

The truth about the coal plant: A reply to LNG lobby

Continued from yesterday

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At Negombo, CEB would have to relocate hundreds, if not thousands, of residents. Sri Lanka is blessed with a shoreline extending from all its boundaries. However, selection of a site for a coal power plant will have to satisfy certain techno-economic and social criteria. For example, mass scale removal of people from their original land is socially unacceptable, whereas shallow sea imposes a techno-economic challenge for the big ships carrying coal to come in. After extensive studies conducted by experts over the years, three sites have been identified for coal power projects in Sri Lanka, Trincomalee in the east coast, Mawella in the south coast and Norochcholai in the West coast. With its deep natural harbour, Trincomalee is the best site.

Unfortunately with the prevailing security situation, this site could only be earmarked for future development. That leaves only Mawella and Norochcholai. When initial studies at Mawella site were carried out in 1989, there were civil disturbances in the country, specially in the south, and further investigations were withheld by a Presidential order at that time before detailed studies were conducted. Several sites along the West Coast were then investigated since 1992 and Norochcholai was found to be the best, from techno-economic and socio-environmental points of view.

This site has since been studied in detail. After the EIA clearance was obtained from all statutory organisations, all blue prints for the Coal Power Plant have been drawn up and are completed after the EIA clearance was obtained from all statutory organisations and all blue prints for the coal plant have been drawn up and completed. To conduct a feasibility study for a project like the proposed CPP, it takes 2-3 years to secure funding, to conduct detailed site investigations and engineering designs and get Project Approvals from the statutory bodies before actual construction could commence. To conduct a feasibility study for a project like the proposed CPP, it takes 2-3 years to first to secure funding and then to conduct detailed site investigations and engineering designs. So, there is no sense talking about shifting of site at this very late stage.

All the available sites will have to be developed sooner or later and with completed stud-

ies, Norochcholai plant will be the the starting point first to be developed in the development program.

Natural Gas

Then Dr. R. goes on to recommend a different fuel, Liquefied Natural Gas (LNG). This is methane gas, which is produced in the oil wells. There are natural gas fields as well, but again they are all mostly located with in the oil producing countries. Unlike oil or coal, production and consumption of LNG is restricted to a handful of countries. Japan, Korea and Taiwan consume three-quarters of the global supply.

The simple reason behind such limited use is the high costs associated with liquefaction, transport and storage of Natural Gas (NG) in the liquefied form. For NG

to become a liquid, it has to be chilled and maintained at 162 degrees centigrade below the freezing point. Special ships are required for LNG transport, special handling equipment for LNG unloading and special tanks for LNG storage.

Since these special jetties, unloading arms, and storage tanks require a huge up front infrastructure cost, economy of scale becomes a pivotal factor. So unless there is a substantial demand, the economics does not work out well for LNG. This fact could be seen by the LNG unloading points around the world that are in existence and those that are planned for the future.

The only small scale LNG project is Enron's 500 MW Eco Electrica plant at Puerto Rico, where project selection was not based on the cost of electricity generation. There had been other reasons such as the fact that the Puerto Rico Utility was facing a legal suit for 50 Million US\$ by the US Environmental Protection Authority (US EPA) for their failure to meet environmental standards due to large thermal power already existing in this small island territory and that country's need for a large capacity of desalinated water.

LNG is nothing new to CEB. From as far back as in 1980s CEB has been considering LNG as an alternate fuel, by conducting a number of studies on its own, and with the assistance from international consultants. These include a study by TEPCO, the consulting arm of Tokyo Electric Power Company (TEPCO), the world's largest LNG consumer.

All these studies clearly demonstrated that LNG is not an economic option for power generation in Sri Lanka. We do not want to drag the reader into the details of those studies but we would like to quote the following paragraph from the report of the recent Sri Lankan study conducted by the World Bank experts. "It is very unlikely that LNG would be competitive with coal. Even at \$2.5 per million BTU, the life cycle penalty for a 300 Megawatt power plant (at 75% PLF) is likely to be in the range of \$100-150 million for a world oil price range of 15-20 dollars per barrel."

Now what this mean is that if we select LNG for the first 300 Megawatt power plant and reject coal, the country will have to pay at least \$100-150 million extra even under the most favorable

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LNG price. Since Dr. R. had categorically accepted that these World Bank experts know what they talk about in a more recent article, it should be clear to him at least now that he should not bother more to argue in favor of LNG.

