



Chintan Shivir

Strategy for achieving 1 Bn Te+
production by CIL and country



February 2020

[KPMG.com/in](https://www.kpmg.com/in)

Most agencies believe that global coal demand is levelling but India's demand will continue to increase



Coal demand (Mtce)	2017	2025	2030	CAGR
Global	5,357	5,383	5,405	0.1%
India	572	801	955	4.0%

Coal demand (Mtoe)	2017	2025	2030	CAGR
Global	3,731	3,710	3,647	-0.2%
India	424	555	658	3.4%



- OECD countries have seen drastic reduction in their demand
- China and India have seen significant increase in their coal demand and will continue to be major demand centers for coal

Source:

1. New policy scenario, World Energy Outlook 2018 as per IEA
2. BP Energy Outlook 2019

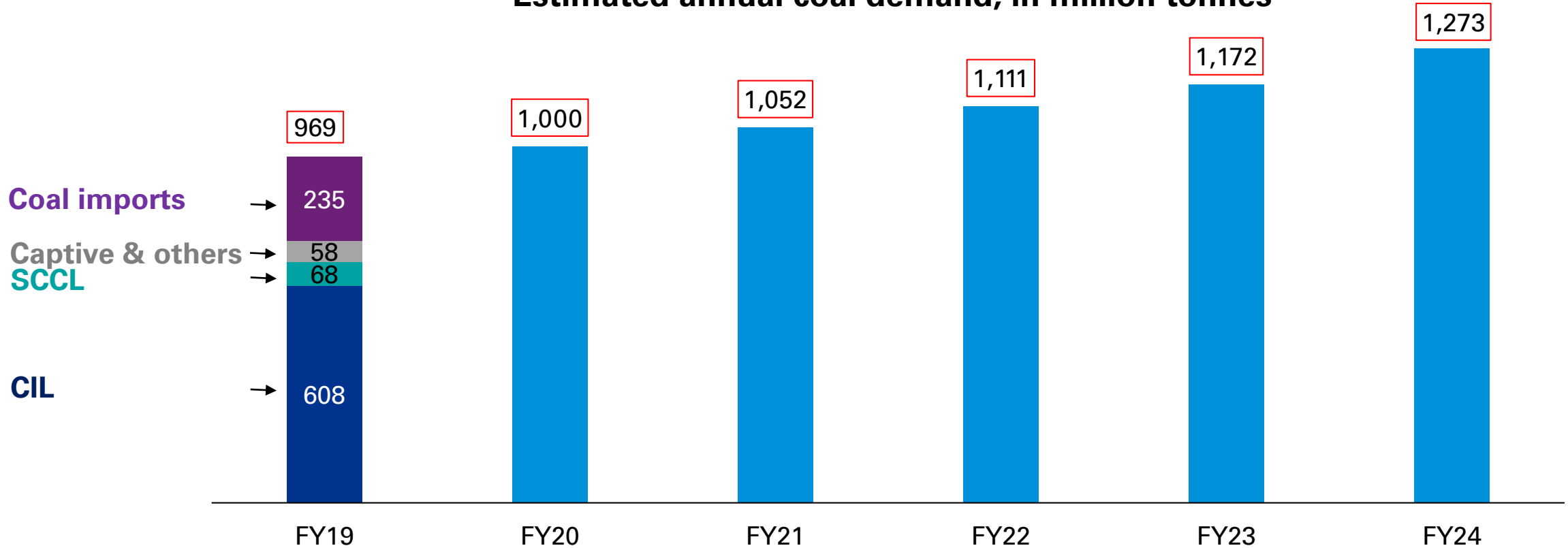
Note:

1 Mtoe ≈ 1.44 Mtce, 1 Mtoe ≈ 2.5 MT of 4,000 kcal/kg coal



Indian coal demand is expected to reach 1.27 BT by FY24

Estimated annual coal demand, in million tonnes



Source: MoC for all years except FY19 (Economic Advisor)

