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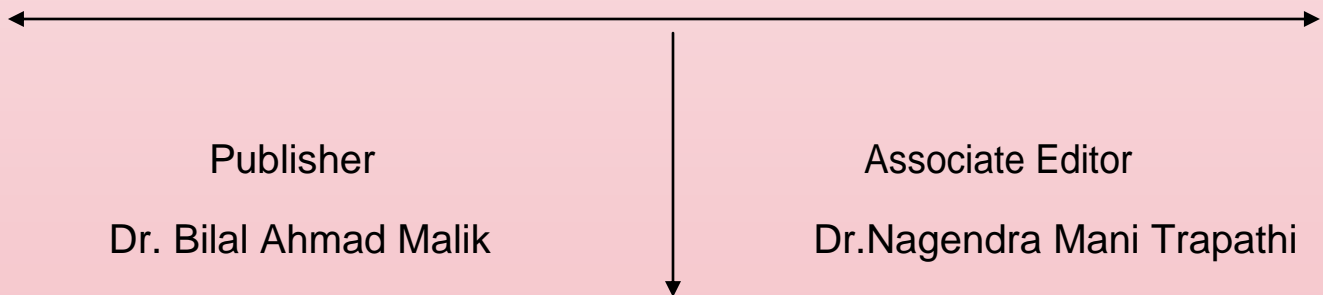
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## SOLAR ENERGY PRACTICES AND ITS IMPLICATIONS – A CASE STUDY

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### ABSTRACT

*Renewable energy is always been remarked as the sustainable energy that is continuously replenishing from nature. The renewable energy majorly covers three important areas like, Solar, Wind and Bio energy. Renewable energy is being championed as a potentially significant contributor for new source of jobs and rural growth in developing countries, and a means of addressing environmental and energy security issues. It is also expected that the Renewable energy policies should have energy security, climate change mitigation, and socio economic development in the country. Now a day's we call renewable energy technologies as "clean" and "green" where as burning fossil fuel emission produces green house gases that contributing towards global warming. An effective use of Renewable energy can help fill the gap while we face unlimited supply of fossil fuels and this does not affect the environment. So this study on the solar energy and its implications was carried out to find out the socio-economic conditions and the opinions of the respondents who have availed the benefits of government programmes on solar energy. The study constitutes of selected case studies who are the beneficiaries of solar energy users in Thanjavur district, Tamilnadu. The researcher has adopted qualitative method by using Case study to collect the details from the respondents and to assess the implication of the renewable energy. The study reveals that the socio economic statuses of the respondents have greater influence on adoption of renewable energy methods. It also reduces the monthly expenses incurred towards electricity charges and it compensates during the shutdown of power. Meanwhile the respondents were also aware that adopting renewable energy programmes and policies can be a mitigation method for emerging climate change issues.*

**Keywords:** Renewable energy, Global warming and Climate change mitigation.

### INTRODUCTION

Renewable energy is a sustainable energy and Green energy. The various form of renewable energy sources are Wind, Solar, Biomass, Biogas, Small Hydro, etc. Renewable energy uses energy sources that are

continually replenished by nature i.e. the sun, the wind, water, the Earth's heat, and plants. Municipal and Industrial wastes could also be a useful sources of energy while ensuring safe disposal. We need energy to power our appliances, to fuel our vehicles and for everything now a days. We have been depending on fossil fuels for our energy needs. Fossil fuels come from natural reserves like coal and oil. The problem with fossil fuel is that they are limited in supply. The whole world consumes fossil fuel that its only a matter of time before we run out of them. The result could be catastrophic. The cost of power or fuel would be unimaginably high because of great demand and depreciating supply. Besides, at the rate we are consuming fossil fuel, it will have a disastrous impact on our fragile atmosphere. If you are wondering why the seasons are not predictable anymore, why it rains when it normally doesn't or its hot when it's not supposed to be, we have caused almost all of it by our fossil fuel dependence. There is an ever increasing demand for energy in spite of the rising prices of oil, other fossil fuels or depletion of fossil fuels. Energy demand, in particular electricity production has resulted in creation of fossil fuel based power plants that has let out substantial green house gas and the carbon emission into the atmosphere leading for climate change issues and global warming.

### **Renewable energy sources**

Renewable energy is not an ever drown source of energy that does not deplete. Sun never stops giving its light even we extract it with all our clout. It is the same with the wind. The nature gives as all the time and its always there. The need is a way to harness them and generate power from them. We are now enhanced and enriched with growing modern technologies which has enabled us to obtain free, everything we need and also unlimited power from renewable energy. Moreover it is absolutely environment friendly and a greater contribution that we can leave the earth preserved for the future generations. Nature always has a way of healing itself when we stop hurting it. Thus the Renewable energy policies that are framed are expected to deliver in three vital areas namely, energy security, climate change mitigation, and economic development.

### **SOLAR ENERGY PROGRAMME BY THE STATE GOVERNMENT OF TAMILNADU**

Government of Tamilnadu initiated and implemented under two major schemes are given below

- The State Government Scheme- Chief Minister's Solar Powered Green House Schemes (CMSPGHS).House construction in rural areas under solar energy programmes like Chief Minister Solar Powered Green House at the unit cost of Rs.2.10 lakh wherein Rs.1.80 lakh is earmarked for construction component and the balance Rs. 30,000/- is being utilized for installation of solar powered Home Lighting Systems by Tamilnadu Energy Development Agency (TEDA).

