METALS AND MINING

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August 2020
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### EXECUTIVE SUMMARY

<table>
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<tr>
<th>Coal Production</th>
<th>Production in India FY20-21: 145.9 MT (till June 2020)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>India is the third largest producer of coal(^\text{a}). Coal production in the country stood at 729.10 million tonnes (MT) in FY20 and reached 145.9 MT in FY21 (till June 2020)</td>
</tr>
<tr>
<td></td>
<td>India is expected to overtake Australia and the US in early 2020s to take the position of the world’s second-largest coal producer.</td>
</tr>
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<table>
<thead>
<tr>
<th>Iron Ore Production</th>
<th>Production in India FY20: 205.74 MT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>India ranks fourth globally in terms of iron ore production(^\text{b}). Production of iron ore in FY20 stood at 205.74 MT.</td>
</tr>
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<table>
<thead>
<tr>
<th>Steel Production</th>
<th>Production in India: 111.2 MT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>India became the world’s second largest crude steel producer in 2019 with production at 111.2 MT.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aluminium Production</th>
<th>Production in India: 3.6 MT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>Combined Aluminium production in India stood at 3.6 MT in FY20.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mining Lease</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Duration Mining Lease</td>
<td>20 to 30 years</td>
</tr>
<tr>
<td>Mining Lease</td>
<td>India has vast mineral potential with mining leases granted for longer duration of 20 to 30 years.</td>
</tr>
</tbody>
</table>

**Note:** CAGR - Compound Annual Growth Rate, \(^\text{a}\)BP Statistical Review of World Energy 2019, \(^\text{b}\)USGS Mineral Commodity Summaries 2019, MT-million tonnes.

**Source:** Ministry of Coal, Worldsteel.org, BP, Ernst and Young
ADVANTAGE INDIA
▪ Rise in infrastructure development and automotive production are driving growth.
▪ Power and cement industries also aiding growth in the metals and mining sector.
▪ Demand for iron and steel is set to continue, given the strong growth expectations for the residential and commercial building industry.

▪ There is significant scope for new mining capacities in iron ore, bauxite and coal.
▪ Considerable opportunities for future discoveries of subsurface deposits.
  ▪ The Ministry of Steel aims to increase the steel production capacity to 300 MT by 2030-31 from 134.6 MT in 2017-2018, indicating new opportunities in the sector.

▪ India holds a fair advantage in cost of production and conversion costs in steel and alumina.
▪ Its strategic location enables convenient export to developed as well as the fast-developing Asian markets.
▪ India produces 95 minerals – 4 fuel-related minerals, 10 metallic minerals, 23 non-metallic minerals, 3 atomic minerals and 55 minor minerals (including building and other minerals).

▪ 100 per cent FDI allowed in the mining sector and exploration of metal and non-metal ores under the automatic route.
▪ National Mineral Policy 2019 was launched for transparency, better regulation and enforcement, and balanced socio-economic growth in the sector.

Notes: MT - million tonnes, FDI - Foreign Direct Investment, MMDR Bill - Mines and Mineral (Development and Regulation) Bill
Source: Data Monitor, RBI, Ministry of Mines
MARKET OVERVIEW
EVOLUTION OF THE INDIAN MINING SECTOR

- Mining sector received a boost post independence under the impact of successive 5 Year Plans.
- Mineral Exploration Corporation established to conduct exploration with focus on coal, iron ore, limestone, dolomite and manganese ore.
- Indian mining sector was opened to Foreign Direct Investment in 1993 after the announcement of the New Mineral Policy.
- Ministry of Mines notified revised royalty rates and dead rent in September 2014 and the revised rates came into effect on September 1, 2014.