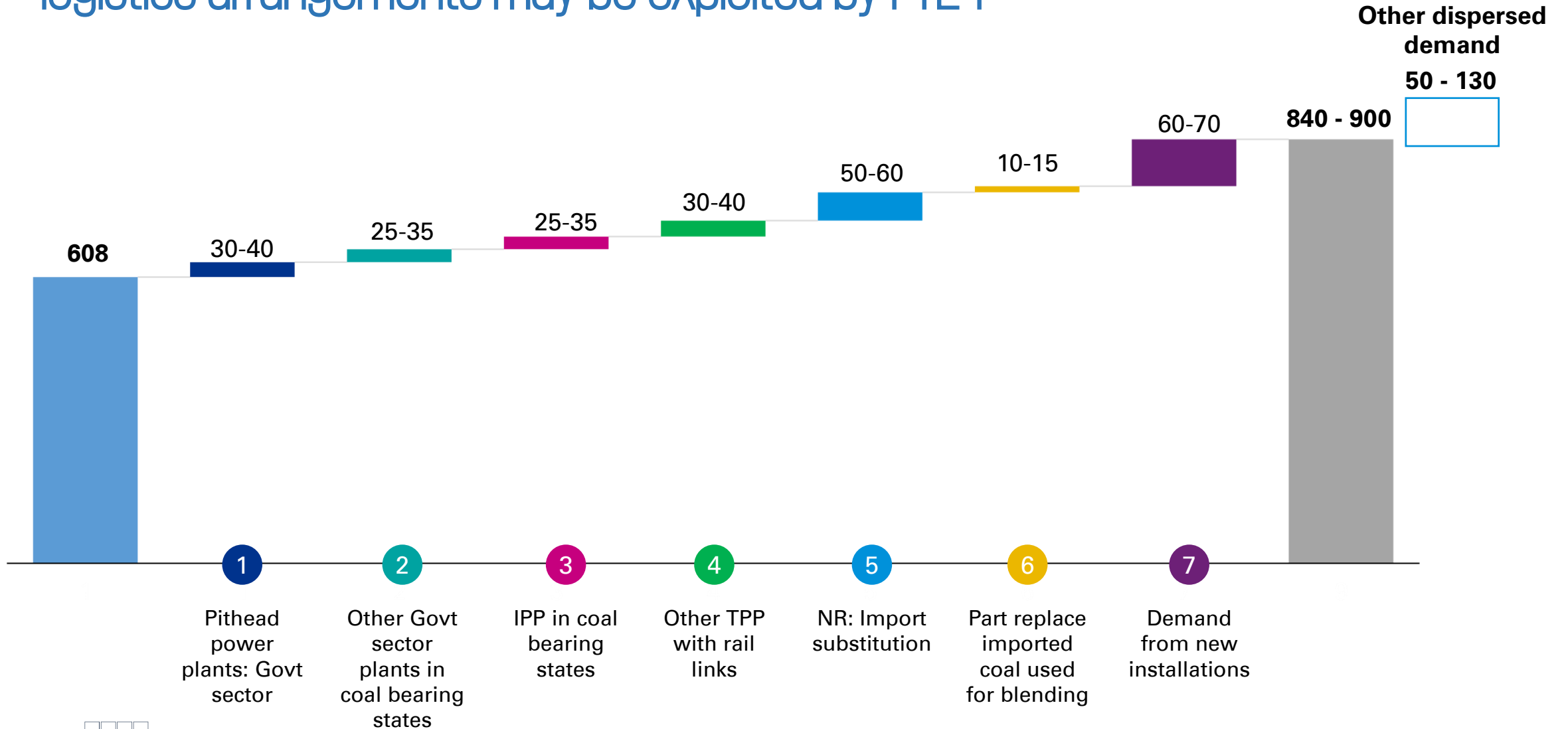
Note: Demand – Supply figures are the single demand scenario as part of Vision 2030 till FY22 extrapolated for FY23 and FY24

FY19 supply figures are for dispatch; FY 20 onwards, dispatch is considered to be the same as production

In order to increase CIL supplies from current 608 MT, utilization of established logistics arrangements may be exploited

