A STUDY ON CONSUMER OPINION TOWARDS SOLAR ENERGY PRODUCTS WITH REFERENCE TO HYDERABAD

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Abstract

In India, Solar energy devices are initiated mainly with the objective to create environmental awareness of mass power consumption and the need to conserve power using solar energy devices. The major downside of solar energy products it is high cost and high space requirement to setup a device. Apart from these drawbacks, the customers must consider that by using one solar energy product would be a part of a large community of citizens who are concern about our environment and actively contributing in helping conserve energy and also be actively helping to save the environment by reducing carbon emissions and reducing the financial burden of the government on subsiding fuels such as kerosene which are used for lighting. Though the people is still using non renewable source like electrical devices the attitude of the consumers are is steadily changing towards solar energy products. The key focus of the study to examine and analyze the customer opinion, customer attitude, views, preferences and criticism about the features and usage of solar energy products.

Key words, Consumer Opinion, Consumer attitude, Solar energy products, Energy conservation.

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INTRODUCTION

Since Independence, the Indian Power Industry has continuously faced the issues with meeting its power generation goals. The conventional energy sources especially coal hasn't been able to meet the demand and the country needs a true approach to meet its ever increasing energy demand. Solar energy, a clean source of renewable energy which emits zero carbon, has got a remarkable potential of the energy which can be harnessed using several types of devices.

Solar power industry has gain a pace in its development and its systems are now available for commercial as well as domestic use with enhanced advantages at minimal cost of maintenance. Usage of Solar Power systems or devices has become financially viable with various government initiated tax incentives, subsidy schemes and rebates. Now a day, solar energy is getting more and more popular in developing and developed nations. In developing nations, it is on early adoption stage whereas in developed nations, most of them are trying to switchover to renewable energy sources completely.

The world's population is growing continuously and hence increases in the demand of water, food and energy which in turn affecting environment. The world's population has become more than double from 3.2 billion since 1962 to 7.2 billion in 2015 and it has been forecasted to grow up to 9.2 billion by 2050. Resources or reserves of coal, gas, oil and uranium are depleting day by day. The frequent usage of these non-renewable resources have put pressure on the energy sector to move away from carbon emitting processes to solar, nuclear and other environmentally friendly options.

Indian Energy Scenario

India, being a tropical country, has a very vast potential for Solar industry where approximately 45% of rural households do not have access to electricity. Today India's population is nearly 1.25 billion and currently facing a huge energy demand. In the production and consumption of electricity, India ranked fifth in the world. The production of electricity has been increased during the last few years at an increasing rate equating to the population expansion rate of the country. The electricity produced by India is mostly from coal (53%) and it is forecasted that coal reserves in the country will last up to 2050. In India, more than 72%

population resides in villages and more than a half of the villages have not been electrified and remains without electricity. To meet this ever increasing demand, solar energy is the best solution to cater the energy needs and bridge the demand supply gap.

Objective of the Study

1. The objective of the study is to know the consumer opinion on the solar energy Products.
2. The objective of the study was to identify the most common factors influencing the consumers buying behaviour to purchase solar energy products.
3. To evaluate and analyze the factors inhibiting the marketing of solar energy products for domestic use.
4. To critically evaluate the policy initiatives of the government for the adoption and diffusion of solar energy products for domestic use.

Importance of Study

The study was conducted to identify consumer opinion and the various internal and external factors influencing the consumers buying behaviour so that correspondingly changes can be suggested in the marketing approach of Solar Energy products so that Solar Energy products can reach to the masses.

Scope of the Study

The study was conducted in the urban areas of Hyderabad, a geographic area having conduced climatic conditions for Solar Energy products and the power situation marked with regular power cuts, offers an appropriate location for the study.

Hypothesis of the Study

Why are the Indian consumers not adopting Solar Energy products?

H1: Consumers do not prefer to use Solar Energy products due to low awareness.

H2: Consumers do not prefer to use Solar Energy products due to high cost and installation charges .

