

Coal Power – diesel lobby's sabotage

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The very important news report 'Govt. drags feet over coal power' appeared in the front page of - 'Sunday Island' of February 2, 2003 has induced me to present a few facts about this matter. From all the experience I have gained over the past 20 years, it is very appropriate for me to say 'Coal power – sabotage continues' - This is wholly an internal act.

Barclay Mowlem Consortium (BMC)

A consortium formed by an Australian based firm Barclay Mowlem with Sumitomo of Japan and Pacific Power International of Australia has made a sound offer to set up a 300 MW coal power plant in the Southern Coast of Sri Lanka to supply electricity at a committed levelized price of US \$ Cts. 4 per unit over a period of 30 years.

This proposal does not seek a sovereign guarantee from the Sri Lanka Government for loan funds for development and construction. The project is expected to be completed in three (3) years. The first stage of the project 300 MW will cost BMC, US \$ 350 million. Later the power station can be expanded according to the CEB requirements. Here there will be no need for Sri Lanka to seek international finance, as the project including any necessary studies will be entirely funded by BMC.

The report states that when the Power and Energy Minister Karu Jayasuriya was contacted for comment by the Sunday Island he has said - "I have delegated authority to the CEB Chairman to speak on this matter".

Then, as the Chairman could not be reached, General Manager D. C. Wijeratne said that the Energy Supply Committee (ESC) was handling the subject and the CEB was not involved. Is not this, a clear example of shirking responsibility and palming the baby off to another?

It is certain that Sri Lanka's power system is in a hopeless state and the country is heading for a very serious power crisis if timely action is not taken now. What is taking place now is, rather than taking any constructive steps to solve the power crisis, the persons responsible for providing power are diverting their energies to find scapegoats - politicians, past CEB Chairmen and General Managers, Bishops, Clergy and the like to blame them for their own shortcomings.

History

To clear misconceptions about this serious matter, let me give a brief historical account of the power development planning in the CEB to illustrate where things have gone wrong. I am a Chartered Civil Engineer. With my long experience in planning the construction of hydropower projects since 1943, I disagreed with the concept that Sri Lanka had a massive hydropower potential. Instead I advocated, since the late 1970's, that after the completion of the Accelerated Mahaweli Hydropower Projects, Sri Lanka should prepare to go in for thermal base load power - in this case coal power I expressed these points clearly in my publication titled Coal Power for Sri Lanka - 1000 MW base load power plant which was published in the Daily News of 26 March 1980 - almost 22 years ago.

The then Secretary for Ministry of Power & Energy and Chairman, CEB, Mr. James Lanerolle, CCS, took my advice seriously. He sent a 3-member team of CEB engineers, including myself, to Rumania and India on a coal power study tour. Soon thereafter, on an Australian Government invitation, I was sent to Australia on the same task. These visits were followed by the setting up of a Coal Power Branch within CEB. Then Mr. Lanerolle left and Prof. K. K. Y. W. Perera took over his seat. Unfortunately he had a different notion about coal power. He went all out to set up oil based diesels and gas turbine power plants, and small run of the river hydropower plants. The CEB library was thus adorned with a series of attractive posters of diesels and gas turbines.

It is appropriate, at this stage to quote a few extracts from reports the CEB has received from leaders in the power development field.

Excerpts

The Mahaweli Consultant's Victoria Volume I, Main Report of November 1978 states as follows:

"Assuming that it were possible to commission these remaining identified hydropower resources at a rate fast enough to satisfy the system's possible energy growth rate it would be theoretically possible to delay commencement of thermal base load until about 1995 or 1996. In view of the sheer volume of planning, designing and implementation required to achieve development of these resources, this is not however considered to be a practical proposition and it is apparent that thermal base load operation will probably need to commence early in the 1990's."

