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# SolarEdge Product Announcement

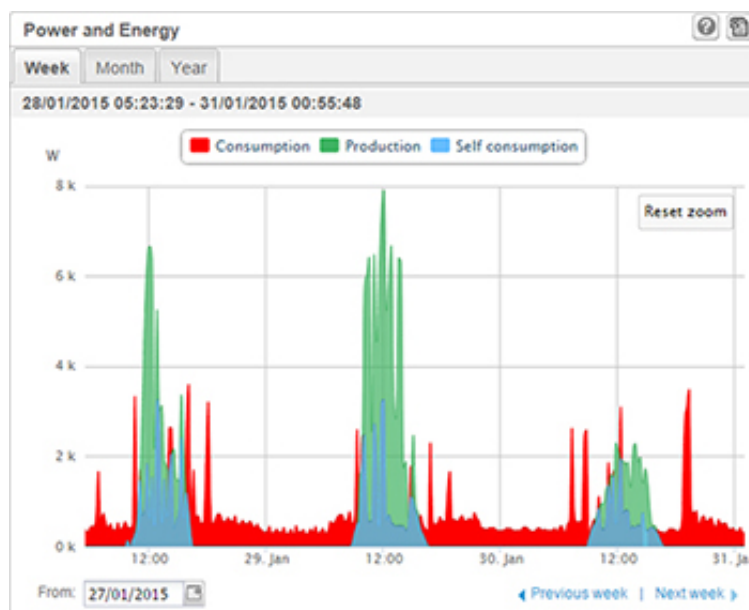
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Grid electricity prices are constantly on the rise. This is a motivation to install large PV systems that allow owners to minimize consumption from the grid during the day. However, some DNOs limit the amount of PV power that can be fed-in to the grid or allow no feed-in whatsoever, while allowing the use of PV power for self-consumption.

SolarEdge offers an export limitation option, integrated in the SolarEdge inverter firmware, which dynamically adjusts PV power production. This allows system owners to use more energy for self-consumption when the loads are high, while maintaining the export limit also when the loads are low.

## SolarEdge Export Limitation

- Integrated into the inverter firmware - install only a Modbus meter
- Cost efficient - <10% of the cost of alternative relay solutions
- Failsafe Operation - feed-in power will never exceed the preconfigured limit under any fault
- Self-consumption data is presented on the dashboard of the monitoring platform along with consumption and PV production data.



**<1 SEC EXPORT LIMITATION RESPONSE TIME**

The SolarEdge feed-in limitation solution is suitable for PV power export regulations requiring short response times of no more than 1sec, meeting strict DNO requirements.

To achieve the faster response time, two changes were made:

1. An updated Modbus meter with faster data sampling was released. The meter is shipping under the following part number: SE-WNC-3Y400-MB-K1 (replaces SE-WNC-3Y-400-MB-K). Specifications can be found [here](#).
2. The three phase inverter firmware was updated to respond faster to energy production and consumption changes. The following versions support the faster response times:
  - o CPU: version 3.13xx and above
  - o DSP1 for three phase inverters: 1.13.702 and above

Support for single phase systems is expected during October 2015.

Contact SolarEdge support for upgrade files and instructions: [UK@solaredge.com](mailto:UK@solaredge.com)

Installation with feed-in limitation must get DNO permission, which will be granted on a case by case basis, depending on reason for the limitation of the grid connection.

