CONSUMER'S PURCHASE DECISION OF ELECTRICALLY EFFICIENT CEILING FANS USABLE WITH BIODIESEL GENERATOR

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ABSTRACT

Globally, the inevitable issue of energy crisis is increasing day by day, adversely affecting the environment and its inhabitants. As a result of industrial revolution and population growth, there has been a colossal rise in the worldwide demand for energy in recent years. In such circumstances where the demand of energy is high but resources are meager, the need of hour is to explore and utilize such renewable energy resources which will not impose a negative impact on the environment as well as on energy sources upon its conversion. The main impetus of this research study is to emphasis the significance of energy-efficient ceiling fans opera table with renewable energy source such as biodiesel. In order to support the research study, perception of both household consumers and commercial area retailers were collected. This study assisted to attain a broader view of people's awareness on the benefits of using such fans and whether they are willing to purchase such products functioning on biodiesel if knowing its cost- effectiveness and positive influence on the environment. Interview sessions were held with retailers and NGO's to gather views on energy-efficient fans and consumer buying behavior. Also lab work was conducted in order to extract biodiesel from waste animal fats and plant oil for use in biodiesel generator to operate ceiling fans during load shedding. The results achieved illustrated a diverse response from both respondents; household consumers were observed to be grey consumers as their purchasing decision was more associated with their own economic feasibility as compared to environmental stability, whereas commercial area retailers proved to be green consumers as environmental aspects had more significance to them than self-benefits received from such fans. Similarly animal fat and plant oil both have great potential to produce biodiesel but according to the results achieved from lab work, it has been observed that only chicken oil displayed a positive result by producing 75% biodiesel. On the contrary, both animal fat and plant oil showed negative results in yielding biodiesel due to lack of equipment facilities to properly carry out the experiment.

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ABBREVIATIONS

ENERCONNational Energy Conservation center

BRESLBarrier Removal to the Cost-Effective Development and Implementation of Energy Efficient Standards and Regime

UNDPUnited Nation Development Program

PSQCAPakistan Standards and Quality Control Authority

NGOsNon-Governmental Organizations

MWMega watts

EPA Environmental Protection Agency

CI Compression-ignition

EPAct Energy Policy Act

ECRA Energy Conservation and Reauthorization Act

GHGs Green House Gases

ASTM American Society for Testing and Materials

NaOHSodium hydroxide

KOH Potassium hydroxide

CO_2 Carbon dioxide

kVA Kilo-volt-ampere

AEDB Alternative Energy Development Board

PSO Pakistan State Oil

PMY Pipri Marshalling Yard

NUST National University of Science and Technology

MeOHSodium methoxide solution

FAME Fatty acid methyl ester

rpm Revolution per minute

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