PV + ESS AC COUPLED SITE COMMUNICATION PROTOCOL

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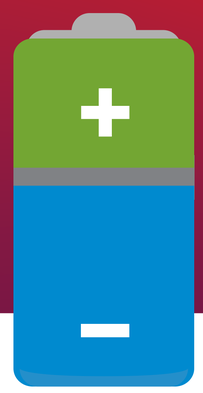
Implementing a communication network at a photovoltaic power generation facility with collocated energy storage.



Potential use cases for the implementation of an energy storage system collocated with a photovoltaic field include:

- **Power smoothing**
- **Frequency shifting**
- **Power shifting**

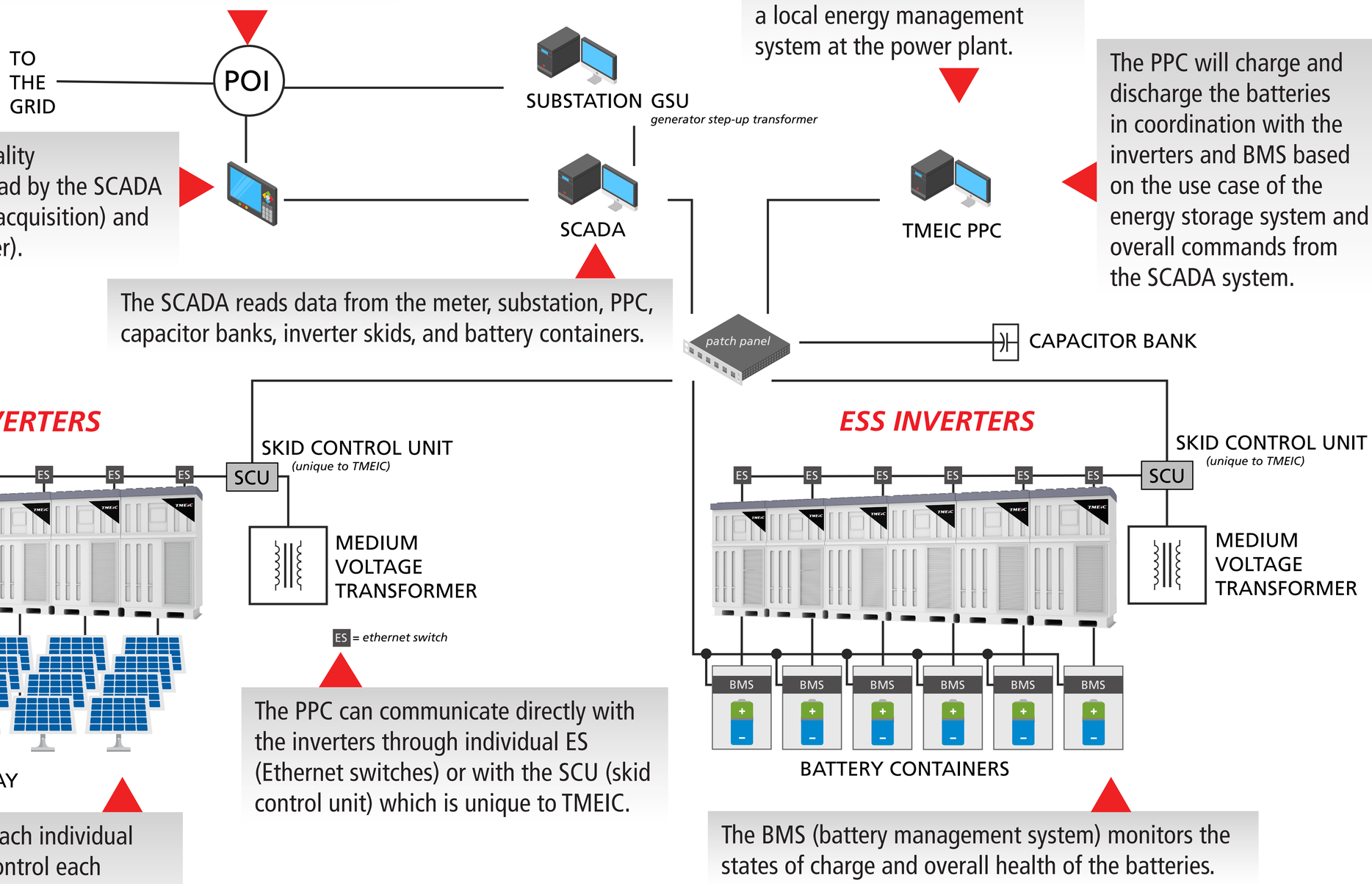
The POI (point of interconnection) is most commonly the point at which the energy output of the power generation facility is monitored by the utility company who accepts the production of the plant.

The energy meter is a high-quality measurement device that is read by the SCADA (supervisory control and data acquisition) and the PPC (power plant controller).

The SCADA reads data from the meter, substation, PPC, capacitor banks, inverter skids, and battery containers.

The PPC reads from and writes commands to the inverter skids and battery container to provide a local energy management system at the power plant.

The PPC will charge and discharge the batteries in coordination with the inverters and BMS based on the use case of the energy storage system and overall commands from the SCADA system.



The PPC can communicate directly with the inverters through individual ES (Ethernet switches) or with the SCU (skid control unit) which is unique to TMEIC.

The SCU communicates with each individual inverter on the skid and can control each inverter independently, so if one inverter has a fault, the other inverters on that skid will continue to operate.

The BMS (battery management system) monitors the states of charge and overall health of the batteries.

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SCAN FOR MORE INFORMATION

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