpayee TPP: Korba East	CSPGCL	2.4	0.0	0.0	1.1	3.6	0.0	3.6	6.1	1.1	0.0	0.0	5.0	6.1	0.0
Dr. Shyama Prasad Mukharjee TPP: Marwa	CSPGCL	0.3	0.1	0.0	2.5	2.9	0.0	2.8	3.0	2.0	1.0	0.0	0.0	3.0	0.0
Hasdeo TPP: Korba West	CSPGCL	6.7	0.0	0.0	0.0	6.7	0.0	6.7	8.4	8.4	0.0	0.0	0.0	8.4	0.0
BALCO TPP	BALCO	5.2	0.1	0.0	0.0	5.3	0.0	5.3	7.6	6.6	0.0	0.0	1.0	7.6	0.0
O.P.Jindal Super TPP (Stage-I)	JINDAL POWER LIMITED	0.0	0.0	0.0	0.0	0.0	4.1	4.1	6.5	0.0	6.5	0.0	0.0	6.5	0.0
TAMNAR TPP	JINDAL POWER LIMITED	1.4	4.5	0.0	0.3	6.2	1.7	7.9	16.2	0.0	10.8	0.0	0.0	10.8	5.4
KMPCL - NARIYARA	KSK MAHANADI POWER COMPANY LIMITED	3.7	0.0	0.6	0.0	4.3	1.5	5.8	9.6	8.4	0.0	1.2	0.0	9.6	0.0
LANCO AMARKANTAK TPS	LANCO AMARKANTAK POWER LIMITED	2.2	0.2	0.0	0.0	2.4	0.4	2.8	3.4	3.4	0.0	0.0	0.0	3.4	0.0
MCCPL BANDHAKHAR	MARUTI CLEAN COAL AND POWER LIMITED	1.2	0.0	0.0	0.0	1.2	0.3	1.5	1.7	1.7	0.0	0.0	0.0	1.7	0.0
BHILAI PP - III	NTPC - SAIL POWER COMPANY LIMITED (NTPC-JV)	1.4	0.1	0.0	0.0	1.5	1.2	2.7	3.1	3.0	0.1	0.0	0.0	3.1	0.0

²⁵²⁸⁹ O-D Source cluster Mapping – Significant increase in Chhattisgarh's internal consumption (2/2)

Name of TPS	Utility	Korba CF	Raigarh CF	CIC CF	Captive	Total Chhattisgarh	Others	Total Coal Consumed FY22	Total Coal Consumption FY30	Supply from Korba CF	Supply from Raigarh CF	Supply from CIC CF	Supply form Captive	Total Chhattisgarh	Others
KORBA SUPER	NTPC LTD.	13.9	0.0	0.0	0.0	13.9	0.0	13.9	14.0	14.0	0.0	0.0	0.0	14.0	0.0
SIPAT SUPER	NTPC LTD.	14.1	0.0	0.0	0.0	14.1	0.0	14.1	16.3	16.3	0.0	0.0	0.0	16.3	0.0
R.K.M. POWERGEN PVT. LTD	R.K.M. POWERGEN PVT. LTD BAIPUR	2.9	0.7	0.0	0.0	3.6	1.7	5.3	9.1	7.3	1.8	0.0	0.0	9.1	0.0
RAIPUR TPP	ENERGEN	1.1	0.0	0.0	0.0	1.2	5.0	6.2	7.9	7.9	0.0	0.0	0.0	7.9	0.0
RATIJA TPS	ACB (INDIA) Ltd.	0.8	0.0	0.0	0.0	0.8	0.0	0.8	1.0	1.0	0.0	0.0	0.0	1.0	0.0
SKS POWER GENERATION (CH) LTD.	SKS POWER GENERATION (CHHATTISGAR H) LIMITED TRN ENERGY	0.8	0.3	0.0	0.0	1.1	0.1	1.2	3.6	0.0	3.6	0.0	0.0	3.6	0.0
RAIGARH TPP	PRIVATE	0.1	0.3	0.0	0.0	0.4	0.1	0.6	3.9	0.0	3.9	0.0	0.0	3.9	0.0
LARA SUPER TPS	NTPC LTD.	0.0	0.0	0.3	0.0	0.3	7.5	7.8	9.0	0.0	0.0	0.0	9.0	9.0	0.0
RAIGARH TPP	RAIGARH ENERGY GENERATION LIMITED	0.4	0.2	0.0	0.0	0.6	2.2	2.8	3.7	0.0	1.1	0.0	0.0	1.1	2.6
DB POWER	DB POWER LIMITED	2.4	1.5	0.0	0.0	3.9	2.5	6.5	7.4	7.4	0.0	0.0	0.0	7.4	0.0
Total		61.6	8.1	0.9	3.9	74.4	29.5	103.9	145.3	92.2	28.9	1.2	15.0	137.3	8.0

• It has been assumed that due to increase in availability of coal from SECL, power plants would prefer each area's coal due to proximity of assets to the respective areas. SECL mines. Therefore, plants such as DB Power, Raipur Energen, OP Jindal, Bhilai PP, NTPC Lara etc. would stop sourcing coal from MCL altogether.

• NTPC Lara would shift entirely to NTPC's Talaipalli Block (In Mand Raigarh Region) with additional capacity from Talaipalli block available for NTPC's other power plants

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²⁵²⁸⁹⁷⁸ O-D Source cluster Mapping – Chhattisgarh to Odisha

Chhattisgarh (including Sohagpur and Johilla areas in MP) to Odisha total Rail Despatch in FY22 = 0.8 Million Tonnes



Major Coal Consuming Districts of Odisha: 2030 (Estimated)

>15 MTPA Coal Consumption	Jharsuguda, Angul, Jajpur, Jagatsinghpur
10-15 MTPA Coal Consumption	Sundergarh, Sambalpur, Dhenkanal
5-10 MTPA Coal Consumption	Cuttack
1-5 MTPA Coal Consumption	Koraput, Rayagada, Gagapati, Ganjam, Khordha, Puri, Bargarh, Balasore

Expected Load from	Chhattisgarh to Odisha states on th	a main trunk is line)	lines (Exclud	ding load fr	om other		
Odisha's Coal Demand 2	2022 ~ 99 MTPA	Odisha's Coal Demand 2030 ~ 147 MTPA					
Rail Supply by Chhattisgarh	2022 ~ 0.8 MTPA	Rail Supply by Chhattisgarh 2030 ~ 1.44 MTPA					
FY22		FY30					
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030		
Surajpur Road	Chhulha (Bypassing Anuppur)	27189.4	0.02	36036	0.03		
Chhulha (Bypassing Anuppur)	Ghutku (Bypassing Bilaspur)	7655.7	0.01	10147	0.01		
Chhulha (Bypassing Anuppur)	Bilaspur	19533.7	0.01	25890	0.02		
Ghutku (Bypassing Bilaspur)	Raipur	7655.7	0.01	10147	0.01		
Raipur	Titlagarh	113812.2	0.08	182903	0.13		
Titlagarh	Lanjigarh Road	113812.2	0.08	182903	0.13		
Lanjigarh Road	Tikri	113812.2	0.08	182903	0.13		
Champa	Bilaspur	106156.5	0.08	172756	0.12		
Bilaspur	Raipur	106156.5	0.08	172756	0.12		
Kharsia	Champa	101972.5	0.07	164568	0.12		
Bilaspur	Champa	19533.7	0.01	25890	0.02		
Champa	Kharsia	19533.7	0.01	25890	0.02		
Kharsia	Jharsuguda	19533.7	0.01	25890	0.02		
Jharsuguda	Rourkela	19533.7	0.01	25890	0.02		
Rourkela	Barabambo	19533.7	0.01	25890	0.02		
Barabambo	Noamundi	19533.7	0.01	25890	0.02		
Baradwar	Kharsia	635835.1	0.45	1236783	0.88		
Kharsia	Jharsuguda Rd	643204.1	0.46	1236783	0.88		
Jharsuguda Rd	Brundamal	643204.1	0.46	1236783	0.88		
Brundamal	Lapanga	616917.1	0.44	1236783	0.88		

Only NRS sector in Odisha is sourcing coal from SECL. Hindalco's Gare Palma IV-5 (PRC of 1 MTPA) could replace the small quantities of coal being procured by SECL (for Utkal Alumina as well as Aditya¹Aluminium)

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²⁵²⁸⁹⁷⁸ O-D Source cluster Mapping – Chhattisgarh to Uttar Pradesh



Major Coal Consuming Districts of UP: 2030 (Estimated)

>15 MTPA Coal Consumption	Jhansi, Sonbhadra
10-15 MTPA Coal Consumption	Bulandsahar, Kanpur
-	Prayagraj, Rae Bareli, Lucknow,
5-10 MTPA Coal Consumption	Shahjahanpur, Ambedkar Nagar,
-	Gorakhpur
1 5 MTDA Coal Consumption	Ghaziabad, Hapur, Gautam Buddha
1-5 MTPA Coal Consumption	Nagar, Aligarh, Agra, Kushinagar, G

	this	line)	Excluding IOa	u nom otn	er states on		
UP's Coal Demand 2022 Rail Supply by Chhattisgarh 202	~ 87 MTPA 22 ~ 0.95 MTPA	UP's Coal Demand 2030 ~ 114 MTPA Rail Supply by Chhattisgarh 2030 ~ 1 MTPA					
FY22			FY3	0			
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030		
Baikunthpur Road	Annupur	556244	0.40	1000000	0.71		
Annupur	New Katni	563976	0.40	1000000	0.71		
Burhar	New Katni	352035	0.25	0	0.00		
New Katni	Bina Malkhedi	908280	0.65	1000000	0.71		
Bina Malkhedi	Lalitpur	908280	0.65	1000000	0.71		
New Katni	Satna	7732	0.01	0	0.00		
Satna	Manikpur	7732	0.01	0	0.00		
Manikpur	Prayagraj Chheoki	7732	0.01	0	0.00		
Champa	Bilaspur	7732	0.01	0	0.00		
Bilaspur	Annupur	7732	0.01	0	0.00		

Exported Load from Chhatticgarh to LID main trunk lin

- Around ~6.6 GW of coal-based capacity is under construction in Uttar Pradesh, which is likely to increase the coal demand substantially for the state.
- Currently only Meja Urja Nigam Pvt Limited and Lalitpur Power Generation Company Limited are the two power plants sourcing coal from SECL. Meja is sourcing from Dipka and Kusmunda areas while telitpur Power G Ltd is sourcing from Bhatgaon, Chirimiri, Hasdeo and Sohagpur areas. Only

Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 balitpur is expected to source coal from SECL in FY30 due to binding FSA from Korea Rewa CF

²⁵²⁸⁹ SECL would need to push certain volumes in order to match the production levels

All figures in million tonnes

Destination State			Korba CF		Raigarh CF	CIC CF	Total SECL
Chhattisgarh			57.9		28.9	3.3	90.0
Madhya Prades	h		8.2		0.0	35.5	43.7
Maharashtra			28.0		2.5	2.2	32.8
Punjab & Haryana			2.8		0.0	0.0	2.8
Rajasthan			1.5		0.3	1.7	3.5
Gujarat			19.2		0.4	1.5	21.2
Odisha			1.4		0.0	0.0	1.4
Uttar Pradesh			0.0		0.0	1.0	1.0
Total for 2030			119.0		32.1	45.3	196.4
Rail Dispatch Plan for SECL			140.6		38.1	50	229
Identified Gap	Identified Gap		21.6		6.0	5.1	32.7
Identified Gap	21.6	6.0	5.1	32.7	A proactive mark	eting strategy needs to b	e articulated by the
E-auction Sales Rail Mode @50% of 14.42% of Long-term rail mode commitment for FY30	8.6	2.3	2.3 3.3 14.2		marketing team to further push surplus production volumes from SECL. Strict competition from captive & commercial mines expected.		
Remaining Gap Generated from eOffice by N RAIESWARA RAO, M	13.0 10C-SO(NRR)-CPIAM, MOC-SI	3.7 O(NRR), Ministry Of CO	1.8 AL on 17/05/2023	17 18.5 04:46 PM			

²⁵²⁸⁹C-D Source cluster Mapping – Additional supply from SECL (e-auctions + push volumes) & Other Commercial Mines (such as Banai-Bhalumunda of JSW Steel etc.)



File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹O-D Source cluster Mapping – Consolidated Coal Traffic from Chhattisgarh (including SECL areas in MP) to all states including push volumes - ODS **ODS: Optimistic Demand Scenario** Major sections are already witnessing significant coal traffic and is estimated to further increase in the coming decade. FY22 Actual and FY30 (Estimated) coal traffic in major sections for despatch of coal from Chhattisgarh (Including Sohagpur and Johilla) to various destinations Currently. Almost all of these sections are operating at >100% capacity utilization levels and hence solutions shall be in place to ensure seamless coal flow in future Increase in Traffic (MT): Rakes / Day: Traffic (MT): Rakes / Day: Feed to UP. То Coal Traffic From 2022 2022 2030 2030 Punjab and (Rakes / Day) Feed to Harvana Hasdeo-Anand Coalfields Rajasthan, Sohagpur and (Including RRVUNL PKEB) 38.32 200.16 142.43 +104.11Bilaspur 53.85 Champa Maharashtra, Johilla Coalfields Gujarat, MP 102% New Katn Surajpur Rd 17.21 12.25 51.03 36.31 +24.06**Bilaspur** Anuppur Surajpur Rd Bina 88% Korba and Malkhedi 39.88 28.38 126.33 89.90 +61.53Anuppur New Katni Mand-Raigarh Coalfields Bilaspur Champa 158% Jharsuguda 115% New Katni Bina Malkhedi 9.95 7.08 63.45 45.15 +38.09 Raipur 🧃 Feed to Odisha Surajpur Anuppur 21.88 15.57 73.69 52.44 +36.88Feed to Chhattisgarh, Road MP, Maharashtra, Odisha and Gujarat FY21-22 Line Capacity Utilization XX% Bilaspur Raipur 30.64 21.81 145.42 103.48 +81.68Uni-Directional Coal Multi-Directional <> > Jharsuguda & Flow from SECL Coal Flow from SECL Baradwar 8.56 6.09 53.88 38.34 +32.25 Jharsuguda Rd

by N RAJEŚWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46 PM



²⁵²⁸⁹⁷⁸ Ongoing works to ensure rail evacuation capacity to trunk lines – Adding rail load of CIL on CERL & CEWRL) 193.7 MTPA out of which

Korba CF: 140.56 MTPA



Trunk Line	Section	Anticipated Traffic for FY30 (MTPA)	Rakes/Day
CERL Ph-I	Raigarh CF-Kharsia	30.0	21.3
CERL Ph-II	Raigarh CF-Gevra Rd.	8.1	5.8
CEWRL	Gevra RdPendra Rd.	65.0	46.3
Existing Infra with Modifications	Gevra RdChampa	83.7	59.6

 CIL blocks in Mand-Raigarh coalfield to use CERL Ph-I and subsequently CERL Ph-II to join CEWRL at Gevra Road for traffic bound for Anuppur-Katni

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Rail Evacuation from Korba &

cuation from Korba Coalfields: ba, Dipka, Gevra & Kusmunda	187 MTPA out of whi Rail: 140.56 MTPA							
Evacuation Enabler for coal flow towards Champa								
Proposed Solution	/Enabler							
Korba yard Modification (Work in pro	ogress)							
Automatic Signalling from Gevra Road to Champa (Tendering already done by SECR(IR)).								
Doubling of Line from Dipka to Jun under consideration of SECL)	adih (Currently single line –							
700m Connectivity from Dipka Sidin for directly evacuating to Gatora (SECR(IR) and NTPC, under considen terms to be expedited	g to NTPC Seepat MGR bulb station, bypassing Champa ration of SECL). Commercial							
Speed Enhancement of Trains, I renewal) (works under progress by S	Ballasting (Complete track ECR(IR) and SEC)							
	 ba, Dipka, Gevra & Kusmunda Evacuation Enabler for coal flow Proposed Solution Korba yard Modification (Work in product Signalling from Gevra Falready done by SECR(IR)). Doubling of Line from Dipka to Jununder consideration of SECL) 700m Connectivity from Dipka Sidin for directly evacuating to Gatora (SECR(IR) and NTPC, under consideration of Seculation Speed Enhancement of Trains, Interneval) (works under progress by Seculation Speed Seculation Speed Enhancement of Trains, Interneval) (works under progress by Seculation Speed Enhancement of Trains, Interneval) (works under progress by Seculation Speed Enhancement of Trains, Interneval) (works under progress by Seculation Speed Enhancement Speed Enhanceme							

evacuation capacity via Rail, which will take up the realistic evacuation capacity from ~223 MTPA to ~260 MTPA

²⁵²⁸⁹²⁰²³ Source cluster Mapping – Consolidated Coal Traffic on railways from Odisha & Chhattisgarh (including SECL areas in MP) to all states with addition of CERL/CEWRL network - ODS

ODS: Optimistic Demand Scenario


²⁵²⁸⁹⁷⁸ ²⁰²³ ^{CPIAM} findings based on detailed analysis of railway traffic for major coal producing states (3/7)

	20)22			2030					
Sub-Section	Capacity	% Utilization	Ongoing Works	Passenger Freight Total		% Capacity Utilizatio		Other Planned Works (New Energy/Other Corridors)	after of All planned works	
Champa to Bilaspur	206	115%	4 th line CERL & CEWRL in progress	117	255 (~152 to 163 R/d is coal)	372 to 383	250	149% to 153%	CRCL line from Jharsuguda- Balodabazaar-Raipur and Katghora – Salka Rd - Donghargarh Coal traffic from Odisha and Chhattisgarh going towards MH/GJ/KA shall be diverted.	149% to 153%
Pendra Rd to Anuppur	98	88%	Khodri-Anuppur Line Doubling with F/O at BSP Pendra RdAnuppur 3rd line & Automatic Signaling: Bilaspur- Uslapur-Ghutku are in progress.	71	120 (~65 to 70 R/d is coal)	191 to 196	142	134% to 138%	With CEWRL line catering to 65 MTPA (Bypassing Champa) load from BSP to APR will drastically reduce. Congestior will be after Pendra Rd.	, 134% to 138%

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²⁵²⁸⁹⁷⁸ ²⁰²³ ^{CPIAM} findings based on detailed analysis of railway traffic for major coal producing states (4/7)

	2022				2030				Other Planned Works	Utilization
Sub-Section	Capacity	% Utilization	Ongoing Works	Passenger	ger Freight Total Capacity % (New Utilization C		(New Energy/Other Corridors)	after of Al planned works		
Anuppur to Shahdol to Katni	116	98%	Anuppur – Katni 3rd Line (166.52 Km) in progress	78	158 (~119 to 128 R/d is coal)	235 to 244	164	143% to 149%	Nil	143% to 149%
Bilaspur to Urukura (Raipur)	206	158%	Nil	105	501 (~129 to 138 R/d is coal)	606 to 615	206	294% to 296%	CRCL line from Jharsuguda-Balodabazaar Raipur and Katghora – Salka Rd - Donghargarh Further load shedding on East-West DFC post	<100%
Surajpur Rd (Kotma) to Anuppur	116	48%	Ambikapur to Boridand Doubling in Progress	42	82 (~52 to 56 R/d is coal)	124 to 128	116	107% to 110%	commissioning Nil	107% to 110%

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²⁵²⁸⁹ Dedicated Freight Corridors – Implications of DFC on Odisha and Chhattisgarh cluster

DFC Name	DFC Connector Station / Node	Total Traffic - 2031 (Rakes/Day)	Coal Traffic	Others			E-W DFC		E-Co DFC		
E-Co DFC	Barang Jn	241	7.23	233.77	Commodity						
E-W DFC	Bilaspur	20	5	15		2031	2041	2051	2031	2041	2051
E-W DFC	Durg	31	4.65	26.35							
E-W DFC	Nagpur	36	2.16	33.84							
E-W DFC F-W DFC	Jharsuguda Jn Rourkela	80 15	11.2 0.75	68.8 14.25	Coal	6.21	30.16	31.05	11.16	18.18	19.21
				Andal	Cement	2.07	12.76	14.85	5.58	9.09	11.3
				_	Fertilizers	1.84	3.48	5.4	3.1	5.05	4.52
	Bilaspur	Rourkela	مر ۲	Kharagpur	Food Grains	0.92	3.48	4.05	2.48	4.04	3.39
Nagp	Nagpur Jharsuguda Jn Bhadrak			ζ.	Iron Ore	0.46	5.8	6.75	4.96	8.08	14.69
	Durg		Barang		Pig Iron	3.45	10.44	12.15	3.72	6.06	6.78
	5	KI	hurda Rd		Pol	0.46	5.8	6.75	4.34	7.07	7.91
					Other RM for Steel	0.23	1.16	6.75	0.62	1.01	10.17
	م کر				Container	0.23	9.28	12.15	2.48	4.04	4.52
					BoG	7.36	32.48	33.75	24.18	39.39	30.51
				25	Maximum nos of Rakes / Day	23	116	135	62	101	113
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Source: National Rail Plan December 2020

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²⁵²⁸⁹⁷⁸ Ongoing works to ensure rail evacuation capacity to trunk lines – Alternative scenario - load of CIL & Non-CIL on CERL & CEWRL)



- Non-CIL blocks such as Gare Palma Sector-III (PRC: 23.6 MTPA) may benefit from infrastructure addition
- If Non-CIL blocks are allowed to use CERL & CEWRL, additional capacity may be planned to accommodate the same

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	vaci (orb	ba, Dipka, Gevra & Kusmunda	Rail: 140.56 MTPA
		Evacuation Enabler for coal flow to	wards Champa
		Proposed Solution/En	abler
	1)	Korba vard Modification (Work in progress	.)
	2)	Automatic Signalling from Gevra Road already done by SECR(IR)).	to Champa (Tendering
	3)	Doubling of Line from Dipka to Junadih under consideration of SECL)	(Currently single line –
	4)	700m Connectivity from Dipka Siding to I for directly evacuating to Gatora static (SECR(IR) and NTPC, under consideration	NTPC Seepat MGR bulb on, bypassing Champa of SECL)
	5)	Speed Enhancement of Trains, Ballas renewal) (works under progress by SECR(I	ting (Complete track R) and SEC)
Н е b	low sira ove	wever, even if CEWRL is not comm able timelines, leveraging the solu e, SECL would be able to add anot l	issioned during itions mentioned h er 46 MTPA coal

evacuation capacity via Rail, which will take up the realistic evacuation capacity from ~223 MTPA to ~260 MTPA

²⁵²⁸⁹Estimated Wagon Procurement requirement by Indian Railways (SECR – Chhattisgarh)

Destination State	Million Tonne - Kms	Volume (Million Tonnes)	Weighted Avg Distance of Despatch (KMs)	Destination State	Million Tonne - Kms	Volume (Million Tonnes)	Weighted Avg Distance of Despatch (KMs)
Rajasthan Madhya Pradesh Maharashtra Gujarat Punjab & Haryana Odisha Uttar Pradesh Chhattisgarh	19766.71 8188.32 13852.53 10989.08 4200.03 146.15 492.28 4471.94	18.93 13.97 18.94 8.51 3.02 0.79 0.77 29.61	1044.20 586.14 731.39 1291.31 1390.74 185.00 639.33 151.03	Rajasthan Madhya Pradesh Maharashtra Gujarat Punjab & Haryana Odisha Uttar Pradesh Chhattisgarh Additional Push Volumes + Commercial Despatches to be taken as per FY22 avg	31848.10 25614.14 41250.40 27375.86 3894.07 259.00 639.33 14347.66 42373.01	30.5 43.7 56.4 21.2 2.8 1.4 1 95 64.55	1044.20 586.14 731.39 1291.31 1390.74 185.00 639.33 151.03 656.44
Other States Total	110.06 62217.09	0.24 94.78 Million Tonnes	458.58 5	Leads	187601.56	316.55 Mi	llion Tonnes
FY22 - Rail	Average Lead for Co	al Supply in FY22 (SE by Odisha 656.44 KMs	CR) for supplies	Average I FY30 - Rail	ead for Coal s	Supply in FY30 (S by Odisha 92.64 KMs	ECR) for supplies
		FY22	FY30	Additional Rakes/Day Despatch Envisaged			154.01
Average Lead of coal Desp	oatch from Chhattisgarh	(KMs) 656.44	592.64	Estimated Improved TAT (Days)			4.42
Estimated Average Turna	around time of Rakes (D	Days) 4.89	4.42	Total Number of Rakes Required			671.89
Rakes / Day Despatch	by Rail + RCR + RSR Moo	de 65.82	219.83	Estimated Wagons to be Procured for Coal till F	Y30		38,969

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Source: Sagarmala Report, Ministry of Ports, Shipping & Waterways, Comprehensive Action Plan for Port Connectivity on Gatishakti NMP 2022, DPIIT]

Additional ~2,923 Wagons would be required for despatches during peak demand period from November to March

First Mile Connectivity Analysis for Chhattisgarh

SECL has ambitious production capacity expansion plans

Chhattisgarh

-			FY22 A	ctual Despatc	h (MTPA)			FY2	5-26 1 BT Plan	(MTPA)			FY29-30 Antic	ipated Dispate	ch (MTPA)	
	Area	Rail	RCR	Pure Road	MGR & Others	Total	Rail	RCR	Pure Road	MGR & Others	Total	Rail	RCR	Pure Road	MGR & Others	Total
	Baikunthpur	2.07	0.00	0.00	0.00	2.07	2.74	0.00	0.00	0.00	2.74	2.74	0.00	0.00	0.00	2.74
	Bhatgaon	2.54	0.16	0.57	0.00	3.27	4.92	0.00	3.96	0.00	8.88	14.91	0.00	0.57	0.00	15.48
	Bisrampur	0.00	0.00	0.34	0.00	0.34	3.40	0.00	0.28	0.00	3.68	3.87	0.00	0.32	0.00	4.19
	Chirmiri	1.55	0.02	0.93	0.00	2.49	2.89	0.00	0.00	0.00	2.89	6.09	0.00	0.00	0.00	6.09
	Dipka	5.35	12.15	6.23	13.18	36.91	21.00	6.00	3.00	15.00	45.00	21.00	6.00	3.00	15.00	45.00
[Gevra	19.02	7.30	4.94	13.74	44.99	39.50	12.00	4.00	14.50	70.00	39.50	12.00	4.00	14.50	70.00
-	Hasdeo	1.91	0.03	0.39	0.00	2.33	4.00	0.00	1.26	0.00	5.26	5.57	0.00	0.39	0.00	5.96
	Jamuna-Kotma	1.48	0.00	0.73	0.00	2.20	3.42	0.00	1.08	0.00	4.50	5.77	0.00	0.73	0.00	6.50
	Johilla	1.14	0.11	0.41	0.00	1.67	2.75	0.00	1.08	0.00	3.83	2.75	0.00	0.00	0.00	2.75
	Korba	3.46	0.61	2.72	0.64	7.42	4.90	0.00	2.78	1.07	8.75	6.56	0.00	2.99	0.00	9.55
[Kusmunda	21.52	1.80	3.73	6.72	33.78	55.50	0.00	0.00	7.00	62.50	55.50	0.00	0.00	7.00	62.50
[Raigarh	1.96	0.20	11.98	0.00	14.14	30.00	0.00	5.00	0.00	35.00	38.14	0.00	6.36	0.00	44.50
-	Sohagpur	1.69	0.20	1.41	0.86	4.15	3.78	2.23	0.93	0.00	6.94	5.46	2.00	1.34	0.00	10.03
	Total	63.68	22.58	34.37	35.14	155.77	179	20	23	38	260	203	20	19	37	279



^{2528978/2023/CPIAM} Proposed evacuation plan for Korba Area achievable



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^{2528978/2023/CPIAM} Proposed evacuation plan for Dipka Area achievable

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Total R/d load on railway circuit: 19.15 r/d (including 4.26 r/d from RCR)

^{2528978/2023/CPIAM} Proposed evacuation plan for Gevra Area achievable



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^{2528978/2023/CPIAM} Proposed evacuation plan for Kusmunda Area achievable



^{2528978/2023/CPIAM} Proposed evacuation plan for Raigarh Area achievable



File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ^{2528978/2023/CPIAM} Proposed evacuation plan for Sohagpur Area achievable



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further modal shift towards railways is plausible.

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) Proposed evacuation plan for Jamuna - Kotma Area achievable



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• Evacuation vis Road mode won't be a challenge as ~0.73 MTPA of road evacuation was achieved from the area last year. Depending on demand from road consumers, further modal shift towards railways is plausible.

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹ Proposed evacuation plan for Hasdeo Area achievable



Realistic 5.57 MTPA evacuation via rail mode ~ 3.95 r/d

Realistic 0.39 MTPA evacuation via Road Mode Estimated evacuation consumers This assuractual FY

5.57 MTPA or ~ 4 R/d from Rajnagar RO and Bijuri Wharfwall Siding. New Rajnagar Siding could be leveraged in future once it is operational

Achievable

evacuation via road mode to consumers via E-Auctions. This assumption is based on actual FY22 rad despatch. We have capped the road supply from this area to FY22 despatch as excess rail evacuation capacity exists.

0.39

MTPA



Total Evacuation of 5.96 MTPA from this cluster is achievable

- The loading from existing wharfwall sidings shall be streamlined to achieve the rail evacuation projections. Rajnagar Siding could be leveraged in future once it is operational
- Minimal Rail congestion exists in this cluster i.e., Kathotia to Katni line via Anuppur, hence rail evacuation won't be a challenge – CFTM, Bilaspur SECR & DT P&P and DT OP
- Evacuation vis Road mode won't be a challenge as ~0.39 MTPA of road evacuation was achieved from the area last year. Depending on demand from road consumers, further modal shift towards railways is plausible.

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^{2528978/2023/CPIAM} Proposed evacuation plan for Bisrampur Area achievable



**Bishrampur Area includes Rehar, Gayatri, Ketki, Amgaon, Amera

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Realistic 3.87 MTPA evacuation via rail mode ~ 2.74 r/d

Realistic 0.32 MTPA evacuation via Road 3.87 MTPA or ~ 2.74 R/d from Kumda and Bisrampur Wharfwall sidings. Pendarkhi Siding could be leveraged in future once it is operational

Estimated 0.32 MTPA evacuation via road mode to consumers via E-Auctions. This assumption is based on actual FY22 rad despatch. We have capped the road supply from this area to FY22 despatch as excess rail evacuation capacity exists.

Achievable



Total Evacuation of 4.19 MTPA from this cluster is achievable

- The loading from existing wharfwall sidings shall be streamlined to achieve the rail evacuation projections. Pendarkhi Siding could be leveraged in future once it is operational
- Minimal Rail congestion exists in this cluster i.e., Ajirma to Kathotia Line, hence rail evacuation won't be a challenge – CFTM, Bilaspur SECR & DT P&P and DT OP
- Evacuation via Road mode won't be a challenge as ~0.32 MTPA of road evacuation was achieved from the area last year. Depending on demand from road consumers, further modal shift towards railways is plausible.

^{2528978/2023/CPIAM} Proposed evacuation plan for Bhatgaon Area achievable



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Achievable

&

Achievable

^{2528978/2023/CPIAM} Proposed evacuation from Baikunthpur, Chirmiri & Johilla Areas achievable

Area	FY22 Actual Despatch					FY30 Anticipated Despatch					Siding to be used for evacuation
	Rail	Road	MGR	Belt	Total	Rail	Road	MGR	Belt	Total	
Baikunthpur	2.07	-	-	-	2.07	2.74	-	-	-	2.74	Churcha and Katora Sidings
Chirmiri	1.55	0.95	-	-	2.49	6.09	-	-	-	6.09	Duman Hill, NCPH and Chirimiri Sidings
Johilla	1.25	0.41	-	-	1.67	2.75	-	-	-	2.75	Nowrozabad Siding

Source: Deloitte Analysis, Interviews with SECL Headquarters (Siding, Marketing, Civil, P&P), TS to CMD SECL, Director Technical OP & Director Technical PP and CFTM SECR Bilaspur

Proposed Evacuation from these 3 smaller areas in CIC coalfields is achievable

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^{2528978/2023} CPIAM Analyzing SECL's Coal Evacuation by Pure Road – Chhattisgarh to Chhattisgarh, Madhya

Pradesh & Odisha

Major Coal Consuming Districts sourcing coal through road mode from SECL:

Madhya Pradesh

- 0 to <100 km: Annuppur, Shahdol, Umaria
- 100 to <200 km: Rewa, Satna, Sidhi
- 200 to <300 km: Rewa, Satna, Shahdol, Sidhi
- **300 km+:**Katni, Damoh, Narsinghpur, Seoni, Singrauli

300 km+ 200 km+

Chhattisgarh

- **0 to <100 km**: Bilaspur, Janjgir-Champa, Korba, Raigarh, Surguja
- **100 to <200 km**: Raipur, Baloda-Bazaar Bhatapara, Raigarh, Korba
- 200 to <300 km: Durg, Raipur, Baloda-Bazaar Bhatapara, Raigarh
- **300 km+:** Raipur, Raigarh, Durg

- Odisha
- 100 to <200 km: Sambalpur, Jharsuguda
- **200 to <300 km**: Sambalpur, Jharsuguda

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F	Y22			Figures in	<u>Figures in Million tonnes</u>		
Destination State	0 to <100 km	100 to <200 k	m 200 to <300 km	300+ km	Total		
Chhattisgarh	12.30	4.97	1.43	0.06	18.75		
Madhya Pradesh	0.45	1.30	0.35	0.13	2.23		
Odisha	0.00	0.04	0.25	0.41	0.70		
Total	12.75	6.31	2.02	0.60	21.68		
			N	· · · · · · · · · · · · · · · · · · ·			

F	Y30			Figures ir	n Million tonnes
Destination State	0 to <100 km	100 to <200 km	200 to <300 km	300+ km	Total
Chhattisgarh	11.18	4.51	1.29	0.06	17.04
Madhya Pradesh	0.41	1.18	0.32	0.12	2.03
Odisha	0.00	0.04	0.23	0.37	0.64
Total	11.58	5.74	1.84	0.54	19.70
Conv	ersion to rail/R	CR mode:	Recommended	Necessary	

Power Sector Consumers located 300+ km from sources for Chhattisgarh, Madhya Pradesh & Odisha, viz., Raipur Energen Ltd., Jaypee Bina thermal Power Plant, Jaypee Nigrie Super Thermal Power Plant, Jhabua Power Ltd. and MPPGCL Shree Singhaji TPS have been considered on rail network

Due to NGT Order 24.06.2021 in matter of Shivpal Bhagat & Ors. Vs. Union of India & Ors., 41 no road tranposrt expected to power plants of JPL, JSPL and others. Currently conveyor is 4:46 PM being used to transport coal from Raigarh region to these plants

Coal Consumption through Road Mode based on Distance from Source

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 SEC A Details of recently completed Concrete Roads

SN	Name of Work	Area	Road Type	Estimated Value (in Rs.)	Status	Remarks
1	GEVRA: Construction of Cement Concrete CT Road -					
(i)	From West MTK junction via jungle Road to Amgaon including RCC Box Culvert					
(ii)	From AB Stock to WB NO.10, 11, parallel to existing CC Road and loop[road for empty vehicles	Gevra Area	CONCRETE ROAD	38,00,00,000	Estimate Tend Prepared & to Awar be approved by Worl 05.10.2021 Worl	ler Invitation- 09.10.2021 rd of Work- 15.12.2021 k Start- 25.12.2021 k Completion- 25.09.2022
(iii)	At level crossing nos.7, 8 & 9 with Conc. Drain in both sides				03.10.2021 Won	

(iv) from west Dozer Junction to crushing point via Anand Vatika at Gevra Project

2528978/2023/CPIAM

SN	Name of Work	Area	Road Type	Estimated Value (in Rs.)	Status	Remarks
2	Dipka : Construction of Cement Concrete CT Road -					
(i)	From hopper No 18/19 to NTPC wharf wall siding					
(ii)	From erection Yard to Shramik Chowk					
(iii)	From WB no 12 to railway siding via WB no 6 & 16	Dipka Area	CONCRETE ROAD		Estimate Prepared & to be approved by 05.10.2021	Tender Invitation- 09.10.2021 Award of Work- 15.12.2021 Work Start- 25.12.2021 Work Completion- 25.09.2022
(iv)	From WB no 3 junction to Old hardi Bazar road junction					
(v)	From Erection Yard to TRS No 1 & 2 with side drain					

(vi) From coal stock yard No 17 to haul road junction behind MTK no 02.

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2528978/2023/CPIAM

SN	Name of Work	Area	Road Type	Estimated Value (in Rs.)	Status	Remarks
(vii)	From old CHP pump house to feeder breaker no 3/4 of old CHP and junction of CTR from coal stock no 17.					
(viii)	On approach ramp of WB No 1,8,3,9,21,4,10 & 11 with retaining wall	Dipka Area	CONCRETE ROAD	51,20,000,00	Estimate Prepared & to be approved by	Tender Invitation- 09.10.2021 Award of Work- 15.12.2021 Work Start- 25.12.2021
(ix)	In front of Neem Bagicha up to junction of CTR from coal stock no 17.				05.10.2021	Work Completion- 25.09.2022
(x)	Near TRS1 & TRS2 unloading platform at Dipka Expansion project of Dipka Area.					
(xi)	Near TLS & approach to siding road at Dipka Expansion project of Dipka Area.					

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SN	Name of Work	Area	Road Type	Estimated Value (in Rs.)	Status	Remarks
3.	Kusmunda: Construction of Cement Concrete CT Road -					
(i)	From Satrakata chowk upto TRS-2 including road from W.B. No. (02) to Samanvay chowk.		CONCRETE		Estimate Ten Prepared & to Awa	nder Invitation- 09.10.2021 ard of Work- 15.12.2021
(ii)	From Sample collection room upto RB Canal via CISF Check post Barrier No. (04) at KOCP. (with drain, Box culvert & retaining wall).	Kusmunda Area	ROAD	31,00,00,000	be approved Work Start- 25.12.2021 by 05.10.2021 Work Completion- 25.09.202	
(iii)	From Chhatri chowk upto Laxman Mines Gate at KOCP. (including Box Culverts with drain)					
4.	Korba: Construction of Cement Concrete CT Road -					
(i)	at Manikpur OCM of Korba Area.	Korba Area	CONCRETE ROAD	8,00,00,000	Estimate Ten Prepared & to Awa be approved Wo by 07.10.2021 Wo	nder Invitation- 15.10.2021 ard of Work- 15.12.2021 ork Start- 25.12.2021 ork Completion- 25.07.2022

SN	Name of Work	Area	Road Type	(in Rs.)	Status	Remarks
5.	Raigarh: Construction of Cement Concrete CT Road -					
(i)	From Khedapali junction to weigh bridge and other branch road at Chhal	Raigarh Area	CONCRETE ROAD	28,69,00,000	Estimate Prepared & to be approved b	Estimate Approval- 07.10.2021 Tender Invitation- 15.10.2021 Award of Work- 15.12.2021 v Work Start- 25.12.2021
(ii)	From State Highway to TRS(Silo/CHP) at Chhal				07.10.2021 Work Completion-	, Work Completion- 25.09.2022
(iii)	From mine to proposed wharf wall of Railway Siding At Baroud					
(iv)	From State Highway to Mine Entrance for Jampali OCP"					

SECL: Details of Major Roads Status

^{2528978/2023/CPIAM} Evacuation Capacity Augmentation for coal transportation roads at SECL (1/2)

		Length (Km)	Carriage Width (m)
SECL	Road Projects already taken up		
	Construction of cement concrete pavement for coal transportation road from control tower junction towards north ramp road upto dump no 4 of Gevra Area	2	15
	Construction of cement concrete pavement for coal transportation from barrier of old Dipka to West dozer section and loop road from W.B No.7 to CISF barrier via L&T bunker of old Dipka unit including 4 Nos. RCC Box culverts at GEVRA OCP,Gevra	3.8	15
	Strengthening existing approach road with CC Pavement to New helipad barrier at Gevra area	0.25	10 m
	Providing concrete pavement on approach road to siding near Shramik Chowk turning of Dipka area	0.8	10
	Strengthening of existing coal transportation road by concrete pavement on approach road near hopper no 18 & 19 of Dipka area	1.54	10
	Strengthening of existing coal transportation road by concrete pavement from 11-12 bunker to 8 no barrier & weigh bridge no 3 turning junction of Dipka area	1.61	14.00 & 7.00 m
	Construction of CC coal transportation road from near W.B. No. (2) to TRS, Phase (I) including box culvert across the conveyor near Satarkata Chowk of Kusmunda Area.	2.5	15
	Strengthening & development of Satarakata Chowk area including ramp of W.B. No. 19 & 20 of Kusmunda Area.	8969 sqm	

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^{2528978/2023/CPIAM} Evacuation Capacity Augmentation for coal transportation roads at SECL (2/2)

		Length (Km)	Carriage Width (m)
SECL	Proposed Road Projects		
	Gevra Area		
	(i) from West MTK junction via jungle Road to Amgaon including RCC Box Culvert of Gevra Area	5.5	14
	(ii) AB Stock to WB NO.10, 11, parallel to existing CC Road and loop[road for empty vehicles of Gevra Area	0.85	24
	(iii) to level crossing nos.7, 8 & 9 with Conc.Drain in both sides	0.55	14
	(iv) west Dozer Junction to crushing point via Anand Vatika at Gevra Project	1.4	14
	DIPKA AREA		
	(i) From hopper No 18/19 to NTPC wharf wall siding	2	7.00 mtrs
	(ii) From erection Yard to Shramik Chowk	0.8	7.00 mtrs
	(iii)From WB no 12 to railway siding via WB no 6 & 16	1	7.00 mtrs
	(iv) From WB no 3 junction to Old hardi Bazar road junction	1	7.00 mtrs
	(v)From Erection Yard to TRS No 1 & 2 with side drain	2.15	7.00 mtrs
	(vi)From coal styock yard No 17 to haul road junction behind MTK no 02.	1.95	7.00 mtrs
	(vii)From old CHP pump house to feeder breaker no 3/4 of old CHP and junction of CTR from coal stock no 17.	1.1	7.00 mtrs
	(viii) On approach ramp of WB No 1,8,3,9,21,4,10 & 11 with retaining wall	1.5	7.00 mtrs
	(ix) In front of Neem Bagicha up to junction of CTR from coal stock no 17.	0.9	7.00 mtrs
	x) Near TRS1 & TRS2 unloading platform at Dipka Expansion project of Dipka Area.	0.2	20 mtrs
	(xi) Near TLS & approach to siding road at Dipka Expansion project of Dipka Area.	0.36	60 mtrs
	KUSMUNDA AREA		
	(i) From Satrakata chwock upto TRS-2 including road from W.B. No. (02) to Samanvay chowk.	1.45	14
	(ii) From Sample collection room upto RB Canal via CISF Check post Barrier No. (04) at KOCP (with drain, Box culvert & retaining wall).	2.3	7
	(iii) From Chhatri chowk upto Laxman Mines Gate at KOCP. (including Box Culverts with drain)	2.5	7
	Main Barrier to Odiya Stock of MANIKPUR OCP, KORBA AREA	1.23	7
	NSPL Camp to bajrang Chowk, Champa Road, via RUB of MANIKPUR OCP, KORBA AREA	1.42	7

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 SECE: Details of Proposed Major Roads

SN	Name of Work	Area	Road Type	Tender Value/Awarded Value (incl GST)	e Status	Remarks
1	Construction of Road: Hardibazar-Tarda-Sarvmangala-Imlichapar (Deposit Basis to State Govt CG PWD.)	Gevra Area	Concrete Road	1,72,10,00,000	Civil Construction Work is in Progress. For land acquisition of Private land of 12 Nos. villages, falling in the Road stretch of Tarda to Hardibazar, Public Hearing proceedings under section-4 of Land Acquisition process has been completed.	First installment of Rs. 39.84 crore has been released to District Collector, Korba. Anticipated completion- 30.06.2023

2Broad Summary of FMC projects in SECLO21-CPIAM (Computer No. 350449)

SL. NO.	PROJECT	PR CAPACITY (MTY)	PR Approval Status	Existing	PH-I Capacity (MTY)	PH-III Capacity (MTY)	Anticipated Timelines
1	GEVRA EXPN	70.00	Approved	30.00	30.00	-	 Phase I – 31st Dec 2023
			, pprotect		20.00	-	 Phase I – 31st Dec 2023
2	KUSMUNDA EXPN	50.00	Approved	-	50.00	-	 Silos with 50 MTY capacity commissioned Phase I (in-pit conveyor) – 30th Sep 2023
3	CHHAL EXPN	6.00	Approved	-	6.00	-	• Phase I – 30 th September 2023
4	MANIKPUR EXPN	3.50	Approved	-	5.00	-	 Phase I – 31st Jan 2024
5	DIPKA EXPN.	40.00	Approved	15.00	25.00	-	 Phase I – 30th September 2023
6	PELMA	15.00	Approved	-	-	15.00	 Phase III – 31st March 2028**
7	MADANNAGAR	12.00	Approved	-	-	12.00	 Phase III – 31st March 2028**
8	BAROUD EXPN	10.00	Approved	-	10.00	-	• Phase I – 30 th September 2023
9	DURGAPUR	6.00	Approved	-	-	6.00	 Phase III – 31st March 2027**
	Total	226.50		45	146	33	

51 Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), MINISTRY OF CALE on 17/05/2023 04:48 Hipject to finalisation of MDO tenders

CIL (SECL) blocks in Chhattisgarh – Korba CF

#	Name of the Block	Exploration Status	Operational Status	Evacuation Route	Nearest major rail line for evacuation
1 2 3 4	Noonbirra Ratija Dipka Gevra Kusmunda	Partly Explored Explored Explored Explored	Non-Operational Operational Operational Operational	For Dipka and Gevra ~29.5 (15 + 14.5) MTPA would be evacuated to NTPC Seepat and Korba respectively via MGR. Dipka Mechanized Siding FMC, Dipka Wharfwall sidings, Gevra Silo III & IV, Gevra RLS, Gevra Silo V & VI and Wharfwall Sidings, would be used for seal loading for	
5	Bhelai E-W Extn	Under Exploration	Non-Operational	other rail despatch. For Kusmunda ~7 MTPA would be evacuated via belt to CGPCL and remaining would be despatched via Kusmunda Silo + Ph-III CHP. 2 Kusmunda Wharfwall Sidings would be utilized for remaining despatch.	All blocks in proximity to Gevra Rd – Korba – Urga – Champa Line and the CEWRL (Gevra
6	Saraipali	Explored	Operational	These cluster of CIL blocks would leverage Surakachhar	Rd – Pendra Rd) Rail
7	Kartali & Kartali East	Explored	Non-Operational	Siding, Manikpur siding (for despatch to CSEB Korba) and	Corridor.
8	Dhelwadi-Bagdewa	Explored	Operational	Manikpur RLS for loading / evacuation of coal.	
9	Banki-Surakachhar	Explored	Operational		All the blocks in this
10	Lachhmanband	Explored	Non-Operational	For Evacuation via Railway Lines for all blocks in Korba CF,	cluster are in the
11	Manikpur	Under Exploration	Operational	Urga-Champa (Gevra Rd-Champa) line would be leveraged for movement within Chhattisgarh, and other states such as Odisha (Champa to Jharsuguda and beyond), Maharashtra, Karnataka etc. (Champa to Bilaspur to Raipur & Beyond), Jharkhand & West Bengal	range of 30-45 Kms from the Jharsuguda – Bilaspur Main line
12	Rajgamar	Explored	Operational	(Champa to Jharsuguda to Rourkela & Beyond) For movement of coal towards northern and central states such as UP, MP, Punjab & Haryana, Rajasthan etc. CEWRL (Gevra Rd – Pendra Rd) rail corridor would be leveraged (upto 65 MTPA) and remaining would be evacuated via Champa – Bilaspur – Annupur and beyond.	

