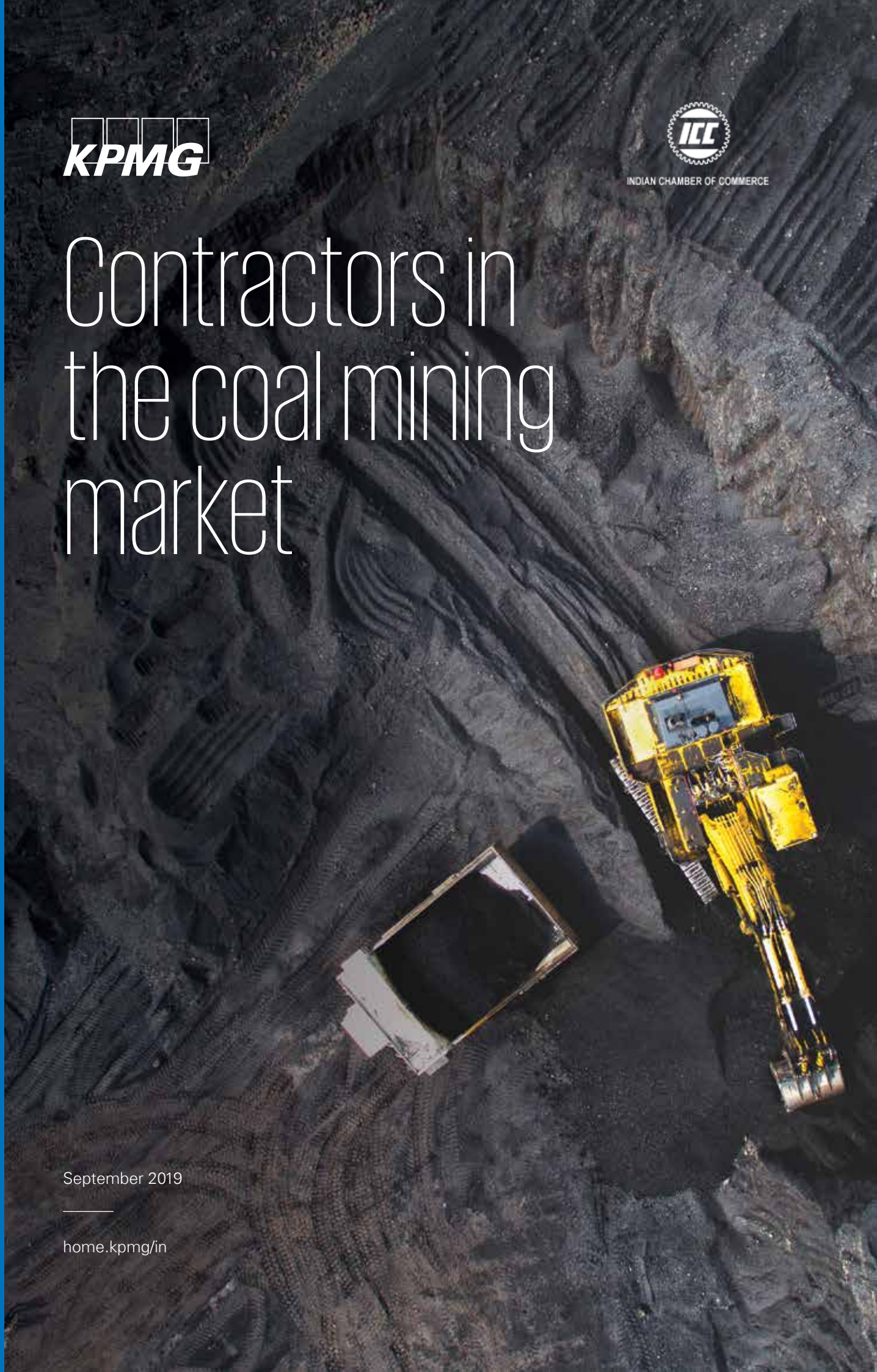
KPMG

INDIAN CHAMBER OF COMMERCE

Contractors in the coal mining market



September 2019

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Foreword

India has set ambitious goals for increasing the share of renewable energy in its energy portfolio. These goals received attention from international community and India got applauded for its efforts in reducing emissions. India still relies heavily on coal for power generation and is expected to do so through 2030 and beyond.

Despite the importance of coal in Indian energy mix, Indian coal industry continues to reel under structural and financial issues. Besides, Indian power industry still faces challenges and suffers from insufficient mechanization and optimization of resource handling, starting from mining and transportation of coal through generation of power and sale to customers.

Indian coal mining is dominated by few public sector units who continue to grapple with growing coal demand. This has led to Indian government promoting private sector coal mining but getting statutory approvals to increase production while maintaining environmental norms are the challenges that discourage the private players to participate in mining. Besides, resource crunch with financial institutions' rigid attitude in helping them mobilize necessary resources is also a critical factor. The government also wants more participation of other public sector units in the commercial coal mining industry, in order to boost efficiency and cater to growing demands of the market.

Thermal power generation industry has been facing financial challenges in India for some time now since capacity has grown faster than demand over the last few decades. Emergence of renewable energy is displacing thermal power generation, lowering plant utilization levels and financial viability. This stress is further aggravated in case of new plants set up by Independent Power Producers (IPP). Although these plants are comparatively more efficient and flexible in operation than older plants, they are put on a disadvantage compared to public utilities. This is primarily due to two reasons – not able to secure coal supply and unable to sign definitive power purchase agreements (PPAs) with state discoms to sell their power. This problem is going to further aggravate as additional 50 GW of thermal power plants under construction comes into operation in next 4-5 years. Going forward, it is imperative that risks in coal are shared more equitably among stakeholders. This paper addresses some of these issues related to risk sharing and the mechanisms which need to be paid attention to in order to ensure that the end objective is achieved.

Against this backdrop, Indian Chamber of Commerce is organizing 11th India Coal Summit on 27th September 2019 at New Delhi. KPMG is the Knowledge Partner of this initiative.

I trust the conference would be able to generate new ideas and new thoughts among the various stakeholders to discuss, share and evolve suitable strategies and development models to enhance the coal mining ecosystem.

Dr Rajeev Singh
Director General
Indian Chamber of Commerce

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Executive summary

In India, the importance of coal and coal mining companies, primarily Coal India Limited is often talked about. In the recent years, a lot of attention is also being paid to allotment and auction of coal blocks to captive players (end-consumer industries). The flavour of the season, going forward, is commercial coal mining after various pronouncements in this regard by the Government of India. However, there is limited attention to the contractors in the coal mining market who shoulder disproportionate volume of activities on the ground. This segment has grown by leaps and bounds over the last two decades. Today, a major part of the composite production of coal and overburden is through outsourced means (i.e. delivered by various coal mining contractors). However, the understanding of this business is very sketchy, both at the end of mine owners as well as interested new entrants.

The current market size of overall coal contract mining is around INR15,000 crore[1] and is expected to become more than INR60,000 crore[2] by 2030 (as depicted in the table below).

Value in INR crore

	FY2018	FY2025	FY2030
Mining contractors	10,000	16,000	20,000
Mine Developer and Operator (MDO)	3,800	17,000	34,500
Active mine management (AMM)	1,000	3,000	6,500
Total	**14,800**	**36,000**	**61,000**

Source: KPMG in India Analysis

Note: Provided that Ministry of Coal continues with its policy of promoting commercial mining, large size contracts and focus on operationalising MDOs

The total number of large players in this segment is around 10-15. The sector has shown a lot of innovation and enterprise over the years and has offered a range of solutions to the mine owners accommodating divergent business requirements.

Funding in the coal sector has been difficult to come by on account of the uncertainty around the future of coal as well as the difficulty in navigating the land, resettlement and rehabilitation and regulations in India. Under such a scenario, it is only natural that mine owners will tend to share the developmental market risk with a mine operator (as distinct from a mine owner).

Therefore, it is imperative to understand the key levers through which this objective of risk sharing can be most efficiently managed and the consequences of not doing it properly. Some of the key contractual levers related to risk sharing are:

- Take or pay threshold levels
- Sharing of capex burden
- Working capital management through mine operator
- Penalties for various types of slippages, mostly back to back, with respect to guarantees given to the Government.

These parameters should in turn define the nature of financial and technical criteria to be set so as to effectively calibrate the degree of the risk sharing and the confidence level associated with it. This paper looks at some of the active mining contractors and compares their financial and technical competencies based on their current standing in the market. However, it is to be noted that the market is not static. With every success, the financial position and technical credentials of a bidder changes, often taking them to the brink of their financial capacity.

Therefore, it is important for the mine owners to be cognisant of these changes while defining eligibility criterion. For instance, after the coal block de-allocation, the turnover of various bidders collapsed faster than their net worth. By the same token, a player with multiple wins could end up with a precarious debt equity ratio which will go unnoticed, if the qualifying criterion is only net worth. Thus, the importance of wisely defined eligibility criteria cannot be over-emphasised. This paper discusses some of these matters and we hope the reader will appreciate the nuances of the market as it has developed over a period of time.

1. KPMG Analysis
2. KPMG Analysis

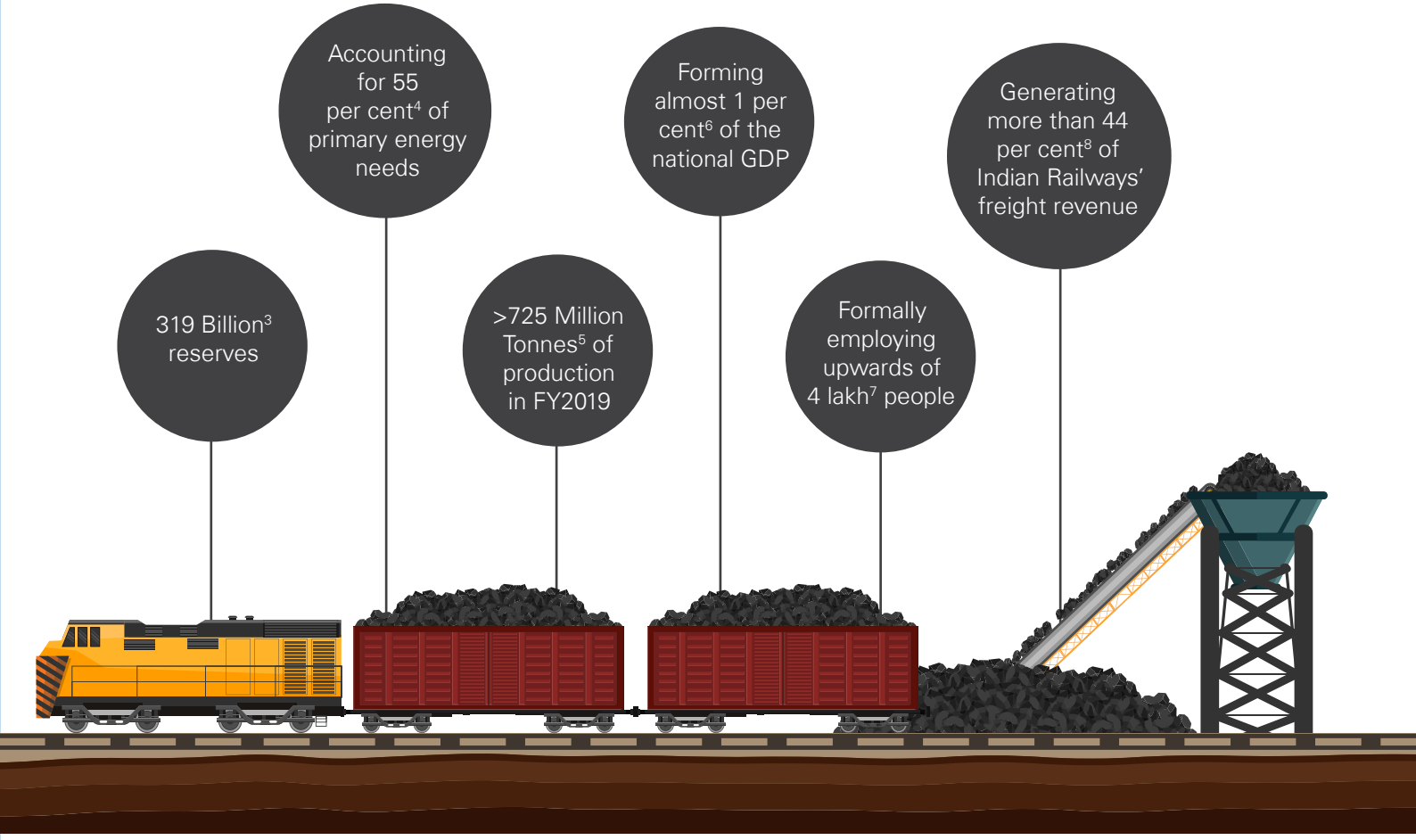
Overview

2.1 Introduction

Commercially started in 1774 by M/s Sumner and Heatly of East India Company in the Raniganj Coalfield along the Western bank of river Damodar in present day West Bengal, the domestic coal industry has come a long way. The world wars of 20th century, increase in railway connectivity and immense national urge to drive growth and development post-Independence, led to continuous expansion of the coal industry in India.

