Electricity Authority of Cyprus

FREQUENTLY ASKED QUESTIONS REGARDING **DISCONNECTIONS OF HOME PHOTOVOLTAIC SYSTEMS**

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01. Why are curtailments and remote disconnections applied to electricity generation from Photovoltaic (PV) Systems?

Curtailments or remote disconnections in electricity generated by Photovoltaic (PV) systems are applied when there is no other option to **maintain the safe and reliable operation of the electricity grid**.

Reasoning:

Electricity generation (Power generation) must always be balanced with electricity demand (consumption). When generation is particularly high while demand is low, **a surplus of energy is created**. Under such conditions, disturbances may occur in the grid and, in extreme cases, may even lead to a **widespread power outage (blackout)**.

This issue is **more pronounced** in Cyprus, as **the power system is isolated** and not interconnected with neighbouring or European grids, limiting the ability to export surplus energy.

In such cases, the Transmission System Operator (TSO), which is responsible for maintaining the **safe and reliable operation of the Transmission System**, reduces conventional power generation to the maximum technically feasible degree and, if deemed necessary, the TSO issues further generation-limitation instructions to the Distribution System Operator (DSO), in accordance with the applicable regulatory and legislative framework governing the operation of the power system.

The DSO then, implements these generation-limitation instructions at the level of individual PV systems to maintain grid stability. These limitations are applied **based on technical and operational criteria**, which typically include **prioritising larger PV generation plants**. If this is not sufficient to restore system stability, remote disconnections of PV systems might also be extended to smaller PV Systems, including household rooftop PV systems..

These procedures fall within the scope of the responsibilities of the Network Operators, as defined by the **Electricity Market Regulation Law N.130(I)/2021** and the relevant **Transmission and Distribution Grid Code**, to ensure the stability, reliability, and safety of the power system.

For more information, please refer to a relevant informational leaflet titled 'The reasoning behind Curtailments in Electricity Generation from Photovoltaic Systems' available at:

https://www.eac.com.cy/EN/regulatedactivities/distribution/informativeleflets/Pages/default.aspx

02. Are large PV systems also remotely curtailed/disconnected, or only household PV systems?

A specific **order of priority** is followed: :

• First, large PV systems are curtailed to nearly zero.

• If further curtailment is required, smaller installations follow (household or small commercial PV systems)

This procedure is implemented by the DSO as part of managing Renewable Energy Sources (RES) penetration and to ensure the stability of the power system.

For more information, a relevant informational leaflet titled 'The reasoning behind Curtailments in Electricity Generation from Photovoltaic Systems' is available at the following link:

https://www.eac.com.cy/EN/regulatedactivities/distribution/informativeleflets/Pages/default.aspx

03. Why some of my neighbours do not experience curtailments? Is there any preferential treatment?

Why are there net-metering contracts with different terms regarding generation curtailment?

The different terms observed in net-metering contracts are mainly due to the fact that these contracts **were signed at different periods**, during which the technical conditions and the needs of the power system were different.

• **Older contracts:**
These were signed at a time when RES penetration levels were low and strict technical curtailment measures were not required. They remain in force until their expiration.

• **Newer contracts:**
Due to the significant increase in PV installations, new contracts include additional provisions and equipment for limiting or disconnecting PV systems remotely when required to ensure the stability of the power system.

Existing contracts remain valid **until their expiration**, in accordance with the terms that applied at the time they were signed. Upon renewal, modification, or conclusion of a new contract, the terms are aligned with the current regulatory and technical framework, as defined in the legislation governing the operation of the electricity market and the relevant Transmission and Distribution Grid Code.

Therefore, this is not a matter of preferential treatment; rather, changes in the contracts reflect the evolution of the system, which is has dynamic nature, as the penetration of renewable energy sources increases.

04. Why is my electricity generation being disconnected remotely by the supplier?

Electricity Suppliers **do not remotely disconnect** household PV systems. Remote disconnections or curtailments are applied by the competent **Network Operator (DSO)**, as part of the safe operation of the electricity system.

In Cyprus, the electricity sector operates based on separate and regulated activities.
The main regulated activities are:

- Electricity generation
- Electricity transmission
- Electricity distribution
- Electricity supply

These activities operate in accordance with the regulatory framework established by the Cyprus Energy Regulatory Authority (CERA).

The electricity supplier (such as EAC's electricity supply) is responsible for the **supply contract and the billing of the energy consumed** without authority to limit or disconnect PV systems from the grid.

