

**ELECTRIFICATION OF THE SUBURBAN  
NETWORK OF THE SRI LANKA RAILWAY  
ECONOMIC STUDY**



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## ABSTRACT

Rapidly increasing congestion of traffic in urban and suburban roads raises the necessity of better and quicker railway service urgently. Electrified railway system is a better solution for that.

The prime objective of this electrification economic study is to determine Whether electrical operation of the Sri Lanka suburban railway is economically viable and more advantageous than that of the existing diesel operation system with further improvement.

According to present railway passenger flow , geographical data of railway tracks and other railway statistics and population of Sri Lanka, the network of suburban railway stations Kalutara North- Colombo-; Polgahawela, Colombo - Homagama and Ragama Negombo (Colombo International Airport ) was selected as high passenger density area.

In the selected suburban area, railway and road passenger flow was studied by us in g train formation , railway time table tickets issued at railway stations (daily and season tickets) and survey details of major railway stations and bus stand s.

According to above data peak hour and daily pass enger flow for one day was calculated. Some technical detail s were selected as to be compatible with the existing system with few modifications, to retain the ability of continued operation o f the present diesel locomotives.

Other technical data was selected by studying established electrification systems in other countries.

Finally, total electrical multiple unit s, clearance specifications , specific energy consumption, power requirement , power generation and distribution were determined. Total cost of electrification system and improved existing diesel system was calculated separately and compared . Electrification system was found to be economically viable for 3 0 years and the cost was less than that of the improved existing diesel system.



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