- The exploration of minerals was intensified, and the Geological Survey of India was strengthened.
- Indian Bureau of Mines was established to look after the scientific development of mineral resources.
- Mineral Exploration Corporation established to conduct exploration with focus on coal, iron ore, limestone, dolomite and manganese ore.
- Indian mining sector was opened up to Foreign Direct Investment in 1993 after the announcement of the New Mineral Policy.
- Total crude steel production in India reached 111.2 million tonnes in 2019 making the country the 2nd largest crude steel producer in the world.
- An airborne geophysical survey of the Obvious Geological Potential Area was inaugurated in April 2017 and will cover a 0.2 million sq km area. It is one of most efficient and cost-effective methods of resource exploration worldwide.

Source: World Steel Association (WSA), DPIIT, DataMonitor
### SEGMENTS OF METALS AND MINING INDUSTRY

<table>
<thead>
<tr>
<th>Metals and mining</th>
<th>Iron and steel</th>
<th>Coal</th>
<th>Aluminium</th>
<th>Bauxite</th>
<th>Base metals</th>
<th>Precious metals and minerals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Iron and steel</strong></td>
<td>Iron and steel segment offers a product mix which includes hot rolled parallel flange beams and columns rails, plates, coils, wire rods and continuously cast products such as billets, blooms, beam, blank, rounds and slab and metallics and ferro alloy.</td>
<td>Coal market consists of primary coal (anthracite, bituminous and lignite)</td>
<td>Aluminium segment includes primary aluminium, aluminium extrusions, aluminium rolled products, alumina chemicals</td>
<td>BauxBPM are sub-divided into two basic types based on the processing methods - Tropical bauxite and European bauxite</td>
<td>Base metal market consists of lead, zinc, copper, nickel and tin</td>
<td>Precious metals market includes gold, silver, platinum, palladium, rhodium and diamond</td>
</tr>
</tbody>
</table>
STRONG GROWTH IN INDIA’S METALS AND MINING SECTOR OVER THE YEARS

- India metals and mining sector has witnessed strong growth over the past few years. GVA from mining and quarrying reached US$ 56.02 billion in FY20AE.
- Mineral production in India also surged, achieving a CAGR of 9.66 per cent between FY16 to FY19E and reached US$ 17.74 billion in FY19.
- Mineral production in India reached Rs 68,577.09 crore (US$ 9.73 billion) in FY20E*.
- The number of operative mines (excluding atomic minerals, petroleum (crude), natural gas (utilized) and minor minerals) in India reached 1,405 in FY19 from 1,430 in FY18.

Notes: CAGR - Compound Annual Growth Rate, RE – Revised estimates, AE- second Advance estimate, *Excluding atomic and fuel minerals, GVA - Gross Value Added, P- Provisional, E- Estimated. *- Till February 2020
Source: Ministry of Statistics and Programme Implementation, Ministry of Mines
Production of as many as 95 minerals is undertaken in India, including 4 fuel minerals, 10 metallic minerals, 23 non-metallic minerals, 3 atomic minerals and 55 minor minerals (including building and other materials).

Odisha was the leading producer of minerals with production worth US$ 4.24 billion in FY20*, followed by Rajasthan, Chhattisgarh, Karnataka and Jharkhand with production worth US$ 1.66 billion, US$ 1.42 billion, US$ 1.10 billion and US$ 0.34 billion, respectively.

Production of metallic minerals in the country increased from US$ 4.81 billion in FY16 to US$ 8.64 billion in FY20*. During the same period, production of non-metallic minerals increased from US$ 1.08 billion to US$ 0.94 billion.

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**Notes:** MMT- Million Metric Tonnes, E-Estimate, ^- excluding fuel, atomic and minor minerals, P- Provisional, ^- Till February 2020

**Source:** Ministry of Mines
Iron ore is a key input for production of steel and primary iron.

Majority (over 85 per cent) of iron ore reserves are of medium- to high-grade and are directly used in blast furnace and direct reduced iron (DRI) plants in the form of sized lumps or sinters or pellets.

India was estimated to be the fourth largest producer of iron ore in 2019.

Iron ore production in the country increased from 158.11 MT in FY16 to 199.21 MT in FY19 and is estimated to reach 205.70 MT by FY20.

