

**WATER ENERGY EFFICIENCYIMPROVEMENTIN  
EASTERN PROVINCE OF SRI LANKA**

T.Ismail

Reg.No.08/8612



University of Moratuwa, Sri Lanka.  
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Degree of Master of Engineering in Energy Technology

Department of Mechanical Engineering

University of Moratuwa

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Thesis submitted in partial fulfillment of the requirements for the  
degree Master of Engineering in Energy Technology

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## **DECLARATION**

I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief.it does not contain any material previously published or written by another person except where the acknowledgement is made in the text

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## ABSTRACT

Energy efficiency improvements at water facilities can significantly reduce the cost since the energy costs typically constitute about 25% to 30% of the operations and maintenance cost. Thus this analysis is based on a collection of information from the water facilities of NWSDB Eastern province. This provides the information from January, 2013 to December, 2013 for the four regions namely Ampara, Akkaraipaththu, Batticaloa and Trincomalee in the Eastern Province.

Bench mark analysis and Project Appraisal Committee reports were considered in planning, designing and implementation stages to minimize energy Usage. This will ensure the proper capital investment and future operational and maintenance cost.

Also, this analysis will help NWSDB to investigate the energy saving techniques and to develop bench mark for each pump for the energy consumption per cubic meter of water. It can contribute to cost reduction and saving could be utilized for the development of the country in investing other development works and improve infrastructures.



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## ABBREVIATIONS

DGM	Deputy General Manager
H/L	High Lift
L/L	Low Lift
NRW	Non Revenue Water
NWSDB	National Water Supply & Drainage Board
O&M	Operation & Maintenance
PAC	Project Appraisal Committee
RSC	Regional Support Center
SCADA	Supervisory Control and Data Acquisition
SEC	Specific Energy Consumption
VSD	Variable Speed Drive



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