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Non-CIL blocks in Chhattisgarh – Korba CF

#	Name of the Block	Exploration Status	Operational Status	Evacuation Route	Nearest major rail line for evacuation
1	Kesla North	Explored	Non-Operational	FMC projects (RLS + Silo + Railway connectivity projects) shall be planned by Captive / commercial players after allocation / allotment of coal blocks, for hassle free evacuation from despatch points and feed into the major rail trunk lines.	All blocks in proximity to Gevra Rd – Korba – Urga –
2	Rajgamar Dipside (Devnara)	Explored	Non-Operational	For Evacuation via Railway Lines for all blocks in Korba CF, Urga-Champa (Gevra Rd-Champa) line would be leveraged for movement within Chhattisgarh, and other states such as Odisha (Champa to Iharsuguda and	Champa Line and the CEWRL (Gevra Rd – Pendra Rd) Rail Corridor.
3	Rajgamar Dipside (South of Phulakdih Nala)	Explored	Non-Operational	beyond), Maharashtra, Karnataka etc. (Champa to Bilaspur to Raipur & Beyond), Jharkhand & West Bengal (Champa to Jharsuguda to Rourkela & Beyond) For movement of coal towards northern and central	All the blocks in this cluster are in the range of 30-45 Kms
4	Kerwa	Regionally Explored	Non-Operational (Kerwa Coal Ltd)	states such as UP, MP, Punjab & Haryana, Rajasthan etc. CEWRL (Gevra Rd – Pendra Rd) rail corridor would be leveraged (upto 65 MTPA) and remaining would be evacuated via Champa – Bilaspur – Annupur and beyond.	from the Jharsuguda – Bilaspur Main line
5	Karkoma	Explored	Non-Operational		

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Proposed evacuation plan for Korba CF



Key Insights and Recommendations

#	Recommendation	Way Forward
1	Although Auto-Signaling works between Korba and Champa along with Korba Yard modification is underway, a third line between Korba and Champa is required for future evacuation of coal from Korba CF towards Bilaspur.	Indian Railways (SECR)
2	Rail line connectivity exists from Gevra to NTPC Seepat (MGR circuit) and from NTPC Seepat (MGR circuit) to Gatora station on the Champa-Bilaspur main line. Connectivity from Junadih siding (Gevra area) to NTPC Seepat (MGR circuit) -700 m, is underway. Collaboration with NTPC to evacuate coal from Korba CF to Champa-Bilaspur main line bypassing Korba-Champa rail line should be developed to provide additional alternate route.	Commercial terms to be expedited for usage of link
3	Additionally, Captive and Commercial miners shall plan to develop First Mile Connectivity projects like Rapid- Loading System with Silos along with Railway connectivity (to nearby major rail lines like Korba – Champa , CERL Ph-I, or CEWRL)	Captive and Commercial miners, who have been allotted blocks in Ib-Valley CF may initiate dialogues with Ministry of Coal regarding their future evacuation plans. Detailed Investment and works plan may be submitted by these miners at the earliest.
4	Alternatively, options for commissioning of Public Freight Terminals with facilities of mechanized loading of coal may be evaluated for providing rake loading services to non-CIL blocks to reduce road movement of coal from these regions	Exploration of Public Freight Terminals for mechanized coal loading and coal transport through rail for non- CIL blocks
5	4 th Line between Pendra Rd to Anuppur & Anuppur to New Katni should be planned	Indian Railways (SECR)
6	Proposed CRCL Lines have to be finalized and executed on priority for diversion of loads directly towards Raipur (for feed to Maharashtra, Karnataka, Gujarat etc.) bypassing Bilaspur.	Indian Railways (SECR). CRCL

CIL (SECL) blocks in Chhattisgarh – Mandraigarh CF

#	Name of the Block	Exploration Status	#	Name of the Block	Exploration Status
1	Chhal	Explored	13	Sayang Central A	Explored
2	Pelma	Explored	14	Sayang East A & B	Explored
_		· - · ·	15	Chirra	Explored
3	Chimtapani	Explored	16	Chirra Northeast A	Explored
4	Baroud	Explored	17	Chirra Northeast B	Explored
5	Jampali	Partly Explored	18	Elong	Under Exploration
6	Chimtapani Extn	Under Exploration	19	Dumdih	Under Exploration
7	Pelma Extn	Under Exploration	20	Chirra South Central	Under Exploration
8	Dip Side of Barod-Bijari (Sector I,II,III,	Under Exploration	21	Chirra Southeast	Under Exploration
_			22	Gitkunwari	Under Exploration
9	Ongaon-Potia	Under Exploration	23	West of Basin – Phatehpur A	Explored
10	Durgapur-Shahpur	Explored	24	West of Basin – Phatehpur B	Explored
11	Sayang Northwest	Explored	25	West of Basin – Phatehpur C	Explored
12	Sayang South	Explored	56 ²⁶	Girari	Under Exploration

Non-CIL blocks in Chhattisgarh – Mandraigarh CF

#	Name of the Block	Exploration Status	#	Name of the Block	Exploration Status
1	Sayang	Regionally Explored	13	Durgapur-II / Sarya	Explored
2	Batati Kolga West	Under Exploration	14	Chainpur	Under Exploration
2		· · · · · ·	15	Ramnagar	Partly Explored
3	Batatı Kolga East	Under Exploration	16	Tendumuri	Regionally Explored
4	Batati Kolga Northeast	Under Exploration	17	Purunga	Regionally Explored
5	Taulipali	Under Exploration	18	Basin Phatehpur South Extn	Explored
6	Rajadahi	Under Exploration	19	Baisi	Partly Explored
7	Jilga Barpali	Under Exploration	20	West of Baisi	Explored
8	Barpali - Karmitikra	Explored	21	Sherband	Under Exploration
0	Dhatabour South	Pogionally Evplored	22	Nawagaon	Under Exploration
9	Filatenpur South	Regionally Explored	23	Kartala	Under Exploration
10	Fatehpur	Regionally Explored	24	Kotmer	Under Exploration
11	Fatehpur East	Explored	25	Barra	Under Exploration
12	Durgapur-II / Taraimar	Explored	57 ²⁶	Phutamura	Under Exploration

Non-CIL blocks in Chhattisgarh – Mandraigarh CF

#	Name of the Block	Exploration Status	#	Name of the Block	Exploration Status
26	Talaipalli	Explored	38	Gare-Pelma Sector-II	Explored
27	Karichappar	Under Exploration			
28	Teram	Under Exploration	39	Gare-Pelma IV/1	Explored
29	Banai - Bhalumunda	Explored	40	Gare-Pelma IV/2 & IV/3	Explored
30	Dolesara	Explored	41	Gare-Pelma IV/6	Explored
31	Jarekela	Explored			
32	Western Part of Gorhi-Mahaloi	Explored	42	Gare-Pelma IV/4	Explored
33	Eastern Part of Gorhi-Mahaloi	Explored	43	Gare-Pelma IV/5	Explored
34	Jobro East	Regionally Explored	44	Gare-Pelma IV/7	Explored
35	Jobro West	Regionally Explored			
36	Jharpalam - Thangarghat	Explored	45	Gare-Pelma IV/8	Explored
37	Gare-Pelma Sector-I	Explored	46 58	Gare-Pelma Sector-III	Explored


Key Insights and Recommendations

#	Recommendation	Way Forward
1	The Jharsuguda-Barpali Rail Line + Sardega-Bhalumunda Rail Line has been planned to join CERL at Gharghoda. Expediting this connectivity along with doubling of the said line to be taken explored for improved coal evacuation.	Expediting Sardega-Bhalumunda rail line along with works for doubling may be taken up for easing of coal traffic towards northern India on the Jharsuguda- Bilaspur line
2	CERL is expected to join CEWRL at Urga (Korba) via the CERL Phase-II. Therefore, CERL Phase-II needs to be expedited for coal evacuation to northern India from the coalfields of Ib Valley and Mand Raigarh.	Expediting CERL Phase-II. Dialogues may be initiated by coal miners who have been allotted blocks in the Ib Valley region and Mand Raigarh region for future evacuation plans with Ministry of Railways
3	Automatic Signaling shall be proposed across all major rail sections in the vicinity of Mand Raigarh	Indian Railways (SECR)
4	Additional FMC projects may be planned for the additional coal blocks under CIL/SECL (north-east of Durgapur coal block) which are currently at various stages of exploration. The same may be planned based on production commencement plans for these blocks.	Production commencement plans to be finalized for under exploration blocks in Mand Raigarh region to aid in planning for additional FMC projects link to CERL Phase I/Phase II
5	Options for commissioning of Public Freight Terminals with facilities of mechanized loading of coal may be evaluated for providing rake loading services to non-CIL blocks to reduce road movement of coal from these regions	Exploration of Public Freight Terminals for mechanized coal loading and coal transport through rail for non- CIL blocks

CIL (SECL) blocks in Chhattisgarh – CIC CF Cluster (1/3)

#	Coalfield	Name of the Block	Exploration Status	#	Coalfield	Name of the Block	Exploration Status
1	Bishrampur	Bhatgaon Colliery	Explored	13	Bishrampur	Mahan South	Partly Explored
2	Bishrampur	Sendupara	Explored	14	Chirimiri	Chirimiri	Explored
2		,		15	Chirimiri	Bartunga-Anjan Hill	Explored
3	Bishrampur	Jagannathpur	Explored	16	Johilla	Kanchan	Explored
4	Bishrampur	Madannagar	Explored	17	Johilla	Lohangi-Pinaura	Explored
5	Bishrampur	Pathakpur	Explored	18	Johilla	Nowrozabad	Explored
6	Bishrampur	Badauli-Khanookhula	Partly Explored	19	Johilla	Birsinghpur (Pali)	Explored
7	Bishrampur	Nawapara	Explored	20	Jhilimili	Katkona	Explored
8	Bishrampur	Tulsi	Explored	21	Jhilimili	Girijapur	Explored
0	Dichromour	Shiveogor	Regionally Explored	22	Lakhanpur	Rehar West	Explored
9	Distilatiipui	SIIIVSagai	Regionally Explored	23	Lakhanpur	Rehar East	Partly Explored
10	Bishrampur	Balrampur Incline Extn.	Explored	24	Sendurgarh	Vijay West	Explored
11	Bishrampur	Bisrampur OC	Explored	25	Sendurgarh	Vijay East	Explored
12	Bishrampur	Mahan North	Partly Explored	61 ²⁶	Sohagpur	Ghunghuti	Under Exploration

CIL (SECL) blocks in Chhattisgarh – CIC CF Cluster (2/3)

#	Coalfield	Name of the Block	Exploration Status	#	Coalfield	Name of the Block	Exploration Status
27	Sohagpur	Panwari	Regionally Explored	39	Sohagpur	Dhanpuri OC	Explored
28	Sohagpur	Malachua	Explored	40	Sohagpur	Bangwar	Explored
20			· · · · · ·	41	Sohagpur	Karkati	Explored
29	Sohagpur	Singhpur North	Under Exploration	42	Sohagpur	Damni	Explored
30	Sohagpur	Singhpur	Under Exploration	43	Sohagpur	Khairaha	Explored
31	Sohagpur	Dhanpura New	Under Exploration	44	Sohagpur	Bodri	Explored
32	Sohagpur	Changera	Regionally Explored	45	Sohagpur	Mithauri-Dulahara	Regionally Explored
33	Sohagpur	Kanchanpur-Pakaria	Partly Explored	46	Sohagpur	Dhanpura	Under Exploration
34	Sohagpur	Jarwahi	Regionally Explored	47	Sohagpur	Batura	Explored
25			F 1 1	48	Sohagpur	Manpura	Partly Explored
35	Sonagpur	Kungta	Explored	49	Sohagpur	Keshwahi Gerua	Regionally Explored
36	Sohagpur	Dhanpuri Minor Scheme of Burhar No. I & III Mines	Explored	50	Sohagpur	Jamuna Kotma	Explored
37	Sohagpur	Bakaho	Explored	51	Sohagpur	Ura Khodri	Explored
38	Sohagpur	Amlai	Explored	62 ⁵²	Sohagpur	Amadand OC	Explored

CIL (SECL) blocks in Chhattisgarh – CIC CF Cluster (3/3)

#	Coalfield	Name of the Block	Exploration Status	#	Coalfield	Name of the Block	Exploration Status
53	Sohagpur	Bakulmuni	Explored	65	Sonhat	Ghugra	Explored
54	Sohagpur	Jhiriya	Explored	66	Sonhat	Labji-Pusla	Under Exploration
	C.			67	Sonhat	Labji-Pusla (West)	Under Exploration
55	Sohagpur	Kulhariya	Explored	68	Sonhat	Up Dipside of Labji-Pusla (West)	Under Exploration
56	Sohagpur	Rajnagar Dola West & North JKD	Explored	69	Tatapani-Ramkola	Bhelmi	Under Exploration
57	Sohagpur	Haldibari	Partly Explored	70	Tatapani-Ramkola	Duba	Explored
58	Sohagpur	Sheetaldhara	Explored	71	Tatapani-Ramkola	Duba Dipside	Under Exploration
59	Sohagpur	Kapildhara	Explored	72	Tatapani-Ramkola	Duba North	Under Exploration
60	Sohagpur	Bijuri	Explored	73	Tatapani-Ramkola	Amartipur	Under Exploration
				74	Tatapani-Ramkola	Amartipur Extn.	Under Exploration
61	Sohagpur	Beheraband	Under Exploration	75	Tatapani-Ramkola	Tatapani	Under Exploration
62	Sohagpur	Chulaha Bhulia	Under Exploration	76	Tatapani-Ramkola	Behratoli	Under Exploration
63	Sonhat	Nagar	Explored	77	Umaria	Umaria	Explored
64	Sonhat	Churcha	Explored	63			

Non-CIL blocks in Chhattisgarh – CIC CF Cluster (1/3)

#	Coalfield	Name of the Block	Exploration Status	#	Coalfield	Name of the Block	Exploration Status	
1	Bishrampur	Dharampur	Partly Explored	13	Hasdeo-Arand	Madanpur (North)	Explored	
2	Bishrampur	Jhigador	Partly Explored	14	Hasdeo-Arand	Madanpur South	Explored	
_		5		15	Hasdeo-Arand	Paturia	Explored	
3	Bishrampur	Barapara	Partly Explored	16	Hasdeo-Arand	Gidhmuri	Explored	
4	Bishrampur	Datima	Explored	17	Hasdeo-Arand	Morga South	Explored	
5	Bishrampur	Shankarpur Bhatgaon II Extn.	Explored	18	Hasdeo-Arand	Saidu	Under Exploration	
6	Bishrampur	Khargaon	Partly Explored	19	Hasdeo-Arand	Tara	Explored	
7	Hasdeo-Arand	Chotia	Explored	20	Hasdeo-Arand	Parsa	Explored	
8	Hasdeo-Arand	Panchbahani	Partly Explored	21	Hasdeo-Arand	Parsa East & Kanta Basan	Explored	
٥	Hasdeo-Arand	Morgal	Regionally Explored	22	Hasdeo-Arand	Kente Extn.	Explored	
9	Hasueo-Aranu	ivioi ga-i	Regionally Explored	23	Hasdeo-Arand	Pendrakhi	Regionally Explored	
10	Hasdeo-Arand	Morga-II	Regionally Explored	24	Hasdeo-Arand	Bhakurma-Matringa	Regionally Explored	
11	Hasdeo-Arand	Morga-III	Regionally Explored	25	Hasdeo-Arand	Nakia I	Explored	
12	Hasdeo-Arand	Morga-IV	Regionally Explored	64 ²⁶	Hasdeo-Arand	Nakia II	Explored	

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Non-CIL blocks in Chhattisgarh – CIC CF Cluster (2/3)

#	Coalfield	Name of the Block	Exploration Status	#	Coalfield	Name of the Block	Exploration Status
27	Hasdeo-Arand	Nakiya-III	Regionally Explored	39	Sohagpur	West of Shahdol	Under Exploration
28	Ihilimili	Bhaskarpara	Explored	40	Sohagpur	Shahdol	Explored
				41	Sohagpur	Maiki North	Regionally Explored
29	Korar	West of Umaria	Regionally Explored	42	Sohagpur	Maiki South	Partly Explored
30	Sendurgarh	Vijay Central	Explored	43	Sohagpur	Chainpa	Explored
31	Sohagpur	Nigwani Bakeli-A	Regionally Explored	44	Sohagpur	Jamui	Explored
32	Sohagpur	Pathora West	Under Exploration	45	Sohagpur	Bicharpur	Explored
33	Sohagpur	Pathora East	Under Exploration	46	Sohagpur	Bicharpur North	Explored
34	Sohagpur	Arjuni West	Partly Explored	47	Sohagpur	Bicharpur East	Explored
25	Cohognur	Ariuni Fact	Fundered	48	Sohagpur	Bicharpur South	Under Exploration
35	Sonaghri	Arjuni East	Explored	49	Sohagpur	Senduri	Under Exploration
36	Sohagpur	Merkhi West	Partly Explored	50	Sohagpur	Marwatola VI & VII Combined	Explored
37	Sohagpur	Marwatola I & II	Under Exploration	51	Sohagpur	Sahapur East	Explored
38	Sohagpur	Marwatola III & IV	Under Exploration	65 ⁵²	Sohagpur	Sahapur West	Explored

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Non-CIL blocks in Chhattisgarh – CIC CF Cluster (3/3)

#	Coalfield	Name of the Block	Exploration Status	#	Coalfield	Name of the Block	Exploration Status
53	Sohagpur	Bandhawa Bara	Regionally Explored	65	Tatapani-Ramkola	Iria Valley Central	Under Exploration
54	Sohagpur	Patasi	Regionally Explored	66	Tatapani-Ramkola	Iria Valley East	Under Exploration
				67	Tatapani-Ramkola	Reonti	Partly Explored
55	Sohagpur	Naukhariya Sector-I	Regionally Explored	68	Tatapani-Ramkola	West of Reonti Extn.	Regionally Explored
56	Sohagpur	Naukhariya Sector-II	Regionally Explored	69	Tatapani-Ramkola	Sondiha	Explored
57	Sohagpur	Bikram	Explored	70	Tatapani-Ramkola	Sursa	Explored
58	Sohagpur	Urtan	Explored	71	Tatapani-Ramkola	Meghuli	Explored
59	Sohagpur	Urtan North	Explored	72	Tatapani-Ramkola	Vijaynagar Giddhi	Under Exploration
60	Sohagpur	Beheraband North Extn.	Partly Explored	73	Tatapani-Ramkola	Pipraul	Partly Explored
61	Sonhat	Ghutra	Partly Evplored	74	Tatapani-Ramkola	Sendur	Regionally Explored
01	Sonnat	Ghutia		75	Umaria	Semaria/Piparia	Explored
62	Sonhat	Sonhat Block-A West	Unexplored				
63	Sonhat	Sonhat Block-A East	Regionally Explored				
64	Tatapani-Ramkola	Iria Valley West	Under Exploration	66			

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Proposed evacuation plan for CIC CF



Under Construction

Key Insights and Recommendations

#	Recommendation	Way Forward			
1	Triple Line from Anuppur to Ambikapur will be required in future as volumes from CIC CF increases. Auto Signaling of the entire section from Anuppur to Ambikapur has to be taken up for easing the evacuation from the cluster	Indian Railways (SECR)			
2	Additionally, Captive and Commercial miners shall plan to develop First Mile Connectivity projects like Rapid- Loading System with Silos along with Railway connectivity (to nearby major rail lines like Ambikapur – Anuppur – New Katni)	Captive and Commercial miners, who have been allotted blocks in CIC CF may initiate dialogues with Ministry of Coal regarding their future evacuation plans. Detailed Investment and works plan may be submitted by these miners at the earliest.			
3	4 th Line between Pendra Rd to Anuppur & Anuppur to New Katni has to be planned	Indian Railways (SECR)			
4	Ambikapur – Garhwa Rd rail corridor is being planned by railways. After the analysis of current and future coal traffic and O-D mapping, it was found that this line would may not have sufficient coal traffic. Plans for development of this corridor should be re-analyzed by the Indian Railways.	Indian Railways (SECR)			
5	Options for commissioning of Public Freight Terminals with facilities of mechanized loading of coal may be evaluated for providing rake loading services to non-CIL blocks to reduce road movement of coal from these regions	Exploration of Public Freight Terminals for mechanized coal loading and coal transport through rail for non- CIL blocks			

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NCL has ambitious growth plans

All figures in million tonnes	- Actu	ials	•		F	Projections —			
Name of Mine / Project	Actual 21-22	2022-23 (Act)	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Bina	9.00	10.50	10.50	12.00	12.00	13	14	14	14
Block-B	5.47	5.47	7.50	7.50	7.50	8	8	8	8
Dudhichua	22.06	23.03	23.50	23.50	23.50	24	24	24	24
Jayant	24.75	26.66	28.00	29.00	30.00	30	30	30	30
Khadia	14.00	15.00	15.00	16.00	16.00	16	16	16	16
Nigahi	21.00	22.50	22.50	23.00	24.00	25	25	25	25
Amlohri	14.00	15.00	15.00	15.00	15.00	15	15	15	15
Krishnashila	7.00	7.50	7.50	6.00	5.00	4	3	3	3
Kakri	2.41	2.26	1.00	0.00	0.00	0	0	0	0
Jhingurdah	2.74	3.25	2.50	2.00	2.00	0	0	0	0
	122	131	133	134	135	135	135	135	135

• NCL has a coal evacuation ramp up plan from 131.2 MTPA in FY23 to 135 MTPA by FY30 – an additional ramp-up of 4.9 MTPA planned.

- 9 FMC projects (1 Project under Phase-II) have been identified as critical projects to ramp up the evacuation capacity for NCL by FY24-26.
- Out of these, 1 project has been commissioned Krishnashila OCP CHP Silo
- Block B rail Connectivity completed

^{2528978/2023/CPIAM} Non-CIL blocks Pipeline in Madhya Pradesh – Singrauli Coalfields

Madhya Pradesh

All figures in million tonnes

			Details of	Non-CIL blocks in Si	ingrauli Coalfields			
#	Name of the Block	Block Owner	PRC	Operational Status	Proposed Loading Point	EUP and other remarks	Actual FY23 Production	Actual FY2 Productic
1	Amelia	THDC India Ltd.	5.6	Non - Operational	Shahdol Railway Station (Mine to Station via NH-39)	Khurja STPP, Bulandshahar, U.P., 856 Kms from mine	~0.05	0.0
2	Amelia North	Jaiprakash Power Ventures Limited	2.8	Operational	Majauli Railway Station (Mine to Station via NH-43)	Jaypee Nigrie Super Thermal Power Plant, Singrauli 37 Kms from mine	2.8	2.8
3	Suliayri	Andhra Pradesh Mineral Development Corporation	6	Non - Operational	Gajrabahra Railway Station (Mine to Station via NH-39)	Nearest port Varansi, U.P., 295 Kms from mine	~1.5	0.0
4	Bandha	EMIL Mines and Mineral Resources Limited	3	Non - Operational	Deoragram Railway Station (Mine to Station via NH-39)	Nearest port Paradip., 849 Kms from mine	0.0	0.0
5	Bandha North	Jaiprakash Power Ventures Limited	NA	Non – Operational	Deoragram Railway Station (Mine to Station via NH-39)	Nearest port Paradip., 849 Kms from mine	0.0	0.0
6	Dhirauli	Stratatech Mineral Resources Private Limited	5	Non - Operational	Gajrabahra Railway Station (Mine to Station via NH-39)	Essar Power MP Limited, M.P., 35 Kms from mine	0.0	0.0
7	Moher & Moher-Amlohri Ext.	Sasan Power Ltd.	20	Operational	Overland conveyor system	Sasan UMPP, M.P., 109 Kms from mine	~16.0	18.4
8	Gondbahera Ujheni (Recent 16th tranche)	- MP Natural Resources	4.12	Non - Operational	Majauli Railway Station (Mine to Station via NH-43	Commercial Sales	-	-
9	Mahan	-	1.2	Non- Operational	Significant area under dense forest cover. Loading point to be finalized post auction	Coal block expected to be auctioned in 7 th tranche	-	-
e Giffico de	r n rajeswara rao, moo	C-SO(NRR)-CPIAM, MOC-SO(I	NRR), M hijn ingebyry Of	COAL on 17/05/2023 C	04:46 PM		~20 35	21.2

Origin – Destination Cluster Mapping for MP & UP (NCL)

²⁵²⁸⁹⁷⁸ C²⁰²³ Source cluster Mapping – Despatch of Coal from MP + UP (NCL): FY22 snapshot

All figures in million tonnes

	Consuming State	Rail + RCR	Pure Road	MGR & Others	Total
	Uttar Pradesh	25.41	4.07	37.41	66.89
	Madhya Pradesh	17.06	2.77	21.25	41
7.74	Rajasthan	7.74			7.74
and the second second second	Punjab & Haryana	5.19			5.19
.80 41 F	Gujrat	0.86			0.86
.74	Chhattisgarh	0.76			0.76
Sand and Sand S	Odisha	0.74			0.74
2 - Elizabeth and a second and a	Other States	2.23			2.23
	Total Despatch from NCL (MP+UP) to destination state (MTPA)	59.98 (48%)	6.84 (5%)	58.66 (47%)	125.49
FY22: Despatch of Coal from NCL (MP+UP) to destination state (MTPA) Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on	73 Origin – Destination Mapp 17/05/2023 04:46 PM lines for ~60 MTPA is cond	bing and the coa ducted and pres	J al flow analysis sented in the n	of rail trunk ext sections	

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹⁷⁸ O-D Source cluster Mapping – Madhya Pradesh to Uttar Pradesh(1/2)



from other states on this line)										
UP Coal De	mand 2022 ~ 87 MT	PA	UP	Coal De	emand 2030 ~ 1	14 MTPA				
Rail Supply by Madh	ya Pradesh 2022 ~ 25	5 .41 MTPA R	ail Supply I	by Mad	hya Pradesh 203	0 ~ 38.59 MTPA				
	FY22				FY30					
From		То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030				
Billi	Chunar	9,068,401.78	6.45		9,702,634.89	6.90				
Chunar	Prayagraj	8,542,212.71	6.08		9,170,884.72	6.53				
Prayagraj	Unchahar	2,093,828.88	1.49		2,106,235.79	1.50				
Unchahar	Rae Bareli	2,093,828.88	1.49		2,106,235.79	1.50				
Rae Bareli	Lucknow	2,093,828.88	1.49		2,106,235.79	1.50				
Lucknow	Roza	926,007.67	0.66		887,220.57	0.63				
Roza	Pilibhit Jn	459,345.64	0.33		442,000.81	0.31				
Lucknow	Kheri	471675.416	0.34		458,676.73	0.33				
Lucknow	Shahjahanpur	696145.796	0.50		760,338.49	0.54				
Shahjahanpur Jn.	Bareilly Jn.	696145.796	0.50	1	760,338.49	0.54				
Bareilly Jn.	Rampur	696145.796	0.50		760,338.49	0.54				
Rampur	Moradabad Jn.	647233.246	0.46		695,880.20	0.50				
Moradabad Jn.	Ghaziabad	66403.71	0.05		87,508.62	0.06				
Moradabad Jn.	Bijnor	41579.29	0.03		54,794.32	0.04				
Roza	Shahjahanpur Jn.	466662.036	0.33		445,219.77	0.32				
Prayagraj	Kanpur	2653083.456	1.89		2,933,550.64	2.09				
Kanpur	Shikohabad Jn.	2653083.456	1.89		2,933,550.64	2.09				
Shikohabad Jn.	Tundla Jn.	2653083.456	1.89		2,933,550.64	2.09				
Tundla Jn.	Aligarh Jn.	2653083.456	1.89		2,933,550.64	2.09				
Aligarh Jn.	Dadri	2653083.456	1.89		2,933,550.64	2.09				
Dadri 74	Gautambudhnagar	2653083.456	1.89		2,933,550.64	2.09				

Expected Load from Madhya Pradesh to Littar Pradesh main trunk lines (Excluding load

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹ C²⁰³ CPIAM Computer No. 350449) ²⁵²⁸⁹ C²⁰³ CPIAM Computer No. 350449)</sup>

Madhya Pradeshto Uttar Pradesh total Rail Despatch in FY22 = 20.04 Million Tonnes



		from other st	tates on this line)						
UP Coal D	emand 2022 ~ 87	' MTPA	UP Co	al Demand 2030 ~ 1	114 MTPA				
ail Supply by Mad	'hya Pradesh 2022	~ 25.41 MTPA	Rail Supply by	Madhya Pradesh 203	30 ~ 38.49 MTPA				
	FY22			FY30					
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030				
Chunar Jn.	Varanasi Jn.	526189.076	0.37	531,750.17	0.38				
Varanasi Jn.	Jaunpur jn.	440502.576	0.31	422,698.20	0.30				
Jaunpur jn.	Akbarpur Jn.	440502.576	0.31	422,698.20	0.30				
Akbarpur Jn.	Ayodhya	440502.576	0.31	422,698.20	0.30				
Ayodhya	Mankapur Jn.	440502.576	0.31	422,698.20	0.30				
Mankapur Jn.	Gonda jn.	440502.576	0.31	422,698.20	0.30				
Gonda jn.	Balrampur	440502.576	0.31	422,698.20	0.30				
Varanasi Jn.	Partapgarh Jn.	85686.5	0.06	109,051.97	0.08				
Partapgarh Jn.	Sultanpur	85686.5	0.06	109,051.97	0.08				
Bargawan	New Katni Jn.	8896020.028	6.33	9,194,389.92	6.54				
New Katni Jn.	Bina Etawa	3063431.572	2.18	3,200,505.86	2.28				
Bina Etawa	Gwalior	343466.15	0.24	452,629.04	0.32				
Gwalior	Dhaulpur	417921.3	0.30	550,748.06	0.39				
Dhaulpur	Agra Cantt	417921.3	0.30	550,748.06	0.39				
Agra	Tundla Jn.	417921.3	0.30	550,748.06	0.39				
Tundla Jn.	Aligarh Jn.	417921.3	0.30	550,748.06	0.39				
Aligarh Jn.	Hapur jn.	417921.3	0.30	550,748.06	0.39				
Hapur jn.	Meerut	417921.3	0.30	550,748.06	0.39				
Meerut	Muzaffarnagar	245746.5	0.17	323,851.42	0.23				
Bina Etawa	Lalitpur	2719965.422	1.94	2,747,876.83	1.96				
Lalitpur	Jhansi	978408.456	0.70	968,863.48	0.69				
Jhansi	Gwalior Jn.	74455.15	0.05	98,119.02	0.07				
Meerut	Saharanpur Jn.	74455.15	0.05	98,119.02	0.07				
New Katni Jn.	Katni Jn	5832588.456	4.15	5,993,884.06	4.27				
Katni Jn	Satna	5832588.456	4.15	5,993,884.06	4.27				
Satna	Manikpur Jn.	5832588.456	4.15	5,993,884.06	4.27				
Manikpur Jn.	Allahabad	5832588.456	4.15	5,993,884.06	4.27				
Krish n⁄a shila	Sonbhadra	5844602.766	4.16	5,130,960.35	3.65				
Renukut	Sonbhadra	167694.32	0.12	220,992.14	0.16				
Shakti Nagar	Sonbhadra	723535.47	0.51	920.833.12	0.66				

Expected Load from Madhya Pradesh to Littar Pradesh main trunk lines (Excluding load

²⁵²⁸⁹⁷⁸ O-D Source cluster Mapping – Supplies to UP to increase slightly

All figures in million tonnes

Name of TPS	Power Utility	NCL Singrauli	CCL	Others including Captive	Total Consumed FY22	Estimated Coal Consumption (FY30)	Supply from NCL	Supply from CC	L Supply from Others i.e SECL, ECL etc	Captive Supply
BARKHERA	Bajaj Energy Limited	0.16	0.00	0.00	0.16	0.32	0.16	0.16	0.00	0.00
KHAMBHAR KHERA	Bajaj Energy Limited	0.18	0.00	0.00	0.18	0.32	0.18	0.14	0.00	0.00
KUNDARKI	Bajaj Energy Limited	0.20	0.00	0.02	0.21	0.31	0.20	0.11	0.00	0.00
MAQSOODAPUR	Bajaj Energy Limited	0.18	0.00	0.00	0.18	0.32	0.18	0.14	0.00	0.00
UTRAULA	Bajaj Energy Limited LALITPUR POWER	0.15	0.00	0.04	0.19	0.32	0.15	0.17	0.00	0.00
LALITPUR	GENERATION COMPANY LIMITED	2.36	2.66	0.84	5.87	5.87	2.36	2.66	0.84	0.00
ANPARA 'C' TPS	LANCO ANPARA POWER LIMITED	5.15	0.00	0.09	5.24	5.49	5.49	0.00	0.00	0.00
MEJA TPP	MEJA URJA NIGAM PRIVATE LIMITED (NTPC-JV)	3.27	1.55	0.23	5.05	5.05	3.27	1.78	0.00	0.00
DADRI	NTPC LTD.	2.02	0.63	1.05	3.70	6.65	2.02	4.63	0.00	0.00
SINGRAULI	NTPC LTD.	9.42	0.00	0.00	9.42	10.85	10.85	0.00	0.00	0.00
RIHAND	NTPC LTD.	14.07	0.00	0.00	14.07	15.02	15.02	0.00	0.00	0.00
FEROZE GANDHI UNCHAHAR	NTPC LTD.	0.00	3.33	2.20	5.53	5.53	0.00	3.53	0.00	Pakri- ^{2.00} Barwadi
TANDA	NTPC LTD.	0.00	3.38	2.07	5.46	6.07	0.00	0.00	0.00	6.07 Keranda
	PRAYAGRAJ POWER									
PRAYAGRAJ TPS	GENERATION COMPANY	7.25	0.16	0.03	7.43	7.43	6.95	0.48	0.00	0.00
	LTD.									
ROSA TPP	ROSA POWER SUPPLY COMPANY LIMITED	0.00	3.52	0.13	3.65	4.27	0.00	4.27	0.00	0.00
ANPARA 'A' & 'B'	UPRVUNL	11.39	0.00	0.00	11.39	14.31	14.31	0.00	0.00	0.00
HARDUAGANJ	UPRVUNL	0.00	0.79	0.49	1.28	2.67	0.00	2.39	0.28	0.00
OBRA	UPRVUNL	3.40	0.00	0.05	3.45	4.59	4.59	0.00	0.00	0.00
PARICHHA	UPRVUNL	0.72	0.96	0.97	2.65	3.66	1.33	0.00	2.33	0.00
Total		59.91	16.97	8.23	85.11	99.04	67.04	20.47	3.46	8.07
Under Constructi	ion / Pipeline Capacities									Pachwar
Ghatampur TPP	NUPPL					6.83	0	0	0	6.83 South
Khurja SCTPP	THDC					4.25	0	0	0	4.25 Amelia
Jawaharpur STPP	UPRVUNL					3.39	0	0	0	3.39 Saharpu
Obra C-STPP	UPRVUNL					5.32	0	0	0	5.32 Jampar
Panki TPS Extn	UPRVUNL					2.68	0	0	0	2.68
Singrauli STPP-III	NTPC LTD.					8.53	8.53	0	0	0
Meja -II STPP	NTPC LTD.			7	6	7.08	0	7.08	0	0
Grand Lotal						137.12	/5.5/	27.55	3.46	30.54

²⁵²⁸⁹⁷⁸ O-D Source cluster Mapping – Madhya Pradesh's Internal Consumption



Supply by Madhya P	Pradesh 2022 ~ 17.0	06 MTPA	Rail Sı	pply by Madhya	Pradesh 2030 ~ .	13.12 N
	FY22				FY30	
From	То	Traffic (1 202	Tonnes) 22	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / 203
Bargawan	Singrauli	835,248	.45	0.59	711,128.7	0.5
Bargawan	New Katni	12,577,7	62.99	8.95	10,481,577.3	7.4
New Katni	Anuppur	230,919	.78	0.16	293,888.3	0.2
New Katni Jn	Katni Jn	103,222	.65	0.07	136,029.6	0.1
New Katni	Jabalpur	12,998,9	77.75	9.25	11,007,767.7	7.8
Jabalpur	Seoni	1,043,26	6.29	0.74	987,116.1	0.7
Jabalpur	Narsinghpur	4,521,79	8.28	3.22	3,509,674.5	2.5
Katni Jn	Satna	35,490.9)7	0.03	46,771.0	0.0
Katni jn	Bina Jn.	115,722	.21	0.08	152,501.9	0.1
Bina Jn.	Bhopal Jn.	115,722	.21	0.08	152,501.9	0.1
Bhopal Jn.	Maksi	115,722	.21	0.08	152,501.9	0.1
Maksi	Ujjain Jn.	115,722	.21	0.08	152,501.9	0.1
Ujjain Jn.	Nagda Jn.	115,722	.21	0.08	152,501.9	0.1
Jabalpur	Itarsi	6,562,83	3.77	4.67	5,402,366.9	3.8
Itarsi	Khargone	3,935,52	0.77	2.80	3,005,672.5	2.1
Itarsi	Khandwa	2,627,31	.3.00	1.87	2,396,694.4	1.7
Shaktinagar	Singrauli	3650986	5.198	2.60	4,539,567.1	3.2

Expected Load from Madhya Pradesh to Madhya Pradesh main trunk lines (Excluding

Generated from eOffice by N RAJESWARA RAO, MOC-SOWRHOCPBANON MOC-SOWRHOCPBANON MINISTRY OF COAL on 17/05/2023 04:46 Major consumers include NTPC Gadarwara, DB power, MB power and Jhabua Power.

²⁵²⁸⁹ O-D Source cluster Mapping – Internal Consumption to remain at similar levels by FY30

All figures in million tonnes

Name of TPS	Power Utility	NCL Singrauli	SECL	Others including Captive	Total Coal Consumed FY22	Estimated Coal Consumption (FY30)	Supply from NCL	Supply from SECL	Supply from Others i.e CCL, WCL	Captive Supply
MAHAN	MAHAN ENERGEN LTD.	0.00	0.00	2.38	2.38	6.19	0.00	0.00	6.19	0.00
JAYPEE BINA TPP	JAIPRAKSH POWER VENTURES LIMITED	0.46	0.83	0.50	1.78	2.65	0.00	2.65	0.00	0.00
JAYPEE NIGRIE SUPER TPP	JAIPRAKSH POWER VENTURES LIMITED	2.00	0.15	2.82	4.97	5.83	0.20	2.83	0.00	2.80 Ameli 2.80 North
SANJAY GANDHI	MPPGCL	0.00	4.90	0.03	4.93	7.42	0.00	7.42	0.00	0.00
SATPURA	MPPGCL	0.00	0.41	1.81	2.22	6.39	0.00	6.39	0.00	0.00
AMARKANTAK	MPPGCL	0.00	0.00	0.99	0.99	1.15	0.00	1.15	0.00	0.00
SHREE SINGAJI TPS	MPPGCL	2.25	2.40	2.23	6.88	13.71	2.25	9.23	2.23	0.00
JHABUA POWER LIMITED	JHABUA POWER LIMITED	0.50	1.67	0.39	2.55	3.08	0.00	2.58	0.50	0.00
ANUPPUR TPS	MB POWER (MADHYA PRADESH) LIMITED	0.17	4.77	0.49	5.44	6.29	0.00	6.29	0.00	0.00
VINDHYACHAL	NTPC LTD.	24.28	0.00	0.00	24.28	26.92	26.92	0.00	0.00	0.00
GADARWARA SUPER	NTPC LTD.	2.60	0.53	2.02	5.14	7.69	3.99	2.30	1.40	0.00
SASAN UMPP TPP	REILIANCE POWER LIMITED	0.00	0.00	18.31	18.31	18.47	0.00	0.00	0.00	18.47
KHARGONE SUPER THERMAL POWER STATION	NTPC LTD.	2.00	0.80	1.04	3.84	5.95	2.61	0.00	3.34	0.00
Total		34.24	16.47	33.00	83.72	111.72	35.97	40.83	13.65	21.27
Under Construction / Pip	eline Capacities									
AMARKANTAK TPS	MPPGCL					3.54	0.00	3.54	0.00	0.00
SATPURA TPS	MPPGCL					3.54	0.00	0.00	3.54	0.00
Grand Total						118.80	35.97	44.37	17.19	21.27

Marginal anticipated increase in coal despatches from NCL to power plants such as NTPC's Vindhyachal Unit (MGR), Gadarwara and Khargone power plants via Rail mode.
Power plants such as Jaypee Nigrie, Jaypee Bina, Jhabua Power, Anuppur TPS etc. will majorly rely on SECL and CCL for the anticipated increase in coal consumption.
Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46 PM

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹⁷⁸ O-D Source cluster Mapping – Madhya Pradesh to Rajasthan



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²⁵²⁸⁹⁷⁸ C-D Source cluster Mapping – Supplies to Rajasthan will decline due to captive supplies

All figures in million tonnes

Name of TPS	Power Utility	NCL Singrauli	SECL	Others including Captive	Total Consumed in FY22	Estimated Coal Consumption (FY30)	Supply from NCL	Supply from SECL	Supply from Others	Captive Supply
KAWAI	ADANI POWER RAJASTHAN LTD.	2964127.59	1260333.33	631539.08	4856000	5170852.87	2964127.59	2206725.28		
CHHABRA	RRVUNL	11963.32	747716.17	2197820.51	2957500	4307626.49	0			4307626.49
SURATGARH	RRVUNL	747688.59	2734719.94	0	3482408.53	6778172.67	0			6778172.67
KALISINDH SUPER TPP	RRVUNL	0	0	4367900	4367900	4939190.73	0			4939190.73
KOTA SUPER THERMAL POWER STATION	RRVUNL	3717359.39	1579812.97	0	5297172.36	5940687.89	0			5940687.89
CHHABRA SUPER CRITICAL TPP	RRVUNL	0	0	3204600	3204600	5055532.76	0			5055532.76
Total		7441138.89	6322582.41	10401859.59	24165580.89	32192063.40	2964127.59	2206725.28	0.00	27021210.54

Power plants of RRVUNL will completely rely on captive supplies from PKEB, Parsa and Kente Extension with a total cumulative PRC of 28 MTPA. This would lead to lower supplies to Rajasthan from NCL. Marginal increase in supplies to Kawai would be fed from SECL, NCL to remain the ACQ levels of 2.9 MTPA due to limited production capacity. Generated from eoffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46 PM

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Madhya Pradesh to Punjab & Haryana total Rail Despatch in FY22 = 4.8 Million Tonnes Rajpura Ambala Jakhal Panipat Bhatinda Rohtak Bargawan, New Katni, Bina-Barnala etawa, Jhansi, Gwalior, Jhajjar Dhaulpur, Agra, Mathura, Delhi, Rewari Rohtak, Jind, Narwana, Jakal, Mathura, Alwar, Rewari, jhajjar Singrauli Singrauli Coalfields Major Coal Consuming Districts of Punjab: 2030 (Estimated) 10-15 MTPA Coal Bhatinda Consumption 5-10 MTPA Coal Mansa, Fatehgarh Sahib, Rupnagar Consumption 1-5 MTPA Coal Amritsar, Tarn Taran, Ludhiana, Consumption Nawashahr

Expected Load from Madhya Pradesh to Punjab & Haryana main trunk lines (Excluding load from other states on this line)								
Pb & Hr Coal D	emand 2022 ~ 33	8.01 MTPA	Pb & Hr Cod	al Demand 2030 ~ 4	3.13 MTPA			
Rail Supply by Mad	hya Pradesh 2022	~ 5.19 MTPA	Rail Supply by N	1adhya Pradesh 2030) ~ 5.19 MTPA			
	FY22			FY30				
From	То	Traffic (Tonnes) 2022	Rakes / Day 202	2 Traffic (Tonnes) 2030	Rakes / Day 2030			
Bargawan	New Katni Jn.	5,185,143.08	3.69					
New Katni Jn.	Bina Etawa	5,185,143.08	3.69					
Bina Etawa	Jhansi	1,130,174.28	0.80					
Jhansi	Gwalior Jn.	1,130,174.28	0.80					
Gwalior Jn.	Dhaulpur	5,185,143.08	3.69					
Dhaulpur	Agra Cantt	5,185,143.08	3.69					
Agra Cantt	Mathura	5,185,143.08	3.69					
Mathura	Delhi	2,434,340.51	1.73					
Delhi	Rohtak Jn.	1,614,703.57	1.15					
Rohtak Jn.	Jind Jn.	442575.4575	0.31					
Jind Jn.	Narwana Jn.	442575.4575	0.31	Iraffic to remain	h like FY22.			
Narwana Jn.	Jakhal Jn.	442575.4575	0.31					
Jakhal Jn.	Katar Singh Wala	39974.0575	0.03	Additional coa	Idemand			
Katar Singh Wala	Bathinda Jn.	39974.0575	0.03	from Dowor				
Jakhal Jn.	Dhuri Jn.	43877.8875	0.03	from Power F	riants of			
Dhuri Jn.	Barnala	43877.8875	0.03	Punjab & Harya	ana would			
Delhi	Panipat	819,636.94	0.58	source fror	n CCL			
Panipat	Kurukshetra Jn.	687598.8225	0.49					
Kurukshetra Jn.	Ambala Cantt. Jn.	687598.8225	0.49					
Ambala Cantt. Jn.	Rajpura Jn.	687598.8225	0.49					
Bina Etawa	Gwalior	4,054,968.80	2.89					
Mathura	Alwar	2,750,802.57	1.96					
Alwar	Rewari	2,750,802.57	1.96					
Rewari	Jhajjar	2,750,802.57	1.96					
Rohtak	Bhiwani	1,172,128.11	0.83					
Bhiwani	Hisar	1,172,128.11	0.83					
Hisar	Barwala	1,172,128.11	0.83					

²⁵²⁸⁹⁷O-D Source cluster Mapping – Supplies to Punjab & Haryana to remain stagnant

All figures in million tonnes

Name of TPS	Power Utility	NCL Singrauli	CCL	Others including SECL,ECL, BCCL, MCL Captive	Total Consumed in FY22	Estimated Coal Consumption (FY30)	Supply from NCL	CCL	Others including SECL,ECL, BCCL, MCL	Captive Supply
RAJPURA TPS	NABHA POWER LIMITED	0.82	0.34	4.28	5.44	5.44	0.82	1.81	2.80	0.00
GURU HARGOBIND TPP, LEHRA MOHABAT	PSPCL	0.00	0.33	0.99	1.32	4.16	0.00	0.00	0.00	4.16
GURU GOBIND SINGH TPP, ROPAR	PSPCL	0.00	0.32	0.86	1.18	3.93	0.00	3.60	0.33	1.44
GVK POWER (GOINDWALSAHIB) LTD.	PSPCL	0.00	1.10	0.21	1.30	2.58	0.00	1.70	0.88	0.00
TALWANDI SABO POWER LTD	TALWANDI SABO POWER LTD.	0.20	0.57	5.24	6.02	9.24	0.20	1.31	7.72	0.00
INDIRA GANDHI	ARAVALI POWER CORPORATION PVT LTD	2.29	0.13	2.25	4.67	6.90	2.29	4.60	0.00	0.00
RAJIV GANDHI TPP, Hissar	HPGCL	1.17	0.10	0.58	1.85	5.77	1.17	3.29	1.30	0.00
Deen Bandhu Chhotu Ram TPS, YAMUNANAGAR	HPGCL	0.00	0.96	0.88	1.84	2.94	0.00	2.80	0.14	0.00
PANIPAT	HPGCL	0.13	0.27	1.48	1.88	3.37	0.13	2.07	1.17	0.00
MAHATMA GANDHI TPP	JHAJJAR POWER LIMITED	0.43	1.70	2.61	4.74	5.60	0.43	5.17	0.00	0.00
Total		5.05	5.80	19.38	30.23	49.91	5.05	26.36	14.33	5.60

Pachwara Central (5.6 MTPA) would cater to the demand of power plants of PSPCL. Increase in demand from power plants would be majorly catered by CCL due to the limited scope of production enhancement of NCL. NCL's despatch to power plants of Punjab & Haryana will remain same as current levels.
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²⁵²⁸⁹⁷⁸ O-D Source cluster Mapping – Madhya Pradesh to Gujarat

Madhya Pradesh to Gujarat total Rail Despatch in FY22 = 0.73 Million Tonnes



10-15 MTPA Coal	Consumption	Ahmedabad.	Surat.	Тар
		, unneadbad,	Suruc,	1 GP



Expected Load from Madhya Pradesh to Gujarat main trunk lines (Excluding load from other states on this line) Gujarat's Coal Demand 2022 ~ 30 MTPA Gujarat's Coal Demand 2030 ~ 39 MTPA Rail Supply by Madhya Pradesh **2022** ~ **0.73 MTPA** Rail Supply by Madhya Pradesh 2030 ~ 0.949 MTPA FY22 FY30 Traffic (Tonnes) Rakes / Day Traffic (Tonnes) Rakes / Day From То 2030 2022 2022 2030 Bargawan New Katni Jn. 857450.43 0.61 998792.06 0.71 New Katni Jn. 679631.39 814276.36 0.58 Bina Etawa 0.48 New Katni Jn. Katni Jn. 177819.04 0.13 184515.70 0.13 Jabalpur Katni In. 177819.04 0.13 184515.70 0.13 Jabalpur 177819.04 0.13 184515.70 0.13 Itarsi 177819.04 Khandwa 0.13 184515.70 0.13 Itarsi Khandwa Jalgaon 177819.04 0.13 184515.70 0.13 Jalgaon Tapi 177819.04 184515.70 0.13 0.13 814276.36 0.58 Bina Etawa Bhopal Jn. 679631.39 0.48 Bhopal Jn. Maksi 679631.39 0.48 814276.36 0.58 0.58 679631.39 814276.36 Maksi Ujjain Jn. 0.48 679631.39 0.48 814276.36 0.58 Ujjain Jn. Nagda 679631.39 814276.36 0.58 Nagda Ratlam 0.48 Ratlam Godhra 679631.39 0.48 814276.36 0.58 271715.14 345807.93 0.25 Godhra Kheda 0.19 Godhra Anand Jn. 322356.72 0.23 410840.37 0.29 Anand Jn. Nadiad Jn. 407916.25 0.29 468468.43 0.33 Nadiad Jn. Sabarmati Jn. 407916.25 0.29 468468.43 0.33 Ghandhinagar 407916.25 Sabarmati Jn. 0.29 468468.43 0.33

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹⁷O-D Source cluster Mapping – Supplies to Gujarat will remain stagnant

All figures in million tonnes

Name of TPS	Power Utility	NCL Singrauli	SECL	Others including WCL, CCL & Others	Total Consumed in FY22	Estimated Coal Consumption (FY30)	Supply from NCL	SECL	Others including WCL, CCL & Others	Captive Supply
MUNDRA TPS	ADANI POWER (MUNDRA) LIMITED	0.00	0.00	6.58	6.58	15.74	0.00	5.40	10.34	0.00
MUNDRA UMPP	Coastal Gujarat Power Limited	0.00	0.00	0.37	0.37	1.01	0.00	0.00	1.01	0.00
GANDHINAGAR	Gujarat State Electricity Corporation Limited	0.29	1.85	0.08	2.22	2.61	0.00	2.60	0.01	0.00
SIKKA	Gujarat State Electricity Corporation Limited	0.00	0.00	0.47	0.47	1.50	0.00	0.00	1.50	0.00
UKAI	Gujarat State Electricity Corporation Limited	0.18	2.56	0.69	3.43	4.69	0.08	3.80	0.89	0.00
WANAKBORI	Gujarat State Electricity Corporation Limited	0.27	7.04	0.28	7.58	9.61	0.12	8.30	1.31	0.00
SABARMATI TPS	TORRENT POWER LTD.	0.00	1.19	0.18	1.38	1.38	0.00	1.10	0.28	0.00
Total		0.74	12.64	8.66	22.03	36.53	0.20	21.20	15.33	0.00
Under Construction / I	Pipeline Capacities									
Ukai TPS – Tapi	Gujarat State Electricity Corporation Limited					4.29	0	4.29	0	0
Grand Total						40.82	0.20	25.49	15.33	0.00

Supplies to Gujarat Utilities will decrease from NCL to around ~0.2 MTPA from current 0.74 MTPA based on the effective ACQs. Coastal shipping from Talcher to GSECL plants, FSA for which have been signed earlier this year could further scale if economic viability is proven. Remaining quantum would be sourced from SECL.
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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹⁷⁸ O-D Source cluster Mapping – Madhya Pradesh to Chhattisgarh

Madhya Pradesh to Chhattisgarh total Rail Despatch in FY22 = 0.01 Million Tonnes



>15 MTPA Coal Consumption Raipur, Raigarh, Durg

Korba, Bilaspur 5-10 MTPA Coal Consumption

1-5 MTPA Coal Consumption Janjgir-Champa, Bijapur-Dantewada-

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un supply by Maanya	FY22	• Kall Suppl	y by ividanya	FY30
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	
Bargawan	New Katni Jn.	759893.67	0.54	Would be catered by SECL in future.
New Katni Jn.	Anuppur Jn.	759893.67	0.54	No Traffic from NC
Anuppur Jn.	Ghutku	759893.67	0.54	future to Chhattisgarh.
Ghutku	Raipur Jn.	759893.67	0.54	
Raipur Jn.	Durg	381981.07	0.27	

Expected Load from Madhya Pradesh to Chhattisgarh main trunk lines (Excluding load

Major Consumers in Chhattisgarh sourcing coal from NCL include ACC LTD. , JAMUL plant and Vandana Global Limited.

²⁵²⁸⁹⁷⁸ O-D Source cluster Mapping – Madhya Pradesh to Bihar



Expected Load fi	rom Madhya Pra	desh to Bih states on th	ar main trunk l ^{iis line})	ines (Excluding	load from other
Bihar Coal Dema	nd 2022 ~ 29.98 N	ΙΤΡΑ	Bihar Coal De	mand 2030 ~ 3	39.17 MTPA
Rail Supply by Madhya	all Supply by Madhya Pradesh 2022 ~ 0.64 IVI I PA Rail Su FY22				030 ~ 0 MTPA
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030
Renukut	Grawah	648377.16	0.46	Would be CCL and EC	catered by CL in future.
Garhwa	Aurangabad	648377.16	0.46	No Traffic f projected i Bił	rom NCL is in future to nar.

Major Consumers in Bihar sourcing coal from NCL are NTPC's Aurangabad.

