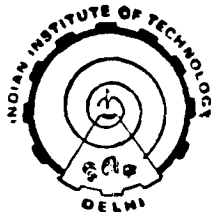


FACTORS RELATED TO ACCEPTABILITY FOR THE PROMOTION OF RENEWABLE ENERGY TECHNOLOGIES IN RURAL AREA

by

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Thesis submitted in fulfilment of
the requirements of the degree of
DOCTOR OF PHILOSOPHY



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CERTIFICATE

This is to certify that the thesis entitled "Factors Related to Acceptability for the Promotion of Renewable Energy Technologies in Rural Areas", being submitted by Rashmi Pachauri to the Indian Institute of Technology, Delhi for the award of the degree of Doctor of Philosophy, is a record of bonafide research work carried out by her. Rashmi Pachauri has worked under our guidance and supervision and has fulfilled the requirements for the submission of this thesis, which to our knowledge, has reached the requisite standard.

The results contained in this thesis have not been submitted in part or full, to any other Institute or University for the award of any degree or diploma.



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I would also like to state at this point, that I solely take the responsibility for any errors and inadequacies in this work. All opinions and findings expressed are mine for which again, I alone am responsible.

RASHMI PACHAURI

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ABSTRACT

An attempt has been made to identify acceptability factors for promotion of energy-efficient technologies in village (Dhanawas) in Northern India. Three technologies (biogas plants, solar cookers, and afforestation) were considered and, along with gathering information on the energy production and consumption patterns, the five acceptability criteria that were identified for technology transfer were:

- cost effectiveness;
- preference of the new technology over the existing one;
- ease of maintenance of the technology;
- easy availability of it; and
- others' opinion of the new technology.

A census survey was conducted and data were collected by means of detailed questionnaires, as well as through informal interviews and group discussions with the villagers.

The analyses consisted of intercorrelations and multiple regressions of the background and energy consumption variables (taken as independent variables) and the five acceptability criteria (the dependent

variables), and significant associations were noted. Quantitative analyses were done for biogas plants and solar cookers. However, because the afforestation programme was still at its initial stages and no so numerical data were available at the time of the research, and also because it was important to do a certain amount of qualitative and descriptive analysis based on observations and informal interviews, the afforestation programme was dealt with thus.

Apart from identifying the five acceptability criteria, the study findings revealed that solar cookers, for a number of socio-technical reasons, failed in the study area. Biogas plants, however, proved to be successfully accepted as an alternative to the cooking method in use. The afforestation programme seemed to be well accepted, although it was still too early to gauge its success.

Although some acceptability factors have inadvertently emerged in a number of previous studies, not much work has been done with the specific aim of identifying and quantifying these factors - one of the major objectives of this research work. It is hoped that this work would lead to aiding future policy and

planning decisions, particularly in the promotion of new technologies in rural areas, because gaps have been perceived in the past between the availability of technologies and their ultimate acceptance and sustained utilization. Implications of the study, recommendations, and suggestions for future research were made.

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