Dr. R. keeps on mentioning about ENRON, a Company setting up a 2,450 MW power plant in India, and accuses the CEB of not taking them seriously. We request him to kindly publish the price of electricity ENRON sells to the Maharashtra State Electricity Board. Since ENRON has kept Dr. Ratnasiri well informed, we assume that this information is also available with him.

CEB, as the national electric utility, has an obligation to the people and industries of this country to produce and deliver electricity at the minimum cost, striking a pragmatic balance between the cost of safeguards to protect our environment and the affordability of electricity to our consumers.

We do not need to re-emphasise the hardships all of us have to undergo when our thermal power generation system is left for the vagaries

of the oil price fluctuations with the proposed tariff increase brought about by the escalating oil prices. Let us not forget that LNG price too is strongly linked to the crude oil price. Only coal could guarantee a stable electricity price once our power generation completes the inevitable transition from a predominantly hydro base to a thermal base in the coming years.

Price of Coal

Dr. R. argues that according to basic economic theory, the price of commodity depends on the supply and demand. CEB has no argument about this. However, while admitting that coal is selling cheap, he tries to attribute the lower price to the depressed demand. This is again willful distortion of facts. Coal has been selling cheap because there are adequate supplies and not due to a lower demand. If we

analyse the future prospects, in contrast to the limited Oil and Gas reserves of about 40-70 years, the world coal reserves are expected to last at least for another 250 years. So there will be ample supplies for the future and the prices will not skyrocket. According to the publication "Electricity in APEC Asia to 2010 and demand for Coal", in 1980 24% of electricity in Asia was derived from coal; in 1992 it was 40% from coal; this percentage is projected to increase to 54% by 2010.

So Dr Ratnasiri, please be realistic and stop talking about low demand for coal. Be happy to know that coal prices are low now and that they will remain so within reasonable limits for the next several decades unlike in the case of oil and gas. It is unfortunate we fail to understand the rationale behind that Dr. R. who admits that 'naturally coal is the major fuel for electricity generation world-wide at present', and then turns around to say 'but, that is no reason why Sri Lanka should go for it at this stage' without valid scientific argument.

Galle Port

Dr. R's suggestion about the development of the Galle port to accommodate a LNG berthing facility falls in line with the proposal ENRON made to CEB. However, when CEB discussed this matter with the Japanese consultants who have undertaken the Galle port development project, their opinion was that with the existing space limitation, Galle port would not be able to accommodate unloading berths for LNG or Crude Oil vessels. Galle Fort is located at one

end and the sensitive Roomassala area and the associated corals are situated at the other end of the Galle bay, making expansion limited according to these consultants.

Even if there is no such problem, we cannot understand the thinking behind Dr. R's suggestion that the Government should meet the cost of port development, and that it should be omitted in economic evaluation of the project. He tries to find an analogy in the container handling. In container handling, there is no other option, but to develop the infrastructure if you need to expand the volumes handled. However, in case of a LNG project, where LNG unloading infrastructure constitutes a significant portion of the levelised economic cost, port infrastructure cannot be neglected in anyway, when you try to compare it with a coal project.

Dr. R. believes that when you factor in the transport and industrial demand, the problem about economy of scale brought about by the very high capital cost of the LNG import facility could be minimised. However, our studies reveal that even if the entire fleet of vehicles in the country is converted to operate on Compressed Natural Gas (CNG) and associated gas distribution and storage facilities are established, still the Sri Lankan Power sector does not have the sufficient demand to make the economics of LNG favourable. So CEB again reiterates our position that LNG is not an economical fuel option for power generation in this country even when the potential for CNG in the transport sector is factored in.

In conclusion, may we remind our readers that with the delay in building a new 40 Megawatt diesel power plant required for operation in 1996, coupled with a low rainfall (as expected), brought immense hardships to the electricity consumers of the country. The GDP fell by 6.1 billion rupees from the expected value and industries and general public all had to bear tremendous difficulties and economic losses.

Sri Lanka has already lost valuable time debating the crucial 300 MW Coal Power Plant, debating why coal, where coal, and when coal, for the last 15 years. The plan for Norochcholai was to commence construction by about now, in time to have it operational before the power crisis of year 2004. CEB and our customers are already feeling the costs of delayed decisions with the looming power cuts, and proposed tariff revisions, but will have to be prepared to face more repercussions of unimaginable proportion if we just keep on debating. The time has come for people to decide whether they want to have an affordable and reliable supply of electricity with all safeguards on environmental protection, or keep the debate going until the darkness engulfs the whole country.