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Madhya Pradesh to Jharkhand

Madhya Pradesh to Jharkhand total Rail Despatch in FY22 = 0.07 Million Tonnes



	other states on this line)									
Jharkhand Coal Den Rail Supply by Madhya	n and 2022 ~ 52.31 Pradesh 2022 ~ 0.0	. МТРА 07 МТРА	Jharkhand Coal Demand 2030 ~ 68.35 MTPA Rail Supply by Madhya Pradesh 2030 ~ 0 MTPA							
	FY22			FY30						
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030					
Renukut	Garhwa	324837.53	0.23							
Garhwa	Palamu	186203.75	0.13							
Garhwa	Richughuta	138633.79	0.10	Would be CCL and EC	catered by L in future.					
Richughuta	Muri	138633.785	0.10	No Traffic 1	from NCL is					
Muri	Adityapur	138633.785	0.10	Jhark	hand.					
Adityapur	Tata Nagar	138633.785	0.10							
Tata Nagar	East Singhbhum	138633.785	0.10							

Expected Load from Madhya Pradesh to Ibarkhand main trunk lines (Evoluting load fro

• Major Consumers in Jharkhand sourcing coal from NCL are Grasim Industries Ltd. Chemical O4:46 Ppivision, Rehla and The Tata Power Company Limited

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Madhya Pradesh to Karnataka

Madhya Pradesh to Karnataka total Rail Despatch in FY22 = Expected Load from Madhya Pradesh to Karnataka main trunk lines (Excluding load from 0.02 Million Tonnes other states on this line) Karnataka Coal Demand 2022 ~ 18.51 MTPA Karnataka Coal Demand 2030 ~ 24.19 MTPA Singrauli Coalfields Singrauli Rail Supply by Madhya Pradesh 2022 ~ 0.02 MTPA Rail Supply by Madhya Pradesh 2030 ~ 0 MTPA Bargawan, New Katni. Jabalpur, FY22 **FY30** Nainpur, Balaghat, Gondia, Kalamna, Traffic Nagpur, Nagpur, Wardha, Bibinagar, Traffic (Tonnes) (Tonnes) Rakes / Day 2022 Rakes / Day 2030 From То Dhine, Guntakal, Ballari, Chikjarjue, 2030 2022 Hasan, 19829.3 0.01 Bargawan New Katni Jn. 19829.3 0.01 New Katni Jn. Jabalpur Jabalpur Nainpur Jn. 19829.3 0.01 19829.3 0.01 Nainpur Jn. Balaghat Jn. Would be catered by 19829.3 0.01 Gondia Jn. Balaghat Jn. RSR – Coastal shipping 19829.3 Gondia Jn. 0.01 Kalamna from Talcher CF. SECL 19829.3 0.01 Kalamna Nagpur and SCCL are also 19829.3 0.01 Nagpur Buti Bori Udupi potential options. 19829.3 0.01 Buti Bori Wardha Jn. UNUPI POWER CORPORATION LIMITED Udupi Power plant 19829.3 0.01 Wardha Jn. Chandrapur mainly relies on 19829.3 0.01 Chandrapur Kazipet Jn. Imported Coal Major Coal Consuming Districts of Karnataka: 2030 (Estimated) 19829.3 0.01 Kazipet Jn. Bibinagar Jn. 19829.3 0.01 Bibinagar Jn. Malkajgiri No Traffic from NCL is 19829.3 Malkajgiri Dhone Jn 0.01 >15 MTPA Coal Consumption Ballari projected in future to 19829.3 0.01 Dhone Jn Guntakal Jn. Karnataka. Guntakal Jn. 19829.3 0.01 Ballari Jn. 10-15 MTPA Coal Consumption Raichur Ballari Jn. Chikjajur Jn. 19829.3 0.01 5-10 MTPA Coal Consumption Dakshina Kanadda 19829.3 0.01 Chikjajur Jn. Hassan 19829.3 0.01 Hassan 88 Udupi 1-5 MTPA Coal Consumption Bijapur, Udupi

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Madhya Pradesh to Odisha

Madhya Pradesh to Odisha total Rail Despatch in FY22 = 0.23 Million Tonnes



Expected Load from Madhya Pradesh to Odisha main trunk lines (Excluding load from other states on this line)									
Odisha's Coal Dem Rail Supply by Madhya	nand 2022 ~ 99 MT Pradesh 2022 ~ 0 2	ГРА 3 МТРА	Odisha's Coal Demand 2030 ~ 147 MTPA						
	FY22	FY30							
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	2 Traffic (Tonnes) 2 2030 Rakes / Day 2					
Bargawan	New Katni Jn.	539749.05	0.38						
New Katni Jn.	Anuppur Jn.	539749.05	0.38						
Anuppur Jn.	Ghutku	539749.05	0.38						
Ghutku	Raipur	539749.05	0.38	Mould be	otonod bu				
Raipur	Titlagarh	539749.05	0.38	MCL in f	uture				
Titlagarh	Kalahandi	539749.05	0.38						
Renukut	Garhwa	202059.09	0.14	No Traffic fr	om NCL is				
Garhwa	Ranchi	202059.09	0.14	projected in Odis	ha.				
Ranchi	Jharsuguda	202059.09	0.14						
Jharsuguda	kalahandi	44865.14	0.03						
Jharsuguda	Sambalpur City	157193.95	0.11						
Sambalpur City	Angul	157193.95	0.11						

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹⁷⁸ O-D Source cluster Mapping – Madhya Pradesh to Uttarakhand

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Madhya Pradesh to Uttarakhand total Rail Despatch in FY22 = 0.36 Million Tonnes



5-10 MTPA Coal Consumption	NA

1-5 MTPA Coal Consumption Nainatal

Expected Load from Madhya Pradesh to Uttarakhand main trunk lines (Excluding load from other states on this line)										
Uttarakhand's Coal Rail Supply by Mad	l Demand 2022 ~ 0. hya Pradesh 2022 ~ (57 MTPA 0.36 MTPA	Uttarakhand's Coal Demand 2030 ~ 0.74 MTPA Rail Supply by Madhya Pradesh 2030 ~ 0.36 MTPA							
	FY22		FY30							
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030					
Billi	Chunar	361,521.78	0.26							
Chunar	Prayagraj	361,521.78	0.26							
Prayagraj	Unchahar	361,521.78	0.26							
Unchahar	Rae Bareli	361,521.78	0.26	Traffic to re	main liko					
Rae Bareli	Lucknow	361,521.78	0.26	FY2	2					
Lucknow	Roza	361,521.78	0.26	Small NRS s	upplies to					
Roza	Shahjahanpur	361,521.78	0.26	Uttarakhar	nd would					
Shahjahanpur	Bareilly	361,521.78	0.26	continue a plavers woi	as these uld prefer					
Bareilly	Rampur	120,178.27	0.09	NCL's	coal					
Rampur	Moradabad	120,178.27	0.09							
Moradabad	Kashipur Jn.	120,178.27	0.09							
Bareilly	Lalkuan	241,343.51	0.17							
Lalkuan	Nanital	241,343.51	0.17							

²⁵²⁸⁹ O-D Source cluster Mapping – Consolidated Coal Traffic from Singrauli Coalfields to all states

2030 – NCL's coal flow									
State	Rail + RCR	Pure Road	MGR & Belt	Total					
Uttar Pradesh	38.59	4.07	39.89	82.55					
Madhya Pradesh	13.12	2.77	26.92	42.81					
Rajasthan	3.26			3.26					
Punjab & Haryana	5.19			5.19					
Gujrat	0.32			0.32					
Uttarakhand	0.36			0.36					
Total	60.84	6.84	66.81	134.49					

FY22 Actual and FY30 (Estimated) coal traffic in major sections for Despatch of coal from Madhya Pradesh to various destinations

From	То	Traffic (MT): 2022	Rakes / Day: 2022	Traffic (MT): 2030	Rakes / Day: 2030	Increase in Coal Traffic (Rakes / Day)
Shakti Nagar	Anpara	59.98	41.65	60.84	42.25	+ 0.60
Anpara	Karaila Rd	46.37	32.20	44.31	30.77	- 1.43
Karaila Rd	Obradam	14.02	9.74	35.73	24.81	+ 15.07
Obradam	Billi Jn	14.02	9.74	35.73	24.81	+ 15.07
Billi Jn	Chopan	12.16	8.44	35.73	24.81	+ 16.37
Chopan	Chunar	12.16	8.44	35.73	24.81	+ 16.37
Chunar	Prayagraj	12.16	8.44	35.73	24.81	+ 16.37
Karaila Rd	Singrauli	32.34	22.46	35.20	24.44	+ 1.98
Singrauli	Mahadiya	32.34	22.46	35.20	24.44	+ 1.98
Mahadiya	Majhauli	32.34	22.46	35.20	24.44	+ 1.98
Majhauli	Gajara Bahara	32.34	22.46	38.00	26.39	+ 3.93
Gajara Bahara	Niwas Road	32.34	22.46	38.00	26.39	+ 3.93
Niwas Road	Katni	27.38	19.01	32.17	22.34	+ 3.93

8.4435.7324.81+ 10.37Coal Traffic includes supply from Non-CIL blocks such as Amelia (5.6 MTPA) of8.4435.7324.81+ 16.37THDC to Khurja STPP, Amelia North (2.8 MTPA) of Jaiprakash power ventures8.4435.7324.81+ 16.37Imited to Jaypee Nigrie TPP from Majhauli.22.4635.2024.44+ 1.98Equal distribution of loads towards Chunar and Katni have been assumed for
other blocks which probably will sell in the commercial market. These blocks22.4635.2024.44+ 1.98Imited to Jaypee Nigrie TPP from Majhauli.

include Suliyari (6 MTPA APMDC), Bandha (3 MTPA Emil Mines & Minerals), Dhirauli (5 MTPA Stratatech Mineral Resources), Gondbahera Ujheni (4.12 MTPA MP Natural Resources)



²⁵²⁸⁹⁷⁸ O-D Source cluster Mapping – Current and Future line capacity utilization of major sections

	2022				2030								
Sub-Section	Passenger	Freight	Others	Total	Capacity (with MB)	% Utilization	Passenger	Freight	Others	Total	Capacity (with MB)	% Utilizati on	Comments
Billi to Obradam	17.14	37.4	20.8	75.34	60	126%	18.54	52.47 (25 is coal)	20.80	91.81	120.00	77%	Capacity Sufficient after Patch Doubling
Obradam to Karaila Rd	17.14	45.6	13.6	76.34	60	127%	18.54	60.67 (25 is coal)	13.60	92.81	120.00	77%	Capacity Sufficient after Patch Doubling
Karaila Rd to Singrauli	12	35.8	7.7	55.5	88	63%	13.98	61.10 (25 is coal)	7.70	82.77	176.00	47%	Capacity Sufficient after Patch Doubling
Singrauli to Mahadiya	11.7	42.4	17.6	71.7	106	68%	15.59	55.20 (25 is coal)	17.60	88.39	212.00	42%	Capacity Sufficient after Patch Doubling
Billi to Chopan	12.84	23.6	14.4	50.84	108	47%	18.26	43.44 (25 is coal)	14.40	76.10	216.00	35%	Capacity Sufficient after Patch Doubling
								55.27					Capacity Insufficient –.
Chopan to Chunar	24.28	38.9	12	75.18	44	171%	26.26	(25 is coal)	12.00	93.53	44.00	213%	Doubling of Chopan to Chunar Line is required – North Central Railway

- All numbers (Except Capacity utilization) represent average two-way traffic Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023-04:46 PM In Trains/Rakes per day

Analyzing Evacuation Capacity for NCL



^{2528978/2023/CPIAM} Proposed Evacuation Plan for FY30 of NCL

All figures in million tonnes
^{2528978/2023/CPIAM} Evacuation Capacity Augmentation

All figures in million tonnes

#	Project Name	Project Capacity	EC Capacity	Existing Capacity CHP/SILO	Under Construction CHP/SILO under FMC Programme	Total Evacuation Planned	Anticipated Completion
1	Amlohri OCP	10	14	12	5	17	September 2023
2	Krishnashila OCP	4	7	4	0	4	Commissioned
3	Nigahi OCP	25	22.5	15	10	25	December 2023
4	Jayant OCP	20	25	10.5	15	25.5	June 2023
5	Bina-Kakri Amalgamation OCP	14	10.5	8 (4.5+3.5)	9.5	17.5	December 2023
6	Dudhichua OCP (CHP Silo + RLS Siding)	20	25	10	15	25	August 2023
7	Khadia OCP (Phase-II)	16	15	0	6	10	December 2024
8	Block - B	8	5.47	3.5	4.5	8	February 2024
	Total	117	124	69	63	132	
				95			

* Data As on 4th April 2023 Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46 PM

Note: List consists only of CHP/Silo. Wharfwall sidings not listed here

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^{2528978/2023/CPIAM} Evacuation Capacity Augmentation for coal transportation roads at NCL

ICL Road Projects already taken up	Length (Km)	Carriage Width (m)
Construction of CC road coal transportation from weigh bridge 3rd/4th bench at Jayant Project	2.5	7
Proposed Road Projects Construction of coal transportation roads in mines of NCI	49 641	10 5
BREAK LIP-	5	10.5
Coal transport Road from coal vard No.5 to old CHP Junction near coal vard No.1 of KHADIA AREA	5	1010
CT Road from workshop back side corner to New Haul Road starting junction point of KHADIA AREA	0.35	10.5
CC Road from weighbridge no. 3 to back side of workshop and upto barrier of KHADIA AREA	1.26	10.5
Road from Coal stock vard no. 23 to Nigahi Wharfwall of NIGAHI AREA	3	10.5
Road for surface miner's coal transportation from Jhandi Man Coal Yard No. 3 to Weigh Bridge No. 1 of BINA AREA	2.9	10.5
Transportation Road from Weigh Bridge No. 2 to Coal Yard No. 1 & Deshaling Weigh Bridge BINA AREA	1.9	10.5
Providing Concrete road from barrier No. 1 upto CHP canteen along with roadside development & protection work	0.92	10.5
AT Amlohri project of AMLOHRI AREA		
Road for Khadia coal transportation to CHP at Krishnashila Project of KRISHNASHILA AREA	3.2	10.5
Road for Surface miner's coal transportation to Coal Yard at Krishnashila of KRISHNASHILA AREA	3.5	10.5
Existing road for weighment (A-B-A-C) of DUDHICHUA AREA	0.45	10.5
Existing coal transportation road (C-D) of DUDHICHUA AREA	1.6	10.5
Existing coal transportation road alignment may be changed after taken barrier coal (D-E) of DUDHICHUA AREA	1.3	10.5
Circular Near new W/B (development of new W/B area (F-G) of DUDHICHUA AREA	0.4	10.5
Coal Despatch road(H-I-J) of DUDHICHUA AREA	2.3	10.5
Other CC Roads of DUDHICHUA AREA	3.95	10.5
Jayant Coal Yard to Receiving Point of CHP and WB No. 1, 2 & 6 of JAYANT AREA	2.5	10.5
Jayant Coal Yard to receiving Point of CHP and WB No. 1, 2 & 6 to West Section Coal Yard of JAYANT AREA	3	10.5
West Coal Yard to West Barrier of JAYANT AREA	1	10.5
East Coal Yard to Dudhichua Boundary of JAYANT AREA	0.5	10.5
W.B. No. 4 to Base Workshop Juntion of JAYANT AREA	1	10.5
Block B CTR	3.38	10.5
Block B Existing CTR	2.66	10.5
Block B Existing CTR	0.82	10.5
Total for MP Projects of NCL (Jayant, Dudhichua, Nigahi, Amlohri and Block B)	28.781	
Total for UP Projects of NCL (Bina, Krishnashila ar 🕫 Khadia)	18.11	
from eoffice by N RAIESWARA RAO. Details in the Kakring and Thing wirds are anothing but tendered	2.75	

CIL (NCL) blocks in Madhya Pradesh – Singrauli CF Cluster

#	Name of the Block	Exploration Status	#	Name of the Block	Exploration Status
1	Jhingurdah	Explored	12	Dongrital	Partly Explored
2	Bina-Kakri-Chandel	Explored	13	Patpaharia	Partly Explored
3	Khadia-Marrak	Explored	14	Gurbara South	Partly Explored
4	Dudhichua-Bundela	Explored	15	Gurbara Central	Partly Explored
5	Jayant-Mehrauli	Explored			
6	Nigahi	Explored	16	Gurbara North	Partly Explored
7	Amlohri	Explored	17	Purail	Under Exploration
8	Semariya	Explored	18	Inguri	Under Exploration
9	Block-B Gorbi	Explored	19	Borka	Explored
10	Dip-Side of MCL Blocks	Explored	20	Saratola	Explored
11	Baghela	Explored	21 97	Makri-Barka West Ph-I & East	Explored

Non-CIL blocks in Madhya Pradesh – Singrauli CF Cluster

#	Name of the Block	Exploration Status	#	Name of the Block	Exploration Status
1	Moher & Moher Amlohri Extn	Explored	13	Gondbahera Ujheni & East	Partially Explored
2	Amelia	Explored	14	Makri Barka	Explored
			15	Pachaur	Under Exploration
3	Amelia North	Explored	16	Bandha	Explored
4	Mara-II Mahan	Regionally Explored	17	Bandha North	Under Exploration
5	Mahan	Explored	18	Chhatrasal	Explored
6	Dhirauli	Partly Explored			
7	Suliyari	Explored			
8	Dongrital-II	Partly Explored			
9	Jhara South & North	Regionally Explored			
10	Sarai West	Under Exploration			
11	Sarai East	Regionally Explored			
12	Barimahuli	Partially Explored	98		



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Key Insights and Recommendations

#	Recommendation	Way Forward
1	Double Line from Mahadiya to Katni (Bypassing Sanjay tiger Reserve) along with Katni Grade separator project to be executed at the earliest. Singrauli to Mahadiya section double line already commissioned.	Indian Railways (WCR & ECR)
2	Doubling of Anpara to Krishnashila may be executed at the earliest.	Indian Railways (WCR & ECR)
3	Additionally, Captive and Commercial miners shall plan to develop First Mile Connectivity projects like Rapid- Loading System with Silos along with Railway connectivity (to nearby major rail lines like Singrauli - Katni). Captive and commercial players along with Indian Railways shall jointly conduct a feasibility study for establishing Public Freight Terminals with Mechanized loading and evacuation systems.	Captive and Commercial miners, who have been allotted blocks in Singrauli CF may consult with Ministry of Coal regarding their future evacuation plans. Detailed Investment and works plan may be submitted by these miners at the earliest.
4	Upcoming new BG line between Lalitpur – Singrauli (estimated TDC: 2025-26) shall provide a vital link between northern India and NCL region avoiding Katni junction. This work should be expedited.	Indian Railways (WCR)
5	7 under-construction FMC Projects of NCL with combined evacuation capacity of ~63 MTPA shall be executed at the earliest to enable coal loading from NCL.	Coal India Limited is continuously monitoring and solving various issues to expedite this
6	Doubling of Chopan to Chunar Section should be planned as capacity augmentation of an important feeder line for DFC	Indian Railways (NCR)
7	Shaktinagar-Mahadiya new BG line feasibility must be explored by Indian Railways	Indian Railways (ECR)

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Jharkhand (CCL)



^{2528978/2023/CPIAM} ambitious growth plans

A	ll figures in million tonnes		tuals —				Projections			
#	CCL Coalfields	FY21-22	FY22-23	FY23-24	FY24-25	FY25-26	FY26-27	FY27-28	FY28-29	FY29-30
1	North Karanpura	45.34	47.87	52.0	65.5	84.62	91.52	97.92	106.92	113.92
2	South Karanpura	5.41	6.76	8.0	6.98	10.98	11.7	11.7	12.5	12.5
3	East Bokaro	12.58	14.46	16.4	21.82	24.82	25.1	27.15	28.15	29.15
4	West Bokaro	4.54	5.48	5.8	8.9	11.78	10.33	10.33	12.33	12.33
5	Ramgarh	0.88	1.33	1.5	2.5	2.5	3.0	3.0	3.0	3.0
6	Giridih	0.10	0.20	0.3	0.3	0.3	0.1	0.1	0.1	0.1
	Total	68.85 (dispatch of 71.86)	76	84	106	135	142	150	163	171

- North Karanpura & East Bokaro are the major coalfields contributing to current production of CCL.
- Till FY30, CCL is expected to grow from current ~76 MT (FY23) to ~171 MT (FY30), with a CAGR growth of ~12.3%
- CCL's planned growth from ~72 MT dispatch in FY22 to ~171 MT in FY30 is majorly based on production ramp-up from its North Karanpura coalfields, which shall contribute ~73% of the additional coal production for CCL

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Jharkhand

All figures in million tonnes

Coalfield	Mine	Type (UG/.OC)	PRC	2021-22 Act	2022-23 Act	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
North Karanpura	Magadh OC	OC	51	11.50	15.575	18	28	42	45	45	48	49
North Karanpura	Amrapali OC	OC	25	16.59	18.001	21	24	25	25	25	25	25
North Karanpura	Chandragupta OC	OC	15	0.00		0	2.8	4.5	5	5	6	8
North Karanpura	Sanghmitra OC	OC	20	0.00		0	0	2	1.5	5	10	14
North Karanpura	Rohini Karkata OC	OC	10	0.68	0.314	0.6	0.4	0.5	3	5	5	5
North Karanpura	Churi-Benti UGP	UG	0.81	0.58	0.706	0.65	0.65	0.7	0.75	0.75	0.75	0.75
East Bokaro	EPR Karo OC	OC	11	2.75	1.519	2.3	5	8	8	10	11	11
North Karanpura	EPR Ashok OC	OC	20	13.13	10.718	7.5	4	3.5	4.5	4.5	4.5	4.5
East Bokaro	EPR Konar OC	OC	8	4.24	6.323	6.5	8	8	8	8	8	8
South Karanpura	North Urimari OC	OC	7.5	3.60	4.199	4.5	4.5	7.5	7.5	7.5	7.5	7.5
West Bokaro	Kotre B & P OC	OC	5	0.00		0	1.5	3	1.5	1.5	3	3
Ramgarh	Rajrappa RCE OC	OC	3	0.88	1.33	1.5	2.5	2.5	3	3	3	3
West Bokaro	Tapin South OC	OC	2	0.85	1.104	1	2	2	1	1	1	1
East Bokaro	Kathara RCE OC	OC	1.9	0.14	9 3 2	0.8	1	1	0.5	0.5	0.5	0.5

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Jharkhand

All figures in million tonnes

Coalfield	Mine	Type (UG/.OC)	PRC	2021-22 Act	2022-23 Act	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
West Bokaro	Jharkhand Laiyo OC	OC	1	0.50	0.37	0.5	0.5	0.7	0.7	0.7	0.7	0.7
West Bokaro	KARMA OC	OC	1	0.83	0.72	1	1	1	1	1	1	1
East Bokaro	Bokaro(Bermo) OC	OC	0.8	0.15	0.31	0.2	0.1	0.1	0.5	0.5	0.5	0.5
South Karanpura	Sayal D OC	OC	1	0.00	0.169	0.6	0.5	1	1	1	1	1
North Karanpura	Tetariakhar OC	OC	2.5	1.02	0.91	1.35	2	2.5	2	2.5	2.5	2.5
West Bokaro	Pundi RO OC	OC	5	0.00	0	0		0.5	1.5	1.5	2	2
South Karanpura	Sirka OC	OC	1.5	0.00	0	0.45			1	1	1	1
West Bokaro	Chainpur OC	OC	1	0.00	0	0			0	0	0	0
East Bokaro	Amlo (AAD OC)	OC	2.5	1.94	2.473	3.5	3.5	3.5	3	3	3	3
West Bokaro	Tapin OC	OC	2.5	1.51	2.055	2.1	2.2	2.5	2.5	2.5	2.5	2.5
East Bokaro	Sel Dhori OC	OC	2.25	1.95	1.381	1.1	1.2	1.2	1.25	1.25	1.25	1.25
South Karanpura	Urimari EPR OC	OC	2	0.75	0.761	0.9	0.5	1	1	1	1	1
West Bokaro	Parej East OC	OC	1.75	0.40	0.416	0.4	0.45	0.45	0.4	0.4	0.4	0.4
East Bokaro	Jarangdih OC	OC	1.5	0.37	9 .87 2	0.65	0.9	0.9	0.85	0.85	0.85	0.85

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Jharkhand

All figures in million tonnes

Coalfield	Mine	Type (UG/.OC)	PRC	2021-22 Act	2022-23 Act	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
East Bokaro	Govindpur Phase II	OC	1.2	0.89	1.137	1.25	2	2	1.6	1.6	1.6	1.6
West Bokaro	Topa RO OC	OC	1.2	0.44	0.817	0.8	1.2	1.2	1.2	1.2	1.2	1.2
West Bokaro	Kedla OC	OC	0.7	0.00	0	0	0.05	0.05	0.1	0.1	0.1	0.1
South Karanpura	Giddi A OC	OC	0.6	0.23	0.233	0.2	0.23	0.23	0.2	0.2	0.6	0.6
South Karanpura	New Giddi C OC	OC	0.6	0.33	0.484	0.35	0.3	0.3	0.2	0.2	0.6	0.6
Giridih	Kabribad/Giridih OC	OC	0.5	0.10	0.195	0.3	0.3	0.3	0.1	0.1	0.1	0.1
South Karanpura	Religara OC	OC	0.5	0.50	0.499	0.5	0.55	0.55	0.55	0.55	0.55	0.55
South Karanpura	Sangam OC	OC	0.24	0.00		0.5	0.4	0.4	0.25	0.25	0.25	0.25
North Karanpura	KD Hesalong OC	OC	4.5	0.95	0.432	1	1.4	1.5	2.1	2.5	2.5	2.5
North Karanpura	Rajhara OC	OC	0.5	0.00	0	0.05	0.05	0.05	0.05	0.05	0.05	0.05
North Karanpura	Purnadih OC	OC	3	0.40	0.731	1.5	1.5	1.5	1.5	1.5	1.5	1.5
North Karanpura	Dakra Bukbuka OC	OC	1.3	0.49	0.478	0.35	0.2	0	0.25	0.25	0.25	0.25
East Bokaro	Tarmi OC	OC	1	0.00		0	0		0	0	0	1

Jharkhand

All figures in million tonnes

Coalfield	Mine	Type (UG/.OC)	PRC	2021-22 Act	2022-23 Act	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
East Bokaro	Govindpur UG	UG	0.8	0.03	0.029	0			0.05	0.05	0.05	0.05
East Bokaro	Kargali OC	OC	0.75	0.00	0	0	0		0.05	0.1	0.1	0.1
East Bokaro	Dhori Khas UG	UG	0.00	0.13	0.128	0.1	0.12	0.12	0.1	0.1	0.1	0.1
South Karanpura	Bhurkunda UG	UG	0.00	0.00	0.41	0	0	0	0	0	0	0
West Bokaro	Kedla UG	UG	0.00	0.01	0	0			0.05	0.05	0.05	0.05
East Bokaro	Pichri OCP	OC	1.2	0		0			1.2	1.2	1.2	1.2
North Karanpura	Piparwar UG Ph-I	UG	0.87	0	0	0	0.5	0.87	0.87	0.87	0.87	0.87
West Bokaro	Parej East UG	UG	0.51	0				0.38	0.38	0.38	0.38	0.38
Total				68.85	76.09	84	106	135	141.75	150	163	171

• CCL's planned growth from ~72 MT dispatch in FY22 to ~171 MT in FY30 is majorly based on production ramp-up from its North Karanpura coalfields, which shall contribute ~73% of the additional coal production for CCL

Non-CIL blocks Pipeline in Jharkhand – North Karanpura CF (1/2)

Jha	arkhand						All figures in m	nillion tonnes
#	Name of the Block	Block Owner	PRC	Operational Status	Proposed Loading Point	EUP and other remarks	Actual FY23 Production	Actual FY22 Production
1	Moitra	JSW Steel Ltd.	1	Not operational	Bes Railway Siding (Mine to Washery to Siding via road - 7 Kms)	Salem Works, TN: 2081 kms from mine Dolvi Works, Maharashtra: 1831 kms from mine Vijayanagar Works, Karnataka: 1873 kms from mine	0	0
2	Badam	NTPC Ltd.	3	Not Operational	Bes Railway Siding (Mine to Siding via road - 8 Kms)	NTPC Barauni, Begusarai, Bihar: 314 kms from mine	0	0
3	Dumri	Hindalco Industries Ltd.	1	Not operational	Ray Railway Siding (Mine to Siding via road - 40 Kms)	CPP Aditya Aluminium, Sambalpur, Odisha: 489 kms from mine; CPP Mahan Aluminium, Singrauli, MP: 427 kms from mine; CPP Hirakud Complex, Sambalpur, Odisha: 520 kms from mine.	0	0
4	Chatti Bariatu and Chatti Bariatu South	NTPC Ltd.	7	Not operational	Shivpur Railway Siding (Mine to Siding via road - 16 Kms)	- NTPC Barh (Stage II), Bihar: 494 kms from mine	0.45	0
5	Kerandari	NTPC Ltd.	6	Not Operational	Shivpur Railway Siding (Mine to Siding via pipe conveyor – 18.5 Kms)	NTPC Tanda (Stage II), UP: 591 kms from mine	0	0

Non-CIL blocks Pipeline in Jharkhand – North Karanpura CF (2/2)

Jharkhand

						,	All figures in m	nillion tonnes
#	Name of the Block	Block Owner	PRC	Operational Status	Proposed Loading Point	EUP and other remarks	Actual FY23 Production	Actual FY22 Production
E	Pakri-Barwadi	h NTPC Ltd.	18	Operational	Banadag Railway Siding. (Currently, coal is transported to railway siding by roads. A 14- kilometre-long belt conveyor is now under development)	Basket mine for NTPC's plants	12.86	8.88
7	Chakla	Hindalco Industries Ltd.	5.3	Not Operational	Biratoli Railway Siding (3 kms from mine).	Since the coal from this block is designated for commercial use, it can be used by any end-use plant	0	0
8	Gondulpara	GMR Chattisgarh Energy Ltd.	4	Not Operational	Bes Railway Siding (Mine to Siding via road - 13 Kms). Badam-Hazaribagh road is nearby and can be used to deliver coal to plants nearby and railway stations	The coal from this coal block is allocated for commercial purposes, and hence coal can be utilized by any end-use plant	0	0
ç	North Dhadu (Eastern Part)) –	4	Not Operational	Block lies east of Shivpur-Tori line.	Coal block expected to be auctioned in 7 th tranche of coal block auctions	-	-
1) North Dhadu (Western Part		3	Not Operational	Block lies east of Shivpur-Tori line.	Coal block expected to be auctioned in 7 th tranche of coal block auctions	-	-
To PF	tal C		52.3				13.31	8.88

Non-CIL blocks Pipeline in Jharkhand – Auranga CF

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				Details of	Non-CIL blocks in Auranga CF			
#	Name of the Block	Block Owner	PRC	Operational Status	Proposed Loading Point	EUP and other remarks	Actual FY23 Production	Actual FY22 Production
1	Tubed	DVC	6	Non Operational	East Central Railway has approved a 17-kilometre railway line from the coal block to Demu railway station, with construction and commissioning estimated to take three years	Mejia Thermal Power Station, WB: 340 kms from the mine; Chandrapura Thermal Power Station, Jharkhand: 240 kms from the mine;	0.02	0
2	Rajbar E&D	Tenughat Vidyut Nigam Ltd	10	Non Operational	Chetar Railway Station (Mine to station via belt conveyor-13.7 kms)	Tenughat Thermal Power Extension, Dumri, Jharkhand- 160 kms from mine	0	0
3	Banhardih	Patratu Vidyut Utpadan Nigam Ltd.	11	Non Operational	Chetar Railway Station (Mine to station via existing CHP and railway siding- 6 kms)	Patratu Thermal Power Extension, Patratu, Jharkhand- 75 kms from mine	0	0
otal 'RC			27.0				0.02	0

Non-CIL blocks Pipeline in Jharkhand – Daltonganj CF

				Details of Nor	n-CIL blocks in Daltongani CF			
#	Name of the Block	Block Owner	PRC	Operational Status	Proposed Loading Point	EUP and other remarks	Actual FY23 Production	Actual FY22 Production
1	Kathautia	Hindalco	0.8	Operational	Coal is currently transported via the Rajhara railway siding. A 3-kilometre-long conveyor belt will be added to the Kajri Railway Rapid Loading System in the future	Mahan Power Plant and Refinery, MP: 242 kms from the mine	0.11	0.32
2	Lohari	Aranya Mines Pvt. Ltd.	0.2	Non Operational	Coal expected to be transported via roads	Commercial usage expected	0	0
3	Meral	Trimula Industries Ltd.	0.44	Non Operational	Initially, the evacuation will take place on the road. According to the allocatee, the viability of rail siding will be investigated during mine operation via the nearest railhead at Kajri, which is roughly 3 kilometres away from the coal block	Trimula Industries, Singrauli, MP: 200 kms from mine	0	0
4	Rajhara North	Fairmine Carbons Pvt. Ltd.	0.75	Non Operational	The coal will be transported by road from the mine to the nearest railhead head at Rajhaura which is 1 km away	The coal has been designated for commercial use. As , a result, any end-use facility can use coal from this block.	0	0
Total PRC			2.19				0.11	0.32

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^{2528978/2023/CPIAM} Non-CIL blocks Pipeline in Jharkhand – Rajmahal CF

Jharkhand

All figures in million tonnes

						Alij	iguies in nin	non tonnes
				Details	of Non-CIL blocks in Rajmahal CF			
#	Name of the Block	Block Owner	PRC	Operational Status	Proposed Loading Point	EUP and other remarks	Actual FY23 Production	Actual FY22 Production
1	Pachwara Central	Punjab State Power Corp Ltd.	5.6	Non Operational	Pakur Railway Station (Mine to Station via local roads- 55 km)	Guru Gobind Singh STPP, Ropar, Punjab: 1701 kms from the mine; Guru Hargobind Singh TPP, Bathinda, Punjab: 1672 kms from the mine	~0.28	0
2	Pachwara North	WB Power development Corp Ltd.	15	Operational	The coal is currently being transported by road. RITES Ltd. has prepared the DPR for the development of a rail siding for this coal block	Sagardigih TPP, WB: 151 kms from the mine; Bakreshwar TPP, WB: 171 kms from the mine Bandel TPP, WB: 284 kms from the mine Santhaldih TPP, WB: 284 kms from the mine Kolaghat TPP, WB: 360 kms from the mine	~14.0	9.08
3	Urma Paharitola	Aurobindo Reality and Infra Pvt. Ltd.	15	Non Operational	The coal will be transported by road NH- 114A, from the mine to the nearest railhead at Muraraj, which is 37 km away	Since the coal from this coal block has been designated for commercial use, it can be used by any end-use plant	0	0
4	Saharpur Jamarpani	UP Rajya Vidyut Utpadan Nigam Ltd.	1	Non Operational	The coal will be transported by road NH- 114A, from the mine to the nearest railhead at Rampurhat, which is 55 km away	Harduaganj Ext-II TPP, Aligarh,UP: 1150 kms from the mine Obra C TPP, Sonebhadra, UP: 500 kms from the mine Jawaharpur TPS, UP: 1050 kms from the mine.	; 0	0
5	Pachwara South	Neyveli UP Power Ltd.	9	Non Operational	Pakur Railway Station (Mine to Siding via conveyor belt)	Ghatampur TPP, Kanpur, UP: 978 kms from mine.	0	0
Total PRC			35.6				14.28	9.08

Non-CIL blocks Pipeline in Jharkhand – Ramgarh, South Karanpura & Giridih CF

			Detail	s of Non-CIL blo	ocks in Ramgarh, South Karanpura & Giridih Cl	F		
#	Name of the Block	Block Owner	PRC	Operational Status	Proposed Loading Point	EUP and other remarks	Actual FY23 Production	Actual FY22 Production
1	Sugia Closed Mine	Jharkhand State Mineral Development Corp Ltd.	0.4	Non Operational	Ramgarh Cantt. Railway Station (Mine to Station via road- 14 km)	Since it is allocated for commercial purposes, coal from the mine can be used in any end-user facility	0	0
2	Tokisud North	NMDC Ltd.	2.32	Non Operational	Tokisud Railway Siding, which is still under construction, is about 2.5 km away from the block. Around 4.5 km away, a CHP has been planned. Coal will be transported locally from the pit head to the CHP and railway siding via a road distance of around 7 kms	It is a commercial mine, and the suitable clients have not been identified yet	0	0
3	Patal East	JSMDC Ltd	-		Road transportation expected for coal from this block	Commercial usage of coal	0	0
4	Brahmadiha	Andhra Pradesh Mineral Development Corp. Ltd.	0.15	Non Operational	Road transportation of coal is proposed. NH 114A is located around 1 km from the block.	The coal has been designated for commercial use. Coal extracted from this mine will be used in any nearby end-use plant.	0	0
otal PRC			2.87				0.00	0.00

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Origin – Destination Cluster Mapping for Jharkhand (CCL)

114

²⁵²⁸⁹⁷⁸ O-D Source cluster Mapping – Despatch of Coal from Jharkhand (CCL & Non-CIL): FY22 snapshot

All figures in million tonnes

	Consuming State	Rail	Road + RCR	MGR & Others	Total
7 states account for 98% of coal flow from Ibarkhand	Jharkhand	13.07	7.76	0	20.83
11 (CCL+Non-CIL)	Uttar Pradesh	24.77	3.01	0	27.78
28 28	Bihar	13.79	0.44	0	14.23
2 215 13	Punjab & Haryana	7.30	3.51	0	10.81
and the second sec	West Bengal	10.82	2.16	0	12.98
and the state of t	Madhya Pradesh	1.57	0.45	0	2.02
Other states include Assam (0.4 MT), Chhattisgarh (0.3 MT), Gujarat (0.3 MT),	Others	1.46	0.29	0	1.76
Andhra Pradesh (0.3 MT), Uttarakhand (0.2 MT), Tamil Nadu (0.2 MT), Odisha (0.1 MT), Maharashtra (0.1 MT), Rajasthan (~0 MT), Delhi (~0 MT), Meghalaya (~0 MT)	Total Despatch from Jharkhand (Including CCL & Non-CIL blocks)	72.79	17.61	0	90.41
FY22: Despatch of Coal from Jharkhand to				C	

destination state (MTPA) Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46 PM

115 Origin – Destination Mapping and the coal flow analysis of rail trunk lines for \sim 73 MTPA is conducted and presented in the next sections

O-D Source cluster Mapping – Jharkhand's internal consumption

Jharkhand to Jharkhand total Rail Despatch in FY22 = 13.07 Million Tonnes



Major Coal Consuming Districts of Jharkhand: 2030 (Estimated)



Generated from eOffice by N RAJESWARA RAO, MOC-S

Expected Load	d from Jharkhar	nd to Jharkhan states on th	d main trunk lii is line)	NES (Excluding)	load from other
Jharkhand Coal De	emand 2022 ~ 48	.91 MTPA	Jharkhand Coal I	Demand 2030	~ 63.91 MTPA
Rail Supply by Jhark	chand 2022 ~ 13.0	7 MTPA	Rail Supply by J	Iharkhand 2030) ~ 42 MTPA
	FY22			FY30	
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030
Mcckluskieganj	Barkakana	2051958	1.46	5102419	3.63
Khalari	Barkakana	2746718	1.95	6830014	4.86
Ray	Barkakana	3530606	2.51	8779239	6.25
Patratu	Barkakana	4516927	3.21	11508557	8.19
Barkakana	Gumia	2526981	1.80	6616789	4.71
Barkakana	Muri	1206156	0.86	3051139	2.17
Barkakana	Dumri Bihar	707591	0.50	1759502	1.25
Gumia	Tenughat	4885016	3.48	8448380	6.01
Gumia	Chandrapura	1012059	0.72	2262631	1.61
Jarangdih	Gumia	9943873	7.08	19531855	13.90
Muri	Adityapur	2335162	1.66	3858819	2.75
Adityapur	ΤΑΤΑ	2621867	1.87	4332593	3.08
Phusro	Purulia	1206156	0.86	3051139	2.17
Purulia	Adityapur	1297858	0.92	3330652	2.37

Saraikela-Kharsawan (NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46 Thermal

²⁵²⁸⁹ O-D Source cluster Mapping – Significant increase in Jharkhand's internal consumption

All figures in million tonnes

Name of TPS	Utility	North Karanpura	South Karanpura	Other CCL	Captive	BCCL	Total Jharkhand	Others (Incl Imports)	Total Coal Consumed FY22	Estimated Coal Consumption (FY30)	Supply from NK 2030	Supply from SK 2030	Supply from S CCL others 2030	Supply from Captive 2030	ⁿ Supply from BCCL 2030	Jharkhand's Supply in FY30	Others
ADHUNIK POWER & NATURAL RESOURCES LTD.	ADHUNIK	1.0	0.2	0.3	0.0	0.0	1.6	1.0	2.5	2.8	1.8	0.3	0.6	0.0	0.0	2.8	0.0
BOKARO	DVC	0.0	0.0	2.3	0.0	0.0	2.4	0.0	1.7	2.2	0.0	0.0	2.2	0.0	0.0	2.2	0.0
CHANDRAPURA	DVC	0.1	0.0	2.2	0.0	0.0	2.3	0.1	2.3	2.3	0.1	0.0	2.1	0.0	0.2	2.3	0.0
KODERMA	DVC	0.1	0.0	3.0	0.0	0.9	4.0	0.2	4.2	4.6	0.1	0.0	2.4	0.0	1.8	4.3	0.3
MAITHON RIGHT BANK TPP	MAITHON POWER LIMITED	0.9	0.7	0.7	0.0	1.6	3.9	0.7	4.6	4.8	0.8	0.6	0.6	0.0	1.8	3.8	0.0
JOJOBERA	TATA POWER	0.6	0.1	0.3	0.0	0.0	0.9	1.7	2.5	2.8	1.7	0.2	0.7	0.0	0.0	2.6	0.3
TENUGHAT TPS	TENUGHAT VIDHYUT NIGAM LTD	- 0.7	0.0	0.4	0.0	0.0	1.1	0.2	1.3	2.3	2.0	0.0	0.3	0.0	0.0	2.3	0.0
North Karanpura STPP Patratu STPP	NTPC PVUNL									0.0 0.0	9.6 0.6	0.0 0.0	0.0 0.0	0.0 11.0	0.0 0.0	9.6 11.6	0.0 0.0
Total		3.5	0.9	9.2	0.0	2.5	16.1	3.8	19.3	21.6	16.7	1.1	8.8	11.0	3.8	41.3	0.6

• 2 Under-Construction power plants namely North Karanpura STPP (NTPC) and Patratu STPP (PVUNL) to consume ~9.6 MT and ~11.6 MT of Coal. While for North Karanpura which letter of assurance are in place with CCL, Patratu STPP is expected to source from Banhardi captive mine with the mine transferred to PVUNL vide deed of adherence signed on 02.06.2017.

• From the overall increase in demand from power sector in Jharkhand, majority will be tatered by mines of CCL. Some quantities being sourced by BCCL due to active FSAs. ECL Generated frish exprected to active FSA Moto-binadings Established in the supply 4.0.19 MMT to Tata Power (Jojobera) due to active FSA

O-D Source cluster Mapping – Jharkhand to Uttar Pradesh



		UP Coal Den	nand 2022 ~ 87 MTP/		UP Coal Der	nand 2030 ~ 11	4 MTPA
		Rail Supply by Jha	rkhand 2022 ~ 16 MT	PA F	Rail Supply by Jl	harkhand 2030 ^	⁻ 56 MTPA
Dadri	Billi, Gaya, Varanasi		FY22			FY30	
Aligarh		From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030
		Phulbasia	Tori	6306199	4.49	15738143	11.20
	Varanasi	Patratu	Tori	808752	0.58	2231433	1.59
		Tori	Garhwa	15322126	10.90	30899567	21.99
		Garwa	Pandit Deen Dayal	11442236	8.14	22176826	15.78
Lalitpur		Garwa	Billi	3931261	2.80	8864894	6.31
		Pandit Deen Dayal	Varanasi	12167650	8.66	23604864	16.80
	a the Bank	Pandit Deen Dayal	Unchdih	24290	0.02	59639	0.04
		Pandit Deen Dayal	Manikpur	29973	0.02	97376	0.07
		Varanasi	Prayagraj	8990965	6.40	15784178	11.23
		Prayagraj	Kanpur Goods	8990965	6.40	15784178	11.23
		Kanpur Goods	Shikohabad	8990965	6.40	15784178	11.23
		Shikohabad	Dadri	7251123	5.16	11285150	8.03
		Varanasi	Lucknow	3461454	2.46	8745856	6.22
		Shikohabad	Harduaganj	1739842	1.24	4499028	3.20
		Billi	Chunar	3931261	2.80	8864894	6.31
Major Coal Consuming Dis	tricts of UP: 2030 (Estimated)	Chunar	Prayagraj	2593516	1.85	7179260	5.11
,		Chunar	Unchdih	1337745	0.95	1685634	1.20
		Prayagraj	Manikpur	2437400	1.73	6791061	4.83
>15 MTPA Coal Consumption	Jhansi, Sonbhadra	Manikpur	Upaipura	2467373	1.76	6888437	4.90
		Lucknow	Pt Ram prasad bismil	2471313	1.76	6283764	4.47
10-15 MTPA Coal Consumpti	on Bulandsahar, Kanpur	Jarangdih	Chandrapura	255707	0.18	422552	0.30
	Prayagraj, Rae Bareli, Lucknow,	Chandrapura	Gomoh	593847	0.42	981322	0.70
5-10 MTPA Coal Consumption	n Shahjahanpur, Ambedkar Nagar,	Gomoh	Gaya	897276	0.64	1967116	1.40
	Gorakhpur	Ranchi Road	Gaya	303430	0.22	985794	0.70
	Ghaziabad, Hapur, Gautam Buddha	Koderma	Gaya	927249	0.66	2064492	1.47
1-5 MIPA Coal Consumption	Nagar, Aligarh, Agra, Kushinagar, Gonda	Hazaribagh	Gaya	137197	0.10	445732	0.32
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Expected Load from Jharkhand to Uttar Pradesh main trunk lines (Excluding load from

other states on this line)

²⁵²⁸⁹⁷O²O²Source cluster Mapping – Significant increase in Jharkhand's supply to Uttar Pradesh (1/2)

All figures in million tonnes

Name of TPS	Utility	North Karanpura	South Karanpura	Other CCL	Captive	BCCL	Total Jharkhand	Others (Incl Imports)	Total Coal Consumed FY22	Estimated Coal Consumption (FY30)	Supply from NK 2030	Supply from SK 2030	Supply from S CCL others 2030	Supply from Captive 2030	Supply from BCCL 2030	Jharkhand's Supply in FY30	Others
BARKHERA	Bajaj Energy Limited	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.2	0.0	0.0	0.0	0.0	0.2	0.2
KHAMBHAR KHERA	Bajaj Energy Limited	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.1	0.2
KUNDARKI	Bajaj Energy Limited	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.1	0.2
MAQSOODAP UR	, Bajaj Energy Limited	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.1	0.2
UTRAULA	Bajaj Energy Limited	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.2	0.0	0.0	0.0	0.0	0.2	0.1
LALITPUR	LALITPUR POWER GENERATI ON COMPANY LIMITED	2.3	0.1	0.3	0.0	0.0	2.7	3.2	5.9	5.9	2.3	0.1	0.3	0.0	0.0	2.7	3.2
ANPARA 'C' TPS	LANCO ANPARA POWER LIMITED	0.0	0.0	0.0	0.0	0.0	0.0	5.2	5.2	5.5	0.0	0.0	0.0	0.0	0.0	0.0	5.5
MEJA TPP	URJA URJA NIGAM PRIVATE LIMITED (NTPC-JV)	1.3	0.0	0.2	0.0	0.0	1.5	3.5	5.0 119	5.0	1.5	0.0	0.2	0.0	0.0	1.8	3.3

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²⁵²⁸⁹⁷O²O²Source cluster Mapping – Significant increase in Jharkhand's supply to Uttar Pradesh (2/2)

All figures in million tonnes

Name of TPS	Utility	North Karanpura	South Karanpura	Other CCL	Captive	BCCL	Total Jharkhand	Others (Incl Imports)	Total Coal Consumed FY22	Estimated Coal Consumption (FY30)	Supply from NK 2030	Supply from SK 2030	Supply from S CCL others 2030	upply from Captive 2030	Supply from BCCL 2030	Jharkhand's Supply in FY30	Others
DADRI	NTPC LTD.	0.6	0.0	0.0	0.0	0.2	0.8	2.9	3.7	6.6	4.4	0.0	0.2	0.0	0.0	4.6	2.0
SINGRAULI	NTPC LTD.	0.0	0.0	0.0	0.0	0.0	0.0	9.4	9.4	10.8	0.0	0.0	0.0	0.0	0.0	0.0	10.8
RIHAND FEROZE	NTPC LTD.	0.0	0.0	0.0	0.0	0.0	0.0	13.5	13.5	15.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0
GANDHI	NTPC LTD.	3.0	0.0	0.3	2.0	1.0	6.3	0.0	5.5	5.5	3.2	0.0	0.4	2.0	0.0	5.5	0.0
UNCHAHAR																	
IANDA	NIPC LID. PRAYAGR	2.5	0.2	0.7	2.0	0.7	6.0	0.0	5.5	6.1	0.0	0.0	0.0	6.1	0.0	6.1	0.0
PRAYAGRAJ TPS	AJ POWER GENERATI ON	0.2	0.0	0.0	0.0	0.0	0.2	7.1	7.2	7.4	0.5	0.0	0.0	0.0	0.0	0.5	7.0
ROSA TPP	ROSA POWER SUPPLY CO	2.7	0.7	0.1	0.0	0.0	3.5	0.1	3.7	4.3	3.3	0.9	0.1	0.0	0.0	4.3	0.0
ANPARA 'A' & 'B'	UPRVUNL	0.0	0.0	0.0	0.0	0.0	0.0	11.4	11.4	14.3	0.0	0.0	0.0	0.0	0.0	0.0	14.3
HARDUAGAN.	J UPRVUNL	0.7	0.0	0.0	0.0	0.4	1.2	0.1	1.3	2.7	0.0	0.0	0.0	2.7	0.0	2.7	0.0
OBRA	UPRVUNL	0.0	0.0	0.0	0.0	0.0	0.0	3.4	3.4	4.6	0.0	0.0	0.0	0.0	0.0	0.0	4.6
PARICHHA	UPRVUNL	0.9	0.0	0.0	0.0	0.7	1.7	1.0	2.7	3.7	0.0	0.0	0.0	0.0	1.9	1.9	1.8
Khurja SCTPP	THDC									4.3	0.0	0.0	0.0	0.0	0.0	0.0	4.3
Ghatampur	NUPPL									6.8	0.0	0.0	0.0	6.8	0.0	6.8	0.0
Jawaharpur STPP	UPRVUNL									3.4	0.0	0.0	0.0	3.4	0.0	3.4	0.0
Obra-C STPP	UPRVUNL									5.3	0.0	0.0	0.0	5.3	0.0	5.3	0.0
Panki TPS Extn.	UPRVUNL									2.7	0.0	0.0	0.0	2.7	0.0	2.7	0.0
Singrauli STPP III	NTPC LTD.									8.5	0.0	0.0	0.0	0.0	0.0	0.0	8.5
Meja -II STPP	NTPC LTD.									7.1	7.1	0.0	0.0	0.0	0.0	7.1	0.0
Total		14.1	1.0	1.8	4.0	2.9	23.9	61.8	182403	137.1	23.0	0.9	1.3	29.0	1.9	56.0	81.1

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O-D Source cluster Mapping – Jharkhand to Bihar



<u> </u>		this line	e)		
Bihar Coal Dema	nd 2022 ~ 29.98 M	ΙΤΡΑ	Bihar Coal D	emand 2030 ~ 39	0.17 MTPA
ail Supply by Jharkh	and 2022 ~ 13.78 N	ΊΤΡΑ	Rail Supply by	/ Jharkhand 2030 ^	⁻ 38 MTPA
	FY22			FY30	
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030
Phulbasia	Patratu	1828837	1.30	4647504	3.31
Patratu	Koderma	3814145	2.71	9721679	6.92
Koderma	Luckeesarai	2740433	1.95	7361385	5.24
Phusro	Chandrapura	833012	0.59	1959504	1.39
Chandrapura	Dhanbad	677737	0.48	1702916	1.21
Dhanbad	Madhupur	677737	0.48	1702916	1.21
Madhupur	Luckeesarai	677737	0.48	1702916	1.21
Luckeesarai	Mokama	3418171	2.43	9064301	6.45
Phulbasia	Tori	864906	0.62	2150684	1.53
Patratu	Tori	197627	0.14	574668	0.41
Tori	Garwa Rd	3829379	2.73	9605416	6.84
Garwa Rd	Nabinagar	3829379	2.73	9605416	6.84
Hazaribagh	Gaya	1949159	1.39	5204483	3.70
Chandrapura	Gaya	155274	0.11	256588	0.18
Gaya	Son nagar	2104434	1.50	5461072	3.89
Son Nagar	Nabinagar	493471	0.35	493471	0.35
Gaya	patna	1610963	1.15	4105736	2.92
Patna	Muzzaffarpur	5640351	4.01	14125251	10.05
1 86 n Nagar	Patna	4029388	2.87	10019515	7.13

²⁵²⁸⁹O-D Source cluster Mapping – Significant increase in Jharkhand's supply to Bihar

All figures in million tonnes

Name of TPS	Utility	North Karanpura	South Karanpura	Other CCL	Captive	BCCL	Total Jharkhand	Others (Incl Imports)	Total Coal Consumed FY22	Estimated Coal Consumption (FY30)	Supply from NK 2030	Supply from SK 2030	Supply from S CCL others 2030	Supply fron Captive 2030	ⁿ Supply from BCCL 2030	Jharkhand's Supply in FY30	Others
NABINAGAR- BRBCL	BHARATIYA RAIL BIJLEE (NTPC-JV)	3.6	0.1	0.6	0.0	0.0	4.3	0.0	3.9	4.5	3.8	0.2	0.5	0.0	0.0	4.5	0.0
KANTI BIJLEE UTPADAN NIGAM LIMITED	KANTI BIJLEE UTPADAN NIGAM	1.3	0.4	0.4	0.0	0.0	2.1	0.0	2.1	3.2	2.1	0.5	0.6	0.0	0.0	3.2	0.0
KAHALGAON SUPER	NTPC	0.0	0.0	0.0	0.0	0.7	0.7	11.2	11.8	13.4	0.0	0.0	0.0	0.0	0.0	0.0	13.4
BARH SUPER TPS	NTPC	1.6	0.4	1.0	0.0	2.3	5.3	0.4	5.7	9.9	6.9	0.0	0.0	3.0	0.0	9.9	0.0
BARAUNI	NTPC	0.2	0.1	0.1	0.9	0.0	1.2	0.4	1.5	3.5	0.0	0.0	0.0	3.5	0.0	3.5	0.0
NABINAGAR- NPGC	NPGC (NTPC-JV)	3.5	0.1	0.5	0.0	0.2	4.3	0.7	5.0	5.4	4.6	0.3	0.5	0.0	0.0	5.4	0.0
Barh STPP-I	NTPC									7.0	0.0	0.0	0.0	7.0	0.0	7.0	0.0
Buxar TPP	SJVN									5.2	5.2	0.0	0.0	0.0	0.0	5.2	0.0
Total		10.1	1.0	2.6	0.9	3.2	17.8	12.6	30.0	52.2	22.7	1.0	1.6	13.4	0.0	38.7	13.4

 2 Under-Construction power plants namely Barh STPP-I (NTPC) and Buxar TPP (PVUNL) to consume ~7 MT and ~5.2 MT of Coal. For Buxar TPP, allocated mine of CCL is Magadh-Amrapali vide letter of Assurance (LoA) for G9 to G14 grade coal issued by Central Coalfields Ltd. (CCL) on 10.12.2018. Coal may be supplied either from Amrapali coal block or Magadh coal block in the North Karanpura coalfield.

