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Anthology : The Research

Pattern and Prospects of Solar Power Industry In India

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Abstract

India has started to develop solar power industries to generate the use of renewable sources & to overcome the problems of non-renewable resources with a new vigour since 2017.As on 30th June 2018 India achieved an installed solar capacity of 23 GW. The solar-generation capacity increased from 2,650 MW as on 26th May 2014 to over 20 GW as on 31st January 2018 which is about 8 times thus becoming the fastest growing industry in India.3 GW of solar capacity were added in the year 2015-2016 alone while in 2017-2018 this reached to 10 GW which was stated in the report published by the Institute for Energy Economics and Financial Analysis (IEEFA), Also the average current price of solar electricity when compared to coal -fired energy, dropped below 18 percent.

The Scheme for Development of Solar Parks has proved successful in attracting foreign capital towards construction of the world's largest ultra-mega solar parks in India. Though India has made a tremendous start by reaching its targets much before schedule, it is estimated that meeting the 2022 revised target of 175 GW through renewable sources would require funding of at least USD 125 billion. As per a report; "Even as notable foreign investors like Goldman Sachs, Morgan Stanley, JPMorgan, and EDF have revealed interest in backing India's solar ambitions, surveys indicate a 65% drop in domestic corporate funding for the solar industry from 4th quarter of 2017 to 1stquarter of 2018." Further there are many regulatory blocks and tariffs impeding its growth. The Green Energy Corridor project, announced in 2013, has been delayed.

This descriptive study charts the growth and reveals the impediments in the progress of solar industry in India. It is based on secondary data. Time series technique has been used to do the analysis.

Keywords: Progress and prospects of solar energy, Impediments, Growth..

Introduction

Power is the energy source of every active thing. It can be of different forms and can be generated by using different sources like, solar energy, wind energy, geothermal energy, hydrogen energy and tidal energy etc.

Solar energy is the power achieved from sun rays. In India the solar power industry is the fast developing industry. The renewable source of energy generation is now important for every developing country. Strong economic growth of India, combined with country`s industrialisation, increasing population & increased access to power has led to rising demand for power in the country.

Indian Government has set very ambitious targets to plug the gap and the big push coming from renewable. The Government of India has significant potential for generating renewable energy, particularly in hydro, wind and solar. India generates 5000 trillion KWh per year, solar energy.

The Government of India has formulated an integrated energy policy (IEP) document, gives a roadmap to develop energy supply options and increased exploitation of renewable energy resources.

Indian Government has amended the National tariff policy for electricity in January 2016 for promoting the renewable energy. The government has set a target to achieve 100 GW of solar capacity installation by 2022 through different schemes, which are;

1. Solar parks & ultra mega solar power project development scheme.
2. Solar PV power plants on canal banks development scheme.
3. Scheme for setting up of 300 MW of Grid connected solar PV power projects by defence establishment.
4. Implementation of scheme for setting up of 15000 MW of grid connected solar PV power projects under batch 2nd of phase 2nd of National Solar Mission.
5. Setting up of 2000 MW grid connected solar power with VGF through solar energy corporation of India.
6. Development of solar cities programme.
7. Scheme for development of solar zones in the country.

Importance of the study:

This is the descriptive research, which focuses on the study of growth, progress and prospects of solar industry in India. This research will help the students, investigators, policy makers and different research scholars etc.

Objectives of The Study

The following are the main objectives of the study;

1. To study the trend of solar energy in India.
2. To study the prospects of solar power in India.
3. To suggest some important ways to promote the solar power in India.

