



INDIA: Business Opportunities in Coal Mining

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Summary

India boasts significant mineral resources and coal constitutes over 80 percent of the mining activities in India. India has approximately 2618 operating mines, 88 percent of which are private. However, the Indian Government-owned mines contribute over 85 percent of the total value of mineral production. Nevertheless, trends point towards increased privatization in the mining sector in India, so U.S. firms should aim to market to both public and private sector entities.

The Indian market for mining and mineral processing equipment is estimated at \$2.2 billion. The market grew by nearly 4 percent in 2006. This growth rate will likely continue, given the projected shortfall in coal supply and increased competition that privatization will bring. Estimated investment of \$21 billion in opencast mining and \$5 billion in underground mining will be required to attain the target production level by 2025. Although Indian firms produce a large amount of mining equipment, U.S. firms will be competitive for providing high-end equipment and advanced technologies. Most of the global technology leaders are present in India as joint venture companies, or have set up their own manufacturing facilities, or marketing companies.

Market Demand

India is endowed with significant mineral resources. The value of mineral production in India, excluding atomic minerals, was around \$16.5 billion in 2005. India has 2326 private and 292 public sector mines. Over 80 percent of the mining activities in India are in coal. Coal mining started in India in 1774. Considering India's limited reserve of petroleum & natural gas, ecological concerns regarding hydropower and low base of nuclear power, coal will continue to occupy the center-stage of India's energy scenario.

Mining in India has been kept as a government undertaking since 1950s. In the last few years, however, the economy has been liberalized, tariffs lowered, state enterprises privatized and the country opened to investment in mineral exploration. There is a need for upgraded equipment and technology in many of India's mines and modernization is underway, particularly in the coal sector. There exists considerable scope for augmenting the resource position by further exploration of known deposits and discoveries of new deposits, adopting state-of-the-art technology and modern methods like aerial reconnaissance or geophysical surveys. The coal sector has been partially opened for private investment. Many coal blocks have been allotted to interested private companies with the condition that the coal produced could be used only for captive consumption in power plants, steel, cement and fertilizer plants or any other utilities.

The Ministry of Coal has the overall responsibility of determining policies and strategies in respect to the exploration and development of coal and lignite reserves, sanctioning of important projects of high value and deciding all related issues. The Ministry supervises Public Sector Undertakings, namely, Coal India Ltd. (and its subsidiaries), Neyveli Lignite Corporation and Singareni Collieries Company Limited.

The guidelines for coal block allocation were amended so as to allow independent coal mining company allocation of captive blocks on the condition that the entire amount of coal/lignite mined would be transferred to an end user company(ies) for their captive consumption in the specified end uses. During 2006, the Government allocated 16 blocks with gross reserves of 3.924 billion tons for captive mining to various companies in private sector and 38 coal blocks with gross reserves of 15.45 billion tons were allocated to government-owned companies for captive and commercial mining. Applications were invited for allocation of 27 more blocks (10 blocks for Power sector and 17 blocks for non-power sector) to government owned companies. Further, 81 coal blocks having total geological reserves of about 20.02

billion tons were identified for allocation to government/private sector for permissible end-uses. Out of the above 81 coal blocks, 39 coal blocks with about 6 billion tons of reserves were recently advertised and applications invited for allocation to companies for specified end uses.

Increased mining activity at Coal India coupled with replacement demand for aged heavy engineering and mining machinery is expected to boost demand for mining equipment. The \$60 billion anticipated investment in power generation between 2007-2012 is expected to create significant market opportunity for mining and material handling equipment providers. Ten per cent of the cost of setting up of new thermal power plant is material handling equipment. The Coal Ministry estimates that an investment of \$21 billion in opencast mining and \$5 billion in underground mining will be required to attain the target production level by 2025. Likewise, the Indian Planning Commission estimates that demand for coal will be around 800 million tons by 2011, and this will greatly exceed supply. In 2007, projected shortfall in coal supply is 50 million tons. Large power generating stations have reported a dip in their average stock of coal in 2006. Foreign Direct Investment (FDI) is permitted in coal sector in captive mines with no Foreign Investment Promotion Board (FIPB) approval required with foreign equity less than 50 percent. Higher equity is allowed with FIPB approval depending on end-use. Current policy allows FDI in coal and lignite mining for captive consumption for power generation (100 percent), steel and cement (74 percent). In coal processing (washing and sizing), 100 percent FDI is allowed. The Investment Commission estimates \$30-40 billion investment opportunity over next ten years to explore and develop new coal mines, manufacture and sell state-of-art mining equipment and technology and create related infrastructure for off-take of mined coal.