Fast forward to 2019, the domestic coal industry is still potent and a force to reckon with in so far as the aim of nation building and employment generation is concerned.

Highlights of the Indian coal industry



3. Ministry of Coal, Government of India
4. Bureau of Energy Efficiency, Ministry of Power, Government of India
5. Annual Report of Ministry of Coal, Government of India
6. MOSPI & KPMG in Analysis
7. KPMG in India Analysis
8. PRS Legislative Research

The domestic coal sector involves a plethora of stakeholders, involving the mining companies, contractors, third party players, consumers, regulators and policy makers. A summary of key stakeholders is presented below:

1

Coal mining companies

- Indian coal production is dominated by Public Sector Units with Coal India Ltd. (CIL along with its subsidiaries) and Singareni Collieries Company Ltd. (SCCL) accounting for over 90 per cent of the overall pie
- Balance comprises captive coal blocks of power, steel and cement sector companies
- Lower than expected growth in captive coal production leading to massive thermal coal imports of ~230 Mtpa in FY2019.

2

Coal customers

- Thermal power sector – Dominated by NTPC (with ~170 Mtpa consumption)
- State generating plants form the 2nd large section of coal customers
- Iron and steel, aluminium, captive power plants and cement plants consume the chunk of the balance coal.

3

Coal transporters

- Around 60 per cent of coal in India is transported to thermal power plants through Indian Railways while road route accounts for around 25-30 per cent
- As decided by Ministry of Power, power plants located within 20 kms from pithead should construct elevated closed belt conveyors by April 2020 while those within 20 to 40 km should construct Merry –Go-Round (MGR) by April 2021. Plants located within 40-100 km from pithead may consider constructing MGR, too, based on financial viability.

4

Coal mining contractors

- As of 2019, the market size of coal mining contractors is in excess of INR10,000 Cr; expected to grow to INR20000 Cr by 2030
- Highly fragmented market with roughly 10-15 large mining contractors
- 50 per cent of the market is dominated by 5-6 big players like BGR, Sainik, Mahalaxmi, Ambey, VPR and DECO

5

Mine Developer-cum-Operator

- The current MDO market of 150+ Mtpa is expected to significantly grow to approximately 250+ Mtpa within the next 5-7 years
- Large MDOs in India are Adani Enterprises, Essel Mining, Sainik Mining, Thriveni, Ambey, BGR, NCC, VPR, Dilip Buildcon

6

Policy makers/ regulators

- The Coal Mines Nationalisation Act (1973), The MMDR Act (1957) & The Coal Mines Special Provisions Act (2015) are the headline acts for the coal sector
- Policy is expected to act with a view to enhance productivity, efficiency and discovery of true market value of coal

7

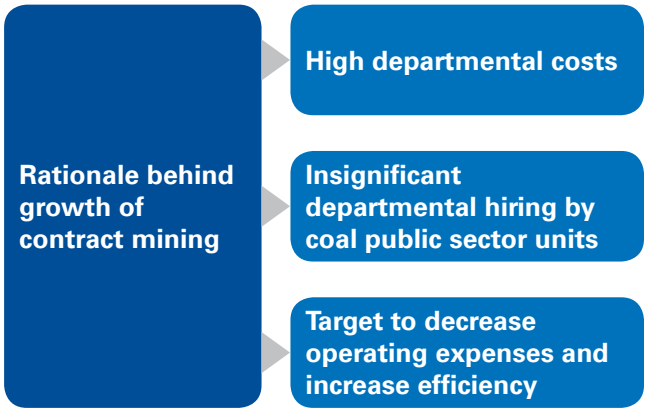
Third party players

- The informal and dynamic third party market comprises of all the players involved between the mining lease holders and the customers
- This market largely involves the Active mine management agents and the coal washeries
- This market may be roughly valued at upwards of INR1000 crore annually.

While there are potentially a variety of players in the value chain, the focus of this document shall be on the mining contractors and the active mine management agents. There are two major reasons for growth of mining contract market over time. Coal was historically not a profitable business. Liberalisation of India in 1991 and thereafter Electricity Act 2003 unravelled the need for rapid expansion of the coal sector. It was felt that the contractual route would enable quicker and more economical expansion than departmental operating model. Also, with limitations on private ownership of coal mines, this provided private players with an avenue to participate in the large coal mining opportunity.

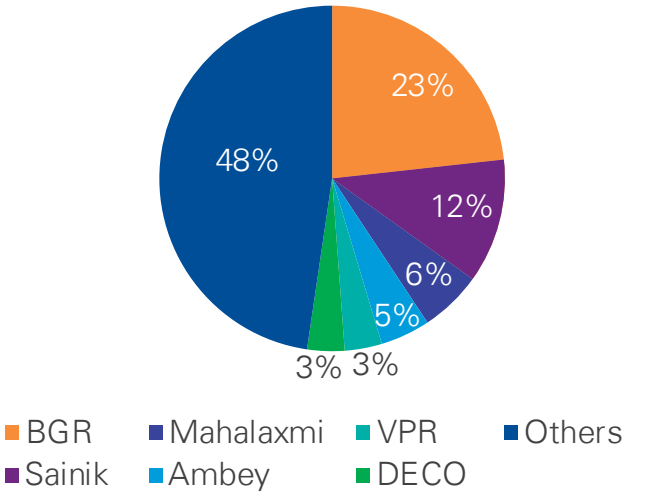
2.2 Mining contractors

While mining contractors are prevalent across the coal sector, their presence is pronounced in coal public sector units[9] and entails outsourcing of various activities along the mining value chain. The core advantages that coal public sector units get by hiring mining contractors are: quick mobilisation of heavy earth moving machineries at project site, asset light model with no upfront capex and avoidance of permanent hiring of manpower and assurance of achieving production targets. Mining contracts are part of the operations of coal public sector unitss for many decades now, but the number and size of these contracts have seen an uptick in the last decade. The average size of contracts over the past 8-10 years has increased significantly in terms of the duration and the contractual value. In the last 4-5 years, large contracts of contractual value as high as INR1,300 crore have also been awarded. Some of the large size contracts in recent times have been overburden removal contracts: Amlohri (~INR1300 crore), Samleshwari OCP (~INR1000 crore), Jayant OCP (~INR700 crore and Lakhanpur OCP (~INR700 crore). The growth of contract mining is largely because of three key reasons.



This contract mining market is highly fragmented, and there are roughly 10-15 large mining contractors. It is a highly competitive business, which witnesses new entrants every few years. More than 50 per cent of the market is captured by 5-6 big players like BGR Mining, Sainik Mining, Mahalaxmi, Ambey, VPR, which usually work across multiple geographies and are location agnostic. The medium and small sized players are local contractors who have grown in size over time, usually bid in joint ventures to qualify against the financial eligibility criteria and restrict themselves to one or two nearby subsidiaries.

Market share of coal mining contractors in 2018



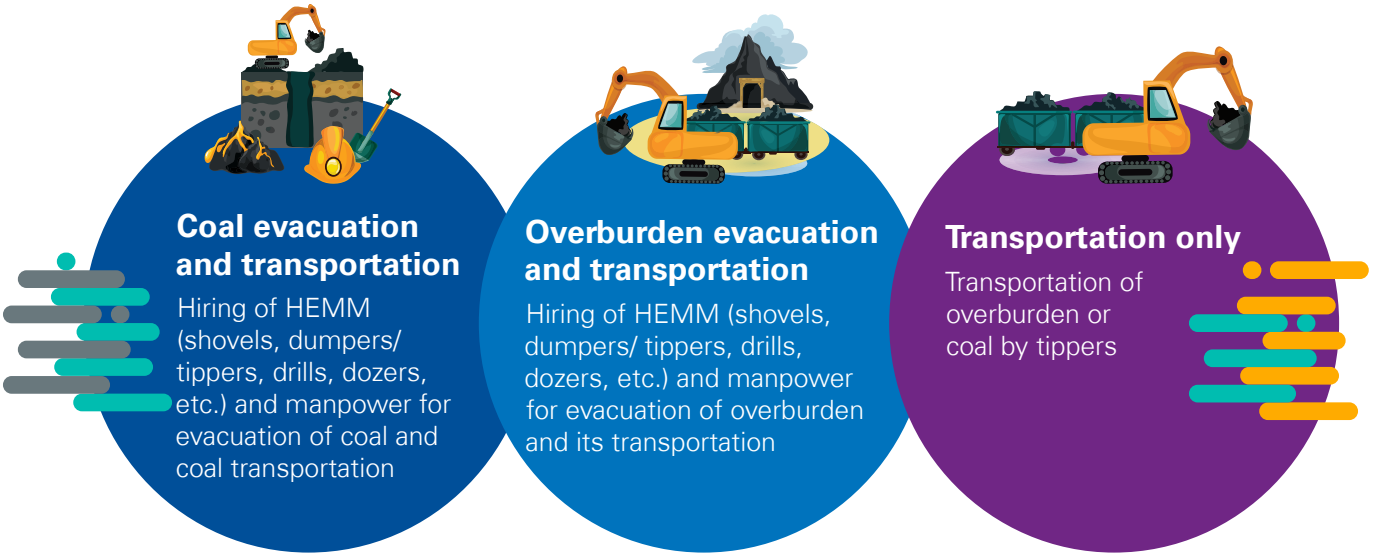
Source: KPMG in India analysis

9. Coal India Limited, the Singareni Collieries Company Limited

2.2.1 Typically the mining contracts come in three types

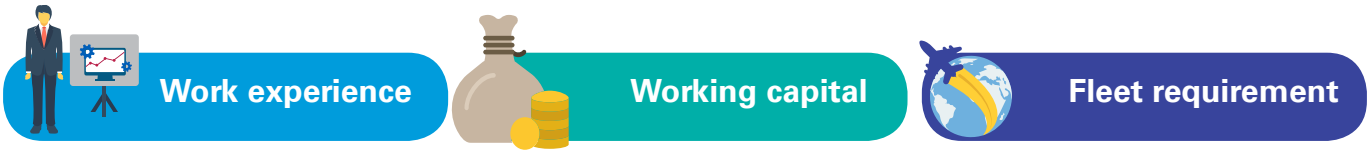
The operating model can be focused/ disaggregated and has separate tenders for over burden (OB) removal, coal evacuation and coal transportation or can have a broader scope by including two or more of the above three activities in one contract.

There are three major types of contracts that coal public sector units have been using over the years. In large number of the cases, coal mining is done departmentally by coal public sector units, overburden removal work is contracted to large size contractors and coal transportation is contracted to smaller local contractors.