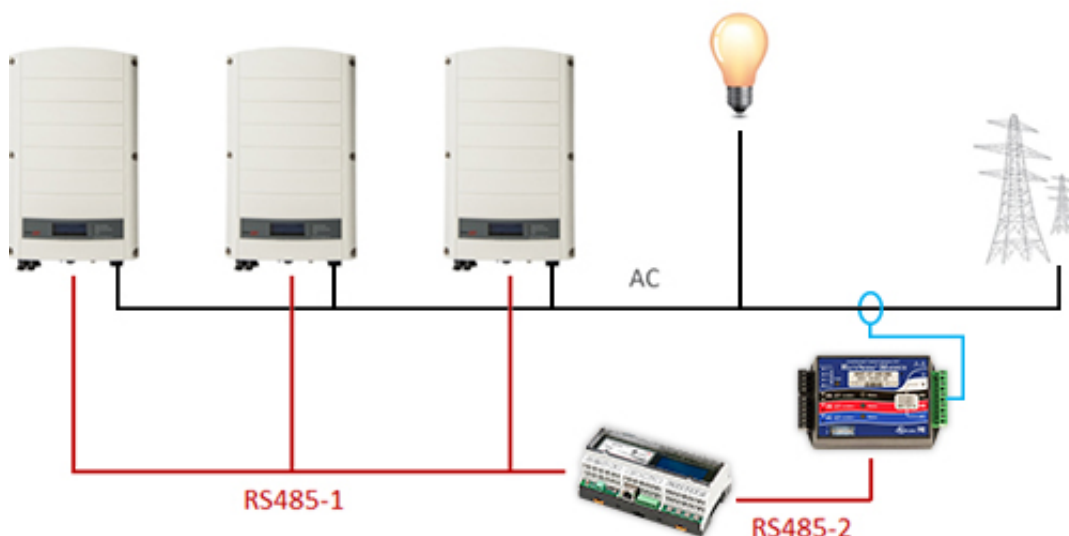
An application note / self-declaration that could be used to prove the fast response function to DNOs can be downloaded [here](#).

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## HOW TO INSTALL A SYSTEM WITH EXPORT LIMITATION

To benefit from the SolarEdge export limitation solution:

- A Modbus meter must be connected at the grid connection point, as shown below. SolarEdge utilises a Wattnode meter which connects to the inverter using robust, hardwired communication (RS485).
- If there are multiple inverters, RS485 communications and a CCG must be used



**Please note:** When the meter is located at the grid connection point, make sure that the CTs are installed with their arrow pointing towards the grid. The LEDs on the Wattnode meter may appear red based on the direction of the current flow (consumption or export). This does not imply wrong connection or error. To verify correct connection, turn the inverter off, to allow

consumption only. The LEDs will turn green. LED lights should be flashing assuming there is an energy flow.

For more information on meter connection please refer to the [application note](#).

50KW INSTALLATION ENABLED  
BY SOLAREGE FEED-IN LIMITATION



Shearline Precision Engineering has a plant in Cambridge with two 50kW PV systems on the roof. The plant is operational during 4.5 days a week and Shearline wanted to reduce their electricity bills by increasing self-consumption through an additional 50kW system. A PV system was designed using a traditional string inverter and the budget was approved by the board, however, grid export was refused until network is upgraded in 4 years' time. The owners were anxious to lock the Feed in Tariff before the quarterly reduction and were looking for a quick and inexpensive solution to dynamically control the export during the non-operational days of the plant.

The installer, Beechdale Energy from Cambridge realized that a G59 relay solution would be expensive and would have taken some weeks to design and build, taking the project over the timeline for the FiT drop at the end of the quarter, and out of the approved budget and ROI. In comparison, the SolarEdge feed-in limitation solution is built in to the SolarEdge inverter and requires only a connection of a Modbus meter. With the SolarEdge solution, Beechdale Energy were able to guarantee the original budget and ROI for the system, taking into consideration that the export cap will be removed when grid upgrade occurs in 4 years.

	Original Proposal String Inverter	G59 Relay Capped Export	SolarEdge Feed-in Limitation
Grid connection	No feed-in limitation	Zero Export	Zero Export

System size	50kW	50kW	50kW
PV system cost	£48,000	£53,500	£50,950
Annual PV system production (@900 Kwh/kWp/year)	44,000kWh	35,200 20% Export Reduction	38,720 Inc. 10% SolarEdge added yield
Net metering and remote management of export cap	No	No	Yes
Annual income from PV system inc. FiT and electricity bill reduction (Index Linked)	£7,849	£6,279	£6,907
Feed-in limitation cost (one time)	-	£5,500	£600
10 year electricity bill saving inc 3% RPI and 8% fuel inflation	£99,243	£79,395	£95,187

\* Values in the table above provided by Beechdale Energy

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