NTPC's Barauni plant has plans to source coal from Badam coal block (PRC: 3 MTPA) with balance quantity probable to be sourced from Pakri Barwadih coal block which NTPC has plans to use as a basket mine. Further, NTPC's Barh plant has plans to source from Chatti-Bariatu (PRC: 7 MTPA) and from CCL due to existing FSAs along with quantity from 122
 Pakri Barwadih being likely.
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Odisha to Punjab & Haryana total Rail Despatch in FY22 = 7.30 Million Tonnes Roop Nagar Jakhal • Chandrapura, Gaya, Barwala Rohtak Hazaribagh Rewari Alwar Tori, Garwa Rd, Son Nagar, Sultanpur Major Coal Consuming Districts of Punjab: 2030 (Estimated) 10-15 MTPA Coal Bhatinda Consumption 5-10 MTPA Coal Mansa, Fatehgarh Sahib, Rupnagar Consumption Amritsar, Tarn Taran, Ludhiana, 1-5 MTPA Coal Consumption Nawashahr Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05

Dh & Hr Coal Dam	$and 2022 \sim 22.01$	Sther States on the	sine)					
PD & Hr Coal Den	iana 2022 ** 33.01 ivi i	PA	Pb & Hr Coal Demand 2030 ~ 43.13 MTPA					
Rail Supply by Jhark	khand 2022 ~ 7.30 MT	PA	Rail Supply by Jharkhand 2030 ~ 33 MTPA					
	FY22			FY30				
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 203			
Patratu	Tori	1191616	0.85	3222162	2.29			
Tori	Garwa Rd	9318900	6.63	23431543	16.67			
Garwa Rd	Son Nagar	9318900	6.63	23431543	16.67			
Son Nagar	Varanasi (via DDU)	10279838	7.32	25459998	18.12			
Varanasi (via DDU)	Sultanpur	10279838	7.32	25459998	18.12			
Sultanpur	Lucknow	10279838	7.32	25459998	18.12			
Lucknow	Shahjhanpur	10279838	7.32	25459998	18.12			
Shahjhanpur	Bareilly Jn.	10279838	7.32	25459998	18.12			
Bareilly Jn.	Moradabad	10279838	7.32	25459998	18.12			
Moradabad	Saharanpur Jn	10279838	7.32	25459998	18.12			
Saharanpur Jn	Rajpura	6858441	4.88	16744261	11.92			
Rajpura	Dhuri	6858441	4.88	16744261	11.92			
Dhuri	Lehra Muhabbat	6858441	4.88	16744261	11.92			
Bermo	Chandrapura	668664	0.48	1104956	0.79			
Chandrapura	Gaya	684983	0.49	1131924	0.81			
Hazaribagh	Gaya	275954	0.20	896531	0.64			
Gaya	Son Nagar	960937	0.68	2028455	1.44			
Varanasi (via DDU)	Prayagraj	3419690	2.43	8138263	5.79			
Prayagraj	Kanpur Goods	3419690	2.43	8138263	5.79			
Kanpur Goods	Shikohabad	3419690	2.43	8138263	5.79			
Shikohabad	Ghaziabad	618792.88	0.44	1137958	0.81			
Ghaziabad	Rohtak	618792.88	0.44	1137958	0.81			
Rohtak	Jakhal	618792.88	0.44	1137958	0.81			
Shikohabad	Bharatpur	3337966	2.38	8335787	5.93			
Bharatpur	Alwar	3337966	2.38	8335787	5.93			
Alwar	Rewari	865803	0.62	2158368	1.54			
Shahjhanpur	Bareilly Jn.	3421397	2.43	8715737	6.20			
Bareilly Jn.	Moradabad	3421397	2.43	8715737	6.20			
W23 adabad	Saharanpur Jn	3421397	2.43	8715737	6.20			
🗛 Şaharanpur Jn	Rajpura	821560	0.58	2123864	1.51			

Expected Load from Odisha to Punjah & Harvana main trunk lines (Evoluting load from

²⁵²⁸⁹ O-D Source cluster Mapping – Significant increase in Jharkhand's supply to Punjab & Haryana

All figures in million tonnes

Name of TPS	Utility	North Karanpura	South Karanpura	Other CCL	Captive	BCCL	Total Jharkhand	Others (Incl Imports)	Total Coal Consumed	Estimated Coal Consumption	Supply from NK 2030	Supply from SK 2030	Supply from CCL others	Supply from Captive	Supply from BCCL 2030	Jharkhand's Supply in	Others
RAJPURA TPS	NABHA POWFR	0.3	0.0	0.0	0.0	0.0	0.3	5.1	FY22 5.4	(FY30) 5.4	1.8	0.0	2030 0.0	2030 0.0	0.0	FY30 1.8	3.6
GURU HARGOBIND TPP, LEHRA	PSPCL	0.3	0.0	0.0	0.0	0.4	0.7	0.6	1.3	4.2	0.0	0.0	0.0	4.2	0.0	4.2	0.0
MOHABAT GURU GOBIND SINGH TPP, ROPAR	PSPCL	0.3	0.0	0.0	0.0	0.0	0.3	0.9	1.2	3.9	2.5	0.0	0.0	1.4	0.0	3.9	0.0
GVK POWER (GOINDWALSAH IB) LTD.	PSPCL	1.1	0.0	0.0	0.0	0.0	1.1	0.2	1.3	2.6	2.6	0.0	0.0	0.0	0.0	2.6	0.0
SABO POWER LTD	TSPL	0.6	0.0	0.0	0.0	0.0	0.6	5.4	6.0	9.2	1.3	0.0	0.0	0.0	0.0	1.3	7.9
INDIRA GANDHI	ARAVALI POWER	0.1	0.0	0.0	0.0	0.0	0.2	4.5	4.7	6.9	4.6	0.0	0.0	0.0	0.0	4.6	2.3
RAJIV GANDHI TPP,Hissar	HPGCL	0.1	0.0	0.0	0.0	0.0	0.1	1.7	1.9	5.8	3.3	0.0	0.0	0.0	0.0	3.3	2.5
Chhotu Ram TPS,	HPGCL	1.0	0.0	0.0	0.0	0.3	1.3	0.5	1.8	2.9	2.8	0.0	0.0	0.0	0.1	2.9	0.0
PANIPAT	HPGCL	0.3	0.0	0.0	0.0	0.8	1.1	0.8	1.9	3.4	2.1	0.0	0.0	0.0	1.2	3.2	0.1
GANDHI TPP	POWER	1.7	0.0	0.0	0.0	1.1	2.8	1.9	4.7	5.6	5.2	0.0	0.0	0.0	0.0	5.2	0.4
Total		5.8	0.0	0.0	0.0	2.7	8.5	21.7	30.2	49.9	26.2	0.0	0.0	5.6	1.3	33.1	16.8

Punjab-Haryana cluster of power plants is likely to source additional coal from Jharkhand due to growth in plant performance and corresponding availability of coal at CCL which shall significantly result in higher PLF.

• PSPCL's captive block, Pachwara Central (PRC: 5.6 MTPA) is expected to supply to PSPCL's Guru Hargobind TPP, Lehra Mohabat and Guru Gobind Singh TPP, Ropar.

• In FY22, power plants in Punjab and Haryana sourced 100% of their supply from CCL from the North Karanpura coalfield which is expected to continue in FY30 due to significant Generated from coal production in the region MC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46 PM

O-D Source cluster Mapping – Jharkhand to West Bengal



		states on t	his line)				
West Bengal Coal D Rail Supply by Jharl	emand 2022 ~ 54.9 khand 2022 ~ 1.09 I	West Bengal Coal Demand 2030 ~ 71.81 MTPA Rail Supply by Jharkhand 2030 ~ 42 MTPA					
	FY22		FY30				
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030		
Khalari	Barkakana	232835	0.17	578970	0.41		
Barkakana	Muri	286874	0.20	745696	0.53		
Muri	Adityapur	286874	0.20	745696	0.53		
Adityapur	Tatanagar	286874	0.20	745696	0.53		
Tatanagar	Kharagpur	286874	0.20	745696	0.53		
Kharagpur	Durgachak	211523	0.15	531121	0.38		
Kharagpur	Kolaghat	514500	0.37	940261	0.67		
Bermo	Chandrapura Jn	439149	0.31	725686	0.52		
Chandrapura Jn	Mahuda	439149	0.31	725686	0.52		
Mahuda	Bankura	439149	0.31	725686	0.52		
Bankura	Kharagpur	439149	0.31	725686	0.52		
Bermo	Rajbera	54180	0.04	89532	0.06		
Rajbera	Bokaro	241595	0.17	399231	0.28		
1 B gkaro	Purulia	152941	0.11	252732	0.18		

Expected Load from Odisha to West Bengal main trunk lines (Excluding load from other

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²⁵²⁸⁹O-D Source cluster Mapping – Significant increase in Jharkhand's supply to West Bengal

All figures in million tonnes

		NI - utile	Carath				Tatal		Total Coal	Estimated Coal	C	6	Supply from	Supply fror	n _{comb} com	Jharkhand's	
Name of TPS	Utility	North Karanpura	South Karanpura	Other CCL	Captive	BCCL	Jharkhand	Imports)	Consumed	Consumption (FV30)	NK 2030	SUPPLY from SK 2030	CCL others	Captive 2030	BCCL 2030	Supply in	Others
Budge Budge									1122	(1150)			2000	2000		1150	
Generating		0.2	0.0	0.0	1.5	0.3	2.0	1.2	3.2	3.5	0.0	0.0	0.0	0.0	3.1	3.1	0.4
Station	CESC																
Southern																	
Generating		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.9
Station	CESC																
DURGAPUR	DVC	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0
MEJIA	DVC	0.0	0.0	0.0	0.0	6.2	6.3	3.4	9.7	12.4	0.0	0.0	0.0	3.0	6.2	9.2	3.2
DURGAPUR		0.0	0.0	0.0	0.0	0.5	0.6	3.6	11	5.4	0.0	0.0	0.0	0.0	1 8	1.8	3.6
STEEL	DVC	0.0	0.0	0.0	0.0	0.5	0.0	5.0	4.1	5.4	0.0	0.0	0.0	0.0	1.0	1.0	5.0
RAGHUNATHPU	J	0.0	0.0	0.2	0.0	3.0	32	0.8	39	6.2	0.0	0.0	0.0	3.0	3.0	6.0	03
R	DVC	0.0	0.0	0.2	0.0	5.0	5.2	0.0	5.5	0.2	0.0	0.0	0.0	5.0	5.0	0.0	0.0
DURGAPUR																	
PROJECTS		0.0	0.0	0.0	0.5	0.6	1.1	0.7	1.8	3.1	0.0	0.0	0.0	0.0	0.8	0.8	2.3
POWER	DDI																
STATION	DPL																
HALDIA ENERGY	Y HALDIA	0.3	0.0	0.0	0.0	0.0	0.4	2.6	2.9	3.3	0.0	0.0	0.0	0.0	0.0	0.0	3.3
LIMITED	ENERGY																
FARAKKA SUPER	R NTPC	0.0	0.0	0.0	0.0	0.3	0.3	7.8	8.1	11.0	0.0	0.0	0.0	0.0	0.0	0.0	11.0
KOLAGHAT	WBPDCL	0.0	0.0	0.3	0.2	0.4	0.9	2.5	3.4	8.0	0.0	0.0	0.0	4.0	2.0	6.0	2.0
SAGARDIGHI	WBPDCL	0.0	0.0	0.0	6.7	0.5	7.2	0.1	7.3	7.9	0.0	0.0	0.0	4.6	1.6	6.2	1.6
BANDEL	WBPDCL	0.0	0.0	0.0	0.2	0.0	0.2	1.1	1.4	2.1	0.0	0.0	0.0	1.1	0.5	1.6	0.5
		0.0	0.0	0.1	0.3	1.0	1.4	1.3	2.8	2.9	0.0	0.0	0.0	1.4	0.7	2.1	0.7
SANTALDIH TP:		0.0	0.0	0.1	2.2	0.6	2.0	1.0	E 2	E 2	0.0	0.0	0.0	2.1	1.2	2.5	1 7
Sagardighi TDD	VVDPDCL	0.0	0.0	0.1	5.2	0.0	5.9	1.5	5.2	5.5	0.0	0.0	0.0	2.4	1.2	5.0	1.7
Ph-III	WRPDCI									3.1	0.0	0.0	0.0	1.5	0.8	2.3	0.8
Total		0.5	0.0	0.7	12.7	13.5	27.5	26.7	54.2	76.8	0.0	0.0	0.0	21.0	21.6	42.6	34.2

• Power plants in West Bengal sourced ~1.3 MT from CCL in FY22. BCCL supplied major quantities to Mejia plant (DVC) and Raghunathpur plant (DVC) in FY22.

• For FY30, plants in West Bengal are not likely to source coal from CCL given the growth of coal production in ECL & BCCL. Another source of major coal traffic shall be witnessed due to growth in captive blocks' production majorly from WBPDCL's in the Pakur region 12thers include majorly ECL with some minor quantities from MCL due to standing FSAs.

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O-D Source cluster Mapping – Jharkhand to Chhattisgarh

Jharkhand to Chhattisgarh total Rail Despatch in FY22 = 0.24 Million Tonnes



Major Coal Consuming Districts of Chhattisgarh: 2030 (Estimated)

>15 MTPA Coal Consumption Raipur, Raigarh, Durg

5-10 MTPA Coal Consumption Korba, Bilaspur

 1-5 MTPA Coal Consumption
 Janjgir-Champa, Bijapur-Dantewada

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Expected Load from Jh	arkhand to Chhattis states on	garh main trui his line)	nk lines (Exc	cluding load from other
Chhattisgarh's Coal Demand	2022 ~ 124.47 MTPA	Chhattisgarh's (Coal Demand	1 2030 ~ 162.64 MTPA
Rail Supply by Jhanrkhand 2	022 ~ 0.24 MTPA	Rail Supply	by Jharkhan	d 2030 ~ 0 MTPA
FY22			FYS	30
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic Rakes / (Tonnes Day) 2030 2030
Tori	Ranchi	208323	0.15	Shall be
Ranchi	Bondamunda	208323	0.15	catered by
Bondamunda	Jharsuguda	208323	0.15	JLCL.
Jharsuguda	Raigarh	77874	0.06	No Traffic
Raigarh	Champa	130450	0.09	envisaged
Champa	Bilaspur	77874	0.06	Jharkhand to
Bilaspur	Badri	77874	0.06	this state in
Badri	Raipur	77874	0.06	FY30

- Major Consumers in Chhattisgarh are ACC Bhatapara plant, Sipat STPS, NTPC Sail, Raipur Energen, KSK Mahanadi, DB power, RKM Energen, Korba STPS, BALCO, Lara TPS, Jindal Steel and Power Ltd, Raigarh Energy
- Major consumer of coal from Jharkhand are Raipur Energen, Raigarh Power & RKM Powergen.

O-D Source cluster Mapping – Jharkhand to Madhya Pradesh



Expected Load from Jharkhand to Madhya Pradesh main trunk lines (Excluding load from other states on this line)									
MP's Coal Demand 20 Rail Supply by Jharkhand 2	022 ~ 84.33 MTPA 2022 ~ 1.15 MTPA	MP's Coal Demand 2030 ~ 110.20 MTPA Rail Supply by Jharkhand 2030 ~ 0 MTPA							
FY22			FYS	30					
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic Rakes / (Tonnes Day) 2030 2030					
Gumia	Barka Kana	19352	0.01						
Barka Kana	Patratu	19352	0.01						
Phulbasa	Tori	701755	0.50	Shall be catered					
Patratu	Tori	848894	0.60	by NCL & SECL.					
Khalari	Tori	932183	0.66	No Traffic envisaged from					
Tori	Garwa Rd Jn	1534981	1.09	Jharkhand to this state in					
Garwa Rd Jn	Billi	1534981	1.09	FY30					
Billi	Katni	1534981	1.09						
Katni	NTPC Gadwara	1534981	1.09						

Major جهومsumers include NTPC Gadarwara, Jaypee Bina Thermal, Mahan Energy Ltd. and Jaypee Nigri.

O-D Source cluster Mapping – Jharkhand to Tamil Nadu



Expected Load 1	rom Jharkhand t	this line	trunk lines (Exci e)	uding load from	other states on				
TN Coal Deman	d 2022 ~ 50.03 MT	AP Coal Den	AP Coal Demand 2030 ~ 65.37 MTPA						
Rail Supply by Jhark	hand 2022 ~ 0.13 N	Rail Supply by	Jharkhand 203	0 ~ 0 MTPA					
	FY22		FY30						
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030				
Patratu	Muri	33599	0.02						
Muri	Chandil	33599	0.02						
Chandil	Sini	33599	0.02						
Sini	Bisra	33599	0.02						
Jharsuguda Rd	Sambalpur	33599	0.02						
Sambalpur	Titlagarh	33599	0.02	Shall be	catered by				
Titlagarh	Lanjigarh Rd	33599	0.02	SCCL & M	ICL (through				
Lanjigarh Rd	Therubali	33599	0.02	coastal	shipping)				
Therubali	Vizianagram Jn	33599	0.02	No Traffic	: envisaged				
Vizianagram Jn	Duvadda	33599	0.02	from Jhark	hand to this				
Duvadda	Samalkot Jn	33599	0.02	state	in FY30				
Samalkot Jn	Vijayawada Jn	33599	0.02						
Vijayawada Jn	Chirala	33599	0.02						
Chirala	Venkatachalam	33599	0.02						
Venkatachalam	Gudur	33599	0.02						
129 Gudur	Tiruvottiyur	33599	0.02						

O-D Source cluster Mapping – Jharkhand to Gujarat



Expected Load from Jha	rkhand to Gujarat on th	main trunk line	S (Excluding	load from other states				
Gujarat's Coal Demand 20	22 ~ 30 MTPA	Gujarat's Co	Gujarat's Coal Demand 2030 ~ 39 MTPA					
Rail Supply by Jharkhand 202	2 ~ 0.43 MTPA	Rail Supply by	Jharkhand	2030 ~ 0.56 MTPA				
FY22			FY3	30				
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	TrafficRakes /(TonnesDay) 20302030				
Tori	Garhwa	429204	0.31					
Garhwa	Billi	429204	0.31					
Billi	Katni	429204	0.31	Shall be catered				
Katni	Bina	429204	0.31	by SECL & MCL (through coastal				
Bina	Bhopal	429204	0.31	snipping)				
Bhopal	Maksi	429204	0.31	No Traffic envisaged from				
Maksi	Ujjain	429204	0.31	Jharkhand to				
Ujjain	Nagda	429204	0.31	this state in FY30				
Nagda	Ratlam	429204	0.31					
Ratlam 130	Anand	429204	0.31					

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O-D Source cluster Mapping – Jharkhand to Assam

Jharkhand to Assam total Rail Despatch in FY22 = 0.33 Million Tonnes



Expected Load from Jharkhand to Assam main trunk lines (Excluding load from other states on this line)						
Rail Supply by Jharkh	nand 2022 ~ 0.33 N FY22	Rail Supply by	Rail Supply by Odisha 2030 ~ 0.44 MTPA FY 30			
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030 Rakes / Day 2030		
Khalari	Gumia	94416	0.07			
Gumia	Chandrapura	333773	0.24			
Chandrapura	Kusunda	337524	0.24	Traffic to remain like		
Kusunda	Asansol	337524	0.24	FY22. Small supplies to		
Asansol	Sainthia	337524	0.24	Assam would continue as these players would prefer		
Sainthia	Nalhati	337524	0.24	CCL's coal		
Nalhati	NJP	337524	0.24			
NJP	Bongaigaon	337524	0.24			

Major Consumer in Assam is Bongaigon Thermal Power Plant

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²⁵²⁸⁹⁷CCL³Would need to push certain volumes in order to match the production levels

Figures in million tonnes

Destination State	North Karanpura CF	South Karanpura CF	East & West Bokaro and Ramgarh CF	Total CCL		
Jharkhand	22.45	1.88	11.68	36.01		
Bihar	22.73	1.02	2.14	25.89		
Uttar Pradesh	24.72	1.19	1.77	27.69		
Punjab & Haryana	30.08	1.25	1.37	32.70		
Total for 2030	99.97	5.35	16.96	122.38		
Dispatch Plan for CCL	115	13	44	171		
Identified Potential Gap	15.03	7.65	27.04	48.62		
Assuming all plants sourcing from CCL run at 95% PLF (optimistic scenario) & additional demand from those plants in these states are sourced from CCL				28.83		
E-auction Sales Rail Mode @50% of 10% of Long-term rail mode commitment for FY30				~ 5		
Remaining Potential Gap		14.79				
A proactive marketing strategy needs to be articulated by the marketing team to further push surplus production volumes from CCL. Strict competition from captive &						

commercial mines as well as CIL's other subsidiaries expected.

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Analyzing Evacuation Capacity for Jharkhand (CCL)

^{2528978/2023}, CPIAM Realistic (achievable) evacuation plan for NK CF



Mine/Project	PRC (MTPA)	FY30 (MTPA)	Rail Mode (75% MT)	Rakes/Day Required	Connected Sidings and Capacity (r/d)
Magadh OCP	51	49	37	26.25	Balumath – 5 Phulbasia – 8 Bukru – 3
Amrapali OCP	25	25	19	13.39	Shivpur – 16 Piparwar W – 2
Ashok Expn OCP	20	5	4	2.68	Bachra – 8 RCM – 6 Rajdhar – 5
Sanghamitra OCP	20	14	11	7.50	Phulbasia & Bukru Sanghamitra Siding - 4
Chandragupta OCP	15	8	6	4.29	Phulbasia & Shivpur
Rohini Karketta OCP	10	5	4	2.68	Dakra – 2
KDH	4.5	3	2	1.61	KDH – 4
Others	8.5	6	5	3.21	Misc.
Total North Karanpura	154	115	86	61.61	63 (~88 MTPA)

While it is estimated that ~86 MTPA or ~62 Rakes/Day is to be despatched via rail from North-Karanpura Area, it is estimated that the cumulative capacity of existing sidings and upcoming KDH CHP would be sufficient to enable evacuation of 62 R/d or ~88 MTPA in FY30.



Whilst Magadh CHP's LoA/Wo has been terminated due to FC issues, Amrapali CHP is also facing multiple EC Issues. Once resolved, these

Gener Stee 0423 Destriktes Jour Rage Johna atau, Indiasd (RRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:46 Phorojects shall contribute further to evacuation capacity.

^{2528978/2023} (CPIAM Realistic (achievable) evacuation plan for East and West Bokaro CF



Mine/Project	PRC (MTPA)	FY30 (MTPA)	Rail Mode (75% MT)	Rakes/Day Required	Connected Sidings and Capacity (r/d)
Karo OCP	11	11	8.3	6	Kargali – 4 Konar – 4
Amlo-Dhori OCP	2.5	3	2.3	1.6	Dhori – 6
Konar OCP	8	8	6	4.3	Jarangdih – 5
Others	11.5	16	4.6	3.3	Jarangdih, Tarmi,
Total East Bokaro	33	38	21.1	15.1	19 r/d (~26 MTPA)
Tapin OCP	2.5	2.5	1.9	1.34	Charhi – 2
Kotre- Basantpur OCP	5	3	2.3	1.61	Kedla W – 4
Pundi OCP	5	2	1.5	1.07	Kuju - 5
Others	8.5	4.5	3.4	2.41	Chainpur, NR Siding
Total West Bokaro	21	8.2	9.0	6.4	15 r/d (~21 MTPA)

For both the Coalfields i.e., East Bokaro and West Bokaro, the total rake loading and evacuation capacity is sufficient to handle the evacuation from coalfields at 75% rail mode.

It shall also be noted that as there is surplus loading capacity, more rail evacuation can be envisaged from these two coalfields.

Achievable

Remaining evacuation via road mode is also feasible.

135her blocks include Govindpur Ph-II, Kathara, Jarangdih, Giridih, PMTarmi etc. for East Bokaro and Karma, Topa, etc. for West Bokaro

^{2528978/2023} (achievable) evacuation plan for South Karanpura and Ramgarh CF



					rake)			
North Urimari OCP	7.5	7.5	5.6	4.0	Saunda-6			
Others	5.5	5.5	4.1	2.9	Giddi & Burkunda			
Total South Karanpura	13	13	9.8	7.0				
Rajrappa OCP	3	3	2.25	1.6	Rajrappa – 2			
Total 3 3 2.25 1.6								
Total Ramgarh332.251.6For both the Coalfields i.e., South Karanpura & Ramgarh, the total rake loading and evacuation capacity is sufficient to handle the evacuation from coalfields at 75% rail mode.It shall also be noted that as there is surplus loading capacity, more								

Remaining evacuation via road mode is also reasible.

Other blocks include Sayal, Giddi, Sirka, Sangam, Religarha etc. for South Karanpura

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^{2528978/2023/CEIAM} of FMC projects of CCL

Name of the Project	Capacity (MTPA)	Contractor	Awarded Value (Rs Cr.)	Expenditure till date (Nov'22)	Financial Progress	Physical Progress	LOA issued	Site Handed over	Sch. Completion	Ant. Completion	Delay	Status
Magadh OCP CHP-SILO	20	HEC Ltd.	₹ 527.12									LOA Cancelled due to FC issues
Amrapali OCP CHP- SILO	12	L&T Ltd.	₹ 299.81									LOA Cancelled due to FC issues
Konar OCP CHP-SILO	5	Hamtek Technologi es India Pvt. Ltd.	₹212.00	₹ 0.00	0%		17-Mar- 22	10-Oct-22	30-Sep-24	30-Sep-24	0	Survey work started
North Urimari OCP CHP-SILO	7.5	L&T Ltd.	₹ 280.91	₹ 226.04	80%	87%	31-Dec- 20	25-Feb-21	25-Feb-23	30-Sep-23	217	FC for 11 Ha for rail connectivity awaited. Diversion of CTR ongoing. Hard rock being removed from 100mtr area both sides of Silo

^{2528978/2023/CPIAM} Evacuation Capacity Augmentation for coal transportation roads at CCL

		Length (Km)	Carriage Width (m)
	Road Projects already taken up Construction of Road from Honhe to Shivpur (Road from Coal Stock to WB No. 06)	4.6	10
	Road from Honhe to Shivpur Railway Siding by RCD, Govt. of Jharkhand	3.6	10
CCL	Proposed Road Projects Road from Manwatongri to WB No. 08 & 09 junction under Amrapali OCP of Amrapali-Chandragupta Area	2.5	10
	Road from Coal Stock to Binglat under Amrapali OCP	1.25	10
	Road from mines to Konar Railway Siding of AKK OCP under B&K Area	2	10

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CIL (CCL) blocks in Jharkhand – North Karanpura CF

#	Name of the Block	Exploration Status	#	Name of the Block	Exploration Status
1	Amrapali	Explored	13	Benti	Explored
2	Chandragupt	Explored	14	Piparwar Mangardaha	Explored
2	Conchroitre	, Eveloped	15	Churi	Explored
3	Sangnmitra	Explored	16	Bachara	Explored
4	Koyad Kishanpur South	Regionally Explored	17	Gonda	Explored
5	Magadh	Explored	18	Raham	Explored
6	Tetariakhar Pinderkom	Explored	19	Naiparam	Regionally Explored
7	Dhadhu East	Under Exploration	20	Chano Rikba	Explored
8	Deonad	Under Exploration	21	Rautpara A	Partly Explored
9	Ashok Karkata West	Under Exploration	22	Rautpara A	Partly Explored
10	Karkatta	Explored			
11	Purnadih	Explored			
12	Ashok	Explored	139		

Non-CIL blocks in Jharkhand – North Karanpura CF

#	Name of the Block	Exploration Status	#	Name of the Block	Exploration Status
1	Sasai	Explored	13	Ashok Karkatta Central	Explored
2	Brinda	Explored	14	Bundu	Explored
2			15	North of Piparwar Ph-II	Under Exploration
3	Dumri	Explored	16	Barwatoli	Unexplored
4	Kerandari	Explored	17	Mausingha	Unexplored
5	Chhati Bariatu	Explored	18	Kerendari-BC	Explored
6	Chhati Bariatu South	Explored	19	Pakri Barwadih	Explored
7	Seregarha	Explored	20	Badam	Explored
8	Ganeshpur	Explored	21	Badam Dipside	Under Exploration
2			22	Gondulpara	Explored
9	North Dhadhu	Explored	23	Moitra	Explored
10	Chitarpur	Explored	24	Babupara	Regionally Explored
11	Chakla	Explored	25	Rohne	Partly Explored
12	Mahuamilan	Explored	140 ²⁶	Dipside of Rohne Rautpara	Regionally Explored

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 **Proposed evacuation plan for North Karanpura CF**



Key Insights and Recommendations

#	Recommendation	Way Forward
	Shivpur-Kathautia new BG line is under construction for coal evacuation from North Karanpura CF towards Koderma	Focused approach to speed up ongoing works &
1	Doubling of Shivpur-Kathautia line should be taken up keeping in view future requirements of evacuation from this area	doubling of Shivpur-Kathautia may be explored. Indian Railways
2	Proposed Tori-Chatra is expected to join Chatra-Gaya line for coal evacuation to northern India from the coalfield of North Karanpura. From Gaya, coal traffic may be diverted to the planned extension of Dedicated Freight Corridor (DFC) line for ease of coal evacuation	Expediting of commissioning lines of Tori-Chatra, Chatra-Gaya and Gaya-Sonenager DFC line. Indian Railways
3	Automatic Signaling may be proposed across all major rail sections in the vicinity of North Karanpura CF	Indian Railways (ECR)
	Additional line should be planned to connect Non-CII. Blocks of Badam Dinside, Babupara, Dinside of Bohne	Production commencement plans to be finalized for
4	Rautpara, Rohne to Hazaribagh-Arigada line with a common Public Freight Terminal	aid in planning for additional FMC projects and BG rail line link to Hazaribagh – Arigada line
5	Y-Curves should be planned for lines from Magadh, Amrapali & Sanghamitra joining on the Tori-Shivpur line to facilitate coal traffic towards Kathautia.	Y-curves to be planned from major coal mines of CCL to facilitate coal traffic towards Kathautia.
6	Major junctions at Tori & Garhwa Road shall witness substantial coal traffic passing through these stations. Grade separator works (similar to Katni Grade Separator) or bypass works may be planned to ease congestions at	Additional works (such as Katni Grade Separator etc.) to be planned at Tori & Garhwa Road to ease traffic at
	junctions	junctions
7	Options for commissioning of Public Freight Terminals with facilities of mechanized loading of coal may be evaluated for providing rake loading services to non-CIL blocks to reduce road movement of coal from these regions	Exploration of Public Freight Terminals for mechanized coal loading and coal transport through rail for non- CIL blocks
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CIL (CCL) & Non-CIL blocks in Jharkhand – South Karanpura CF

#	Name of the Block	CIL/Non-CIL Block	Exploration Status	#	Name of the Block	CIL/Non-CIL Block	Exploration Status
1	Aswa	CIL (CCL)	Explored	13	Hindegir	CIL (CCL)	Explored
2	Urimari	CIL (CCL)	Explored	14	Jeevandhara	CIL (CCL)	Explored
-				15	Sirka & Sirka Southern Limb	CIL (CCL)	Explored
3	Asso. & Khas Karanpura	CIL (CCL)	Explored	16	Argada	CIL (CCL)	Explored
4	Gidi	CIL (CCL)	Explored	17	Tokisud Block II	Non-CIL	Explored
5	Hesalong	CIL (CCL)	Explored	18	Tokisud North	Non-CIL	Explored
6	Bhurkunda	CIL (CCL)	Explored	19	Patal East	Non-CIL	Explored
7	Central Saunda	CIL (CCL)	Explored	20	Binja	Non-CIL	Partly Explored
8	Sayal D	CIL (CCL)	Explored	21	Patratu	Non-CIL	Explored
q	Saunda D (SW)		Regionally Explored	22	Jainagar	Non-CIL	Partly Explored
5	Suanda D (SW)			23	Maurya	Non-CIL	Explored
10	Patratu South	CIL (CCL)	Regionally Explored				
11	Patratu South Extn.	CIL (CCL)	Regionally Explored				
12	Patratu ABC	CIL (CCL)	Explored	143			

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 **Proposed evacuation plan for South Karanpura CF**



Key Insights and Recommendations

#	Recommendation	Way Forward
1	Tripling of Barkakhana-Garhwa Road is under progress along with Hazaribagh-Arigada Surface Crossing. Y- connection between Kuju & Ranchi Rd, surface crossing at Arigada and Rail over Rail flyover at Patratu have been proposed to further facilitate coal traffic in this region.	These ongoing works should be expedited
2	Proposed Tori-Chatra is expected to join Chatra-Gaya line for coal evacuation to northern India from the coalfield of North Karanpura. From Gaya, coal traffic may be diverted to the planned extension of Dedicated Freight Corridor (DFC) line for ease of coal evacuation	Expediting of commissioning lines of Tori-Chatra, Chatra-Gaya and Gaya-Sonenager DFC line. Indian Railways
3	Additional line should be planned to connect Hazaribagh and Barkakhana/Arigada as an alternate to Barkakhana/Arigada – Garhwa Road to reach Gaya via Koderma	Additional evacuation route for under exploration blocks in the region and Kuju area of West Bokaro coalfield, among others
4	Automatic Signaling may be proposed across all major rail sections in the vicinity of South Karanpura CF	Indian Railways (ECR)

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Proposed evacuation plan for East Bokaro, West Bokaro & Ramgarh CF



Key Insights and Recommendations

#	Recommendation	Way Forward
1	Tripling of Barkakhana-Garhwa Road is under progress along with Hazaribagh-Arigada Surface Crossing. Y- connection between Kuju & Ranchi Rd, surface crossing at Arigada and Rail over Rail flyover at Patratu have been proposed to further facilitate coal traffic in this region.	These ongoing works should be expedited
2	Additional line should be planned to connect Hazaribagh and Barkakhana/Arigada as an alternate to Barkakhana/Arigada – Garhwa Road to reach Gaya via Koderma	Additional evacuation route for under exploration blocks in the region and Kuju area of West Bokaro coalfield, among others
3	Eastern DFC's works may be expedited till Gomo to facilitate coal evacuation from all coalfields of CCL, BCCL & ECL	DFC works may be expedited till Gomo
4	Doubling of Bhojudih-Pradhan Khunta line should be taken up to facilitate BCCL's coal evacuation from the area	Doubling of Bhojudih-Pradhan Khunta line may be taken up
5	Options for commissioning of Public Freight Terminals with facilities of mechanized loading of coal may be evaluated for providing rake loading services to non-CIL blocks to reduce road movement of coal from these regions	Exploration of Public Freight Terminals for mechanized coal loading and coal transport through rail for non- CIL blocks
6	Automatic Signaling may be proposed across all major rail sections in the vicinity of East Bokaro, West Bokaro & Ramgarh CF	Indian Railways (ECR)

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Jharkhand (BCCL)

BCCL has ambitious production capacity expansion plans

Jharkhand

	Act	tuals 🔶				Projections -		All figures in n	nillion tonnes
Coal Supply from BCCL	FY22 Actual	FY23 Actual	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Barora	1.94	2.45	3.90	4.87	5.20	5.57	5.90	6.00	6.27
Block II	3.70	4.68	4.57	4.90	5.40	5.61	5.71	6.53	6.91
Govindpur	0.79	0.85	1.45	2.06	2.08	2.36	2.71	2.85	2.86
Katras	4.25	3.95	4.95	5.05	5.10	5.20	5.81	5.81	5.81
Sijua	3.43	3.76	4.12	4.29	4.31	4.78	4.78	4.78	4.99
Kusunda	5.05	6.13	5.70	5.78	5.78	5.80	5.80	6.00	6.00
Pootkee Balihari (PB)	0.23	0.17	0.25	0.26	0.27	0.27	0.27	0.27	0.27
Bastacolla	5.11	6.17	5.50	5.62	5.62	5.70	5.70	5.80	6.20
Lodna	3.81	6.05	4.57	4.58	4.60	4.63	4.83	4.83	4.90
Eastern Jharia	0.67	0.79	1.20	1.39	1.39	1.53	1.88	1.88	2.08
Chanch Victoria (CV)	0.94	0.63	0.90	1.90	1.95	2.05	2.69	2.85	2.85
Western Jharia (WJ)	0.59	0.55	0.90	2.30	3.30	3.50	3.92	4.41	4.86
Total BCCL (CIL) in Jharkhand	31	36	41	45	50	50	50	52	54

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BCCL has ambitious production capacity expansion plans

Jharkhand

All figures in million tonnes

Subsidiary	Area	Mine	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
BCCL	BARORA	Amal. Muraidih Phularitand Colliery	2.200	3.750	4.670	5.200	5.570	5.900	6.000	6.266
BCCL	BARORA	Damoda Colliery	0.500	0.150	0.200	0.000	0.000	0.000	0.000	0.000
BCCL	BLOCK II	Amalgmated Block-II OCP Mine	4.075	4.565	4.900	5.400	5.610	5.710	6.525	6.910
BCCL	GOVINDPUR	Jogidih	0.020	0.030	0.030	0.030	0.030	0.030	0.030	0.030
BCCL	GOVINDPUR	Kharkharee	0.010	0.040	0.120	0.120	0.450	0.600	0.600	0.600
BCCL	GOVINDPUR	Maheshpur	0.038	0.050	0.000	0.000	0.000	0.000	0.000	0.000
BCCL	GOVINDPUR	New Akashkinaree Colliery	0.532	0.720	0.880	1.330	1.130	1.130	1.130	1.130
BCCL	GOVINDPUR	Amal. Block-IV GVP	0.300	0.605	1.030	0.600	0.750	0.950	1.090	1.100
BCCL	KATRAS	Salanpur UG (discontd)	0.000	0.000	0.050	0.080	0.200	0.810	0.810	0.810
BCCL	KATRAS	AKWMC	4.100	4.650	4.700	4.720	4.700	4.600	4.600	4.600
BCCL	KATRAS	AGKCC	0.300	0.300	0.300	0.300	0.300	0.400	0.400	0.400
BCCL	SIJUA	Tetulmari colliery	0.250	0.820	0.650	0.530	0.530	0.530	0.530	0.530
BCCL	SIJUA	Loyabad UG	0.000	0.000	0.050	0.500	0.800	0.800	0.800	0.800
BCCL	SIJUA	Nichitpur Colliery	1.450	0.800	0.730	0.692	0.750	0.750	0.750	1.154
BCCL	SIJUA	Mudidih Colliery	0.400	0.850	1.100	1.000	1.000	1.000	1.000	0.000
BCCL	SIJUA	Basdeopur	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BCCL	SIJUA	Sendra Bansjora Colliery	1.100	0.500	0.380	0.292	0.350	0.350	0.350	0.754
BCCL	SIJUA	Kankanee Colliery	0.200	1.150	1.380	1.292	1.350	1.350	1.350	1.754
BCCL	KUSUNDA	Dhansar (ADI)	0.450	1.05 050	0.980	1.300	1.300	0.700	0.700	0.700

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BCCL has ambitious production capacity expansion plans

Jharkhand

All figures in million tonnes

Subsidiary	Area	Mine	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
BCCL	KUSUNDA	New Godhur Kusunda Colliery	1.000	1.100	1.500	0.000	0.000	0.000	0.000	0.000
BCCL	KUSUNDA	Ena Cilliery	2.200	2.600	2.600	2.600	2.600	2.600	2.600	2.600
BCCL	KUSUNDA	East Bassuriya Colliery	0.000	0.350	0.100	0.000	0.000	0.000	0.000	0.000
BCCL	KUSUNDA	Gondudih Khas Kusunda Colliery	2.000	0.600	0.600	1.880	1.900	2.500	2.700	2.700
BCCL	P.B.	P.B. Project Colliery	0.000	0.000	0.050	0.050	0.050	0.050	0.050	0.050
BCCL	P.B.	Gopalichuk Colliery	0.170	0.250	0.210	0.224	0.224	0.024	0.024	0.024
BCCL	P.B.	Hurriladih Colliery	0.000	0.000	0.000	0.000	0.000	0.200	0.200	0.200
BCCL	BASTACOLLA	Bastacolla Colliery	1.700	1.600	1.500	1.500	0.000	0.000	0.000	0.000
BCCL	BASTACOLLA	Kuya Colliery	2.650	2.600	2.600	2.200	2.800	3.250	3.250	3.450
BCCL	BASTACOLLA	Rajapur/South Jharia Colliery	1.200	1.300	1.000	1.200	1.900	2.450	2.550	2.750
BCCL	BASTACOLLA	Dobari Kuya Colliery	0.000	0.000	0.520	0.720	1.000	0.000	0.000	0.000
BCCL	LODNA	Amal. NT-ST Jeenagora.	5.050	4.100	3.800	3.820	3.902	4.102	4.102	4.302
BCCL	LODNA	Kujama	0.050	0.470	0.780	0.780	0.724	0.724	0.724	0.600
BCCL	E. Jharia	Bhowrah (N)	0.000	0.000	0.025	0.050	0.200	1.000	1.000	1.000
BCCL	E. Jharia	Amlabad UG (Discontd)	0.000	0.000	0.000	0.010	0.010	0.010	0.010	0.010
BCCL	E. Jharia	Bhowra (S)	0.400	0.670	0.750	0.320	0.170	0.170	0.170	0.170
BCCL	E. Jharia	ASP Colliery	0.430	0.530	0.615	1.010	1.150	0.700	0.700	0.900
BCCL	C. Victoria	Damagoria/Kalyaneshwari	0.000	0.100	0.700	0.700	0.800	1.239	1.800	1.800
BCCL	C. Victoria	Dahibari Basanti Mata Colliery	0.500	0.800	1.200	1.250	1.250	1.450	1.050	1.050
BCCL	W. Jharia	Moonidih Colliery	0.625	0.900	2.300	3.100	3.100	3.100	3.100	3.100
BCCL	W. Jharia	Kapuria Colliery	0.000	0.00051	0.000	0.200	0.400	0.821	1.305	1.756

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Origin – Destination Cluster Mapping for Jharkhand (BCCL & Non-CIL BLOCKS)

All figures in million tonnes



File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449)

O-D Source cluster Mapping – Jharkhand to Bihar (BCCL & Non CIL Blocks)



	FY22				FY30		
From	То	Traffic (Tonnes)	Rakes / Day	From	То	Traffic (Tonnes)	F
Gomoh	Garwha	239679	0.17	Gomoh	Garwha	313180	
Kusunda	Gomoh	73626	0.05	Kusunda	Gomoh	96205	
Bhaga	Gomoh	36874	0.03	Bhaga	Gomoh	48182	
Gomoh	Dhanbad	76201	0.05	Gomoh	Dhanbad	99569	
Dhanbad	Madhupur	1005019	0.72	Dhanbad	Madhupur	1313223	
1adhupur	Jasidih	2241643	1.60	Madhupur	Jasidih	2929077	
Jasidih	Bhagalpur	294907	0.21	Jasidih	Bhagalpur	385345	
Kusunda	Dhanbad	928818	0.66	Kusunda	Dhanbad	1213654	
Bhaga	Bhojudih	1584163	1.13	Bhaga	Bhojudih	2069971	
Bhojudih	Bhagalpur	365406	0.26	Bhojudih	Bhagalpur	477463	
Gomoh	Barh	333313	0.24	Gomoh	Barh	435528	
Jasidih	Barh	1946736	1.39	Jasidih	Barh	2543732	
Koderma	Teghra	0	0.00	Koderma	Teghra	3000000	
Koderma	Bhaktiyarpur	0	0.00	Koderma	Bhaktiyarpur	7435528	
aktivarnur	Barh	0	0.00	Bhaktivarpur	Barb	7435528	

Major Power consumers in Bihar currently taking coal from BCCL include NTPC Kahå형aon (Bhagalpur), NTPC Barh (Patna), and NTPC Nabinagar (Aurangabad).

O-D Source cluster Mapping – Jharkhand to West Bengal (BCCL & Non CIL Blocks)



Expected Lo	ad from Jha	arkhand t	o West. states	Benga	al main trun	Ik lines (Exclu	Iding load fr	om othei
	51/22					EV-24		
_	FY22	_				FY30		
From	То	Traffic (Tonnes)	Rakes / Day		From	То	Traffic (Tonnes)	Rakes / Day
Bhaga	Bhojudih	3991718	2.84		Bhaga	Bhojudih	5215839	3.71
Bhojudih	Damodar	3488275	2.48		Bhojudih	Damodar	4558007	3.24
Damodar	Andal	1392265	0.99		Damodar	Andal	1819224	1.29
Andal	Bhimgara	1320050	0.94		Andal	Bhimgara	1724863	1.23
Bhimgara	Barharwa	2737881	1.95		Bhimgara	Barharwa	3964163	2.82
Mahuda	Bhojudih	1976319	1.41		Mahuda	Bhojudih	2582387	1.84
Kusunda	Dhanbad	5003041	3.56		Kusunda	Dhanbad	8132634	5.79
Asansol	Bardhamann	4209231	3.00		Asansol	Bardhamann	7095390	5.05
Bhimgara	Ahmadpur	582169	0.41		Bhimgara	Ahmadpur	760699.9	0.54
Dhanbad	Asansol	4350164	3.10		Dhanbad	Asansol	7279543	5.18
Asansol	Andal	237218	0.17		Asansol	Andal	309964.5	0.22
Bhojudih	Adra	3695204	2.63		Bhojudih	Adra	4828394	3.44
Adra	Kolkata	421435	0.30		Adra	Kolkata	550674.4	0.39
Andal	Budge Budge	309433	0.22		Andal	Budge Budge	404325.3	0.29
Damodar	Bardhamann	2096010	1.49	1	Damodar	Bardhamann	2738783	1.95
Dhanbad	Bhojudih	585630	0.42		Dhanbad	Bhojudih	765222.3	0.54
Chandrapura	Kusunda	1075000	0.76		Chandrapura	Kusunda	3000000	2.13
Sainthia	Ahmadpur	2000000	1.42		Sainthia	Ahmadpur	3000000	2.13
Ahmadpur	Khana	2000000	1.42		Ahmadpur	Khana	3000000	2.13
155 Khana	Kolkata	2000000	1.42		Khana	Kolkata	3000000	2.13

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 2528978 2020 Devurce cluster Mapping –Jharkhand to Uttar Pradesh (BCCL & Non CIL Blocks)



xpected I	Load from .	Jharkhan	d to Utta	adesh main t	runk lines (I	Excluding loa	id fro
_	EV22	_			EV3(_
From	То	Traffic (Tonnes)	Rakes /	From	То	Traffic	Rake
Koderma	Deen Dayal Upadhaya	14318327	10.19	Koderma	Deen Dayal Upadhaya	37995942	27.0
een Dayal Joadhaya	Chunar	979692	0.70	Deen Dayal Upadhaya	Chunar	10940129	7.7
Chunar	Aligarh	533380	0.38	Chunar	Aligarh	1026949	0.7
Aligarh	Ghaziabad	164905	0.12	Aligarh	Ghaziabad	215476	0.1
Bhaga	Gomoh	993689	0.71	Bhaga	Gomoh	1298419	0.9
Kusunda	Gomoh	642306	0.46	Kusunda	Gomoh	839279	0.6
Dhanhad	Gomoh	95841	0.07	Dhanbad	Gomoh	125232	0.0
Aligarh	Chandausi	368/75	0.26	Aligarh	Chandausi	811473	0.5
Chunar	Pravagrai	409976	0.20	Chunar	Prayagraj	535701	0.3
een Dayal	Varanasi	13374971	9.52	Deen Dayal Upadhaya	Varanasi	27103292	19.2
Varanasi	Avodha	6164991	4.39	Varanasi	Ayodha	15868921	11.
Varanasi	Jhansi	717736	0.51	Varanasi	Jhansi	937841	0.6
Varanasi	Unchahar	6492244	4.62	Varanasi	Unchahar	10296531	7.3
Gomoh	Koderma	3318327	2.36	Gomoh	Koderma	4335942	3.0
Jasidih	Kiul	0	0.00	Jasidih	Kiul	660000	0.4
Kiul	Manpur	0	0.00	Kiul	Manpur	9660000	6.8
arwa Road	Son Nagar	0	0.00	Garwa Road	Son Nagar	6000000	4.2
SaintHia6	Etah	0	0.00	Sainthia	Etah	330000	0.2
Barharwa	Kanpur	0	0.00	Barharwa	Kanpur	9000000	6.4

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O-D Source cluster Mapping – Jharkhand to Chattisgarh (BCCL and Non CIL Blocks)



	states on this line)								
	FY22					FY30			
From	То	Traffic (Tonnes)	Rakes / Day		From	То	Traffic (Tonnes)	Rakes / Day	
Kusunda	Bhojudih	88299	0.06		Kusunda	Bhojudih	128483	0.09	
Bhojudih	Purulia	159912	0.11		Bhojudih	Purulia	232687	0.17	
Jharsuguda	Bilaspur	52832	0.04		Jharsuguda	Bilaspur	76875	0.05	
Bhaga	Bhojudih	23895	0.02		Bhaga	Bhojudih	34769	0.02	
Mahuda	Bhojudih	47718	0.03		Mahuda	Bhojudih	69434	0.05	
Jharsuguda	Naya Baradwar	110509	0.08		Jharsuguda	Naya Baradwar	160801	0.11	
Asansol	Purulia	3429	0.00		Asansol	Purulia	4990	0.00	
Purulia	Jharsuguda	163341	0.12		Purulia	Jharsuguda	237676	0.17	
Jharsuguda	Champa	52832	0.04		Jharsuguda	Champa	76875	0.05	
Champa	Bilaspur	52832	0.04		Champa	Bilaspur	76875	0.05	

Expected Load from Ibarkband to Chatticgarh main trunk lines (r.

 Major Power consumers in Chattisgarh taking coal from BCCL include NTPC Lara and NTPC Sipat.

The⁵⁷major coal consuming districts of Chattisgarh (i.e. Bilaspur and Raigarh)
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O-D Source cluster Mapping – Jharkhand to Punjab and Haryana (BCCL & Non CIL Blocks)



>15 MTPA Coal Consumption Bhatinda

Mansa, Fatehgarh Sahib, 5-10 MTPA Coal Consumption Rupnagar

Amritsar, Tarn Taran, Ludhiana, 1-5 MTPA Coal Consumption Nawashahr Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023

Expectec	l Load from	Jharkhar	nd to Har states	yana I on this	main trunk s line)	lines (Exclud	ing load fror	n other
-	FY22					FY3	0	
From	То	Traffic (Tonnes)	Rakes / Day		From	То	Traffic (Tonnes)	Rakes / Day
Kusunda	Gomoh	810068	0.58		Kusunda	Gomoh	1058488	0.75
Gomoh	Tundla	2293400	1.63		Gomoh	Tundla	2996706	2.13
Tundla	Bhiwani	1135751	0.81		Tundla	Bhiwani	1484046	1.06
Bhaga	Gomoh	452652	0.32		Bhaga	Gomoh	591465	0.42
Tundla	Panipat	568661	0.40		Tundla	Panipat	743050	0.53
Gomoh	Deen Dayal Upadhaya	726359	0.52		Gomoh	Deen Dayal Upadhaya	949108	0.68
Deen Dayal Unadhaya	Chunar	159298	0.11		Deen Dayal Upadhaya	Chunar	208149	0.15
Deen Dayal Upadhaya	Varanasi	567061	0.40		Deen Dayal Upadhaya	Varanasi	740959	0.53
Rajpura	Nangal Dam	157666	0.11		Rajpura	Nangal Dam	486017	0.35
Chunar	Bhatinda	159298	0.11		Chunar	Bhatinda	208149	0.15
Varanasi	Roza	567061	0.40		Varanasi	Roza	740959	0.53
Roza	Bhatinda	567061	0.40	r	Roza	Bhatinda	1020959	0.73
Barharwa	Roza	0	0.00		Barharwa	Roza	560000	0.40

- **Major Power consumers in Punjab taking coal from BCCL** include State Govt. operated plants at Ropar, Nangal Dam, Lehra Mohabbat, and Bhatinda
- Major Power consumers in Haryana taking coal from BCCL include NTPC Aravali
 ^{23 04:46 PM} and State Govt. operated plants at Panipat and Jhajjar.

O-D Source cluster Mapping – Jharkhand Internal Consumption (BCCL & Non CIL Blocks)



Expected L	oad for Jhar	khand's	main tru	nk line	S (Excluding	gload from othe	er states on t	this line)
	FY22	-			-	FY30		
From	То	Traffic (Tonnes)	Rakes / Day	_	From	То	Traffic (Tonnes)	Rakes / Day
Mahuda	Chandrapura	59050	0.04		Mahuda	Chandrapura	85923	0.06
Kusunda	Chandrapura	5546	0.00		Kusunda	Chandrapura	8070	0.01
Bhaga	Mahuda	91307	0.06		Bhaga	Mahuda	132860	0.09
Kusunda	Dhanbad	84279	0.06		Kusunda	Dhanbad	122634	0.09
Dhanbad	Asansol	103002	0.07		Dhanbad	Asansol	149877	0.11
Gomoh	Koderma	854310	0.61		Gomoh	Koderma	1243099	0.88
Mahuda	Gomoh	87647	0.06		Mahuda	Gomoh	127534	0.09
Kusunda	Gomoh	149028	0.11		Kusunda	Gomoh	216849	0.15
Asansol	Adityapur	19756	0.01		Asansol	Adityapur	28747	0.02

- Major consumers in Jharkhand taking coal from BCCL are DVC Maithon, Chandrapura, Koderma
- Presence of Private Players such as M/s Adhunik also operate thermal power plants around Jamshedpur.

