KfW Development Bank

»» Project Information

Federal Ministry for Economic Cooperation and Development

Implemented by: KFW

Solar Energy – India

Sakri Solar Power Plant – a show case of Indo-German energy cooperation

India needs energy, in fact more than it currently produces. Around a thenth of today's energy requirements are not met. And that at a time when the economy and population are expanding. To bridge these energy gaps, and at the same time enable climate-friendly growth, the Indian government has begun to significantly increase its investments in renewable engergies. KfW supports these efforts on behalf of the German government.

Context

The Indian Government has given a strong push to develop the solar energy sector and launched the National Solar Mission (NSM) in 2010. As announced by the Government, India has the ambition to increase the share of solar power capacity to 100 GW by 2022 as compared to 4 GW in 2015.
In that spirit, India is undertaking huge efforts to rapidly exploit the solar power potential in renewable energy rich parts of the country - as is the case in Maharashtra.

Project approach

Aligned with the objectives of the NSM, the Maharashtra State Power Generation Company Ltd. (Mahagenco) has implemented the construction of a 125 MW solar photovoltaic (PV) power plant at Shivajinagar in the Dhule District of Maharashtra. The total project covers an area of around 350 hectares of idle land that is unsuitable for agriculture. KfW Development Bank has supported this project on behalf of the German Government through concessional financing and a grant for technical assistance measures in order to ensure high quality in technical, commercial and procedural matters. The Financial Cooperation loan to the Indian Government has been on-lent through the State of Maharashtra to Mahagenco.
The contracts for the works were awarded by Mahagenco to two different Indian contractors through international competitive bidding. These contractors were in charge of erecting different lots of crystalline and thin film solar modules. The contractors will also operate the plant for a period of ten years under an Operation and Maintenance (O&M) contract including a performance guarantee before it will be handed over to Mahagenco.

Project name	Sakri Solar Power Plant
Commissioned by	Federal Ministry for Economic Cooperation and Development (BMZ)
Country/Region	Indien
Lead executing agency	KfW Development Bank

The Indian Government is increasing the share of solar power capacity. Source: KfW Group / Arjun Guha

Impact

Sakri Solar PV Plant started its operation in March 2013 and is one of the largest PV plants owned by a single State Generation Utility in India.

At the time of signing the loan agreement in August 2011, there was limited solar PV experience in India with just a few mega-watts of utility scale installations. Mahagenco's initiative and the successful financial closure of the Sakri Solar PV Plant was a significant step forward in motivating commercial financing to the Indian solar sector. At the time of tendering, this project demonstrated "best-in-country" costs per watt of solar power, primarily due to synergies and economies of scale generated by the size of the project.

As different photovoltaic technologies and materials for generating solar power have been employed in this project, it has already allowed for collecting long-term and local experience with these technologies.

The technical assistance engaged in the project was a big enabler toward establishing a landmark solar power plant for the Indian energy sector.

The Sakri Solar PV Plant currently supplies 220,000 households in Maharashtra with clean power resulting in the reduction of more than 170,000 tons of greenhouse gas emissions equivalent to taking 40,000 cars off the road annually.

Solar plants in general are located in regions of high solar irradiation, and often face challenges in securing water supply for the plant operations and solar module cleaning. Taking cognizance of the long term implications of this challenge, rainwater harvesting measures have been implemented at the Sakri project in order to improve the security of water availability and to minimize dependence on external sources for water supply.

The experience gained from the Sakri project has been instrumental to the State of Maharashtra embarking upon their Solar Energy Policy of 2015 which envisions establishing 2500 MW solar PV across the state by the year 2020. Indo-German Development Cooperation is

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