

SolarEdge inverters – Automatically pause production due to negative utility rates – Application Note – Europe

Revision history

- Version 1.0, December 2023: Initial release

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Overview

SolarEdge systems are an excellent way to save money and reduce your environmental footprint. However, in regions where electricity rates can become negative during certain periods, it's essential for SolarEdge system owners to optimize their energy consumption and grid interaction. This application note outlines how to configure your SolarEdge inverter using mySolarEdge to pause production during negative utility rates, thus ensuring cost-effective operation.

Background

Electrical utility companies in certain countries offer dynamic electricity rates. This implies that both import and export rates can become negative. Under these conditions, grid operators pay consumers for using power from the grid, and penalize consumers if they export power to the grid when export rates are negative. To maximize savings during these periods, it's beneficial for system owners to pause solar inverter production.

Compatible inverters

Pausing production is supported for all single-phase and three-phase Home Wave and Home Hub inverters, as well as all commercial three-phase and Synergy inverters.

Prerequisites

Before implementing the procedure outlined in this application note, ensure that you meet the following prerequisites:

- A SolarEdge PV system is installed and commissioned.
- The latest version of the mySolarEdge application is installed on your smartphone or tablet.
- You have a working knowledge of mySolarEdge.
- You are in a country in Europe that offers day-ahead dynamic rates.

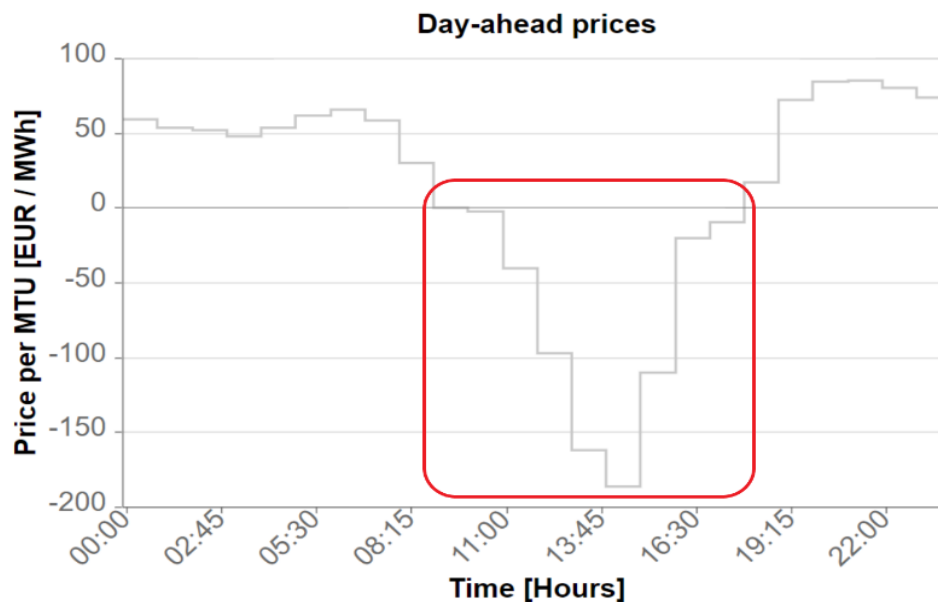
... IMPORTANT NOTES

- When production is paused, the installed PV system does not supply AC power to the site.
- Any DC-coupled device continues to operate via the DC bus. For example, a DC-coupled battery can continue being charged, even though the inverter is no longer producing AC power.
- The pause production feature is also available for PV-only sites.
- The pause production feature does not overwrite any of the other backup or battery mode settings. It runs in parallel with the other settings, and simply pauses production when electricity rates are negative.

Pause production

To take advantage of the fact that grid operators make available day-ahead dynamic rates, SolarEdge now has the ability to automatically pause production while the rates are negative.

Typical day-ahead dynamic rate charts are shown below. The red highlighted areas indicate the times and the duration where you can expect negative prices for imported energy.