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O-D Source cluster Mapping – Jharkhand to Odisha (BCCL & Non CIL Blocks)



Expected L	oad from Jh	arkhand ⁻	to Odisha on t	i main his line)	trunk line	es (Excluding lo	oad from oth	ier states
	FY22					FY30		
From	То	Traffic (Tonnes)	Rakes / Day		From	То	Traffic (Tonnes)	Rakes / Day
Chandil	Sambalpur	0	0		Chandil	Sambalpur	660000	0.47

- Major Coal consumers in Odisha taking coal from Non CIL Blocks include Hindalco Group (Aditya Aluminium and Hirakud Complex)
- The major coal consuming districts of Odisha are Jharsuguda, Angul and Jagpur.

Major Coal Consuming Districts of Odisha: 2030 (Estimated)

	>15 MTPA Coal Consumption	Jharsuguda, Angul, Jagpur, Jagatsinghpur
	10-15 MTPA Coal Consumption	Sundergarh, Sambalpur, Dhenkanal
	5-10 MTPA Coal Consumption	Cuttack
160	1-5 MTPA Coal Consumption	Koraput, Rayagada, Gagapati, Ganjam, Khordha, Puri, Bargarh, Balasore

O-D Source cluster Mapping – Jharkhand to Madhya Pradesh (BCCL & Non CIL Blocks)



				other stat	es on	adesh main 1 this line)	Lrunk lines	(Excluding lo	ad from
	-	FY22	-				FY30		-
	From	То	Traffic (Tonnes)	Rakes / Day		From	То	Traffic (Tonnes)	Rakes / Day
Ga	rhwa Road	New Katni	0	0		Garhwa Road	New Katni	1570000	1.12
•	Major	Coal consi	umers in	Madhya	a Pra	desh taking	coal from	Non CIL B	locks
•	The m	ajor coal ur.	Group (N consum	∕lahan A ing distr	lumii ⁻ ict c	nium)\ of Madhya	Pradesh is	Shahdol	and
•	The m Jabalpu Singrau coal be	ajor coal ur. uli in Madl earing bloc	Group (N consum nya Prade cks.	∕lahan A ing distr esh attrac	lumii rict c	nium)\ of Madhya ne highest tr	Pradesh is affic of coa	Shahdol	and n CIL

O-D Source cluster Mapping – Jharkhand to Maharashtra (BCCL & Non CIL Blocks)



Expected Load from Jharkhand to Maharashtra main trunk lines (Excluding load from other states on this line)								
	FY22					FY30)	
From	То	Traffic (Tonnes)	Rakes / Day		From	То	Traffic (Tonnes)	Rakes / Day
Garwa Road	New Katni	300000	0.213		Garwa Road	New Katni	330000	0.235
New Katni	Itarsi	300000	0.213		New Katni	Itarsi	330000	0.235
Itarsi	Bhusaval	300000	0.213		Itarsi	Bhusaval	330000	0.235
Bhusaval	Jalgaon	300000	0.213		Bhusaval	Jalgaon	330000	0.235
Jalgaon	Pachora	300000	0.213		Jalgaon	Pachora	330000	0.235
Pachora	Chalisgaon	300000	0.213		Pachora	Chalisgaon	330000	0.235
Chalisgaon	Manmad	300000	0.213		Chalisgaon	Manmad	330000	0.235
Manmad	Kalyan	300000	0.213		Manmad	Kalyan	330000	0.235
Kalyan	Vasco	300000	0.213	I	Kalyan	Vasco	330000	0.235

Major Coal Consuming Districts of Maharashtra: 2030 (Estimated)

	>15 MTPA Coal Consumption	Nagpur, Chandrapur & Bhandara
	10-15 MTPA Coal Consumption	Palghar/Thane
	5-10 MTPA Coal Consumption	Nashik
2 PM	1-5 MTPA Coal Consumption	Solapur, Pune, Raigad, Ahmednagar, Wardha & Akola

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449)

From

Sini

Sarla

Bobbili

Tenali

Gudur

O-D Source cluster Mapping – Jharkhand to Tamil Nadu (BCCL & Non CIL Blocks)



Load from Jharkhand to Tamil Nadu main trunk lines (Excluding load from other states on this line)								
FY22	-				FY30)		
То	Traffic (Tonnes)	Rakes / Day		From	То	Traffic (Tonnes)	Rakes / Day	
Sini	300000	0.213		Chandil	Sini	330000	0.235	
Rajkharsawan	300000	0.213		Sini	Rajkharsawan	330000	0.235	
Bondamunda	300000	0.213		Rajkharsawan	Bondamunda	330000	0.235	
Jharsuguda	300000	0.213		Bondamunda	Jharsuguda	330000	0.235	
Sarla	300000	0.213		Jharsuguda	Sarla	330000	0.235	
Bobbili	300000	0.213		Sarla	Bobbili	330000	0.235	
Vizianagaram	300000	0.213		Bobbili	Vizianagaram	330000	0.235	
Samalkot	300000	0.213		Vizianagaram	Samalkot	330000	0.235	
Nidadavolu	300000	0.213		Samalkot	Nidadavolu	330000	0.235	
Vijayawada	300000	0.213		Nidadavolu	Vijayawada	330000	0.235	
Krishna Canal	300000	0.213		Vijayawada	Krishna Canal	330000	0.235	
Tenali	300000	0.213		Krishna Canal	Tenali	330000	0.235	
Gudur	300000	0.213		Tenali	Gudur	330000	0.235	
Renigunta	300000	0.213		Gudur	Renigunta	330000	0.235	
Arrakkonam	300000	0.213		Renigunta	Arrakkonam	330000	0.235	
Katpadi	300000	0.213		Arrakkonam	Katpadi	330000	0.235	
Jolarpettai	300000	0.213		Katpadi	Jolarpettai	330001	0.235	
Magnesite	300000	0.213		Jolarpettai	Magnesite	330002	0.235	
Salem	300000	0.213		Magnesite	Salem	330003	0.235	

25289272023 Separce cluster Mapping File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) Inarkhand to Karnataka (BCCL & Non CIL Blocks)



cpected	Load from J	narknand	states	on th	a main trunk is line)	IINES (Exclud	ing load fr		
	FY22				FY30				
From	То	Traffic (Tonnes)	Rakes / Day		From	То	Traffic (Tonnes)		
Chandil	Sini	300000	0.213		Chandil	Sini	330000		
Sini	Rajkharsawan	300000	0.213		Sini	Rajkharsawan	330000		
kharsawan	Bondamunda	300000	0.213		Rajkharsawan	Bondamunda	330000		
ndamunda	Jharsuguda	300000	0.213		Bondamunda	Jharsuguda	330000		
arsuguda	Sarla	300000	0.213		Jharsuguda	Sarla	330000		
Sarla	Bobbili	300000	0.213		Sarla	Bobbili	330000		
Bobbili	Vizianagaram	300000	0.213		Bobbili	Vizianagaram	330000		
anagaram	Samalkot	300000	0.213		Vizianagaram	Samalkot	330000		
amalkot	Nidadavolu	300000	0.213		Samalkot	Nidadavolu	330000		
dadavolu	Vijayawada	300000	0.213		Nidadavolu	Vijayawada	330000		
ayawada	Krishna Canal	300000	0.213		Vijayawada	Krishna Canal	330000		
hna Canal	Guntur	300000	0.213		Krishna Canal	Guntur	330000		
Guntur	Dhone	300000	0.213		Guntur	Dhone	330000		
Dhone	Guntakal	300000	0.213		Dhone	Guntakal	330000		
iuntakal	Ballari	300000	0.213		Guntakal	Ballari	330000		
Ballarä	Tornagallu	300000	0.213		Ballari	Tornagallu	330000		

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load from other

Rakes /

Day

0.235

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5

Analyzing Evacuation Capacity for Jharkhand (BCCL)

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²⁵²⁸⁹Details of Infrastructure projects of BCCL (Railway siding, wharf wall etc.)

Name of the Project	Status	Length (km)	Contract Value (Rs Cr.)	Commissioning Date
NT-ST Siding #	Under Construction	10	112.6	
Renovation/strengthening of existing Railway Siding for 2.5 Mtpa Patherdih NLW Washery	Under Construction	7.29	90.0	2022
Renovation/strengthening of existing Railway Siding for 2.0 Mtpa Bhojudih NLW Washery	Under Construction	8.50	90.0	31.03.23
MAHESHPUR SILO RLS	Under Construction	7.705	82.5	05.10.24
Renovation/strengthening of existing Railway Siding for 5.0 Mtpa Patherdih NLW Washery	Under Construction	12.95	56	30.06.23
NL OC Extension of Siding	Under Construction	0.75	10.94	31.03.24
Dugdha Washery #	Envisaged		170.55	Presently on hold
Dahibari NLW washery #	Envisaged	7	107.5	Presently on hold
Tetulmari #	Envisaged		75.86	
Renovation/strengthening of existing Railway Siding for 2.5 Mtpa Moonidih Coking Coal Washery	Envisaged	4	50	2023
Sudamdih Siding No.5-Electrification	Envisaged	0.9	11.63	

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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Details of Infrastructure projects of BCCL (Coal Trunk Roads etc.)

Name of the Project	Nature of Road	Length (km)	Width (m)	Contract Value (Rs Cr.)	Completion	Status
Construction of Cement Concrete pavement road for coal transportation from 25 no. coal dump to patherdih coal washery through Parbad under Lodna Area	PQC	6.2	7.5	15.26	nil	
Construction of PQC road from South Tisra workshop to Jayrampur via CISF checkpost under Lodna Area	PQC	2.5	7	5.32	15%	Work in progress
Construction of PQC coal transportation road from GKKC coal dump to Indra chowk with both side drain via Shiv Mandir under Kusunda Area	PQC	1.7	7	2.93	5%	Work in progress
Construction of PQC Coal transportation road along with 2 Nos. of R.C.C Box culvert at (i) DBOCP & (ii) DOCP , of CV Area	PQC	1.913	7.5	3.39	3%	Work in progress
Construction of PCC Road, RCC Culvert and RCC Drain along both sides of the road at PCW under EWZ Area	PQC	1.1	7.2	4.37	15%	Work in progress
Construction of PQC coal transportation road from Nudkhurkee feeder breaker to KKC main siding under Block II Area of BCCL	PQC	2.7	7	4.78	35%	Work in progress
Construction of PQC coal transportation road from Muraidih entrance gate to Satabdi CISF check post under Barora Area	PQC	2.2	7	3.8	3%	Work in progress

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O-D Source cluster Mapping – Consolidated Coal Traffic from Jharkhand to all states (Incl. CIL and Non-CIL Blocks)

FY22 Actual and FY30 (Estimated) coal traffic in major sections for Despatch of coal from Jharkhand to various destinations

From	То	Traffic (MT): 2022	Rakes / Day: 2022	Traffic (MT): 2030	Rakes / Day: 2030	Increase in Coal Traffic (Rakes / Day)
Koderma	Barh	0.00	0.00	7.44	5.29	5.29
Demu	Barkakana	0.00	0.00	11.00	7.83	7.83
Koderma	Deen Dayal	15.04	10.71	38.95	27.71	17.01
Deen Dayal	Varanasi	13.94	9.92	27.84	19.81	9.89
Deen Dayal	Chunar	1.14	0.81	11.15	7.93	7.12
Varanasi	Ayodha	6.16	4.39	15.87	11.29	6.91
Varanasi	Unchahar	6.49	4.62	10.30	7.33	2.71
Gomoh	Koderma	3.51	2.49	9.95	7.08	4.59
Chandil	Jharsuguda	0.49	0.35	6.61	4.70	4.36
Garwa Road	New Katni	0.49	0.35	7.52	5.35	5.00
Dhanbad	Asansol	4.54	3.23	12.90	9.18	5.95
Tori	Garwa Rd	30.43	21.65	69.14	49.20	27.55
Patratu	Tori	3.05	2.17	8.16	5.81	3.64
Hazaribagh	Gaya	3.15	2.24	6.55	4.66	2.42
Varanasi	Prayagraj	12.41	8.83	23.92	17.02	8.19
Gumia	Chandrapura	10.28	7.32	20.48	14.57	7.26
Patna	Muzzaffarpur	5.64	4.01	14.13	10.06	6.04
Prayagraj	Kanpur Goods	12.41	8.83	23.92	17.02	8.19
Kanpur Goods	Shikohabad	12.41	8.83	23.92	17.02	8.19



²⁵²⁸⁹⁷Our key findings based on detailed analysis of railway traffic for major coal producing states (5/7)

		20	122			2030					Utilization
- 7	Sub-Section	Capacity	% Utilization	Ongoing Works	Passenger	Freight	Total	Capacity	% Utilization	Other Planned Works (New Energy/Other Corridors)	after of All planned works
	Sonnagar to Sasaram	168	135%	Nil	80	213	293	168	174%	Eastern DFC planned to cover Sonnagar-Sasaram- DDU section. Coal traffic	<100%
	Sasaram to Deen Dayal Upadhaya	150	152%	Nil	82	213	294	150	196%	could be diverted onto DFC network as per NRP 2020.	<100%
	Purulia to Chandil	110	100%	Chandil-Anara- Burnpur 3rd line in progress (DPR stage)	75	110	185	110	168%	Nil	168%
Ge	All numbers (Except Cap	Dacity utiliza	ation) represent averag 2อรุธุคาธุตรุสโรก includes	e two- cotheris/05/20	9 23 04:47 PM		1	Note: Capaci Ma	ty refers to Capacity of line wi intenance Block (MB)	th

²⁵²⁸⁹⁷Our key findings based on detailed analysis of railway traffic for major coal producing states (6/7)

	Sub-Section	20 Capacity	22 % Utilization	Ongoing Works	Passenger	2030 Freight	Total	Capacity	% Utilization	Other Planned Works (New Energy/Other Corridors)	Utilization after of All planned works
	Gaya to Sonnagar	134	110%	Nil	91	110	201	134	150%	Nil	150%
	Garhwa Road to Sonnagar	116	124%	3 rd Line in progress	34	150	183	156	117%	Nil	117%
	Tori to Barwadih	84	147%	Patratu-Garhwa RdSonnagar 3 rd line in progress	29	107	136	110	123%	Nil	123%
	Barwadih to Garhwa Road	78	175%	Patratu-Garhwa RdSonnagar 3 rd line in progress	39	139	178	118	151%	Nil	151%
Ge	All numbers (ner Mayotratfice in T	Except Cap	acity utiliza 88, PBE-SLAVAR	ation) represent averag 2ลรรคทธยรสโรค, includes	e two- cotheris/05/20	10 23 04:47 PM		1	Note: Capacit Mai	y refers to Capacity of line wi intenance Block (MB)	th

²⁵²⁸⁹⁷Our key findings based on detailed analysis of railway traffic for major coal producing states (7/7)

		20	22			2030				Other Planned Works	Utilization
	Sub-Section	Capacity	% Utilization	Ongoing Works	Passenger	Freight	Total	Capacity	% Utilization	(New Energy/Other Corridors)	after of All planned works
	Gomoh to Chandrapura	70	112%		41	55	96	70	137%		137%
	Gomoh to Koderma	94	121%	NUL	59	88	147	94	156%		156%
	Koderma to Bandhua	94	129%	NIL (as per ECR Line Capacity Statement FY2022)	59	95	155	94	164%	Nil	164%
	Bandhua to Manpur	94	112%	,	59	73	132	94	140%		140%
	Manpur to Gaya	154	138%		129	132	261	154	170%		170%
Gei	All numbers (ner Way traffice in T © 2022 Deloitte To	Except Cap	acity utiliza (8, PPGE-SCAVAR) J India LLP	ation) represent averag 2สรรคทธยรสโรก includes	e two- Cathers/05/202	11 23 04:47 PM		٦	Note: Capacit Mai	y refers to Capacity of line wi intenance Block (MB)	th

12

West Bengal

ECL has ambitious production capacity expansion plans

West Bengal	← Act	uals	•			Projections		All figures ir	n million tonnes
Coal Supply from ECL	FY22 Actual	FY23 Actual	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Deoghar/Saharjuri Coal Field	0.99	1.03	1.6	2.0	2.5	2.7	2.5	2.5	2.5
Mugma-Salanpur Coal Field	5.18	4.86	7.1	8.1	8.9	9.5	10.3	10.3	11.4
Rajmahal Coal Field	5.47	5.62	16.4	14.0	22.5	22.5	22.5	23.5	23.5
Raniganj Coal Field	20.78	23.50	25.9	28.9	31.0	32.2	32.6	32.6	32.5
Total ECL (CIL) in West Bengal	32	35	51	52	60	65	68	69	70

- Currently, Raniganj Coal Field is the primary source of coal for ECL. However, for FY30 Rajmahal CF is expected to become the largest source of coal for ECL
- Other major coal fields are Deoghar/Saharjuri CF and the Mugma-Salanpur CF.
- ECL has set an ambitious target towards achieving the 1 BT programme of Coal India Limited, and further augment the production till FY 2030.

ECL's production capacity expansion plans (1/7)

West Bengal

All figures in million tonnes

	Subsidiary	Area	Mine	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
2,1	ECL	Bankola	Khandra	0.075	0.090	0.080	0.080	0.070	0.070	0.070	0.070
	ECL	Bankola	Kumardih-A	0.085	0.100	0.085	0.085	0.080	0.080	0.080	0.080
	ECL	Bankola	Kumardih-B								
	ECL	Bankola	Bankola	0.170	0.200	0.170	0.170	0.150	0.150	0.150	0.150
	ECL	Bankola	Shankarpur	0.250	0.180	0.000	0.000				
	ECL	Bankola	SSPur incl. Sarpi	0.620	0.690	0.900	1.000	1.500	1.500	1.500	1.500
	ECL	Bankola	Tilaboni	0.140	0.140	0.140	0.600	0.800	0.800	0.800	0.800
	ECL	Bankola	Kumardih B CM	0.840	0.900	1.000	1.000	1.000	1.000	1.000	1.000
	ECL	Bankola	Nakrakonda Kumardih-B OCP	0.600	0.900	1.500	1.750	1.700	1.750	1.750	1.750
	ECL	Jhanjhra	Jhanjhra	2.795	3.600	4.000	4.500	5.000	5.000	5.000	5.000
	ECL	Rajmahal	Rajmahal OC	16.000	16.000	17.000	20.000	20.000	20.000	20.000	20.000
	ECL	Rajmahal	Hura-C OCP	0.500	0.500	0.500	1.250	1.500	1.500	1.500	1.500
	ECL	Rajmahal	Chupervita					1.000	1.000	1.000	1.000
	ECL	Rajmahal	Lalmatia Dip							1.000	1.000
	ECL	S P Mines	Chitra East OCP	1.500	1.600	2.000	2.500	2.700	2.500	2.500	2.500
	ECL	Sonepur	Sonepur Bazari OCP	11.000	11.0004	12.000	12.000	12.000	12.000	12.000	12.000

ECL's production capacity expansion plans (2/7)

West Bengal

All figures in million tonnes

									, j.g	
Subsidiary	Area	Mine	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
ECL	Kajora	Jambad	0.140	0.150						
ECL	Kajora	Khas Kajora	0.170	0.180	0.170	0.170	0.170	0.170	0.170	0.170
ECL	Kajora	Madhabpur	0.040	0.045	0.040	0.040	0.050	0.050	0.050	0.050
ECL	Kajora	Naba Kajora UG	0.045	0.000	0.000	0.000	0.040	0.040	0.040	0.040
ECL	Kajora	Parascole East	0.070	0.080	0.070	0.070	0.070	0.070	0.070	0.070
ECL	Kajora	Parascole West	0.075	0.075						
ECL	Kajora	Madhabpur OC								
ECL	Kajora	Parascole East OC			0.000	0.000	0.100	0.100	0.100	0.100
ECL	Kajora	Central Kajora	0.075	0.085	0.070	0.070	0.060	0.060	0.060	0.060
ECL	Kajora	Madhusudanpur	0.025							
ECL	Kajora	Jambad OC	0.550	0.550						
ECL	Kajora	Parascole-Jambad (UG+OC)			0.200	0.440	0.230	0.480	0.480	0.480
ECL	Kajora	Parascole-Jambad		15	0.500	0.500	0.600	0.600	0.600	0.500
d from eOffice by N R	AJESWAAA RAO, MO	C-SO(NRR) Nahakainga Santha DAMistry of	COAL on 17/05/20	23 04:47 PM			0.100	0.100	0.100	0.100

ECL's production capacity expansion plans (3/7)

West Bengal

All figures in million tonnes

	Subsidiary	Area	Mine	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
9	ECL	Kenda	CL Jambad UG	Convertion to OC	Convertion to OC						
2.1	ECL	Kenda	Chora 7 & 9 Pit	0.100	0.090	Amalgamation with Sonepur Bazari Expansion OC					
	ECL	Kenda	New Kenda								
	ECL	Kenda	Bonbahal OC	0.300	0.200	0.000	0.000				
	ECL	Kenda	CL Jambad OC	0.100	0.300	0.300	0.400	0.300	0.400	0.400	0.400
	ECL	Kenda	Bahula	0.150	0.100	0.120	0.120	0.140	0.140	0.140	0.140
	ECL	Kenda	Lower Kenda	0.065	0.070	0.060	0.060	0.060	0.060	0.060	0.060
	ECL	Kenda	Chora 10	0.045	0.035	0.000	0.000				
	ECL	Kenda	Chora Block Incline	0.055	0.045	0.000	0.000				
	ECL	Kenda	Shankarpur OC	0.100	0.100	0.000	0.000				
	ECL	Kenda	Siduli	0.085	0.085	0.080	0.080	0.160	0.160	0.160	0.160
	ECL	Kenda	New Kenda OCP	0.550	0.400	0.500	1.000	1.000	1.000	1.000	1.000
	ECL	Kenda	Siduli OCP	0.100	0.109 ₆	0.500	0.750	1.000	1.000	1.000	1.000

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ECL's production capacity expansion plans (4/7)

West Bengal

All figures in million tonnes

Subsidiary	Area	Mine	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
ECL	Kunustoria	North Searsole OC	0.100	0.200	0.000	0.000				
ECL	Kunustoria	Bansra OC	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
ECL	Kunustoria	N Searsole OC	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
ECL	Kunustoria	Amritnagar	0.110	0.100	0.100	0.100	0.100	0.100	0.100	0.100
ECL	Kunustoria	Bansra	0.350	0.100	0.200	0.200	0.150	0.150	0.150	0.150
ECL	Kunustoria	Kunustoria	0.115	0.100	0.100	0.100	0.110	0.110	0.110	0.110
ECL	Kunustoria	Parasea-Belbaid Reorganisation	0.215	0.175	0.360	0.360	0.360	0.360	0.360	0.360
ECL	Kunustoria	Narainkuri HW	0.300	0.450	0.500	0.500	0.400	0.400	0.400	0.400
ECL	Mugma	Badjna UG	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060
ECL	Mugma	Kumardhubi	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030
ECL	Mugma	Lakhimata	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050
ECL	Mugma	Shyampur-B UG	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060
ECL	Mugma	Shampur A OC	0.050	0.050	Patch reserve exhaustion					
ECL	Mugma	Gopinathpur OC	0.050		0.000	0.000				
ECL	Mugma	Badjna OC		0.070	0.000	0.000				
ECL	Mugma	Chapapur OC	0.300	0.400	0.400	0.400	0.400	0.500	0.500	0.500
ECL	Mugma	Kapasara OC	0.500	0.400	0.400	0.200	0.500	0.500	0.500	0.500
ECL	Mugma	Nirsha OC	0.350	0.400	0.400	0.400	0.400	0.400	0.400	0.400
ECL	Mugma	Chapapur-II	0.030	0.025	0.030	0.030	0.040	0.040	0.040	0.040
ECL	Mugma	Hariajam	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040
ECL	Mugma	Khoodia	0.010	0.010	0.010	0.010	0.030	0.030	0.030	0.030
ECL	Mugma	Barmuri OC	0.400	0.500	0.300		0.300	0.300	0.300	0.300
ECL	Mugma	Rajpura OC	0.200	17.100	0.000	0.000				

ECL's production capacity expansion plans (5/7)

West Bengal

All figures in million tonnes

Subsidiary	Area	Mine	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	
ECL	Pandaveshwar	Madhaipur UG	0.055	0.050	0.050	0.050	0.060	0.060	0.060	0.060	
ECL	Pandaveshwar	Manderboni South Samala	0.075	0.080	0.080	0.080	0.080	0.080	0.080	0.080	
ECL	Pandaveshwar	Pandaveshwar	0.100	0.100	0.000	0.000					
ECL	Pandaveshwar	Madhaipur OC	0.300	0.300	Patch reserve exhaustion						
ECL	Pandaveshwar	Dalurband OC	0.500	0.500	New PR Pandaveswar - Dalurband (UG+OC)						
ECL	Pandaveshwar	Khottadih	0.890	0.600	0.800	0.800	1.000	1.000	1.000	1.000	
ECL	Pandaveshwar	Khottadih OCP	1.000		0.000		Reserve exhaustion	Reserve exhaustion	Reserve exhaustion	Reserve exhaustion	
ECL	Pandaveshwar	Pandaveshwar Dalurbandh			0.100	0.100	0.095	0.095	0.095	0.095	
ECL	Pandaveshwar	Pandaveshwar Dalurbandh			0.300	0.750	0.750	0.750	0.750	0.750	
ECL	Salanpur	Gaurangdih OC	0.500		0.000	0.000	0.500	0.500	0.500	0.500	
ECL	Salanpur	Dabor OC		0.500	0.500	0.500	0.500	0.750	0.750	0.750	
ECL	Salanpur	Gaurangdih-Begunia OC	1.300	1.300	1.300	1.300	1.300	1.300	1.300	1.300	
ECL	Salanpur	Itapara	0.000	0.000	Future as MDO mode						
ECL	Salanpur	Shampur B / Sangmahal OC			0.250	0.500	0.500	0.500	0.500	0.500	
ECL	Salanpur	Bonjemehari OC									
ECL	Salanpur	Mohanpur OCP	1.100	2.000	2.000	2.250	2.250	2.250	2.250	2.250	
ECL	Salanpur	Bonjemehari OCP	0.500	0.450	0.750	1.000	0.750	1.000	1.000	1.000	
ECL	Salanpur	Itapara (in MDO Mode)		18	0.500	1.500	1.800	2.000	2.000	3.100	

ECL's production capacity expansion plans (6/7)

West Bengal

All figures in million tonnes

Subsidiary	Area	Mine	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
ECL	Satgram	Chapui Khas	0.025	0.025	0.020	0.020	0.020	0.020	0.020	0.020
ECL	Satgram	Nimcha UG	0.170	0.170	0.170	0.170	0.180	0.180	0.180	0.180
ECL	Satgram	Pure Searsole	0.030	0.035	0.030	0.030	0.040	0.040	0.040	0.040
ECL	Satgram	Kalidaspur OC					0.100	0.100	0.100	0.100
ECL	Satgram	Nimcha OCP	0.300	0.300	0.300	0.200	0.200	0.200	0.200	0.200
ECL	Satgram	JK Nagar	0.150	0.150	0.140	0.140	0.130	0.130	0.130	0.130
ECL	Satgram	Kalidaspur	0.070	0.070	0.070	0.070	0.080	0.080	0.080	0.080
ECL	Satgram	Satgram Pit (Project)	0.055	0.055	0.050	0.050	0.050	0.050	0.050	0.050
ECL	Satgram	Satgram Incline	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030
ECL	Satgram	Nimcha HW	0.080	0.100	0.500	0.500	0.500	0.500	0.500	0.500
ECL	Sodepur	Bejdih	0.025	0.036	0.030	0.030	0.025	0.025	0.025	0.025
ECL	Sodepur	Mithani	0.050	0.051	0.050	0.050	0.050	0.050	0.050	0.050
ECL	Sodepur	Parbelia	0.050	0.035	0.030	0.030	0.050	0.050	0.050	0.050
ECL	Sodepur	Chinakuri-III	0.040	0.055	0.040	0.040	0.040	0.040	0.040	0.040
ECL	Sodepur	Dhemomain Pit	0.015	0.020	0.015	0.015	0.015	0.015	0.015	0.015
ECL	Sodepur	Dhemomain Incline	0.025	0.025	0.025	0.025	0.030	0.030	0.030	0.030
ECL	Sodepur	Dubeswary	0.085	0.043	0.050	0.050	0.060	0.060	0.060	0.060
ECL	Sodepur	Narsamunda	0.025	0.050	0.040	0.040	0.040	0.040	0.040	0.040
ECL	Sodepur	Patmohna	0.040	0.10945	0.030	0.030	0.030	0.030	0.030	0.030

ECL's production capacity expansion plans (7/7)

West Bengal All figures in million tonnes Subsidiary Mine 2022-23 2023-24 2024-25 2025-26 2026-27 2027-28 2028-29 2029-30 Area ECL 0.000 0.000 0.000 0.010 0.010 0.020 0.020 Sripur Nigha 0.010 ECL Sripur Bhanora OC 0.300 0.300 0.350 0.215 0.400 0.400 0.400 0.400 Patch reserve Patch reserve 0.000 ECL Sripur Kalipahari OC 0.000 exhaustion exhaustion Exhaustion of Exhaustion of Patch Patch Reserve, Reserve, New ECL Bhanora West OC 0.050 Sripur 0.050 0.050 0.000 New PR on PR on Bhanora west Bhanora west UG UG Patch reserve Patch reserve Patch reserve Patch reserve ECL Sripur Ningha 0.050 0.050 0.100 0.200 exhaustion exhaustio exhaustion exhaustion n New PR on ECL Sripur Bhanora West Block 0.030 0.030 0.030 Bhanora west UG Reserve Reserve Reserve Reserve ECL Sripur Rajpura HW 0.030 0.030 0.200 0.350 exhaustio exhaustion exhaustion exhaustion n ECL Sripur 0.030 0.030 0.030 0.030 0.030 Bhanora-West UG

• For ECL's planned growth of ~33 MT dispatch in FY22 to ~70 MT production & dispatch in FY30, the major contributor is the Rajmahal coalfields which will drive almost ~50% of the production ramp-up

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Non-CIL blocks Pipeline in West Bengal – Raniganj CF (1/2)

				Details o	f Non-CIL blocks in Ranigani CF		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
#	Name of Block Block	ck Owner	PRC	Operational Status	Proposed Loading Point	EUP and other remarks	Actual FY22 Prodn.	Actual FY21 Prodn.
1	Ardhagram OCL Iro	n & Steel Ltd.	0.4	Operational	The coal is transported to the plant on road via tarpaulin covered trucks	OCL Iron & steel, Rajganjpur, Odisha: 407 kms from mine site	0.4	0.4
2	Bajora W	VBPDCL	0.5	Operational	Hazratpur Railway Siding (Mine to Siding via road – 7.5 Kms)	Sagardigih TPP, WB: 176 kms from the mine; Bakreshwar TPP, WB: 44 kms from the mine Bandel TPP, WB: 178 kms from the mine Santhaldih TPP, WB: 123 kms from the mine Kolaghat TPP, WB: 254 kms from the mine	0.22	0.22
3	Bajora W North	/BPDCL	3	Operational	Durgapur Railway Siding (Mine to Siding via road – 16.5 Kms)	Sagardigih TPP, WB: 209 kms from the mine; Bakreshwar TPP, WB: 232 kms from the mine Bandel TPP, WB: 145 kms from the mine Santhaldih TPP, WB: 123 kms from the mine Kolaghat TPP, WB: 221 kms from the mine	2.2	1.5
4	Gangramch ak and Gangaramc W hak Bhadulia	/BPDCL	1	Operational	Hazratpur Railway Siding (Mine to Siding via road – 15 Kms)	Sagardigih TPP, WB: 176 kms from the mine; Bakreshwar TPP, WB: 44 kms from the mine Bandel TPP, WB: 178 kms from the mine Santhaldih TPP, WB: 123 kms from the mine Kolaghat TPP, WB: 254 kms from the mine	0.5	-
Total PRC			4.9		21		3.32	2.12

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2528979/2023/CPIAM Non-CIL blocks Pipeline in West Bengal – Raniganj CF (2/2)

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								All figures in i	million tonne
					Details o	f Non-CIL blocks in Raniganj CF			
	#	Name of the Block	Block Owner	PRC	Operational Status	Proposed Loading Point	EUP and other remarks	Actual FY22 Prodn.	Actual FY2 Prodn.
2.	5	Khagra Joydev	DVC	DVC 3		Panchra Railway Siding (Mine to Siding via road – 20 Kms)	Mejia, TPP, WB: 591 kms from mine	1	-
	6	Sarisatoli	CESC	3.5	Operational	Asansol Railway Siding. (Mine to Siding via road – 25 Kms)	CESC Budge Budge, WB- 257 kms from mine	1	0
	7	Tara E&W	WBPDCL	4	Non- Operational	Bara Bani Railway Siding (Mine to Siding via road – 14 Kms)	Sagardigih TPP, WB: 239 kms from the mine; Bakreshwar TPP, WB: 107 kms from the mine Bandel TPP, WB: 207 kms from the mine Santhaldih TPP, WB: 123 kms from the mine Kolaghat TPP, WB: 294 kms from the mine	0.5	-
	8	Jagannathp ur B	Powerplus Traders	1.5	Non Operational	Ukhra Railway Station (Mine to station via road-19 kms). Coal is transported to Shyam steel by road.	Orissa Metalliks, WB: 285 kms from mine Rashmi Cement, WB: 331 kms from mine Shyam Steel, WB: 27 kms from mine	0.5	-
	9	Jaganathpur A	-	0.6	Non- Operational	Nearest railhead is Ukhra (19 km by road)	Coal block expected to be auctioned in 7th Tranche of coal block auctions	-	-
	10	Kabirtirtha	-	1.0	Non- Operational	20 km away from Asansol and 18 km from Raniganj by road	Coal block expected to be auctioned in 7th Tranche of coal block auctions	-	-
	Total PRC			13.6		22		3.0	0

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West Bengal

Origin – Destination Cluster Mapping for West Bengal

O-D Source cluster Mapping – Despatch of Coal from ECL, West Bengal: FY22 snapshot

All figures in million tonnes



File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449)

O-D Source cluster Mapping – Despatch of Coal from ECL, West Bengal: FY22 snapshot

	Consuming State	Rail	Pure Road & RCR	MGR & Others	Total
	MEGHALAYA	0.359	0.000	0.000	0.359
0.001	HIMACHAL PRADESH	0.155	0.000	0.000	0.155
	TRIPURA	0.032	0.000	0.000	0.032
0.016	MADHYA PRADESH	0.027	0.001	0.000	0.028
0.002 0.028	MAHARASHTRA	0.020	0.000	0.000	0.020
	TELANGANA	0.008	0.008	0.000	0.016
0.020 0.016	RAJASTHAN	0.016	0.000	0.000	0.016
	NAGALAND	0.004	0.000	0.000	0.004
	GUJARAT	0.000	0.002	0.000	0.002
	UTTARAKHAND	0.000	0.001	0.000	0.001
	DELHI	0.000	0.000	0.000	0.000
FY22: Despatch of Coal from West Bengal to destination state (MTPA) Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/202 © 2022 Deloitte Touche Tohmatsu India LLP	25 ₃ ₀ ₄Ҭѻ҉ҭҙӏ₀Despatch from West Bengal	24.65 (68.2%)	3.30 (9.14%)	8.20 (22.69%)	36.20

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O-D Source cluster Mapping – West Bengal to Andhra Pradesh



Expected L	.oad from \	Nest Ben fi	igal to An om other st	dhra Pi ates on 1	radesh mai this line)	n trunk line	es (Excludi	ng load
	FY22	-				FY30)	
From	То	Traffic (Tonnes)	Rakes / Day		From	То	Traffic (Tonnes)	Rakes / Day
Andal	Damodar	623357	0.444		Andal	Damodar	1032428	0.73
Damodar	Ramkanali	804894	0.573		Damodar	Ramkanali	1333097	0.95
Ramkanali	Purulia	869482	0.619		Ramkanali	Purulia	1440070	1.02
Purulia	Samalkot	887782	0.632		Purulia	Samalkot	1470379	1.05
Samalkot	Dharmavar am	29073	0.021		Samalkot	Dharmavar am	48152	0.03
Bhojudih	Purulia	18300	0.013		Bhojudih	Purulia	30309	0.02
Asansol	Damodar	125452	0.089	,	Asansol	Damodar	207779	0.15

Major Power consumers in Andhra Pradesh currently taking coal from ECL include NTPC Simhadri and APPCDL.

The genajor end use customers are primarily located in Vishakhapatanam

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O-D Source cluster Mapping – West Bengal to Assam



New Jalpaiguri Bongaigaon	Expected L	oad from W	/est Ben	gal to Ass states c	sam ma n this line	in trunk lin e)	es (Excluding	g load from	other
Asansol Kamakhya		FY22					_		
Andal Badarpur	From	То	Traffic (Tonnes)	Rakes / Day	-	From	То	Traffic (Tonnes)	Rakes / Day
Nalhati	Asansol	Andal	72759	0.05		Asansol	Andal	120506	0.09
	Andal	Bhimgara	157334	0.11		Andal	Bhimgara	260583	0.19
	Bhimgara	Sainthia	860150	0.61		Bhimgara	Sainthia	1424614	1.01
Purulia	Sainthia	Nalhati	860150	0.61		Sainthia	Nalhati	1424614	1.01
	Nalhati	Barsoi	860150	0.61		Nalhati	Barsoi	1424614	1.01
Adra	Barsoi	New Jalpaiguri	860150	0.61		Barsoi	New Jalpaiguri	1424614	1.01
Durgapur Kolkata Major Junctions	New Jalpaiguri	Fakiragram	860150	0.61		New Jalpaiguri	Fakiragram	1424614	1.01
/ Stations	Fakiragram	New Bongaigaon	860150	0.61		Fakiragram	New Bongaigaon	1424614	1.01
Major Coal Consuming Districts of Assam: 2030 (Estimated)	New Bongaigaon	Rangya	57830	0.04		New Bongaigaon	Rangya	95780	0.07
	Rangya	Kamakhya	57830	0.04		Rangya	Kamakhya	95780	0.07
>15 MTPA Coal Consumption NA	Kamakhya	Chaparmukh	50151	0.04		Kamakhya	Chaparmukh	83062	0.06
10-15 MTPA Coal Consumption NA	Chaparmukh	Lumding	30697	0.02		Chaparmukh	Lumding	50842	0.04
5-10 MTPA Coal Consumption NA	Lumding	Bokajan	30697	0.02		Lumding	Bokajan	50842	0.04
1-5 MTPA Coal Consumption Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/0	Chaparrowski 5/2023 04:47 PM	Badarpur	19454	0.01	(Chaparmukh	Badarpur	32220	0.02

O-D Source cluster Mapping – West Bengal to Tamil Nadu



Expected L	.oad from	West Bei	ngal to T other st	l Nadu main tru on this line)	ınk lines (E	xcluding loa	ad from
	FY22				FY3)	_
From	То	Traffic (Tonnes)	Rakes / Day	From	То	Traffic (Tonnes)	Rakes / Day
Andal	Damodar	1088751	0.77	Andal	Damodar	1803232	1.28
Damodar	Ramkanali	1088751	0.77	Damodar	Ramkanali	1803232	1.28
Ramkanali	Purulia	1088751	0.77	Ramkanali	Purulia	1803232	1.28
Purulia	Chandil	1088751	0.77	Purulia	Chandil	1803232	1.28
Chandil	Sini	1088751	0.77	Chandil	Sini	1803232	1.28
Sini	Rajkharsawan	1088751	0.77	Sini	Rajkharsawan	1803232	1.28
Raikharsawan	Bondamunda	1088751	0.77	Rajkharsawan	Bondamunda	1803232	1.28
Bondamunda	Jharsuguda	1088751	0.77	Bondamunda	Jharsuguda	1803232	1.28
Iharsuguda	Sarla	1088751	0.77	Jharsuguda	Sarla	1803232	1.28
Sarla	Bobbili	1088751	0.77	Sarla	Bobbili	1803232	1.28
Bobbili	Vizianagaram	1088751	0.77	Bobbili	Vizianagaram	1803232	1.28
Vizianagaram	Samalkot	1088751	0.77	Vizianagaram	Samalkot	1803232	1.28
Samalkot	Nidadavolu	1088751	0.77	Samalkot	Nidadavolu	1803232	1.28
Nidadayolu	Krishna Canal	1088751	0.77	Nidadavolu	Krishna Canal	1803232	1.28
Krishna Canal	Tenali	1088751	0.77	Krishna Canal	Tenali	1803232	1.28
Tenali	Gudur	1088751	0.77	Tenali	Gudur	1803232	1.28
Gudur	Chennai	1088751	0.77	Gudur	Beach	1803232	1.28
Channai Baach	Beach	122205	0.21	Chennai Beach	Chengalpattu	715984	0.51
	Villupuram	432293	0.31	Chengalpattu	Villupuram	715984	0.51
Villupuram	Vriddhachalla m	432295	0.31	Villupuram	Vriddhachalla m	715984	0.51
/riddhachallam	Trichy	432295	0.31	Vriddhachallam	Trichy	715984	0.51
Trichy	Dindigul	432295	0.31	Trichy	Dindigul	715984	0.51
Dindigul	Madurai	432295	0.31	Dindigul	Madurai	715984	0.51
Madurai	Virudunagar	432295	0.31	Madurai	Virudunagar	71598/	0.51
Virudunagar ZO	Vanchimaniya chi	432295	0.31	Virudunagar	Vanchimaniya chi	715984	0.51
an <u>ch</u> innaniyachi	Tuticorin	432295	0.31	Vanchimaniyachi	Tuticorin	715984	0.51

O-D Source cluster Mapping – West Bengal to Punjab & Haryana



Expected Lo	ad from V	Vest Benរ្ f	gal to Pu rom other	injab & states o	Haryana ma n this line)	ain trunk li	nes (Exclud	ding load
	FY22					FY3)	
From	То	Traffic (Tonnes)	Rakes / Day		From	То	Traffic (Tonnes)	Rakes / Day
Andal	Deen Dayal Upadhaya	2705730	1.93		Andal	Deen Dayal Upadhaya	4481336	3.19
Deen Dayal Upadhaya	Varanasi	1472993	1.05		Deen Dayal Upadhaya	Varanasi	2439629	1.74
Varanasi	Ambala	1472993	1.05		Varanasi	Ambala	2439629	1.74
Ambala	Sirhind	686625	0.49		Ambala	Sirhind	1137215	0.81
Sirhind	Amritsar	52571	0.04		Sirhind	Amritsar	87070	0.06
Deen Dayal Upadhaya	Prayagraj	1919362	1.37		Deen Dayal Upadhaya	Prayagraj	3178923	2.26
Prayagraj	Tundla	1919362	1.37		Prayagraj	Tundla	3178923	2.26
Tundla	Bhiwani	1250626	0.89		Tundla	Bhiwani	2071336	1.47
Tundla	Ghaziabad	668736	0.48		Tundla	Ghaziabad	1107587	0.79
Ghaziabad	Hazrat Nizamudd in	233629	0.17		Ghaziabad	Hazrat Nizamudd in	386946	0.28
Hazrat Nizamuddin	Panipat	46071	0.03		Hazrat Nizamuddin	Panipat	76305	0.05
Hazrat Nizamuddin	Jakhal	187558	0.13		Hazrat Nizamuddin	Jakhal	310641	0.22
Ghazi 29 ad	Bhatinda	435107	0.31		Ghaziabad	Bhatinda	720641	0.51

O-D Source cluster Mapping – West Bengal to Uttar Pradesh



Expected Lc	ad from W	/est Beng	other sta	on this line)	n trunk lines (Excluding lo	bad from
	FY22				FY3	0	
From	То	Traffic (Tonnes)	Rakes / Day	From	То	Traffic (Tonnes)	Rakes / Day
Andal	Acancol	1005026	0.72	Anda	l Asansol	1664580	1.18
Anuar	Deen Dayal	948278	0.72	Asanso	Deen Dayal Upadhaya	1570542	1.12
Deen Daval	Upadhaya	540270	0.07	Deen Da	iyal Varanasi	337840	0.24
Upadhaya	Varanasi	203980	0.15	Varana	iya isi Avodha	182793	0.13
Varanasi	Ayodha	110366	0.08	Deen Da Upadha	iyal Chunar	238164	0.17
Deen Dayal Upadhaya	Chunar	143798	0.10	Chuna	r Ghaziabad	225432	0.16
Chunar	Ghaziabad	136111	0.10	Asanso	ol Gorakhpur	94038	0.07
Asansol	Gorakhpur	56778	0.04				
Chunar	Bina Etawa	7687	0.01	Chuna	ir Bina Etawa	12732	0.01
Varanasi	Unchahar	93614	0.07	Varana	isi Unchahar	155047	0.11

- Major Power consumers in Uttar Pradesh procuring coal from ECL include NTPC Tanda and Unchahar.
- The major coal consuming districts of Uttar Pradesh procure coal through the coal trunk line via Deen Dayal Upadhaya.

Note: Coal Dispatch from ECL by railway mode to numerous local, small and micro scale coal traders totaling to 0.6 MT have /05/2029@an4distributed evenly across major railway nodes and important routes/junctions.

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O-D Source cluster Mapping – West Bengal to Bihar



Expected Lo	oad from W	/est Beng	al to Bih on	ar main this line)	trunk line	S (Excluding lo	ad from otl	ner states			
	FY22	2	_		_	FY3	0				
From	То	Traffic (Tonnes)	Rakes / Day		From	То	Traffic (Tonnes)	Rakes / Day			
Andal	Asansol	52468	0.04		Andal	Asansol	86900	0.06			
Asansol	Madhupur	56432	0.04		Asansol	Madhupur	93465	0.07			
Madhupur	Jasidih	399655	0.28		Madhupur	Jasidih	661924	0.47			
Jasidih	Kiul	351366	0.25		Jasidih	Kiul	581946	0.41			
Kiul	Luckeesarai	351366	0.25		Kiul	Luckeesarai	581946	0.41			
Luckeesarai	Hathidah	351366	0.25		Luckeesarai	Hathidah	581946	0.41			
Hathidah	Barauni	351366	0.25		Hathidah	Barauni	581946	0.41			
Barauni	Bachwara	3964	0.00		Barauni	Bachwara	6565	0.00			
Bachwara	Samastinur	3964	0.00		Bachwara	Samastipur	6565	0.00			
Composition		2004	0.00		Samastipur	Muzaffarpur	6565	0.00			
Samastipur	Nuzattarpur	3964	0.00		Bhimgara	Sainthia	3909785	2.78			
Bhimgara	Sainthia	2360640	1.68		Sainthia	Nalhati	3909785	2.78			
Sainthia	Nalhati	2360640	1.68		Nalhati	Barharwa	3909785	2.78			
Nalhati	Barharwa	2360640	1.68		Barharwa	Tinpahar	3909785	2.78			
Barharwa	Tinpahar	2360640	1.68		Tinpahar	Bhagalpur	3909785	2.78			
Tinpahar	Bhagalpur	2360640	1.68								
Jasidih	Bhagalpur	48289	0.03		Jasidih	Bhagalpur	79978	0.06			
Bhagalpur	Barharwa	48289	0.03		Bhagalpur	Barharwa	79978	0.06			
r Major Kah ଶ୍ ୱୀga	Major Power consumers in Bihar procuring coal from ECL include NTPC										

O-D Source cluster Mapping – West Bengal to Jharkhand



	FY22				FY30		
From	То	Traffic (Tonnes)	Rakes / Day	From	То	Traffic (Tonnes)	Rakes Day
Andal	Damodar	341394	0.24	Andal	Damodar	565431	0.40
Damodar	Ramkanali	341394	0.24	Damodar	Ramkanali	565431	0.40
Ramkanali	Purulia	341394	0.24	Ramkanali	Purulia	565431	0.40
Purulia	Chandil	289742	0.21	Purulia	Chandil	479883	0.34
Chandil	Sini	98257	0.07	Chandil	Sini	162737	0.12
Sini	Rajkharsawan	98257	0.07	Sini I	Rajkharsawan	162737	0.12
Rajkharsawan	Jhinkpani	98257	0.07	Rajkharsawan	Jhinkpani	162737	0.12
Chandil	Tatanagar	191486	0.14	Chandil	Tatanagar	317146	0.23
Purulia	Ranchi	51652	0.04	Purulia	Ranchi	85548	0.06
Andal	Asansol	40330	0.03	Andal	Asansol	66796	0.05
Asansol	Dhanbad	40330	0.03	Asansol	Dhanbad	66796	0.05

INCLUCE TATA POWER, ALL CEMENT. 32 Note: Coal Dispatch from ECL by railway mode to numerous local, small and micro scale coal traders totaling to 0.06 MT have

O-D Source cluster Mapping – West Bengal's Internal Consumption (Incl. Non CIL Blocks)



	FY22	2				FY3	0
From	То	Traffic (Tonnes)	Rakes / Day	-	From	То	
Andal	Khana	4198205	2.99		Andal	Khana	
Khana	Dum Dum	2360220	1.68		Khana	Dum Dum	
Dum Dum	Ballygunge	2052258	1.46		Dum Dum	Ballygunge	
Ballygunge	Budge Budge	2052258	1.46		Ballygunge	Budge Budge	
Andal	Damodar	1515907	1.08		Andal	Damodar	
Andal	Bankura	2586134	1.84		Andal	Bankura	
Bhimgara	Sainthia	7258771	5.17		Bhimgara	Sainthia	-
Khana	Naldanga	1014243	0.72		Khana	Naldanga	
Asansol	Andal	2813696	2.00		Asansol	Andal	
Andal	Bhimgara	6437522	4.58		Andal	Bhimgara	-
Sainthia	Nalhati	5407522	3.85		Sainthia	Nalhati	
Nalhati	Barharwa	5407522	3.85		Nalhati	Barharwa	
Asansol	Damodar	225568	0.16		Asansol	Damodar	
Damodar	Ramkanali	1505568	1.07		Damodar	Ramkanali	
Ramkanali	Adra	905568	0.64		Ramkanali	Adra	
Khana	Kolkata	978246	0.70		Khana	Kolkata	
Andal	Bardhamann	2740903	1.95		Andal	Bardhamann	
Andal3	Sainthia	207721	0.15		Andal	Sainthia	

Expected Load in West Bengal' main trunk lines (Excluding load from other states on this line)

Howrah, Hugli, Birbhum Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2028 een tistinbuted evenly across major railway nodes and important routes/junctions.

Traffic

(Tonnes)

7361695

3252849

2742791

2742791

3090718

5627017

13219463

2170774

4003914

12579594

9579594

9579594

373595

3073595

2073595

2193967

4539591

344036

Rakes /

Day

5.24

2.31

1.95

1.95

2.20

4.00

9.41

1.54

2.85

8.95

6.82

6.82

0.27

2.19

1.48

1.56

3.23

0.24

O-D Source cluster Mapping – West Bengal to Chattisgarh



xpected Loa	ld from Wes	t Bengal	to Jhark states o	chan n this	d main trunk ; line)	lines (Excludi	ng load fro	om other
_	FY22					FY30		
From	То	Traffic (Tonnes)	Rakes / Day		From	То	Traffic (Tonnes)	Rakes / Day
Andal	Damodar	500138	0.36		Andal	Damodar	653513	0.47
Damodar	Ramkanali	500138	0.36		Damodar	Ramkanali	653513	0.47
Ramkanali	Purulia	500138	0.36		Ramkanali	Purulia	653513	0.47
Purulia	Chandil	500138	0.36		Purulia	Chandil	653513	0.47
Chandil	Sini	500138	0.36		Chandil	Sini	653513	0.47
Sini	Rajkharsawan	500138	0.36		Sini	Rajkharsawan	653513	0.47
Rajkharsawan	Bondamunda	500138	0.36		Rajkharsawan	Bondamunda	653513	0.47
Bondamunda	Jharsuguda	500138	0.36		Bondamunda	Jharsuguda	653513	0.47
Jharsuguda	Champa	106865	0.08		Jharsuguda	Champa	139637	0.10
Champa	Bilaspur	106865	0.08		Champa	Bilaspur	139637	0.10
Bilaspur	Raipur	106865	0.08		Bilaspur	Raipur	139637	0.10
Jharsuguda	Naya Baradwar	461445	0.33		Jharsuguda	Naya Baradwar	602954	0.43
Asansol	Damodar	68172	0.05		Asansol	Damodar	89078	0.06
• Maior E	nd-Use con	sumers	in Chatti	sgar	h currently r	procuring co	al from	ECL

in&ude NTPC Lara and Bhilai Steel Plant.