2.2.2 The eligibility criteria for the bidders are of standard nature

The eligibility criteria for the coal public sector unit contracts have three major components.



- Work experience: This section ensures that a bidder has worked on similar projects before and has been in the industry for a given period of time. The bidder must have experience of having successfully executed works of similar nature of value around two-third of the annualised estimated cost of the work put to tender
- Working capital: This section looks at the financial stability of the bidder based on its performance over the years. It needs the bidder to have evidence of possession of adequate working capital (at least a few percent of the "Annualised value or Estimated value, whichever is less" of this work) inclusive of credit and availability of other financial resources to meet the requirement
- Fleet requirement: This check is to ensure that the bidder has the capacity to provide the HEMMs required for the completion of the work. The bidder needs to submit an affidavit in the prescribed format to deploy the essential equipment, either owned or hired, satisfying the minimum capacity for each fleet.

2.2.3 The contractors bear only the production risk

The coal public sector unit contracts are much simpler than typical MDO contracts and mining contractors are required to bear only production risk, as shown below. In many cases though, working area is not available to contractors to mine coal or remove overburden as per targets due to delays in rehabilitation and resettlement activities, land acquisition and possession, pumping out water from the pit, etc. Due to these reasons, risk of contractor not achieving monthly production target increases and may face penalties.

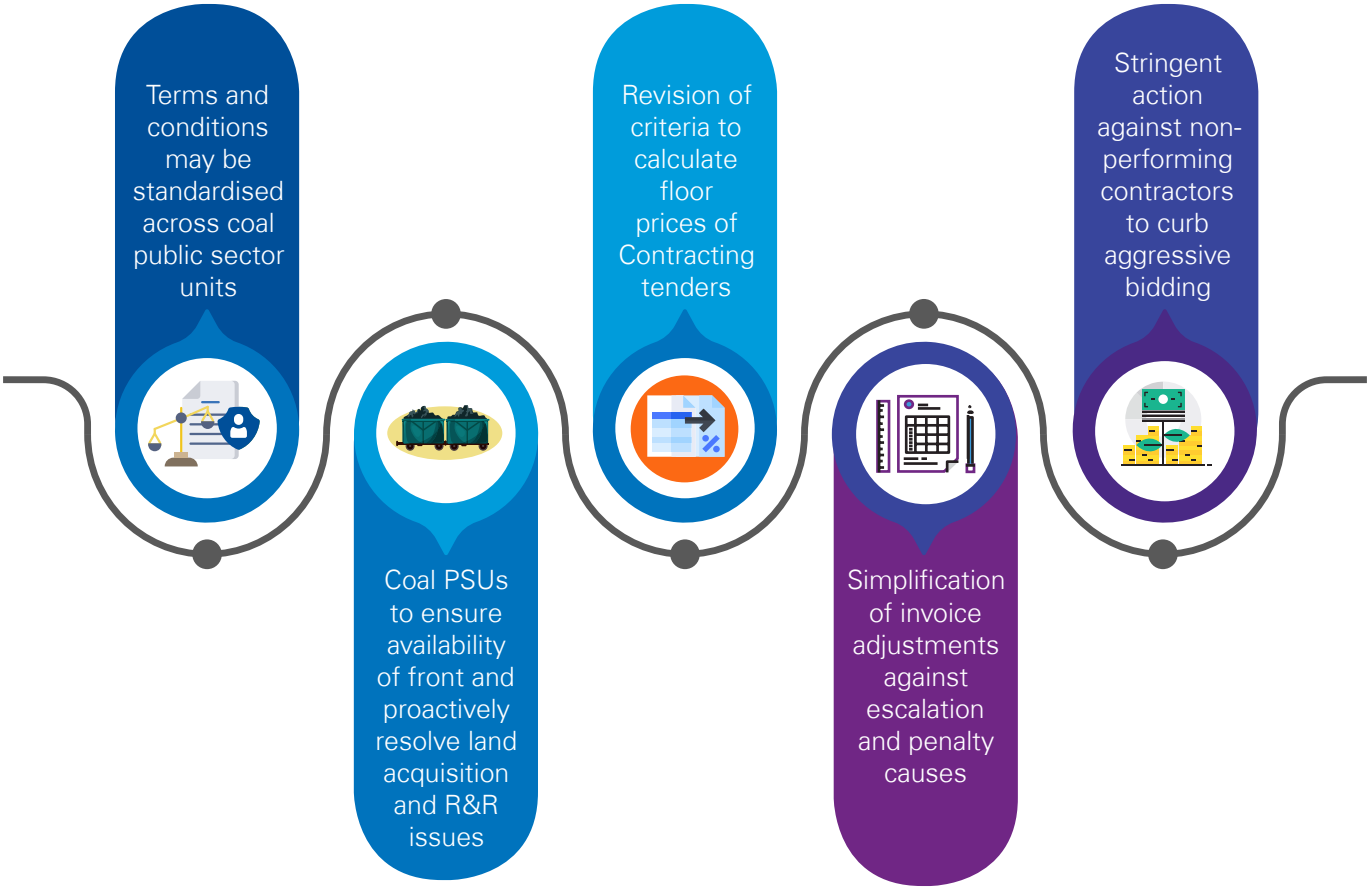
Risk	Responsibility
Statutory clearance	Coal public sector units
Land acquisition	Coal public sector units
Resettlement and rehabilitation	Coal public sector units
Development risk	Coal public sector units
Production risk (meeting targets)	Contractor
Quality risk	Coal public sector units
Environmental risk	Coal public sector units

2.2.4 Penalties are imposed on production aspects only

If a contractor fails to comply with the required progress with respect to timelines or progress charts or if a contractor fails to complete the work and clear the site on or before the date of completion of contract or extended date of completion, the contractor becomes liable to pay the liquidated damages. The penalties are levied as per slabs and to avoid penalties, the contractor needs to adhere to the monthly target with respect to the quantity that is indicated in the contract. The contractor is given a chance to make up for the shortfall within the financial year.

2.2.5 Voice of the contractors

The mining contractors form an important part of the coal mining industry of India. Their voice deserves not just a mention, rather for the continued success of the business ecosystem, the same needs to be heard by the mine owners. The following graphic shows the key highlights of our various interactions with the contractors:



2.2.6 Contract mining pie to get even bigger

Source: KPMG in India analysis

The market size of coal mining contractors is estimated to grow at a healthy compounded rate of 7-8 per cent over the next decade. The role of mining contractors will be very critical in the operations of coal public sector units to keep the operational costs low and achieve coal production targets in the next decade.

There is also a growing trend of increase in size of mining contracts. Presented below is the analysis of mining contracts awarded in one of the coal public sector units.

	Number of total tenders floated	Number of large size (>300 Cr)	Number of medium size (300-100 Cr)	Number of small size (<100 Cr)	Total value of contracts (Cr)	Average value of contracts (Cr)
2018	2	1	0	1	718	359
2017	10	3	3	4	1,885	189
2016	8	1	6	1	1,570	196
2015	2	2	0	0	742	371
2014	16	1	5	10	1,871	117
2013	6	0	1	5	445	74
2012	6	0	1	5	274	46

Source: KPMG in India analysis

As apparent from above,

- **Total number of contracts –** 8-10 contracts per year in the last two years. 2014 saw exceptionally high number of contracts being awarded, followed by slump of awards in 2015. This could be because new target of 1 BT by 2020 was accepted by a coal public sector unit in 2014 and this resulted in higher number of contracts being offered that year.
- **Average size of contract –** Average size of contracts has been increasing in last 6-7 years from ~INR70 crore to ~INR200 crore.
- **Number of large contracts –** In the past 2-3 years, more large and medium size contracts have been awarded.

In 2018, Coal India Limited has set a target of achieving 1 Billion Tonnes of coal[10] production by 2026. The contracting business is expected to see a jump in total number of contracts in next 2-3 years. However, there is a need for strengthening of this trend. Larger (and longer) contracts will allow mining contractors to invest in large size equipment and organisation capability. This will bring in the much-needed maturity to the sector and will also improve on-ground practices. It is possible that to some extent market may shape up and get awarded as MDO contracts instead of piece-meal transportation / overburden contracts. Some subsidiaries of Coal India (like CCL) have shown a preference for smaller contracts whereas others are more open to MDO contracts. That is dealt with in the next section.

10. Policy initiatives and reform measures, Ministry of Coal, Annual Report 2017-18

2.3 Rise of the MDO business

With the coal mining sector being opened up beyond coal public sector units i.e., blocks being allocated to public sector units such as state MDCs, state and central gencos, mine developer and operator (MDO) the market emerged and gained prominence. MDO is an extension of mining contract, which includes not just certain bits-and-pieces of work, but responsibility for development activities such as assistance in securing clearances, ensuring mine access, physical possession of land, implementing rehabilitation and resettlement = equipment handling and maintenance, coal production as per mining plan, etc. This was important because these public sector units had limited expertise in coal mining and were unaware of the functioning of the entire coal supply chain.

There is a strong need for the mine owners to understand the coal market demand-supply, relationship building with customers, marketing strategies, coal evacuation challenges and mitigating measures, the socio-economic impact assessment and rehabilitation and resettlement related strategies. Thus, the trend of mining through MDO contract would involve an entire understanding of the coal mining business.

The key enablers of a successful MDO project can be depicted as below:

MDO as a phenomenon pre-dates to 2014. This trend of outsourcing development and operation work on almost a turn-key basis, had already caught on, almost a decade prior to deallocation of the coal mines.

Some of the large players in the MDO market are Adani Enterprises, Essel Mining, Sainik Mining, Thriveni, Ambey, BGR, NCC, VPR, Dilip Buildcon[11]. Essel Mining is one of the largest MDO, which operates two large Coal India mines, namely the Rajmahal OCP (ECL) & Bhubaneshwari OCP (MCL), totalling 40+ Mtpa of production (in FY 2018). In terms of MDO contracts won, Adani has the largest number of wins at this points in time.

The MDO market is still very nascent in the Indian context. With the passing of the Coal Mines (Special Provisions) Act, 2015 (CMSP 2015) and subsequent notifications, the coal mining market has been opened to both public sector unit commercial mining and private commercial mining. Public sector unit commercial mining is clearly the target for the MDOs. On the other hand, private commercial mining may be the direct mode of mining for the MDOs, as many of them would hope to become mine owners and reach the scale of operations as they had always wished for, sans some of the risk!

11. This is not an exhaustive list, and the order of mention is of no significance

2.3.1 MDO market is dominated by a handful of large players

The Indian coal market is slowly evolving from the mining contracting mode of operations to a MDO ecosystem. Thus, at present there are only a handful of players who could single-handedly participate in the MDO tenders. Thus, in most of tenders it has been observed that players bid as consortiums. On an average, 3-5 bids in the past MDO tenders, were consortium bids.

Typical eligibility parameters in MDO tenders		Number of players			
		Ineligible	Just eligible	Quite eligible	Highly eligible
Financial strength	Turnover	5-3	5	5-3	3
	Net worth	7-5	3	5	2
	Cash accrual	9-6	2	3	3
	Unutilised line of credit	9-6	5-3	2	2
Technical capability	MDO route	6-4	2-1	4-2	4
	Contractor route	5-2	5-1	4-2	5
Others	Infrastructure (CHP, workshop, township, etc.)	Almost all the major contractors/ MDOs have experience in infrastructure development			

Note:

This study is based on 15-20 MDO/ contractors generally active in the market

Eligibility threshold is as per recent MDO tenders (since 2014)

This has significant implications on the nature of structuring of the eligibility criteria in the tenders. More on the eligibility criteria later!

2.3.2 The game involves finding the right partner

While some players have both contracting and MDO operations, few others are focused solely on MDO, via joint ventures/ consortiums. These focused players bring in certain expertise, either technical, equipment or financial deep pockets. In some cases, the expertise involves better understanding of the socio-economic aspects of the local region. This helps in community development by fostering a harmonious relationship with the local populace, which is a critical aspect of many successful projects.

