INTERNATIONAL TRADE ADMINISTRATION

Coal News and Trends

Upcoming Events:

- **ITA Clean Energy Trade Mission to China and India, January 8-14, 2008**
  The January 2008 ITA Clean Energy Trade Mission builds on the first U.S. Clean Energy Technologies Trade Mission, which took place in April 2007 and brought 17 U.S. companies to China and India. China recently announced its first national plan to address climate change, calling for a 20 percent reduction in energy consumption per unit of GDP by 2020 while increasing the use of renewable energy. By 2020, China plans to spend nearly $200 billion to increase renewable energy use to 15 percent of total supply. India plans 100 gigawatts (GW) of new power over the next ten years, including 10 GW from renewable sources. This plan includes the electrification of 18,000 remote villages, and a goal to meet 10 percent of its energy demand using clean energy by 2012. U.S. companies have the opportunity to take part in either the China portion of the mission (January 8-13 in Beijing, Guangzhou, and Hong Kong) and/or the India portion of the mission (January 14-18 in Kolkata and Bangalore). For additional information and application procedure, visit www.export.gov/cleanenergymission or contact Justin Rathke at (202) 482-7916.

- **International Mining, Exploration Mineral Processing & Technology Exhibition (IME) Show, January 17-20, 2008**
  The IME 2008 in India will run concurrently with the 2nd Asian Mining Congress. Both events offer unparalleled opportunities for companies in the coal and mining industry. The four-day international exhibition will be held at Netaji Stadium & Khudiram Hall Complex in Kolkata, from January 17 to January 20, 2008. There will be a number of exhibits of mining machinery, safety and rescue equipment, and communication and logistical equipment. This event will provide an ideal forum for minerals and coal producers, manufacturers of mining machinery and equipment, and mining professionals and experts to discuss business and productivity goals while creating new partnerships and addressing important sustainability issues. The U.S. Commercial Service is managing a U.S. Pavilion of U.S. coal and mining companies as part of the IME event. U.S. companies that would like to take part in the event and meet with Commercial Service trade specialists to discuss export opportunities to India are encouraged to contact Ms. Aileen Nandi at Aileen.Nandi@mail.doc.gov.

Policy Analysis:

DOE Issues Final Environmental Impact Statement on Coal-to-Clean Fuels Project

http://fossil.energy.gov/news/techlines/2007/07074-WMPI_EIS_Released.html
October 25, 2007

Washington, DC - The U.S. Department of Energy has issued its final Environmental Impact Statement for the Waste Management and Processors Inc. (WMPI) clean coal project in Gilberton, PA. Selected in 2003 in the first round of the Clean Coal Power Initiative, WMPI will head a team to build and operate the plant that will produce clean electricity, high-value industrial heat, and nearly 5,000 barrels per day of clean-burning diesel fuel from raw anthracite wastes. At the core of the advanced process will be a coal gasification process that will turn the wastes

into a chemically-rich source of gas. A portion of the gas will be converted into diesel while the rest will be combusted to make electricity and steam. The Energy Department's share of the $612 million project is $100 million.

Market Analysis:

Business Opportunities In India's Coal Mining Sector

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Summary:

India boasts significant mineral resources, with coal constituting over 80 percent of its mining activities. India has approximately 2618 operating mines, 88 percent of which are private. However, government-owned mines contribute to over 85 percent of the total value of mineral production. As trends point towards increased privatization in the mining sector in India, U.S. firms have significant market opportunities in both public and private sector coal mining entities in India.

The Indian market for mining and mineral processing equipment is estimated at $2.2 billion, and it 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 of $5 billion in underground mining will be required to attain target production levels by 2025. Although Indian firms produce a large amount of mining equipment, U.S. firms will be competitive 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:

The value of mineral production in India, excluding atomic minerals, was approximately $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. Considering India's limited reserves of petroleum and natural gas, ecological concerns regarding hydropower and nuclear power, coal will continue to occupy the center-stage of India's energy scenario.