H2: Consumers do not prefer to use Solar Energy products due to lack of motivation.

H3: Consumers do not prefer to use the Solar Energy products due to incorrect perception of the products.

Review of Literature

Vernon (1996) in his theory of product life cycle has identified products in the introduction stage as those products which have lower demand and higher cost of production. In other words, these are those products which have just entered in the market. Renewable Energy Technological (RET) products like the solar water heater have been in the market for more a hundred years as reported by the California Energy Centre. But still the use of this vast resource has been by a very few or the technology has not been adopted as widely as it should have been. However, there are also numerous examples to make the case for REP (Renewable Energy Product) strong with potential for widespread adoption. As reported by The Rural Energy Foundation,

Netherlands, (2010) the rural energy Foundation programme in the sub-Saharan African Solar Now programme which has identified retailers and distributors for Solar Energy Technology since 2007 and provided training in Technology, marketing, sales and business administration etc. This has now given access to 3 Lac people in just three years. A similar experience has been executed by Sun Lab BOB which is based in Lao which provides affordable, reliable solar electricity to rural household through rental services as reported in an article 'Lighting Up Rural

Lao'(2007) in Appropriate technology. Mbogo (2001) states that approximately 2 billion people living in developing countries have limited access to modern energy supplies which makes them dependant on kerosene for lighting and also to spend substantial amount on other sources of energy. He argues that solar lanterns produced by organizations which can withstand the harshness of environment and also be accessible to the target customers by way of financing schemes have great prospective.

The acceptance of solar energy products in a society is not just affected by the presence of suppliers of solar energy products but also as concluded by Zahran et.al (2008) on others as environment, socio-economic and political factors have a greater role in the acceptance of solar energy products.

Some of the scientists have an opinion that renewable energy technology is still beyond the reach of common man and the support infrastructure like massive electricity storage systems are a deterrent to the widespread adoption as argued by Lee and Gushee (2009).

Though by the use of renewable technology and specialized electricity generation and distribution has been a relatively non-viable option at commercial level but at the domestic level and in the rural areas of developing countries like Bangladesh and India approximately 1,65,000 people have been benefitted by approximately 25,000 solar home systems which light up their basic energy equipments (Approximate Technology 2006). Efforts are being made to make RET products affordable for the household consumption.

Methodology

Primary Data:

The primary sources are discussion with individuals, data is collected through questionnaire by online survey.

Secondary Data:

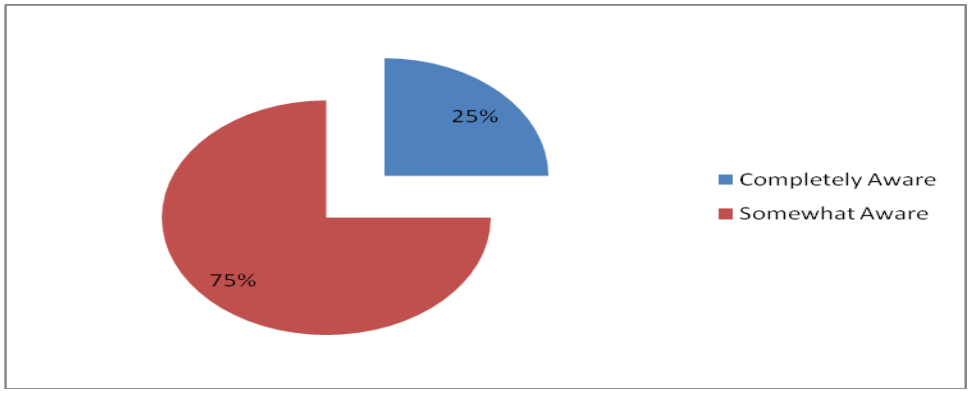
The secondary data mainly consists of data and information will be collected from records, company websites and also discussion with the management of the organization. Secondary data can also be collected from journals, magazines and books.

