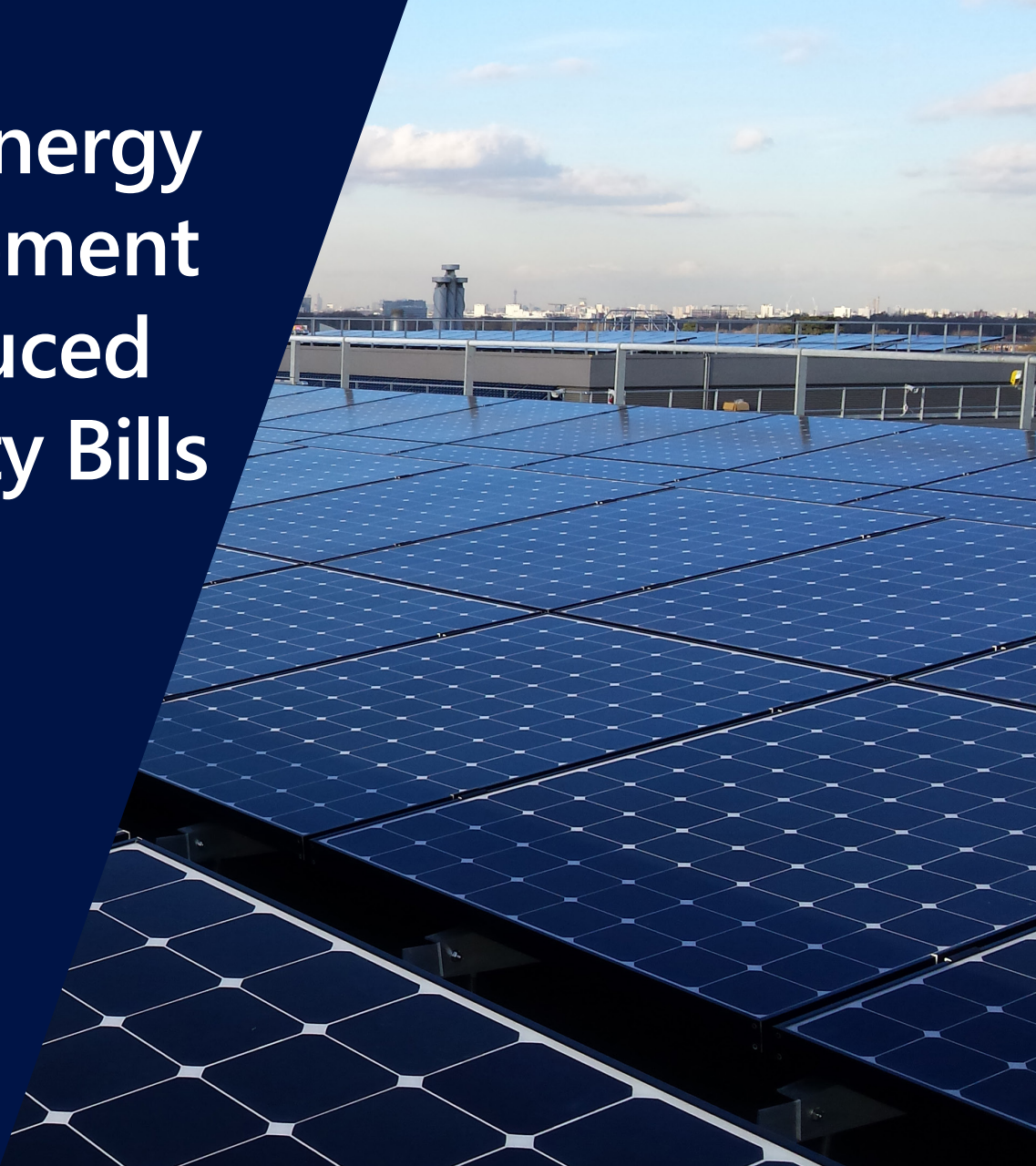


Smart Energy Management for Reduced Electricity Bills



Increase PV System Self-Consumption

Grid electricity prices are constantly on the rise. This situation motivates the installation of PV systems that allow business and property owners to reduce consumption from the grid during the day. However, some local regulations may limit the amount of PV power that can be exported to the grid or allow no export whatsoever, while allowing the use of PV power for self-consumption. Therefore, an energy management system is required to support the installation of PV systems where no export is permitted or where export power is limited or governed through regulation.

The SolarEdge Smart Energy Management solution offers an export limitation option, integrated in the SolarEdge inverter firmware, which dynamically adjusts PV power production. This allows system owners to install PV systems of any size, while ensuring the power exported to the grid does not exceed the limitation.

Export Limitation Solution Benefits

- Export limitation is integrated into the inverter firmware - install only an energy meter
- Fast Response Time - ensuring that even with rapid changes in load consumption and PV production the export power does not exceed the limit
- Failsafe Operation - the operation is designed to guarantee that the exported power will never exceed the preconfigured limit under any fault

SolarEdge Inverter as Energy Manager

- Export limit can be configured by SolarEdge or if required, by a local utility provider, and can be locked after set up to prevent unauthorized configuration changes
- In a multi-inverter system, one inverter will serve as the energy manager
- Installed SolarEdge inverters can be firmware upgraded with the export limitation option

Energy Meter Support

- The inverter can read a meter installed either at the grid connection point or at the load consumption point
- The inverter maintains the output power limit with accuracy equal to that of the meter
- Two types of meters may be used:
 - An RS485 meter, available from SolarEdge, which connects to the RS485 terminal block of the SolarEdge inverter
 - A meter with an S0 interface and an S0 meter adapter cable available from SolarEdge

Zero Export Operation Example

The following example illustrates the behavior of a 120kW PV system, with an export power limit of 0W - no export to the grid.

6AM

- No PV production
- Loads powered from grid



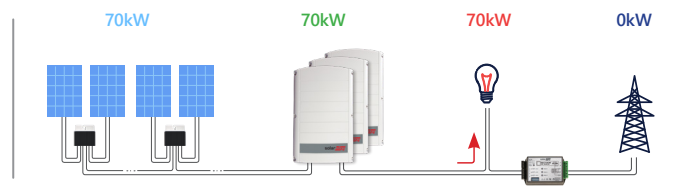
8AM

- PV production lower than loads
- Loads powered from PV and from grid



9AM

- PV production equal to load
- No power to/from grid



12PM

- PV potential greater than load
- PV production limited to maintain export limit
- No power to/from grid



* Minus sign indicates power is purchased from the grid

The overall behaviour of the example system throughout the day can be seen in the following chart:

