



Solar Energy

The Way To Go

ONE of the fastest growing nations in the world, India faces a dilemma today – ensuring steady economic development in the face of challenges posed by climate change and energy security. Even though coal provides almost 42% of India's energy requirements, it is plagued with issues of shortage and disputes over environmental concerns and land permits. Nuclear energy is still trying to gain a foothold amidst rising protests and concerns over its safety records.

There has been a growing realization over the years that it is the renewable energy sector where India should be putting its money in. In fact, that is precisely the course the country has

REFERENCE HANDBOOK FOR SOLAR ENERGY SYSTEMS,

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charted for itself lately. The WorldWatch Institute counts India among the fastest growing nations, after China, Brazil and the US, in the renewable energy sector with investments rising to 62% -- the highest growth rate for any single country over 2010 totals.

The solar energy sector gives much hope in being able to plug the country's energy gap to a large extent. The government, therefore, rightly launched the Jawaharlal Nehru National Solar Mission (JNNSM) in 2010. In the first phase the target was to set up 1,000-2,000 MW of grid-based solar power in the country. In the next phase that kicks in from 2013, the target is setting up of 9,000 MW of solar power by 2017. With prices of solar energy crashing in the past three years, solar energy is now closer to grid parity than ever before. With increasing incentives, augmented indigenous capacity and increased awareness the solar energy sector can be expected to get a real boost.

In a tropical country like India, even if a small fraction of the almost 5,000 trillion kWh per year solar energy incident over India is captured, the country can meet its entire power requirements. However, information and advocacy on the how and why of solar energy is severely lacking in the

country. This is what the Reference Handbook for Solar Energy Systems sets out to do. It is a good effort at increasing awareness and removing myths and misinformation that is so rampant about the efficiency, robustness and ease of installation and maintenance of solar energy systems.

The book details the country's current energy scenario and makes a passionate argument for solar energy. It tries to demystify myths related to cost effectiveness, efficiency in urban environments, ease of installation and so on. The book provides a detailed insight into the solar energy power generation technology comprising various components such as solar panels, battery requirements, regulator, the cabling and wiring, the load for various applications, etc. It also provides the reader guidance on system design and costing, installation and commissioning, safety aspects and troubleshooting and also preventive maintenance. It's a virtual guidebook on how to install and commission solar energy systems for personal use.

The annexures in the book are especially helpful as they give a list of various government schemes that provide subsidies and incentives for the use of solar energy, list of solar photovoltaic manufacturers in India, specifications of solar photovoltaic panels, and effect of orientation, temperature and shading on the efficiency of solar panels. There is also a section for school kids guiding them in making simple solar energy circuits.

A well-designed handbook with numerous graphics in the form of pictures, tables and flowcharts, the book would be especially useful for students, users, manufacturers, and all those keen to know more about Solar Energy.