Progress and Trend of Solar Energy in India

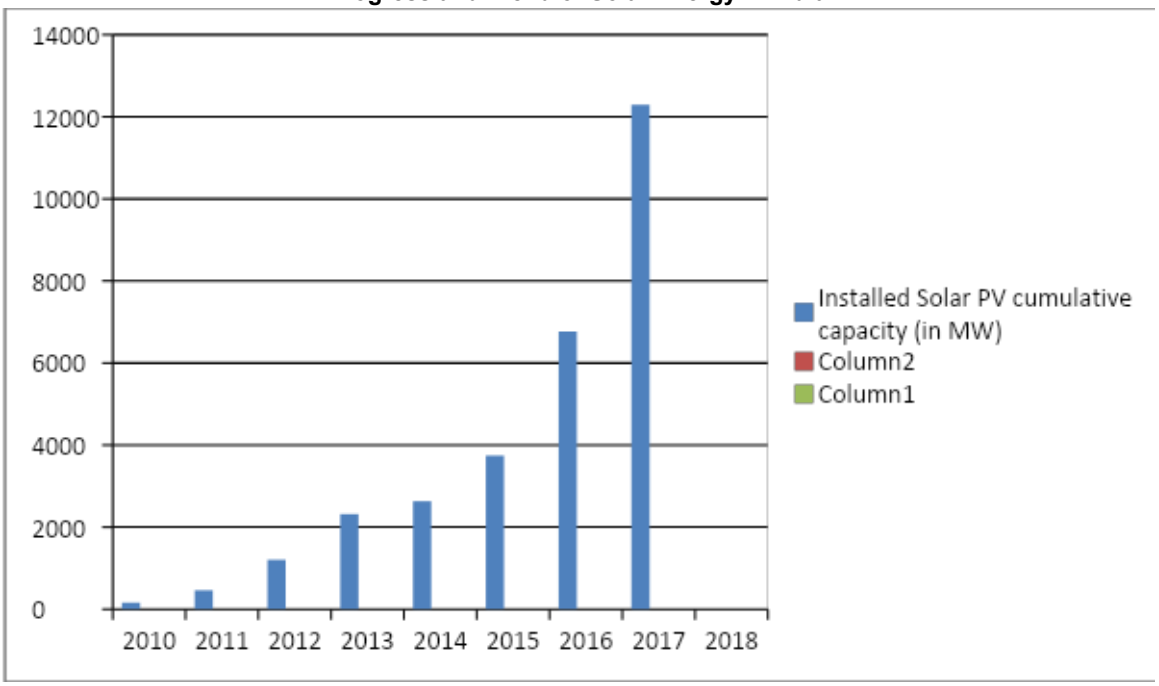

Fig. 1.1

The above figure shows the continuous growth in solar power industry in India.

Annual Solar Power Generation

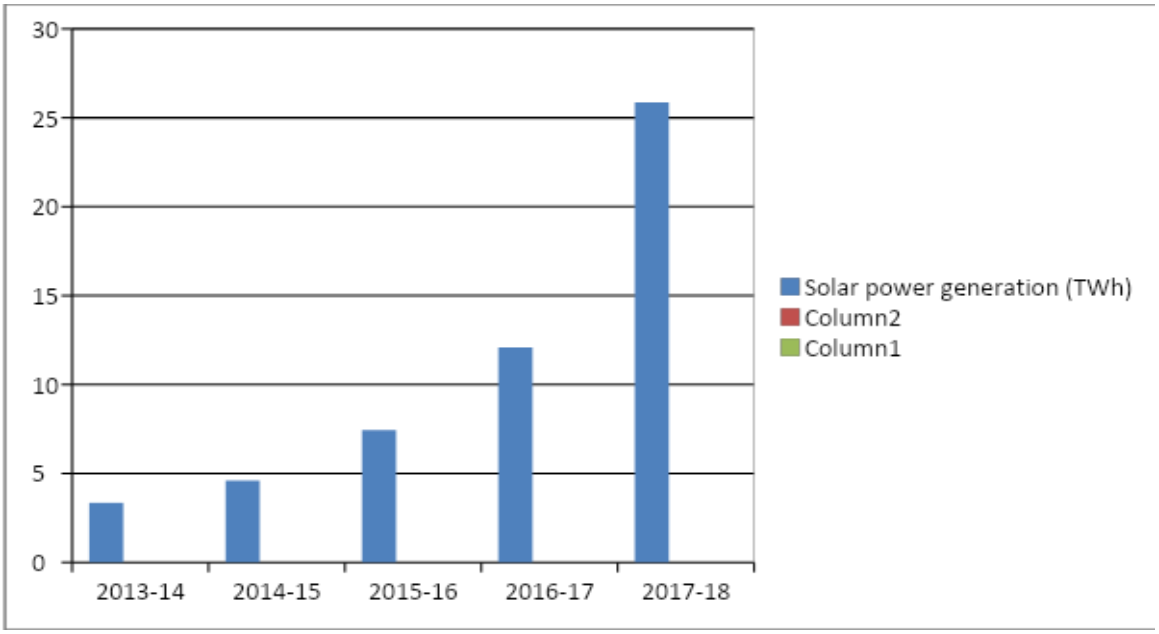

Fig. 1.2

Government support

Fifty-one solar radiation resource assessment stations have been installed across India by the Ministry of New and Renewable Energy (MNRE) to create a database of solar-energy potential. India began a ₹40 cr. project to measure solar radiation with a spatial resolution of 3 by 3 kilometres, in June 2015. According to National Institute of Wind Energy officials, “The Solar Radiation Resource Assessment wing (121 ground stations) would measure solar radiation's three parameters—Global Horizontal Irradiance (GHI), Direct Normal Irradiance (DNI) and Diffuse Horizontal Irradiance (DHI)—to accurately measure a region's solar radiation.”

The Indian government announced an allocation of ₹1,000 cr. for the Jawaharlal Nehru National Solar Mission for promoting solar energy and a clean-energy fund for the 2010-11 fiscal year, an increase of ₹380 cr. from the previous budget. The budget encouraged private solar companies by reducing the import duty on solar panels by five percent. It is expected to reduce the cost of a rooftop solar-panel installation by 15 to 20 percent.

Prospects of solar power industry in India

The Green peace has proposed a feed-in-tariff system, which would provide the finance to enable massive renewable energy uptake. It has also estimated the future installed capacity growth for renewable energy in India, including solar PV. This estimate is basically based on two probable scenarios, which are reference and revolution.

Reference scenario

The installed capacity is estimated to increase to 3GW by 2020 from current capacity installed.

Projected installed capacity (GW)

Year	Solar PV installed capacity
2020	3
2030	7
2040	11
2050	16

Revolution scenario:

The installed capacity of solar power will increase to 10 GW by 2020 and is projected to outpace the future capacity of wind power in 2040.

Projected installed capacity (GW)

Year	Solar PV installed capacity
2020	10
2030	118
2040	486
2050	1093

National Solar Mission Targets

Year	Target installed capacity (GW)
2013	1-2
2017	4-10
2022	20

With the help of above explained matter it is clear that solar power industry is having good future in India. Indian government expanded the solar-generation capacity 8 times from 2,650 MW on 26 May 2014 to over 20 GW as on 31 January 2018, which shows good increment in solar energy in India.

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