

An Empirical study on Solar Energy in Tamilnadu (INDIA)

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ABSTRACT

This paper investigates the growth of solar energy in India. The developed countries are well established in green energy like solar power and the developing countries are concentrating in green energy. The countries like India have large space for solar business so; the world markets are looking Indian market. India is basically having good resource in solar energy. Solar energy policy in Tamil Nadu states the TN is now the leading Indian state in terms of installed solar power capacity, with 1,368 MW as of August 22,2016, according to market analyst Bridge to India. The TamilNadu government provides incentives for users. It helps to improve solar power growth in the state. The chief minister's Solar powered Green House scheme provides – Energisation of street lights through solar power / MNRE capital subsidy scheme for offgrid and decentralized solar application plants solar PV / Solar water Heater. The private companies like Adani Invested Rs:4550 crore for Solar plant having capacity of 648 MW in Kamuthi, Ramanathapuram- Tamilnadu. Hence the part of solar energy plays a vital role in TamilNadu electricity and the growth of green energy.

Key words: Solar Energy, State Development, Government Policies

I INTRODUCTION

The researches represent the growth and development of solar energy in TamilNadu state and elaborate the role of India in solar energy. This is fully depending on empirical study referred to the secondary data for the research. India and France have committed more than US\$2 billion to fund solar-energy projects in developing countries. Renewable-energy analysts say that the money has the potential to dramatically expand solar technology in these nations, but others argue that governments should instead focus on removing barriers that slow the growth of renewable energy. The announcement came on 11 March during the first summit of the International Solar Alliance (ISA) in New Delhi, which drew heads of government from more than 20 countries. In his opening address, Indian

Prime Minister Narendra Modi pledged \$1.4 billion to support solar-energy projects in Bangladesh and in developing countries in Africa. French President Emmanuel Macron committed €700 million (US\$865 million) to the scheme. “Pledges of \$2-billion-plus are quite significant,” says solar-policy analyst Ashvini Kumar at the Energy and Resources Institute, a sustainable-development think-tank in New Delhi. “A number of programmes can be launched and sustained with this,” he says. The intergovernmental ISA was launched by Modi and former French President François Hollande at the United Nations climate conference in Paris in 2015. The alliance seeks to lower the cost of solar technology so that it can meet the energy needs of 121 sunshine-rich developing countries. It aims to create 1 terawatt (1,000 gigawatts) of solar energy by 2030. So far, 61 countries have joined the alliance and 32 have ratified its framework agreement. Modi told the summit that India’s \$1.4-billion pledge would be used to support 27 new projects in 15 developing nations. Projects will range from setting up small solar photovoltaic power plants in several African countries to a 100-megawatt solar photovoltaic plant in Mollahat, Bangladesh, and an LED street-lighting project in the Seychelles.

India’s need to increase energy provision for its population and fast growing economy poses a formidable challenge which is perceived as both a great opportunity as well as a necessity for the country to increase the share of renewables in the overall energy mix. At present India is sixth largest country in the world in electricity generation, having aggregate capacity of 177 GWs out of which 65% is from thermal, 21% from hydro, 3% from nuclear and the rest about 11% is from renewable energy sources [4]. Although Over the years, Indian power sector has experienced a five-time increased in its installed capacity—a jump from 30,000 MW in 1981 to over 176,990.40 MW [4] by 30 June 2011 but still there is a huge gap in generation and demand in India hence need to be establish more generation plants preferably to be come from renewable sources by governmental as well as various private participation. Government initiatives to promote solar energy in India There are several electricity policies in the last few years have talked about the need and priority to promote renewable energy. Foremost amongst them is the Electricity Act (2003) which delicensed stand-alone generation and distribution systems in rural areas [18,19]. The National Rural Electrification Policy, 2005 [20] and National Rural Electrification Policy, 2006 also stresses the need for urgent electrification [21]. The New Tariff Policy (2006) stated that a minimum percentage of energy, as specified by the Regulatory Commission, is to be purchased from such sources [22]. The details of directive released by Indian government to promote renewable energy are discussed in later sections. India, faced with twin challenges on energy and environmental front, has no option but to work towards increasing the role of renewable in the future energy systems. The objective of the JNNSM is to establish India as a global leader in Solar Energy, by creating the policy conditions for its diffusion across the country as quickly as possible.