Notes: CAGR - Compounded Annual Growth Rate, P – Provisional, E – Estimate
Source: Business Standard, Ministry of Mines (Annual Report)
With the Indian economy expected to grow more than 7 per cent in the years to come, sectors such as infrastructure and automobiles will receive a renewed thrust, which would in turn generate demand for steel in the country.

India’s crude steel production crossed 100 MT for the first time in FY18. Crude steel production in the country decreased 2.2 per cent y-o-y to 108.5 MT in FY20.

Finished steel production in India stood at 101.05 MT in FY20. Consumption of finished steel in the country stood at 100.00 MT during the same period.

According to World Steel Association, India’s steel demand was expected to grow 5.5 per cent in 2018 to 92.0 MT and 6.0 per cent in 2019 to 97.5 MT.

Notes: CAGR - Compound Annual Growth Rate, MT – Million Tonnes
Source: World Steel Association
RISING DOMESTIC DEMAND PUTS PRESSURE ON SUPPLY OF IRON AND STEEL … (1/2)

- In FY20, India’s iron and steel export was valued at US$ 9.28 billion. During FY16-FY20, India’s export of iron and steel grew at a CAGR of 14 per cent.

- Government of India has imposed 30 per cent export duty on all iron ore forms (except the low-grade iron ore) and 5 per cent export duty is levied on iron ore pellets.

Notes: CAGR - Compound Annual Growth Rate, ^CAGR is up to FY20
Source: Ministry of Commerce, DGCIS – Directorate General of Commercial Intelligence and Statistics
India has turned into a net importer of iron and steel due to strong growth in the manufacturing sector and rising infrastructure projects.

India’s transition into a net importer of steel despite the strong growth in domestic steel production shows the demand potential of the sector.

The impact of strong growth in domestic steel production has been most felt in the iron ore sector. With steel firms’ ever rising demand for the raw material, India’s import of iron ore has been growing steadily.

India’s iron and steel import decreased at a CAGR of 1.10 per cent to reach US$ 10.73 billion in FY20.

Notes: CAGR - Compound Annual Growth Rate, ^CAGR is up to FY20
Source: Ministry of Commerce, DGCIS – Directorate General of Commercial Intelligence and Statistics
COAL PRODUCTION GROWING AT A STEADY PACE

- In the coming years, coal production in the country is likely to receive a boost as the Government plans to replace country’s captive mining policy in coal and iron ore with an open bidding one.
- India’s coal production grew at a CAGR of 3.16 per cent between FY16 and FY20 to reach 737 MT.

Notes: CAGR - Compound Annual Growth Rate, ^CAGR is up to FY20, *- till June 2020.
Source: Ministry of Mines
INDIA’S ROLE IN GLOBAL ALUMINIUM PRODUCTION

- India was the fourth largest producer of aluminium in the world with a share of around 5.33 per cent of the global aluminium output.

- The principal user segment in India for aluminium continues to be electrical and electronics sector followed by automotive and transportation, building, construction, packaging, consumer durables, industrial and defence.

- According to the Ministry of Mines, India had the 7th largest bauxite reserves of around 2,908.85 MT in FY19.

- Aluminum production increased to 3.65 million kgs in FY19.

- Over the course of last four years, India’s aluminium production capacity has increased to 4.1 MT, driven by investment worth Rs 1.2 lakh crore (US$ 18.54 billion).

Note: ICRA - Information Credit Rating Agency Ltd.
Source: World Bureau of Metal Statistics (WBMS), Aluminium Association of India, Economist Intelligence Unit (EIU), ICRA Management Consulting Services Ltd (IMaCS)
GROWING DOMESTIC DEMAND TO SUPPORT ALUMINIUM PRODUCTION

- Demand for aluminium is expected to pick up as the scenario improves for user industries like power, infrastructure and transportation.
- Production of aluminium stood at 3.65 MT in FY20.
- Aluminium export from the country reached 1.50 MT in FY19 and 0.52 MT in FY20. In value terms, aluminium export from the country stood at US$ 20.18 million in FY20.
- National Aluminium Company (NALCO), a central government-owned entity, is set to join the club of MT producers in the metal segment by 2020. NALCO has readied about US$ 3.72 billion investments for increasing its alumina, aluminium and power production capacities.