Mining in India has been controlled by the government since the 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, as well as adoption of state-of-the-art technology, such as 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 on the condition that the coal produced be used only for captive consumption in steel, cement and fertilizer plants, power 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 and sanctioning of important projects of high value. 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 companies allocation of captive blocks on the condition that the entire amount of coal/lignite mined would be transferred to an end-user companies for their captive consumption for 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 the private sector. Thirty-eight coal blocks with gross reserves of 15.45 billion tons were allocated to government-owned companies for captive and commercial mining. Applications were solicited for allocation of 27 additional blocks (l0 blocks for the power sector and 17 blocks for non-power sectors) to government-owned companies. Further, 81 coal blocks having total geological reserves of approximately 20 billion tons were identified for allocation for government and private sector entities for permissible end-uses. From the above 81 coal blocks, 39 coal blocks with approximately 6 billion tons of reserves were recently released, and applications solicited for allocation to companies for specified end uses.

Increased mining activity at Coal India, Ltd. coupled with replacement demand for aged heavy engineering equipment and mining machinery is expected to boost demand for mining equipment. The $60 billion anticipated

for investment in power generation between 2007-2012 is expected to create significant market opportunities for mining and material handling equipment providers. Ten percent of the cost for establishing new thermal power plants consists of investments in 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 approximately 800 million tons by 2011, which will greatly exceed supplies. In 2007, projected shortfall in coal supply is estimated at 50 million tons. Large power generating stations have reported a drop in their average stock of coal in 2006. Foreign Direct Investment is permitted in the coal sector for captive mines, with no Foreign Investment Promotion Board approval required when foreign equity is less than 50 percent. Higher equity is allowed with FIPB approval depending on end-use. Current policy allows foreign investment 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 foreign investment is allowed. The Investment Commission Estimates investment opportunity of $30-40 billion over the next ten years to explore and develop new coal mines, manufacture and sell state-of-art mining equipment and technology, and create the infrastructure required for movement of mined coal.

The Coal Mining Task Force formed under the Asia Pacific Partnership on Clean Development and Climate (APP) has identified 16 project areas to promote sustainable mining practices among APP 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 and lignite. Coal accounts for approximately 60 percent of the country's energy needs, with reserves estimated by the Geological Survey of India at 247.85 billion tons, of which 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 to 30 million tons of coal per year, including some 10 million tons of coking coal. However, in view of growing shortages 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. Approximately 80 percent of this market is estimated to be specifically in the coal mining sector. From April to November 2006, the mining sector grew by 3.8 per cent compared to 0.5 per cent in the previous year's corresponding period. Opencast mines contribute over 80 percent of the total production. A number of large opencast mines of over 10 million tons per year capacity are in operation. Shovels with a capacity of 25 cubic meters, 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 approximately nineteen percent of national output. Most of the production is achieved by the conventional board and pillar mining method. Intermediate technologies using side discharge loaders and load haul dumpers in the board and pillar method have been introduced. Contemporary technology in the form of longwall powered support has also been introduced on a limited scale.

With the focus on increased productivity and private investment in mining, India will become a major market for advanced mining equipment and technology from the United States and other foreign countries, notably Australia and Germany. A few large manufacturers in each product segment dominate the mining equipment industry. The industry recently has made substantial investments in establishing manufacturing bases, despite small volumes and uneconomic scales of production. Although the country has a fairly large domestic manufacturing base supplying about sixty percent of requirements, 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 importation of the critical components for local assembly. Given the liberalized Mineral Policy of the government, coupled with existing private sector investments in the mining industry, 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 • Excavators, shovels and coal/rock cutters • Feeder crushers and special stage loaders • Continuous mining technology • Jumbo drills and long wall machinery • Hydraulic/friction props and chocks • Mineral screening, washing, crushing and grinding equipment • Underground communication and safety

systems • Coal beneficiation, washeries and gasification plants • Coal bed methane equipment • Underground coal gasification equipment • Mine safety equipment

In addition to new equipment, some of India's private mine developers are also interested in exploring the possibility of obtaining used or reconditioned equipment at reasonable costs.