Remote disconnections or curtailments of PV systems are implemented by the DSO, based on the operational needs of the network and in accordance with the TSO instructions, in order to maintain the stable, reliable, and safe operation of the power system.

For more information regarding the structure and activities of the Electricity Authority of Cyprus, you can visit its official website.

https://www.eac.com.cy/EL/Pages/default.aspx

05. Since there is legislation that allows PV generation for self-consumption, why are curtailments or remote disconnections still being applied?

PV generation is effected through connection to the electricity grid. Therefore, any user connected to the grid is subject to the **technical and operational requirements governing the operation of the power system**. However, the option is now available to participate in a "zero-export" scheme. In this scheme, the energy is used exclusively for self-consumption and is not fed into the grid.

In exceptional cases, when necessitated by the operational conditions of the power system and after the rest of RES generation has been curtailed, disconnection instructions may still be issued as an escalation, to the PV systems operating under a zero-export scheme.

06. Can I avoid curtailments? (Zero-Export Scheme)

A transition to **Zero-Export Scheme** is feasible upon application. In this scheme, the energy is used exclusively for **self-consumption** and is not fed into the grid. To achieve this, additional control equipment is required (an inverter that supports this functionality). Under this scheme, the installation is generally not subject to the standard remote disconnection measures applied to the published groups.

https://www.eac.com.cy/EN/regulatedactivities/distribution/distributionsystemoperation/Pages/res-e_curtailments.aspx

The recent legislative regulation allows Network Users to install PV systems to **cover their own energy needs**, without injecting the generated energy into the electricity grid. For this purpose, the option to participate in a **Zero-Export (ZE) scheme** is offered, under which the generated electricity is used exclusively for **self-consumption**.

For more information, a relevant informational leaflet is available at the link below: (Click HERE)

https://www.eac.com.cy/EN/regulatedactivities/distribution/informativeleflets/Pages/default.aspx

07. Is it possible to convert my installation to a zero-export scheme, with or without batteries?

Yes, it is possible to convert your installation with or without batteries, provided that the inverter supports zero-export control functionality. Combining the PV system with batteries is leads to more efficient energy utilisation and to reduce losses during periods when energy export to the grid is restricted or not permitted.

08. How does the zero-export scheme work?

The zero-export scheme can be implemented in two main forms, depending on the connection terms defined by the DSO:

1. Permanent zero-export operation

In this case, the PV system operates exclusively for **self-consumption**, without exporting electrical energy to the grid. The generated energy is consumed within the installation, and the control system ensures that no energy is injected into the grid. In this mode of operation, the installation **is generally not subject to remote disconnections**, apart from exceptional cases related to network safety or stability issues.

2. Occasional zero-export operation

In this case, the PV installation may **export energy to the grid when the operating conditions of the power system allow it**. However, when required to maintain the balance and safe operation of the power system, an instruction may be issued to **switch to zero-export mode**, temporarily restricting energy export to the grid.

09. Can I choose to convert my system to occasional zero-export instead of permanent zero-export?

Yes, the user may choose this option, provided that the PV system meets the technical requirements and subject to the operating conditions of the electricity grid in the area of connection, as determined by the DSO following the necessary evaluation.

10. When I am under an "occasional zero-export" scheme, when does the PV system stop exporting energy to the grid?

The system exports energy under normal conditions when operating conditions allow it. Energy export **is temporarily interrupted only when an instruction is issued to switch to zero-export mode** in order to maintain the safe operation of the power system. In this case, the PV system **temporarily stops exporting energy** to the grid, and the generated energy is limited to covering the **household's local consumption**.

This instruction is issued as part of the RES penetration management, as described in **Question 1** above.

11. Why is my PV system being repeatedly remotely disconnected for two (2) or more consecutive days?

The DSO makes every effort to ensure that curtailments applied to smaller PV systems (such as residential and small commercial installations) are carried out in a **fair and balanced manner**. For this purpose, the systems are organised into groups, to which mass remote disconnection instructions are broadcasted on a rotating basis whenever required.

During remote disconnection planning, both the **frequency and the duration** of the remote disconnections are considered, in order to ensure, as far as technically feasible, **fair treatment** of small PV systems, which do not participate in the Competitive Market.

However, in cases where RES generation curtailment is not sufficient due to the operating conditions of the electricity grid, remote disconnection instructions may also be issued to groups that were already disconnected in previous days. Factors such as low electricity demand, high RES penetration, and the limited energy-storage capability of the power system may lead to recurring disconnections for the same group of installations.

