

# KIT Students Build Photovoltaics Station in India

**University Group “Engineers without Borders” Executed “India Electric” Project  
 at a Training Center in the State of Orissa**



*The photovoltaics station, here still under construction, supplies the training center in the village of Gonasika with electricity from the sun. (Photo: EWB)*

**Secure electricity supply was lacking in the training center “Silent Valley” in Gonasika. The university group Engineers without Borders (EWB) of Karlsruhe Institute of Technology (KIT) wanted to change this. Under the “India Electric” project, they built a photovoltaics station in the small village. Construction was completed in early April this year. First balancing shows that the plant provides for a reliable electricity supply. It is the long-term objective of EWB to extend electricity supply for the operation of computers and machines.**

The “Silent Valley” center, where apprentices aged 12 to 16 are trained to become tailors or carpenters, is located in the village of Gonasika. It is situated in an impassable jungle area in the north of the Indian state of Orissa. Due to its remote location, the school is not connected to the public electricity grid. “After 8 p.m., light was provided by kerosene lamps. Inhabitants could not use computers and modern machines, which is a drawback for the training of carpenter and tailor apprentices,” says Tim Eck from Engineers without



*KIT Climate and Environment Center:  
 For an Environment Worth Living in*

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Borders (EWB), who studies business engineering.

"By constructing a solar power station, we wanted to provide for the basic electricity supply of the training center," emphasized Kaili Shen, EWB chairman and student of electrical engineering. The "India Electric" project started in 2010 and was supported by foundations and the organization operating the training center. Technical components, such as panels and AC converters, were made available by industry. The EWB group constructed the plant and distribution station accommodating the batteries, charge control unit, and the converter, and installed the electric system. The students repeatedly travelled to India during their holidays in order to check local conditions, establish contacts to Indian logistics and battery companies, and to coordinate the project.

Installation of the station was completed in early April, the first balance is positive: The lamps provide for reliable illumination. Days with little sunlight are compensated by a battery storage system which also guarantees consumption independent of electricity supply. "We trained supervisors, who are now operating the solar station and ensure that the system works," says Shen. Now, the EWB members evaluate the technical data for a period of one year in order to check the efficiency of the plant and to optimize it, if necessary. In the long term, the center will be equipped with computers and machines.

The group will make available a detailed project description as an open source. "In this way, all those, who are interested in executing similar projects, may obtain a first idea of technical prerequisites and project execution," says Eck. Apart from the solar project in India, EWB executes other projects to improve living conditions in developing countries. A cistern at a school in Port-au-Prince on Haiti, for instance, is aimed at improving drinking water supply in the long term. Dry toilets will prevent the drinking and usable waters from being contaminated at an orphanage in Golomolo, Uganda.

On Wednesday, June 20, the EWB group will present the "India Electric" project in a slide show (lecture hall 59, building 10.81, KIT Campus South) to the interested public. Further information on the program and short-term changes will be provided on the website of the university group at <http://www.ewb-karlsruhe.de/>.

Information on the "India Electric" project:  
<http://www.india-electric.ewb-karlsruhe.de/>.



*The completed photovoltaics station at Gonasika. (Photo: EWB)*

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