Detailed below is the strategy chalked out by the consortiums while bidding for a three Mtpa coal block located in West Bengal. Though none of the consortiums won the tender, the fact remains that parties are evolving mutually beneficial partnerships with risk limiting clauses to participate in the MDO process. This feature is expected to stay and evolve as players gain expertise in certain activities to drive efficiency in mine development and operations.

Consortium	Responsibility of lead party	Responsibility of second party
Consortium 1: Lead Party (51 per cent) + Partner (49 per cent)	All other activities except responsibilities of second partner	• Mine infra + workshop facilities • Construct all civil works including diversion of nalla • Employment of PAP • Assist mine owner in land acquisition + possession • Assist mine owner in obtaining statutory clearances
Consortium 2: Lead Party (51 per cent) + Partner (49 per cent)	All other activities except responsibilities of second partner	Provide finance
Consortium 3: Lead Party (51 per cent) + Partner (49 per cent)	All other activities except responsibilities of second partner	Provide finance
Consortium 4: Lead Party (76 per cent) + Partner (24 per cent)	All other activities except responsibilities of second partner	• Provide finance • Assist land procurement in development and operations of mine including deployment of equipment • Employment of PAP • Assist mine owner in land acquisition + rehabilitation and resettlement • Assist mine owner in obtaining statutory clearances
Consortium 5: Lead Party (51 per cent) + Partner (49 per cent)	All other activities except responsibilities of second partner	• Mine infra + workshop facilities • Construct all civil works including diversion of nalla • All rehabilitation and resettlement activities + implementation • Assist mine owner in land acquisition + possession • Assist in supervision, monitoring, liaising with independent engineer

2.3.3 Voice of the MDO

Having deep insights and market networks allows KPMG in India to interact with a large set of stakeholders. In the commercial coal mining space, the voice of the MDO cannot be ignored. The following graphic shows the key highlights of our interactions:

Pre qualification criterion of MDO tenders to be streamlined

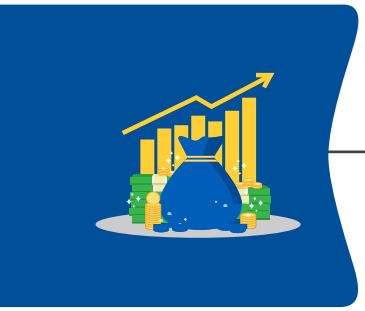
- Lacuna with non-uniformity in various tenders leading to limited participation
- Criterion designed in a fashion favouring few selected players
- Market study to be done about players and based on general qualification, criterion should be set

Excessive fee undercutting

- To grab jobs, MDOs/ contractors are undercutting fee in reverse auction
- Mining scenario not good and to grab tenders, MDOs are quoting non-competitive rates

Need for 'Single Window' Statutory Clearances

- MDO tenders to be floated after all clearances in place
- Assistance to be provided by Government to obtain clearances
- Clearances should be obtained by mine owners
- Projects granted but not able to start
- Land acquisition biggest challenge including rehabilitation and resettlement



Assuming 100 per cent FDI in coal mining

- Tie-ups/ joint ventures as foreign companies need locals to understand Indian scenario
- Necessity for coal market for healthy competition

2.3.4 Competitiveness in the MDO market

The MDO market used to be an **attractive one** with presence of only few players like Adani Enterprises Limited, Lanco Infratech and Essel Mining and Industries Limited initially who were the early movers and grabbed the new opportunity.

With **increase in competition** due to new entrants, largely coming in consortiums either because they lack the financial capabilities to meet the financial qualification criteria for tenders or technical expertise, margins are going down. **The newer players are bidding aggressively and quoting very low rates.** This trend is pushing margins downwards in this capex intensive industry requiring intensive investments. With most companies now following reverse auction, margins are expected to get squeezed further with bids in MDO becoming increasingly aggressive and costs (fuel, wages) rising.

However, bidding in consortium with newer players is not expected to sustain for long, since the new bidders are not experienced enough, and it would be difficult for them to sustain mining operations with such high and varied development risks. Thus, **competition is expected to gradually fade off, leaving the market with only 7-10 players.** So, growth will gradually come in the MDO and mining contracting market with ample opportunities since Government would require assistance with the mining operations. The commercial mining segment may further broaden the market for the MDO/ mining contractors to some extent.

In order to keep the MDO/ mining contractor market surviving, focus should be given to the **pre-qualification technical and financial criterion** in the tenders. The eligibility conditions should be framed in a manner which encourages better participation from companies.

2.3.5 Successful MDOs face varied challenges

Apart from price competition, the challenges faced by MDOs include:

- delay in obtaining **statutory clearances,** like environment, forest and wildlife, which take minimum of 3-4 years
- **Land acquisition** is voiced as another big challenge. Identification of rightful land owner, finalisation of market value of dwelling structures, dealing with illegal occupants, etc. are some of the practical hindrances which MDOs face on the ground. To top it all, residents are reluctant to give land even when they agree or after finalising a price
- **Rehabilitation and resettlement (R&R)** of the project affected families and other modalities pose a major issue.

Thus, despite the fact that tenders have been awarded, work has not started yet. In such cases, bank guarantees are encashed if block is not developed within a stipulated time (usually varying between 1-2 years), leading to pressure on cash flows. Thus, government intervention shall prove to be a key factor in speeding up the process by setting up the much-talked about **'Single Window Clearance'** system. Further, vesting of the responsibilities with the owners as pre-requisite before awarding of any tenders may facilitate faster initiation of projects.

The MDO/ mining contractors are also wary of the fact that the **Government regulations are prone to change any time** making them apprehensive of the future. Further, financial institutions are unwilling to lend money for the projects due to the past experiences where blocks allotted were cancelled, policies changed, posing a serious threat to the financial institutions.

Further, considering that 100 per cent FDI comes in, few MDO players are of the opinion that foreign players might look at India given that it has one of the largest reserves of coal, growing demand and they might need to partner with the Indian counterparts to better understand the Indian mining market. Further, they, too, would have to 'wait and watch' till clearances come in, given the long gestation period currently in India. However, the other school of thought says that FDI is a necessity for coal market as it would bring in healthy competition.

Thus, while the industry varies in opinion on some factors, they agree that MDO market is slated to grow, though it shall be consolidated allowing some 7-10 players to exist. Pre-qualification criterion needs to be a focus area to enable larger and fairer participation, and regulatory authorities should step in to expedite statutory clearances making it a profitable business for both the owners and the MDOs/ contractors.

2.3.6 Expected MDO market size

In the public sector unit space (excluding CIL and SCCL), MDO has been selected for more than 175 Mtpa[12] of coal assets till now. This capacity is expected to significantly grow as another 10-15 Mtpa is expected to be allocated to public sector units (from nine blocks which are up for grabs) under the commercial mining process.

If we add the existing MDOs for those coal public sector units, it is another 40-50 Mtpa capacity handled by MDOs. Also, this number would also grow, as incrementally those coal public sector units are looking to engage MDOs for large sized mines to reduce costs and improve operations.

Going forward, it can definitely be expected, that the coal blocks allocated to public sector units (state gencos, state MDCs, etc.) and yet to start producing, would engage MDOs for mine development and production, as MDOs bring in unique set of scale and efficiency which these public sector units do not possess. These could add to another 30-50 Mtpa of production by 2024[13].

Thus, the total MDO market from the public sector unit commercial mining space could easily reach upwards of 250 Mtpa by FY2025. In value terms, this could translate to INR15,000-20,000 crore[14] market.

This is a sharp growth in market size which would be handled by a handful of well financed MDOs with significant moats and business acumen.

2.4 X factor: private commercial coal mining

While the CMSP Act 2015 paved the way for commercial coal mining for both public and private sector, so far, the market has moved in one direction only – the public sector. The participation of private players in the commercial space is yet to take any shape or form. This affects the MDO market in a very interesting way.

Below are some of the market players with whom we had discussions to understand that they would be interested in private commercial coal mining.

Large Coal MDO players

Non-coal merchant miners

Large captive consumers

Foreign mining companies

What they bring to the table…

- Deep expertise and understanding of the coal mining operations

- Understand mining ecosystem
- Access to similar consumers, logistics, etc.

- Optimal portfolio with a mix of long term captive and short/ medium term market sales

- Superior technology, equipment, processes, scale and experience
- May require partnerships with local players

Thus, private commercial mining is the X factor. We have to wait and see how this shapes up in the next few years. This is certainly an opportunity for the various captive miners and non-coal merchant miners, not to forget the coal MDOs with deep pockets. The players will have to take market risk. The MDOs or mining contractors too serving these mine owners will have to bear a portion of the risk.

12. Considering only coal blocks allocated to public sector units for commercial mining (excluding CIL and SCCL MDO contracts), Source: KPMG in India Assessment

13. Considering only 50 per cent of those assets to start producing through MDO and conservatively 50 per cent amongst those would reach PRC by 2024

14. KPMG in India Analysis

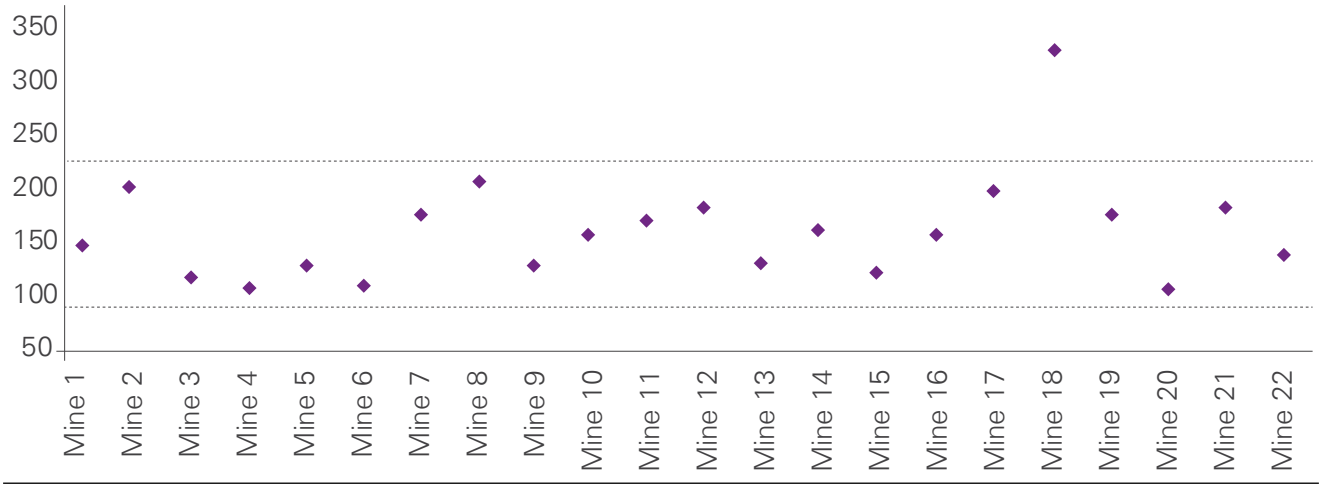
Assessment of the past MDO tenders

In the past five years (since the CMSP Act 2015), many coal MDO tenders have been published, and the process of MDO selection has concluded in 22 tenders[15].

3.1 Analysis of the final bidding price

The final bidding price (L1 price) across the various tenders throw up some interesting numbers. While the peak rated production capacity (Mtpa) and the stripping ratio (cum per tonne) have varied across the tenders, the price in terms of INR/cum of total excavation (i.e., overburden + coal) has stayed within a band of INR100 – 200/cum across most of the tenders. This insight gives an idea of internal calculation performed by the potential bidders while assessing the block's profitability. The final price (L1 bidder) typically lies between INR100 – 200/cum of total excavation (considering both coal and overburden).