O-D Source cluster Mapping – West Bengal to Odisha (Incl. Non CIL Blocks)



states on this line)												
_	FY22	-				FY30	-					
From	То	Traffic (Tonnes)	Rake / Da	es Y	From	То	Traffic (Tonnes)	Rakes Day				
Andal	Damodar	767100	0.55	5	Andal	Damodar	1270501	0.90				
Damodar	Ramkanali	1167100	0.83	3	Damodar	Ramkanali	1670501	1.19				
Ramkanali	Purulia	435438	0.31	L	Ramkanali	Purulia	458694	0.33				
Purulia	Chandil	435438	0.31	L	Purulia	Chandil	458694	0.33				
Chandil	Sini	435438	0.31	L	Chandil	Sini	458694	0.33				
Sini	Rajkharsawan	435438	0.31	L	Sini	Rajkharsawan	458694	0.33				
Rajkharsawan	Bondamunda	423448	0.30)	Rajkharsawan	Bondamunda	438835	0.31				
Bondamunda	Jharsuguda	423448	0.30	D	Bondamunda	Jharsuguda	438835	0.31				
Ramkanali	Rupsa	731662	0.52	2	Ramkanali	Rupsa	1211807	0.86				
Rupsa	Jakhapura	731662	0.52	2	Rupsa	Jakhapura	1211807	0.86				
Jakhapura	Sambalpur	731662	0.52	2	Jakhapura	Sambalpur	1211807	0.86				
Rajkharsawan	Jakhapura	11990	0.01	L	Rajkharsawan	Jakhapura	19858	0.01				
Maior I	Fnd-Use co	nsumers	in	Odisha	currently pr	ocuring co	al from	FCI				

 Major End-Use consumers in Odisha currently procuring coal from ECL in&ude NTPC Talcher and Rourkela Steel Plant.

O-D Source cluster Mapping – Consolidated Coal Traffic from West Bengal to all states

FY22 Actual and FY30 (Estimated) coal traffic in major sections for Despatch of coal from West Bengal to various destinations										
From	То	Traffic (MT): 2022	Rakes / Day: 2022	Traffic (MT): 2030	Rakes / Day: 2030	Increase in Coal Traffic (Rakes / Day)				
Andal	Damodar	4.84	3.44	8.59	6.11	2.67				
Damodar	Ramkanali	5.41	3.85	9.27	6.60	2.75				
Ramkanali	Purulia	3.24	2.30	5.10	3.63	1.32				
Purulia	Chandil	3.20	2.28	5.04	3.59	1.31				
Chandil	Sini	3.01	2.14	4.72	3.36	1.22				
Sini	Rajkharsawan	3.01	2.14	4.72	3.36	1.22				
Andal	Khana	4.20	2.99	7.36	5.24	2.25				
Bhimgara	Sainthia	10.48	7.46	18.55	13.20	5.75				
Asansol	Andal	6.69	4.76	10.42	7.42	2.66				
Andal	Bhimgara	6.59	4.69	12.84	9.14	4.44				
Sainthia	Nalhati	8.63	6.14	14.91	10.61	4.47				
Nalhati	Barharwa	7.77	5.53	13.49	9.60	4.07				
Andal	Bardhamann	2.74	1.95	4.54	3.23	1.28				
Asansol	Deen Dayal Upadhaya	3.65	2.60	6.05	4.31	1.71				

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²⁵²⁸⁹⁷ Significant railway connectivity projects in Jharkhand, West Bengal and adjoining areas (1/2)

Zone	Activity	Description of Proposed / Ongoing Works
Eastern Railway	New Lines	Lakshmikantapur-Namkhana-Chandanagar with new material modification for Kakadwip- Budakhali (5 km) & Chandanagar-Bakhali (17.2 km)
Eastern Railway	New Lines	Tarakeswar-Bishnupur with extension upto Dhaniakhali, Arambagh-Irphala, Irphala-Ghatal (11.2 km), Arambagh-Champadanga (23.3 km) & Bishnupur-Uparsol (31.8 km) and new material modification for Mynapur-Kamarpukur via Birsha (19 km)
Eastern Railway	Guage Conversion	Bardhaman-Katwa (51.52 km) with new material modification for Katwa-Bazarsau (30.59 km) - doubling, Katwa (Dainhat)-Mateswar (34.4 km), Negun - Mangalkot (8.60 km) & Mateswar - Memari (35.6 km) – NL
Eastern Railway	Doubling	New Alipore-Akra & Budge Budge-Pujali with new material modification for Pujali-Uluberia (Birshivpur)(10.25 km) & Pujali-Bahrahat(9.75 km)- new lines
Eastern Railway	Doubling	Pandabeswar-Chinpai (21.41 km) with new material modification between Barbani-Churulia (9 km) - new line
Eastern Railway	Track Renewals	Andal-Sainthia: TFR - 43.09 Km (DN Line)
Eastern Railway	Doubling	Andal-Sainthia - Broad gauge bypass line with direct connection from quadruple line to branch line (2.565 km)
Eastern Railway	Track Renewals	Andal-Sainthia - CTR - 2.38 km & TRR - 2.53 km (P)
South Eastern Railway	New Lines	Bankura - Damodar Valley (96 Km) GC with Bowai Chandi - Khana (22 km) NL, Rainagar- Masagram (20.9 km) NL, Bankura - Mukut Monipur (57 km) NL & Mukut Monipur-Uparsol (26.7 km) NL , Bankura (Kalabati)-Purulia via Hura - (65 km) NL & Mukut Monipur-Jhilim
South Eastern Railway	Doubling	Rajkharswan-Chakradharpur - 3rd line (20 km)
South Eastern Railway	Doubling	Rourkela-Jharsgguda - 3rd line (101 km)

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²⁵²⁸⁹⁷Significant railway connectivity projects in West Bengal and adjoining areas (2/2)

Zone	Activity	Description of Proposed / Ongoing Works
South Eastern Railway	Track Renewables	Rourkela - Jharsuguda - CTR(S) - 8.28 km
South Eastern Railway	Track Renewables	Howrah-Kharagpur & Kharagpur-Tatanagar - CTR(S) -19.573 km
Northeast Frontier Railway	Gauge Conversion	New Jalpaiguri-Siliguri-New Bongaigaon line alongwith branch lines, material modification for Chalsa-Naxalbari (16 km) - new line & Rajabhatkhowa - Jainti (15.13 km) - new line
Northeast Frontier Railway	Track Renewals	Alipurduar jn Fakiragram - New Bongaigaon - TRR(P) - 18.449 km
Northeast Frontier Railway	Track Renewals	New Bongaigaon - Kamakhya - TSR(P) - 8.700 km
Northeast Frontier Railway	Track Renewals	New Jalpaiguri - Malda Town & New Jalpaiguri - Raninagar Jalpaiguri -CTR(P) - 13.120 km
East Central Railway	Track Renewal	Dhanbad-Chandrapura - Alternative route via Tundu-Nichitpur (25.81 km) (umbrella work
East Central Railway	Track Renewal	Dhanbad - Chandrapura - CTR(P) -1.576 km, TSR(P) - 3.70 km, CTR(S) (TSR(P) & TRR(S) -2.618 km
East Central Railway	Track Renewal	Dhanbad Div N.S.C.B.Gomoh - Barkakana - CTR(S/P) - 5.345 km & Danapur Div Jhajha - Patna - TRR(S) - 2.88 km & TSR(S) - 1.50 km
East Central Railway	Track Renewal	N.S.C.B.Gomoh - Patratu - TBR - 4.01 km, TFR - 1.011 km and Dhanbad - Chandrapura - TBR 5.916 Km
East Central Railway	Track Renewal	Garwa Road Jn Son Nagar jn. & Manpur - Pt. Deen Dayal Upadhyay Jn TRR(P) - 3.741 km
East Central Railway	Track Renewal	Manpur - Pt. Deen Dayal Upadhyay Jn CTR(P) - 33.187 km Manpur - Pd. Deen Dayal Upadhyay Jn TRR(P) - 13.33 Km & TSR(P) - 31.90 Km Manpur - Pd. Deen Dayal Upadhyay Jn TBR - 73.14 km & TFR - 72.37 km
East Central Railway	Track Renewal	Patratu - Garhwaroad - CTR(P) - 19.95 km, TRR(P) - 29.775 km, CTR(S), TSR(P) & TRR(S)) - 7.464 km, TRR(S) - 2.25 km 38

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First Mile Connectivity Analysis of ECL

^{2528979/2023 (CPIAM} Logistical Outlook – Eastern Coalfields Limited (ECL)

ECL's despatch is progressing towards higher share of rail from current 67% to close to 88 % by FY30. Ensuring that the evacuation capacity exists is a crucial aspect of the holistic logistics policy

FY 22 ACTUAL DISPATCH (MT)				FY 26 DISPATCH 1 BT PLAN (MT)				FY 30 ANTICIPATED DISPATCH (MT)					
ROAD	MGR	OTHERS	TOTAL	RAIL	ROAD	MGR	OTHERS	TOTAL	RAIL	ROAD	MGR	OTHERS	TOTAL
0.18	0	0	2.08	2.14	0	0	0	2.14	5.4	0	0	0	5.4
0.05	0	0	3.64	3.5	0	0	0	3.5	5	0	0	0	5
0.72	0	0	1.44	1.83	0	0	0	1.83	1.6	0	0	0	1.6
0.17	0	0	1.01	3.46	0	0	0	3.46	2.8	0	0	0	2.8
0.12	0	0	0.7	0.97	0	0	0	0.97	1.3	0	0	0	1.3
0.02	0	0	0.19	0.75	0	0	0	0.75	0.5	0	0	0	0.5
0.1	0	0	0.84	1.81	0	0	0	1.81	1.8	0	0	0	1.8
0.94	0	0	3.22	5.2	0	0	0	5.2	9.4	0	0	0	9.4
0.29	0	0	1.83	2.11	0	0	0	2.11	2	0	0	0	2
0.23	0	0	1.11	2.5	0	0	0	2.5	2.5	0	0	0	2.5
0.48	0	0	10.23	12	0	0	0	12	12	0	0	0	12
0.23	0	0	1.58	2.82	0	0	0	2.82	2	0	0	0	2
0.08	8.21	0	8.29	-	0	22.5	0	22.5	14.4	0.1	9	0	23.5
0.1	0	0	0.41	0.31	0	0	0	0.31	0.3	0	0	0	0.3
5 3.71	8.21	0	36.57	39.4	0	22.5	0	61.9	61	0.1	9	0	70.1
FY22 MOC-SO(NRR)-CPIA	66% м, мос-so	(NRR), Ministr	y Of COAL c	n 17/05/2023 (FY26 40 04:47 PM	64	%			FY30		87%	
10 dia	C-SO(NRR)-CPIA	C-SO(NRR)-CPIAM, MOC-SO	C-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry	C-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL o	C-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023	40 C-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:47 PM	40 C-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:47 PM	C-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:47 PM	40 C-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:47 PM	C-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:47 PM	C-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:47 PM	40 C-SO(NRR)-CPIAM. MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:47 PM	40 C-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:47 PM

25289797202000 evacuation plan for East Raniganj CF Areas cluster achievable



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2528979/2023/Chaposed evacuation Phan for West Raniganj CF. Areas cluster achievable



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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 **Proposed evacuation plan for Rajmahal CF areas cluster achievable**



^{2528979/2023/CPIAM} Evacuation Capacity Augmentation for coal transportation roads at ECL

		Length (Km)	Carriage Width (m)
	Road Projects already taken up		
	Raod from I-land to East-North corner of CHP sub-station (Marked as CF in Plan)	0.35	7.5
	Road from ramp end slope portion of crusher to North of maintenace zone tail end (Marked as C2 -C3 in Plan)	0.27	15
	Road from near reclaim section to near RCC drain (Marked as IJ in Plan)	0.12	7.5
ECL	Road from near Silo weigh bridge to Pillar no 10 maintenace zone (Marked as BI in Plan)	0.51	7.5
	Road from BTL crusher to slope ramp end portion (Marked as C1-C2 in Plan)	0.112	9
	Proposed Road Projects		
	Construction of concrete road for coal transportation from ICL Crusher Point to New CHP at Sonepur Bazari, ECL	2.3	7.0 metre + Divider +7.0 Metre
	Construction of concrete road fro coal transportation road in CHP at Rajmahal Area of ECL	2.71	7.5 to 15
	44		

^{2528979/2023/CPIAM} CIL(ECL) blocks in Jharkhand – Rajmahal CF

Name of the Block	Exploration Status	Evacuation Route	Distance from Nearest major Rail Line
Amarkonda Murdangal	Regional Explored	Existing railway main line from Rampurhat to Dumka with proposed railway line from Amarkonda	
Brahmini (Including	Regional Explored	to meet main line at Harinsingh.	
Chichro Patsimal)		From Harinsingh, traffic bound from Jharkhand, Uttar Pradesh and west of Rajmahal CF to move	_
Haripur Chaparia	Regional Explored	towards Dumka and onwards towards Jasidih or towards Hansdiha and onwards to Bhagalpur as	~13 Kms from
Kulkuli Dangal	Regional Explored	per destination.	Harinsingh
Kayada-Choudhar-	Explored	Traffic bound for West Bengal to move towards Rampurhat from Harinsingh.	
Gariapani	2/10/000	Local roads may be used to transport coal from these blocks to Harinsingh till new proposed	
Salaipahar	Regional Explored	railway line is commissioned.	
Chuperbhita	Explored	Pakur to Godda Proposed new BG Rail line will pas through these blocks. After development of	
		Sidings at these projects, it will directly feed the new line with three possible evacuation routes. If	
		coal has to move to South-east, it will move towards Godda to Hansdiha to Dumka to various	~22 Kms from
Simlong	Explored	destinations. For supply to WB, it will move to Pakur to Rampurhat to various WB destinations,	Godda
		for movement to Northern States, it will move via new proposed Rail Line (Godda-Pirpainti new	
		BG Line) to Pirpainti via Godda and further to Bhagalpur to various destinations.	
		This block is very near to Pirpainti. This will leverage proposed New Godda-Pirpainti line. For	
		movement towards Northern states, coal will move towards Pirpainti to Bhagalpur to	
Bhalukasba Surni	Explored	destinations. For movement towards Eastern states, coal will move towards Godda to Hansdiha	~15 Kms from
(Including Ph-I,II,III)	LAPIOTEU	to Dumka to various destinations. For movement to WB destinations, it will move to Godda to	Pirpainti
		Pakur to Rampurhat to destinations or to Pirpainti to Sahibganj to Pakur to Rampurhat to	
		destinations.	
Hura C' (Deoghar)	Explored	Feed Via MGR to NTPC Kahalgaon and Farakka.	
		If coal has to be evacuated via Rail, FMC projects would be used for evacuation. Coal would be	
		evacuated via the new proposed Rail Line (Godda-Pirpainti new BG Line) and further move	~ 30 Kms,
Lalmatia ASB	Dartly Evolarad	towards Bhagalpur if supply is to Northern States. For Movement to Western States, it would	equidistant from
	Party Explored	move from Godda to Hansdiha to Dumka and further from Dumka to various destinations. For	Godda and
		movement towards west Bengal, coal will move from Godda to Pakur to Rampurhat and from	Pirpainti
		Pakur to WB destinations.	
	Name of the Block Amarkonda Murdangal Brahmini (Including Chichro Patsimal) Haripur Chaparia Kulkuli Dangal Kayada-Choudhar- Gariapani Salaipahar Chuperbhita Simlong Bhalukasba Surni (Including Ph-I,II,III) Hura C' (Deoghar) Lalmatia A&B	Name of the BlockExploration StatusAmarkonda Murdangal Brahmini (Including Chichro Patsimal) Haripur Chaparia Kulkuli Dangal Kayada-Choudhar- Gariapani 	Name of the BlockExploration StatusExploredAmarkonda Murdangal Brahmini (Including Chichro Patsimal)Regional Explored Regional Explored Regional Explored Regional Explored Regional Explored Regional Explored SalapaharExisting railway main line from Rampurhat to Dumka with proposed railway line from Amarkonda to meet main line at Harinsingh. From Harinsingh, traffic bound from Jharkhand, Uttar Pradesh and west of Rajmahal CF to move towards Dumka and onwards towards Jasidih or towards Hansdiha and onwards to Bhagalpur as towards Dumka and onwards towards Jasidih or towards Hansdiha and onwards to Bhagalpur as towards Dumka and onwards towards Isaligh to rowards Rampurhat from Harinsingh. Local roads may be used to transport coal from these blocks to Harinsingh till new proposed railway line is commissioned.ChuperbhitaExploredPakur to Godda Proposed new BG Rail line will pas through these blocks. After development of Sidings at these projects, it will move towards Godd to Hansdiha to Dumka to various destinations. For supply to WB, it will move to Pakur to Rampurhat to various WB destinations, for movement to Northern States, it will move towards Godda to Hansdiha to Dumka to various destinations. For movement towards Northern states, coal will move towards Pirpainti ine. For movement towards Northern states, coal will move towards Pirpainti to Ramgurhat to destinations. For movement to WB destinations, it will move to adda to the new BG lone) to Pirpaint to Salibagan to Adda to Pakur to Rampurhat to destinations. For movement towards Northern states, coal will move towards Coald to Hansdiha to Dumka to various destinations.Bhalukasba Surni (Including Ph-I,II,III)ExploredFeed Via MGR to NTPC Kahagaon and Faraka. It coal has to be evacuated via Rail, FMC projects would be used

Non-CIL blocks in Pipeline in Rajmahal CF

	Details of Non-CIL blocks in Rajmahal CF								
#	Name of the Block	Exploration Status	Operational Status	Evacuation Route	Distance from Nearest major Rail Line (in km)				
1	Jitpur	Explored	Non- Operational	Godda Railway Station (Mine to Station via local roads- km)	21 km to Godda				
2	Mahuagarhi	Partially explored	Non- Operational	Block lies beside proposed railway line, Litipara-Amrakonda	-				
3	Singdhri-Cholpathar	Under exploration	Non- Operational	The coal will be transported by road NH-114A, from the mine to the railhead at Murari, which is 37 km away	37 km				
4	Urma Paharitola	Regionally explored	Non- Operational	Urma Paharitola allotted to Aurobindo Reality and Infra Pvt. Ltd. (PRC: 15 MTPA)					
5	Saharpur-Jamarpani	Regionally explored	Non- Operational	Existing railway main line from Rampurhat to Dumka with proposed railway line from Amrakonda to meet main line at Harinsingh.	NA (Block beside Rampurhat-Dumka line, distance from Rampurhat-55 km)				
6	Pokharia Paharpur	Under exploration	Non- Operational	From Harinsingh, traffic bound from Jharkhand, Uttar Pradesh and west of Rajmahal CF to move towards Dumka and onwards towards Jasidih or towards Hansdiha and onwards to Bhagalpur as per destination.	13 km to Harinsingh				
7	Kalyanpur Badalpara	Regionally explored	Non- Operational	Traffic bound for West Bengal to move towards Rampurhat from Harinsingh. Local roads may be used to transport coal from these blocks to Harinsingh till new proposed railway line is commissioned.	12 km to Harinsingh				
8	Gomarpahari-Siulibana	Regionally explored	Non- Operational	Saharpur-Jamarpani allotted to UP Rajya Vidyut Utpadan Nigam Ltd. (PRC: 1 MTPA)	15 km to Harinsingh				
9	Salbhadra- Gomarpahari	Explored	Non- Operational	46	20 Km to Harinsingh				

Non-CIL blocks in Pipeline in Rajmahal CF

	Details of Non-CIL blocks in Rajmahal CF								
#	Name of the Block	Exploration Status	Operational Status	Evacuation Route	Distance from Nearest major Rail Line (in km)				
10	Mandar Parvat	Explored	Non- Operational		~17 Kms from Pirpainti				
11	Mirzagaon	Under exploration	Non- Operational		~6 Kms from Pirpainti				
12	Dhulia & Dhulia North	Explored	Non- Operational	These blocks are very near to Pirpainti. This will leverage proposed New Godda- Pirpainti line. For movement towards Northern states, coal will move towards Pirpainti to Bhagalpur to destinations. For movement towards Eastern states,	~14 Kms from Pirpainti				
13	Pirpainti Barahat	Explored	Non- Operational	For movement to WB destinations, it will move to Godda to Pakur to Rampurhat to destinations or to Pirpainti to Sahibganj to Pakur to Rampurhat to destinations.	~18 Kms from Pirpainti				
14	Rajgaon	Under Exploration	Non- Operational		~8 Kms from Pirpainti				
15	Dighi Dharampur North & South	Regionally Explored	Non- Operational		~16 Kms from Pirpainti				

Non-CIL blocks in Pipeline in Rajmahal CF

	Details of Non-CIL blocks in Rajmahal CF								
#	Name of the Block	Exploration Status	Operational Status	Evacuation Route	Distance from Nearest major Rail Line (in km)				
16	Dewanganj-Harisingha	Regionally Explored	Non- Operational	Existing railway main line from Rampurhat to Dumka with proposed railway line from Amarkonda to meet main line at Harinsingh. From Harinsingh, traffic bound from Jharkhand, Uttar Pradesh and west of Raimabal CE to move towards Dumka and onwards towards lasidih or towards.					
17	Deocha-Pachami	Regionally Explored	Non- Operational	Hansdiha and onwards to Bhagalpur as per destination. Traffic bound for West Bengal to move towards Rampurhat from Harinsingh. Local roads may be used to transport coal from these blocks to Harinsingh till new proposed railway line is commissioned.	25 km from Harinsingh And 15 Km from Mallarpur Bazar				
18	Kapasdanga-Bharkata	Regionally Explored	Non- Operational	Alternatively, it can also leverage Mallarpur Bazar Station for evacuation towards West Bengal.					
19	Pachwara Central	Explored	Operational	The coal is currently being transported by road to Pakur & Dumka. For movement towards northern states, coal will move from Dumka to					
20	Pachwara North	Explored	Operational	Bhagalpur and onwards. For movement towards eastern states, coal will move towards Pakur to Rampurhat. Pachwara Central allotted to Punjab State Power Corp Ltd. (PRC of 5.6 MTPA) Pachwara North allotted to WBPDCL (PRC of 15 MTPA) Pachwara South allotted to Nevveli UP Power Ltd. (PRC of 9 MTPA)	55 km from Pakur 35 km from Dumka				
21	Pachwara South	Regionally explored	Non- Operational						

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Proposed evacuation plan for Rajmahal CF areas cluster achievable



Total Evacuation of 23.5 MTPA from 4 mines of ECL by FY30

Proposed 14.4	FMC Projects: 23 MTPA (~16.27 rakes per day) capacity will exist by FY30				
rail mode ~ 10.25 r/d	Evacuation via Wharf Wall/Railway Sidings would not be required				
Proposed 9 MTPA evacuation via MGR mode ~ 6.4 r/d	Existing evacuation to NTPC Kahalgaon and Farakka in FY 2022 has been 8.2 MTPA. It is expected to evacuate upto 9 MTPA in FY 2030.				
D					

Remaining Smaller Quantities by Road

Evacuation of 36.5 MTPA from Non-CIL Mines by FY30

For Saharpur Jamarpani (UPRVUNL), the evacuation would be from Rampurhat and would move towards dumka – Bhagalpur to power plants in Uttar Pradesh.

For Pachwara Central (PSPCL), Pachwara North (WBPDCL), and Pachwara South (NUPL) will leverage Pakur Railway Station for loading. Godda – Pirapainti can also be leveraged for north movements by PSPCL and NUPL. These coal block owners have formed a SPV with equity participation for development of coal siding at Pakur for shared use.

WBPDCL currently taking coal via road to both Dumka and Pakur stations for despatch to its power plants

Detailed evacuation routes for under exploration blocks have been mapped in the list attached

Expected commissioningGodda-Pirpainti LineGodda-Pakur Lineof railway works:TDC by FY28-FY29TDC by FY28-FY29

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Proposed Doubling of Rajmahal – NTPC Farakka MGR Line



Key Insights and Recommendations

#	Recommendation	Way Forward
1	New BG line between Godda and Pakur should be expedited to reduce reliance on road transport from the Pachwara blocks to Pakur and Dumka.	Expediting of new line Godda-Pakur
2	At the same time, FMC projects with requisite capacities may be planned by block owners for the Pachwara blocks for efficient loading of coal	FMC projects to be taken up/expedited
3	Proposed projects of Murari-Pakur 3 rd and 4 th line to be expedited due to increased coal traffic from Pakur along with Bardhman-Shaktigarh 5 th line	Proposed 3 rd & 4 th line to be expedited
4	New BG line from Saharpur-Jamarpani block to Harisingh station to be taken up. This may be extended in future to cater to coal traffic from Deocha-Pachami and other non-operational blocks	New line to Harisinghpur from southern blocks
5	MGR line from Rajmahal to NTPC Farakka may be extended to cover coal evacuation from Chupervita of ECL along with doubling of the NTPC Farakka MGR line. Hura C to Rajmahal MGR (~12 Kms) is being constructed by NTPC for taking coal to either Kahalgaon and Farakka Plants	Doubling of MGR Line and expedition of connectivity from Hura C to Rajmahal. NTPC
6	Expediting of Chitra-Basukinath line works along with doubling of Rampurhat-Dumka line to facilitate coal traffic in the Rajmahal CF	Doubling of Rampurhat-Dumka line
7	Options for commissioning of Public Freight Terminals with facilities of mechanized loading of coal may be evaluated for providing rake loading services to non-CIL blocks to reduce road movement of coal from these regions	Exploration of Public Freight Terminals for mechanized coal loading and coal transport through rail for non-CIL blocks
8	Automatic Signaling may be proposed across all major rail sections in the vicinity of Rajmahal CF 51	Indian Railways

²⁵²⁸⁹Estimated Wagon Procurement requirement by Indian Railways (ECR, SER, ER – Jharkhand & West Bengal)

Destination State	Million Tonne - Kms	Volume (Million Tonnes)	Weighted Avg Distance of Despatch (KMs)		Destination State	Million Tonne - Kms	Volume (Million Tonnes)	Weighted Avg Distance of Despatch (KMs)
Jharkhand	3075.80	19.04	161.54		Jharkhand	6671.76	41.30	161.54
West Bengal	8097 04	20 10	212.07		West Bengal	12490.92	58.90	212.07
West Deliga	8037.04	50.10	212.07		Uttar Pradesh	45803.46	56.00	817.92
Uttar Pradesh	25024.23	30.60	817.92		Bihar	13982.70	38.70	361.31
Bihar	7128.65	19.73	361.31		Punjab & Haryana	45407.04	33.00	1375.97
Punjab & Haryana Others	17924.77 7181.25	13.03 9.58	1375.97 750		Additional Push Volumes + Commerci Despatches to be taken as per FY22 av Leads	al /g 22726.64	57.22	397.18
Total	68431.74	130.15 Mil	lion Tonnes		Total	147082.53	285.12 Mi	llion Tonnes
FY22 - Rail Average Lead for Coal Supply in FY22 for supplies by Jharkhand & West Bengal 525.80 KMs					FY30 - Rail	verage Lead for C Jhark	oal Supply in FY30 hand & West Ben 515.86 KMs	D for supplies by gal
		FY22	FY30		Additional Rakes/Day Despatch Envisaged			107.62
Average Lead of coal Des	spatch from JH + WB (KN	√ls) 525.8	0 515.86		Estimated Improved TAT (Days)			3.85
Estimated Average Turna	around time of Rakes (Da	ays) 3.92	3.85		Total Number of Rakes Required			414.34
Rakes / Day Despatch k	by Rail + RCR + RSR Mod	e 90.38	3 198	5	Estimated Wagons to be Procured for Coal	till FY30		24,032
				Ŭ				

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Source: Sagarmala Report, Ministry of Ports, Shipping & Waterways, Comprehensive Action Plan for Port Connectivity on Gatishakti NMP 2022, DPIIT]

Additional ~1,803 Wagons would be required for despatches during peak demand period from November to March

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^{2528979/2023/CPIAM} Manarashtra's coal-based power generation clusters



N	hajor Coal Based Power Pla	nts in Manarasht	ſd
Name of TPS	Power Utility	Installed Capacity (MW)	Coal Consumed in FY22 (MMT)
Tiroda	Adani Power Maharashtra Lttd	3300	14.1826
Adani Dahanu	Adani Electricity Mumbai Ltd	500	1.989
Dhariwal	Dhariwal Infrastructure Ltd	600	2.721
GMR Warora	GMR Warora Energy Ltd	600	2.3192
Ratnagiri	JSW Energy Ltd	1200	2.7286
Bhusawal	MAHAGENCO	1210	4.7446
Chandrapur	MAHAGENCO	2920	11.5712
Khaparkheda	MAHAGENCO	1340	6.2042
Koradi	MAHAGENCO	2190	8.1874
Nashik	MAHAGENCO	630	1.6781
Parli	MAHAGENCO	750	1.9664
Paras	MAHAGENCO	500	1.9981
Mouda Super TPS	NTPC Ltd	2320	8.6862
Solapur Super TPS	NTPC Ltd	1320	3.2532
Amravati TPS	RattanIndia Power Ltd.	1350	5.9049
Trombay	The TATA Power Company Ltd	750	2.31
Sai Wardha Power Ltd, Warora	Sai Wardha Power Generation Pvt Ltd	540	1.4753
	Total	22020	81.92

^{2528979/2023/CPIAM} Manarashtra's Cement production clusters

Maharashtra's Total Coal Demand from Cement Sector in FY22: 3.19 Million Tonnes Chandrapur and Nagpur Cement Production Cluster: 7 Jalgaon Cluster **Cement Plants** Ce U Wardha Valley Coalfields of WCL Solapur Cluster Major Coal Consuming Districts of Maharashtra: 2030 (Estimated) Nagpur, Chandrapur, Bhandara, >15 MTPA Coal Consumption Jalgaon 10-15 MTPA Coal Consumption Palghar/Thane 5-10 MTPA Coal Consumption Nashik 1-5 MTPA Coal Consumption Solapur, Pune, Raigad, Ahmednagar, Т Wardha & Akola

Name of Cement Plant	Cement Production: FY22 (MTPA)	Estimated Coal Consumption(MTPA)
ACC Ltd Chanda, Chandrapur	2.63	0.36
Ambuja Cement, Maratha Cement, Chandrapur	3.60	0.49
entury Textiles, Manikgarh Cement I & II, Chandrapur	3.00	0.41
ltratech Cement, Awarpur, Chandrapur	2.73	0.37
Ultratech Cement, Hotgi, Solapur	2.40	0.32
Ultratech Cement, Nagpur	1.40	0.19
Ultratech Cement, Ratnagiri	0.34	0.05
Zuari Cement, Solapur	0.84	0.11
Orion Cement, Jalgaon	1.40	0.19
Murli Industries, Chandrapur	2.10	0.28
Mancherial Cement, Jalgaon	1.40	0.19
JSW Dolvi, Raigad	0.70	0.09
India Cements, Parli, Beed	0.77	0.10
Birla Corporation, Butibori, Nagpur	0.35	0.05
otal Maharashtra Cement Production	23.66	3.19

Major Cement Production Plants in Maharashtra

^{2528979/2023/CPIAM} Manarashtra's Iron & Steel production clusters



WCL has ambitious production capacity expansion plans

Maharashtra (WCL) All figures in million tonnes Coal Supply from WCL FY22 FY23 FY24 FY25 FY26 FY27 FY28 FY29 FY30 Pench Kanhan & Tawa Valley CF 2.97 2.84 3.3 3.71 4.59 4.59 4.59 4.59 4.59 Wardha Valley, Umrer, Kamptee & Bander CF 54.74 61.426 64.30 65.42 65.42 63.7 65.42 65.42 65.42 Total WCL (CIL) 64 70 70 58 67 68 70 70 70

- Wardha Valley, Umrer, Kamptee and Bander coalfields are the major coalfields contributing to current production of WCL.
- Till FY30, WCL is expected to grow from current ~64 MT (FY23) to ~70 MT (FY30), with a CAGR growth of ~1.3%
- WCL's major coal producing area of Wardha Valley has produced ~40 MT in FY23 with plans to produce ~40 MT in FY30. Hence, this area has already reached its target of FY30 with existing evacuation infrastructure.

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WCL has ambitious production capacity expansion plans (1/5)

Maharashtra

All figures in million tonnes

Coalfield			AREA	Name of Mine / Project	Type (UG / OC)	PR Capacity (MTY)	Actual 21- 22	Act 2022-23	2023-24	2024-25	2025- 26	2026-27	2027- 28	2028- 29	2029- 30
Wardha Valley	Chandrapur	Mahakali	Chandrapur	UG		0.029									
Wardha Valley	Ballarpur	Ballarpur RO	Chandrapur	UG	0.600	0.088	0.110	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120
Wardha Valley	Ballarpur	Sasti RO	Chandrapur	UG	0.360	0.042	0.000								
Wardha Valley	Chandrapur	Durgapur Rayatwari RPR	Chandrapur	UG	0.600	0.108	0.100	0.150	0.150	0.150	0.140	0.140	0.140	0.140	0.140
Wardha Valley	Chandrapur	Hindusthan Lalpeth (Mana & Nandgaon)	Chandrapur	UG	0.600	0.150	0.063	0.090	0.080	0.080	0.080	0.080	0.080	0.080	0.080
Wardha Valley	Wani North	Rajur (Incl. RO)	Yeovatmal	UG	0.300	0.052	0.053	0.065	0.080	0.080	0.070	0.070	0.070	0.070	0.070
Kamptee	Nagpur	Patansaongi RPR (Patansongi Scheme)	Nagpur	UG	0.370	0.054	0.037	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
Kamptee	Nagpur	Saoner RPR (II &III)	Nagpur	UG	0.960	0.249	0.282	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.500
Kamptee	Nagpur	Silewara Ph-II	Nagpur	UG	0.800	0.078	0.052	0.085	0.090	0.090	0.100	0.100	0.100	0.100	0.100
Bander	Umrer	Morpar	Chandrapur	UG	0.090	0.072	0.024								
Pench Kanhan	Pench	Mahadeopuri	Chindhwara	UG	0.150	0.082	0.073	0.125	0.100	0.100	0.120	0.120	0.120	0.120	0.120
Pench Kanhan	Pench	Mathani	Chindhwara	UG	0.270	0.073	0.092	0.060							
Pench Kanhan	Pench	Naharia	Chindhwara	UG	0.360	0.252	0.283	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300
Pench Kanhan	Pench	Vishnupuri II	Chindhwara	UG	0.260	0.074	0.095	0.125	0.090						
Pench Kanhan	Kanhan	Jharna	Chindhwara	UG	0.090 58	3									

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WCL has ambitious production capacity expansion plans (2/5)

💁 Maharashtra

All	figures	in	million	tonnes
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Coalfield			AREA	Name of Mine / Project	Type (UG / OC)	PR Capacity (MTY)	Actual 21- 22	Act 2022-23	2023-24	2024-25	2025- 26	2026-27	2027- 28	2028- 29	2029- 30
Pench Kanhan	Kanhan	Mauri Scheme RCE	Chindhwara	UG	0.180	0.171		0.190	0.190	0.190					
Pench Kanhan	Kanhan	Tandsi Expan. (Incl. Tandsi RPR)	Chindhwara	UG	0.590	0.158	0.094	0.060	0.160	0.160	0.300	0.300	0.300	0.300	0.300
Tawa Valley	PATAHKHERA	Chatarpur II Sarni	Betul	UG	0.200	0.071	0.060	0.060							
Tawa Valley	PATAHKHERA	(including D2 Dyke)	Betul	UG	0.420										
Tawa Valley	PATAHKHERA	Shobhapur	Betul	UG	0.600	0.019									
Tawa Valley	PATAHKHERA	Tawa Phase-I	Betul	UG	0.210	0.328	0.270	0.370	0.360	0.360	0.360	0.360	0.360	0.360	0.360
		Chattarpur I													
Tawa Valley	PATAHKHERA	(including Umri)	Betul	UG	0.210	0.334	0.407	0.610	0.600	0.600	0.360	0.360	0.360	0.360	0.360
Tawa Valley	PATAHKHERA	Tawa - II Expansion	Betul	UG	0.390	0.353	0.464	0.600	0.660	0.660	0.650	0.360	0.360	0.360	0.360
Kamptee	Nagpur	Saoner UG-1 Expansion	Nagpur	UG	1.200	0.205	0.163	0.160	0.445	0.900	1.200	1.200	1.200	1.200	1.200
Kamptee	Nagpur	Waghoda	Nagpur	UG	0.390						0.200	0.300	0.350	0.350	0.350
Pench Kanhan	Pench	Jamuniya	Chindhwara	UG	0.900										
Pench Kanhan	Pench	Dhankasa	Chindhwara	UG	1.000					0.300	0.700	1.400	1.800	1.800	1.800
Tawa Valley	PATAHKHERA	Tawa -III	Betul	UG	0.840					0.145	0.420	0.420	0.720	0.720	0.720
Pench Kanhan	Kanhan	Sharda	Chindhwara	UG	0.378				0.045	0.080	0.150	0.250	0.350	0.350	0.350
Tawa Valley	PATAHKHERA	Gandhigram	Betul	UG	1.260						0.100	0.400	0.800	1.200	1.200
Wardha Valley	Ballarpur	Gauri I & II Expn. Scheme	Chandrapur	OC	1.800	0.944	0.866	1.000	1.000						
Wardha Valley	Ballarpur	Pauni(OC SCHEME)	Chandrapur	OC	0.600										
Wardha Valley	Wani	Kolgaon RPR Explo.of Patch	Chandrapur	OC	0.500	0.600	0.600	0.600	0.320						
Pench Kanhan	Pench	Pench (Sethia, Barkui,	Chindhwara	OC	0.100	0.180	0.015	0.200	0.500	0.500					
		Cininaj				29									

WCL has ambitious production capacity expansion plans (3/5)

Maharashtra

												All	figures in	million to	onnes
Coalfield			AREA	Name of Mine / Project	Type (UG / OC)	PR Capacity (MTY)	Actual 21- 22	Act 2022-23	2023-24	2024-25	2025- 26	2026-27	2027- 28	2028- 29	2029- 30
Wardha Valley	Ballarpur	Scheme for Ballarpur OC Ambara &	Chandrapur	OC	0.540	0.265	0.101	0.625	0.625	0.625					
Pench Kanhan	Kanhan	other Quarry Patches (Mohan)	Chindhwara	OC	0.120	0.373	0.291								
Bander	Umrer	Gokul	Nagpur	OC	1.875	1.875	1.875	1.875	1.000						
Wardha Valley	Ballarpur	Gauri Deep	Chandrapur	OC	0.400	0.600	0.563	0.600	0.600	0.600	0.600				
Wardha Valley	Ballarpur	Sasti Expn. (SCHEME)	Chandrapur	OC	1.400	1.463									
Wardha Valley	Ballarpur	Pauni-II Expansion OC	Chandrapur	OC	3.250	3.250	3.250	3.250	3.900	3.900	3.250	3.000	1.850		
Wardha Valley	Chandrapur	Durgapur Expn. Deep	Chandrapur	OC	3.000	1.836	1.725	1.795	2.400	2.400	3.000	3.000	3.000	3.000	3.000
Wardha Valley	Chandrapur	Deep Extention	Chandrapur	OC	2.500	0.190	0.011								
Wardha Valley	Majri	New Majri Sector IA & II A Extn.	Chandrapur	OC	2.000	1.667	2.402	2.000	1.000						
Wardha Valley	Wani	Nirguda Deep Extn. OC	Chandrapur	OC	3.500	4.167	4.308	5.200	5.250	5.250	5.250	5.250	5.250	3.000	
Wardha Valley	Wani	Bellora/ Naigaon Deep	Yeovatmal	OC	1.000	0.942	1.250	1.250	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Wardha Valley	Wani	Expansion (Deep)	Yeovatmal	OC	3.500	3.752	4.451	4.500	4.500	4.500	4.500	4.500	4.500	4.200	
Wardha Valley	Wani North	Ghonsa RPR	Yeovatmal	OC	0.600	0.426	0.460	0.600							
Wardha Valley	Wani North	Junad Extn.	Yeovatmal	OC	0.600	0.739	0.631	0.600	0.600						
Wardha Valley	Wani North	Kolar pimpri Extn.	Yeovatmal	OC	1.500	0.511	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500
Wardha Valley	Wani North	Ukni Deep	Yeovatmal	OC	2.000 6	0 1.500	1.756	1.700	2.000	2.000	2.000	2.000	2.000	2.000	2.000

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All figures in million tonnes

WCL has ambitious production capacity expansion plans (4/5)

Maharashtra

Coalfield			AREA	Name of Mine / Project	Type (UG / OC)	PR Capacity (MTY)	Actual 21- 22	Act 2022-23	2023-24	2024-25	2025- 26	2026-27	2027- 28	2028- 29	2029 30
Wardha Valley	Wani North	Junad Extn.	Yeovatmal	OC	0.600	0.739	0.631	0.600	0.600						
Wardha Valley	Wani North	Kolar pimpri Extn.	Yeovatmal	OC	1.500	0.511	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500
Wardha Valley	Wani North	Ukni Deep	Yeovatmal	OC	2.000	1.500	1.756	1.700	2.000	2.000	2.000	2.000	2.000	2.000	2.000
Kamptee	Nagpur	Bhanegaon Amalgamated	Nagpur	OC	1.000	0.633	0.403	0.625	0.625	1.150	1.000	1.000	1.000	1.000	1.000
Kamptee	Nagpur	Gondegaon - Ghatrohan	Nagpur	OC	3.500	3.500	3.500	3.500	3.500	1.500					
Wardha Valley	Chandrapur	Hindustan Lalpeth Expn	Chandrapur	OC	1.000	0.457	1.000	1.000		1.000	0.600	0.600			
Pench Kanhan	Pench	Urdhan	Chindhwara	OC	0.600	0.501	0.700	0.600	0.700	0.700	0.700	0.700	0.700	0.700	0.400
Umrer	Umrer	Expansion (Amb River Phase - IV)	Nagpur	OC	2.000	3.552	3.808	1.500							
Wardha Valley	Wani	Penganga	Chandrapur	OC	4.500	6.300	5.706	5.400	2.100						
Kamptee	Nagpur	Singori Amalgamated	Nagpur	OC	0.800	1.120	1.200	1.200	1.200						
Kamptee	Nagpur	Inder- Kamptee OC Amalgamated	Nagpur	OC	3.200	2.221	2.506	2.650	3.200	3.200	3.200	3.200	3.200	3.200	3.200
Wardha Valley	Majri	Yekona I & II OC	Chandrapur	OC	2.750	2.417	2.750	2.750	2.750	2.750	2.750	2.750	2.750	2.750	2.750
Wardha Valley	Wani North	Pimpalgaon OC Scheme	Yeovatmal	OC	1.500			0.400	1.000	1.500					
Wardha Valley	Chandrapur	Bhatadih Expn	Chandrapur	OC	2.000	1.302	1.465	1.465	1.465	2.000	2.000	2.000	2.000	2.000	2.000
Umrer	Umrer	Dinesh OC Expn	Nagpur	OC	8.000	1.131	3.003	4.200	4.200	6.000	6.000	6.000	6.000	6.000	8.000
Wardha Valley	Majri	New Majri Expn UG to OC	Chandrapur	OC	3.000	1.925	1.864	2.250	3.000	3.000	3.000	3.000	3.000	3.000	3.000
Umrer	Umrer	Makardhokra I	Nagpur	OC	2.000	3.720	4.200	4.100	4.200	4.200	4.200				

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WCL has ambitious production capacity expansion plans (5/5)

Maharashtra

All figures in million tonnes

Coalfield			AREA	Name of Mine / Project	Type (UG / OC)	PR Capacity (MTY)	Actual 21- 22	- Act 2022-23	2023-24	2024-25	2025- 26	2026-27	2027- 28	2028- 29	2029- 30
Kamptee	Nagpur	Adasa UG to OC	Nagpur	OC	1.500	0.607	0.237	1.025	1.500	1.850	1.850	1.850	1.850	1.850	1.850
Pench Kanhan	Pench	Vishnupuri UG to OC	Chindhwara	OC	2.000					0.490	1.160	1.500	1.500	1.500	1.500
Wardha Valley	Ballarpur	Gauri-Pauni Expn	Chandrapur	OC	3.500				2.500	3.500	3.500	3.500	3.500	3.500	3.500
Wardha Valley	Ballarpur	Sasti Expn Ghonsa Expn	Chandrapur	OC	2.500		2.450	2.200	1.725	2.500	2.500	2.500	2.500	2.500	2.500
Wardha Valley	Wani North	OC (Kumbharkha ni UG to OC)	Yeovatmal	OC	1.500				0.600	1.200	1.500	1.500	1.500	1.500	1.000
Wardha Valley	Ballarpur	Dhuptala Sasti UG to OCP	Chandrapur	OC	2.500		0.701	1.300	1.700	2.500	2.500	2.500	2.500	2.500	2.500
Wardha Valley	Ballarpur	Ballarpur N/W	Chandrapur	OC	1.500					0.500	1.200	1.200	1.200	1.200	1.500
UMRER SIDING	Umrer	Gokul Extn OC	Nagpur	OC	2.000				1.000	2.000	2.000	2.000	2.000	2.000	2.000
Kamptee Umrer	Nagpur Umrer	Singhori Deep MKD-I Expn Gauri	Nagpur Nagpur	OC OC	2.000				1.000	1.500	1.500	1.500 4.200	1.500 4.200	1.500 4.200	2.000 4.200
Wardha Valley	Ballarpur	Central/Gauri Deep Expn	Chandrapur	OC							0.500	0.500	0.500	0.600	1.000
Wardha Valley	Majri	Konda Hardola	Chandrapur	OC							0.500	0.500	0.600	1.600	2.500
Wardha Valley	Wani North	Chinchala- Pisgaon	Yeovatmal	OC										0.500	1.000
Kamptee	Nagpur	Silori OC	Nagpur	OC										0.500	1.000
Wardha Valley	Wani	Penganga Deep	Chandrapur	OC							0.500	0.500	0.500	1.000	2.000
Wardha Valley	Wani North	Borda	Yeovatmal	OC										0.500	1.000
Wardha Valley	Wani North	Shivani	Yeovatmal	OC										0.500	0.700
Wardha Valley	Wani North	Parsoda	Yeovatmal	OC										0.300	0.800
Pench Kanhan	Pench	Thesgora UG to OC	Chindhwara	OC	(62									0.300
ro W/arothiæ V&INe &A	JESW MRAIR AO,	MORCO EGENORR DEPERPM	, Caloverschraubber, M	linistry Of COAL on 17/05/3	2023 04:47 PN	N					0.500	0.500	0.500	0.600	0.800

Non-CIL blocks in Wardha Valley CF

Maharashtra

Block Name	Allocated to	PRC (MT)	Operational Status	– Proposed Loading point	EUP and other remarks	FY23 Production (MT)	FY22 Production (MT)
Baranj I, Baranj II, Baranj III, Baranj IV, Manora Deep & Kiloni	Karnataka Power Corporation Ltd	2.5	Operational	Roadways will be used to deliver coal to Majri Junction by haul trucks (distance from mine is approx 7Kms)	Bellary Thermal Power Station Unit 1 and 2 Karnataka	1.59	0.96
Belgaon	Sunflag Iron & Steel Company Ltd	0.27	Operational	Roadways will be used to deliver coal to Chikni Road station (distance from mine is approx 4.5 Kms)	500 TPD KILN DRI/ 10MW Combustor, 350 TPD KILN DRI & 15 MW Captive Power Plant at Bhandara Maharastra	~0.19	0.18
Marki Mangli - III	B.S. Ispat Ltd	0.3	Operational	Roadways will be used to deliver coal to Kayar station	B.S. ISPAT LTD Nagpur	~0.14	0.13
Marki Mangli - I	Topworth Urja and Metals Ltd	0.38	Operational	Roadways will be used to deliver coal to Kayar station (distance from mine is approx 24 Kms)	2 X 100 TPD Sponge iron Plant & 2 X 13 MW Captive power plant at Nagpur	~0.14	0.24
Marki Mangli - II	Yazdani International Pvt Ltd	0.3	Non- Operational	Roadways will be used to deliver coal to Wani station (distance from mine is approx 37 Kms)	Sponge Iron Plant of Yazdani Stee and Power, Jajpur Odisha	I 0	0
Takli-Jena-Bellora (North & South)	Aurobindo Reality & Infrastructure Pvt Ltd	1.5	Non- Operational	Roadways will be used to deliver coal to Bhandak Station (distance from mine is approx 7Kms)	Commercial use	0	0
Nerad Malegaon	Indrajit Power Pvt Ltd	0.36	Non- Operational	Roadways will be used to deliver coal to Kayar station (distance from mine is approx5 Kms)	Indrajit Power Private Limited (IPPL) Wardha Maharastra	0	0
Bhivkund	Sunflag Iron & Steel Company Ltd	0.72	Non- Operational	Roadways will be used to deliver coal to Chikni Road station	Commercial Mining	0	0
North West of Madheri	MH Natural Resources Pvt. Ltd.	NA	Non- Operational	63 Partially explored block	-	0	0
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Non-CIL blocks in Pench Kanhan, Kamptee, Katol & Mohpani CF

두 Maharashtra

Block Name	Allocated to	PRC (MT)	Operational Status	Proposed Loading point	EUP and other remarks	FY23 Production (MT)	FY22 Production (MT)
Sial Ghogri	Reliance Cement Company Pvt. Ltd.	0.3	Operational	Coal is transported on trucks/dumpers via road.	Maihar Cement Plant Madhya Pradesh	~0.36	0.20
Brahmpuri	Birla Corporation Ltd	0.36	Non-Operational	Coal is transported on trucks/dumpers via road.	Birla Vikas Satna MP & Madhav Nagar Rajasthan Plant at Bhandara Maharastra	0	0
Mandla North	Dalmia Cement (Bharat) Ltd.	1.5	Non-Operational	Coal is likely to be transported via roadways to nearest railhead	Dalmia Cement works; block allotted in 6 th Tranche auctions Various cement works of	0	0
Dahegaon Gowari	Ambuja Cements	0.50	Non-Operational	Coal is likely to be transported via roadways to nearest railhead	Ambuja such as Darlaghat, Bhatapara, Rabriyawas, Bargarh, Rauri, Ropar, and Gajambuja	0	0
Kalambi Kamleshwar (Western part)	Samlok Industries Pvt. Ltd.	Partially explored	Non-Operational	-	-	0	0
Total		17.5				0.36	0.2

Coal Blocks to be Auctioned in 7th Tranche

Maharashtra (including blocks in Pench Kanhan-Tawa Valley, Madhya Pradesh)

Block Name	Coalfield	State	PRC (MT)
Dahegaon Jhunki	Kamptee	Maharashtra	0.5
Dahegaon Saptadhara	Kamptee	Maharashtra	0.5
Kosar Dongargaon	Wardha Valley	Maharashtra	0.3
Mandla South	Pench Kanhan	Madhya Pradesh	0.3
Pathakhuri-Piparia (Northern Part)	Pench Kanhan Tawa	Madhya Pradesh	0.36
Pathakhuri-Piparia (Southern Part)	Pench Kanhan Tawa	Madhya Pradesh	0.36
Rawanwara North (Eastern Part)	Pench-Kanhan	Madhya Pradesh	0.5
Rawanwara North (Western Part)	Pench-Kanhan	Madhya Pradesh	0.5
Tandsi-III & Tandsi-III Extn (Revised)	Pench Kanhan	Madhya Pradesh	0.6
Thesgora-B/ Rudrapuri	Pench Kanhan Tawa	Madhya Pradesh	1
West of Kiloni	Wardha Valley	Maharashtra	0.25
Total	65		5.17

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Origin – Destination Cluster Mapping for Maharashtra

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹⁷O-D²Source cluster Mapping – Despatch of Coal from Maharashtra: FY22 snapshot

All figures in million tonnes



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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ^{2528979/2023} CPIAM O-D Source cluster Mapping – Maharashtra's internal consumption (1/2)





