

## Executive Summary

# Solar PV Industry: Global and Indian Scenario

September 2008

Supported by:


## National Manufacturing Competitiveness Council (NMCC)

Department of Industrial Policy and Promotion  
Ministry of Commerce & Industry  
Government of India  
New Delhi



India Semiconductor Association

UNI Building, Millers Tank Bund Road  
Bangalore 560 052. [www.isaonline.org](http://www.isaonline.org)



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.

### **Economics of Solar PV manufacturing**

Solar PV adoption globally is in its early phase and is expected to grow significantly over the next few decades. Developed economies, like Germany and Japan, have led the manufacturing revolution and the adoption of PV technologies till now. They have fuelled the technological progress and cost reductions. China is slowly gaining ground as a manufacturing centre for solar PV. Given that the technology is young and is in an evolving stage, the government in several countries, like China, Malaysia, Hungary and Mexico, have announced initiatives to attract investments in the manufacturing of PV. Now is the time for the Indian government to frame and implement suitable programmes and policies to attract domestic and global investments in this sector. Besides serving the expanding global PV market, this manufacturing ecosystem will ensure that India has a stake in the development of low cost photovoltaic panels for local consumption. This will ensure the technology achieves grid-parity at the earliest, and thereby reduces dependence on conventional energy sources.

The incentive structure currently offered under the Special Incentive Package Programme of the Semiconductor Policy is a welcome move. It has resulted in investors showing interest to set up large-scale vertically integrated manufacturing facilities. It is crucial to implement the incentive package fast so that India can establish a manufacturing base of a commendable scale. As would be seen in the detailed analysis, the manufacturing base has to be adequately supported by the capital subsidy programme.

Duties on the balance of systems, like inverters, batteries, charge controllers, etc. (which constitute 30-40% of the solar PV system cost), and are used for setting up solar power projects should be reduced. It would lead to a drop in project cost and ensure a lower cost of generation and better returns for the developer.