The Coal Mining Task Force formed under the Asia Pacific Partnership on Clean Development & Climate Change has identified 16 project areas to promote sustainable mining practices among member countries including India. Details are available on <http://www.state.gov/documents/organization/75483.pdf>

Market Data

Coal is the most important and abundant fossil fuel in India, with the country ranking third in worldwide production (407 million tons) and consumption (425 million tons) of coal & lignite. Coal accounts for around sixty percent of the country's energy need, with reserves being estimated by the Geological Survey of India at 247.85 billion tons whereas lignite reserves in the country have been estimated at around 36 billion tons. Hard coal deposits, spread over 27 major coalfields, are mainly confined to the eastern and south central parts of India. India has a potential coal-bearing area of about 22,400 sq. kilometers, of which only about 45 percent has been partially explored. India imports about 25-30 million tons of coal per year, which includes some 10 million tons of coking coal. However, in view of growing shortage of coal, imported thermal coal is becoming attractive to Indian customers, especially those along the coastline.

The Indian market for mining and mineral processing equipment is estimated at \$2.2 billion. Around 80 percent of this is estimated to be in the coal mining sector. During April-November 2006, the mining sector grew by 3.8 per cent compared to 0.5 per cent in the previous year corresponding period. Opencast mines contribute over 80 percent of the total production. A number of large opencast mines of over 10 million tons per annum capacity are in operation. Shovels with a capacity of 25 cu. m., Dumpers of 170 tons, Draglines of 24/96 capacities and crushing conveying systems are deployed in hard coal opencast mines. Large capacity bucket wheel excavators are in operation for lignite mining.

Underground mining currently accounts for around 19% of national output. Most of the production is achieved by conventional Bord and Pillar mining method. Intermediate technologies using Side Discharge Loaders and Load Haul Dumpers in Bord and Pillar method of working have been introduced. Contemporary technology in the form of Longwall Powered support has also been introduced in a limited scale.

With the focus on increased productivity and private investment in mining, India is anticipated to become a major market for advanced mining equipment and technology from the United States and other foreign countries like Australia and Germany. A few large manufacturers in each product segment dominate the mining equipment industry. Most of the global technology leaders are present in India as joint venture companies, or have set up their own manufacturing facilities, or marketing companies. The industry has made substantial investments in the recent past for setting up manufacturing bases, despite small volumes and uneconomic scales of production. Although the country has a fairly large domestic manufacturing base supplying about 60 percent of the requirement, the scope for direct imports of advanced mining equipment and technology will grow. Moreover, the large domestic manufacturers have foreign licensing agreements, which allow indirect import of the critical components for local assembly and incorporation in the indigenous equipment. Given the liberalized Mineral Policy of the government, and with private entrepreneurs investing in mining industry here, the opportunity for U.S. firms to enter the Indian market through direct exports, joint ventures and technical collaborations has grown immensely.

Best Prospects

The top prospects for U.S. firms include:

- Longwall loaders and draglines
- Continuous mining technology
- Mineral screening, washing, crushing and grinding equipment
- Coal Bed Methane
- Excavators, shovels and coal/rock cutters
- Jumbo drills and long wall machinery
- Underground communication and safety systems
- Underground coal gasification
- Feeder crushers and special stage loaders
- Hydraulic/friction props and chocks
- Coal beneficiation, washeries and gasification plants
- Mine safety equipment

Besides new equipment, some of India's private developers of mines are also interested in exploring the possibility of getting used or reconditioned equipment at a reasonable cost.

Key Suppliers

There are 32 manufacturers in the organized sector, both public and private, for underground and surface mining equipment of various types. Out of the 32, there are 17 units manufacturing underground mining equipment.