Sample Size:

The Sample selected for the present study will be 100 respondents selected randomly from different places in Hyderabad.

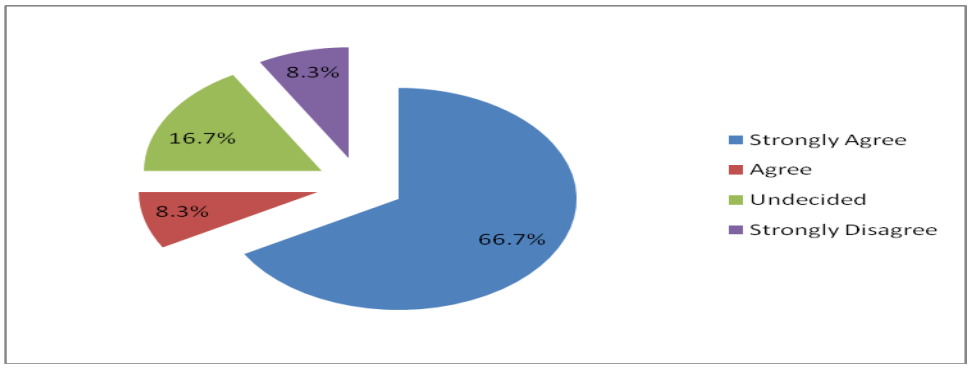
Data Analysis

1) Consumer believe using solar energy sources helps to improve the environment



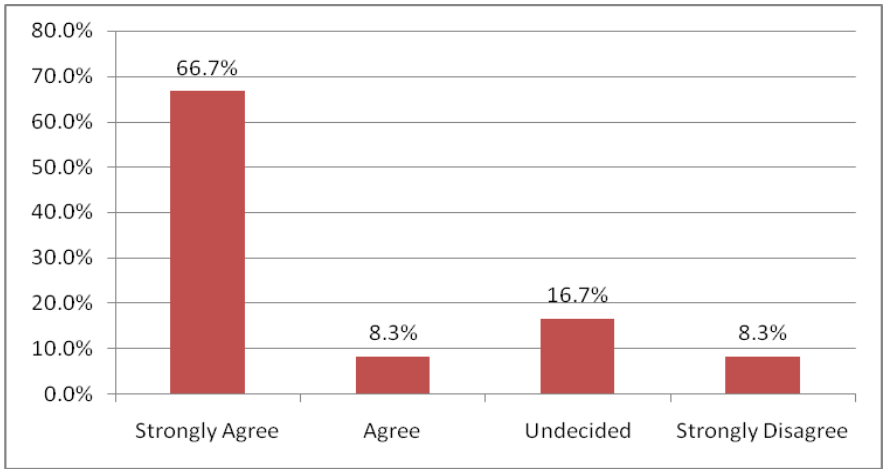
Inference: 100% respondents believe that using energy sources helps to improve the environment

2) Awareness of consumer on solar energy products



Inference: 25% of respondents are completely aware of the solar Energy products and 75% of the respondents are somewhat aware of the solar energy products

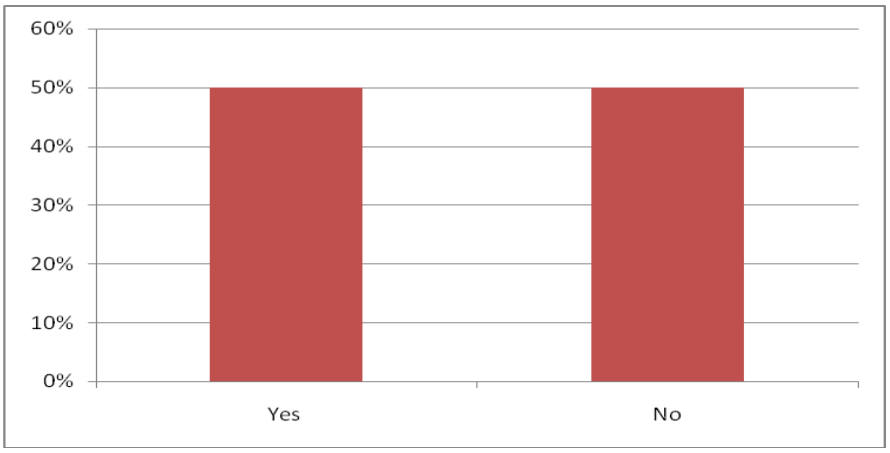
3) Reduction of electricity bills by using solar energy products



