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Future water and energy interaction

Sri Lanka produces 1200MW of hydropower and 350MW of thermal power for the national grid and this is a low per capita power production. Only 60% of the populated areas were given electricity for domestic illumination. The loss due to transmission was around 20%. The conductors are old and long when compared with European countries. Rural electrification was done as a subsidy.

In 1970 Mahaweli plan assumed selling energy to South India but in 1994 the demand went up leaving the supply at a constant. New areas are connected as political decisions but the supply was not multiplied. In 1970 scientists opposed installation of 25MW boiler turbine but the idea was directed to hydropower. However gas turbines and diesel turbines are needed to increase energy production. Thermal power supplied by coal is a proposal, which does not materialize due to objections from EIA. Highly concentrated coal power plants are not advisable but each district in the coastal belt can house a coal power plant up to 300 MW. This will reduce the environmental effect and also the distribution losses. During drought conditions the hydropower supply was dropped to 200 MW and failed to maintain the country illumination and industrial captive consumption. Thermal power generators have to be provided in each district to meet the domestic need. Renewable energy sources are to be used with the help of private sector. Dendro, Waste, Solar, Salinity ponds, Wind are some methods to provide domestic illumination.

Small hydropower systems are to be improved than the 1950 level. When the national grid was cheaper such projects were abandoned.

Hydrologists pointed the drought in 2001, but the decision makers were ignorant and the country was in dark. Under such conditions pumping water from national grid power for

industries and water supply has to be shifted to generators. Air conditioners and uneconomical lamps have to be removed from national circuits. Government policy for power production has to allow wheeling and banking facility if the buying rate is cheaper. Thermal power shall be the base load while hydropower is the peaking load. Surplus energy can be utilized to pump water in the coastal lowlands in the island specially in the drier districts to a high level tank for drinking and other uses. This prevents surplus fresh water going to the sea. Fresh water tanks in the coastal zone mitigate the drought situation. Dendropower boilers are another alternative, which can produce energy any where. Rubber, aristonia timber can be used as fuel. Wind mills are costly. Solar cells are good for domestic illumination.