Note: CAGR - Compound Annual Growth Rate, F- Forecast, *CAGR is till FY20.
Source: CARE Ratings, Ministry of Mines, DGCIS, News Articles

Aluminium production (MT)

- FY16: 2.44 MT
- FY17: 2.90 MT
- FY18: 3.40 MT
- FY19: 3.69 MT
- FY20: 3.65 MT

*CAGR 10.62%
STRONGER ECONOMIC GROWTH TO SUPPORT ALUMINIUM CONSUMPTION

- Aluminum consumption reached 3.40 MT in FY19.
- Aluminum consumption is expected to reach 7.2 MT in the next five years.

### Aluminium consumption (million tonnes)

<table>
<thead>
<tr>
<th>Year</th>
<th>Aluminium consumption (million tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY16</td>
<td>1.99</td>
</tr>
<tr>
<td>FY17</td>
<td>3.00</td>
</tr>
<tr>
<td>FY18</td>
<td>3.21</td>
</tr>
<tr>
<td>FY19</td>
<td>3.40</td>
</tr>
<tr>
<td>FY21F</td>
<td>5.30</td>
</tr>
</tbody>
</table>

*CAGR 19.58%

Note: CAGR - Compound Annual Growth Rate, F – Forecast, *CAGR is till FY19
Source: Care Ratings, Indian Bureau of Mines
## MAJOR METALS AND MINING PLAYERS IN THE COUNTRY

<table>
<thead>
<tr>
<th>Segment</th>
<th>Major player</th>
<th>Market share</th>
<th>Other players</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron and Steel</td>
<td>Sesa Goa, SAIL, Orissa Minerals</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>80 per cent</td>
<td>Singareni Collieries Company, Reliance Natural Resources</td>
<td></td>
</tr>
<tr>
<td>Aluminium</td>
<td>60 per cent</td>
<td>National Aluminium Company (NALCO), Bharat Aluminium Company (BALCO)</td>
<td></td>
</tr>
</tbody>
</table>
NOTABLE TRENDS
NOTABLE TRENDS IN THE METALS AND MINING SECTOR (1/2)

Captive mining for coal
- In captive mining for coal, companies are permitted to set up coal washeries and for specified end uses, including the setting up of power plants, fertilizers and steel units.

Longer duration lease
- In the last few years, India has seen a significant growth in minerals with the Government granting lease for longer duration, between 20 to 30 years.

Focus on domestic market
- The demand for metal and metal products is rising in the domestic market with India being a net importer in the metals segment.

Overseas ventures
- In search of greater mineral opportunities, an increasing number of Indian mining companies are venturing overseas in a bid to secure stable, long-term supplies of minerals especially in the areas of coal and iron ore.
- Adani Enterprises’ Carmichael coal plant expects to make its first shipment by August 2021.

Outlook of metal and mining
- The index of mineral production was 132.7 in March 2020.
- Mining group under Index of Industrial Production (IIP) stood at 109.7 for FY20, showing a growth of 1.7 per cent y-o-y.

Source: Mining Global Inc.
### Cost optimisation

- Players in the industry are trying to minimise cost to gain competitive advantage.
- For example, SAIL is trying to reduce cost by:
  - entering into MoU for coal bed methane and propane gas to reduce cost of energy.
  - optimising input resources, operating efficiency for handling assets available with the company, reducing overhead costs and stabilising newly formed operation units.

### Focus on technology

- Players in the industry are focusing on optimising technology to increase process efficiency.
- Coal India Ltd has ambitious plans of using GPS/GPRS based vehicle tracking system to enhance productivity. It also has services such as E-auction and E-procurement of goods and services.
- Mining Industry in India has been dominated by surface mining. However, due to various challenges presented by surface mining, the move towards underground mining is considered inevitable. This presents an opportunity for players to enter the market with underground mining technology.

