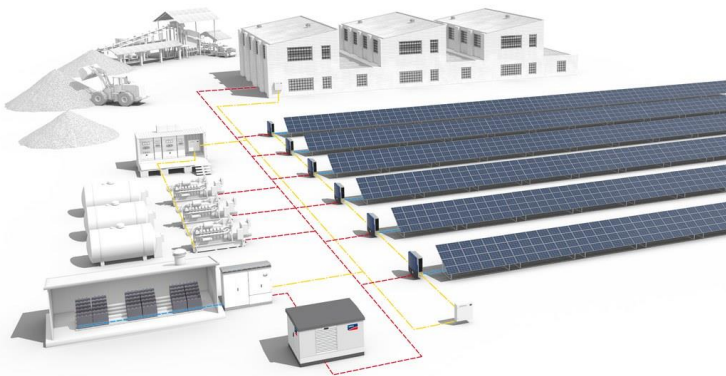


Introduction to Integration of Solar and DG

The integration of Solar and DG is required to avoid failure of a DG Set and / or Solar Inverter. An inverter works on reference voltage, that is, it requires voltage from the connected source of power (Grid, DG or Battery). However, in situations of surplus solar power during power shutdown and DG on, precautions must be taken for safety and financial reasons. Therefore, this integration can be critical in few situations.



A DG Set works optimally at 30%, that is, DG must burn 30% fuel while solar power generates 70%, translating to 70% savings. A DG is designed to burn 30% fuel even on less load.

What happens when there is surplus power when DG is on?

Surplus power from rooftop solar must go back to the source (the one that gives reference voltage), that is, DG. Unlike Grid, DG neither stores power nor transports it to other consumers. Therefore, the DG set would trip and malfunction, and cause financial burden on the consumer. If the integration of solar and DG is not implemented properly, even solar inverters may fail and cause warranty loss and further financial burden.

What precautions to take when DG is on?

When the DG set is switched on, the solar inverter must be synchronized with it to avoid generating surplus power, through MODBUS device. This device, configured and connected to the solar inverter, communicates with it and sends commands to generate less or more power accordingly.