Comparison of Final Bidding Price (INR / cum)



Source: KPMG in India Analysis

3.2 Eligibility criteria: technical qualifications

The past MDO tenders must be studied from the point of view of technical qualifications sought as eligibility criteria. Typically, most of the tenders have allowed both the mining contractors and MDOs, as is evident from the eligibility clause.

Based on our assessment of the past tenders, we can develop the below table for a reference coal block ready for MDO selection process, which could provide the values of "X", "Y", "A", "B", "C" and "D".

Reference coal block	MDO route		Contractor route			
Terms in the eligibility criteria	**Reserves of coal mine developed and operated (Mt)**	**Annual capacity of single mine developed and operated (Mt)**	**Aggregate volume of overburden and coal/ lignite (Mill BCM)**	**From number of mines**	**Composite volume of overburden and coal/ lignite (Mill BCM)**	**Coal production from single mine (Mt)**
The important numbers	**X**	**Y**	**A**	**B**	**C**	**D**
Small (<4 Mtpa)	Same as coal reserve of the reference mine	Same as PRC of the reference mine	Same as aggregate volume of coal + overburden of the reference mine	3	30-50 per cent of composite volume of coal + overburden of the reference mine	50 per cent of PRC of the reference mine

15. This excludes captive blocks in the non-power end-use segment

Reference coal block	MDO route		Contractor route			
Terms in the eligibility criteria	**Reserves of coal mine developed and operated (Mt)**	**Annual capacity of single mine developed and operated (Mt)**	**Aggregate volume of overburden and coal/ lignite (Mill BCM)**	**From no. of mines**	**Composite volume of overburden and coal/ lignite (Mill BCM)**	**Coal production from single mine (Mt)**
Medium (4-10 Mtpa)	150	5 or 6	Same as aggregate volume of coal + overburden of the reference mine, subject to maximum of 30	5	50 per cent of composite volume of coal + overburden of the reference mine	50 per cent of PRC of the reference mine
Large (>10 Mtpa)	150	6	30	5	15	3.5

The above table provides a basis to the mine owners to set the technical qualifications within the eligibility criteria.

3.3 Eligibility criteria: financial qualifications

From the standpoint of the financial qualifications, the past MDO tenders show some remarkable trends (though with some exceptions).

The typical financial qualifying parameters are:

- Net worth (average of past 3 years)
- Turnover (average of past 3 years)
- Annual cash accrual
- Unutilised credit limit

Based on our assessment of the past tenders, we can develop the below table for a reference coal block ready for MDO selection process.

Parameters	Typical value	Illustration for a reference mine (PRC = 5 Mtpa)
Average net worth	25 per cent of initial project capex	If project capex is estimated as INR1000 crore, the net worth criteria (average of past three years) would be INR250 crore for the bidders
Average turnover	30 per cent of expected revenue from five years of producing coal at PRC	The expected revenue for five years of production, i.e., production of 25 Mt (5 * 5 Mtpa) would be estimated as say INR2500 crore[16]. The average turnover would be set as INR750 crore (30 per cent of INR2500 crore) for the reference mine
Annual cash accrual	20 per cent of net worth requirement	INR50 crore (20 per cent of INR250 crore)
Unutilised credit limit	15 per cent of net worth requirement	INR38 crore (15 per cent of INR250 crore)

16. Assuming selling price of coal as INR1000/tonne

Mine operationalisation for MDO

About 45 blocks with peak rated production capacities of 275+ Mtpa have been allocated to public sector units (excluding the blocks of Coal India Limited and Singareni Collieries Company Limited). MDOs would be the natural mode of development of these blocks. Some of the large blocks have already seen activity in selection of MDOs. The below table provides the details of some of the larger blocks (>5 Mtpa).

Key blocks allocated and MDO appointed (non-exhaustive)

#	Coal Block	State	Block Owner	Category	PRC (Mtpa)	E-auction date	Coal Production in FY19
1	Gare Palma Sector II	Chhattisgarh	MSPGCL	Schedule III	23.6	Feb-17	0
2	Talabira II & Talabira III	Odisha	Neyveli Lignite Corporation	Schedule II	20.0	Jan-18	0
3	Parsa East & Kanta Basan	Chhattisgarh	RRVUNL	Schedule II	15.0	Sep-15*	15.0
4	Gare Palma Sector III	Chhattisgarh	CSPGC	Schedule III	6.5	May-17	0
5	Suliyari	Madhya Pradesh	APMDC	Schedule I	6.0	Feb-19	0
6	Parsa	Chhattisgarh	RRVUNL	Schedule III	5.0	Sep-15*	0
7	Gidhmuri & Paturia	Chhattisgarh	CSPGCL	Schedule III	5.6	Aug-18	0
8	Manoharpur	Odisha	OCPL	Schedule III	8.0	Jul-18	0
9	Chatti Bariatu	Chhattisgarh	NTPC	Schedule III	7.0	Jun-16	0
10	Pachhwara North	Jharkhand	WBPDCL	Schedule II	15.0	Jan-16	0
11	Tubed	Jharkhand	DVC	Schedule I	6.0	Aug-18	0
12	Pachhwara Central	Jharkhand	PSPCL	Schedule II	7.0	Aug-18	0
13	Madanpur South	Chhattisgarh	APMDC	Schedule I	5.4	Feb-19	0
14	Barjora North	West Bengal	WBPDCL	Schedule II	5.0	Feb-16	0
15	Gare Palma Sector I	Chhattisgarh	GSECL	Schedule III	21.0	Jan-17	0
16	Pakri Barwadih	Jharkhand	NTPC	Schedule II	15.0	Dec-15	6.8
17	Dulanga	Odisha	NTPC	Schedule III	7.0	Jun-17	0.5

Source: KPMG in India Analysis

*Earlier contracts were novated

We can, however, see that despite the fact that MDOs have been appointed for quite some time now for some of the above blocks, production has not yet started/ it is minimal. This shows the long gestation period required in acquiring various clearances by the MDOs to start production.

However, we can certainly expect the MDO selection process to be initiated for the other public sector unit[17] coal blocks, i.e., the blocks which have been allocated, but yet to appoint an MDO.

17. Public sector units exclude CIL (and its subsidiaries), SCCL

4.1 Role of MDO in development

The present shape and form of commercial coal mining by public sector units and the expected developments in this area would necessitate MDOs to be more active and agile in mine development and operations. It would be key for the large MDOs to bring efficiency and reduce cost of production through scale and collaboration. It is quite possible for MDOs to do the following:

- Target the public sector unit coal blocks within a certain geographical region, where they have both local knowledge and expertise. This is essential as many of the blocks would be greenfield projects. If not greenfield, there are expectedly higher risks of land acquisition, rehabilitation and resettlement, higher forest areas, etc. This is quite obvious, since it is well accepted that these blocks are the ones which have stayed away from the eyes of coal public sector units. There must be definitive reasons for this
- Enhance efficiency and reduce costs of production by effectively managing HEMMs, washing infrastructure, sharing railway sidings/ evacuation routes for adjacent/ closely spaced blocks
- Manage manpower costs in the wake of improved labour laws, which necessitate higher minimum wages. This must be done while effectively managing safety, environmental and regulatory challenges.

MDOs may be more meticulous about the various clauses of the tender and mine development agreements. With more than a dozen MDO processes already concluded, and availability of draft model coal mining agreement being available, one may assume that MDO selection process has become quite standardised. However, this could not be further away from the truth. The following aspects would have a direct bearing on mine development:

- Transparency from the mine owner regarding the block is extremely important. The mine owner has nothing to gain (apart from appropriation of bank guarantee amount of the MDO), and everything to lose right from penalties to be paid to Ministry of Coal on delay of mine development and thus not adhering to efficiency parameters as detailed in the allotment agreement. Below listed are some aspects of the coal block, which should be included within the tender documents under "Mine information/ project information sheet" -
  - issues in land acquisition due to poorly maintained data on land ownership, illegal dwellers, high level of inhabitation with schools, colleges, hospitals, etc.
  - challenges in rehabilitation and resettlement due to inaction of district authorities to form rehabilitation and resettlement committee as stipulated under The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013, or due to heavy involvement of local political leaders causing social unrest unless high compensation is guaranteed
  - unclear about existing mining leases, status of statutory clearances of environment clearance and forest clearance
  - geological and mining challenges such as risks of subsidence, prior illegal mining/ rat holes, etc.
- The mine owner (case in point the public sector unit) shall be balanced in defining the scope of work for the MDO and itself. It is obvious that core mine development activities, such as drilling, blasting, excavation of overburden, production of coal, undertake social development and ensuring welfare activities in the local community, procurement of equipment etc. However, there are certain aspects of mine development which may/ may not be under the scope of work. It is important for the mine owner to clarify (if required with illustrations) the exact segregation of scope of those activities in the tender document. Some of these activities are listed below:
  - Delivery point of coal produced i.e., the point of transfer of ownership of coal needs to be defined. This becomes a niggling issue at times when evacuation routes/ points are not pre-decided by the mine owner. For most of the greenfield projects, railway siding needs to be developed. The capex to be incurred, infrastructural developments required and related stakeholder interactions and approvals, specifically involving the railway authorities need to be in place prior to MDO selection. In case it is not, the same must be communicated in unambiguous terms in the tender document.

18. As per KPMG in India Assessment

- Crushing and washing facilities for coal is another such area. In the wake of stringent pollution control norms and environmental aspects, coal must be crushed and washed if it is transported beyond certain distances. MDO must be adequately aware of capex requirement and scope of its involvement through the tender document.
- In some of the tender documents, support and assistance of the MDO is sought for physical possession of land, rehabilitation and resettlement implementation and statutory clearances. The mine owner must own the ownership of these activities and clearly state the involvement sought from MDO in the facilitation process.

Thus, the process of mine development (post the selection of MDO) is definitely a focal point from both commercial point of view and operational point of view. Both the mine owner and MDO must evolve common agenda and chart a course in this regard.

4.2 Reasons of non-operationalisation

Once the mine developmental challenges are adequately addressed, and programme is chalked out, there is still a long way to go for operationalisation of a coal block. Coal block operationalisation requires the following to be handled:

- The conditions precedent for both the mine owner and the selected MDO are generally stated in the coal mining agreement. Post the fulfilment (or any waiver of those) of the Conditions Precedent, appointed date is reached. The contract is enforceable from this appointed date. Some of the key conditions precedent for the mine owner are getting environment and forest clearances, procuring mining lease, procuring approved mining plan and procuring approval of the rehabilitation and resettlement plan. These require sincere time and effort from the mine owner.

  On the other hand, the MDO shall pay the performance bank guarantee, execute the financial agreements, procure all applicable permits, provide confirmation on the correctness of the representations and warranties, etc. It is essential for both the parties to be steadfast in getting through this Conditions Precedent phase.
- MDO needs to understand the endemic aspects of the coal block. This comprises the utilities including roads, power lines, forest/ trees, handling obstructions to initiating top soil removal, overburden removal, etc. The MDO is responsible to suitably develop infrastructure such as townships, CHP, power infrastructure, etc. These aspects may cause significant delays in operationalising a coal block.

4.3 Value loss due to non-operationalisation

As we assess this market size, we must not overlook the scope of value loss for the mine owners, arising out of various value debilitating factors. As we provide details about the probable causes of developmental and operationalisation challenges in above section, let us try to hypothetically understand the value loss to a mine owner of a 5 Mtpa capacity block[19].

