



Federal Ministry for the  
Environment, Nature Conservation,  
Building and Nuclear Safety

INTERNATIONAL CLIMATE INITIATIVE (IKI)



## Supporting Innovative Technologies within the International Climate Initiative (IKI): Concentrated Solar Power (CSP)

Concentrated Solar Power (CSP) is an innovative technology for countries with appropriate solar conditions to decarbonise their economic development. Through the International Climate Initiative (IKI), the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) funds eight projects supporting CSP technologies in partner countries around the world and committed more than EUR 81 million for technical and financial support. Financial assistance provided to these projects mobilised concessional loans amounting to EUR 424 million. These contributed to the implementation of commercial CSP plants with overall total investment costs of at least EUR 1.6 billion.

Through IKI's commitment to the development of CSP technology and together with commercial and political partners from India, Morocco, Brazil and Chile, around 640MW of electrical power capacity will be installed. Stakeholder advisory, capacity building and awareness raising programmes are essential tools of IKI projects as they improve framework conditions and market development in partner countries.

### PROJECT EXAMPLES:

#### India – Solar Thermal Power Plant “India One”

India has ambitious targets for renewable energy growth as it aims to install 100GW of solar power capacity and 60GW of wind power capacity by 2022 which is more than six times the current installed capacities. The solar thermal power plant “India One” will be the country's first utility scale solar thermal power plant with storage designed to run 24/7. The project employs a provision of energy storage of 16 hours in addition to the regular operation of approximately eight hours during sunny days. For further information please visit: [www.comsolar.in](http://www.comsolar.in)

#### Morocco – Solar Power Complex Ouarzazate

The Moroccan government is pursuing an ambitious energy strategy: The country is undergoing a transformation of its electricity sector comparable to the German “Energiewende” (energy transition). Several climate projects financed by the German government intend to support Morocco towards this goal. Germany contributes to the funding of the innovative solar power complex Ouarzazate for which additional, private funding is being mobilised through a PPP structure.

Germany also supports Noor III, planned to be the biggest solar tower worldwide (240 metres) with the CSP plant allowing energy storage up to eight full load hours. The solar complex will generate environmentally friendly electricity for at least 1.3 million people and a minimum of 600,000 tonnes CO<sub>2</sub> emissions per year will be avoided.

## Brazil – SMILE – Solar-hybrid Microturbine Systems for Cogeneration in Agroindustrial Electricity and Heat Production

Brazil's climate goal is to reduce CO<sub>2</sub> emissions by increasing the use of renewable energy and improving energy efficiency. The country has several regions with high solar irradiation levels which can efficiently be used to generate solar energy. At the same time, the Brazilian agro-industry strives for environmentally friendly methods of energy and heat production. This is where CSP comes in: The aim of the IKI-funded SMILE project, run by German Aerospace Center (DLR), is to build two highly innovative hybrid solar thermal towers (100kWel solar/biodiesel) for co-generation of electricity and heat. As a secondary objective, the project aims to give Brazilian stakeholders and experts a better understanding of this innovative technology in order to put them in a position to upscale technology. For further information on the heliostat project please visit [www.csp-ceisa.com](http://www.csp-ceisa.com)



## Chile – Large Scale Solar Energy

In Chile, strong economic growth and the development of large-scale industrial projects, especially in the mining sector, lead to an annual growth of approximately 6% in energy demand. Germany, through the IKI and other funding mechanisms, has been very supportive of fostering solar energy in Chile: The objective of the current large-scale solar energy project is to promote power generation through large solar plants and to identify instruments and methodologies to generally improve grid injection of variable renewable energies. The emphasis lies on electricity generation by photovoltaics (PV) and concentrated solar power plants (CSP/CST). The projects include capacity building and training, technology transfer, identification and analysis of innovative applications for solar energy as well as the dissemination of the results and experiences gained at an international level. The initiative also supports the efforts of the Chilean government to launch a national strategy for the development of a solar industry and sustainable development of solar projects in the country; it furthermore participates in the national steering committee to design a solar road-map. The project includes a financing component that is covered by the German Kreditanstalt für Wiederaufbau (KfW), contributing to the financing of the first Latin American CSP plant in the north of Chile.

---

## Imprint

**Published by:** Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit (BMUB)  
Referat KI II7 · 11055 Berlin  
E-Mail: [KI117@bmub.bund.de](mailto:KI117@bmub.bund.de) · Internet: [www.bmub.bund.de](http://www.bmub.bund.de)  
**Design:** MediaCompany – Agentur für Kommunikation GmbH  
**Photo credits:** GIZ 4e Chile, KfW  
**Date:** September 2015



 [@iki\\_bmub](https://twitter.com/iki_bmub)

[www.international-climate-initiative.com](http://www.international-climate-initiative.com)