

[CHALLENGES OF COAL LOGISTICS IN INDIAN PORTS]

[GV Radhakrishnan, IIMA, 918460108991, radhakrishnan@iimahd.ernet.in]

Overview

With the liberalization of the Indian economy, the demand for power in India ranks among the highest in the world and has been increasing at an annual compounded growth rate of about 9%. Indian thermal power production has undergone rapid expansion. The countries in close proximity to India with thermal coal available for export are primarily Indonesia, South Africa and Australia however other exporters such as Russia and Colombia have occasionally exported coal to India. The grade of coal required for generation power plants in India typically exceeds the quality specifications of domestic coal thus guaranteeing a market for imported coal

The estimates of coal requirement vary depending on assumptions regarding the fuel and technology mix in future generating capacity, however coal-based power generation is central to the energy needs and consequently demand for thermal coal in the country is bound to increase at a rapid rate. Hence, economic growth is conditional on the security of its rising energy needs.

A key policy initiative by the central government to increase power generation capacity is the ultra-mega power plants (UMPP) Policy. UMPPs are coal-based power plant projects with over 4000 MW capacity using supercritical technology and awarded through competitive tariff-based bidding (MOP, 2007b). The coastal UMPPs are exclusively dependent on imported coal.

India ranks fourth and accounts for about 10% of the world's coal import demand. The Indian Planning Commission, in 2014 indicated that the import dependence for the chosen pathway on an overall basis for coal supply is expected to increase from 18 per cent (2012) to 62 per cent (2047).

The domestic coal resources of the country are not evenly spread and are largely concentrated in the north eastern part of India. The power sector consumes about 2/3rd of this domestic coal. The thermal coal traffic in Major ports was 43.4 million tons in 2009-10. The CEA reports indicate that with about 38 MT of indigenous coal is expected to be transported through sea route, thus the total non-coking coal traffic for power sector including coastal movement would be 287 million tons (161 MT (indigenous) + 50 MT (imported coal) + 38 (coastal transportation)*2) say 290 MT by the end of XII Five Year Plan (2012-17).

The existing coal capacity in the Indian ports was fully utilized to transport approximately 40 million tons of coal (steam and coking coal) and coastal movement of coal. Efforts are being made to increase port coal handling capacity. In addition efforts are also being made to rationalize coal traffic on east and west coasts. In addition to domestic capacity, Indian entities have acquired port capacity abroad. Mundra's Abbot Point terminal, Australia when developed will handle 50 million tons annually.

The total investment of USD 2306 billion is estimated on overall energy supply infrastructure from 2011 to 2035, or an average USD 92 billion per year. India's energy investment for the year 2006-2030 was projected at \$1250 billion (World energy Outlook, 2007). Three-quarters of total energy-related investment needs up to 2030 for were for power infrastructure.

[#MoS2011;] envisages capacity enhancement in the Indian port from 963 million tons (2009-10) to reach 3.12 billion tons by 2019-20. In 2010-11 the major ports handled 73MT of coal traffic while the port capacity required for handling both imported coal as well as coastal shipment is expected to be in the range of 100-125 MTPA. The capacity in the Indian ports is about 1247 million tons (2011-12). The capacity addition planned during the XII Five Year Plan (2012-17) is about 1440 million tons.

With India increasing dependent on imported thermal coal for its power requirements, this paper studies the coal transportation infrastructure in India with focus on the port capacity in India to handle the large volumes of imported and domestic coal.

Methods

The study will carry out a demand supply assessment of coal handling capacity in the Indian Ports. It will review various publications of the Central government, Indian Ports Association and the Major and Minor Ports to study the existing and upcoming coal handling capacity in the Major and Non-Major ports of India. If necessary econometric forecasts will be made and interviews of concerned port authorities will be carried out.]

Results

The results will indicate the supply demand gap and ability of the Indian Ports to handle the coal movements in forecasted future. It will also indicate shortfalls in effectiveness of the port capacity planning and execution of projects and any other socio-economic factors with effect the positioning of adequate capacity in time.

Conclusions

The study highlights the infrastructure shortfalls in the maritime sector. It will inter alia also highlight lack of adequate evacuation infrastructure - rail rakes, rail capacity etc. The focus of the government is to minimize internal movement and encourage coastal shipping of coal. The study inter alia will also highlight the increasing concentration of coal handling (and storage) capacity with select operators viz Adani logistics controls about 50 per cent of coal imports to the country.