IMPORTANT NOTE

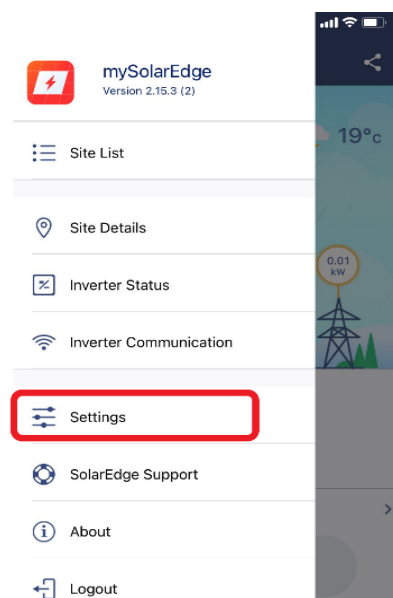
Site owners are fined for exporting energy to the grid under conditions of negative export rates.

Activate Pause Production in mySolarEdge

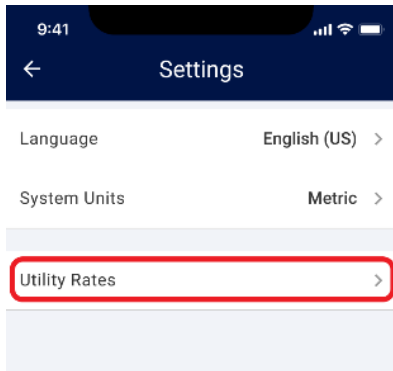
1. On a smartphone or tablet, open the mySolarEdge application.
2. Where there are multiple sites, search for and select the applicable site.
3. Tap the menu button.



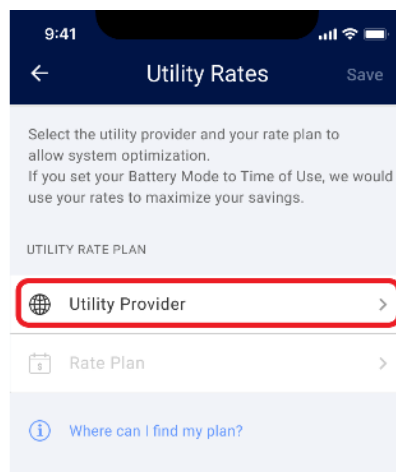
4. Tap **Settings**.



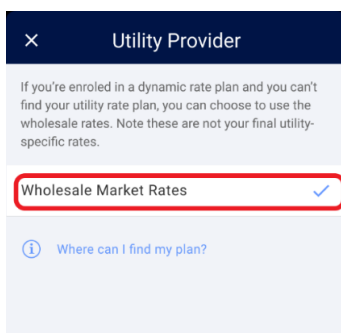
5. Tap **Utility Rates**.



6. Tap **Utility Provider**.

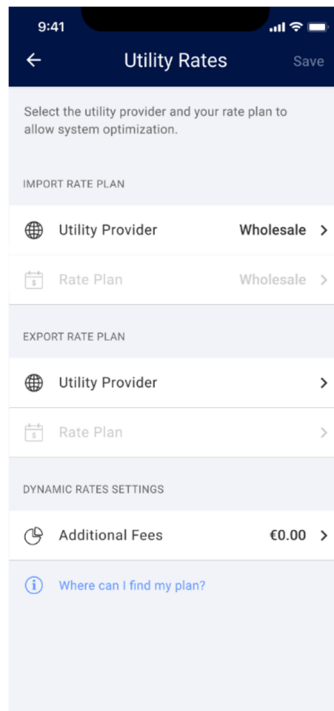


7. Select **Wholesale Market Rates**.



Currently only the Wholesale Market Rates plan is available in your area. These rates are based on the ENTSO-E Aggregator rates, and are close to the actual utility rates.

