

**STRATEGIES TO OVERCOME BARRIERS IN
ACCELERATING RURAL ELECTRIFICATION IN
SRI LANKA**

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Degree of Master of Science

By

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DECLARATION

The work submitted in this dissertation is the result of my own investigation, except where otherwise stated.

It has not already been accepted for any degree, and is also not being concurrently submitted for any other degree.


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I endorse the declaration by the candidate.

UOM Verified Signature

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Executive summary

This report presents a research carried out on rural electrification in Sri Lanka. This research mainly involves surveys and rural electrification policy studies. The analysis was carried out in a selected district in Sri Lanka.

The first stage of the project was devoted to gathering the data about present electrification level in Sri Lanka. In this stage, the collected data was organized in a manner that enables comparison between the data components. To identify the barriers for electrification, it was decided to conduct three surveys in un-electrified villages, off grid-electrified villages and un-electrified houses in grid electrified villages. Separate questionnaires were prepared for each survey.

The survey in un-electrified villages was carried out in 10 villages in the Ratnapura district. The goal of this survey was to identify the existing barriers in rural electrification. The results of this survey were summarized and **nine** major barriers for rural electrification were identified. The identified barriers were categorized and ranked using a method developed by the researcher. In this ranking procedure, the opinions of the villagers were taken in to consideration, because those people have experienced these barriers for more than 20 years.

The second survey was carried out to observe the existing situation of present off grid projects, specially the micro-hydro power projects, which are functioning properly in Ratnapura district. Five off grid power plants were selected for this survey. Major problems prevailing in the above micro-hydro projects were pin pointed and the contributions that villagers can make to overcome these problems were identified.

Third survey was carried out in 5 grid-electrified villages to identify Problems existing in un-electrified houses. Four major barriers were identified in this survey. In these surveys social data too were collected for a better analysis. More than 90% of the villagers in a particular village were interviewed to obtain better survey result.

The rural electrification policy study was carried out to identify what improvements could be made to the policies, to have solutions to the survey results. This policy study and possible strategies were analyzed by considering the suitable policy evaluation criteria. Not availability of clear policy for rural electrification in Sri Lanka is a major issue. Identification of areas where nation grid can be extended, policy must support to the rest of the areas of electrification through off grid electrification options.

In addition possible strategies were analyzed as solutions to these problems. Integrated rural development, grid extension and isolated power generation, area coverage and intensification can give signification contribution to remove or reduce these barriers. In addition policy improvement also can give significant contribution to solve these barriers.



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List of Abbreviations

SRC	Senate research Committee
CEB	Ceylon Electricity Board
ITDG	Intermediate Technology Development Group
DFCC	Development Financed Cooperation of Ceylon
RERED	Rural Economic
ESD	Energy Services Delivery
ECF	Energy conservation Fund
EIRR	Economic Internal Rate of Return
TR	Total Rank
VR	Villagers Rank
NR	Normalized Rank
PV	Photo Voltaic
ESMAP	Energy Sector Management Assistance Programme
IEE	Institute of Electrical Engineers
IEEE	Institute of Electrical & Electronics Engineers
LV	Low Voltage
HV	High Voltage



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