

## **An Analysis on Suitability of Solar Power System for Households: Case study in Gampaha Urban area**

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### **Abstract**

Sustainable domestic energy has been a significant factor in the development of the properties in the world. Cost, availability, environment problem etc are associated issues in popular energy sources like, fossil oil, hydro electricity and gas etc. In this context, use of solar panel has been recognized as a sustainable energy for domestic purposes which would be an emerging trend of development of residential properties. Hence, it is important to be properly knowledgeable about the usage and utility of solar panel. This study examines suitability of using solar panel in residential properties in Gampaha urban area and households awareness about the solar panels. Also, this study is attempted to identify key motivational factor to establish solar system in residential properties. Further the study examined householders' views on the use of solar. These objectives were achieved by analysing primary data collected from current solar panel users through a questionnaire survey. Relevant secondary data was obtained from The Ceylon Electricity Board and approved solar panel agents in the Gampaha area. Analysis was done descriptively. The study found that a considerable amount of solar panel users belongs to the category of those monthly income level is more than Rs.150,000. Accordingly, their monthly electricity expenditure was recorded as a considerable percentage from their total monthly expenditure. In average, it is about 7% from total expenditures. When monthly electricity bill amount is greater than Rs.5400, the solar investment generates a positive Net Present Value (NPV). Therefore, householders who receive monthly electricity bill greater than Rs.5400 have an opportunity to use solar panel systems. Among the respondents, majority of respondents are highly satisfied, because monthly electricity expenditure can be converted to zero value by installation of solar panels.

Hence, it can be recommended public awareness should be made to know how to select appropriate solar panel system for houses, installing and which requirement should be fulfilled, advantages of investment on solar panel system etc. In addition, solar panel systems should be promoted and financial facilities should be provided for that.

**Keyword:** Solar Panel, Satisfaction, Domestic Energy, Residential Properties, Installation of Solar Panel