The **Utility Rates** screen displays:



Now you can access the following settings:

- Import Rate Plan
- Export Rate Plan
- Dynamic Rate Settings, including Negative Rate Optimization and Additional Fees settings



IMPORTANT NOTE

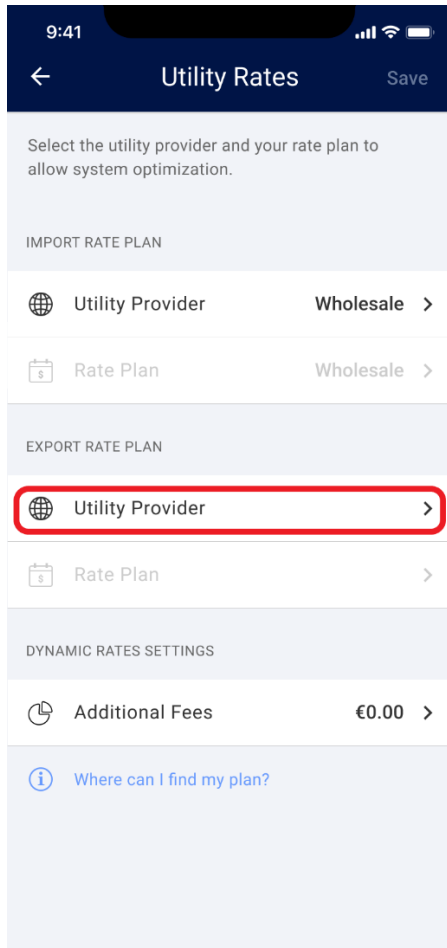
The selection of Import and Export rate plans are dependant on the specific in-country parameters.

Import Rate Plan

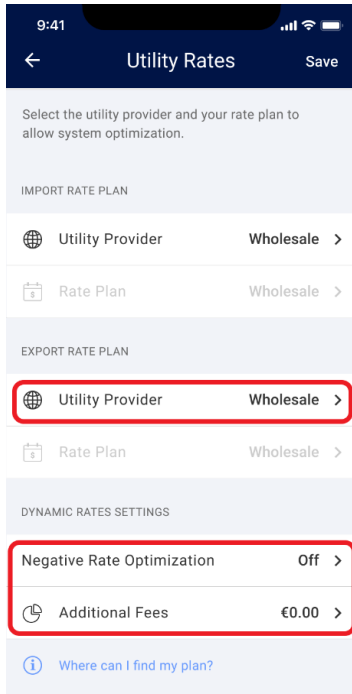
1. In the **Import Rate Plan** section, tap **Utility Provider**.
2. Set the utility provider for the export rate plan to **Wholesale**.

Export Rate Plan

1. In the **Export Rate Plan** section, tap **Utility Provider**.



- Set the utility provider for the export rate plan to **Wholesale**. The **Dynamic Rates** settings activate.

