

Opening up Thar Coal for non-power uses



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Thar coal has come up a long way. Two blocks are functional with an installed power capacity of 2000 MW. Power sector has helped opening up of the Thar coal which was lying dormant after its discovery in 1980s. Several attempts were made to make a breakthrough but failed. Solving federal vs provincial control issue took a period of full five years. On the other side of the border, India also has the same continuation of Thar Desert which India stated exploiting in 1970s and is about to consume it all in less than a few decades more. With SECMC third phase, Thar coal production would reach a level of 12.2 mtpa and fortunately at a viably low cost of 30 USD/ton as opposed to twice the current price. Combined with SINOSSRL production, the combined total Thar coal production would be around 20 mtpa enough to fire 3000 MW power capacity.

There are two problems, however, with Thar coal; high moisture content (40-50%) and low calorific value (50% of the normal sub-bituminous coal. It has to be dried and may be processed before transportation, both for safety and economic reasons. This adds to cost. It is conventionally priced lower at 25-30 USD/ton as opposed to 80-100 USD/ton of conventional thermal coal. Current Thar coal costs of 65 USD/t might have been another constraint in wider use of Thar coal. As mentioned elsewhere, these costs/prices may come down to 27-30 USD/ton in near future in one of the blocks(2). Northern parts of Pakistan may suffer from higher costs due to transportation.

Unfortunately, we installed three coal power plants on imported coal. One can be wise in hindsight. At that time, there was power capacity crisis. And now we have fuel availability and pricing problem. Imported coal prices went up to 300 USD per ton almost thrice the normal level which made the operations of these plants unfeasible for some time. Fortunately, international coal prices have come down to 150-200 USD per ton which is still high but workable temporarily. The three coal power plants consume 12 mtpa (million tons per annum) costing 1.8 Billion USD per year at 150 USD/ton. Efforts are being made to convert these plants to local Thar coal initially at 10-20% level. Had Chinese been in the circumstances we are in, they would have done it 100%. But why should they have been? There are technical issues complicated by contractual and legal complexities.

Although, there is a potential of 100,000 MW or more of power production from Thar coal, practical limits put an upper limit of 8000 MW, say 10,000 MW, due to resource constraints such as water constraints. Furthermore, as we are starting with Thar coal, world has turned against it. Coal Power plants are the focus of world opposition. International financing is required in installing power plants which may become expensive and difficult. No new Thar coal based power plants are under planning, is a good enough indicator.

Besides producing electric power, lignite coal has been producing synthetic natural gas (SNG), fertilizers (urea and others), ammonia and other chemicals. Lignite can be used for making graphite. Researchers in North Dakota recently found out that lignite coal is much more amenable to graphitization than the more expensive Bituminous and Anthracite coal – these coal types do not lend themselves to graphitization at all. Humic acid and Leonardite are well-known. Leonardite is naturally oxidized lignite and rich in Humic acid. It is found close to the surface of lignite mines. Humic acid is used as a soil conditioner in agriculture and Leonardite is used in oil and gas drilling mud. India has been exporting Leonardite at \$1,400 per tonne.

While, there may be sufficient power plants capacity, industrial sector is suffering from the pricing and availability issues of thermal energy in the form of gas or LNG. While local gas production is depleting, spot market LNG prices have gone up and infact not available at any price. Fortunately, we have long term LNG contracts with Qatar which have partly saved from a catastrophe. Fortunately, our cement sector had already converted it to coal, although to imported coal. This conversion trend was almost worldwide in the cement industry. But other sectors are still gas dependent. In Gujarat and adjoining areas in India, which is a textile hub of India, Lignite is being used making India competitive in that sector, while our textile industry is dependent on energy subsidies. Our industry is converting to expensive Furnace Oil to fire their boilers.

Cement is a big sector in Pakistan with an installed capacity of 70 mtpa which may go upto 100mtpa in next ten years or earlier. Cement sector also earns foreign exchange through exports to the regional countries. Cement sectors coal demand itself is very high as much as 7.0 mtpa which is equivalent to Thar coal of 14-15 mtpa. But the cement sector depends on imported coal mostly. This alone can be a sizable market for Thar coal.

There is steel sector which can also be converted to Thar coal. Steel sector is suffering from lack of energy supplies and high costs. Cement and steel combined are major inputs for the construction sector .The latter can give a fillip to the economy or otherwise slow down the economy and the associated employment creation.

The question is why don't these sectors utilize Thar coal;it is local and cheaper and now foreign exchange is not there or is terribly expensive. The answer is that Thar coal has been wedded with the power sector alone. And coal imports were cheaper and easier. Thar's remoteness and

isolation was an issue which is going to be solved in near future by laying a Railway line connecting Thar to the Railways network.

There is a policy vacuum relevant to non-captive uses of Thar coal. Existing coal production capacity is constrained from using Thar coal due to legal and financial lacunae which could have been removed by allowing them to sell at marginal cost plus a reasonable profit margin. However, the main issue is opening up of Thar coal to non-power users such as Cement, Steel and Textile sectors and others.

Cement sector is very big and progressive one. They have highly modern and capital expensive cement plants. They have organizational and other resources and capability. A coal mine costs the same CAPEX of a few hundred million USD as one or two cement plants would be. There can be many business models such as competitive mine auction capacity in blocks of 5 mtpa or more. Cement or steel sector may form a cooperative to reduce risk. Classical IPP model with some changes can be adopted. There can be price control ala pharma industry or unregulated prices. GMDC (Gujarat Mining India) model can be adopted. Possibilities and potential are many.

Existing players may also be inducted in this initiative so that invisible resistance and barriers may be reduced. They can participate as mine contactors making good use of their experience. JVs of mine contractors with local parties may be encouraged.

Currently, there is a scope for opening four Thar coal mines of 5 mtpa. It would create a competitive market. This mining activity can be quiet and much less visible and noticeable than coal power plants. These mines may not require international financing as power plants require and can be implemented with ease as other capital intensive plants like Cement ones are done. Cement, Steel and Textile sectors put together are a great resource that should be mobilized by the policy makers.

Sindh government may also consider establishing a SME industrial Estate in Thar area which may engage in various Thar coal processing industries like coal drying, briquetting, sales and dispatch etc for miscellaneous customers. This is not to suggest that other initiatives like Coal-to-Gas, Fertilizer or Diesel may be dropped. However, these can wait due to various constraints. Let us make another beginning.

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