

Canal topping

A new space-efficient 10 MW photovoltaic power plant in India generates emission free energy while preventing water loss in an irrigation canal.

One of the world's most innovative solar power projects was inaugurated in January 2015 by UN Secretary General Ban Ki-moon.

Located on the outskirts of Vadodara city in Gujarat state, India, the 10 MW photovoltaic (PV) power plant is built on a 3.6 km stretch of irrigation canal. The plant not only generates a significant amount of emission-free energy, it also prevents evaporation and eliminates the need to use valuable agricultural land for construction of the plant.

The plant has saved an estimated 16 hectares of land and will prevent 90 million liters of water from evaporating each year. The cooling effect of the water beneath the PV panels boosts panel efficiency by an estimated 7 percent.

Based on its successful track record in India's solar power industry, ABB was selected by the plant's engineering, procurement and construction (EPC) contractor, to provide a fully integrated electrical balance of plant and automation

solution for the PV power plant.

ABB's integrated high-performance solution includes a broad range of ABB power and automation products, which are designed and optimized for PV power plants. These include central inverters, transformers, indoor and outdoor switchyards, and connection to the local distribution network in compliance with utility grid codes. ABB was responsible for design, engineering, installation, testing and commissioning of the EBoP solution.

Canal irrigation network

The plant has generated huge interest in India and other parts of the world for its ability to produce clean renewable energy and save water and land – this in an area where water and land are a scarce resource. Hence the participation of Ban Ki-moon in the opening ceremony. The success of this pioneering concept is now being evaluated for implementation in other Indian states as well.

Gujarat state has one of the world's largest irrigation networks. Some 19,000

km of canals distribute water to vast tracts of farmland throughout the state. It is estimated that if 10 percent of the network was used for canal-top power generation, it would generate 2,400 MW of clean energy. It would also save more than 21 billion liters of water annually and eliminate the need to use 11,000 acres of land for plant construction.

ABB has long been at the forefront of India's growing PV power industry – providing complete and fully integrated power and automation solutions for more than 10 utility-scale PV power plants with a generating capacity of between 1 MW and 50 MW. These include the 50 MW Sakri PV plant in Maharashtra state, which uses advanced thin-film technology.



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