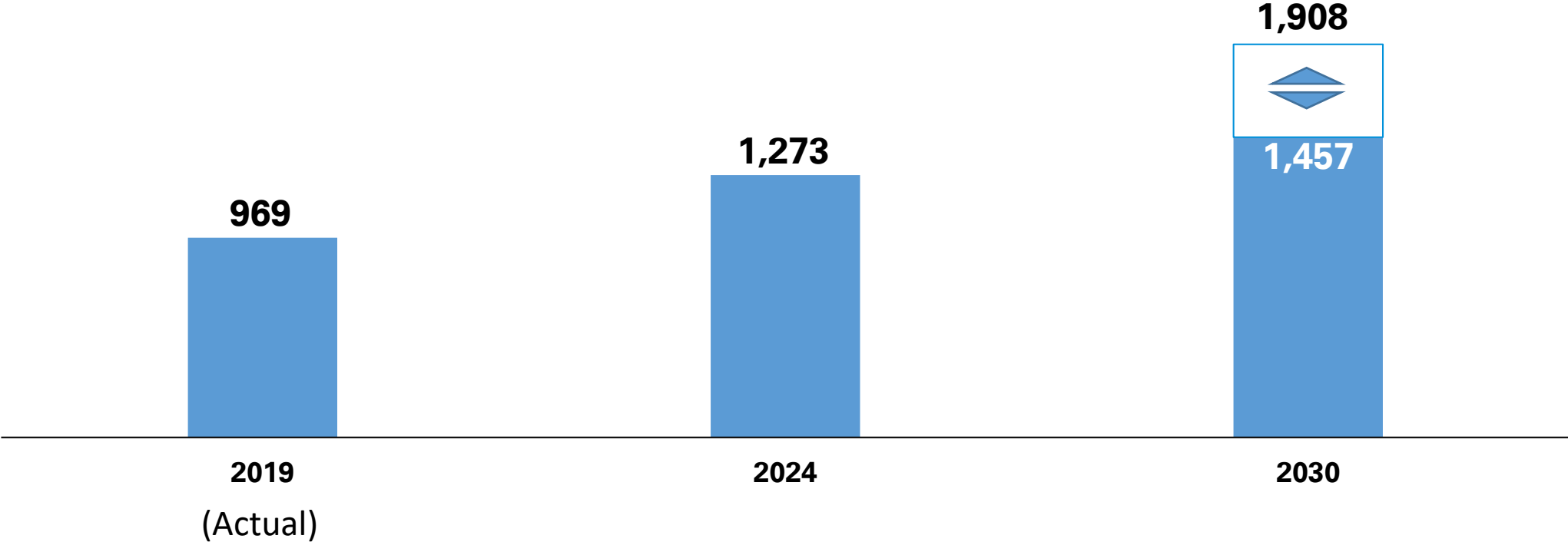
No.	Particulars	Additional supply possible	Example
1	Increase in PLF of central and state sector pithead plants from current levels to 95%	30 to 40 MTPA	Farakka, Anpara
2	Increase in PLF of non pithead central and state power plants in coal bearing states to 75%	25 to 35 MTPA	Chandrapura TPS, Marwa TPS
3	Increase in PLF of pithead and non pithead IPP in coal bearing states to 75%	25 to 35 MTPA	Tamnar TPP, Derang TPP
4	Increase in PLF of other rail connected TPPs by 10% for power plants with current PLF of less than 60%	30 to 40 MTPA	Tanda TPS, DS TPS
5	Non-regulated sector increased imports replaced by domestic coal	50 to 60 MTPA	Vedanta Jharsuguda, JSPL Angul
6	Part replacement of imported coal used for blending	10 to 15 MTPA	Adani Tiroda, L&T Nabha
7	Untied demand from new installations already under construction or planned	60 to 70 MTPA	Yadadri, North Chennai TPP
8	Other dispersed demand (incl. above) in optimistic demand scenario	50 - 130 MTPA	Incl. shortfall from other sources etc.