"As described above, an examination of the projected load and energy demand forecasts prepared by the CEB indicates that the development of known hydropower potential of Sri Lanka is likely to satisfy requirement until about 1990 only. After that date, apart from the development of minor run-of-river schemes, it is apparent that the necessary energy requirement will necessitate the introduction of thermal power plants acting as base load stations"

ADB warnings

In spite of this sound advice the powerful diesel lobby in the CEB gave prominence to Samanalawewa hydro over coal power. The ADB repeatedly objected to this ill-conceived plan.

A Telex of ADB on 1/1985-01-08 stated - 'Long range Optimum Expansion Plan (1985-2004) includes Rantambe (60 MW) commissioning in 1988, and Broadlands (20MW) and Samanalawewa (120 MW) in 1989. We have serious reservations on the possibility of achieving these commissioning dates and were importantly on the advisability of these further hydro additions to the system and the capability of most hydro plants to meet base load requirements'

Another Telex on 1985-01-17 stated -

"By 1987 with all the ongoing hydro plants brought into operation CEB will have 82.5% hydro capacity and only 17.5% peaking thermal plants. The systems load characteristic even in its current form can absorb a base load capacity of

about 200 MW. We cannot therefore find any justification for the proposed addition of further mid range and peaking hydro plants such as Rantambe, Broadland, and Samanalawewa ahead of Trincomalee"

But the diesel lobby with determination to knock out coal power generation produced a bogus cost figure of only Rs. 6000 million for the Samanalawewa project and had it approved for implementation. Eventually it ended up at a cost of over Rs. 20,000 million, and a further Rs. 2,500 million to repair, without full success, the dam leak. What I recommended at that time was to reserve this Samanalawewa site for a pumped storage scheme at a later date, after having established a sizable quantity of coal power for base load operation. This site with two ponds available upstream at Diyavana and down stream at Katupiniyaya is ideal for a 1000 MW pumped storage plant for peaking. The large dam and reservoir are not necessary for the project.

Generation Master Plan

The Coal Power Consultant Black & Veatch, supported by ADB was planning to get coal power introduced in 1992. The Diesel Lobby did not like this. It got Lahmeyer Consultant who was doing a hydropower desk study at that time to prepare a Generation Plan according to the dictates of the diesel lobby in which coal power was pushed to the distant future 2007. Till then the country is to be flooded with diesels. This plan was hailed as the Generation Master Plan 1989. This is exactly the plan now being followed, which is costing Rs. 12 to Rs. 15.00 a unit, a most unsatisfactory and unreliable provision of power for the Nation.

Trincomalee Thermal Power Project Phase III Review Meeting 6-8 October 1987 - ADB conclusions directs as follows: -

"We would recommend the following approach for consideration for dealing with the key uncertainties and completing the work under the loan

(v) We consider it is important to evaluate not only the Capital cost but also the performance, efficiency, reliability (over lifetime) of diesel units to determine whether CEB should assign diesels such a prominent role in the generation system, even if they feature in the least cost sequence in high numbers"

The ADB Energy Planning Unit December 1987 - Energy Policy Positions of Selected Developing Countries - an update stated that

"only Sri Lanka reports possible deferment of coal projects in favour of intermediate diesel power options"

In spite of these very real expert warning the CEB had received, the powerful diesel lobby adopted anti-coal, pro diesel, foolish, ill conceived power developments which have resulted in the present power crisis and high cost of electricity in this country.

Many of my articles exposing the anti-national activities of the diesel lobby have been published in the news media and also were read at Seminars.

Diesel Performance

The table 'Effective availability of power plants' (LMD May 2002) gives the Installed Capacity of CEB as 523 MW while the effective capacity available was only 281.5 MW as on 1.12.2001. Here it is practically 50% non-effective due to steam leak, forced outage of gas turbines, turbine vibrations, scheduled maintenance, exhaust gas problems etc.

As mentioned before, the ADB has pointed out in 1987 all these factors regarding diesel and gas turbine performances. To reiterate, they said

"We consider it is important to evaluate not only the capital cost but also the performance

efficiency (over life time) of diesel units to determine whether CEB should assign diesels such a prominent role in the generation system..."