### Build strategic alliances

- Alliance with global and domestic players help companies to improve their operational performance through technological improvement and cost optimisation.

**Notes:** MoU – Memorandum of Understanding, GPS – Global Positioning System, GPRS - General Packet Radio Service

**Source:** SAIL Company website, Business Standard
GROWTH DRIVERS
STRONG FUNDAMENTALS AND POLICY SUPPORT AIDING GROWTH

Higher demand for metals
- Growing infrastructure investment
- Sustained growth in India's automotive sector
- Aluminum and coal benefiting from rising power production
- Rising production of cement increasing demand for coal

Policy support
- Relaxed FDI norms
- Allowing private ownership
- Reduced customs duty
- Tax and other incentives

Innovation
- Expanding research and development and distribution facilities in India
- Use of modern technology
- Providing support to global projects from India

Increasing investment
- Increasing FDI
- Increasing private participation

Notes: M&As - Mergers and Acquisitions, FDI - Foreign Direct Investment
Source: TechSci Research
A FAST-EXPANDING CONSTRUCTION SECTOR HAS AIDED GROWTH ... (1/2)

- India is witnessing a sustained growth in the infrastructure build up. The construction industry has witnessed a strong growth wave powered by large spends on housing, road, ports, water supply, rail transport and airport development.
- In March 2020, NHAI accomplished the highest ever highway construction of 3,979 km of national highways in FY20.
- Revenue growth has been strong over the years. Indian Railways’ revenue reached US$ 24.78 billion in FY20.
- Cargo traffic handled stood at 707.4 million tonnes (MT) in FY20.
- Electricity production reached 1,252.61 BU in India in FY20.
- It has been estimated that India is going to require US$ 4.5 trillion of investment by 2040 for infrastructure development.
- Government introduced National Infrastructure Pipeline with plans to invest Rs 100 lakh crore (US$ 1.43 trillion) over the next five years.

*Note:* F - Forecasts (by BMI), CAGR – Compounded Annual Growth Rate, BU- Billion Unit

*Source:* Business Monitor International’s (BMI) Report on infrastructure industry in India
A FAST-EXPANDING CONSTRUCTION SECTOR HAS AIDED GROWTH ... (2/2)

- Gross Value Added (GVA) in the construction sector grew almost 1.3 per cent y-o-y to Rs 10.33 trillion (US$ 146.58 billion) in FY20PE.
- Iron and steel being a core component of the real estate sector, demand for these metals is set to continue given strong growth expectations from residential and commercial building industry.

**Growth of construction goods classification under Index of Industrial Production**

*Note: PE – Provisional Estimated, YoY – Year on Year*

*Source: Business Monitor International’s (BMI) Report on infrastructure industry in India*
The power sector accounts for a large share of the consumption of coal in the country.

Installed capacity have increased steadily over the years, posting a CAGR of 7.19 per cent in FY16–FY20.

With electricity production of 1,252.61 BU in FY20, the country witnessed growth of around 0.26 per cent over the previous fiscal year.

Energy generation from conventional sources stood at 97.70 billion units (BU) in March 2020. Between 2017 and 2022, conventional sources are expected to witness capacity addition of 58.38 GW.

Around 81 per cent of the total power generation was done through thermal power plants, while hydro and nuclear plants contributed 15 per cent and 4 per cent respectively in FY20.