For a 5 Mtpa coal block, the performance bank guarantee (PBG) may be about INR100 crore. If the clauses in the tender document and mining agreement are not tailored in a balanced way, a typical MDO may be able to derive financial benefits out of it at the expense of the mine owner. This is very critical to understand for a state MDC or a state genco who is new to the coal mining market. The following clauses in the tender document and mining agreement require specific focus:

- Delay in fulfilling Conditions Precedent on the part of the mine owner: Since the mine owner has to get the environment clearance, forest clearance, mining lease, approval of mining plan and approval of rehabilitation and resettlement plan (not an exhaustive list), it is imperative for the mine owner to have enough time built in the clause for it to act. Inability to stick to the Conditions precedent may cause maximum damages to the tune of 10 per cent of the PBG. This is a considerable sum of INR10 crore (10 per cent of INR100 crore) which the mine owner owes the MDO before even the appointed date is reached.
- Delay by the MDO in achieving project milestones (such as excavation of overburden, start of production of coal, reaching commercial operations date, etc.) may cause the MDO to owe the mine owner (typically 0.25 per cent to 0.5 per cent of PBG) for each week's delay. The mine owner must assess its own financial obligations to the Ministry of Coal (i.e. the Nominated Authority under the CMSP Act 2015), and accordingly set this clause to be able to penalise the MDO for delays attributable solely to the MDO (and not the mine owner).

19. KPMG in India analysis

- Damages for breach of maintenance obligations: The MDO is liable to pay for each day's delay to repair/ rectify any defect/ deficiency set forth in the maintenance requirements. This is generally calculated as 1 per cent of average daily mining charge. The mine owner should be able to assess its own daily loss arising out of breach, and hence accordingly set the quantum of damage on the MDO.
- Damages due to reduced quantity of coal supplied at delivery point: It is extremely essential for the mine owner to assess the coal value loss due to transit/ handling loss at the mine. Damages must be put in place if coal delivered is short by more than certain per cent (typically 0.5 per cent is the threshold) at the delivery point. The damages typically set in the contract are to the tune of 300 per cent of prevailing mining charge/ tonne.
- Shortfall in production due to MDO: In the case of actual shortfall in production (and thus not adhering to the production schedule of the mining plan), the MDO may be penalised. However, the quantum and threshold of damages should be well thought through and should not be too harsh or too lenient. In this regard, the mine owner may make the decision based on the damages payable to Ministry of Coal due to failing to the efficiency parameters as set forth in the Allotment Agreement.
- Shortfall in production due to poor market demand: In the case of commercial mining, the onus of selling and marketing of coal lies with the mine owner. However, at times of low market demand, the mine owner might be at a loss as it has to pay the mining charge to the MDO for production, while it itself struggles to sell the produced coal. Thus, the clause of damages for shortfall in production has to be suitably designed. The mine owner must be able to balance this issue, by putting remedial clauses in place. For example, the mine owner may commit to pay the MDO a fixed charge equal to 25 per cent of the mining charge for the reduction in quantity below a threshold production quantity.
- Poor coal quality: The mine owner should be able to penalise the MDO for grade slippages and thus hurting the coal customers. Any damage arising out of coal quality should be loaded on to the MDO. This clause would have a check on the MDOs mining standards and prevent any value loss to the mine owner.

Thus, this is quite clear that the mine owners need to be competent and balanced in drafting the tender clauses, so that it can minimise the damages upon itself, which is not attributable to its own faults/ delays.

A quick look at the typical efficiency parameters for commercial coal mining[20] is given below *(this is for illustrative purposes only. This may not hold true for future coal block allocations/ auctions):*

Assumptions table

Capacity of illustrative mine	5 Mtpa
Performance Security	INR100 crore
Impact in case of low probability of occurrence	25 per cent
Impact in case of medium probability of occurrence	50 per cent
Impact in case of high probability of occurrence	80 per cent

20. Considering the allotment agreement of the 16 coal blocks (under host state and non host state) which were put up for allocation to public sector units in 2016

Likely impact of the delays on the appropriation of the performance security submitted by the mine owner to Ministry of Coal

#	Milestone	Time limit in months (from the date of the Allotment Order i.e. zero date)/ Parameter for compliance	Weightage for calculating deduction of performance security (in case of failure/ delay in achieving milestone)	Likely value loss/ performance security to be deducted (in case of failure/ delay in achieving milestone) (INR crore)
1	Prospecting License or notification under Section 4 of the CBA Act, 1957, as applicable	0	5 per cent	1.3
2	Completion of Exploration and Preparation of Geological Report (GR)	0		
3	Mining Lease Application or notification under Section 7 of the CBA Act, 1957, as applicable	3	7 per cent	1.8
4	Submission of Mining Plan	6	8 per cent	4.0
5	Mining Plan Approval	11	8 per cent	4.0
6	Previous Approval Application	12	6 per cent	1.5
7	Previous Approval	13	5 per cent	1.3
8	Forest Clearance Application	11	8 per cent	2.0
9	Forest Clearance	21	5 per cent	4.0
10	Environment Clearance Application	11	8 per cent	4.0
11	Environment Clearance	21	5 per cent	4.0
12	Grant of Mining Lease or notification under Section 11 of the CBA Act, 1957, as applicable	24	8 per cent	6.4
13	Land Acquisition (To reach rated capacity)	36/ 42 (in case of forest land)	5 per cent	4.0
14	Opening of Escrow Account	37/ 43 (in case of forest land)	8 per cent	2.0
15	Application for Opening Permission	37/ 43 (in case of forest land)	2 per cent	1.0
16	Grant of Opening Permission	38/ 44 (in case of forest land)	4 per cent	3.2

#	Milestone	Time limit in months (from the date of the Allotment Order i.e. zero date)/ Parameter for compliance	Weightage for calculating deduction of performance security (in case of failure/ delay in achieving milestone)	Value loss/ performance security to be deducted (in case of failure/ delay in achieving milestone) (INR crore)
17 (A)	Schedule of production till reaching of Peak Rated Capacity	At least 90 per cent of the annual schedule production/ rated capacity as per approved mining plan in case of opencast mines and at least 80 per cent of the annual schedule production/ rated capacity as per approved mining plan for underground mines	8 per cent	1.0
17 (B)	Schedule of production from the year subsequent to the year in which Peak Rated Capacity will be achieved	The actual production of coal in any year should not be less than 50 per cent of the coal production as per the Mine Plan. However, in any five year block, the Allottee is required to produce at least 80 per cent of the coal as per the Mine Plan		
Total penalty				**45.35**

Source: KPMG in India Analysis

Thus, based on the market understanding, a mine owner may stand to lose 40-50 per cent of the performance security due to its inability to adhere to the efficiency parameters. This is certainly a major cause of value loss for the mine owner.

Thus, for the commercial coal mining industry as a whole, the maximum value loss that can accrue to each mine owner would be limited to the PBG, which is about INR20 crore/Mtpa of peak rated capacity.

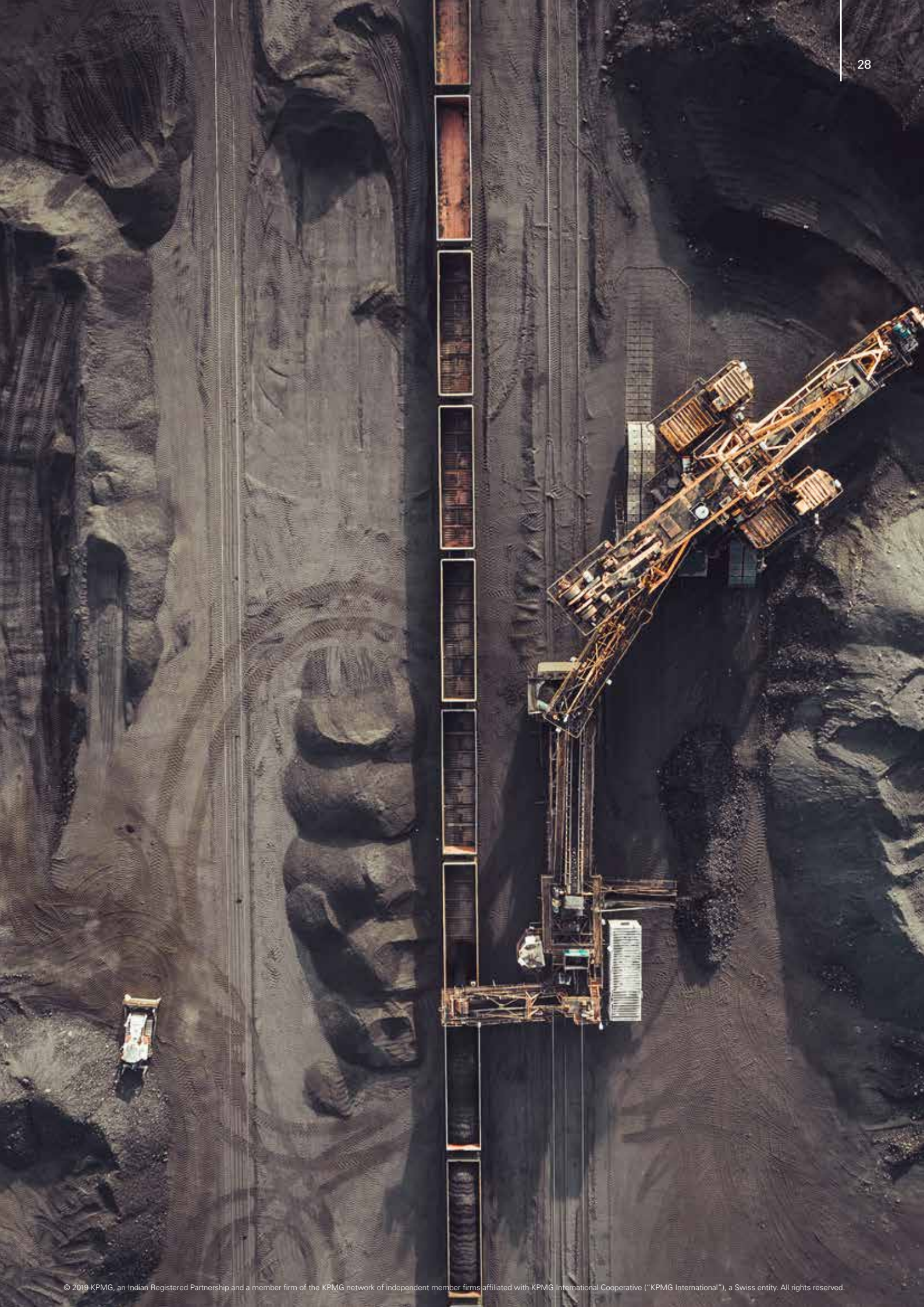
With more than 200 Mtpa of coal blocks at different stages of development (either allocated and MDO selected OR allocated but MDO not selected OR would be allocated), considering 30-40 per cent of the capacity to face challenges in mine development and operationalisation to the tune of 40-50 per cent of its efficiency parameters[21], the likely value loss can be calculated to be about INR500-800 crore[22] on the mine owners.

This is a significant figure, especially when many of the state MDCs and state gencos struggling to cope up with poor geology and lack of mineral exploration, escalating manpower costs, competition from RE in the power distribution market, etc.

It is also imperative to put in place effective monitoring mechanism to objectively evaluate performance of the contractors. With the aid of information technology, much of this can be automated.