Key Suppliers:

There are 32 manufacturers, in both the public and private sectors, for underground and surface mining equipment. Of the 32 manufacturers, there are 17 units manufacturing underground mining equipment. The Indian company, Bharat Earth Movers Limited, has approximately a fifty percent market share in earthmoving equipment. Other leading Indian companies include Telcon and L&T. The majority of the international suppliers and technology leaders , such as Case, Caterpillar, Hitachi, Ingersoll-Rand, JCB, John Deere, Joy Mining Machinery, Komatsu, Lieberr, 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 has engaged India's Ministry of Coal on a few bilateral programs, though progress has been slow. By contrast, Britain, Germany, France, the CIS, Japan and Australia have all aggressively expanded their respective equipment sales among Indian end-users. For the 2006 International Mining & Machinery Exhibition, which is India's largest mining trade event, Australia brought a delegation of over 40 companies to participate at the event. India has established Joint Working Groups with France, Germany, Russia, Canada, Poland, Australia and China with a view to import the latest technologies.

Prospective Buyers:

Coal India Ltd. mines more than eighty percent of India's coal reserves, and, along with its eight subsidiaries, is the largest buyer for coal mining equipment in the country. Coal India, Ltd. also oversees the activities of the Central Mine Planning & Design Institute Ltd. which serves as a centralized planning organization assisting in mine operations and design. Although cash-rich, Coal India Ltd. has burdensome tendering procedures and has been known to insert challenging terms and conditions. That said, Coal India Ltd. is the most important contact for U.S. companies interested in exporting coal-mining equipment to India. Coal India Ltd. 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 additional 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. 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 the latest technology and equipment.

Market Entry:

U.S. mining companies can establish either 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 favorable, it is also worthwhile to open an office within India. U.S. companies need to understand the government system of operation, particularly as all of Coal India Ltd.'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 regulation purposes. 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 also 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 or earn any income in India unless authorized by the Reserve Bank of India.

D) Project office: This is treated as a foreign company, intended for implementing specific projects.

E) Branch office: This is treated as a foreign company, with the majority engaged in manufacturing, trading and consulting, and requires prior approval from the Reserve Bank of India.

U.S. companies planning to export mining equipment to India are advised to check with India's Directorate General of Mines Safety (DGMS) if its approval is required for their specific mining equipment. A list of equipment approved and the procedure for obtaining approval is also available on the website:

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

The Indian mining industry actively seeks foreign equipment. 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, a technical bid and a commercial bid. The commercial bid is open 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 of availability of training and after-sales service. In major tenders for procurement of mining equipment, U.S. companies may consider bundling their offer with an 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 to over 85 percent of the total value of mineral production. However, it is the policy of the Government to withdraw from the non-strategic sectors, according to the National Mineral Policy of 1993. Accordingly, the public sector undertakings are being privatized in a phased manner and private investment, including foreign direct investment, is being allowed for mining and processing of most minerals. Guidelines are being amended to allow 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 of 1973, coal mining was mostly reserved for the public sector. Amendments to the Coal Mines (Nationalization) Act of 1973 have been implement to facilitate captive mining in approved end-use industries. Thirty-eight 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 investments for new mining equipment and technology. 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 standards. The size of equipment utilized in India is lower than international benchmarks. The business of rental mining equipment is very nascent. With the high technology barrier, the role of small and medium sector industries is limited to manufacturing components and sub-assemblies.

Upcoming Trade Events:

INTERNATIONAL MINING & MACHINERY EXHIBITION (IME), 2008: This is India's largest mining trade show, organized by the Confederation of Indian Industries (CII). Details are available at http://www.indianmining.com/client/index.aspx?page=1Resources & Key Contacts

Key websites:

Ministry of Coal and Mines: http://www.coal.nic.in; http://mines.nic.in
Coal India Ltd.: http://www.coalindia.nic.in
Mineral Exploration Corporation Ltd.: http://www.meclindia.com/
Central Mine Planning & Design Institute Ltd.: 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