Sessional Paper No. III of 1976 - Report of the Committee of Enquiry, into the Gas Turbine Projects in its conclusion states as follows: -

"a. The installation of a gas turbine power plant as envisaged is not economically and technically justifiable

b. The degree of satisfaction in the maintenance and operation of gas turbines had not been critically studied before the project was put up to the Cabinet for approval.

The following are excerpts from the article 'Power Crisis Bites Philippines' which appeared in the Financial Times (London), February, 11, 1992.

"But their response to the mounting power crisis has been to adopt expensive quick fix solutions including the purchase of barge mounted diesel generators. Such increases in generating capacity in the past few years have come from these mobile barges and from the 200 MW gas turbine project. The turbines were supposed to be used occasionally to top up supplies at times of peak demand, but their continued running is now essential simply to maintain the base load.

The current power shortages are profitable for the foreign manufacturers of generators and power barges but not for the Philippines"

President Ramos solved this power crisis by getting a 700 MW Coal Power Plant Implemented in a record speed just in three years.

The Union Minister for Irrigation and Power of the Government of India in his address at the 1971 Annual Session of the Institute of Engineers, Sri Lanka said that Sri Lanka should concentrate on large power plants instead of small ones which would require the same time and personnel as the big ones. Now 30 years after with a population of 18 million equivalent to that in Australia more prominence is given to the unreliable and insignificant power sources like diesels, run of river plants, mini hydro, solar, wind, bio-gas, fuel wood thermal, etc. The only coal plant talked about is also at the most impracticable site.

From the documentary evidence presented here it is clearly seen that over and over the unsuitability of diesels and gas turbines for base load operation in the power system has been pointed out. But the powerful diesel lobby, ignoring all this sound advice it had received, went on with the disastrous diesel plan.

Latest Plan

L M D Publication, May 2002 reports - Prof. K. K. Y. W. Perera, Secretary, Ministry of P & E as stating "The country will be more than comfortable till 2008. We will not have to worry about power cuts due to many power projects scheduled to be connected to the national grid. After 2008 we would have a coal power plant in some part of the country."

This betrays the very shallow concepts of coal power. In the same of the LMD former General Manager, CEB, Mr. A. P. P. Seneviratne and the present General Manager, CEB Mr. D. C. Wijeratne say that coal power should have been introduced after the accelerated Mahaweli Power Projects. i.e. in about 1990. Here we see exposed the sheer duplicity in planning among the high ups in the energy sector. There is a big gap - a difference of nearly 20 years for the introduction of coal power in the opinion of the General Managers who wanted it in 1990, contrasting entirely with the view of the Secretary P & E who plans coal power for sometime after 2008.

What are these power plants the learned Professor is speaking of? They are all diesels, gas

turbines, most unreliable for base load operation costing phenomenal amounts per unit, and run of the river hydropower plants without reservoirs, ineffective during the dry seasons, like Kukule and Upper Kotmale. What is happening now is that big establishments like Hatton National Bank, Kabool Lanka - Thulhiriya, and other major industries depend on their own generators. Elsewhere other factories are closing down due to the high price of electricity The tourist trade is also badly affected. The streets are dark. The CEB is also saddled with a stupendous debt of over Rs. 17500 million. Is this the great achievement produced by the least cost planners and the diesel lobby? What an elephantine debt to boast of?

The Island (02 02 2003) reports that the key figures in the Ministry of P & E and ESC, for the sake of transparency, are calling for expressions of interest from parties interested in power development here The optimum site for the project will be selected by the ESC. The key figures in the ESC the Ministry of P & E and the CEB are the very same in all these bodies and as a result there is only one view-point - this is what that is obstructing the power sector from taking off

Norachcholai

Take the case of Norochcholai. The JCI team of Japan studied the West coast. They recommended Dungalapitiya, Negombo. Fine layout plans were drawn up. Japan offered Rs. 500 million for the feasibility study, and recommended 4 of their top coal power consulting firms, requesting us to select one of them. The diesel lobby in the CEB really got upset - fearing the project would go through, and so instigated interested parties to obstruct it, and pushed the project to Norochcholai, a worst site. They also internationalized the selection of the consultant. This Consultant was specifically chosen to say what the CEB wanted. In other words to recommend Norachcholai as the suitable site.