II.LITERATURE REVIEW

Naveen Kumar Sharma et al (2012).Renewable energy sources and technologies have potential to provide solutions to the longstanding energy problems being faced by the developing countries like India. Solar energy can be an important part of India's plan not only to add new capacity but also to increase energy security, address environmental concerns, and lead the massive market for renewable energy. Solar thermal electricity (STE) also known as concentrating solar power (CSP) are emerging renewable energy technologies and can be developed as future potential option for electricity generation in India. In this paper, efforts have been made to summarize the availability, current status, strategies, perspectives, promotion policies, major achievements and future potential of solar energy options in India. KhamidMahkamov (2007). The continuous increase in the level of greenhouse gas emissions and the climb in fuel prices are the main driving forces behind efforts to more effectively utilise various sources of renewable energy. In many parts of the world, direct solar radiation is considered to be one of the most prospective sources of energy. However, the large-scale utilisation of this form of energy is possible only if the effective technology for its storage can be developed with acceptable capital and running costs. One of prospective techniques of storing solar energy is the application of phase change materials (PCMs). Unfortunately, prior to the large-scale practical application of this technology, it is necessary to resolve numerous problems at the research and development stage. Shanthi Priya (2012) This study is carried out on the vernacular architecture of coastal regions. The vernacular architecture in the coastal belts of Nagapatinam is known for its use of natural and passive methods so as to create a comfortable indoor environment. However, so far, it has not been proved by a detailed quantitative evaluation method. The authors have conducted the qualitative and quantitative analysis to investigate the indoor environmental condition of a vernacular residential building in coastal region of Nagapatinam. Sophia Porchelvi (2015) It would be beneficial to switch over to renewable energy sources like solar, wind, tide and biomass etc. This study focuses on making use renewable sources as an alternative source of energy. The study area is Nagapattinam district a south coastal region of Tamilnadu in India, and a generalized findings and suggestions have been given based on the secondary data obtained. The problem is formulated as an integer linear program where the objective function is to be minimizing the initial capital investment.

III.OBJECTIVE OF THE STUDY:

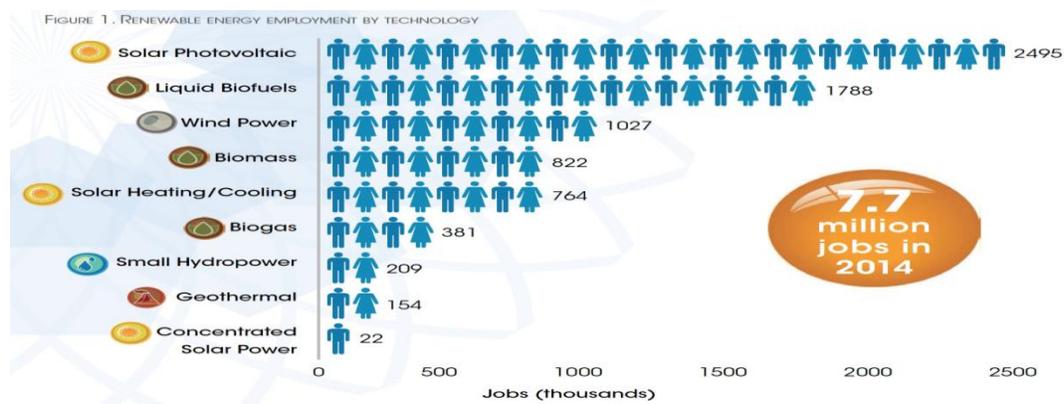
- To understand the role of Tamiladu in Solar energy policy
- To find out the Growth and development of Solar energy within the state
- To analyze the importance of jobs in renewable energy – Solar Energy

IV.METHODOLOGY

This research is purely based on empirical study. An empirical study is one that includes scientific methodology based on experimentation, systematic observation, or measurement, rather than theoretical formulation. The data were collected belongs to journals, magazine, newspaper. The data were structured by the researcher for the purpose of research output. The conceptual data were used for the research.

V.DISCUSSION

Tamilnadu Solar Energy Policy: The state came up with an ambitious solar energy policy in 2012, with the goal of 3000 MW of solar power in Tamil Nadu by 2015. Hon'ble Chief Minister's Solar Rooftop Photovoltaic Capital Incentive Scheme/Chief Minister's Solar Powered Green House Scheme -The Govt. of Tamil Nadu has launched Solar Powered Green House Scheme. Under this scheme 3 lakh houses will be constructed with solar powered lighting systems over a period of 5 years from 2011-12 to 2015-16 for the benefit of poor in rural areas. Energisation of Street Lights through Solar Power-The Govt. of Tamil Nadu has decided to energise 1 lakh street lights in village panchayats through solar power over a period of 5 years up to 2016.MNRE Capital Subsidy Scheme for Offgrid and Decentralised Solar Applications Plants Solar PV-Ministry of New and Renewable Energy (MNRE) provides financial incentives for rooftop and offgrid solar power plants. Solar Water Heaters- are provided to the people with reasonable cost.