For transparency purposes, data on the frequency of disconnections per group for the last 30 days is published and updated every 15 days on the website of the Electricity Authority of Cyprus.

https://www.eac.com.cy/EN/regulatedactivities/distribution/distributionsystemoperation/Pages/res-e_curtailments.aspx

12. Which remote disconnection group does my PV system belong to? Can I change groups?

The management and configuration of the groups are a technical process carried out exclusively by the DSO, within the framework of the safe and efficient operation of the Distribution Network and the available technical capabilities in each case. Information about the group to which each PV system belongs is not disclosed, as the composition of the groups may change for operational reasons. For the same reason, it is not possible for the Network User to choose or change their group.

13. Where can I get more information about remote disconnections of household PV systems?

For any questions not covered in this informational FAQ, interested parties may contact their local regional offices. Relevant information and announcements are published on the official website.

https://www.eac.com.cy/EN/regulatedactivities/distribution/distributionsystemoperation/Pages/res-e_curtailments.aspx

14. Is there a dedicated call centre for issues related to PV system remote disconnections or curtailments?

No, there is no dedicated call centre for issues related to remote disconnections or curtailments of PV systems.

The EAC call centre mainly handles unexpected faults and power outage incidents. In cases of **scheduled power interruptions** for maintenance or network-upgrade work, affected consumers are informed in advance, usually at least **48 hours before the planned outage**.

Disconnections or curtailments of PV systems are an **operational measure for managing RES penetration** and do not fall under the category of power outages.

15. How can I install a storage system in order to reduce remote disconnections affecting my PV system?

Interested parties may **submit an application for the connection of a battery storage system** to their existing PV system.

Following application approval, the applicant may proceed with **purchasing and installation of the necessary equipment**, in accordance with the approved technical connection terms.

The installation of a storage system is usually subject to the **zero-export scheme**, in which the generated electricity is used primarily for self-consumption or storage for later use.

16. Do remote disconnections in household PV systems remain constant throughout the year?

No. Curtailments are more frequent during spring (March to early May) and autumn (October), when **solar irradiation is high and electricity demand remains low**. However, it should be noted that as PV penetration in the Electricity System increases, curtailments and remote disconnections will also increase accordingly.

17. Can energy storage for self-consumption help reduce curtailments and remote disconnections of PV systems?

Energy storage systems (batteries) may help reduce curtailments and remote disconnections of PV systems to some extent, since they increase the percentage of self-consumption.

However, storage **does not completely eliminate the need to apply PV generation limitations**, as curtailments are mainly related to the overall operating conditions required to maintain the stability of the electricity system. (See **Question 1** above)

18. Why have energy storage projects not been implemented to date?

According to European Directive 2019/944, storage is **considered primarily a competitive market activity**. Therefore, Transmission and Distribution System Operators are not expected to develop such systems for commercial purposes. Recently, however, Cyprus was granted an exemption **due to its isolated power system**. **As a result, the installation of storage systems in Transmission Substations is now permitted** to enhance the stability of the power system.

19. Which authority can I contact for matters related to energy policy or the operation of the EAC?

For matters of subsidy schemes and energy policy, the responsible authority is the Ministry of Energy, Commerce and Industry.

EAC operates within the regulatory framework set by CERA, which is the independent Regulatory Authority for the Electricity Market.

20. Can vulnerable consumers be exempted from, or granted special arrangements regarding remote disconnections of PV systems?

No, remote disconnections are based on technical criteria related to power system stability, and no exemptions are provided based on consumer category.

For matters concerning special tariffs or other arrangements that may apply to vulnerable consumers, interested parties may contact the electricity supplier with whom they have a supply contract.

21. What is the reason for the clearing of the accumulated exported energy from my PV system?

The clearing is carried out based on the official 2024 "Renewable Energy for Self-Consumption Scheme," prepared by the Ministry of Energy, which defines the method for the settlement of accumulated energy. PV systems are intended to cover their own consumption needs and **not for arbitrary generation aimed at financial gain**.

For this reason, each Network User is responsible for the proper sizing of their system so that it corresponds to the actual consumption needs of their installation.

22. How is the electricity generated by a PV system used and ultimately billed?

The energy is consumed at the time it is generated. It is used either through **direct self-consumption** or by being fed **into the electricity grid**, within the framework of the applicable net-metering scheme. The final cost in electricity bills reflect the overall energy mix (RES and conventional units).

Conventional units must operate in order to ensure the **continuous and reliable supply of electricity** and the stability of the power system.