



MicroSCADA X is monitoring  
the 52-megawatt power  
plant in central Thailand.

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Hitachi Energy MicroSCADA X improves

# Operational reliability at solar photovoltaic power plant in Thailand



Thin-film photovoltaic solar panels

## Hitachi Energy has delivered a complete MicroSCADA X monitoring solution for a 52-megawatt (MW) thin-film photovoltaic (PV) power plant installed in the Lopburi region of central Thailand.

Equatorial Thailand enjoys abundant solar power potential and is rapidly developing utility-scale solar projects. By the end of December 2014, the country's energy ministry recorded 294 solar farms selling 1.32 gigawatts (GW) of electricity to the national grid. At the time, another 14 installations with 296 MW capacity had contracts but were not yet supplying power.

### Customer need

The customer, Serm Sang Palang Ngan Co., Ltd., wanted a single SCADA (supervisory control and data acquisition) monitoring and control system to oversee its new solar plant from the PV modules to the 115 kilovolt (kV) substation, in order to maximize the plant's performance.

### Hitachi Energy solution

Hitachi Energy delivered a MicroSCADA X solution including integration equipment consisting of string monitoring, solar inverters, RTU540 remote terminal units as well as Relion® RED670 relays for line differential protection, REF630 relays for feeder protection, and RET630 relays for transformer protection, as well as a meteorological module from a third-party supplier.

System integration with weather sensors enables predictive management, ensuring peak operating efficiency at all times.

Hitachi Energy deployed servers at critical points to control and monitor the plant's substation, PV modules, switchgear and inverters, including a central server for increased data availability to maximize operational and maintenance performance.

Hitachi Energy's MicroSCADA X solution controls and monitors the entire solar plant, and enables operators to calculate plant performance ratios (PR) from recorded data. The system can also provide failure alarms in real time in order to identify PV malfunctions.

## Customer benefits

This central monitoring capacity improves operational reliability and efficiency by quickly identifying and addressing disturbances, in order to reduce their impact on operations and minimize disruptions from failure in any part of the network.

By automatically monitoring primary and secondary equipment, staff can be warned before equipment actually fails based on detailed performance analysis. The system enables predictive management by integrating with weather sensors to ensure peak operating efficiency at all times.

Hitachi Energy has been active in Thailand for more than a century, and in recent years delivered a similar control and monitoring solution for a 73-MW solar power plant in the Lopburi region for the same customer with a different end user.

Hitachi Energy MicroSCADA X systems for utility and industrial customers deliver versatile, integrated SCADA and control functionality in a single system, enabling immediate access to real-time information and easy connectivity to other systems.

