ABSTRACT

Presently, sixty percent of the electricity power requirement in Sri Lanka is addressed by thermal power solutions due to non-availability of hydro power sources anymore. Since most of the thermal power plants consume fossil fuels, the cost of electricity generation has been increased drastically and considerable amount of foreign exchange is lost in each year for importing fuels (Ceylon Electricity Board Statistical Digest Report, 2016).

The scope of this research therefore was to study the existing electricity power generation system in Sri Lanka to explore the contribution of non-conventional renewable generation options and to analyse the feasibility of introducing power plants from Municipal Solid Waste (MSW) in order to reduce the cost of electricity power generation in Sri Lanka.

The study was carried out with the support of documentary sources including project reports, publications, books and newspaper articles. Required statistics related to electricity generation were collected from Ceylon Electricity Board whereas the garbage related data were taken from Galle Municipal Council. The data analysis is carried out with the Microsoft Excel for tabulating data which are already available in the form of secondary data.

In this paper, capacity estimation of electricity generation based on the quantity and composition of the MSW in Galle Municipal Council area, is analysed. Further, the available technologies for extracting the energy from MSW is discussed to seek a possible conversion technology for electricity generation. As such, this research paper finally leading to establish a discussion that the Waste to Energy power plants are a solution for electricity generation as well as to reduce accumulation of garbage dumps.