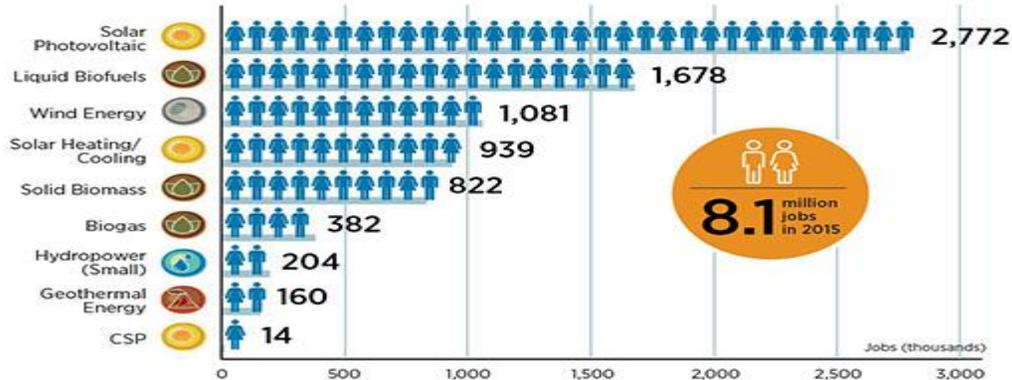


Source : IRENA

Renewable Energy and Jobs
Annual Review 2016

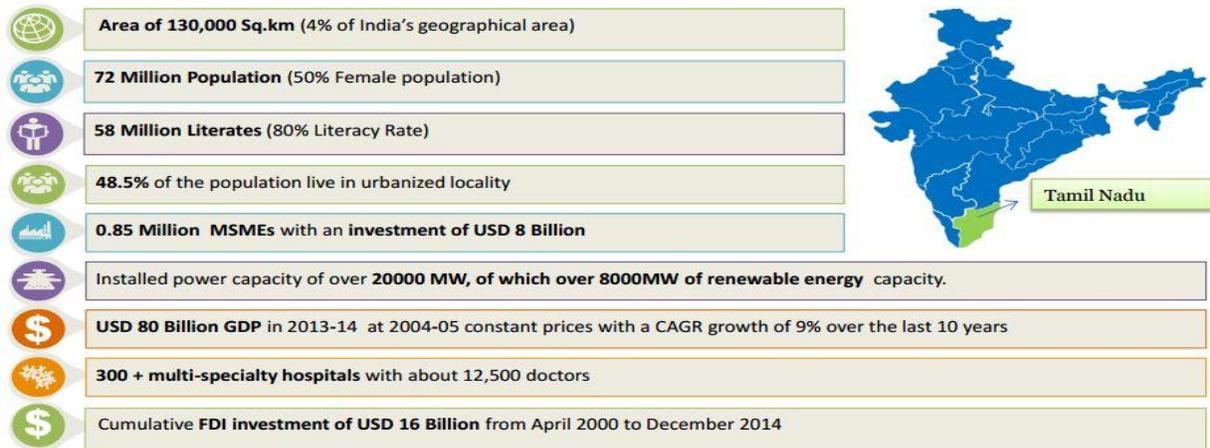
IRENA
International Renewable Energy Agency
#rejobs

RENEWABLE ENERGY EMPLOYMENT BY TECHNOLOGY



Source : IRENA

Tamil Nadu at a glance



Source : IRENA

VI.CONCLUSION

The role of solar energy is great among the Indian renewable energy sector. The government of India motivates all the states to concentrate in renewable energy like solar energy. Even our government of India and France make a great deal for solar power. The government of tamilnadu concentrate more in solar energy then only they permitted the project like Adani Solar power station in kamuthi ramanathapuram and also provides subsidy to the users of

residence those who install more than 1 KW Solar power. Hence in this empirical connectional data analysis the government of India and the state government like Tamilnadu doing better process for Solar Energy that will provide more jobs in this sector

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