**Notations:**
- GW - Gigawatt
- ^ - Tentative
- @ CAGR till FY20
- * - till April 2020

**Source:** Ministry of Power, Central Electricity Authority (CEA)
### FAVOURABLE POLICIES ARE SUPPORTING THE SECTOR GROWTH

| **Mineral Laws (Amendment) Bill, 2020** | - Aims to open a new era in Indian coal and mining sector, specially to promote ‘ease of doing business’.
- It will boost coal production and will reduce dependency on import. |
| **National Mineral Policy 2019** | - To bring more transparency, better regulation and enforcement, balanced socio-economic growth along with sustainable mining practices.
- Proposed to grant ‘industry’ status to mining with an objective of boosting financing of private sector.
- Supported M&A of mining players. |
| **Relaxed FDI norms** | - FDI up to 100 per cent is permitted under the automatic route to explore and exploit all non-fuel and non-atomic minerals and process all metals as well as for metallurgy.
- FDI cap in the mining and exploration of metal and non-metal ores have been increased to 100 per cent under the automatic route.
- In March 2018, the Government allowed 100 per cent FDI in coal mining. |
| **Allowing private ownership** | - Government of India is encouraging private ownership for steel operations and other high priority industry. |
| **Reduced custom duty** | - Government of India significantly reduced the duty payable on finished steel products and has streamlined the associated approval process. |
| **Skill Development Plan for the Mining Sector (2016-22)** | - Focus on upgradation of skill sets to foster adaptation of new state of art technology.
- Increase the capacity and quality of training infrastructure and trainers to address human resource needs. |

*Notes: FDI - Foreign Direct Investment  
Source: TechSci Research*
**MMDR ACT**

**General restrictions and concessions**
- Reservation of areas for PSUs removed.
- State Government to set special courts to expedite prosecution in illegal mining.
- Statutory Coordination cum Empowered Committee at central and state level to decide upon stringent penalties for offences.

**Process of revenue collection and usage**
- Central Government to establish National Mineral Fund, while individual state governments to establish State Mineral Fund(s).
- District Mineral Foundation will be set up by state Government and will work for the interest and benefit of persons or families affected by mining related operation in the district – it will be managed by a governing council.
- The mining tax collected will be spent within the district.

**Relaxation on duties**
- The Basic Customs Duty (BCD) on
  - ships imported for breaking up is being reduced from 5 per cent to 2.5 per cent.
  - coal-tar pitch is being reduced from 10 per cent to 5 per cent.
  - battery waste and battery scrap is being reduced from 10 per cent to 5 per cent.
  - steel grade limestone and steel grade dolomite is being reduced from 5 per cent to 2.5 per cent.

**Notes:**
- FDI - Foreign Direct Investment
- Source: TechSci Research
### MINERAL AUCTION RULES, 2015

#### Mining lease
- Mining auctions conducted under the ambit of state Government.
- Types of lease granted:
  - Mining lease - where evidence of mineral contents is established.
  - Composite lease - combination of a prospecting licence and a mining lease.

#### Net worth requirements
- For annual average production up to
  - Rs 2 crore (US$ 311,090) – net worth required: Rs 50 lakh (US$ 77,773).
  - Rs 20 crore (US$ 3.11 million) – net worth required: Rs 10 crore (US$ 1.56 million).
  - Small bidders can include value of unencumbered immovable property in net worth.

#### Auction modalities
- Auctions are conducted electronically, and bidding is done over two rounds.
- The first round requires bidders to furnish technical details and initial offer must be equal to or higher than the set ‘Reserve Price’.
- The highest bid in the first-round acts as the ‘reserve price’ for the second-round in which only technically qualified bidders participate.
FOREIGN INVESTMENTS FLOWING IN INDIA

- FDI up to 100 per cent is allowed in exploration, mining, minerals processing metallurgy and exploration of metal and non-metal ores under the automatic route for all non-fuel and non-atomic minerals including diamonds and precious stones.

- During April 2000–March 2020, FDI inflow in metallurgical industries stood at US$ 13,401.78 million. During the same period, FDI inflow in mining, diamond and gold ornaments and coal production sectors stood at US$ 2,731.07 million, US$ 1,177.01 million and US$ 27.73 million, respectively.

