

A STUDY ON CONSUMERS' AWARENESS ON SOLAR ENERGY PRODUCTS IN TIRUNELVELI DISTRICT

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Abstract : This study has been undertaken to investigate the determinants of stock returns in Karachi Stock Exchange (KSE) using two assets pricing models the classical Capital Asset Pricing Model and Arbitrage Pricing Theory model. To test the CAPM market return is used and macroeconomic variables are used to test the APT. The macroeconomic variables include inflation, oil prices, interest rate and exchange rate. For the very purpose monthly time series data has been arranged from Jan 2010 to Dec 2014. The analytical framework contains.

IndexTerms - Component,formatting,style,styling,insert.

INTRODUCTION

The sun is inexhaustible sources of energy to mankind. India is both densely populated and has high solar isolation, providing an ideal combination for solar products in India. Much of the country does not have an electric grid, so one of the first applications of solar products has been for water pumping; to being replacing India's four to five million diesel products water pumps, each consuming about 3.5 kilowatts, and off-grid lighting. The amount of solar energy produced in India is merely 0.5 percent compared to other energy resources. The Ministry of New and Renewable Energy (MNRE) have initiated schemes and incentives – like subsidy, soft loan, concessional duty on raw material imports, excise duty exemption on certain devices/product etc. – to boost the production and use of solar energy products. The Indian Renewal Energy Development Agency (IREDA) provides revolving fund to financing and leasing companies offering affordable credit for the purchase of PV products. An Expert Committee Constituted by the planning Commission has prepared an Integrated Energy Policy which envisions a ten million square meter solar collector area, to be set up by 2022, and capable of conserving electricity equivalent to that generated from a 500 MW products plant. The state of West Bengal has initiated to make the use of solar products mandatory in new multi-storeyed buildings. However the Indian government support is insignificant compared to the support solar energy receives by governments in Europe and East Asia accounted for approximated 6.4 megawatt- years of products as of 2005. Per capita land availability is a scarce resource in India. Dedication of land area for exclusive installation of solar cell might have to compete with others necessities that require land. The amount of land required for utility-scale solar products plants- currently approximately 1[km.sup.2] for every twenty-sixty megawatt (MW) generated – could pose a strain on India's available land resources. A wide variety of technologies have been developed. The efforts made for research and development, demonstration and large-scale promotion during the eighties and nineties have resulted in perfecting many of these technologies have reached maturity and a user-friendly status. The technologies are suitable for decentralized application and have no negative impact on environment.

STATEMENT OF THE PROBLEM

Tirunelveli district is one of the most developing areas in Southern Tamilnadu. More industries are in and around Tirunelveli District. For the development of the industry and over all development of economy as a whole products generation is considered as an important one. Solar energy is actually one of the cleanest methods of energy production, because solar panel simply converts the energy of sun into energy. Mankind can use; there are no harmful by products or threats to the environment. Since solar products generate no air pollution during operation. So considering the importance of solar energy the researcher has selected consumers' awareness of solar energy products in Tirunelveli District.

OBJECTIVES OF THE STUDY

- ❖ To know the awareness about solar energy products
- ❖ To identify different renewable energy sources
- ❖ To find suggestion and findings in solar energy products

SOCIAL RELEVANT OF STUDY

Since solar energy products generate no air pollution during operation, the primary environmental, health, and safety issues involve how they are manufactured, installed, and ultimately disposed of. Energy is required to manufacture and install solar components, and fossil fuel used for this purpose will generate emissions. Lack of electricity infrastructure is one of the main hurdles in the development of rural India. India's grid product is considerably under-developed, with major section of its populace still surviving off-grid. Developments in cheap solar technology are considered as a potential alternative that allows an electricity infrastructure consisting of a network of local-grid clouds with distributed electricity generation. It could allow bypassing (or at least relieving) the need to install expensive, glossy, long –distance, centralized products delivery products and yet bring cheap electricity to the masses.

COLLECTION OF DATA

The study based on both primary and secondary data. For the purpose of collecting primary data, the researchers have visited various industries and institution housing and multi storied buildings, and it is carefully designed and pre–tested interview schedule. Secondary data were collected from reference books, journals, magazines and from websites.

DIFFERENT FORM OF ENERGY

Energy exists in many different forms. Examples of these are: light energy, heat energy, mechanical energy, sound energy, chemical energy, nuclear energy and so on. These forms of energy can be transferred and transferred between one another. This is of immense benefit to us. For a source of energy to end up as electricity it may undergo many transformations before it can products the light bulb in your home. Energy has a number of different forms, all of which measures the ability of an object or products to do work on another object or products. In other words, there are different ways that an object or products can process energy.