The Indian company, Bharat Earth Movers Limited, has about 50 percent market share in the earthmoving equipment category. Other leading Indian companies include Telcon and L&T.

Most of the international suppliers and technology leaders like Case, Caterpillar, Hitachi, Ingersoll-Rand, JCB, John Deere, Joy Mining Machinery, Komatsu, Liebert, Poclain, Terex, Bucyrus and Volvo are present in India as joint venture companies, or have set up their own manufacturing facilities, or marketing companies. However, U.S. participation in the Indian mining sector has not lived up to its full potential. The U.S. Government, through the Department of Energy, has recently started engaging India's Ministry of Coal on a few bilateral programs but the progress has been slow. By contrast, Britain, Germany, France, the CIS, Japan and Australia have all aggressively expanded their respective technical orientations and equipment sales among Indian end-users. The Indo-U.S. Coal Working Group was formed in June 2001. In the International Mining & Machinery Exhibition 2006, which is India's largest mining trade event, Australia was the partner country and brought a delegation of over 40 companies to participate. India has established Joint Working Groups with France, Germany, Russia, Canada, Poland, Australia and China with a view to import the latest technologies. Volvo India produces mining trucks in India and plans to export the same to South East Asia.

Prospective Buyers

Coal India Ltd. (CIL), a large Government-owned conglomerate, mines more than 80 percent of India's coal reserves. CIL, along with its eight subsidiaries, is the largest buyer for coal mining equipment in the country. The Ministry of Coal, Government of India, directly administers CIL. CIL also overlooks the activities of Central Mine Planning & Design Institute Ltd. (CMPDIL), which acts as a centralized planning organization assisting in mine operations and design. Although cash-rich, CIL has burdensome tendering procedures and has been known to insert challenging terms and conditions. That said, CIL is the most important contact for U.S. companies interested in exporting coal-mining equipment to India. CIL and its subsidiaries offer both investment and export opportunities for U.S. companies in the mining sector. For details of various CIL tenders and investment opportunities, please visit <http://www.coalindia.nic.in/>

Two other government-owned companies in South India – Singareni Collieries Ltd. in Andhra Pradesh and Neyveli Lignite Corporation in Tamil Nadu -- are other important end users of coal mining equipment. In the private sector, Tata Iron & Steel Company Ltd. (TISCO) in Jamshedpur, Jharkhand continues to be a major buyer of equipment for its captive coalmines. India's private sector power utility companies like Reliance, CESC, and Tata are also working on projects to develop, own and operate captive coal mines which will require latest technology and equipment.

Market Entry

U.S. mining companies can have comprehensive or project-based business joint ventures with local firms. Partnership with local companies is recommended in the early phase of market entry for small and medium enterprises. If the response from key clients is good, it is also worthwhile to open an office. U.S. companies need to understand the government system of functioning, particularly since all of CIL's purchases must be made through government tenders.

A foreign company has the following options as part of its market entry strategy:

- a) Wholly owned subsidiary company- this is treated as an Indian company for all regulations. At least two shareholders are mandatory for a private limited company and seven for a public limited company..
- b) Joint venture with an Indian partner, preferably with majority equity participation -- this is again treated as an Indian company. Such strategic alliances are forged with local companies having substantial experience and expertise in the relevant line of activity.
- c) Liaison office -- this is treated as a foreign company. Its role is limited to collecting information about the possible market and providing information about the company to prospective clients. Such offices act as "listening and transmission posts," and are not allowed to undertake any business activity and cannot earn any income in India as per approval granted by the Reserve Bank of India.
- d) Project office -- this is treated as a foreign company, meant for executing specific projects.
- e) Branch office -- this is treated as a foreign company, meant for foreign companies engaged in manufacturing, trading and consulting; with prior approval of Reserve Bank of India.

