Renewable energy integration
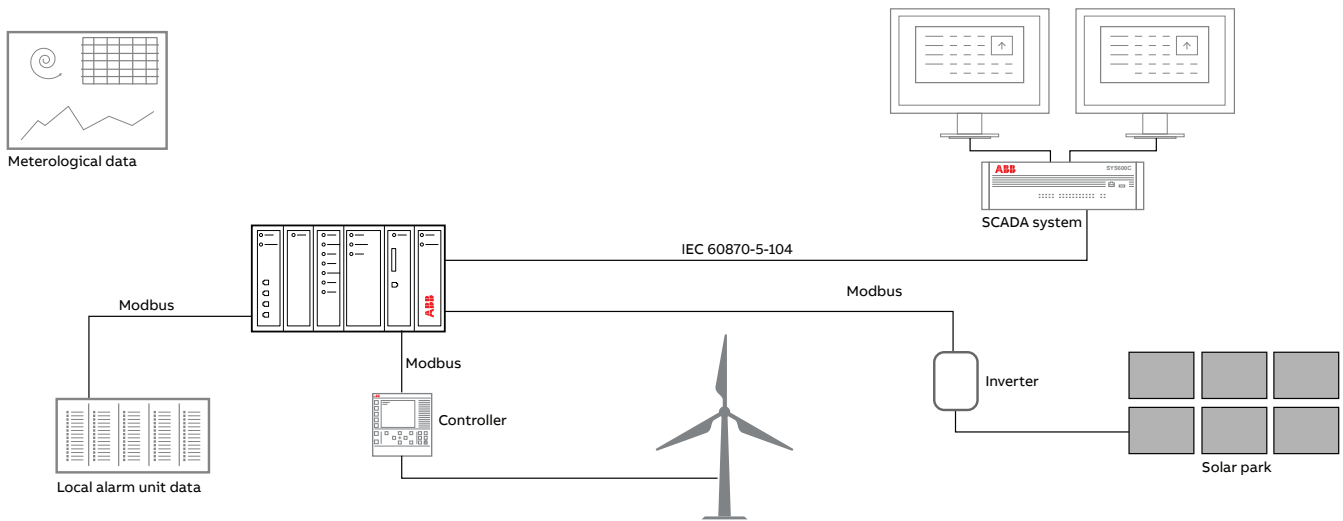## RTU520 enables remote monitoring of renewables

The renewable energy solution (EEG) is promoting electricity generation from renewable energy sources such as wind power, solar energy, hydroelectric power, biomass and biogas. With the increasing amount of renewable energy resources in the grid, the need for accurate selectivity has never been higher. More and more regulations to improve grid stability have been formulated as a means of integrating decentralized generation facilities. RTU520 supports you in fulfilling grid codes and the increasing amount of regulations. Beside standard monitoring, control & measurement functionality, with the RTU520 you can reduce the power being supplied in case of grid overload via remote control, and retrieve the relevant actual supply.

Functions

- Remote monitoring of energy storage, biogas plants, wind and solar plants
- Fault Detection and Isolation
- Power generation reduction in case of high frequency
- Possibility of provision of reactive power
- Advanced fault location information for system restoration and verification
- Regulation of network management
- Switching the supply in four stages (0%, 30%, 60%, 100%)
- Simple assembly and installation
- Detection of current status
- Wireless data transfer via GSM/GRPS or mesh networks
- IT secuirty accross the entire application
- Central management of security events and user accounts

APPLICATION EXAMPLE

Meterological data

Modbus

Modbus

IEC 60870-5-104

SCADA system

Modbus

Controller

Inverter

Solar park

Local alarm unit data

Benefits

- Easy to install
- Pre-configured
- Following grid operators' order
- Control feed-in of electricity
- Flexible communication interface
- Increased grid observability based on new measurement concepts
- New control and regulation options in secondary substation
- New applications in grid control (centralized/ decentralized)
- New communication solutions

Reference project in Bern, Switzerland: ABB smart automation harmonizes multiple energy sources

With the emergence of multiple renewable energy resources, electrical grids face demanding challenges as the distributed energy resources place an enormous strain on the electrical infrastructure.

A new solar plant with 134 kW was installed in the distribution grid of BKW Group. This resulted in a violation of voltage limits within the LV network. ABB's remote terminal unit was chosen as control unit to solve the problem. ABB's RTU with a monitoring function allowed for a controlled adjustment of the line voltage.

Above and beyond the value of a stabilized voltage for the grid, BKW improved the power quality with distributed energy resources on its network. By using a line voltage regulator BKW avoided to spend high costs for a new transformer and rewiring the LV network with higher rated cables. The installation also provides BKW a secure virtual private network (VPN) over the public communications network.