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A Study of Households' Perception towards Solar Panel Installation Case Study: Villagers of Techno-park nearby Faculty of Technology, University of Sri Jayewardenepura

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Abstract

In Sri Lanka, energy demand has been exponentially increasing with the outage of non-renewable energy sources. There is significant solar intensity in most of the areas in Sri Lanka. This study focused on the domestic solar power system since domestic solar panel usage (700 MW) is the country's highest contributor to solar energy usage. A photovoltaic (PV) system can supply electric energy to loads by directly converting solar energy through the photovoltaic effect with a flexible structure. This study aimed to analyze households' perceptions of solar panel installation. The study was conducted within a 5 km radius around the Faculty of Technology, the University of Sri Jayewardenepura, to analyze the awareness of solar-related technologies. A systematically developed questionnaire was used for the survey to collect the peoples' awareness based on environmental, social & economic beliefs. Thirty residential places (30) were interviewed. According to the results, a residential house's average monthly electricity consumption is 137.67 kWh. The mean monthly income in the area is sixty-eight thousand one hundred and sixty-six rupees and sixty-seven cents. Moreover, most people had solar energy knowledge (93.33%). Among them, 53.57% of the majority were willing to install Domestic Solar PV systems for residential places. From the consumers, 76.66% of the majority had an average level of awareness of the Environmental benefits of using renewable energy and 70.00% of the majority had an excellent awareness of government intervention in rooftop solar energy projects such as "Soorya Bala Sangramaya". From the defined awareness levels, further analysis was done on the lowest level of Awareness of Solar Energy to identify their characteristics. The majority of them were those who had lower energy consumption, were over the age of 60 and had a monthly income below twenty thousand rupees. According to the consumers, the best strategy for promoting Solar PV Systems was to lower the prices of existing Solar PV systems. Regulating the efficiency of the Solar PV system was identified by the existing Solar PV system owners.

Keywords: Solar PV system, Techno-park, Photovoltaic panels