In order to increase CIL supplies from current 608 MT, utilization of established logistics arrangements may be exploited by FY24



Coal demand is expected to be 1.5 BT to 1.9 BT by FY30

Coal demand (in million tonnes)



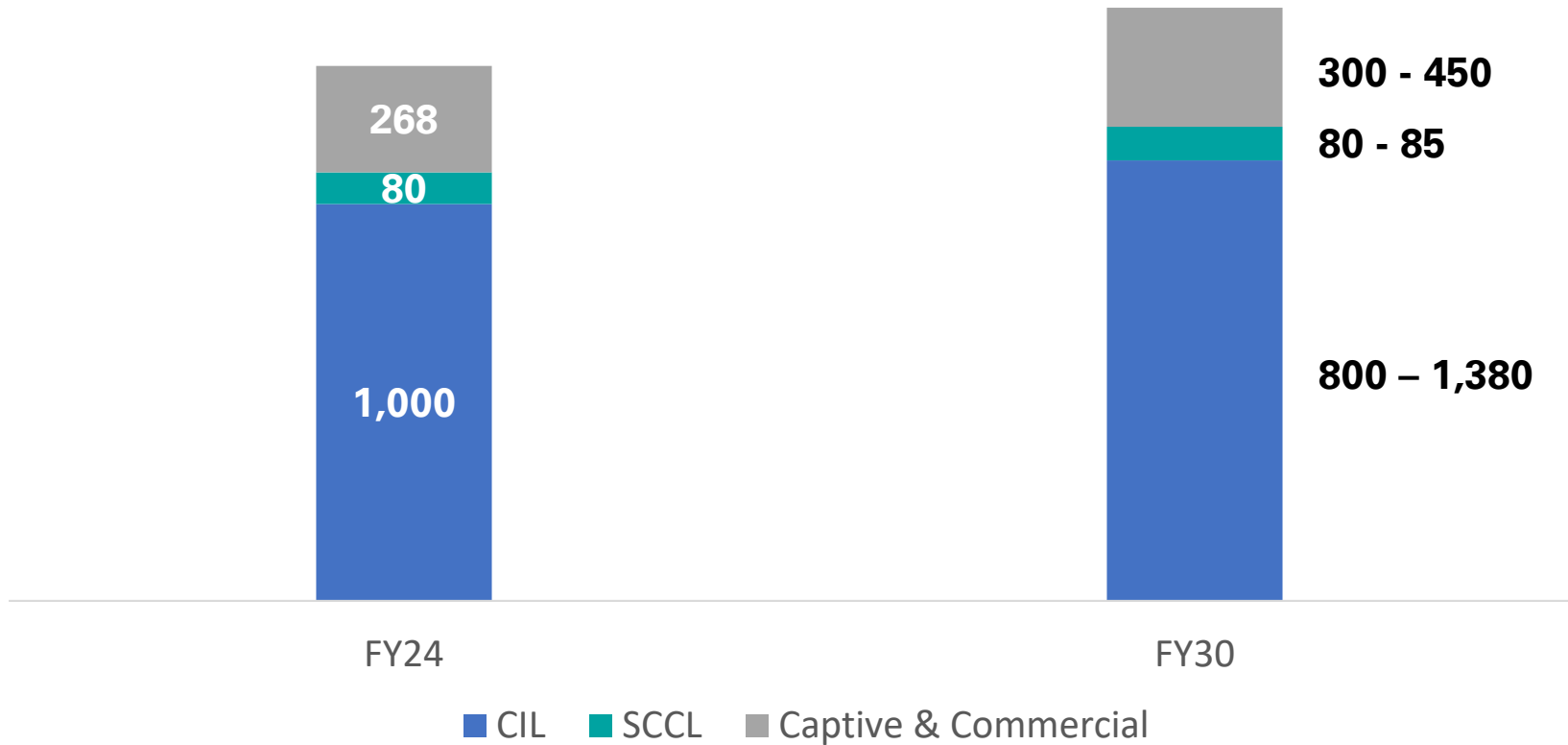
Source: KPMG Analysis, Vision 2030

With respect to planning in near to medium term, base case scenario may be considered



Coal Supply Target/ Requirement

Coal Supply Target/ Requirement (in million tonnes)



The demand incident on CIL in FY30 would depend on demand growth rate as well as captive/ commercial block performance

Source: For FY 2024, as provided by CIL and SCCL (for CIL, SCCL production), and MoC (for captive & commercial production), and for FY2030, KPMG Analysis

Increased coal supply would not only need augmentation in evacuation capacity at first mile level...