Inference:

66.7% of the respondents strongly agree that electricity bills can be reduced by using solar energy products. 8.3% of the respondents strongly agree that electricity bills can be reduced by using solar energy products. 16.7% of the respondents do not have clarity about reduction electricity bills by using solar energy and 8.3% of respondents strongly disagree that electricity bills cannot be reduced by using solar energy products.

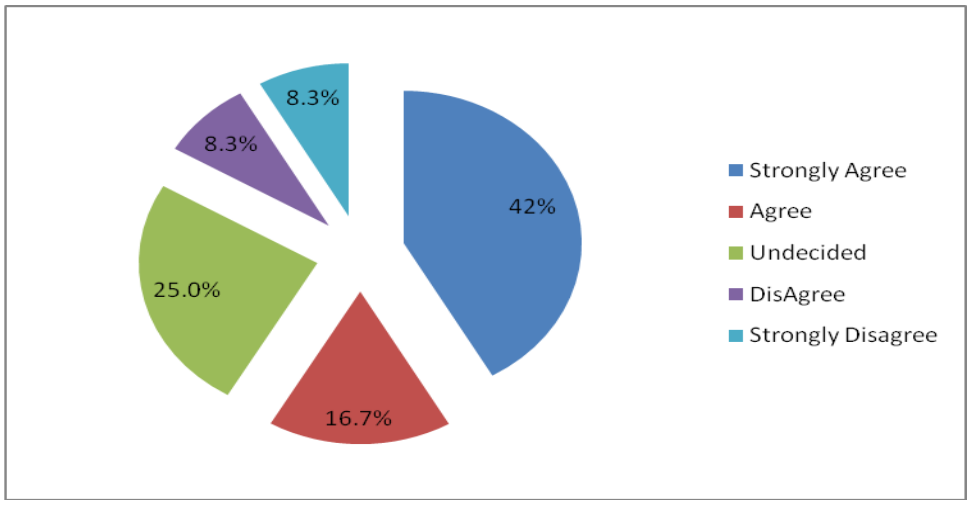
4) Consumer awareness of subsidies provided by the government for buying solar energy devices.



Inference :

Only 50% of the respondents are aware of the sudsidies provided by the government for buying solar energy products.

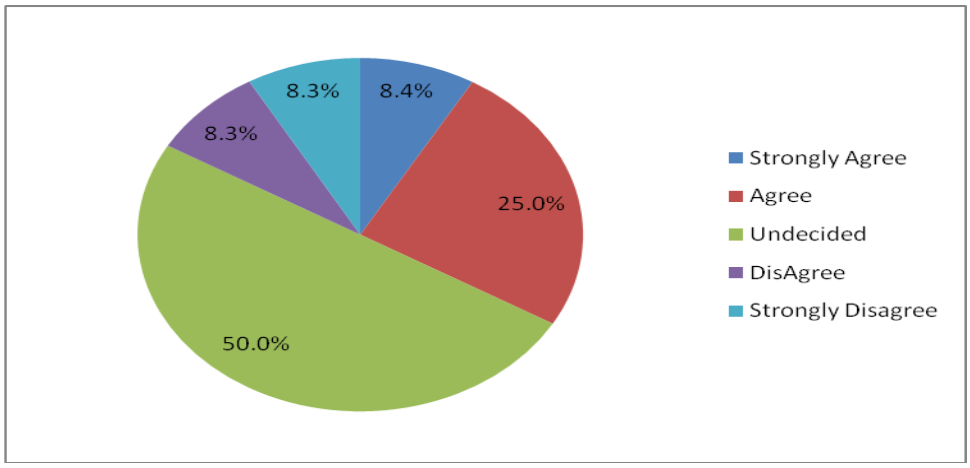
5) Advertisements of the Solar Energy Devices are Informative and motivating.