Source: Department of Industrial Policy and Promotion
### MERGER AND ACQUISITIONS

#### M&A activities

<table>
<thead>
<tr>
<th>Acquirer</th>
<th>Target</th>
<th>Acquisition price (US$ billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ArcelorMittal</td>
<td>Essar Steel</td>
<td>6.01</td>
</tr>
<tr>
<td>Tata Steel</td>
<td>Bhushan Steel</td>
<td>7.04</td>
</tr>
<tr>
<td>Mr Anil Agarwal</td>
<td>Anglo American (Partial stake purchased)</td>
<td>2.0</td>
</tr>
<tr>
<td>JSW Energy Ltd</td>
<td>Jindal Steel and Power Ltd</td>
<td>0.97</td>
</tr>
<tr>
<td>SAIL</td>
<td>Reiterated its interest to acquire majority stake in Neelachal Ispat Nigam Ltd (NINL) in Jajpur, Odisha</td>
<td>-</td>
</tr>
<tr>
<td>Joint Venture between Vedanta Resources and Sesa Goa</td>
<td>Merger of Sterlite Industries (Indian subsidiary of Vedanta Resources ) and Sesa Goa</td>
<td>3.90</td>
</tr>
<tr>
<td>GVK Power and Infrastructure Ltd</td>
<td>Hancock Coal-Queensland Coal</td>
<td>1.26</td>
</tr>
<tr>
<td>Sesa Goa Ltd</td>
<td>Cairn India Ltd</td>
<td>1.18</td>
</tr>
<tr>
<td>JFE Steel Corp</td>
<td>JSW Steel Ltd</td>
<td>1.03</td>
</tr>
<tr>
<td>Lanco Resources Australia</td>
<td>Griffin Coal Mining Co Pty Ltd</td>
<td>0.72</td>
</tr>
<tr>
<td>Vedanta</td>
<td>Cairn India</td>
<td>1.56</td>
</tr>
<tr>
<td>Oil and Natural Gas Corporation (ONGC)</td>
<td>Gujarat State Petroleum – KG Basin</td>
<td>1.20</td>
</tr>
<tr>
<td>Tata Steel Ltd</td>
<td>Brahmani River Pellets Ltd</td>
<td>0.13</td>
</tr>
</tbody>
</table>

*Source: Thomson Banker, Deal Tracker*
## OPPORTUNITIES

<table>
<thead>
<tr>
<th>Untapped market with strong growth potential</th>
<th>Scope for new mining capacities in iron ore, bauxite and coal</th>
<th>Rapid growth of user-industries to drive demand for metals and minerals</th>
<th>Expansion of product line by existing players</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ India’s per capita steel consumption was 65.2 kgs in 2019 compared with the global average of 214.5 kgs.</td>
<td>▪ India has the world’s seventh largest reserve base of bauxite and fourth largest base of iron ore, which accounts for about 7 per cent and 11 per cent of the total world production, respectively.</td>
<td>▪ Strong long-term demand from the steel industry is expected to further boost the iron ore industry.</td>
<td>▪ The iron and steel segment offers a product mix which include hot rolled parallel flange beams and columns, rails, plates, coils, wire rods, and continuously cast products such as billets, blooms, beams, blanks, rounds and slabs as well as metallics and ferro alloy</td>
</tr>
<tr>
<td>▪ Between US$ 25 billion to US$ 33 billion is expected to be invested in the steel sector over the next 6-7 years.</td>
<td>▪ Moreover, India had the world’s fifth largest coal reserve at 319.02 billion tonnes in FY19.</td>
<td>▪ Increasing power production is likely to catapult demand for coal.</td>
<td>▪ Looking at the expected growth in the sector, existing manufacturers have a huge opportunity to expand their product line in new segments.</td>
</tr>
<tr>
<td>▪ Under the “Atmanirbhar Bharat” vision, Government plans to move around 500 mineral blocks through an open and transparent auction by repealing Section 10A2 (b) of the MMDR Act.</td>
<td></td>
<td>▪ Booming construction, automobiles and packaging industries are expected to lend substantial support to the metals and mining sector.</td>
<td></td>
</tr>
</tbody>
</table>