- The State Government Scheme - Department of Agriculture and Department of Agriculture Engineering - Solar Powered Motor Pump sets (5HP) fitted to bore wells equipped with drip irrigation or sprinkler irrigation facilities. . While a solar-powered pump set would cost Rs.3, 96,000, the government would provide a subsidy of Rs.3, 00,000 undertaken by Ministry of New and Renewable energy (MNRE).

## METHODOLOGY

The respondents were the beneficiaries of Chief Minister's Solar Powered Green House Schemes (CMSPGHS) and Solar Powered Motor Pump sets programmes by Department of Agriculture and Department of Agriculture Engineering. The beneficiaries of solar energy programmes were collected from the agricultural engineering department and CMSPGHS were collected from one of the selected Pillayarpati panchayat. The case study method has been adopted to collect the data and the respondents were from pillayarpati panchayat of Thanjavur district, Tamilnadu.

## CASE INTRODUCTION

The case study method has been adopted and three cases were selected who are the solar energy beneficiaries and are residing in Pillayarpati a small village situated about 4km away from Thanjavur city.

### Case study 1: Shanmugavel is a beneficiary of (CMSPGHS).

Shanmugavel (53) is one of the political leader of this village. He has three girl children. He explains about the usage of Solar system under rural housing scheme and the state Government provides Chief Minister's Solar Powered Green House. He implemented this scheme in the year 2012 with the help of Pillayarpati panchayat. He also having electric connection. Approximately he spends every month around Rs. 2450 for electricity. He get Rs.30000 subsidiary for Green house from the government. He uses the solar unit 5 CFL bulbs every day, with 6 hours of backup. He explains, solar is one of the useful scheme to the villagers implemented by the state government.

### Case study 2: Tiyagarajan is a beneficiary of (CMSPGHS).

Tiyagarajan (40) is an auto driver lives in Pillayarpati village. He lives with his wife and two children. He does not have regular earnings. He is one of the beneficiary of green house with the subsidiary amount Rs.30000 provided by Tamilnadu government in the year 2012. He could not pay electricity bills many times and

sometimes he pays late. The electricity power has been disconnected due to nonpayment of electricity bill. This made him to approach the panchayat president for green house. As he is one among the family comes under below poverty line and the village administration allocated him a green house. Approximately he was paying more than Rs.1500 per month towards electricity charges before availing this programme.

### **Case study 3: Joshep Leonal is a beneficiary of Solar Powered Motor Pump sets**

Joshep Leonel (45) years old agriculturist engaged in agricultural activities in his 2.5 acre land. He is one of the beneficiary of solar water pump scheme implemented by Agriculture Engineering Department undertaken by Department of Agriculture. Overall cost of solar water pump scheme includes Rs.3, 96,000 with individual contribution of Rs.95, 000 remaining Rs.3, 00,000 subsidiary given by agriculture engineering department. The solar panel having 4,800 watts power. He runs 2Hp motor for his agricultural activities. He was spending merely Rs.2100 every two month for his electric expenses.

### **RESULT AND DISCUSSION**

The researchers observed the socio economic conditions, energy security and their contribution for climate change. All the respondents are having electric connections to their houses. Approximately two third of the respondents spend every month around Rs. 2450 for electricity. Two third of the respondents are using the solar power unit with the maximum capacity of 5 CFL bulbs with 6 hours of backup every day. The respondent reveals that solar energy is one of the useful and essential scheme for the rural areas that were implemented by the government. Researchers found that all the solar programmes are done under its given regulations and no one use home appliance or other gadgets using the solar system. All the three respondents said they use the bulbs during the night time only. All respondents said that solar programme is more useful when there is power shut downs and during the night time with the backup up to 6 hours. All the three respondents said that the major drawback of this scheme is only that they can use only prescribed appliances to the system. Researcher find out all the three respondents said that they need maximum usage of appliances like fan, T.V etc. The researcher find out all the three respondents are saving Rs.700 to Rs1600 in two month. The researcher find out all three respondents revealed that there is a interference of politicians in the selection of solar beneficiaries.

## IMPLICATIONS

- The solar energy is one of the new revenue sources.
- The solar energy is one of the new job and business opportunities
- The solar energy scheme is one of the Innovations in products and practices.
- The solar energy scheme is one of the basic alternative source during the power shortage and power interruption.
- The higher configuration of solar panel and battery for the efficient energy is needed for the future growth.
- The saving of Rs.700 to Rs1600 per family contributes in their economic aspects and to meet out other expenses.
- The increase in savings helps to contribute for their children's education.
- Researcher find that all the three respondent said that government has to implement more solar energy schemes for other domestic usage.
- Solar system upgrading with high configuration of solar panel and batteries will have a greater impact.
- Solar energy proved to be one of the alternative source of energy.
- Solar energy is one of the major contributors in climate change mitigation.

## CONCLUSION

To conclude, the research demonstrates that there are no shortcuts to rural development. Policy makers should always take into account the overall cost of energy, and implement the least expensive energy solution that can also satisfy carbon emission reduction requirements. Only a coherent and integrated development strategy can achieve the goal of promoting growth together with a better environment. This study reveals that the solar energy practices and its implications has been a new innovations model and wider scope in social entrepreneurship.

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