Inference:

58.7% of the respondents agree that advertisements of the Solar Energy products are Informative and motivating

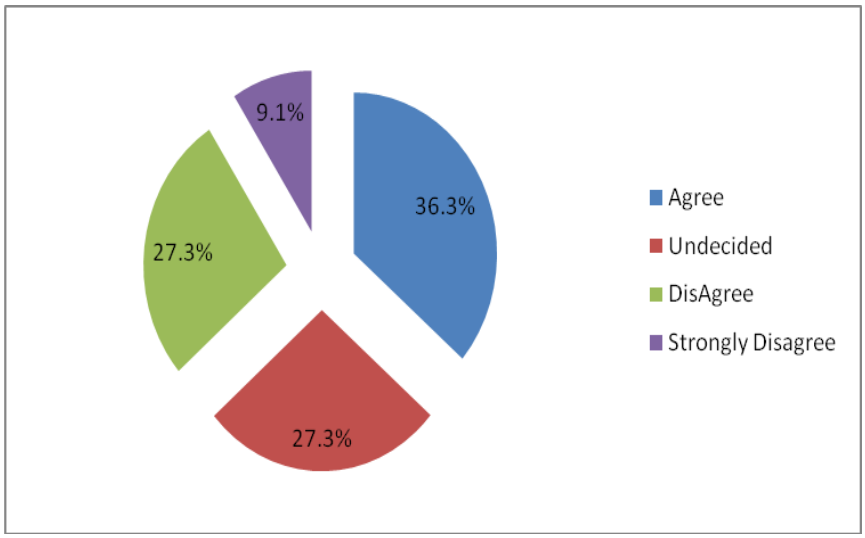
6) High cost of the Solar Power Packs



Inference

50% of the respondents do not have clarity about the prices of the solar energy products in the market.

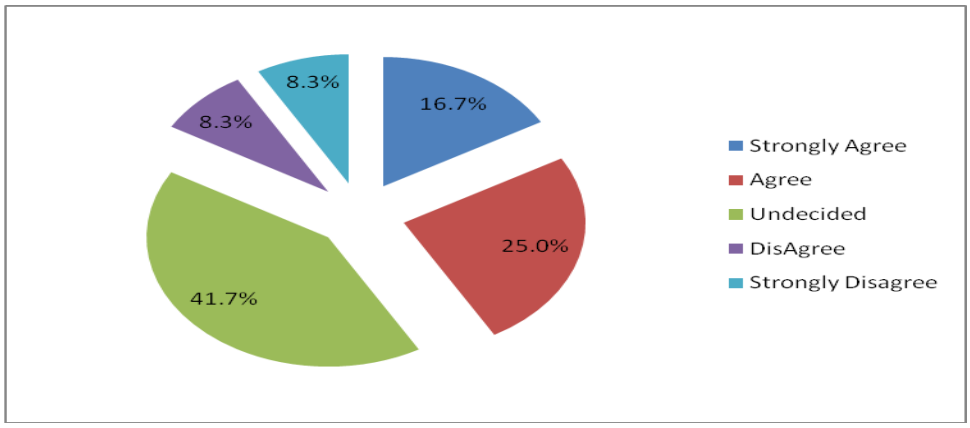
7) Installation charges of Solar Power Packs



Inference:

36.3% of the respondents agree that the installation charges of the solar energy products are high. 27.3% of the respondents do not have clarity about the installation charges of the solar energy products. 27.3% of the respondents disagree that the installation charges of solar energy products are less.

