



EPISODE 65

Optimizing Export Power Management for C&I PV Projects

Bankable. Reliable. Local.

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>> 1 Introduction

In the last Solis seminar, we discussed what zero feed-in limitation is and the scenarios it is applied in, and shared the zero feed-in-limitation solution of Solis residential PV project. Now we make a sharing continuation. I would like to introduce zero Feed-in-limitation solution of C&I project.

The power limit to the grid is close to 0%

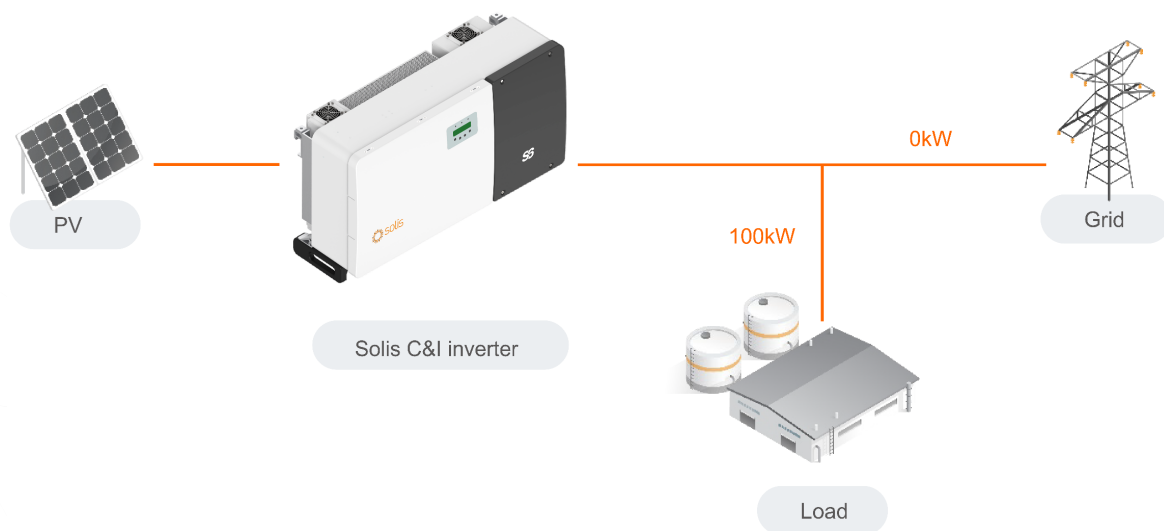


Figure 1: The topology of zero feed-in limitation

>> 2 Solis C&I PV project zero Feed-in-limitation solution

2.1 Zero Feed-in-limitation with a Meter

Solis provides three-phase meters for energy management (EPM), perfect for C&I PV systems. These meters typically include external current transformers (CTs) and are ideal for single inverter setups with capacities ranging from 30 to 100kW.

- The meter monitors power flow at the grid connection point.
- If any power tries to flow back into the grid, the meter sends a signal to the inverter via 485 communication.
- The inverter then adjusts its output to prevent energy from feeding into the grid.

This setup ensures seamless zero feed-in functionality for three-phase systems.