21. As seen in the above analysis

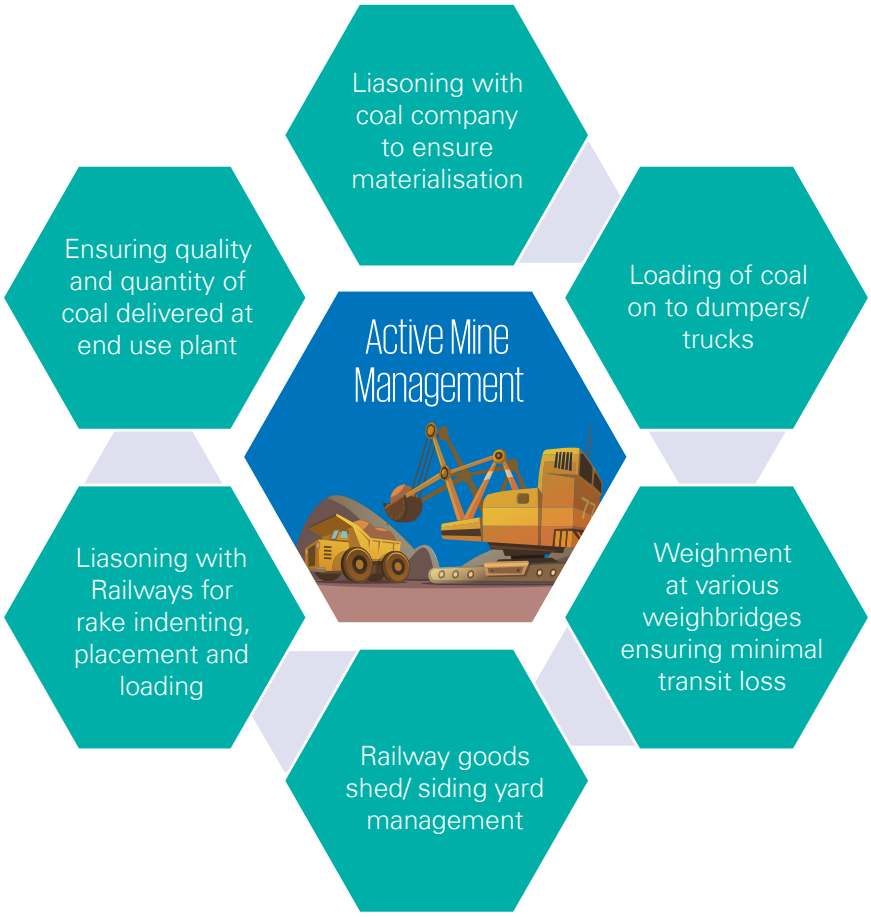
22. KPMG in India Assessment



Active mine management players have their own niche market

Let's shift the focus on another set of stakeholders involved in the coal mining and supply value chain – the active mine managers.[23] Active mine management is an umbrella term used to identify the third parties engaged by many coal customers. Typically, active mine managers perform all the activities between the coal company and the end-use customers.

Below schematic shows the typical services offered by the active mine managers.



In India, almost 80 per cent of the thermal/ non-coking coal produced is consumed in the thermal power plants for the purpose of generation of electricity. Though the power plants are located far and wide, all along the length and breadth of the country, the coal mines are located only in a few states, i.e., in Jharkhand, Odisha, West Bengal, Chhattisgarh, Madhya Pradesh and eastern Maharashtra. This necessitates transport of coal mostly via railway wagons over long distances. It becomes very tedious for the power plants (mostly state gencos) to engage its own employees at coal mines and/ or coal loading railway sidings to ensure coal in terms of right quantity and good quality. With coal in high demand, it is very difficult for the coal companies to ensure quantity and quality for all of its customers.

In come the active mine managers!

These set of companies have been traditionally coal traders, transporters and liasoning agents with multiple stakeholders in the coal market. With time, these players have started evolving, and now they provide the entire services starting from the coal mines till the delivery point at the end-use plant located hundreds of kilometres away.

23. It is important to note that "Active Mine Manager" and "Manager of a mine" (as per The Mines Act 1952) are two totally unrelated terms. While "Manager of a mine" is a statutory position with relation to a mine, "Active Mine Manager" is a term used in the coal market for identifying players who actively handle the coal loading/ unloading/ transportation/ liasoning, etc. on behalf of a coal customer

5.1 Active mine management market is highly concentrated with strong local networks

Unlike the coal mining contract market, and to some extent the MDO market, the active mine management segment is highly concentrated amongst a handful of players. This is largely because being an active mine manager requires strong local networking, along with liasoning abilities with coal companies and railway authorities.

For example, the key railway sidings for IB Valley coalfields of MCL are LOCM and BOCM. Market analysis reveals that only two active mine managers offer services in the LOCM sidings (LOCM 1, 2 and 3). On the other hand, a single active mine manager has significant presence in the WCL command area and handles maximum volume of coal despatched from WCL in that region. The observation is true for other coalfields/ sidings in other key CIL subsidiaries as well. This has a potential for creating a conflict of interest in terms of the quality of service offered by one active mine manager to two consumers picking up coal from the same area.

Some of the key AMMs operating in the current market are Naresh Kumar and Company Private Limited, Karam Chand Thapar Group, Aryan Group, Hind Energy, Shah Coal and Caliber Group.

It may also be noted that many of the active mine managers offer a part of the entire services to some of the coal customers. For example, some customers may have their own manpower to manage the railway siding for loading of coal and liasoning with railway officers. Thus, in such a case, the gamut of services of the active mine managers get curtailed to be a mere transporter, perhaps.

It may be quite difficult to attribute a number to the active mine management market. However, based on certain assumptions (like the amount of coal moved via the active mine managers, and typical active mine manager charges which is about INR20-50/tonne), it may be derived that the active mine management market may be sized somewhere around INR1000 crore.

As coal production grows, and siding yard management becomes tougher due to higher coal moved through rakes, the active mine management market is expected to grow significantly. It may touch INR3000 crore[24] by 2025.

5.2 Factors which play a role in active mine management contracts

The basic purpose of engaging an active mine manager is to ensure materialisation (i.e. quantity of coal as per the agreed upon contract of the coal customer with the coal company) and quality (i.e., coal of certain gross calorific value and moisture) of coal received at end use plant.

The terms and conditions of an illustrative active mine management contract may include the below.

Guaranteed gross calorific value (ARB)

- Weighted average quarterly gross calorific value (ARB) to be 4000 kcal/kg for the entire DO quantity
- Failing which pro rata penalty on for landed cost of coal at end-use plant for the loss in gross calorific value (ARB)

Total moisture (TM)

- Maximum of 14 per cent TM for the entire delivery order (DO) quantity
- Receipt quantity to be calculated as normalised receipt (in case TM per cent exceeds 14 per cent for the entire DO quantity

  Normalised receipt =(Actual receipt quantity at plant end * (100 –TM at plant end))/(100 –Guaranteed TM)

Quantity and delivery schedule

- Entire DO quantity to be delivered at plant before the expiry of the DO

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5.3 Operational benchmarking of some of the major active mine managers

A study was conducted by KPMG in India across two captive power players (termed as 'CPP') and nine independent power players (IPP) to understand their coal supply chain and assess the impact of the active mine managers engaged by them. This covers 80+ Mtpa of coal supply through the active mine management players.

Below table provides a basic detailing of the coal customers along with their active mine managers – categorised as 'liasoning/ coal handling contractor' and pureplay 'RCR/ Road mode transporter'.

Coal customers and their active mine managers

#	Label	Description	Coal offtake (MTPA)	Liasoning/ coal handling contractor	RCR/ road mode transporter	Major CIL subsidiary
1	**CPP - 1**	A leading aluminium manufacturer	15 – 16	AMM1	AMM1	NCL, MCL, SECL, CCL and captive blocks
2	**CPP - 2**	A leading aluminium manufacturer	33 – 35	AMM1	AMM1	MCL, SECL and captive blocks
3	**IPP – 1**	Thermal power plant from Chhattisgarh	1 - 1.5	In – house/ departmental	Transporters on rotation basis	BCCL, MCL, CCL, SECL
4	**IPP – 2**	Thermal power plant from Punjab	~ 5	In – house/ departmental	AMM 4, AMM5, AMM6	SECL, BCCL
5	**IPP – 3**	Large private power producer having capacity of more than 10,000 MW	8 – 10	In – house/ departmental	Small transporter	SECL, NCL, WCL, MCL
6	**IPP – 4**	IPP from Maharashtra	1.5 – 2	AMM2	AMM7	SECL, WCL
7	**IPP – 5**	IPP from Madhya Pradesh	2.5 – 3	AMM3	AMM8	SECL
8	**IPP – 6**	A joint venture power producer from Jharkhand	~ 3	In – house/ departmental	Small transporter	BCCL, CCL
9	**IPP – 7**	Private producer having plant at Chhattisgarh & Uttar Pradesh	7-May	In – house/ departmental	Small transporter	SECL, NCL
10	**IPP – 8**	Private producer belonging to a large genco-discom group	2 – 3	AMM4	Transporters selected based on tendering	MCL, BCCL, CCL
11	**IPP – 9**	Mahashtra based private power plant	2 – 3	AMM5	Transporters selected based on tendering	WCL, SECL, SCCL

Source: KPMG in India Assessment

The performance of the active mine managers was evaluated based on three factors:

- Materialisation (quantity delivered at end-use plant) measured @75 per cent of FSA
- Transit loss/ shortage
- Coal quality (in terms of gross calorific value and total moisture)

The observations were as below:

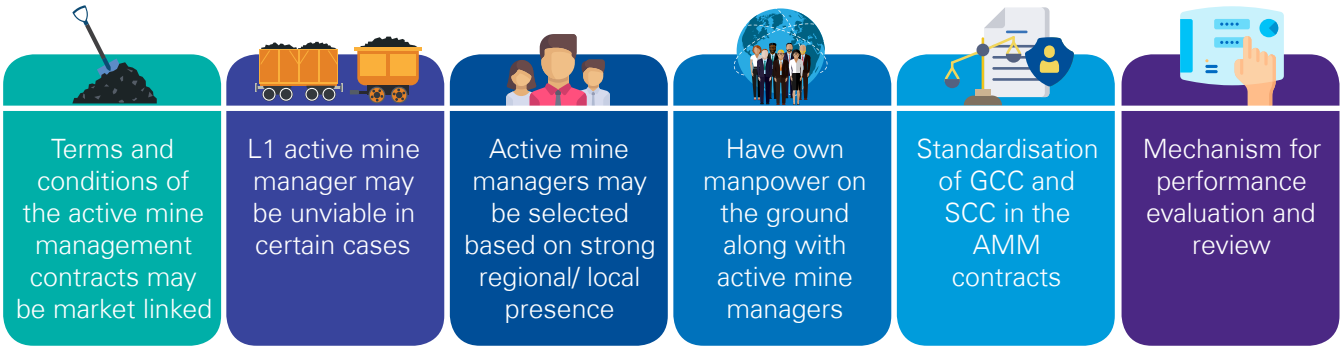
	< 80 per cent	80 per cent - 85 per cent	85 per cent - 95 per cent	95 per cent - 100 per cent	>100 per cent
Materialisation (@ 75 per cent of FSA)			• IC – 1 (AMM1) • IC – 2 (AMM1) • IPP – 2 (in-house) • IPP – 4 (AMM2)	• IPP – 3 (in-house) • IPP – 7 (in-house) • IPP – 8 (AMM4) • IPP – 9 (AMM5)	• IPP – 1 (in-house) • IPP – 5 (AMM3) • IPP – 6 (in-house)

	> 4 per cent	2 per cent - 4 per cent	1 per cent - 2 per cent	0 per cent - 1 per cent	<0 per cent
Shortage		• IPP – 6 (in-house) • IPP – 8 (AMM4)	• IC – 1 (AMM1) • IC – 2 (AMM1) • IPP – 1 (in-house) • IPP – 2 (in-house) • IPP – 3 (in-house) • IPP – 4 (AMM2) • IPP – 7 (in-house) • IPP – 9 (AMM5)	• IPP – 5 (AMM3)	

	Two grade lower than billed	One Grade lower than billed	Slightly lower than Average	Slightly higher than Average	One grade better than billed
Coal quality (grade of coal)	• IPP – 3 (in-house) • IPP – 5 (AMM3)	• IC – 1 (AMM1) • IC – 2 (AMM1) • IPP – 2 (in-house) • IPP – 6 (in-house) • IPP – 7 (in-house) • IPP – 8 (AMM4) • IPP – 9 (AMM5)	• IPP – 4 (AMM2) • IPP – 1 (in-house)		

5.4 Lessons for the coal customers

The active mine management market is here to not just stay, but grow strong, as more and more coal consumers are sourcing coal from non-pithead mines, involving a variety of stakeholders. The power plant companies, both public sector units and private, focus on their core activities (of power plant operations) and outsource the coal supply chain largely to these active mine managers. However, this mechanism has its own set of challenges and risks. In this section, we talk about some of the factors which coal customers need to consider in order to derive value.