Major Coal Consuming Districts of Maharashtra: 2030 (Estimated)



other states on this line)										
Maharashtra's Coal Dem	and 2022 ~ 85 MTPA	Maharashtra's	Coal Dema	nd 2030 ~	111 MTPA					
Rail Supply by Maharashtra	2022 ~ 31.42 MTPA	Rail Supply by N	Aaharashtro	a 2030 ~ 41	.06 MTPA					
FY22			FY	30						
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030					
Chandrapur	Majri	8758309.2	6.23	10537975.6	7.50					
Chandrapur	Tadali	494332.4	0.35	989011.9	0.70					
Chandrapur	Kazipet	173927.1	0.12	347976.4	0.25					
Majri	Wardha	9179115.9	6.53	10609223.6	7.55					
Majri	Mudkhed	45438.4	0.03	90908.8	0.06					
Majri	Warora	1194776.0	0.85	2390391.0	1.70					
Wardha	Akola	4338955.5	3.09	5139226.8	3.66					
Mudkhed	Parli	45438.4	0.03	90908.8	0.06					
Tadali	MDIT	167237.8	0.12	334593.0	0.24					
Akola	Bhusaval	4994528.3	3.55	5638683.4	4.01					
Bhusaval	Jalgaon	4928218.1	3.51	5575786.2	3.97					
Jalgaon	Manmad	59739.0	0.04	119520.0	0.09					
Manmad	Nasik Rd	1501461.3	1.07	1509348.9	1.07					
Kazipet	Secunderabad	379368.6	0.27	582359.1	0.41					
Secunderabad	Chittapur	379368.6	0.27	582359.1	0.41					
Chittapur	Tilati	379368.6	0.27	582359.1	0.41					
Tilati	Solapur	379368.6	0.27	582359.1	0.41					
Wardha	Nagpur	11647338.7	8.29	11594287.6	8.25					
Chhindwara	Nagpur	37196.4	0.03	35281.9	0.03					
Akola	Pune	372704.9	0.27	368393.6	0.26					
Nagpur	Kanhan	1052190.9	0.75	903307.6	0.64					
Kanhan	Gondia	2572928.0	1.83	2565807.4	1.83					

Expected Load from Maharashtra-to-Maharashtra main trunk lines (Excluding load from

• Major consumers include Adani Electricity, NTPC Mouda & Solapur plants, Mahagenco's Koradi,

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ^{2528979/2023} CPIAM (Computer No. 350449) O-D Source cluster Mapping – Maharashtra's internal consumption (1/2)

Maharashtra's Internal total Rail Despatch in FY22 = 7.86 Million Tonnes



	other states	s on this line)							
Maharashtra's Coal Deman Rail Supply by Maharashtra 2(d 2022 ~ 85 MTPA 022 ~ 31.42 MTPA	Maharashtra's Coal Demand 2030 ~ 111 MTPA Rail Supply by Maharashtra 2030 ~ 41.06 MTPA							
FY22			FYS	30					
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030				
Akola	Latur	1075943.6	0.77	1043834.8	0.74				
Latur	Solapur	1075943.6	0.77	1043834.8	0.74				
Maksi	Bhopal	605673.2	0.43	904724.4	0.64				
Bhopal	Itarsi	605673.2	0.43	904724.4	0.64				
Itarsi	Akola	38578.4	0.03	57626.5	0.04				
Itarsi	Nagpur	44238.8	0.03	66081.8	0.05				
Itarsi	Kahndwa	522856.0	0.37	781016.2	0.56				
Kahndwa	Jalgaon	522856.0	0.37	781016.2	0.56				
Umred	Buti Bori	4933293.2	3.51	5206416.7	3.70				
Nagpur	Akola	6537429.9	4.65	6166345.0	4.39				
Akola	Parli	37288.2	0.03	24323.3	0.02				
Nagpur	Gondia	1806401.7	1.29	1848840.5	1.32				
Wardha	Amravati	161561.4	0.11	105387.5	0.07				
Manmad	Ankai	24532.9	0.02	37516.1	0.03				
Ankai	Pune	24532.9	0.02	37516.1	0.03				

Expected Load from Maharashtra-to-Maharashtra main trunk lines (Excluding load from

• Major consumers include Adani Electricity, NTPC Mouda & Solapur plants, Mahagenco's Koradi, Odda Chandrapur & Khaperkheda plants, Adani Power's Gondia Power Plant

²⁵²⁸⁹⁷⁹ O-D Source cluster Mapping – Slight increase in supply to Maharashtra (1/2)

All figures in million tonnes

Name of TPS	Utility	Wardha CF	Pench Kanhan & Tawa	Umrer, Bander, Kamptee	Captive	Total Maharashtra	Others	Total Coal Consumpt ion (FY22)	Estimated Coal Consumption (FY30)	Wardha CF	Pench Kanhan & Tawa CFs	Umrer, Bander, Kamptee CFs	Captive	Total Maharashtra	Others
TIRODA	ADANI POWER MAHARAS HTRA LTD.	0.1	0.0	3.4	0.0	3.5	10.7	14.2	15.2	0.0	0.0	2.7	0.0	2.7	12.4
ADANI DAHANU	ADANI ELECTRICI TY MUMBAI LIMITED	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.1	0.0	0.0	0.0	0.0	0.0	2.1
DHARIWAL INFRASTRUCTU RE Ltd.	DHARIWA L INFRASTR UCTURE LIMITED	0.8	0.0	0.0	0.0	0.8	2.0	2.7	2.9	0.0	0.0	0.7	0.0	0.7	2.2
GMR WARORA ENERGY LTD.	GMR WARORA ENERGY LTD.	1.4	0.0	0.0	0.0	1.4	0.9	2.3	2.8	2.4	0.0	0.0	0.0	2.4	0.4
RATNAGIRI	ENERGY	0.0	0.0	0.0	0.0	0.0	2.7	2.7	4.6	0.0	0.0	0.0	0.0	0.0	4.6
BHUSAWAL	MSPGCL	2.6	0.7	1.4	0.0	4.8	0.0	4.7	6.6	1.8	0.5	1.0	0.0	3.2	3.3
CHANDRAPUR	MSPGCL	6.8	0.0	0.1	0.0	6.9	4.7	11.6	15.8	6.0	0.0	0.0	0.0	6.0	9.9
KHAPARKHEDA	MSPGCL	0.2	0.1	2.7	0.0	3.0	3.2	6.2	8.2	0.0	0.0	1.4	0.0	1.4	6.8
KORADI	MSPGCL	4.0	0.0	2.7	0.0	6.7	1.5	8.2	11.2	0.0	0.0	0.0	0.0	0.0	11.2
NASHIK	MSPGCL	0.9	0.0	0.7	0.0	1.6	0.1	1.7	3.7	0.5	0.0	1.9	0.0	2.4	1.3
PARLI	MSPGCL	0.1	0.0	0.0	0.0	0.1	1.8	2.0	3.5	1.0	0.0	0.0	0.0	1.0	2.5
PARAS	MSPGCL	1.3	0.0	0.5	0.0	1.9	0.1	2.0	2.7	1.8	0.1	0.7	0.0	2.7	0.0
Generated from Resoffice by	NTPC LTD. y N RAJESWAR	2.5 A RAO, MOC-SO	0.0 (NRR)-CPIAM	1.5 , MOC-SO(NRR	0.0 .), Ministry Of	4.0 COAL on 17/05/	4.7 2023 04:47 PM	8.7	11.6	5.7	0.0	3.8	0.0	9.5	2.1

²⁵²⁸⁹⁷O-D³Source cluster Mapping – Slight increase in supply to Maharashtra (2/2)

All figures in million tonnes

Name of TPS	Utility	Wardha CF	Pench Kanhan & Tawa	Umrer, Bander, Kamptee	Captive	Total Maharashtra	Others	Total Coal Consumpt ion (FY22)	Estimated Coal Consumption (FY30)	Wardha CF	Pench Kanhan & Tawa CFs	Umrer, Bander, Kamptee CFs	Captive	Total Maharashtra	Others
SOLAPUR SUPER TPS	NTPC LTD.	0.9	0.0	0.3	0.0	1.3	2.0	3.3	5.9	2.3	0.0	0.8	0.0	3.1	2.8
AMARAVATI TPS	RATTANIN DIA POWER LTD.	0.2	0.0	0.0	0.0	0.2	5.7	5.9	6.3	0.0	0.0	0.0	0.0	0.0	0.0
TROMBAY	THE TATA POWER COMPANY LIMITED	0.0	0.0	0.0	0.0	0.0	2.3	2.3	2.7	0.0	0.0	0.0	0.0	0.0	9.0
SAI WARDHA POWER Ltd., WARORA	SAI WARDHA POWER GENERATI ON PVT LTD.	1.6	0.0	0.0	0.0	1.6	0.0	1.5	2.5	2.5	0.0	0.0	0.0	2.5	0.0
Bhusawal TPS	MSPGCL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.6	0.0	2.5	0.0	3.2	0.0
Total		23.4	0.9	13.4	0.0	37.7	44.4	81.9	111.5	24.5	0.6	15.6	0.0	40.7	70.8

• Major growth in coal consumption of power houses in Maharashtra shall be catered to by WCL. However, due to existing FSAs of plants in Maharashtra with other subsidieries along with major import-based power plants such as Trombay plant of Tata Power present, coal shall also be sourced from outside Maharashtra for the power sector.

For upcoming power plant, Bhusawal TPS, coal has been allocated from WCL; allocated Mine - WCL, Umred/Ghugus; Distance from mine – 403/430km; Allocation Date: 11-09-2020, Source: WCL mines ,Grade: G9/G10, Quantity : 3.18 million tonne.

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Maharashtra to Madhya Pradesh (1/2)

Maharashtra (including Pench in MP) to Madhya Pradesh total Rail Despatch in FY22 = 5.160 MT



Gwalior, Bhopal, Seoni

Expected Loa	d from Mahar	astra to MP main this line	trunk lines (Exc)	luding load from	other states on
MP's Coal De	emand 2022 ~ 8	4.33 MTPA	MP's Coal Den	nand 2030 ~ 11	0.20 MTPA
Rail Supply by N	Maharashtra 202	2 ~ 5.16 MTPA F	Rail Supply by Mał	harashtra 2030 '	~ 6.74 MTPA
	FY22			FY30	
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030
Chandrapur	Nagbhir	118875.0	0.08	237833.5	0.17
Nagbhir	Gondia	118875.0	0.08	237833.5	0.17
Gondia	Balaghat	118875.0	0.08	237833.5	0.17
Balaghat	Nainpur	161984.4	0.12	276239.2	0.20
Nainpur	Kachhpura	161984.4	0.12	276239.2	0.20
Kachhpura	Narsinghpur	161984.4	0.12	276239.2	0.20
Umred	Buti Bori	537105.1	0.38	566841.0	0.40
Buti Bori	Nagpur	228025.5	0.16	213760.5	0.15
Nagpur	Amla	1192628.9	0.85	1184975.8	0.84
Amla	Betul	1192628.9	0.85	1184975.8	0.84
Betul	Itarsi	1684235.6	1.20	1897780.4	1.35
Itarsi	Narsinghpur	830959.5	0.59	884592.9	0.63
Wardha	Akola	2746965.0	1.95	3334674.0	2.37
Akola	Bhusaval	2746965.0	1.95	3334674.0	2.37
Bhusaval	Khandwa	2746965.0	1.95	3334674.0	2.37
Khandwa	Indore	23618.3	0.02	32873.4	0.02
Chandrapur	Majri	880313.5	0.63	1761245.2	1.25
Majri	Wardha	2995035.0	2.13	3588037.5	2.55
Buti Bori	Wardha	639956.4	0.46	648497.2	0.46
Wardha	Nagpur	888026.3	0.63	901860.7	0.64
Maksi	Bhopal	559666.9	0.40	826603.0	0.59
Bhopal	Itarsi	1224066.6	0.87	1525048.9	1.09
Itarsi	Khandwa	85947.0	0.06	127745.9	0.09
72 Maksi	Ujjain	7761.5	0.01	8191.2	0.01
и. 47 рм Ujjain	Nagda	7761.5	0.01	8191.2	0.01

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Maharashtra to Madhya Pradesh (2/2)

Maharashtra (including Pench in MP) to Madhya Pradesh total Rail Despatch in FY22 = 5.160 MT



Gwalior, Bhopal, Seoni

Expected Load from Maharastra to MP main trunk lines (Excluding load from other states on this line)											
MP's Coal Demand 2022 ~ 84.33 MTPA MP's Coal Demand 2030 ~ 110.20 MTPA											
Rail Supply by	Maharashtra 202 .	2 ~ 5.16 MTPA	Rail Supply by Mah	arashtra 2030 ʻ	~ 6.74 MTPA						
	FY22			FY30							
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030						
Nagpur	Gondia	865.9	0.00	771.4	0.00						
Gondia	Durg	865.9	0.00	771.4	0.00						
Durg	Ghutku	865.9	0.00	771.4	0.00						
Ghutku	Anuppur	865.9	0.00	771.4	0.00						
Maksi	Ratlam	1341.7	0.00	1614.6	0.00						
Maksi	Gwalior	957.5	0.00	1326.5	0.00						
Gwalior	Bhind	4865.7	0.00	7164.3	0.01						
Nagpur	Chhindwara	30458.3	0.02	27135.0	0.02						
Betul	Chhindwara	2160.3	0.00	2599.7	0.00						
Itarsi	Chhindwara	12217.8	0.01	18250.3	0.01						
Maksi	Dewas	9609.1	0.01	8689.6	0.01						
Majri	Nagpur	454.6	0.00	518.7	0.00						
Bhopal	Maksi	137099.2	0.10	142781.6	0.10						
Maksi	Indore	120655.0	0.09	149985.5	0.11						
Betul	Akola	174.9	0.00	210.5	0.00						
Akola	Gangapur	174.9	0.00	210.5	0.00						
Itarsi	Jalgaon	274.9	0.00	410.7	0.00						
Jalgaon	Gangapur	274.9	0.00	410.7	0.00						
Bhopal	Bina	650946.6	0.46	821411.8	0.58						
Bina	Gwalior	2883.1	0.00	3231.6	0.00						
Nagpur	Betul	761.1	0.00	678.0	0.00						
Nagpur	Itarsi	72913.5	0.05	64957.8	0.05						
Nagpur	Balaghat	44109.4	0.03	39296.5	0.03						
Balaghat	Jabbalpur	1000.0	0.00	890.9	0.00						
73 Itarsi	Jabbalpur	8022.7	0.01	10236.2	0.01						
_{::47 РМ} Bina	Katni	648063.5	0.46	818180.2	0.58						
Maksi	Nagda	55037.4	0.04	50605.1	0.04						

²⁵²⁸⁹⁷O-D³Source cluster Mapping – Slight increase in supply to Madhya Pradesh

All figures in million tonnes

Name of TPS	Utility	Wardha CF	Pench Kanhan & Tawa	Umrer, Bander, Kamptee	Captive	Total Maharashtra	Others	Total Coal Consumpt ion (FY22)	Estimated Coal Consumption (FY30)	Wardha CF	Pench Kanhan & Tawa CFs	Umrer, Bander, Kamptee CFs	Captive	Total Maharashtra	Others
MAHAN	MAHAN ENERGEN	0.0	0.0	0.0	0.0	0.0	2.4	2.4	5.5	0.0	0.0	0.0	0.0	0.0	5.5
JAYPEE BINA TPP	JVPL	0.0	0.0	0.0	0.0	0.0	1.8	1.8	2.4	0.2	0.0	0.0	0.0	0.2	2.1
JAYPEE NIGRIE SUPER TPP	JVPL	0.0	0.0	0.0	0.0	0.0	5.0	5.0	5.2	0.0	0.0	0.0	0.0	0.0	5.2
SANJAY GANDHI	MPPGCL	0.0	0.0	0.0	0.0	0.0	4.9	4.9	6.6	0.0	0.0	0.0	0.0	0.0	6.6
SATPURA	MPPGCL	0.0	0.6	0.1	0.0	0.7	1.5	2.2	5.7	0.0	1.1	0.0	0.0	1.1	4.5
AMARKANTAK	MPPGCL	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.1	0.0	0.0	0.0	0.0	0.0	1.1
SHREE SINGAJI TPS	MPPGCL	1.0	0.1	0.3	0.0	1.4	5.5	6.9	12.2	2.2	0.3	0.4	0.0	2.9	9.3
JHABUA POWER LIMITED	JHABUA POWER	0.0	0.0	0.0	0.0	0.0	2.6	2.6	2.7	0.0	0.0	0.0	0.0	0.0	2.7
ANUPPUR TPS	MB POWER	0.0	0.0	0.0	0.0	0.0	5.4	5.4	5.6	0.0	0.0	0.0	0.0	0.0	5.6
VINDHYACHAL	NTPC	0.0	0.0	0.0	0.0	0.0	24.3	24.3	26.9	0.0	0.0	0.0	0.0	0.0	26.9
GADARWARA SUPER	NTPC	0.9	0.0	0.0	0.0	0.9	4.2	5.1	6.8	0.5	0.0	0.0	0.0	0.5	6.3
SASAN UMPP TPP	REILIANCE POWER	0.0	0.0	0.0	0.0	0.0	18.3	18.3	18.3	0.0	0.0	0.0	0.0	0.0	18.3
KHARGONE SUPER															
THERMAL POWER STATION	NTPC LTD.	0.0	0.0	0.0	0.0	0.0	3.8	3.8	5.3	0.0	0.0	0.0	0.0	0.0	5.3
Total		2.0	0.7	0.5	0.0	3.1	80.6	83.7	104.3	3.0	1.4	0.4	0.0	4.8	99.5

• Slight increase in supplies to power houses in Madhya Pradesh due to improved PLFs of plants like Satpura TPS and Shree Singaji. However, due to relatively smaller size of TPS such as Satpura TPS, no major increase in coal demand expected. Generated from edifice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:47 PM

²⁵²⁸⁹⁷O-D Source cluster Mapping – Maharashtra to Gujarat

Maharashtra (including Pench in MP) to Gujarat total Rail Despatch in FY22 = ~5.76 MT



Gujarat's Coal Demand 2022 ~ 30 MTPAGujarat's Coal Demand 2030 ~ 39 MTPARail Supply by Maharashtra 2022 ~ 5.76 MTPARail Supply by Maharashtra 2030 ~ 7.53MT								
	FY22	FY30						
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Da 2030			
Wardha	Akola	6405798.9	4.56	6263545.2	4.46			
Akola	Bhusaval	6405798.9	4.56	6263545.2	4.46			
Bhusaval	Jalgaon	6405798.9	4.56	6263545.2	4.46			
Jalgaon	Surat	6382167.5	4.54	6242492.2	4.44			
Surat	Vadodara	5104886.7	3.63	4965211.4	3.53			
Vadodara	Anand	5104886.7	3.63	4965211.4	3.53			
Anand	Ahmedabad	2779875.6	1.98	2666641.8	1.90			
Ahmedabad	Gandhinagar	487156.0	0.35	416395.8	0.30			
Ahmedabad	Viramgam	2092742.3	1.49	2062159.9	1.47			
Viramgam	Gandhidham	2357403.4	1.68	2357403.4	1.68			
Surat	Atul	101644.3	0.07	101644.3	0.07			
Chandrapur	Majri	351341.3	0.25	658890.3	0.47			
Majri	Wardha	2435718.5	1.73	2387465.2	1.70			
Umred	Buti Bori	2579895.2	1.84	2631351.5	1.87			
Buti Bori	Wardha	4136864.0	2.94	4131128.8	2.94			
Nagpur	Buti Bori	1473577.0	1.05	1372252.9	0.98			
Anand	Bharuch	451851.3	0.32	402624.2	0.29			
Bharuch	Dahej	3246.8	0.00	2892.5	0.00			
Jalgaon	Kosamba	13591.8	0.01	12108.8	0.01			
Jalgaon	Vapi	1500.0	0.00	1336.3	0.00			
Jalgaon	Navapur	8539.6	0.01	7607.8	0.01			
Nagpur	Kheda	83391.8	0.06	127524.4	0.09			
Betul	Itarsi	44750.2	0.03	53852.8	0.04			
Itarsi	Bhopal	44750.2	0.03	53852.8	0.04			
Bhopal	Maksi	37386.6	0.03	44991.4	0.03			
Maksi	Ratlam	30838.4	0.02	37402.1	0.03			
Ratlam	Anand	30838.4	0.02	37402.1	0.03			
Maksi	Dewas	7800.0	0.01	9459.2	0.01			
Jal ga on	Valsad	7363.6	0.01	8861.4	0.01			
Anand	Bharuch	300.0	0.00	342.3	0.00			
04:47 PM Majri	Wardha	300.0	0.00	342.3	0.00			

Expected Load from Maharashtra to Gujarat main trunk lines (Excluding load from other

²⁵²⁸⁹⁷O-D²Source cluster Mapping – Similar supply from Maharashtra to Gujarat

All figures in million tonnes

Name of TPS	Utility	Wardha CF	Pench Kanhan & Tawa	Umrer, Bander, Kamptee	Captive	Total Maharashtra	Others	Total Coal Consumpt ion (FY22)	Estimated Coal Consumption (FY30)	Wardha CF	Pench Kanhan & Tawa CFs	Umrer, Bander, Kamptee CFs	Captive	Total Maharashtra	Others
MUNDRA TPS	ADANI POWER	0.0	0.0	1.9	0.0	1.9	4.7	6.6	15.7	0.0	0.0	4.1	0.0	4.1	11.6
MUNDRA UMPP	Coastal Gujarat Power	0.0	0.0	0.0	0.0	0.0	0.4	0.4	1.0	0.0	0.0	0.0	0.0	0.0	1.0
GANDHINAGAR	GSECL	0.4	0.0	0.2	0.0	0.6	1.7	2.2	2.6	0.0	0.0	0.0	0.0	0.0	2.6
SIKKA	GSECL	0.0	0.0	0.0	0.0	0.0	0.5	0.5	1.5	0.0	0.0	0.0	0.0	0.0	1.5
UKAI	GSECL	0.8	0.0	0.4	0.0	1.2	2.3	3.4	4.7	0.0	0.0	0.5	0.0	0.5	4.2
WANAKBORI	GSECL	1.2	0.0	0.7	0.0	1.9	5.7	7.6	9.6	0.4	0.0	0.3	0.0	0.7	8.9
SABARMATI TPS	TORRENT POWER LTD.	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	0.0	0.0	0.0	0.0	0.0	1.4
Total		2.3	0.0	3.2	0.0	5.5	16.5	22.0	36.5	0.4	0.0	4.8	0.0	5.2	31.3

• Supplies are expected to remain stagnant and may decrease slightly due to increased availability of coal from SECL and MCL with some consumers such as GSECL Ukai recently signing FSA to offtake coal from MCL via coastal shipping

²⁵²⁸⁹⁷O-D²Source cluster Mapping – Maharashtra to Karnataka



Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/202.

		states on t	nis line)	· · · ·				
Karnataka Coal Den	nand 2022 ~ 18.51	МТРА	Karnataka Coal Demand 2030 ~ 24.19 MTPA					
Rail Supply by Mahai	rashtra 2022 ~ 2.61	ΜΤΡΑ	Rail Supply by Maharashtra 2030 ~ 4.75 MTPA					
	FY22		FY30					
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030			
Chandrapur	Kazipet	1272621.2	0.91	4815387.6	3.43			
Kazipet	Bibinagar	1272621.2	0.91	4815387.6	3.43			
Bibinagar	Secunderabad	1272621.2	0.91	4815387.6	3.43			
Secunderabad	Vikarabad	1233781.0	0.88	4752051.3	3.38			
Vikarabad	Wadi	1233781.0	0.88	4752051.3	3.38			
Wadi	Raichur	1108317.4	0.79	4752051.3	3.38			
Majri	Chandrapur	637186.3	0.45	2376025.6	1.69			
Wadi	Hotagi	125463.6	0.09	0.0	0.00			
Hotagi	vijayapura	125463.6	0.09	0.0	0.00			
Umred	Buti Bori	89211.3	0.06	89211.3	0.06			
Buti Bori	Wardha	89211.3	0.06	89211.3	0.06			
Wardha	Majri	89211.3	0.06	89211.3	0.06			
Secunderabad	Dhone	38840.1	0.03	38840.1	0.03			
Dhone	Ballari	38840.1	0.03	38840.1	0.03			
Ballari	Hosapete	38840.1	0.03	38840.1	0.03			
Hosapete	Gadgag	38840.1	0.03	38840.1	0.03			
Gadgag	Hubballi	38840.1	0.03	38840.1	0.03			
77 _{Hubballi}	Alnavar	38840.1	0.03	38840.1	0.03			

Expected Load from Maharashtra to Karnataka main trunk lines (Excluding load from other

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹⁷⁰-D²Source cluster Mapping – Maharashtra to Chhattisgarh

Kharsia Gondia Bilaspur Nagpur Wardha NTPC Mairi ara Wani Chandrapur Raipur

Maharashtra (including Pench in MP) to Chhattisgarh total Rail Despatch in FY22 = ~0.30 MT

Major Coal Consuming Districts of Chhattisgarh: 2030 (Estimated)

>15 MTPA Coal Consumption Raipur, Raigarh, Durg

5-10 MTPA Coal Consumption Korba, Bilaspur

Janjqir-Champa, Bijapur-Dantewada-1-5 MTPA Coal Consumption

Rakes / Day Traffic (Tonnes) Traffic (Tonnes) Rakes / Day From То 2022 2022 2030 2030 Chandrapur 73251.6 Majri 0.05 Majri 275702.7 Wardha 0.20 Wardha Nagpur 275702.7 0.20 Gondia 323713.8 0.23 Nagpur NTPC's Lara shall source 323713.8 Gondia Durg 0.23 its coal from its captive Bhilai 323713.8 0.23 Durg block, Tallaipali and hence no rail movement Bhilai 323713.8 0.23 Raipur of coal from Maharashtra 275702.7 0.20 Bilaspur Raipur to Chhattisgarh is Bilaspur Baradwar 275702.7 0.20 expected. Baradwar 275702.7 Kharsia 0.20 Betul Nagpur 745.6 0.00 Maksi Bhopal 1000.0 0.00

Expected Load from Maharashtra to Chhattisgarh main trunk lines (Excluding load from

other states on this line)

Chhattisgarh's Coal Demand 2030 ~ 162.64 MTPA

Rail Supply by Maharashtra 2030 ~ 0.0 MTPA

FY30

Chhattisgarh's Coal **Demand 2022** ~ **124.47 MTPA**

Rail Supply by Maharashtra 2022 ~ 0.30 MTPA

Bhopal

FY22

Itarsi

Major Power consumers in Chhattisgarh currently taking coal from WCL is NTPC Lara in Raigarh district for which coal is sent from 2 siding – Wani North and Ballarpur.

0.00

1000.0

Generated from eOffice by N RAJESWARA RAO, MOC-S Galand Collars tero C-SO(NRR), Ministry Of COAL on 17/05/2023 04:47 The main common trunk line is Majri—Wardha—Nagpur—Gondia-Raipur-Bilaspur.



Expected Load from Maharashtra to Punjab & Haryana main trunk lines (Excluding load from other states on this line)												
Punjab's Coal Dema	nd 2022 ~ 18.03 MTF	PA Punja	ıb's Coal Den	nand 2030 ~ 23	8.56 MTPA							
Rail Supply by Maharas	htra 2022 ~ 0.083 M1	FPA Rail S	upply by Mał	harashtra 2030	~ 0.0 MTPA							
	FY22		,	FY30								
			D. 1 / D	T (C (T)								
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	l raffic (Tonnes) 2030	Rakes / Day 2030							
Umred	Buti Bori	3917.39	0.003									
Majri	Wardha	79118.01	0.056									
Wardha	Buti Bori	79118.01	0.056									
Buti Bori	Nagpur	83035.40	0.059									
Nagpur	Amla	83035.40	0.059									
Amla	Betul	83035.40	0.059									
Betul	Itarsi	83035.40	0.059		untition							
Itarsi	Bhopal	83035.40	0.059									
Bhopal	Bina	83035.40	0.059	from Mana	rashtra to							
Bina	Jhansi	83035.40	0.059	Punjab &	Haryana							
Jhansi	Gwalior	83035.40	0.059	shall be re	placed by							
Gwalior	Dhaulpur	83035.40	0.059	coal from	CCL. NCL							
Dhaulpur	Agra Cantt	83035.40	0.059	and S								
Agra Cantt	Mathura	83035.40	0.059	anu s								
Mathura	Delhi Safdarjung	83035.40	0.059									
Delhi Safdarjung	Sonipat	83035.40	0.059									
Sonipat	Panipat	83035.40	0.059									
Panipat	Kurukshetra	79118.01	0.056									
Kurukshetra	Ambala Cantt	79118.01	0.056									
Ambala Cantt	Rajpura	79118.01	0.056									

Major Power consumers in Punjab & Haryana currently taking coal from WCL is Nabha Power in Rajpura district (Haryana) and HESB in Panipat (Haryana).

The common trunk line for supply to Haryana & Punjab is from Buti Bori to Panipat.

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Maharashtra to Rajasthan



Expected Load from Maharashtra to Rajasthan main trunk lines (Excluding load from other states on this line)												
Rajasthan's Coal Demand 2022 ~ 28.86 MTPA Rajasthan's Coal Demand 2030 ~ 37.71 MTPA												
Total Rail Supply by M	aharashtra 2022 ~ 0	.41 MTPA Total Ro	ail Supply by M	aharashtra 2030	~ 0.53 MTPA							
FY22 FY30												
From	То	Traffic (Tonnes) 2022	Rakes / Day 2022	Traffic (Tonnes) 2030	Rakes / Day 2030							
Umred	Buti Bori	409409.49	0.29									
Buti Bori	Nagpur	409409.49	0.29									
Nagpur	Amla	409409.49	0.29									
Amla	Betul	409409.49	0.29									
Betul	Itarsi	409409.49	0.29									
Itarsi	Bhopal	409409.49	0.29	Traffic to re	main like							
Bhopal	Maksi	39094.49	0.03	FY22	2.							
Maksi	Ujjain	39094.49	0.03									
Ujjain	Nagda	39094.49	0.03									
Nagda	Ratlam	39094.49	0.03									
Ratlam	Chittaurgarh	39094.49	0.03									
Chittaurgarh	Bhilwara	15744.99	0.01									

- **Major Power consumers in Rajasthan** taking coal from WCL is Adani Power in Baran district in Rajasthan.
- **Major non power consumer in Rajasthan** taking coal from WCL is HZL in Chittorgarh area (Chanderiya & Dariba).
- The main common trunk line is Nagpur–Amla-Betul-Bhopal. From Bhopal the line is divided towards Chittorgarh and Baran district in Rajasthan

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 2528979/2023/CPIAM O-D Source cluster Mapping – Consolidated Coal Traffic from Maharashtra to all states

FY22 Actual and FY30 (Estimated) coal traffic in major sections for Despatch of coal from Maharashtra to various destinations

From	То	Traffic (MT): 2022	Rakes / Day: 2022	Traffic (MT): 2030	Rakes / Day: 2030	Increase in Coa Traffic (Rakes / Day)
Wardha	Nagpur	12.81	9.12	16.74	11.91	+2.80
Chandrapur	Majri	10.70	7.61	13.98	9.95	+2.34
Wardha	Akola	13.49	9.60	17.63	12.55	+2.94
Nagpur	Akola	6.54	4.65	8.54	6.08	+1.43
Akola	Bhusaval	14.15	10.07	18.49	13.15	+3.09

Major sections are already witnessing significant coal traffic and is estimated to further increase in the coming decade.

Currently. Almost all of these sections are operating at >100% capacity utilization levels and hence solutions shall be in place to ensure seamless coal flow in future\.



^{2528979/2023/CPIAM} Outlook – Western Coalfields Limited (WCL)

WCL's despatch is expected to continue its share of rail from current ~71% to ~71%-72% by FY30 with sufficient existing evacuation capacity

Area		FY22 A	ctual Despatch	(MTPA)		FY25-26 1 BT Plan (MTPA)					FY29-30 Anticipated Dispatch (MTPA)					
Area	Rail	RCR	Pure Road	MGR & Others	Total	Rail	RCR	Pure Road	MGR & Others	Total	Rail	RCR	Pure Road	MGR & Others	Total	
Ballarpur	4.68	0.66	2.16	0.00	7.50	10.26	0.70	3.29	0.00	14.25	10.26	0.70	3.29	0.00	14.25	
Chandrapur	1.13	0.00	1.34	1.99	4.47	2.13	0.00	1.00	2.50	5.63	2.13	0.00	1.00	2.50	5.63	
Kanhan	0.34	0.00	0.36	0.00	0.70	0.22	0.00	0.21	0.00	0.43	0.22	0.00	0.21	0.00	0.43	
Pench	0.65	0.55	0.07	0.00	1.27	1.98	0.00	0.41	0.00	2.39	1.98	0.00	0.41	0.00	2.39	
Majri	3.67	0.11	1.96	0.00	5.74	4.14	0.15	1.46	0.00	5.75	4.14	0.15	1.46	0.00	5.75	
Nagpur	4.09	4.80	0.00	0.06	8.95	6.78	0.00	1.28	2.50	10.56	6.78	0.00	1.28	2.50	10.56	
Patherkhera	0.00	1.10	0.00	0.02	1.12	0.00	0.00	1.77	0.00	1.77	0.00	0.00	1.77	0.00	1.77	
Umrer	8.67	0.00	3.45	0.00	12.12	9.95	0.00	2.25	0.00	12.20	9.95	0.00	2.25	0.00	12.20	
Wani	11.76	0.60	5.83	0.00	18.19	7.74	1.50	1.51	0.00	10.75	7.74	1.50	1.51	0.00	10.75	
Wani North	2.99	0.09	1.02	0.00	4.10	4.52	0.10	1.66	0.00	6.28	4.52	0.10	1.66	0.00	6.28	
Total	37.99	7.90	16.20	2.07	64.16	47.72	2.45	14.84	5.00	70.00	47.72	2.45	14.84	5.00	70.00	



File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Proposed evacuation plan for Wardha Valley CF



File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 Proposed evacuation plan for Bander, Kamptee, Katol & Umrer CF



File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) 25289 **Proposed evacuation plan for Pench-Kanhan CF**



Key Insights and Recommendations

#	Recommendation	Way Forward
1	Nagpur-Wardha line is currently running at 158%. Due to increased supplies from Chhattisgarh to Maharashtra along with traffic from Odisha and WCL's own traffic, tripling of this line to be expedited.	Tripling of Nagpur-Wardha to be expedited, Indian Railways
2	Tripling of Itarsi-Nagpur (both Itarsi-Amla & Amla-Nagpur currently at >100%) and Chandrapur-Majri (current utilization ~140%) should be expedited to enable future coal evacuation from these areas	Tripling of Chandrapur-Majri-Sonegaon line to be expedited, Indian Railways
3	Proposed chord line from Chandrapur to Chanda Fort station in the Wardha Valley region to be expedited for traffic moving from Wardha Valley CF to Nagbhir	Chandrapur-Chanda Fort Chord line to be expedited
4	Options for commissioning of Public Freight Terminals with facilities of mechanized loading of coal may be evaluated for providing rake loading services to non-CIL blocks to reduce road movement of coal from these regions	Exploration of Public Freight Terminals for mechanized coal loading and coal transport through rail for non- CIL blocks
5	Automatic Signaling may be proposed across all major rail sections in the vicinity of coal blocks in Maharashtra	Indian Railways (CR)

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2528979/2023/CPIAM

Telangana (SCCL and Non-SCCL) - Production Capacity Expansion Plans

SCCL

7								All figures in mi	llion tonnes
Coal Supply from SCCL	FY22 Actual	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Ramp-up from Existing Mines	~65	~67	70	72	74	81	82	82	80
Mahaveer Khani OC (Telangana)	0	0	0	0.2	0.8	1.5	1.8	2	2
Naini (Odisha)	0	0	5	7.5	10	10	10	10	10
Other New Mine(s)	0	0	0	0	0	2	3	4	6
Total SCCL	65	67	75	80	85	94	97	98	100

Note: New Patrapara coal block in Odisha has been surrendered by SCCL. The block has a PRC of 15 MTPA and SCCL had ramp-up plans up to 8 MTPA within the period FY27 to FY30. However, due to the surrender, a gap of 8 MT for SCCL's growth vision is existing, which can be fulfilled by either ramp-up from existing blocks & participation in new coal block auctions.

Non-SCCL blocks in Telangana

#	Name of the Block	Block Owner	PRC	Operational Status	Proposed Loading Point	EUP and other remarks	Actual FY23 Production	Actual FY22 Production
1	Tadicherla-I	Telangana State Power Generation Corporation Limited. (TSGENCO)	2.5	Operational	Conveyor belt of 17.2 km in length has been proposed as an evacuation method Currently coal is being evacuated through road mode	Kakatiya Thermal Power Project (1 X 600 MW) EUP is 54 km from mine by road	2.48 MT	2.21 MT
	Total PRC		2.5	88				

Coal Blocks to be Auctioned in 7th Tranche

Telangana (including blocks in Pranhita Godavari CF, Andhra Pradesh) All figures in million tonnes Block Name Coalfield PRC (MT) State Chintalpudi Sector A1 (NW Part) Pranhita Godavari Valley Andhra Pradesh 0.3 Chintalpudi Sector A1 (SE Part) Pranhita Godavari Valley Andhra Pradesh 0.5 Penagaddppa Godavari Valley Telangana 1.5 Somavaram East Godavari Valley Andhra Pradesh 0.12 Somavaram West (Northern Part) Pranhita Godavari Valley Andhra Pradesh 0.5 Somavaram West (Southern Part) Pranhita Godavari Valley Andhra Pradesh 0.5 Sravanapalli (Revised) Godavari Valley Telangana 2.3 Total 5.72

Due to smaller PRC of mines to be auctioned in Telangana (including blocks in Pranhita Godavari CF, Andhra Pradesh), coal from these blocks are expected to be commercial sales in nature and hence road transport is envisioned for blocks except Penagaddppa and sales Generated from eoffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:47 PM

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Evacuation Capacity from SCCL's mines in Telangana

SCCL

SCCL has 10 nos. CHPs in place to evacuate its coal from its mines in Telangana in addition to MGR and Belt for supply to pithead plants in Telangana

All figures in million tonnes

#	Region	Name of Mines	Dispatch to Power in FY22	Dispatch to Non- Power in FY22	Total Dispatch in FY22	Name of Dispatch Point for Rail
1	Kothagudem	PVK-5 Incline, JVR OC (I&II), Kistaram OC, Penagadapa Coal Block, VK Coal Mine	8.85	3.97	12.82	Rudrampur CHP
2	Kothagudem	KOC-II, JK OC	5.29	0.93	6.22	Yellandu CHP
3	Ramagundam	GDK 11 Incline, GDK 1 & 3 Incline, GDK 2 & 2A Incline, GDK 5 OC	1.22	1.30	2.51	GDK-1 CSP
4	Kothagudem	Kondapuram, PK OC, Manuguru	10.40	2.01	12.40	Kondapuram CHP
5	Ramagundam	RG OC III Exp, Vakilpalli Mine	6.77	1.82	8.59	OC3 CHP
6	Ramagundam	RG OC I Exp, RG OC II Ext, Adriyala LWP, Ramagundam Coal Mine	7.23	0.18	7.41	RG OC-1
7	Ramagundam	KTK-1&1A Inc, KTK-5 Inc, KTK-6 Inc, KTK- OC II, Kakatiya Longwall Project, KTK OC III, PVNR OC (Venkatapur OC)	1.57	0.60	2.16	KTK OC-II CHP
8	Bellampali	Khairagura OC, BPA OC II, Goleti OC	2.16	0.19	2.36	Goleti CHP
9	Bellampali	KK 1 Incline, Kasipet 1 & 2, RKP OC, KK OCP, SK	3.69	0.19	3.88	Ravindrakhani CHP
10	Bellampali	RK-5 Inc, RK-6 Inc, RK-7 Inc, SRP OC II, IK OC, IK 1A	6.46	0.70	7.16	Srirampur CHP
	Total		65.53	53.65	11.88	

Note: *Naini coal block's evacuation load on railways has been captured in Odisha section as it is located in Odisha*. Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:47 PM

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Origin – Destination Cluster Mapping for Telangana

²⁵²⁸⁹⁷O-D²Source cluster Mapping – Despatch of Coal from Telangana: FY22 snapshot

Quantity in million tonnes



~40 MTPA is conducted and presented in the next sections

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Telangana's internal consumption



Major Coal Consuming Districts of Telangana: 2030 (Estimated)



- Yadadri TPS has been allocated coal from SCCL to the tune of 14 MTPA and is expected to be commissioned by 2024, as per CEA. Telangana STPS has been allocated coal from SCCL (supply of 6.846 MTPA) to be commissioned by 2023 as per CEA
- From a O-D cluster perspective, the major load on trunk lines are localized in the regions of Ramagundam & Kothagudem with the other load center being Bellampalli to Singareni Thermal Power Project
- TSGENCO's coal from Tadicherla-I is currently being planned to move via conveyor system to its

²⁵²⁸⁹⁷O-D³Source cluster Mapping – Significant increase in supply to Telangana

All figures in million tonnes

Name of TPS	Utility	KGM Region	RGM Region	BPA Region	Total SCCL	Captives	Total Telangana	Others (Incl Imports)	Total Coal I Consumed (FY22)	Estimated Coal Consumption (FY30)	Supply from SCCL 2030	Supply from Captive 2030	Telangana's Supply in FY30	Sourced from Others & Imports
RAMAGUNDAM SUPER	NTPC LTD.	0.6	10.1	0.1	10.8	0.0	10.8	0.0	10.8	12.7	12.7	0.0	12.7	0.0
SINGARENI TPP	SCCL	0.1	0.6	4.7	5.4	0.0	5.4	0.0	5.4	5.7	5.7	0.0	5.7	0.0
RAMAGUNDAM 'B'	TSPGCL	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2	0.4	0.4	0.0	0.4	0.0
KOTHAGUDEM	TSPGCL	6.0	0.1	1.0	7.1	0.0	7.1	0.0	7.1	8.4	8.4	0.0	8.4	0.0
KAKATIYA (Stage-I&II)	TSPGCL	0.0	1.9	0.0	1.9	0.0	1.9	2.2	4.1	5.0	2.5	2.5	5.0	0.0
Bhadradri TPP	TSPGCL	3.6	0.0	0.0	3.6	0.0	3.6	0.0	2.9	4.9	4.9	0.0	4.9	0.0
Sub-Total		10.3	12.9	5.7	29.0	0.0	29.0	2.3	30.6	37.1	34.6	2.5	37.1	0.0
Yadadri TPP	TSGENCO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.85	14.85	0.00	14.85	0.0
Telangana STPP St-I	NTPC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.85	6.85	0.00	6.85	0.0
Total										58.8	56.3	2.5	58.8	0.0

• For upcoming power plant, Yadadri, coal has been allocated from SCCL; Distance from mine - 270 km (non pithead); Ministry of Coal vide File No.23014/1/2018-CLD, Dt:15-02-2018 has granted coal linkage from SCCL for supply of 14 MTPA of coal (grade-G9).



²⁵²⁸⁹⁷O-D³Source cluster Mapping – No significant change in supply to Andhra Pradesh

All figures in million tonnes

Name of TPS	Utility	KGM Region	RGM Region	BPA Region	Total SCCL	Captives	Total Telangana	Others (Incl Imports)	Total Coal Consumed (FY22)	Estimated Coal Consumption (FY30)	Supply from SCCL 2030	Supply from Captive 2030	Telangana's Supply in FY30	Sourced from Others & Imports
Dr. N.T.R TPS	APGENCO	4.2	0.0	0.3	4.5	0.0	4.5	4.7	9.2	9.7	7.4	0.0	7.4	2.3
RAYALSEEMA SRI	APGENCO	1.6	0.2	0.3	2.1	0.0	2.1	3.0	5.1	8.6	1.3	0.0	1.3	7.4
DAMODARAM SANJEEVAIAH	APPDCL	0.0	0.0	0.0	0.0	0.0	0.0	3.6	3.6	7.1	0.0	0.0	0.0	7.1
Vizag TPP	HINDUJA NATIONAL POWER CORPORATION LIMITED	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	5.4	0.0	0.0	0.0	5.4
SIMHADRI SUPER	NTPC LTD.	0.1	0.0	0.1	0.2	0.0	0.2	8.8	8.9	10.8	0.0	0.0	0.0	10.8
PAINAMPURAM TPP	SEMBCORP ENERGY INDIA LTD.	0.0	0.0	0.0	0.0	0.0	0.0	5.7	5.7	5.6	0.0	0.0	0.0	5.6
SGPL TPP	SEMBCORP ENERGY INDIA LTD.	0.0	0.0	0.0	0.0	0.0	0.0	4.6	4.6	5.6	0.0	0.0	0.0	5.6
Sub-Total		6.0	0.2	0.7	6.9	0.0	6.9	26.2	33.0	48.8	8.7	0.0	8.7	40.1
Dr Narla Tata Rao TPS St-V	APGENCO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.55	0.00	0.00	0.00	3.55
Sri Damodaram Sanjeevaiah TPP St-II	APPDCL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.55	0.00	0.00	0.00	3.55
Total										55.9	7.86	0.00	8.7	47.2

• 2 Under-Construction power plants namely APGENCO's Dr NTR TPS Unit-V and Sri Damodaram Sanjeevaiah TPP St-II to consume ~7.10 Million Tonnes of Coal for which FSA's are in place with MCL. Coastal Shipping will be more cost effective than transporting directly via rail to these power plants.

 From the overall increase in demand from power sector in Andhra Pradesh, majority will be catered by mines of MCL (either via coastal shipping or complete Rail mode) and the remaining to be catered by SCCL. Some quantities being sourced by ECL and SCC26 by NTPC Simhadri could also be substituted with MCL's coal. This substitution has been Generated from second by independence of the power plants.

²⁵²⁸⁹⁷⁹C-D Source cluster Mapping – Telangana to Karnataka



²⁵²⁸⁹ O-D Source cluster Mapping – No significant change in supply to Karnataka

All figures in million tonnes

Name of TPS	Utility	KGM Region	RGM Region	BPA Region	Total SCCL	Captives	Total Telangana	Others (Incl Imports)	Total Coal Consumed (FY22)	Estimated Coal Consumption (FY30)	Supply from SCCL 2030	Supply from Captive 2030	Telangana's Supply in FY30	Sourced from Others & Imports
VIJAYANAGAR	JSW ENERGY LIMITED	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	0.0	0.0	0.0	1.3
RAICHUR POWER PLANT	KPCL	0.7	0.6	0.3	1.5	0.0	1.5	3.2	4.7	4.8	0.0	0.0	0.0	4.8
BALLARI	KPCL	1.6	0.6	0.6	2.8	0.0	2.8	1.5	4.4	4.4	0.0	0.0	0.0	4.4
KUDGI	NTPC LTD.	0.9	0.6	0.1	1.6	0.0	1.6	2.3	4.0	5.6	5.6	0.0	5.6	0.0
YERAMARUS TPS	RPCL	0.9	1.0	1.3	3.3	0.0	3.3	0.0	3.3	3.8	3.8	0.0	3.8	0.0
UDUPI	UDUPI POWER CORPORATION LIMITED	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	2.0	0.0	0.0	0.0	2.0
Sub-Total		4.1	2.8	2.3	9.3	0.0	9.3	9.2	18.4	21.8	9.4	0.0	9.4	12.5
Yelanhaka CCPP	KPCL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.60	0.00	0.00	0.00	1.60
Total										23.4	9.4	0.00	9.4	14.1

• 1 Under-Construction power plant namely KPCL's Yelahanka CCPP to consume ~1.6 Million Tonnes of Coal from its captive blocks Baranj in Maharashtra.

• JSW's plant in Vijaynagar likely to consume its total coal requirement based on imports as per current scenario. Udupi plant is likely to source majorly imported coal Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:47 PM

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²⁵²⁸⁹⁷⁹C-D Source cluster Mapping – Telangana to Tamil Nadu

Telangana to Tamil Nadu total Rail Despatch in FY22 = 3.12 Million Tonnes Peddapalli Manuguru Nodes named are representative in nature for Warangal the illustration. All nodes Kazipet mapped in table Krishna Canal, Tenali Dornakal Vijaywada Towards Mettur Gudur Towards Tuticorin Major Coal Consuming Districts of TN: 2030 (Estimated)



Expected Load from Telangana to Tamil Nadu main trunk lines (Excluding load from other states on this line) TN Coal Demand 2022 ~ 27.95 MTPA TN Coal Demand 2030 ~ 56.56 MTPA Rail Supply by Telangana 2022 ~ 1.97 MTPA Rail Supply by Telangana 2030 ~ 3.94 MTPA **FY22** FY30 (Tonnes) 2022 Rakes / Day 2022 Traffic Traffic (Tonnes) Rakes / Day 2030 То From 2030 1026137 Bhadrachalam Road 0.73 788742 Manuguru 0.56 Bhadrachalam Road Karepalli 3095360 2.20 1947878 1.39 Karepalli 3095360 2.20 1947878 1.39 Dornakal Ramagundam Peddapalli 32480 0.02 1.42 1995966 32480 Peddapalli 0.02 1995966 1.42 Warangal 32480 Warangal 1.42 Dornakal 0.02 1995966 2.23 2.81 Dornakal 3127841 3943844 Motumari 3127841 2.23 Motumari Vijaywada 3943844 2.81 3127841 2.23 Vijaywada Krishna Canal 3943844 2.81 Krishna Canal Tenali 3127841 2.23 3943844 2.81 3127841 2.23 Tenali Gudur 3943844 2.81 2566631 1972844 Gudur Renigunta 1.83 1.40 Renigunta Katpadi 2566631 1.83 1972844 1.40 2566631 Katpadi Jolarpettai 1.83 1972844 1.40 561209 0.40 Gudur Ennore For Ennore & 561209 Chennai Beach 0.40 Ennore Tuticorin plants, Chengalpattu 561209 Chennai Beach 0.40 Chengalpattu 561209 0.40 Villupuram coastal shipping via Vriddhachalam 561209 0.40 Villupuram MCL is expected and Tiruchchirappalli 561209 Vriddhachalam 0.40 rail load from Tiruchchirappalli Dindigul 561209 0.40 Telangana to these 561209 Dindigul Madurai 0.40 561209 Madurai Virudunagar 0.40 plants are expected to Virudunagar Vanchi Maniyachchi 561209 0.40 be nil Vanchi Maniyachchi 561209 0.40 Tuticorin

²⁵²⁸⁹⁷O-D³Source cluster Mapping – No significant change in supply to Tamil Nadu

All figures in million tonnes

Name of TPS	Utility	KGM Region	RGM Region	BPA Region	Total SCCL	Captives	Total Telangana	Others (Incl Imports)	Total Coal Consumed (FY22)	Estimated Coal Consumption (FY30)	Supply from SCCL 2030	Supply from Captive 2030	Telangana's Supply in FY30	Sourced from Others & Imports
MUTIARA	COASTAL ENERGEN PVT. LTD	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.80	5.04	0.0	0.0	0.0	5.0
IL & FS TAMIL NADU POWER COMPANY LTD	IL & FS TAMIL NADU POWER COMPANY LIMITED	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.67	4.14	0.0	0.0	0.0	4.1
NLC TAMILNADU POWER Ltd	NLC TAMIL NADU POWER LIMITED	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.04	4.66	0.0	0.0	0.0	4.7
VALLUR	TAMILNADU ENERGY COMPANY LTD (NTECL) (NTPC- JV)	0.6	0.0	0.0	0.6	0.0	0.6	5.4	5.96	7.24	0.0	0.0	0.0	7.2
TUTICORIN	TANGEDCO	0.0	0.0	0.0	0.0	0.0	0.0	4.3	4.28	5.80	0.0	0.0	0.0	4.6
METTUR-I & II	TANGEDCO	2.5	0.0	0.0	2.6	0.0	2.6	3.5	3.86	4.33	1.97	0.0	2.0	5.4
CHENNAI-I & II	TANGEDCO	0.0	0.0	0.0	0.0	0.0	0.0	6.2	6.18	9.20	0.0	0.0	0.0	9.2
Sub-total		3.1	0.1	0.0	3.2	0.0	3.2	24.8	27.95	43.43	1.97	0.0	1.97	40.3
Ennore SCTPP	TANGEDCO									5.12	0.0	0.0	0.0	5.12
Udangudi STPP St-I	TANGEDCO									5.07	0.0	0.0	0.0	5.07
North Chennai TPP St-III	TANGEDCO									2.94	1.97	0.0	1.97	0.97
Total										56.56	3.94	0.0	3.94	52.62

For North Chennai TPP St-III, allocated coal source is SCCL; Distance from mine - 606 km (non pithead);. Ministry of Coal recommended for long-term coal linkage for 1.971 MTPA Indigenous coal to SCCL. FSA Executed between TANGEDCO and SCCL for indigenous coal. MoU has been entered with M/s. MMTC for supply of Imported coal of 1.450 MTPA on 25.05.2015.

Generated from eOffice by N RAJESWARA RAO, MOC-SO(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 17/05/2023 04:47 PM • For Ennore SCTPP & Udangudi STPP, allocated mine is Chandrabila Coal Block in Odisha; Distance from mine - 1300 km (non pithead)

²⁵²⁸⁹⁷O-D²Source cluster Mapping – Telangana to Chhattisgarh



File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ²⁵²⁸⁹⁷⁰-D²Source cluster Mapping – Telangana to Madhya Pradesh



future.