Three Phase- Meter with CT

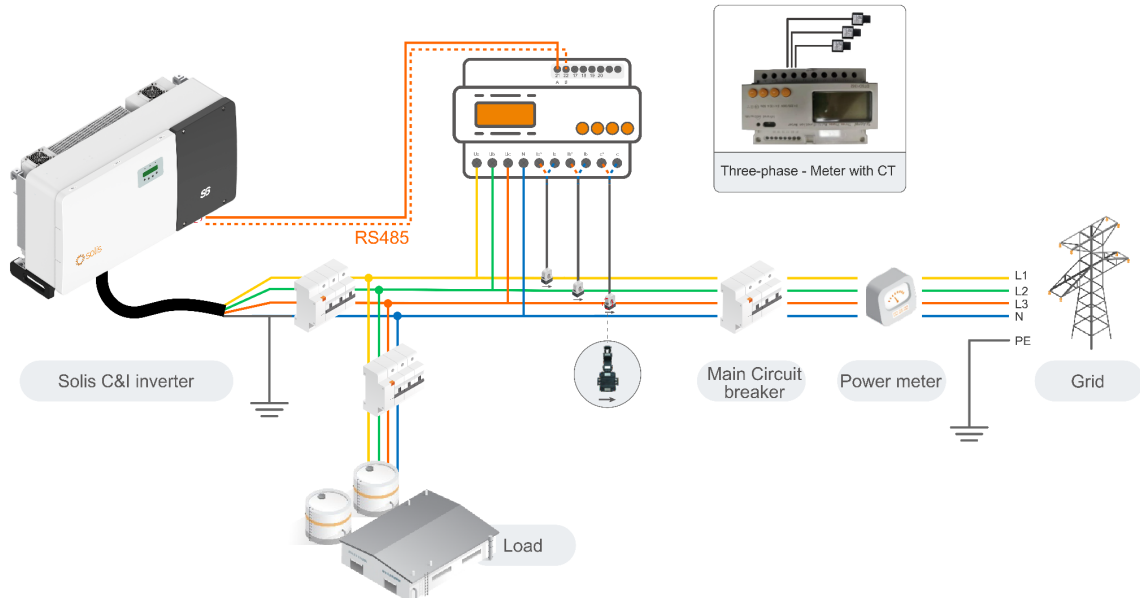


Figure 2: Meter to achieve Zero feed-in limitation function

2.2 EPM Devices for Zero Feed-in Limitation

If your project involves multiple inverters, Solis' Energy Management Platform (EPM) devices offer an efficient solution.

- Meters work well for single inverters, but EPM devices are designed to manage several inverters simultaneously.
- The Solis-EPM3-5G and Solis-EPM3-5G-Pro can handle up to 30 three-phase inverters, making them perfect for larger C&I installations.

Multiple inverters with EPM

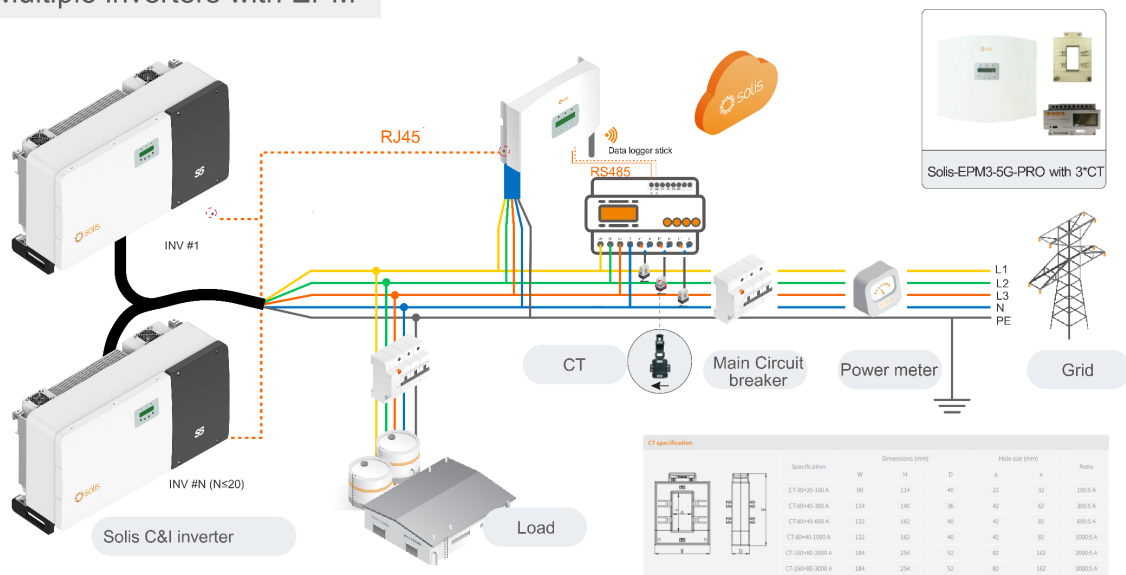


Figure 3: Multiple inverter systems use EPM solutions

2.3 S3-Logger Devices for Zero Feed-in Limitation and Meteorological monitoring

Additionally, zero feed-in limitation and meteorological monitoring can be achieved using the S3-Logger or G3-Gateway devices. These advanced solutions are capable of monitoring between 30 and 90 inverters, offering robust control and data management for larger systems.