*Source: WSA, Ernst and Young*
OPPORTUNITIES IN THE IRON ORE SECTOR

Exploration in proposed exploration zones

- **Odisha**: Bonai (Keonjhar belt) and Tomka (Daitari and Umerkoke belts).
- **Jharkhand**: All major high-grade ore deposits; contain low-grade lateritic ores.
- **Karnataka**: Bagalkot, Tumkur, and Chitradurga districts.
- **Maharashtra**: Sindhudurg, Gadchiroli and Gondia.
- **Chhattisgarh**: All 14 deposits of Bailadila range, Dantewada district.
- **Andhra Pradesh**: Kadapa, Kurnool, Karimnagar, Adilabad, and Guntur districts.

Scope for new mining capacities in iron ore, bauxite and coal

- **Pelletisation capacity is about 59.30 metric tonnes per annum (MTPA)**.
  - Sintering capacity is about 70.05 MTPA*.
- **Scope for domestic and foreign firms to explore PPP opportunities.**
  - Joint Venture or technical participation with midcap players with lease/license and seeking capital, expertise and technology.
  - Through the auction route, players can get access to coal mines and iron ore reserves.

*Notes: MT - Metric Tonnes, MTPA - Metric Tonnes Per Annum, *: As per Indian Minerals Yearbook 2017

*Source: PwC, Ministry of Mines*
<table>
<thead>
<tr>
<th>Agency</th>
<th>Contact Information</th>
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<tbody>
<tr>
<td>SAIL – Steel Authority of India Ltd.</td>
<td>118, 1st Floor, Ramanashree Arcade</td>
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<td></td>
<td>18, M. G. Road</td>
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<td></td>
<td>Bengaluru, Karnataka-560 001</td>
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<tr>
<td></td>
<td>Phone: 91- 80-25582197, 25582757</td>
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<tr>
<td></td>
<td>Fax: 91-80-25594535</td>
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<td>E-mail: <a href="mailto:aluminium@eth.net">aluminium@eth.net</a></td>
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<td>Federation of Indian Mineral Industries</td>
<td>FIMI House, B-311, Okhla Industrial Area</td>
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<td>Phase-I, New Delhi-110 020</td>
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<td>Phone: 91-11- 26814596</td>
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<td>Indian Stainless Steel Development Association</td>
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<td>Fax: 91-124 - 4375509</td>
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<td></td>
<td>E-mail: <a href="mailto:nissda@gmail.com">nissda@gmail.com</a></td>
</tr>
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USEFUL INFORMATION
APPENDIX

- BMI’s Mining Business Environment Ratings
  - Market structure: It takes into consideration mining output in US$ billion, sector value growth, per cent y-o-y, mining sector, per cent of GDP
  - Country structure: It takes into consideration labour market infrastructure, physical infrastructure, tax, and scope of state
  - Market risks: It considers metals prices, 5-year forecast average, metals price forecast, average 5-year growth, regulatory framework, legal framework
  - Country risk: It considers, long-term external risk, corruption, bureaucracy, long-term policy continuity
  - Mining ratings: It shows the overall scores of the above indicators
GLOSSARY

▪ CAGR: Compound Annual Growth Rate
▪ FDI: Foreign Direct Investment
▪ FY: Indian Financial Year (April to March); So, FY10 implies April 2009 to March 2010
▪ GOI: Government of India
▪ IBM: The Indian Bureau of Mines
▪ MoU: Memorandum of Understanding
▪ PPP: It could denote two things (mentioned in the presentation accordingly) –
  • Purchasing Power Parity (used in calculating per-capita GDP)
  • Public Private Partnership (a type of joint venture between the public and private sectors)
▪ PE: Private Equity
▪ US$: US Dollar
▪ Wherever applicable, numbers have been rounded off to the nearest whole number
## Exchange Rates

### Exchange Rates (Fiscal Year)

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### Exchange Rates (Calendar Year)

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*Source: Reserve Bank of India, Average for the year*
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