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Telangana to Maharashtra

Telangana to Maharashtra total Rail Despatch in FY22 =		Load from Telangana-to-Maharashtra main trunk lines (Excluding load from other states on this line)						
5.65 Willion Tollines	Nodes named are representative in nature for the illustration. All nodes manned in table	Maharashtra's Coal Dema Rail Supply by Telangana 2 	Maharashtra's Coal Demand 2030 ~ 111 MTPA Rail Supply by Telangana 2030 ~ 0.0 MTPA					
	,	FY2		FY30				
		From	То	Traffic (Tonnes) 2022	Rakes / Day 2022			
	Warangal	Manuguru	Bhadrachalam Road	162747	0.12			
	Kazinot	Bhadrachalam Road	Karepalli	235665	0.17			
	Kazipet	Karepalli	Dornakal	235665	0.17			
Towards Nagour Bood	Manuguru	Dornakal	Warangal	235665	0.17	No volume is		
Chandranur dictricts		Warangal	Kazipet	235665	0.17	expected to flow		
chanarapar districts	Dornakal	Kazipet	Bibinagar	235665	0.17	from Telangana to		
	Y	Bibinagar	Vikarabad	235665	0.17	Maharashtra in		
	Vijavwada	Vikarabad	Latur Road	235665	0.17	futuro		
Bibinagar, Vikarabad, Nizamabad, Jankampe	et,	Latur Road	Parbhani (section towards Parli)	1707422	1.22	Tuture.		
Mukhed. Purna		Manikgarh	Mandamari	1013298	0.72	WCL, SECL, NCL and		
		Mandamari	Manchiryal	1220064	0.87	Cantive blocks		
		Manchiryal	Ramagundam	1260551	0.90	would be sufficient		
Major Coal Consuming Districts of Maharashtra:	2030 (Estimated)	Ramagundam	Peddapalli	1471757	1.05	would be sufficient		
		Peddapalli	Nizamabad	1471757	1.05	to cater to demand		
Naapur, Chandra	pur, Bhandara.	Nizamabad	Jankampet	1471757	1.05	of Maharashtra		
>15 MTPA Coal Consumption		Jankampet	Mukhed	1471757	1.05			
10.15 MTRA Coal Consumption Balabar/Thans		Mukhed	Purna	1471757	1.05			
10-15 WIFA Cour Consumption Paignar/ mane		Purna	Parbhani	1471757	1.05			
5-10 MTPA Coal Consumption Nashik								
1-5 MTPA Coal Consumption Solapur, Pune, Ro Wardha & Akola	nigad, Ahmednagar,	 Maharashtra is not e 103^{Mahagenco's captive} 	expected to source co e blocks in Chhattisga	oal from SCCL rh	due to inc	crease in volume of CIL's &		

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Telangana to Uttar Pradesh

Telangana to Uttar Pradesh total Rail Despatch in FY22 = 0.13 Million Tonnes Nodes named are representative in nature for the illustration. All nodes mapped in table Warangal Kazipet Dornakal Vijaywada

> Route: Peddapalli-Manikgarh, Nagbhir, Gondiya, Balaghat, Nainpur, Jabalpur, Katni, Prayagraj, Jaunpur

Major Coal Consuming Districts of UP: 2030 (Estimated)

			>15 MTPA Coal Consumption	Jhansi, Sonbhadra		
			10-15 MTPA Coal Consumption	Bulandsahar, Kanpur		
				Prayagraj, Rae Bareli, Lucknow,		-
			5-10 MTPA Coal Consumption	Shahjahanpur, Ambedkar Nagar,		
				Gorakhpur		
			1 E MTDA Coal Consumption	Ghaziabad, Hapur, Gautam Buddha		•
			1-5 MIPA COULCONSUMPTION	Nagar, Aligarh, Agra, Kushinagar, Gonda		1
G	enerat	ted fron	n eOffice by N RAJESWARA RAO, MOC-SC	O(NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 1	7/05/2023 04:4	17 PM

Load from Telangana-to-Uttar Pradesh main trunk lines (Excluding load from other states on this line)									
UP's Coal Demar Rail Supply by Telang	ad 2022 ~ 87 MTPA ana 2022 ~ 0.13 MTI	РА	UP's Coal Demand 2030 ~ 114 MTPA Rail Supply by Telangana 2030 ~ 0.0 MTP						
F	Y22				FY3U				
From	То	Traffic 2	(Tonnes) 022	Rakes / Day 2022					
Manuguru	Bhadrachalam Road	7	801	0.01					
Bhadrachalam Road	Karepalli	6	7233	0.05					
Karepalli	Dornakal	6	7233	0.05	No volume is				
Dornakal	Warangal	6	7233	0.05	evpected to flow				
Warangal	Peddapalli	6	7233	0.05	from Tolon come to				
Peddapalli	Manchiryal	11	.8017	0.08	from leiangana to				
Manchiryal	Mandamari	12	5972	0.09	Uttar Pradesh in				
Mandamari	Manikgarh	12	5972	0.09	future.				
Manikgarh	Nagbhir	12	5972	0.09					
Nagbhir	Gondiya	12	5972	0.09	NCL. CCL. captive				
Gondiya	Balaghat	12	5972	0.09	blocks and other				
Balaghat	Nainpur	12	5972	0.09					
Nainpur	Jabalpur	12	5972	0.09	CIL sources would				
Jabalpur	Katni	12	5972	0.09	be sufficient to				
Katni	Manikpur	12	5972	0.09	cater to demand of				
Manikpur	Prayagraj	12	5972	0.09	Uttar Pradesh				
Prayagraj	Jaunpur	12	5972	0.09					
Jaunpur	Akbarpur	54	4283	0.04					
Prayagraj	Unchahar	7	1689	0.05					

• Major consumers of coal in UP in FY22 to source coal from Telangana are NTPC Tanda & ¹⁰⁴NTPC Unchahar. However, these plants are not expected to source coal from SCCL in 2030

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Telangana to Jharkhand

Load from Telangana-to-Jharkhand main trunk lines (Excluding load from Nodes named are Telangana to Jharkhand total Rail Despatch in FY22 = other states on this line) representative in nature for 0.03 Million Tonnes the illustration. All nodes Jharkhand's Coal Demand 2030 ~ 68.35 MTPA Jharkhand's Coal Demand 2022 ~ 87 MTPA mapped in table Rail Supply by Telangana 2022 ~ 0.00 MTPA Rail Supply by Telangana 2022 ~ 0.03 MTPA Towards Manikgarh FY22 **FY22** Peddapalli Traffic Rakes / Day Manuguru From То (Tonnes) 2022 2022 Warangal Ramagundam 28478 0.02 Manchirval 0.02 Manchirval Mandamari 28478 Kazipet Mandamari Manikgarh 28478 0.02 Manikgarh Chandrapur 28478 0.02 28478 0.02 Manikgarh Chandrapur 0.02 Chandrapur Majri 28478 Dornakal 0.02 Majri Warora 28478 Vijaywada 28478 0.02 Wardha Warora No volume is Wardha 28478 0.02 Nagpur expected to flow Kanhan 28478 0.02 Nagpur Kanhan Gondiya 28478 0.02 from Telangana to Route: Peddapalli-Manikgarh, Chandrapur, Majri, 28478 0.02 Gondiya Raipur Warora, Wardha, Nagpur, Gondiya, Raipur, Bilaspur, Jharkhand in future. 28478 0.02 Raipur Bilaspur Jharsuquda Jn, Bondamunda 28478 0.02 Bilaspur Champa CCL, BCCL, ECL and Champa Kharsia 28478 0.02 28478 0.02 Kharsia Jharsuguda Jn captive blocks Major Coal Consuming Districts of Jharkhand: 2030 (Estimated) 0.02 Bondamunda 28478 Jharsuguda Jn would be sufficient 0.01 Bondamunda Rajkharsawan 12200 to cater to demand Rajkharsawan Sini 12200 0.01 >15 MTPA Coal Consumption East Sinahbhum Sini Chandil 12200 0.01 of Jharkhand Chandil Purulia 12200 0.01 10-15 MTPA Coal Consumption -Purulia 12200 0.01 Bokaro Steel City **Bokaro Steel City** Chandrapura 12200 0.01 5-10 MTPA Coal Consumption Bokaro, Hazaribagh Bondamunda 0.01 Ranchi 16278 Ranchi Tatisilwai 16278 0.01 Simdega, Gumla, Khunti, Ranchi, 105 Tatisilwai Barkakhana 16278 0.01 1-5 MTPA Coal Consumption Saraikela-Kharsawan (NRR)-CPIAM, MOC-SO(NRR), Ministry Of COAL on 1<mark>7</mark>/05/2023 04:47 PM Barkakhana Kuju 16278 0.01 Generated from eOffice by N RAJESWARA RAO, MOC-SO Kuju 16278 0.01 Koderma

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Telangana to West Bengal

Telangana to West Bengal total Rail Despatch in FY22 = 0.03 Million Tonnes

Nodes named are representative in nature for the illustration. All nodes mapped in table



Major Coal Consuming Districts of WB: 2030 (Estimated)

>15 MTPA Coal Consumption Mursh Purba

Murshidabad, Paschim Bardaman, Purba Bardaman

10-15 MTPA Coal Consumption -

5-10 MTPA Coal Consumption Hooghly, Howrah, North 24 Parganas

1-5 MTPA Coal Consumption -

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from other states on this line)								
West Bengal's Coal Demand 2022 ~ 54.96 MTPAWest Bengal Coal Demand 2030 ~ 71.81Rail Supply by Telangana 2022 ~ 0.03 MTPARail Supply by Telangana 2030 ~ 0.00 M								
	FY22		FY30					
From	То	Traffic (Tonne 2022	s) Rakes / Day 2022					
Peddapalli	Manchiryal	8065	0.01					
Manchiryal	Mandamari	39084	0.03	No volume is				
Mandamari	Manikgarh	39084	0.03	expected to flow				
Manikgarh	Nagbhir	39084	0.03	from Telangana to				
Nagbhir	Gondiya	39084	0.03	West Bengal in				
Gondiya	Raipur	39084	0.03	future				
Raipur	Bilaspur	39084	0.03	ruture.				
Bilaspur	Champa	39084	0.03					
Champa	Kharsia	39084	0.03	ECL, BCCL, CCL and				
Kharsia	Jharsuguda Jn	39084	0.03	captive blocks would				
Jharsuguda Jn	Bondamunda	39084	0.03	be sufficient to cater				
Bondamunda	Rajkharsawan	39084	0.03	to demand of West				
Rajkharsawan	Sini	39084	0.03	Bengal				
Sini	Purulia	39084	0.03					
Purulia	Andal	39084	0.03					

Load from Telangana-to-West Bengal main trunk lines (Excluding load

- Only 1 plant in West Bengal sourced coal from Telangana in FY22 Durgapur Steel TPS, DVC.
- However, going forward, no traffic is expected to flow from Telangana to West Bengal due to growth in ECL, BCCL, CCL and captive blocks of DVC, WBPDCL etc.
- 106^Further, DVC has plans to participate in coal block auctions for its plants

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) O-D Source cluster Mapping – Telangana to Odisha



File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) ^{2528979/2023} CPIAM O-D Source cluster Mapping – Consolidated Coal Traffic from Telangana to all states

FY22 Actual and FY30 (Estimated) coal traffic in major sections for despatch of coal from Telangana to various destinations								
From To Traffic (MT): Rakes / Day: 2022 Traffic (MT): Rakes / Day: 2030 (
Manuguru	Bhadrachalam Road	6.76	4.81	7.65	5.45	+0.63		
Bhadrachalam Road	Karepalli	12.71	9.04	13.30	9.47	+0.42		
Karepalli	Dornakal	15.90	11.32	17.66	12.57	+1.25		
Dornakal	Warangal	5.62	4.00	10.22	7.27	+3.27		
Dornakal	Motumari	11.16	7.94	13.67	9.73	+1.79		
Warangal	Peddapalli	2.16	1.54	5.53	3.94	+2.40		
Peddapalli	Kazipet	5.68	4.04	21.70	15.45	+11.40		
Peddapalli	Manchiryal	8.62	6.14	25.15	17.89	+11.76		
Manchiryal	Mandamari	10.43	7.42	23.66	16.83	+9.41		
Kazipet	Bibinagar	8.83	6.28	25.85	18.39	+12.11		
Motumari	Vijaywada	11.16	7.94	13.38	9.52	+1058		

Major sections are already witnessing significant coal traffic and is estimated to further increase in the coming decade.

Increase in traffic majorly expected in sections serving the state of Telangana for which coal supply has been allocated to SCCL for upcoming power plants



In addition, the **line connecting Manuguru with Ramagundam via Jayashankar Bhupalpally** shall further ease coal evacuation from this area. The construction of this **new BG line is to be expedited**

Key Insights and Recommendations

#	Recommendation	Way Forward
1	Due to increased coal production from SCCL's Bhupalpally region, the line connecting Ramagundam to Manuguru via Jayashankar Bhupalpally region which is under contruction to be expedited on priority. Joining of this line will ease traffic on Kazipet-Peddapalli section	Manuguru-Ramagundam (via Bhupalpally) line may be expedited
2	Ongoing tripling works on sections Vijaywada-Motumari-Dornakal-Kazipet-Odella (near Peddapalli) and section Mandamarri-Manikgarh shall further ease evacuation for congested sections in this region.	Tripling work in the region to be expedited. Additional lines may be evaluated for Peddapalli- Manchiryal section (4 th line)
3	Tripling of Kazipet-Bibinagar should be evaluated for easing traffic flowing from SCCL's blocks to southern states	Tripling work for Kazipet-Bibinagar should be evaluated
4	Automatic Signaling may be proposed across all major rail sections in the vicinity of coal blocks in Telangana	Indian Railways (SCR)

²⁵²⁸⁹Estimated Wagon Procurement requirement by Indian Railways (SCR - Telangana)

	Destination State	Million Tonne - Kms	Volume (Million Tonnes)	Weighted Avg Distance of Despatch (KMs)		Destination State		Million Tonne - Kms	Volume (Million Tonnes)	Weighted Avg Distance of Despatch (KMs)
	Telangana	2198.58	16.02	137.24		Telangana		5386.67	39.25	137.24
	Karnataka	5766.82	9.32	618.76		Karnataka		5816.32	9.4	618.76
	Andhra Pradesh	1699.57	6.87	247.39		Andhra Pradesh		2152.29	8.7	247.39
	Maharashtra	1301.05	3.86	337.06		Maharashtra		0.00	0	337.06
	Wana ashti a	1301.03	5.00	337.00		Tamil Nadu		3846.56	3.94	976.28
	Tamil Nadu	3055.77	3.13	976.28		Additional Push Volumes + Com	nmercial			
	Others	2858.85	6.17	463.35		Despatches to be taken as per F Leads	-Y22 avg	4633.46	10	463.35
	Total	16880.64	45.37 Milli	on Tonnes		Total		21835.30	71.29 N	1illion Tonnes
	FY22 - Rail Average Lead for Coal Supply in FY22 (SCR) by Telangana 372.07 KMs		(SCR) by Telangana	1	FY30 - Rail	Average	Lead for Coal Su	pply in FY30 5.29 KMs	(SCR) by Telangana	
Γ			FY2	2 FY30		Additional Rakes/Day Despatch Envisa	ged			18
	Average Lead of coal [Despatch from SCCL (K	Ms) 372.	07 306.29		Estimated Improved TAT (Days)				2.28
	Estimated Average Turna	around time of Rakes	(Days) 2.7	7 2.28		Total Number of Rakes Required				41
	Rakes / Day Despatch	by Rail + RCR + RSR M	ode 31.5	61 49.51	1	Estimated Wagons to be Procured for (Coal till FY	' 30		2,384
						Addition	al ~170 \	Nagane would b	o roquirod f	or dospatchos

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Source: Sagarmala Report, Ministry of Ports, Shipping & Waterways, Comprehensive Action Plan for Port Connectivity on Gatishakti NMP 2022, DPIIT]

Additional ~179 Wagons would be required for despatches during peak demand period from November to March 2528979/2023/CPIAM

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Smart Coal Logistics

²⁵²⁸⁹Z⁴Digital backbone is a key theme for Smart operation



²⁵²⁸⁹⁷**Opportunities in mining sector**

The core operational processes in the future mining value chain will be a highly automated, with a wide range of digital capabilities

Globally, 69% of mining companies are looking at remote operation and monitoring centres, 29% at robotics and 27% at unmanned drones.

While in India, only ~25% of the mining companies are looking for remote operation & monitoring centers.



²⁵²⁸⁹**Technology innovation in mining sector**

The technological innovations including the digital solutions have the capacity to add a considerable value to the metals and mining industry. The below data shows the cumulative value addition under various technology innovation portfolio in metal and mining sector with the expected rate of adoption in the mining industry:



Cumulative Value FY2	e Addition (Till 5	Rate of Adopt Indus	ion (Mining try)
Mining	Metals	FY18	FY25
Usd 9 Billion	Usd 25 Billion	20%	50%
Usd 47 Billion	Usd 8 Billion	25%	40%
Usd 59 Billion	Usd 26 Billion	50%	65%
Usd 65 Billion	Usd 12 Billion	30%	60%
Usd 5 Billion	Usd 16 Billion	75%	80%
Usd 2 Billion	Usd 35 Billion	15%	25%
Usd 2 Billion	Usd 8 Billion	25%	50%

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²⁵²⁸⁹Technology and Digital Trends in Mining

Sample use cases of technology and digital opportunities trending in the mining industry



Operations Integrated operations is enabled by global access to real time information, collaborative technology and integration of multiple expertise across disciplines, organizations and geographical locations



Traffic Management

Haul trucks, jumbos, scoops and other vehicles can cause traffic jams and result in lost time and productivity. Traffic management solutions can be used to prioritized and sequence traffic

Analytics and AI



Location Detection

Underground location detection is a support system that provides real-time positioning of vehicles, equipment and personnel in underground mines to maximize safety and productivity







Digital Drawings

Digital twins and digital drawings are created from physical drawings of assets for predictive modelling scenarios



Blast Optimization

The use of advanced analytics, data, and models can enhance the blast to achieve the desired degree of fragmentation, minimize costs, and improve safety.



Maintenance Predictive maintenance include asset data monitoring, intelligent, parameter optimization, analytically modeling, and using data to inform maintenance planning



Natural Gas Trucks The conversion of traditional haul trucks to supplement their use of diesel can increase safety, decrease emissions, and decrease erated from eOffice by a indicates RAO, MOC-SO(1



Asset Electrification Battery-powered vehicles can be more efficient than diesel-based counterparts and can reduce 115 ventilation and cooling requirements in MOC-SO(NRR) under bround Annual 7/05/2023 04:47 PM PIAM.





Smart Grid

Smart grid is the digitization of the traditional distribution grid through sensors to collect information on the grid operating conditions,, information storage and analysis



Demand Management Demand Management refers to the opportunity to optimizing power use when local renewable energy is abundant & grid electricity is economical

Cases

Use

²⁵²⁸⁹**Technology and Digital Trends in Mining**

Sample use cases of technology and digital opportunities trending in the mining industry

Short Interval control





Planning Software Planning software maximizes use of automated processes to eliminate repetitive tasks to improve speed and accuracy in operations across multiple scenarios



Use of sensors on personnel and equipment can result in better view of underground operations and result in continuous improvement to mining operations

Automation



Planning Integrated Mine Planning is provided through mining software for geological data discovery, reserves definition, mine engineering and scheduling of mining activities



252**SAFETY AND COMPLIANCE**

The benefits from incorporating new innovations and best practices can be meaningful



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^{2528979/2023/CPIAM} Application of Smart Technology (1/2)

With the adoption of various digital solutions across the mining value chain, miners are extracting business benefits.

Underground Monitoring System

An underground network of sensors powered by IOT helps keep workers constantly up to date on the state of underground environment and mining operations. These sensors connect to each other and the internet share data between different devices. Companies that use IOT usually choose to store their data on the cloud because IOT devices to collect large quantities of data and facilitate collaboration across operations. Sensors enable the mass collection of data that help make smart mining so much more efficient than traditional mining practices. More data leads to a better understanding of mining operations, which allows for better planning and site wide improvements.

Moreover, IOT sensors allow a mine to know the exact second something goes abnormal instead of discovering anomalies after the situation has time to aggravate. Miners working above and below ground can be informed of issues real time and can deal with them more concisely.

Remote controlling devices

Remote-controlled drills are operated from console at a remote location. This means workers aren't exposed to the typical dangers associated with drilling. Additionally, operators can use multiple drills simultaneously, increasing efficiency.

Autonomous drills also offer more precise drilling. Unevenly blasted material is more challenging to handle and leads to more costly operations. With advanced technology, drilling is more precise, setting a better foundation for the entire operation.

Autonomous smart mining vehicle

We have been looking forward to self-driving cars for decades but while we wait for them to hit our highways, automated fleet vehicles are already impacting the mining industry. These vehicles position themselves with their environment, load, and unload materials, perform route tracking, and park by themselves. Route tracking is when machines use AI to identify the optimal route to travel. By pinpointing the best possible trajectory, autonomous vehicles reduce furl consumption. Each autonomous vehicles communicates with the rest of the fleet and build in collision awareness increases efficiency and decreases accident.

Mining vehicles often access hazardous areas, putting drivers in danger. Automated vehicles reduce the risk of accidents and keep people safe.

Unmanned aerial vehicle

Unmanned aerial vehicles are generally known as drones, are used for prospecting possible new mines, and providing visualizations of geographical areas. Instead of sending a team of people to stake out the land, drone imaging provides an accurate, detailed view of the terrain that wouldn't be possible without technology.

Drone mapping is a lot faster than in person mapping. It also makes possible to map out previously inaccessible areas, with accuracy down to 1 cm.

Aside from mapping mines, automated drones survey hazardous areas to ensure worker safety. Workers also use them to measure and manage inventory and perform inspections.

File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449)

^{2528979/2023}, CPIAM Application of Smart Technology (2/2)

With the adoption of various digital solutions across the mining value chain, miners are extracting business benefits.

3D laser mapping in smart mining

Three-dimensional laser scanning has been used or years in civil engineering and architecture, but it's application in mining sector is relatively new. This technology uses laser light to analyze the environment's geography and create 3d map. Analyzing the resulting geographical data helps workers with mine exploration, the planning of drill holes and project management.

Geographic information system

Geographical information systems offer mineworkers a more in depth look at an area's geography, especially when the terrain is in accessible. This technology provides a 3D visualization of a mine, including the location, size, and shape of various geographical features.

Geographical Information systems generates a digital map with various layers superimposed on a base map. Different version of this map can be toggled to showcase additional landscape features depending on the purpose. GIS apps then allow workers to view detailed maps on various devices from any number of locations and access a database of geographical data.

Image recognition technology

Smart mines use image recognition technology to detect ores and differentiate them from the surrounding environment. This increased accuracy mitigates human error and streamlines the mining process.

For example, image recognition can differentiate between copper grades, some of which are suitable to differentiate commercialization ends.

Smart PPE (Personal Protective Equipment)

Many types of PPE have smart equipment or equivalents whether its hardhats, vests, safety googles, or boots. These safety wear items contain variety of sensors and communication devices that connect workersespecially lone workers- and providing them with real-time biometric data to ensure their safety in dangerous environments.

By measuring physiological indicators like body temperature, breath frequency, and heart rate, mineworkers and managers can be infirmed of an incident as soon as it happens and can deploy emergency health faster. Mineworkers follow strict work/rest regimes to stay safe in a difficult work environment. Keeping track of biometrics through PPE helps to keep everyone informed on the state of each worker so they can rest when required and prevent overexertion.

²⁵²⁸⁹79/2023/CPIAM Benefits of implementing Smart Mining (1/2)

While embarking on their digitalization journey, digital solutions across the mining value chain is helping the miners to achieve the real benefits across safety & sustainability, total cost control, transparency, and mobility.

Reduced Operational Cost

The implementation of the smart mining technologies is high, but they help to reduce the mining operational cost in the long run. As the long-time taking tasks that are usually done by people are automated for ultimate productivity, leading to increased profits, also the usage of automated machines to perform various tasks leads to the requirement of fewer people on the field at a time. It also reduces the cost of labor for making manual data collection and maintenance.

The three main cost area of a mine are equipment, energy, and safety. Investing in equipment leads to fewer costs in energy and safety. Collecting data through smart sensors helps mines use energy more efficiently and prevents expensive safety incidents, leading to safer working environment.

Increased accuracy

As the key to the profit in mining industry is primarily the number of natural resources that are excavated, so making sure that the machinery is used as efficiently as possible is crucial to meet the performance goals. Usage of AI and data analytics decreases manual searching for ores and minimizes the possibility of human error. The same mining site becomes more productive and yields more profit when smart technologies are leveraged.

The use of high-tech equipment always has an edge when it comes to understanding of a mine's geography and weak points. The use of drone mapping and image recognition technology allow workers to gain a better understanding of mine's terrain. The detailed analysis of the terrain increases the accuracy of the explosive deployment, optimizing various resources like the required number of explosive and hours of labor.

Optimized Workflow and Decision making

The use of big data automation makes it easier to optimize every stage of the mining process. Large-scale data gathering leads to less downtime because the errors or inconsistencies are immediately identified and addressed sooner than they would have been otherwise. It also simplifies tracking materials across the value chain, so that less time is wasted on figuring out logistics.

Regularly reviewing the data allows organizations to continuously adapt and find room for improvement, producing a lean and effective organization. Smart technologies can automatically provide valuable insights, leading to better decision-making and leaving more time for implementing beneficial changes. Additionally, interconnected device networks make it possible to increase collaboration across all the level of mines, leading to a better decision making.

Improved asset health with predictive maintenance

Smart mining technologies equipped with sensors can generate constant stream of data on equipment "wear and tear", allowing the predictive maintenance of equipment. The analytics allows mining operation to know when and where there will be equipment issues based on all the involved variables like temperature, pressure, and their usage, which allows the maintenance checks and replacement at the exact location when there is a true need for the same. This leads to an efficient and budget-oriented maintenance as compared to constant routine maintenance upkeep.

²⁵²⁸⁹^{29/2023/CPIAM} of implementing Smart Mining (2/2)

While embarking on their digitalization journey, digital solutions across the mining value chain is helping the miners to achieve the real benefits across safety & sustainability, total cost control, transparency, and mobility.

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Better worker safety

Mine workers face physical dangers like cave-ins, explosives, and extreme temperatures, they are also exposed to many medical risks from physical injuries due to heavy lifting to respiratory diseases like lung cancer and black lung disease. There is also risk of hearing loss due to loud repetitive noises.

Equipping amine and workers with connective technologies and providing the appropriate training improves the safety in the workplace. AI helps to generate detailed actionable reports, facilitating safety accountability, planning, training, monitoring and improvements.

With AI and machine learning constant analysis of data can be done, negative behavioral trends can be quickly spotted, and corrective training can be automatically recommended.

Improved Recruiting and Employee Retention

Maintaining a skilled workforce is a continuous challenge in the industry. Increasing demand for resources, a retiring workforce, and a lack of emphasis on skilled trades in younger generations have created a mining labor shortage in the industry.

This lack of interest in the sector is caused by a combination of factors, including the physical and mental toll, possible dangers, and the remoteness of many mining communities. Smart mining makes mining sector more attractive to new workers by making it possible to work form a safe, remote location while using cutting-edge technology.

With this new technology, smart mining is introducing more jobs to people from broader set of educational backgrounds. The new mining workforce includes engineers, computer scientists, programmers, and data analysts.

Prevention of Environment Incident

In the mining industry, any errors can lead to injuries and fatalities, as well as have direct consequences on the local environment. The best solution is to take advantage of the latest technology to automate equipment, monitor processes and use data to proactively predict outcomes and make efficient decisions.

The way out for operation to avoid unexpected consequences on the environment is the large-scale collection of real time data. Using historical data, Ai technology can use algorithms to predict environment risks and generate actionable insights, AI can also be used to predict energy peaks, allowing operations to control their energy usage, reduce overall energy demand, save cost, and reduce greenhouse gas emissions.

Remote operation

Smart mining and automated equipment allow many workers to do their jobs remotely, away from the dangers of unstable areas within the mine. Thus, in many cases, new technologies have removed a lot of the laborintensive work and improved the overall safety. As the inclusion of automated vehicles keep people out of dangerous areas while transporting materials to where they need to go. Inclusion of smart PPE and wearables can alert the workers about abnormalities in their environment or their individual biometrics, prompting them to follow emergency procedures when needed.

²⁵²⁸⁹²⁰ Illustrative case study in Smart Mining

Illustrative use case 1: IOT enabled Asset health monitoring and predictive maintenance to enhance reliability of mining operations and predict failure

Use case detail

Mines are struggling with unplanned downtime and lack of Asset health monitoring capabilities. Interconnected asset data can be extensively used to analyze trend, predict failure and optimize maintenance schedule. By leveraging IOT technology, large pool of data can be captured, processed and analyzed.

Illustration

Potential benefit

- Early prediction of failure for HEMMs including drilling machines
- Improvement in Equipment life and performance
- Data driven decision making- optimized maintenance schedule, reduction in spare cost

Digital enablers :

Internet of Things, Big Data Analytics, Machine Learning



Example 1: Australian coal mining company

A Major Australian coal miner realized operational cost reductions of over USD 55 Million in the first year, with the payback being 3 months and a 3:1 ROI achieved in the first year of operations after implementation of smart IOT enabled Asset monitoring and predictive analytics solution. Similar realizations have been made by other mining companies all over the world

Deloitte has helped multiple Mining and Oil & Gas companies to deploy sensor enabled predictive analytics to predict health of crucial assets on site in order to improve asset performance and reduce costs



Predictive maintenance,

Using predictive analytics platform, predict failure and enhance availability. Optimize maintenance schedule

²⁵²⁸⁹²⁰ Illustrative case study in Smart Mining

Illustrative use case 2: Deployment of drones for smart production scheduling in variety of applications in the mining industry ranging from haul mine

planning to production scheduling and monitoring

Use case detail

Mines face a problem of seamless mine plan monitoring and time intensive surveys for volumetric calculations.

Drone technology with smart sensors has helped mining clients along the globe save time and cost of operations while maintaining desired accuracy levels.

- Potential benefit
- Better accuracy in excavated volume calculations
- Reduction in time and cost for production monitoring and scheduling
- · Faster and easily repeatable surveys at low cost

Digital enablers :

Drone Technology, Smart sensors (payloads)



Example 1: APAC- American aggregate mining company

APAC has successfully deployed drone technology to improve the accuracy of their mine plan and schedule monitoring, boundary demarcations, pit road optimization and <u>mine</u> security.



Example 2: Complete Mapping of the RTB Copper mines, Serbia in 10 days

APAC has successfully deployed drone technology to improve the accuracy of their mine plan and schedule monitoring, boundary demarcations, pit road optimization and <u>mine</u> security.

<u>Illustration</u>

Holistic Mine planning

- Pit excavated volumetric calculations
- · Face advancement and bench stability monitoring
- Haul road width and gradient monitoring
- · Tracking and flagging of mine plan deviations
- Assisting fleet management systems by vehicle and asset monitoring in remote mining locations
- Stockpiles volumetric assessment (in mines, ports and washeries)
- · Monitoring mine boundary compliance
- Providing visual information about inaccessible areas
- · Enabling and reinforcing Mine Security

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Current Drone applications in the Mining Industry



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²⁵²⁸⁹²⁹ Illustrative case study in Smart Mining

Illustrative use case 3: Smart machine learning enabled analytics for optimized blasting parameters using previous blasting data to provide smart solutions for fragmentation monitoring and optimization

Use case detail -

Mining companies facing challenges pertaining to blast

performance. Strong machine learning enabled analytics platforms are being used by mining companies globally to ensure optimized fragmentation to reduce crushing and beneficiation costs while reducing ground vibrations, back breaks and fly-rocks

Potential benefit

- Improved crushing, loading and hauling productivity
- Reduction in blasting costs due to reduced consumption of explosives
- Reduced environmental impacts
- Control over bench integrity and phasing

Digital enablers :

Machine learning, future simulation platforms, big data analytics







Example 1: Anglo American and Teck Resources

Global mining giants like Anglo America and Teck Resources have used Orica's smart blasting solutions to reduce overall operational costs and realize better control over downstream scheduling, quality compliance and reduced environmental impacts

Parameters include geological strata characteristics, desired fragmentation (gradation), explosive used etc. IOT sensors are also leveraged by some players to get real time data for from blast hole drills

²⁵²⁸⁹²⁹ Illustrative case study in Smart Mining

Illustrative use case 4: Safety management through wearable technology have led to improved worker connectivity, safety and productivity for various mining and metals companies globally

Use case detail

Advanced wearable technologies can be effective to enhance safety of workforce in the field and hazardous areas along with increasing operational productivity

- Potential benefit -

- · Enhance safety of workforce
- · Improved health monitoring of workforce
- Improved productivity
- Generation of Management insights for better operational planning and design

Digital enablers:

Wearable technology, Cognitive computing, Cloud, Mobile Application



Example 1: Rio Tinto, Anglo American, New Crest Mining

 Mining companies in Australia are providing workers with smart caps that monitor their brain waves to measure fatigue. The smart cap provides early warnings when the worker is approaching microsleep.



Example 1: Companies like Janantec technologies, K4 Integration and M3sh technologies have penetrated global mining and metals market with a range of smart wearables that have helped clients improve worker safety and productivity, along with getting management insights on operational planning and design to mitigate the core issues identified.

Illustration 1:

Wearable technology allows real time monitoring of the environment as well as interfaces with which to communicate with field workers. Google glass and other optical sensors allow engineers to access information whilst keeping their hands free.



Illustration 2: Example of Vital parameters monitoring



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²⁵²⁸⁹²⁹ Illustrative case study in Smart Mining

Illustrative use case 5: Remote operations center provide real time control over operations to off-site employees leveraging connectivity and analytics platforms

Use case detail -

Mining companies face challenges pertaining to skill retention and labor productivity at extremely remote mining sites. Remote operations center has provided an alternate option to mining operations, leveraging IOT, smart backend analytics platforms and <u>front end</u> data visualization and control software systems

Illustration

– Potential benefit

- Decrease reliance on on-site Human interventions
- Leads to better productivity and engagement between the operating, monitoring and planning teams

Digital enablers :

IOT, Machine learning, Data visualization software systems



Example 1: ROC for BHP's Pilbara mine The Integrated Remote Operations Center allows BHP to monitor, analyze and control its entire west Australian iron ore supply chain including operational controls over Pilbara Mine, fixed plant, train & port operations from one central location.

IROC uses a mine fleet-management system, train control and fixed-plant control systems for mine and port operations as well as CCTV/radio communications for personnel communications.







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^{2528979/2023/CPLAM} Digitalization in Logistics

The digital intervention in mining logistics creates the must needed "Digital Supply Chain". Every industry at present is experiencing a supply chain disruption and the story remains same for the mining sector too. The key to resolve this turbulence in supply chain is the adaptation of digital technology. The adoption of digital supply chain in the mining sector is an uphill task than compared to other industries as this sector requires and inside-out transformation with cultural changes, workforce reskilling, and strong data management practices.

Post Covid period the change in the demand dynamics is disrupting the traditional supply chains and as the demand and price are in fluctuation, there will always be fluctuation in the production plan. The traditional mining supply chain are not elastic enough to swiftly align supply pipelines with demand fluctuations. The mining logistics has always been complex and challenging to manage, with demand changes the complexities in the domain increases further. The predicted future supply chain requirements were pushed to forefront as the pandemic led to the complete disruption of the supply chain. The pandemic brought the economic activities to screeching halt and the traditional supply chain was disrupted completely. Studies suggest that the supply chain disruption across industries were up by 67% in 2020 than compared to previous year.

The idea of digital supply chain gained popularity as people started to reconsider their supply chain strategies post pandemic. Moreover, the Suez Canal blockage in March 2021 hurt the global economy by approximately \$9 Billion per day, while the ongoing Russia-Ukraine conflict is fluctuating the values of all commodities.

The Leading miner BHP is targeting to use predictive analytics to streamline operations, enabling better identification of asset condition and efficiency. Various companies are deploying block chain solutions for enhanced supply chain traceability, allowing end to end digital transactions.

The technology uses augmented reality and virtual reality technology for modeling, simulation, and cause-and-effect analysis to predict and solve the challenges. It helps miners to visualize end-to-end supply chain and site operations. The use of digital twin technology for miners is not only limited to enhancement of operational visibility but also to boost the real time management of production, inventory, product pipeline, and deliveries.

²⁵²⁸⁹Z⁹Digitalization in Logistics - Logistics control tower

Solution features and benefits

A centralised integrated platform for logistics planning, scheduling, reporting and monitoring logistics parameters in real-time	Benefits- Tangible / Intangible	
Dynamic Planning tool with GPS enabled real-time tracking of major logistics assets and reporting of any abnormal behaviour for proactive behaviour	Reduction in overall logistics cost by reducing TAT	Increased transparency and efficiency in rake planning
Advanced analytics on large volumes of data to understand the interactions between assets, network and customers, to identify patterns, predictions and recommendations		Higher customer
Real-time visibility of autonomous loading of rakes and other types of maintenance work for Weighbridge and Rail track	Optimization of rake loading efficiency	delight due to better On-time In-full (OTIF) compliance
Integration with Rapid loader system, Weighbridge and ERP for automatic reconciliation of dispatch quantity and generation of dispatch goods note		
Interaction through IoT cloud platform with Drones and Rail inspection trolleys for rail track monitoring and surveillance	Seamless collaboration between stakeholders for proactive decision	Improved SLA adherence and ground-level end-to- end visibility



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²⁵²⁸⁹**IT-OT** integration

Focus on enabling seamless & secure collaboration between IT and OT assets and teams

Secured and Seamless flow of data from OT to IT systems

Field level Control

OT system helps in operation of physical processes and the machinery used. **High in Instrumentation capabilities, low in compute & analytical capabilities**

FMS & Asset health management system

- Sensorization of fleet assets
- In-line sampling system for of real-time data on Quality
- Alarms & Alerts from SCADA & PLC systems

Integrated EHS

 Environmental sensors for continuous monitoring of air quality levels



Integration

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IT Systems

IT system involves network & applications with **high** in compute & analytical capabilities

Operation Management Level Controls and Planning

- Condition-based analytics: Asset class defined rule/logic
- Automated quality & Quantity reconciliation for error free invoicing

Production Process Operating Controls

- Improved drilling effiiency by better planning
- Integration Mine Planning application with on field devices for real time actions

Recording and Analysis Level Control

 Monitoring of scheduled activities for Mining operation, Processing & Logistics from start to completion, according to the time frame set and/or the operational targets

Business Benefits



Improved IT and OT security by reduction enabling a secure architecture



Common language and processes for IT-OT risk management



Detection and prevention from detected anomalies and cyber attacks



Improvement in availability of OT/OT systems

²⁵²⁸⁹^{29/2023/CPIAM} Integrated data platform (IDP)

Encompasses complete data life-cycle and host use-case interventions to address technological challenges

- Maximize value of data across the organization leveraging digital platform
- Provide base for advanced analytics and business intelligence initiatives
- Real time tracking of success indicators and KPIs



^{2528979/2023/CPIAM} Advanced analytics platform

Empowering enterprises to rapidly adopt AI, resulting in faster, smarter and future ready businesses

Self Service Analytics

- Data Discovery and exploratory data analysis
- Calculated fields for quick metric and insight calculation & algorithms



Automated AI Lifecycle Management

- Powerful AI studio tools to build, train & deploy complex AI at scale
- Instantly scale AI solutions across the enterprise from proof of concept to production

Private AI

- Create custom AI solutions without using cloud-based AI models
- Brings AI models & algorithms near to data source (Edge deployment)

Infuse Intelligence

- Embed intelligence in legacy Applications
- End to end automation of business Processes

²⁵²⁸⁹²⁰²³ CPIAM Illustrative case study in Smart Logistics

Illustrative use case 1: IOT enabled value chain visualization and analysis provide companies a holistic view of the entire supply chain and helps in improving analytics and modelling capabilities to drive value

Use case detail

Mining companies face decision making challenges due to siloed operational and supply chain data and lack of capabilities to conduct real time assessment of operations and make decisions based on KPIs

Potential benefit -

- Improved decision making capabilitiess
- Comprehensive managerial transparency over the integrated value chain
- Enhanced governance and risk mitigation capabilities

Digital enablers :

IOT, Machine learning, Big Data Analytics, Scenario planning and modelling software solutions, Data Visualization



Example 1: Supply chain visualization for BHP's Iron ore Operations The Integrated Remote Operations Center allows BHP to monitor, analyze and control its entire west Australian iron ore supply chain including operational controls over Pilbara Mine, fixed plant, train & port operations from one central location.



Example 1: Leading metals and mining company in Australia adopted supply chain visualization and real-time state-of-art scenario modelling tool to optimize their decision making processes while complementing established intelligent mining ecosystem

<u>Illustration</u>



File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449)

²⁵²⁸⁹**7**⁴**7**²⁰²³**4CPIAM Existing** Initiatives in India for Smart logistics

The key technology behind Smart mining is the Internet of Things (IoT), which is defined by the use of a network of sensors and devices connected through the Internet. When used in industries like mining, IoT is referred to as IIoT, which stands for "Industrial Internet of Things." The goal of IIoT is to improve industry efficiency by connecting devices and eliminating the need for human involvement in data collection.

If we closely look at the mining value chain, we can broadly classify it into Production & Transportation. Major capital expenditure takes place in production and secondary expenditure is in transportation and logistics. At any mines surveillance and safety is the utmost area of concern. CSIR-CIMFR had developed and filed patent application entitled "Mine Transport Surveillance System (MTSS)" under a R&D project sponsored by Ministry of Electronics and Information Technology (MeitY), Government of India. This is the proprietary and indigenous product of CSIR-CIMFR, which has been recommended by MeitY to NMDC, CIL, Ministry of Coal, Ministry of Mines and others for its implementation in mines under "Digital India" and "Make in India" programs. NMDC Ltd. had sponsored the project for installing MTSS in Kumaraswamy Iron Ore Mine (KIOM), Donimalai Iron Ore Mine (DIOM) and Pellet Plant at Donimalai Complex of NMDC Ltd. The different modules under MTSS are:

• Weighbridge automation module for fast, accurate and automated weighing process; Centralized billing, monitoring and software solution for secure and transparent on-line

• Dispatch and Production monitoring with independent website of each mining company.

• Long range proximity warning device for safety of Heavy Earth Moving Machinery.

• GPS and RFID-based vehicle tracking and production monitoring module for keeping continuous watch on the vehicles on geo-fenced transportation routes

• Periphery surveillance using virtual fencing for detecting intrusion of vehicles with the intention of illegal transportation of mineral through unauthorized routes as well as identifying human intrusion into an industrial area.

• Close circuit television cameras and thermal imaging cameras for keeping different mining activities under day-and-night sharp surveillance, particularly to watch vehicles carrying mineral.

 In-motion weighbridge for weighing of mineral produces from mine, and Wireless networking for effective deployment of the system and centralized monitoring for overseeing all mining activities as well as transport surveillance from a central location.
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File No. CPAM-43020/15/2021-CPIAM (Computer No. 350449) Existing Initiatives in CIL for Smart logistics (1/2)

BHARAT COKING COAL LIMITED (BCCL)

CCTV Surveillance System: CCTV surveillance System have been commissioned and made operational at 136 vulnerable points of BCCL like Area Offices, Stores, Magazines, Major Coal Dumps, Hospitals etc. CCTV surveillance system have been installed & commissioned at 23 nos. of railway sidings of BCCL.

Presently, RFID based boom barrier system is installed and commissioned at 48 nos. of Road Weighbridges at BCCL for weighbridge automation & surveillance purposes. Also 15 nos. more RFID surveillance system is under implementation in upcoming road weighbridges of BCCL.

Work order for supply, installation, commissioning, implementation, training & maintenance of GPS based Vehicle Tracking System has been issued in Jan2020 and is under trial run now.

EASTERN COALFIELDS LIMITED (ECL)

CCTV Surveillance System: CCTV system has been established at mine viewpoint in Sonepur Bazari Area and is in operation. Seventy-two (72) nos. of CCTVs are installed in Pandaveswar Area. Eighteen (18) nos. of CCTVS are online i.e., can be access from anywhere through internet.

"Weighbridge Automation System" for all the 105 road weighbridges of ECL with RFID based boom barrier access control system.

GPS based vehicle monitoring system has been introduced at all the Areas to curb coal pilferage.GPS enabled VTMS system is fitted in Coal transportation vehicle for live tracking of vehicle.

CCTV cameras are installed at each railway siding and other sensitive locations.

CENTRAL COALFIELDS LIMITED (CCL)

GPS/GPRS based Vehicle Tracking System and RFID with CCTV based Weighing Control and Monitoring System across CCL Command areas.

CCTV surveillance at Vulnerable points of CCL Command Area.

WESTERN COALFIELDS LIMITED

GPS/ GPRS based Vehicle Tracking System (VTS) with 1370 nos. of GPS sets and Geofencing of Mine Areas.

Increased electronic surveillance with Centralized CCTV surveillance system at all vulnerable points like Weighbridges, entry/ exit points, stock yards, magazines, stores etc.

Implemented RFID based weighment integration of all the Road weighbridges.

RFID based Boom barrier access control system is implemented at Check posts to prevent entry of unauthorized vehicles in mines.

IP Radio Network with the state-of-the-art technology established for integration of all above systems from remote units to the Area HQ Servers.

MAHANADI COALFIELDS LIMITED (MCL)

GPS/GPRS based Vehicle Tracking System: GPS based VTS (Vehicle Tracking System) units have been installed in 2970 private trucks/ tippers, HEMM's, and other vehicles engaged in production and internal transportation of coal and OB, as well as vehicles used by Security Department for patrolling. Live tracking of these vehicles along with viewing of various reports related to violation of geo fences, trip, long stoppages, distance traveled etc. are available through web.

Geo-fencing of the mine boundary along with the routes have been done.

Operator Independent Truck Dispatch System (OITDS): OITDS is running successfully in three open cast projects of MCL i.e., Balram, Lingaraj and Bharatpur OCP. A total of 137 HEMMs have been installed with the equipment for OITDS.

Installed still-shot IP cameras at 90 in-motion and static road weighbridges.

VHF communication: Installed VHF communication network in different mines for communication at the Projects up to the Coal Faces. The same is being enhanced every year for increased operational efficiency.

Underground Communications System has been installed in all underground projects for fast and safe communication.

South Eastern COALFIELDS LIMITED (SECL)

CCTV Camera Surveillance System: SECL has procured 596 numbers of CCTV cameras centrally in August 2020 and installed them at different vulnerable points of Areas like Coal Stocks, Weighbridges, Mines Entry-Exit gates. "CIL Eye" app has been installed for real time monitoring of mine activities

GPS-GPRS based Vehicle Tracking System: In this system, the GPS/GPRS devices are installed in all internal coal transportation vehicles and the same are tracked on real-time by 24x7 basis.

Geo Fencing: All mine boundaries, coal patches, unloading points like sidings, stocks, feeder breakers, crusher and bunker, internal coal transportation routes are geo-fenced.

RFID based Automatic Boom Barriers: RFID based Automatic boom barriers are installed at all the entry and exit points of Mines and Railway Sidings so that only authorized vehicles/tippers can enter/exit into the mine premises which eliminate the possibility of any coal pilferage and helps to regulate vehicle traffic.

Electronic In-motion Rail weighbridges and Road weighbridges has been installed for weighment of input as well as output coal of SECL mines. Five numbers of new In-motion Rail weighbridges have been installed at different sidings in place of old static Rail weighbridges. All the In-motion Rail WBs have been upgraded for integration with Freight Operation Information System (FOIS) of Railways.

All the road weighbridges are equipped with Weighbridge Centering System (WBC). This system would allow the weighment of trucks only if the vehicle is properly placed within the weigh platform otherwise would not allow.

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²⁵²⁸⁹Z9/2023/CEIAM Initiatives in Railway Sector

- Railway, said to be the lifeline of India, transports ~1200 million Tons of goods annually through ~5000 goods train every day earning 66% of revenue. The major commodities carried by Indian Railways are Coal, Iron Ore, Food grains, Iron & Steel, Cement, Petroleum products, Fertilizer and Containerized Traffic. Wagons are standardized as per the material they transport. Unlike passenger carrying trains, freight trains do not run to a fixed schedule. Thus, it is even more imperative to have real-time data on freight train. These data drives decision on optimum utilization of resources like wagons, locomotives, crew and routes ensuring high mobility in the system.
- To manage such a complex system Indian Railways has introduced Freight Operations Information System (FOIS). Apart from monitoring the movement
 of freight trains, the system calculates freight and other charges based on complex rules of business and generates the Railway Receipt, the bill payable
 by the shipper. The system is used to track and trace consignments for end users and system administrators. Electronic Registration of Demand is also
 now a part of FOIS which brings convenience, speed, and ease to customers through online registering of indents for Rakes and Wagons.
- Centre for Railway Information Systems (CRIS) undertakes design, development, Implementation and O&M for various IT projects awarded by Railway Board. Further, CRIS also undertakes Freight Business Data Integration (FBDI), for FOIS, to develop APIs for customers to integrate with their internal MIS networks.
- For faster and customized automated access to data through Freight Operations Information System (FOIS) of Indian Railways, which would help Coal India Limited (CIL) monitor movement of coal laden rakes and coal dispatch activity, CIL has entered a Memorandum of Understanding (MoU) with the Centre for Railway Information Systems (CRIS). The first-of-its-kind data sharing offers CIL a bouquet of benefits which will help it in rationalizing the entire coal supply matrix via rail mode. It provides precise details of loading, weighment and unloading details along with turnaround time of rakes. The MoU is a collaboration on freight operation information between the networks of CIL and CRIS regarding CIL's rail movement of coal.. The data on coal transport and events enroute on consignments can be ported into Coal Sector Smart Logistics systems for real time information and decision making.

²⁵²⁸⁹*Z*9/2023/CRIAM **Initiatives in Port Sector**

- Centralized Port Community System (PCS) is an initiative by Indian Ports Association (IPA) intended to provide a single window system for the Port
 communities in India to securely exchange the documents and information electronically with their stakeholders involved in the maritime transport
 and logistics chain including the trading partners and government agencies. It is also expected to provide global visibility and access to the central
 database to all its stakeholders through internet-based interfaces.
- PCSIx, a cloud-based new generation system, brings together the different stakeholders of the maritime sector on a single platform, facilitating
 government-to-business, business-to-government, and business-to-business transactions even as it ensures extreme levels of cyber security. As PCS
 architecture is built on an open platform, the technology can integrate any new concept or module available in the industry without disturbing the
 existing ecosystem. Various ports are in the process of adopting PCS1x including minor ports. Indian Ports Association (IPA) and PCS have published an
 API specifications sheet and assist users in API integrations to avail of services and information.

²⁵²⁸⁹79/2023/CPIAM Benefits from digital makeover of logistics

Digitalizing the multi-modal logistics offers various benefits:

Prediction of operational risks

Digital supply chain can self-organize and self-optimize with the real time data from connected sensors combined with the individual preferences, this will provide us the accurate forecasts of demand. Furthermore, by providing an operational bottleneck from a rising at an event, a smart logistic system can analyze the situation, streamline the system. Thus, it will result improved operational efficiency and leaner manufacturing.

Proactive maintenance to avoid downtime

Using smart logistics predetermined maintenance schedule can be made, this schedule helps to ensure that they are repaired and checked to prevent them from malfunctioning when needed the most. It may not be the best maintenance strategy, but it is the most used. In a connected world, companies are no longer in need to perform the preventive maintenance; instead, the analytics inform the date of maintenance.

AI and machine learning integrated together can create the maintenance management software which will monitor and feed real time data into equipment and the health of the system can be monitored. This makes it possible to take appropriate action to prevent equipment failure and costly downtime.

Smart trend analysis

Using smart technologies, an effective predictive analytics solution can be very useful in monitoring the conditions of the vehicles. It will assist the team with predictive analysis to identify the parts that are not working properly and to arrange replacement of the parts quickly. It is also a simple way to achieve greater efficiency by incorporating the smart chain into this process. Detecting and monitoring operational issues with a system and adjusting based on the findings might increase the system's overall span.

With the market's growing demands and customer expectations, manufacturers are becoming more concerned with supply chain transparency. Therefore, it is vital to maintain a transparent supply chain through IoT to effectively cater to eco-conscious customers and prevent disruptions that could place supply chain operation at risk.

Improved and efficiency planning

The use of real-time data so gathered from the connected devices to understand the current demand of commodities in the market. The analytics so generated can be used to plan the sales and operations by making sure the current plans are viable and providing accurate information about the changing conditions, such as logistic planning. Several companies have already incorporated the use of supply chain 4.0 based on AI and Machine learning, no matter how small but the gains in efficiency are worth the effort and expense, as the return to the investment is massive in long run.

Smart supply will not only help to track the movement of commodities but will also provide more visibility into the demand and supply patterns so the cost can be controlled, and profitability can be increased. As smart logistics will provide maximum efficiency only when there will be the right set of data to analyze, rather than collecting all the data at one place.

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Thank You

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