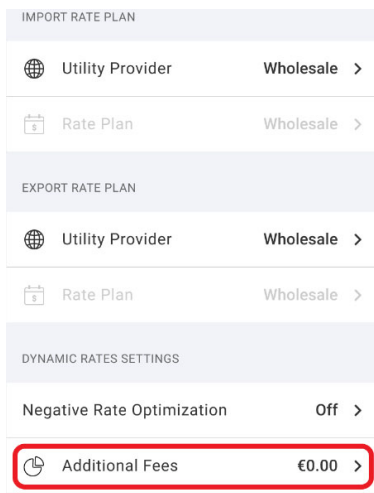


Add additional fees

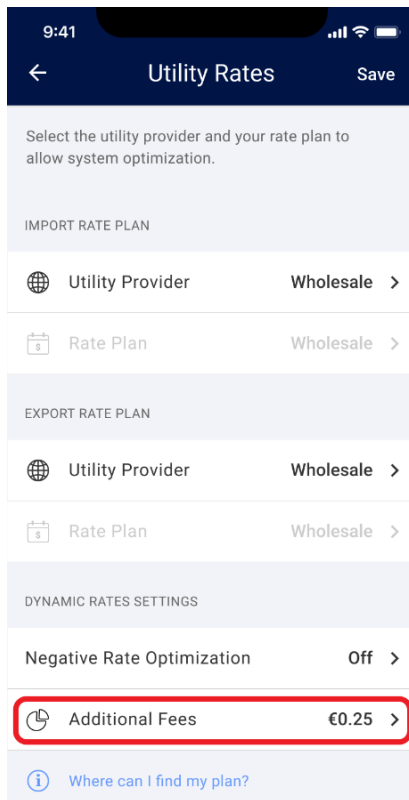
To make sure that the negative rate optimization feature works correctly, it is important to add in the additional fees being charged into the application. You can find these amounts on your electricity bill or by contacting your electricity supplier directly.

To add in the additional fees:

- Tap **Additional Fees**.



2. Enter the additional amount in euros per kWh.



9:41

Utility Rates Save

Select the utility provider and your rate plan to allow system optimization.

IMPORT RATE PLAN

Utility Provider Wholesale >

Rate Plan Wholesale >

EXPORT RATE PLAN

Utility Provider Wholesale >

Rate Plan Wholesale >

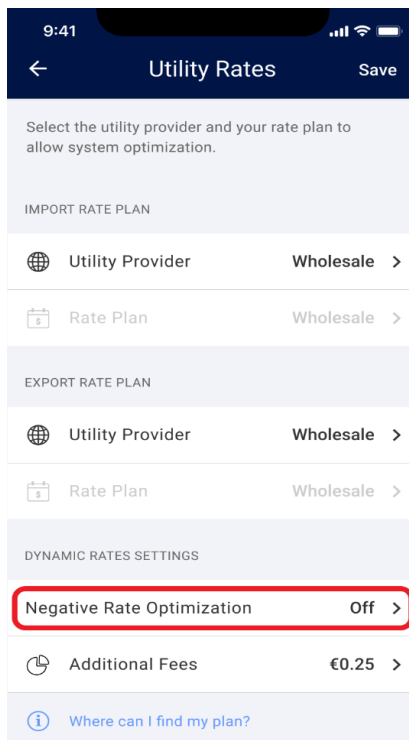
DYNAMIC RATES SETTINGS

Negative Rate Optimization Off >

Additional Fees €0.25 >

[Where can I find my plan?](#)

3. Tap **Negative Rate Optimization**.



9:41

Utility Rates Save

Select the utility provider and your rate plan to allow system optimization.

IMPORT RATE PLAN

Utility Provider Wholesale >

Rate Plan Wholesale >

EXPORT RATE PLAN

Utility Provider Wholesale >

Rate Plan Wholesale >

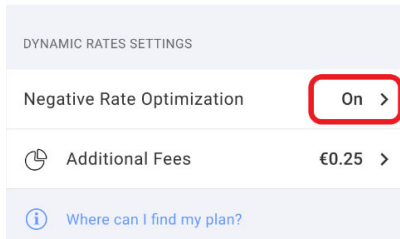
DYNAMIC RATES SETTINGS

Negative Rate Optimization Off >

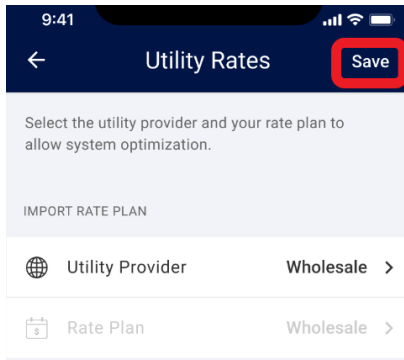
Additional Fees €0.25 >

[Where can I find my plan?](#)

Negative Rate Optimization turns On.



4. Tap Save.



Your system is set up for negative rate optimization.

Bidding Zones

Some countries have divided their area into separate Bidding Zones. These zones may have slightly different import or export rates compared to other Bidding zones. If this feature is available in your country, it appears in the Utility Rates screen where you may select your Bidding zone in place of the default value.