U.S. companies planning to export mining equipment to India are advised to check with DGMS (spell out what this is) if its approval is required for their specific mining equipment. A list of equipment approved and the procedure for getting approval is also available on the website:

http://www.dgms.net/approval_list.htm

The Indian mining industry actively seeks foreign equipment where required. Procurement by Indian public and private sector mining companies is generally based on an open tender system with global tenders for large projects. The tender system generally entails a two-bid system -- technical bid and commercial bid. The commercial bid is opened for only those bidders who meet the technical requirements. Price, quality, track record, conformity to specifications, and ease of maintenance are some of the key factors that are taken into consideration in selecting a vendor. As the tender system

requires constant interaction with the buyer, it is advisable to retain a local agent or representative to keep abreast of the latest developments. Companies planning to market products that require regular maintenance or availability of spares should ensure that they convince the buyer about ready availability of training and after sales service. In major tenders for procurement of mining equipment, U.S. companies may consider bundling their offer with attractive financial package to gain a competitive advantage. The U.S. Export Import Bank is active in the Indian market and U.S. companies should aggressively seek its funding. Some foreign companies already have either technical collaborations or joint ventures with Indian mining equipment manufacturers.

Mining has been classified as a manufacturing activity under the Export Promotion Capital Goods (EPCG) Scheme. Capital goods imported for mining would qualify for reduced rates of customs duty subject to certain export obligations.

Market Issues & Obstacles

The public sector contributes over 85 percent of the total value of mineral production. However, it is the avowed policy of the Government to withdraw from the non-strategic sectors, according to the National Mineral Policy, 1993. Accordingly, the public sector undertakings are being privatized in a phased manner and also private investment, including foreign direct investment, is being allowed for mining and processing of most minerals. Guidelines are being amended to allow stand-alone mining companies to apply for captive coal blocks reserved for cement, steel and power sector players. Under the provisions in Section 3 (3) of Coal Mines (Nationalization) Act, 1973, coal mining was mostly reserved for the public sector. Amendments to Coal Mines (Nationalization) Act, 1973 have been done to facilitate captive mining in approved end-use industries. 38 coal blocks with reserves of over 6 billion tons of coal have been identified for this purpose. Privatization not only increases productivity at the mines, but also brings in much needed fresh investments for new mining equipment and technology. Recommendations made by a high-level committee appointed by Government of India are likely to lead to changes creating a seamless transition for foreign companies from reconnaissance to prospecting and then to mining.

For the equipment required for open cast mining like dumpers, dozers, shovels, draglines and excavators, the level of technology of the equipment manufactured is at par with international standards except with respect to usage of electronic controls, hydraulic systems and engines adhering to the latest emission norms. Size of equipment used is also lower than international benchmarks. The business of mining equipment rental is very nascent. With the high technology barrier, the role of small- & medium sector industries is reduced to manufacturing components and sub-assemblies.

Trade Events

ELECTRA MINING INDIA 2007: This is a large trade show for the Mining sector in India and will be held in November 22-24, 2007 in Calcutta, India. Details are available at <http://www.electramining-india.com/>

9th INTERNATIONAL MINING & MACHINERY EXHIBITION (IMME), 2008: This is India's largest mining trade show, organized by Confederation of Indian Industries (CII). Venue is to be announced. Australia was the partner country in the 2006 show, and brought a delegation of over 40 companies. Details will be available at www.immeindia.com

Resources & Key Contacts

Key websites:

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| Ministry of Coal and Mines | http://www.coal.nic.in ; http://mines.nic.in |
| Coal India Limited | http://www.coalindia.nic.in |
| Mineral Exploration Corporation Ltd. | http://www.meclindia.com/ |
| Central Mine Planning & Design Institute Limited | http://www.cmpdi.co.in/ |
| Indian Institute of Coal Management, Ranchi | http://www.iicm-india.com/ |
| Publications of Indian Bureau of Mines | http://ibm.nic.in/publications.html |

Department of Heavy Industry- Report

<http://www.dhi.nic.in/MINING-CONSTN-EQUIPMENT.pdf>

For More Information

For more information on the coal sector in India and how to tap into commercial opportunities, please contact Commercial Specialist Arup Mitra at the U.S. Commercial Service in Calcutta, India via e-mail at: arup.mitra@mail.doc.gov; Phone: 91-33-3984 6400; Fax: 91-33-2288 1207 or visit our website:

www.buyusa.gov/india

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