The strength of the solar energy available at any point on the earth depends, on the day of the year, the time of the day, and the latitude of the collection point. The amount of energy collected can be further changed depending on the orientation and shape of the object doing the collection. Insulation is a measurement of the amount of solar energy that reaches the surface of the earth. The amount of institution an area receives depends upon the Sun's angle, the amount of dust and water vapour in the air, and the amount of cloud cover. Less than the half of the radiation energy we receive from the sun makes it to the ground. The rest is absorbed by the atmosphere or reflected back out into space.

Solar energy products are used for heating water for domestic use, space heating of buildings, drying agriculture products, and generating electrical energy. One of the first examples of using solar energy was the use of a solar collector box to cook food during an expedition into Africa in the 1830's by British Astronomer John Herschel. Today it is used for many things. Solar thermal or heat energy is used widely in Australia for heating water for our domestic use in Solar Water Heater. This is an excellent and economic energy solution as, by using the suns for making our hot water, we cut down on the amount of fossil fuels needed to be burnt to supply electricity to do the same thing. **FRAME WORK FOR ANALYSIS**

In this study, eighty respondents are selected from various solar adaptors in Tirunelveli District by convenience sampling method. The data analyzed by applying simple percentage and chi-square testing and the results are given below.

Table 1

Respondents Awareness of the Solar Energy Products

S.NO	Option	No. of respondents	Percentage
1.	Yes	46	57
2.	No	34	43
	Total	80	100

Source: Primary data

It is inferred from Table1 that the knowing of solar energy products of respondents. Out of 80 respondents, 57% of the respondents belonging that they are known about the solar energy products, 43% of the respondents belonging that they are unknown about the solar products energy. It is clear that most of the sample respondents of (57%) come under the known about the solar energy products.

Table 2
Opinion about the cost effectiveness of the Solar Energy Products

S. No	Particulars	No. of respondents	Percentage
1.	Cost for solar energy products is very high	24	30
2.	Cost is just comparable with other sources	27	34
3.	Cost for solar energy products is low	13	16
4.	Don't know	16	20
	Total	80	100

Source: Primary data

Out of 80 respondents, 34% of the respondents mentioned that cost is just comparable with other sources, 24% of the respondents said that cost for solar energy products is very high, 20% of the respondents said that they don't know about the cost effectiveness of the solar energy products and the remaining 16% of the solar energy products is low.

HYPOTHESIS

H01 – There is no significant relationship between the gender of the respondents and the dependent variables.

H02 – There is no significant relationship between the occupational status of the respondents and the dependent variables.

Table 3
Distribution on gender and dependent variables

Particulars	Gender		Total	Chi-square value
	Male	Female		
Factors influencing	15	11	26	0.23
Level of satisfaction	14	10	24	
Perception	17	13	30	
No. of valid cases	46	34	80	

Source: Primary data

The Table 3 shows calculated value (0.23) is less than the table value (5.99); hence the null hypothesis (H01) is **accepted**. This means there is no significant relationship between the gender of the respondents and dependent variables.

Table 4
Distribution on occupational status of the respondents and the dependent variables

Particulars	Occupational Status					Total	Chi-square value
	Govt. Employee	Pvt. Employee	Business	Profession	Agriculture		
Factors influencing	5	3	11	7	10	36	13.5
Level of satisfaction	4	7	5	3	2	21	
Perception	3	8	4	2	6	23	
No. of valid cases	12	18	20	12	18	8	

Source: Primary data

The Table 4 shows calculated value (13.5) is less than the table value (15.5); hence the null hypothesis (H01) is **accepted**. This means there is no significant relationship between the occupational status of the respondents and dependent variables.

FINDINGS AND SUGGESTIONS

- In this study the respondents are mostly 46% are coming under the knowing of Solar Products Energy.
- Most of the sample respondents are accepted that Solar Products Energy is the other source of generating Products.
- From this study most of the respondents will have the idea to install the Solar Products Energy. So government should give their role to make awareness to public by conducting many seminars in schools and colleges and make advertisement to public.

CONCLUSION

Solar energy products is a clean, pollution free, and renewable source of energy requires accurate detailed long term knowledge of the potentials taking in to account seasonal variation. The Solar technologies will also reduce many of the current environment problems associated with fossil fuel production and use. An immediate priority is to speed the transition from reliance on non- renewable energy sources to reliance on renewable, especially solar based, energy technologies. Various combinations of solar technologies should be developed consistent with the characteristics of different geographic regions taking into account the land and water available and regional energy needs. Finally the nature's gift is the Solar Energy. So we make use of it at the useful manner.

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