



Understanding Photovoltaic (PV) Curtailment in Cyprus

CHALLENGES AND SOLUTIONS



Dear Valued Customers,

With the increasing penetration of photovoltaic (PV) systems in Cyprus, many owners have noticed that their systems are either temporarily shutting down or their production is being limited by the Distribution System Operator (DSO).

We clarify that this phenomenon only affects properties where the installation of photovoltaic (PV) systems took place after 2020 (for systems with a capacity of >7.14 kWp), as well as all systems installed after April 2023. Systems installed before these dates are not affected.

With this announcement, we aim to explain in a simple and understandable way why this happens, what the impact is for PV owners, and what solutions can be implemented for both residential and commercial consumers.

Recent Curtailment Events



In early February 2025, the DSO announced temporary disconnections of PV systems to maintain grid stability due to low electricity demand and prevailing weather conditions. These actions were necessary to ensure the reliable operation of the electrical system.

What is PV Curtailment?

PV curtailment occurs when the DSO intentionally reduces or halts the electricity output from solar installations. This measure is typically implemented to maintain the stability and safety of the electrical grid, especially during periods when electricity supply exceeds demand.

Why Does Curtailment Happen?

Several factors contribute to the need for curtailment:

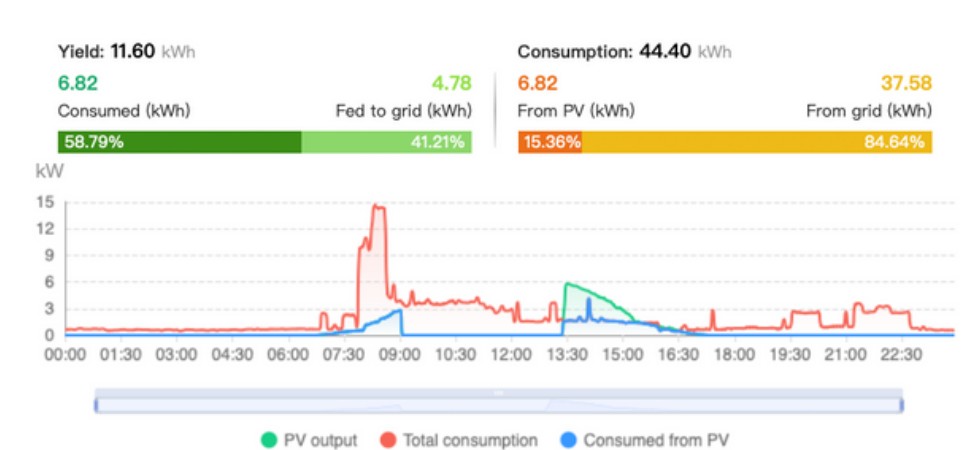
Grid Stability: The electrical grid requires a balanced supply and demand to function correctly. During times of low electricity demand, especially on sunny days with high PV output, the excess energy can threaten grid stability. To prevent potential issues, the DSO may curtail PV production.

Infrastructure Limitations: The current grid infrastructure in Cyprus has limitations in accommodating the rapid increase in renewable energy sources. This mismatch can lead to situations where the grid cannot safely handle the surplus energy generated by PV systems.

Technical Constraints of Conventional Power Plants: Traditional power plants in Cyprus operate under specific technical constraints, requiring them to maintain a minimum level of production to ensure grid stability. This requirement limits the grid's capacity to absorb energy from renewable sources, leading to increased curtailment of PV systems.

Impact on PV System Owners

Curtailment can lead to reduced energy production from your PV systems, affecting both energy savings and the return on investment. Understanding the reasons behind curtailment is crucial for implementing effective solutions.



PROPOSED SOLUTIONS



At this stage, there is no need for equipment upgrade measures, as the phenomenon causes an average production loss of around 8%.

In the event that the frequency of the restrictive measures increases in the future and a production loss exceeding **30%** is observed, we recommend the following solutions for **Optimizing Self-Consumption**:

Installation of Smart Monitoring system that can **optimize self-consumption** using the following methods:

1. Load Shifting-Using More Power When the Sun is Strongest

- Automatically schedule high-energy appliances (**water heaters, washing machines, EV chargers**) during **peak solar production hours**.
- Uses smart home integration to **turn on devices when excess solar energy is available**.

2. Dynamic Battery Charging & Discharging

- **Charge batteries** when excess solar energy is available instead of sending it to the grid.
- **Discharge batteries** in the evening to reduce reliance on expensive grid electricity.

3. Smart Grid Interaction & Dynamic Export Limitation

- Limits excess solar export when grid restrictions (curtailments) are applied.
- Ensures that solar energy is **prioritized for self-consumption** instead of being wasted.

4. Smart EV Charging Integration

- Enables **solar-powered EV charging**, ensuring that cars are charged **using excess solar energy** instead of grid electricity.
- Can schedule charging based on **PV production forecasts**.

Conclusion


While PV curtailment presents challenges, understanding its causes and implementing proactive solutions can help you maximize the benefits of your solar investment.


At EnergyIntel, we are committed to assisting our customers in navigating these challenges and optimizing their renewable energy systems.

For personalized advice and support, please contact our team.


Together, we can work towards a more resilient and efficient energy future.

Sincerely,
The EnergyIntel Team

 +357 22 380707

 info@energyintel.com.cy

 1, Grigori Afxentiou Street, Palouriotissa
1040, Nicosia, Cyprus

 www.energyintel.com.cy