



Executive Summary

Solar PV Industry: Global and Indian Scenario

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The Renewable Energy (RE) sector around the world, including India, is developing rapidly. Within RE, solar is one of the major growth segments globally with almost 30% of all investments in the sector going into solar. The Indian solar industry, which is in the nascent stage, holds huge potential. But the pace at which it is growing does not compare to global standards. One of the main reasons for this is the lack of adequate investment in solar PV manufacturing and R&D in India. There is an urgent need to facilitate and enhance investment in solar PV manufacturing in India. This would enable the domestic solar PV industry to provide cost-effective and sustainable solutions to the domestic market and compete with the rest of the world. This study has been carried out with the intent to provide the requisite background for investment in this sector.

The study provides a broad overview of the solar PV market globally and in India. It provides the current status and future trends in solar PV manufacturing, technology, R&D, market dynamics, commercial and financial aspects, and government policies and market drivers in leading countries in this space, namely, Germany, Japan and the USA. The study also identifies key market segments where solar PV can be implemented and evaluates the market viability and the size of these market segments. Based on these analyses, a set of recommendations has been made to enhance the growth and competitiveness of the Indian solar PV industry.

Recommendations

Based on interactions with various stakeholders, data and information collection and its analysis thereof, the salient recommendations for promoting solar PV industry, both, in manufacturing and its applications, have been made.

The manufacturing base in India comprises of cell and module manufacturing, with the bulk of the value addition taking place outside the country. Additionally, the current scale of manufacturing in India is small in comparison to global standards. Hence, there are two issues to be addressed: scale and integration. Significant and immediate steps would be required from the Government of India to facilitate a bigger and vertically integrated manufacturing base in the country. The availability of capital subsidy would ensure early capital recovery or break even for the investor and allow the investor to commit higher investments into this sector. It is recommended that the incentives as per the Semiconductor Policy should be made available to a larger no. of units engaged in solar PV manufacturing.

Emphasis should be laid on R&D and innovation in solar photo-voltaics as they are one of the key drivers for the development of the solar PV industry. The salient initiatives in this direction include collaborative

research amongst government, R&D institutions and industry, enhancing coordination amongst various government departments and institutes undertaking R&D, commercialization of the developed technology and developing a proper framework for technology transfer and collaboration within India and other countries to obtain the best available technology.

On the deployment side, it is recommended that the government extends the GBI scheme to all project developers for unlimited capacity addition in the next 5 years. In addition, the existing period of 10 years for GBI incentives should be extended to 20 years. Besides, the government should allow developers to take benefits of the accelerated depreciation. To accelerate the demand, the government should enact a Renewable Energy Law requiring all utilities to progressively increase their purchase of power (year after year) from the RE segments. Also, within the RE segments, higher allocation should be given to purchasing power from solar sources. This will help in creating sustainable demand for power from renewable sources, which will immensely help the solar manufacturing industry. Besides the large scale applications, the government should encourage solar PV applications for small & medium scale niche market segments (residential, commercial and telecom). It is recommended that the government agree for 'net metering' for all grid connected consumers generating solar power, which will incentivise all consumers to adopt solar PV

The provision of financial assistance at cheaper rates to both, the manufacturers and the developers, will also enhance the competitiveness of this sector and would greatly help in achieving the grid parity through solar PV.

A comprehensive National Policy for Solar Energy in India based on the recommendations made should be formulated to achieve set objectives and goals at the national level and encourage the growth of this sunrise industry in a big way. It is recommended that the growth of the solar PV industry should be implemented under Mission mode.