1. **Terms and conditions of the active mine management contracts may be market linked –** From our observation of various active mine management (and similar) contracts, the various terms and conditions of the active mine management contracts, having financial implications have been loosely drafted by the coal customers. For example, incentive and penalty clauses on committed gross calorific value should not be rolled over year-on-year, but rather should be linked to the past months' experience. Similarly, the tolerance on transit loss (shortage) should be formulated based on distance, mode of transport, social/local issues, etc. Thus, the practical aspects of coal supply chain should be considered while drafting the terms and conditions of the contract.

2. **L1 active mine management may be unviable in certain cases –** Most of the coal customers, procuring coal via e-auction, bring out tenders for selection of active mine managers. These active mine managers quote a price for the landed cost of transportation, which includes coal loading, transport, unloading at transfer points, further loading on to rakes, etc. L1 bidder may, however, be burdened with past DOs (from previous e-auction phases) and may be unable to honour this fresh quantity with respect to timely delivery. Coal customers need to have a forward-looking view and consider splitting the e-auction quantity across L1, L2 (and may be L3) bidders to ensure materialisation, with minimal impact on landed costs.

3. **Active mine managers having strong regional/ local presence may be selected –** It may be understood that certain active mine managers would have stronger presence, in terms of better network, cheaper manpower, scale of operations, in certain coalfields/ regions. For example, an active mine manager may be selected for the LOCM / BOCM cluster, while another active mine manager may be selected in the Talcher region by the same coal customer sourcing bulk of coal from MCL.

4. **Own manpower on the ground along with active mine managers –** It is prudent for a large coal customer, i.e., having significant sourcing from a set of sidings within a close geographical area (say more than two Mtpa comes from sidings within 20 kms of each other) to have own manpower on the ground. This manpower would be present even at the higher cost and effort of duplication, since active mine manager is also present in those areas. The purpose of departmental manpower is to have a better control of quantity (ensuring higher materialisation), quality (better coal loaded on to rakes, supervision on active mine managers, third-party sampling agencies etc.) and transit loss management (pilferage, theft, tarpaulin cover, weighbridge performance etc.)

5. **Standardisation of the GCC and SCC in the contracts –** The active mine management contracts may be drafted into three broad sections - General Conditions (GCC), Specific Conditions (SCC) and then some Annexures (containing contract value, service level agreements, payment terms and conditions, etc.). While the annexures would vary from one contract to another, GCC and SCC may be quite similar. The GCC are very generic in nature having definitions, legal provisions, termination clauses, statutory compliance, force majeure, etc. The SCCs might have scope of work and coal sampling and testing procedures. An effort to standardise the contracts would reduce substantial repetitive work performed by coal customers as they participate and win every e-auction quantity. Rather the team may be able to focus on value adding work such as developing coal market insights from various coal mines, including their expected production, gross calorific value, competition in e-auction space, expected premium to be paid, etc.

6. **Mechanism for performance evaluation and review –** Clauses must suitably be built in the contracts which call for periodic performance evaluation for the active mine managers. It may be prudent to not just penalise the active mine managers for failing to adhere to terms and conditions but unearth the reasons contributing to it. This is because any value loss to coal customer hits its materialisation (and hence procuring additional coal at generally a higher market price) and quality (sub optimal and unpredictable coal blending to boilers). Penalising the active mine manager on a mere service charge (of say INR20-50/ tonne) is not enough to protect the financial and operational interest of the customer.

Conclusion

There are various service providers in the coal sector of which the mining contractors, MDO and the active mine management segment is expected to be INR16,000 crore[25], INR17,000 crore[26] and INR3,000 crore[27] respectively by 2025. The MDO market currently has 15-20 players and in five years from now, it may witness consolidation and shall have 10-12 players and the active mine management market with 5-8 large players currently shall expand to reach 8-12 players in five years. The mining contractors' market may remain the same with 10-15 players. In fact, it may go down as big projects will go in MDO route.

The key contractual points to be kept in mind by mine owners and end consumers are various penalties imposed on either party due to delay/ non-fulfillment of several requirements. For instance, penalties imposed due to shortfall in production/delay in fulfilling Conditions Precedent/ delay in achieving project milestones. If these consolidations are not wisely weighed and factored in during contracting, it might lead to delays in mine development and operations, which have significant financial implications on the mine owner.

The higher objective for India as a nation is fuel security with the MDO market having adequate number of competent players who work in a compliant manner rather than multiple smaller players cutting corners. Therefore, the following actions are recommended:

- In the last few years, two-stage bidding culminating in reverse auction has become the norm in the industry. Mine owners should seriously consider single-stage sealed bids without reverse auctions.
- Despite a sealed bid method, it is possible that irrational bids may still come in. They should also consider other modes like Vickrey sealed bid where the lowest bidder wins but at the price of second lowest bidder.
- Independent evaluation of the reserve price should be done based on scientific mine planning by the auctioning authority.
- Mine owners should each maintain, over a period of time, a proper Contractor Rating System which they should use and share in industry forum so that it is mutually beneficial to the industry.
- We have seen that mine owners adopt a hands-off style after award of contract and are only focused on KPIs such as production, dispatch, etc. This creates a tendency to ignore the method by which the production is achieved. For instance, if the mining contractor is paid based on the amount of coal he delivers to the captive mine owner, then it is highly unlikely that the captive mine owner shall institute mechanisms and checks to ensure that no amount of coal is diverted. With the advent of digital technologies and modern surveillance methods, adequate steps should be taken by the mine owners to constantly monitor the mining operations and institute the highest level of operational rigour and compliance standards as necessary by law or otherwise.

It is also imperative to put in place effective monitoring mechanism to objectively evaluate performance of the contractors. With the aid of information technology, much of this can be automated.

Further, ideally in a well-oiled supply chain, there should not be any role of active mine management, and all transactions and material movement should happen smoothly and fairly. The only reason why active mine managers would still be required in a fair system is the humongous amount of co-ordination and paper work required to move material after its allocation to a consumer. It is important for the active mine management market to avoid conflict of interest. For instance, if a single player dominates a certain coal belt and all coal consumers make use of such a player, then that active mine manager is virtually conflicted with one customer's interest vis-à-vis the others. Therefore, this market needs more number of players who will each strive to maximise the interest of its own clients.

In summary, it may be said that the market is complex and of this nature because of inherent inefficiencies and unique opportunities of the Indian coal sector. So, the only tools in the hands of all stakeholders is the contract, the method through which the service provider is chosen and the extent of monitoring. All three should be wisely designed for long term sustainability of the business.

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25. KPMG in India Analysis

26. KPMG in India Analysis

27. KPMG in India Analysis

Glossary

AMM	Active Mine Manager
ARB	As Received Basis
BOCM	Belpahar Opencast Mine
BCCL	Bharat Coking Coal Limited
BCM	Billion Cubic Metre
Capex	Capital expenditure
CBA	The Coal Bearing Areas (Acquisition and Development) Act, 1957
CCL	Central Coalfields Limited
CHP	Coal Handling Plant
CMSP	The Coal Mines (Special Provisions) Act, 2015
CPP	Captive Power Plant
cum	cubic metre
EC	Environment Clearance
ECL	Eastern Coalfields Limited
FC	Forest Clearance
FDI	Foreign Direct Investment
FSA	Fuel Supply Agreement
FY	Financial Year
GCV	Gross Calorific Value
GDP	Gross Domestic Product
Genco	Generating Company
GR	Geological Report
HEME	Heavy Earth Moving Equipment
HEMM	Heavy Earth Moving Machinery
INR	Indian Rupee
IPP	Independent Power Plant
JV	Joint Venture

Glossary

LARR	Land Acquisition & Rehabilitation & Resettlement
LOCM	Lakhanpur Opencast Mine
MCL	Mahanadi Coalfields Limited
MDC	Mineral Development Corporation
MDO	Mine Developer cum Operator
MGR	Merry Go Round
MMDR	The Mines and Minerals (Development and Regulation) Act, 1957
Mtpa	Million Tonnes per Annum
NCL	Northern Coalfields Limited
NMDC	National Mineral Development Corporation
NTPC	National Thermal Power Corporation
OB	Over Burden
OCP	Open Cast Project
OPEX	Operating Expense
PAF	Project Affected Family
PAP	Project Affected People
PBG	Performance Bank Guarantee
POV	Point of View
PPA	Power Purchase Agreements
PRC	Peak Rated Capacity
PSU	Public Sector Undertaking
R&R	Rehabilitation and Resettlement
SCC	Specific Conditions of Contract
SECL	South Eastern Coalfields Limited
T&C	Terms & Conditions
WCL	Western Coalfields Limited

KPMG in India

KPMG in India, a professional services firm, is the Indian member firm affiliated with KPMG International and was established in September 1993. Our professionals leverage the global network of firms, providing detailed knowledge of local laws, regulations, markets and competition. KPMG has offices across India in Ahmedabad, Bengaluru, Chandigarh, Chennai, Gurugram, Hyderabad, Jaipur, Kochi, Kolkata, Mumbai, Noida, Pune, Vadodara and Vijayawada.

KPMG in India offers services to national and international clients in India across sectors. We strive to provide rapid, performance-based, industry-focussed and technology-enabled services, which reflect a shared knowledge of global and local industries and our experience of the Indian business environment.

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ICC Profile

Founded in 1925, Indian Chamber of Commerce (ICC) is the leading and only National Chamber of Commerce operating from Kolkata, and one of the most pro-active and forward-looking Chambers in the country today. Its membership spans some of the most prominent and major industrial groups in India. ICC's forte is its ability to anticipate the needs of the future, respond to challenges, and prepare the stakeholders in the economy to benefit from these changes and opportunities.

Set up by a group of pioneering industrialists led by Mr G D Birla, the Indian Chamber of Commerce was closely associated with the Indian Freedom Movement, as the first organised voice of indigenous Indian Industry. Several of the distinguished industry leaders in India, such as Mr. B M Birla, Sir Ardeshir Dalal, Sir Badridas Goenka, Mr. S P Jain, Lala Karam Chand Thapar, Mr. Russi Mody, Mr. Ashok Jain, Mr. Sanjiv Goenka, have led the ICC as its President. Currently, Mr. Mayank Jalan is leading the Chamber as its President.

ICC is the only Chamber from India to win the first prize in World Chambers Competition in Quebec, Canada.

ICC's North-East Initiative has gained a new momentum and dynamism over the last few years. ICC has a special focus upon India's trade & commerce relations with South & South-East Asian nations, in sync with India's 'Look East' Policy, and has played a key role in building synergies between India and her Asian neighbours through Trade & Business Delegation Exchanges, and large Investment Summits.

ICC also has a very strong focus upon Economic Research & Policy issues - it regularly undertakes Macro-economic Surveys/Studies, prepares State Investment Climate Reports and Sector Reports, provides necessary Policy Inputs & Budget Recommendations to Governments at State & Central levels.

The Indian Chamber of Commerce headquartered in Kolkata, over the last few years has truly emerged as a national Chamber of repute, with full-fledged offices in New Delhi, Mumbai, Guwahati, Ranchi and Bhubaneshwar & Hyderabad functioning efficiently, and building meaningful synergies among Industry and Government by addressing strategic issues of national significance.

KPMG in India contacts:

Nilaya Varma
Partner and Leader
Markets Enablement
T: +91 124 669 1000
E: nilaya@kpmg.com

Niladri Bhattacharjee
Partner
Metals and Mining
T: +91 033 4403 4020
E: niladri@kpmg.com

home.kpmg/in

ICC contacts:

Dr Rajeev Singh
Director General
Indian Chamber of Commerce
T: +91 033 2230 3242-44
E: sg@indianchamber.net

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