Crusher

Mode (% share for FY19 major mines) of Coal PSUs

1. Road (14%)



2. Wharf wall (35%)



Siding stock

Pay loader



3. Washery RCR (4%)



Washery

4. Belt/ Pipe conveyor (3%)

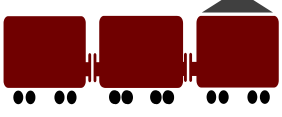


5. Rapid Loading (7%)

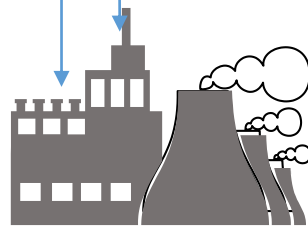


Silo

6. Merry-Go-Round (24%)



8

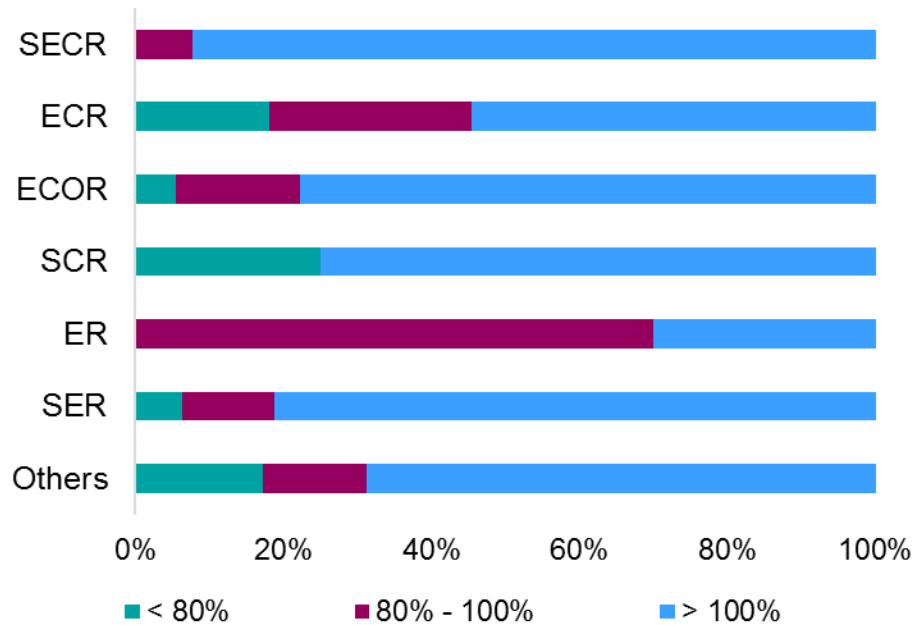


...but also at trunk route level, which already is seeing significant congestion

Line capacity beyond siding stage

High Density Network Line Capacity Utilisation

% Rakes handled
26%
23%
21%
9%
6%
5%
10%



KPMG Analysis, Coal Vision 2030

Subs. catered
SECL, MCL, WCL
NCL, CCL, BCCL
MCL
SCCL, WCL
ECL, CCL, BCCL
ECL
WCL, NEC

Other Key Issues

- Rake availability at mine siding
- Lack of infrastructure to store, load and handle coal at sidings
- Rail line connectivity till mine end
- Limited technology adoption in carrying capacity
- Limited penetration of alternative modes

The 3 new critical railway lines (Tori - Shivpur, Chhattisgarh East & West corridor & Jharsuguda - Sardega) are a part of SECR, ECR & ECOR zones and will add incremental peak load of 280 – 320 million tonnes

Source: White paper on India Railways, Lifeline of the nation dated 2015

It will need comprehensive integrated evacuation planning for the entire sector

Phase 1

- Assessment of evacuation capacity of CIL Mines up to railway siding for growth subsidiaries (MCL, SECL, CCL)

Phase 2

- Assessment of evacuation capacity of CIL Mines up to railway siding for other subsidiaries

Phase 3

- Assessment of evacuation capacities for other captive and commercial coal mines up to railway siding

Phase 4

- Infrastructure Assessment between Siding to Customer for key rail routes
- Assessment of unloading capacity and infrastructure at customer end (for coal coming via rail routes)

