

## **System performance of a three-phase PV-grid-connected system installed in Thailand: Data monitored analysis**

**Author(s):** Boonmee, C (Boonmee, Chaiyant)<sup>1</sup>; Plangklang, B (Plangklang, Boonyang)<sup>2</sup>; Watjanatepin, N (Watjanatepin, Napat)<sup>1</sup>

**Source:** RENEWABLE ENERGY **Volume:** 34 **Issue:** 2 **Pages:** 384-389 **DOI:** 10.1016/j.renene.2008.05.022 **Published:** FEB 2009

**Abstract:** PV-grid-connected systems are worldwide installed because it allows consumer to reduce energy consumption from the electricity grid and to feed the surplus energy back into the grid. The system needs no battery so therefore the system price is very cheap comparing to other PV systems. PV-grid-connected systems are used in buildings that already hooked up to the electrical grid.

Finding efficiency of the PV-grid-connected system can be done by using a standard instrument which needs to disconnect the PV arrays from the grid before measurement. The measurement is also difficult and we lose energy during the measurement.

This paper will present the system performance of a PV-grid-connected system installed in Thailand by using a monitoring system. The monitored data are installed by acquisition software into a computer. Analysis of monitored data will be done to find out the system performance without disconnecting the PV arrays from the system. The monitored data include solar radiation, PV voltage, PV current, and PV power which has been recorded from a 5 kWp system installed of amorphous silicon PV at Rajamangala University of Technology Suvarnabhumi, Nonthaburi, Thailand. The system performance of the system by using the data monitored is compared to the standard instrument measurement. The paper will give all details about system components, monitoring system, and monitored data. The result of data analysis will be fully given. (C) 2008 Published by Elsevier Ltd.

### **Addresses:**

1. Rajamangala Univ Technol Suvarnabhumi, Dept Elect Engn, Fac Engn & Architecture, Muang 11000, Nonthaburi, Thailand
2. Rajamangala Univ Technol Thanyaburi, Dept Elect Engn, Fac Engn, Thanyaburi 12110, Phatumthani, Thailand