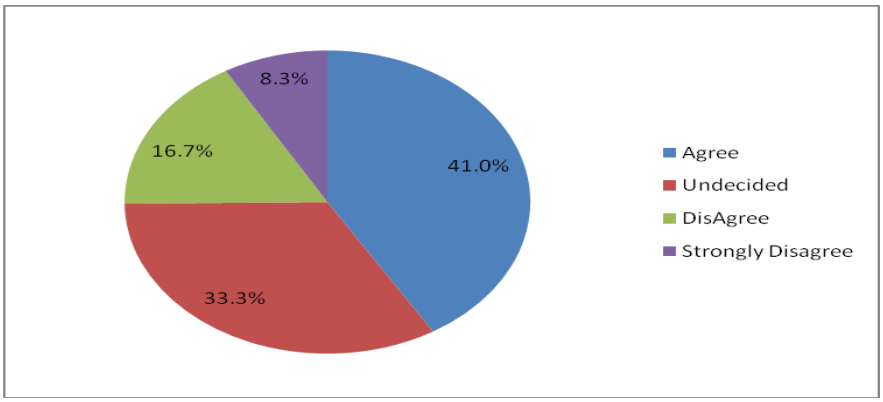
9) Durability of Solar Energy Products



Inference

16.7% & 25 % of the respondents agree that solar energy products are durable. And 41.7% of the respondents do not have clarity about durability of the solar energy products.

10) Installation of solar panels on the roof takes large space



Inference:

41% of the respondents agree that installation of the solar panel on the roof takes large space. 33.3% of the respondents do have clarity of acquiring large space on the roof top for installation of solar panel. 16.7% of the respondents disagree that installation of the solar panel on the roof takes large space and 8.3% of the respondents strongly disagree that installation of the solar panel on the roof takes large space.

FINDINGS

1) Most of the consumers are aware of reduction of electricity bill by using Solar Energy Products.

2) Most of the consumer using Solar Energy sources helps to improve the environment.

3) Most of the consumers are not completely aware of the Solar Energy Products.

4) 50% of the consumer are aware of the sudsidies provided by the government for buying Solar Energy Products.

5) 58.7% of the consumers belive that advertisements of the Solar Energy Products are less motivating and Informative.

6) Consumers have a diverse opinion of the cost of Solar Power Pack.

7) Consumers have a varied opinion about installation cost of Solar Power Pack.

8) Consumers have a speckled opinion about installation cost of Solar Power Pack.

9) Consumers have a diverse opinion about durability of Solar Energy Products.

10) Consumers have varied opinion about acquiring large space on the roof top for installation of solar panel.

11) Very less consumers are aware about the Solar Energy Products through newspapers

12) Very less consumer use solar energy products solar lanthers, solar home lighting system and solar water heaters.

13) Most of the consumer believes that Solar Panels convert sunlight to electricity without environmental omission.

14) Most of the consumer believes that solar panels used in the Solar Power Pack should made available in small size as they occupy a large space for setup.

15) Most of the consumer should increase subsidies to encourage the consumer to purchase Solar Power Packs.

16) Most important factor which is considered by more number of consumer is economical factor to purchase Solar Energy Products in near future.

Conclusion

Consumers continue to believe that the most important benefit of solar energy product is that it is better for the environment than regular power, although some consumers believe that the most important benefits are domestic sourcing and to a lesser extent human health or economic benefits. Consumer awareness is a challenge for utilities or companies providing solar energy options to consumers. Despite a modest increase in consumer awareness, only 25% of consumers were aware of solar energy purchase options in 2016. In addition, consumer willingness to pay

more for renewable energy has declined in recent years because advertisements of the Solar Energy Products are less motivating and Informative. Consumer willingness to purchase Solar Energy Products has declined due to lack of awareness of Government Subsidies. Finally the source of conventional energy in near future will recede and the consumer has to depend on renewable energy. As solar energy is clean source of renewable energy solar energy companies should bring awareness and uses of the solar energy products in consumer. And Government should make consumer about the subsidies for purchase of solar energy products and also increase the subsidies.

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