Multiple inverters with EPM

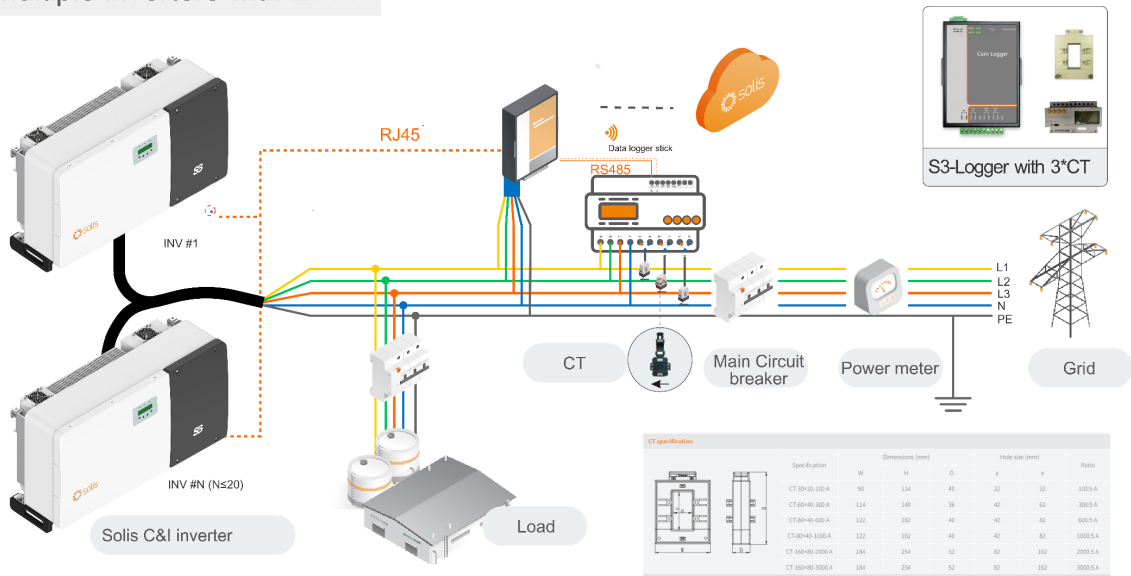
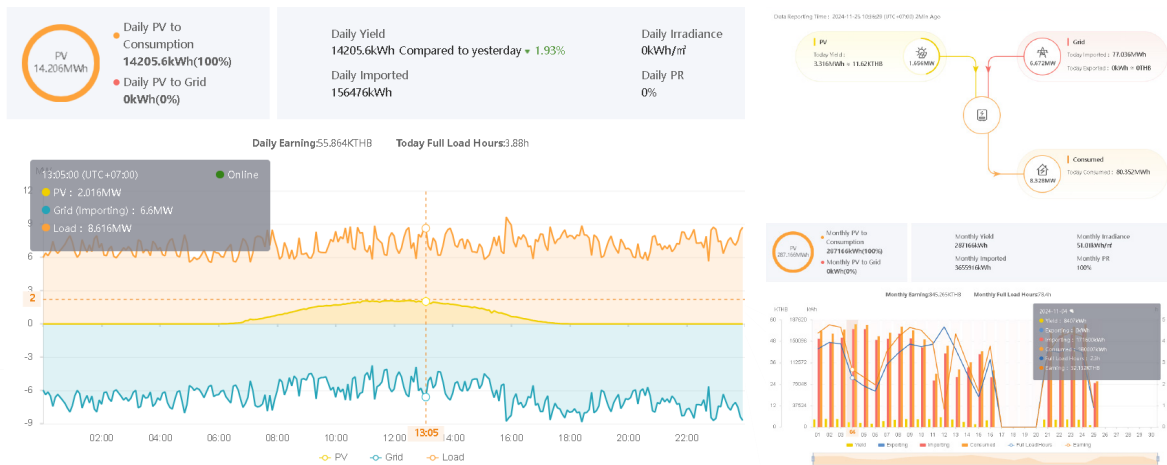


Figure 4: Multiple inverter systems use EPM solutions

Along with preventing reverse power flow, the Energy Management Platform (EPM) provides a range of features for enhanced monitoring and system management.



>> 3 24-Hour Load Monitoring:

This feature enables real-time tracking of PV power generation, load power consumption, and grid power usage, providing continuous insights around the clock. It also records detailed monthly and annual statistics for both power generation and electricity consumption, making it easy to monitor and analyze system performance over time.

Conclusion:

>> Different from residential PV projects, C&I projects have more complexity, including larger capacity and more complex loads, such as heavy-duty motors, mixed single-phase and three-phase power use, frequent switching, etc., which requires the system to be more stable, such as balancing three-phase power, avoiding any phase of excess power feed into the grid. While Solis zero feed-in-limitation solutions can do it, and it has a faster response speed, which can ensure the rapid load change balance. And these solutions are suitable for diverse regions worldwide, including Europe, America, Pakistan, Indonesia, India, Philippines and etc., and have received widespread positive feedback from customers.