Norachcholai is a site where a steady coal supply can never be maintained. The result would be that there will be a majestic looking but idling power plant without coal. On this futile exercise we wasted Rs. 500 million and 7 years. Now, if the private sector is called to set up this power plant on a BOO/BOT basis, no private power developer will undertake this shaky project - where coal supplies cannot reach the power station. The Bishop's objection to this power plant at Norachcholai has turned out to be a heavenly blessing in disguise to the diesel lobby. Now they will be promoting Norachcholai coal plant as if they are vehement supporters determined to have coal plant knowing very well that a coal plant will never come at the Norachcholai site.

Further, if the ESC/Ministry of Power and Energy/CEB select a new site for the project, it will certainly be in the Wilpattu Sanctuary between Puttalam and Mannar. This site is indicated in a map prepared by CEB energy planners published in the Sunday Times of January, 19th 2003. Mind you this site is even worse than Norachcholai. According to this publication only diesels and gas turbines are to be set up in the rest of the country, although the Southern coast has better prospects to set up coal power plants.

The Southern Provincial Council is desperate to get some development projects moving like Hambantota Harbour, an Airport, an industrial zone, etc., for the development of Hambantota. But all these good intentions cannot be fulfilled because there is no water and no power in this region. What are absolutely essential for the development of the Southern Region are two projects - the diversion of the Kalu Ganga to provide water to Ruhuna and a coal power plant in

the South. The diesel lobby is continually sabotaging both these vital projects.

Mawella

Now the CEB plan has nothing more than the 20 MW diesel plant at Matara. The only objection to Mawella, the best available site for a coal plant in Sri Lanka after Trincomalee, is said to be that about 40 families will have to be resettled. Relocating 40 families is after all a simple exercise when compared to the problems of resettling over 100,000 displaced families in the North and East. What a great hypocrisy is this?

The CEB states that many coal power plants are required. Then why not allow Barclay Mowlem Consortium to set up a 300 MW plant at the site of their choice after ensuring that the tariff offered by them is economical to the country. After all, BMC will spend their own money without any guarantee from the Government, and if they do not deliver the affected party will be only BMC. If CEB identifies other convenient sites let them be developed by others. By this process at least one 300 MW coal power plant will be available within the next three to four years.

According to the proposal of the BMC no government guarantee is requested for project funding. Planning will be carried out by BMC at their cost while they will be committed to sell power to the CEB at US \$ Cts 4 per unit for a period of 30 years. Private sector experience will surely find a good site for coal power plant engineering and suitable security wise as well. They will also propose the best plans because the whole investment will be about Rs., 35,000 million that will be consortium's private funds. This is how the BOO projects operate. Then why place obstacles. Commissioning dates can be arranged to suit the system.

The Government has only to be concerned about preventing undesirable elements with dubious motives from getting a foothold in the country under the guise of developers.

Mawella has been proved to be the best site after Trincomalee. Why does the CEB remain silent? Why does it never talk about Mawella? The hidden motive of the diesel lobby is to shun good workable sites, take up bad sites and when they get thrown out, find fault with coal power itself and also with the genuine coal power promoters, exactly as what is taking place at Norachcholai.

In the past Civil Engineers played a major role in power development and thus power planning went well till the Mahaweli Projects were completed. It was after Mahaweli that civil expertise was completely eliminated from CEB and the policy changed to promotion of impractical quick power generation, and expensive run of river hydropower plants, of little value. Thus the power sector faced all manner of set backs and this led to the adoption of all modes of corruption resulting in unprecedented losses.

The President of the CEB Engineer's Union, Dr. Susantha Perera states "The position of the CEBEU has always been that anyone found guilty of any wrong doing - be it corruption, inefficiency or insubordination - should be punished under the prevailing laws and regulations"

If this is so, then this is a matter he should act on. I have provided enough factual data for this purpose.