Phase 5

- Integration of evacuation capacity assessment from Phase 1 to Phase 4 to prepare comprehensive coal evacuation masterplan for the country

Possible digital interventions for integrated evacuation from mine to customers



Mine



Storage



Loading points



Coal transportation



Customers

Digital interventions

Track & Trace (real time)

- Visibility of truck movement from pit storage to siding
- Visibility of rail and MGR movement from siding to customers

Automation

- Automated integrated coal handling systems at loading and unloading areas of pitheads and siding (examples include automated rotary dumpers, turnover dumpers, automated loading chutes and shuttle conveyor systems)

Asset monitoring and preventive maintenance

- Digital solutions for optimum asset monitoring and maintenance schedule management
- Preventive maintenance using high-end IoT sensors for loading equipment, conveyor belts, trucks, rail locos and rakes, and MGR

Command and Control Center

- Centralized command and control center for each mine to monitor evacuation activities from pit to rake-loading for active siding stock monitoring and relocation of rakes
- To ensure interventions can be introduced to avoid bottlenecks in end-to-end supply chain
- Integration with Freight Operations Information System (FOIS) of Indian Railways

Policy interventions must for expediting development of mines

Easing approvals

- Extension of CBA Act to non-PSU mines – with safeguards; diversion for solar; restoration
- Flexible compensatory afforestation policies
- EC policies for expansion

State Govt Support

- Incentivizing states to be signatory to CMDPA/ support agreements
- Setting up of state wise PMUs - To hand-hold and facilitate mine clearances and development

Facilitation of logistics

- Hub and spoke model for demand-centres without supply
- Railway take-off points for auctioned mines
- Nodal agency for shared evacuation infra

Power sector policies

- Allowing FSA coal for merchant sales
- Flexibility to state utilities with captive blocks to procure power against coal supplies

Coal Market

- Commodity exchange for coal
- Review of linkage auction policies and practices
- Coal price regulator/ expansion of mandate of coal controller
- Capacity building/ Institutional strengthening of CIMFR

Employee Health and Safety

- Increasing diversity
- Moving away from job for land policies
- Strengthening of CMPFO
- Capacity building/ institutional strengthening of DGMS

Key/ thrust areas for the coal sector's success

1

Reducing development risk

- Allocation of mines with less developmental risks (low forest area, near railway line etc.)
- Increased focus on large mines in 'Medium' risk category for swift capacity addition

2

Retaining cost competitiveness and sustainability

- Linkage rationalization for entire consumer base
- Enable surrender and closure of mines rendered uncompetitive
- Continued funding of various clean coal and carbon sequestration technologies

3

Increased technology adoption

- Developing ecosystem to enable increased technology adoption in the coal mining sector
- Revising Indian Standard Procedures (ISP) by GSI to facilitate technology adoption (e.g. non-coring drilling) for exploration

4

Integrated approach to planning

- Integrated planning at coalfield level
- Environmental masterplan
- R&R masterplan
- Logistics masterplan – micro planning and development

Support to PSUs in coal mining would be essential

1

Sales & pricing policy independence to coal companies including SMDCs

- Relaxation of policies that impose restrictions on finding their markets (like 75% to power and 25% to non-power)
- Not stipulating SMDCs to sell 25% to MSME sector or carry stock
- Specific regions may see great pressure from commercial miners (e.g. Talcher) – greater pricing freedom to tackle increasing competition

2

Increased technology adoption in governance by approving agencies

- Technology in governance –
 - e.g. digitization of land records,
 - submission for various approvals, supporting documents, clarifications, monitoring of progress

3

One time window for surrender of unviable or costly captive mines (esp. with PSUs)

- One-time window to surrender mines as several mine holders (incl. PSUs) have been struggling to bring the capacities online with question marks over their viability



Thank you

Contact Us

Niladri Bhattacharjee

Partner

KPMG in India

E: niladri@kpmg.com

M: +91 9051061645

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavour to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.

© 2020 KPMG, an Indian Registered Partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved.

The KPMG name and logo are registered trademarks or trademarks of KPMG International.