

Renewable Power Should Replace High Pollution Coal Plants In Tropical Sri Lanka

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Readers should be thankful to recent articles in Colombo Telegraph on options on power generation for Sri Lanka focusing on the use of coal as the most suitable option, which has opened up a very useful discussion on its merits and future power generation plan for Sri Lanka. This is most opportune as the new government is looking at various options available to it bring about a rapid growth together with employment creation.

Obviously, power generation has a prime seat in this context as one unit of power is nearly equivalent to one unit of GDP as GDP growth is a mirror image of power generation. If this exercise can be coupled to employment creation, then power generation becomes a prime candidate in government options for country development.

In the discussion thru Colombo Telegraph, coal power was considered as the prime candidate to fill the gap ignoring the greatest danger posed to the general public of having highly polluting Coal power plants as against zero emission renewable power systems.

The purpose of this brief note is to show the greatest threat to humanity is thru highly polluting coal power, metalloids & metallic elements, and the soot poisoning the air and their ill effects, which once liberated to biosphere cannot be reversed and all coal power plants are known to do so and thus developed countries have ceased to use coal power while the power requirement of Sri Lanka could be met thru developing its renewable power resources which have zero emission and creates plenty of job opportunities where it is mostly needed.

Of all the fossil power sources in the world coal has been proven to be the dirtiest & irreversible polluter which causes greatest misery to man & biosphere through its emission of mercury. One of the highest sources of pollution of air, water & food including staples like rice, fish & meat is already proven to be Mercury from Coal burning for power and heat & its use in gold mining & chemical industries.

Levels as low as 55mcg/L of blood is considered the beginning of neurotoxic level. The infamous Minimata disease of Japan which caused irreversible brain damage, loss of memory, suffering, crippling of limbs & death as well as loss of hair, kidney & other organ failures are already well documented.

Mercury pollution in Asia- A review of Contaminated sites by Li et al (2009) in J of Hazardous Material is good eye opener to those who are blind to reality. Unlike any other, Hg once released into environment is not degraded but converted to more toxic alkyl mercury compounds which accumulate in the food chain like fish & rice, the common staples of general population. It shows, in the Asian world map, Sri Lanka was considered to be free of Hg pollution in 2009, and let us keep to that even at loss of coal powered plants, but

countries such as China, India, Philippines, Indonesia, Japan, Kazakhstan, Israel & Kuwait already suffering and all are moving away from dirty coal to other zero emission sources for power.

Unfortunately CEB planners, in its future power generation plan relying heavily on Coal power has completely neglected this aspect either in ignorance or neglect of the immediate & irreversible damage to life & limb of people & that of biosphere at large. This is the typical attitude of the engineers while dealing meticulously with physical systems, tend to ignore the impacts such systems have on the biosphere in a given country because environment impact assessment unfortunately is not an integral part of their training or thinking. Dr Kumar David being an old school engineer is therefore no exception.

The Question that begs an answer is, whether the power generation by CEB is to sustain a healthy nation or sick & incurable population as well as giving rise to an irreversibly damaged soil where any crop or animal would neither thrive nor safe to be used as food. They must make their intentions clear. Or have they completely missed this aspect in bargaining for a cheap and steady resource but one with hidden poisons. Coal lobby is so strong all over the world, these dealings and options reminds one of Watergate scandal & Panama Papers!

However, let us look at reality beginning with neurotoxicity. When neurotoxicity begins at 55mcg/L of blood, the staggering amounts of $117 \times 330 \times 24 \times 500 - 1000 / 1012 = 0.0005 - 0.001$ kg/annum mercury from coal burning being equivalent to 500-1000mcg/annum of mercury in just one year would kill or maim whole of Sri Lankan population making either Sampur or any other coal plant being useless to a sick nation. Indian coal is known to be highly contaminated of many pollutants, notorious being Hg, Cd, Pb, Cr, Se etc. If environmental mitigation costs and health costs are taken into account, then unit cost of coal power would be frightening! Now the next question the CEB has to answer is their contribution of Hg, Cd, Pb, Cr, Se into the environment (air & water) thru Coal burning power plant in Norichcholai and how much it has contributed to the prevalence and spread of CKDu & other NCDs in the country. Before a clear cut quantitative assessment being made how wise is to pursue the same line one wonders. I am not aware whether CEB has even browse along these lines let alone embarking on methodical investigations.

No new coal plants including Sampur should be built as national power requirement including firm power could be met from renewable resources available itself in Sri Lanka namely hydro, solar, biomass, wind, geothermal and ocean sources. In fact Sri Lanka being a tropical country has the ability to produce surplus high energy biomass, including Miscanthus, Erianthus, energy cane, high fibre bamboo etc. in addition to woody biomass in plenty which can be made into high energy pellets & briquettes which could not only replace all the coal power but could open up an export market too giving several millions of jobs. There are specialist firms in UK and elsewhere in the developed world who have mastered the commercial harnessing of sea waves through floating buoy systems which translate motion of sea waves to rotary motion to drive turbines enabling sea wave motion to be tapped throughout day and night all along the year. Blow hole in Dickwella Hummanaya in down south itself can be one promising power station being one of the highest water jet blow holes in the world.

1978 UNP government had fresh thinking of compressing a 30 year plan for Mahaveli development into 06 years putting development ahead of population growth. Similarly, it is time ripe now for the new government to think afresh and take bold steps in development of renewable power by rapid development of renewable energy sources by inviting the world leaders in biomass and renewable power development elsewhere to assist us as JRJ did with Mahaveli Accelerated Development Plan by taking bold and pragmatic steps. If this second UNP government dares to take bolder steps renewable energy from our own sources could be the second accelerated country development programme even surpassing the developments that were ushered in thru Mahaveli Development. Let Sri Lanka use its location being the paradise of the tropics in the Indian Ocean harvest the ultimate nonpolluting source of energy the sun thru biomass & other renewables available here itself.

The Old hackneyed and world condemned “resources” such as coal should be discarded without further ado. Noricholai power station be phased out for neither prosperity nor sustainability of a nation could come from such dirty power unless of course the aim of CEB planning is for a sick & ailing nation as its prime motive. Are we again being hoodwinked by our giant neighbor in Asia ignoring reality elsewhere in the world? If allowed to go ahead, HE the President will have to make a plan for begging for more neurological & kidney hospitals & not just one kidney hospital for Polonnaruwa. Coal power catalyzed environmental pollution is such a vicious poison, anyone who offers such dirty tricks as aid should be classified not as your friends but foe. It is in such instances that they say it is good to know your friends!

If CEB & the government wishes to go ahead with coal power plants, then it is better to make allocations in their estimates to include provisions for both Kidney & Neurological hospitals with each dirty coal power plant & provisions to man & upkeep them together with a planning unit for health & environment remediation in each coal power plant area itself.

Mind you, making a decision is one thing but putting it into practice is entirely a different task & CEB should realize that, for a nation, health is wealth & not vice versa.