

SCIENCE & TECHNOLOGY

Coal power plants and the scourge of acid rain

by Norbert Manatunga

When we consider the pros and cons of a coal-power plant we are inclined to give scant attention to the disastrous consequences to the environment, including lakes and streams, wildlife, fish and birds and even our drinking water. This destructive element will be acid rain. An unbiased probe into the overall coal power functioning system and its pollution disasters would reveal the fact that the harmful effects far outweigh its need for the country.

"In North America, Eastern Canada and in many parts of the heavily industrialised parts of America, invisible clouds of sulphur dioxide and nitrogen, soar across state and international boundaries, and settle down in the form of acid rain and acid snow, or cling to dry particles that mingle with surface water to become acidic. The destructive power of this acid rain is so appalling that in New York's Adirondack Park alone over 200 lakhs are dead their fish completely wiped out, their aquatic life gone. Many of the headwaters streams in the Appalachian chain from Georgia to Maine are becoming acidified. Two-thirds of the 1500 lakes in the Boundary Waters Canoe Area, a million acre wilderness along the Minnesota Ontario Vorder are threatened." Congressman, James Oberstar of Minnesota has said, "Acid Rain may be the single most important environmental concern of the century". The US-Canada Research Consultation Group has reported, "the damage from acid rain could become wide spread and irreversible."

What does this noxious brew do? From studies of dying lakes and laboratory simulations, plus data from Scandaniva - where acid rain has destroyed 15,000 lakes in recent years - we know the fallout kills aquatic life by direct action on fish and by depleting the aquatic food chain. Below PH 5.6 the spawning ability of adult fish and the survival of eggs and young fish sharply decline. Nearly all shrimp like organisms disappear. Even fish-eating ducks, loons, ospreys, otter, mink, even sparrows begin to leave because their food and shelter have been destroyed. On the ground, acid rain leaches essential nutrients - calcium, magnesium, potassium and sodium - from the underlying soil and organic matter. It prevents bacteria from decomposing leaf litter into soil, kills valuable earth-worms, encourages unwanted fungal growth, prevents seeds from germinating, and scars leaves and erodes their protective wax coating. It also releases toxic quantities of metal (particularly aluminium) to be absorbed by the roots and water supplies. This insidious process is going on all over the United States, wherever lakes, rivers and soils are unprotected by natural alkalinity.

Because much of the acid-rain research is new in North America, doubters, particularly in coal-burning states, have

urged a go-slow approach. But US Environmental Protection Agency (EPA) head, Douglas Costle has said emphatically, "We know it is killing fish and other water life. We know soils are being damaged. We suspect that forests and crops are being reduced. We are faced with a genuine and serious problem."

The annual cost of a 50 per cent reduction in sulphur-dioxide emission has been estimated at up to sterling pounds 500 in Canada, and up to \$7 billion in NE. United States - a cost taxpayer and consumer will largely wind up paying. But the cost of not doing so will be worse."

I have quoted above from an extensive chapter entitled, "Acid Rain: Scourge from the skies", from the Reader's Digest.

Very probably that was why the late world renowned scientist, Mr. Cyril Ponnampereuma, who had travelled almost all over North America, after explaining at length the harmful effects of coal-power, concluded by saying, "Sri Lanka should not need a coalpower plant." That was why so many highly qualified and knowledgeable authorities had disapproved it.

There is another disastrous effect due to sea erosion. Many engineers have enumerated in that, time and again. Below I give a concrete instance: Minister of Fisheries and Aquatic Resources Development, Mahinda Rajapakse, had some interesting remarks about building of jetties, and connected sea erosion. Speaking at Dodanduwa in 1997, lamenting the sea erosion in the South, the Minister said, "When the Queen Elizabeth jetty in Colombo harbour was being built in 1952, the foreign engineer had said that there would be heavy sea erosion in the South, if the jetty was built. After completion of the Jetty, this particular engineer threw a bottle from the Colombo Jetty, inserting a note and cash Rs. 50/- therein, requesting this bottle to be sent to the Govt. Agent of the area where the bottle may be washed ashore. After about five days, it was washed ashore at Seenigama area, according to the people." (Ceylon Daily News Sept. 24, 1997). Today Seenigama Devale is far away in the sea. That is why, with conclusive proof, the Bishop of Chilaw, represented matters to the President and the Minister of Power, to shift the contemplated site for the coal power plant from Morachicholai elsewhere, if at all, and save a centuries old, renowned pilgrim centre of the Catholics St. Anne's Church in Talawila - only six miles from the proposed coal plant. The Catholics of Sri Lanka have no doubt, that the President will act prudently, on humane considerations, as done hitherto.

As regards the calamitous eventualities of coal power generation, as quoted from sources coming from the most advanced country in the world, let the wisest counsel prevail, in the interest of the future of the country and posterity.