FEMS App Grid-Optimized Self-Consumption

Version:2023.4.1

Table of Contents

1. Introduction

Dear customer,

Thank you for choosing the "FEMS App Grid-Optimized Self-Consumption". You are welcome to send us your suggestions so that we can further improve the quality of our products.

2. App activation

If you have purchased a Symphon-E electrical energy storage system from Heckert Solar, the app is already included and pre-installed.

System	Symphon-E
App pre-installed	☑

If you have purchased another electrical energy storage system that does not have the app pre-installed, you will have received a 16-digit license key when you ordered the "FEMS App Grid-Optimized Self-Consumption". You can use this license key in the EMS App Center to install the app.

3. FEMS App Grid-Optimized Self-Consumption

The "FEMS App Grid-Optimized Self-Consumption" is an advanced version of self-consumption optimization. It uses forecasts of local power generation and power consumption to optimize the charging behaviour throughout the day. This results in a flatter feed-in curve and avoids power losses due to PV curtailment as far as possible.

As soon as the "FEMS App Grid-Optimized Self-Consumption" has been activated on your EMS, you will see this widget in your monitoring:

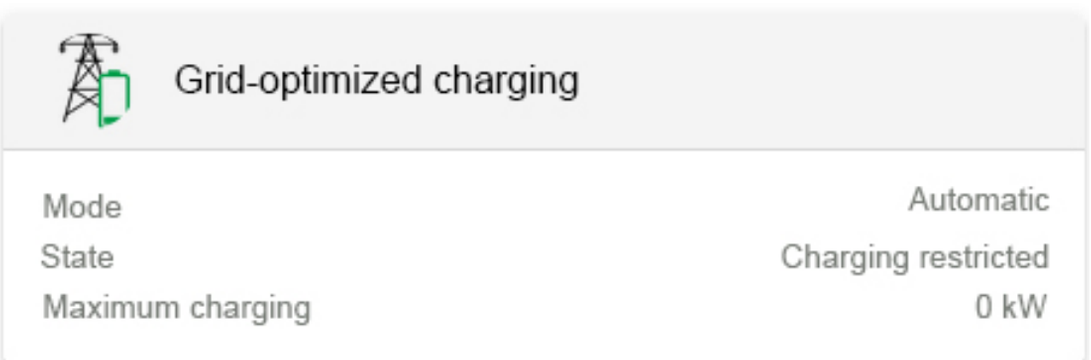

Figure 1. Widget — Initial operation

If the app has already been activated for some time, you will see a widget similar to the one below:

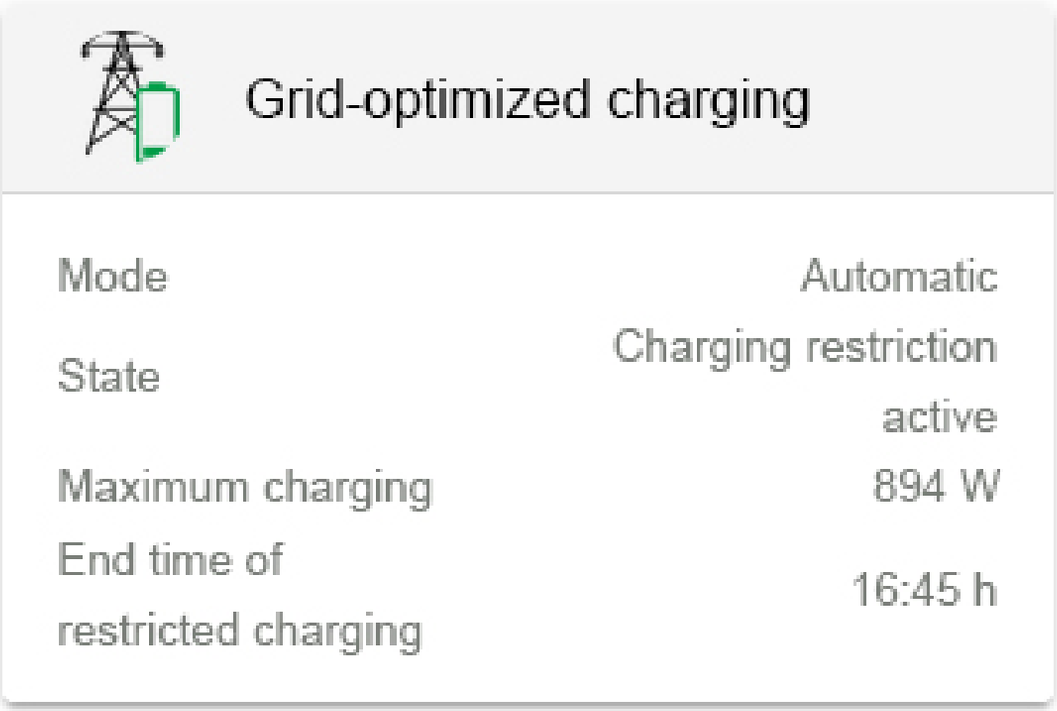

Figure 2. Regular operation — Widget

4. Overview

The following information can be viewed in the overview:

- Mode: Indicates the current grid-optimized charging mode:
  - Manual
  - Automatic
  - Off
- Status: Indicates the current status. A distinction is made between the following states:
  - Loading limit active
  - End time not calculated

    This condition exists, for example, if the app has been in operation for less than one day (see Widget — Initial operation)
  - Feed-in limitation is avoided
  - No charging limit active
  - No limitation possible (restriction by controls with higher priority).
  - End time of limited charging exceeded.
  - Electrical energy storage already full
- Maximum charging: Indicates the current maximum charging of the electrical energy storage.

- End time of the restricted charging: Time until the restricted charging should continue.

5. Extended display

Click on the widget to open the detailed view of the EMS app:

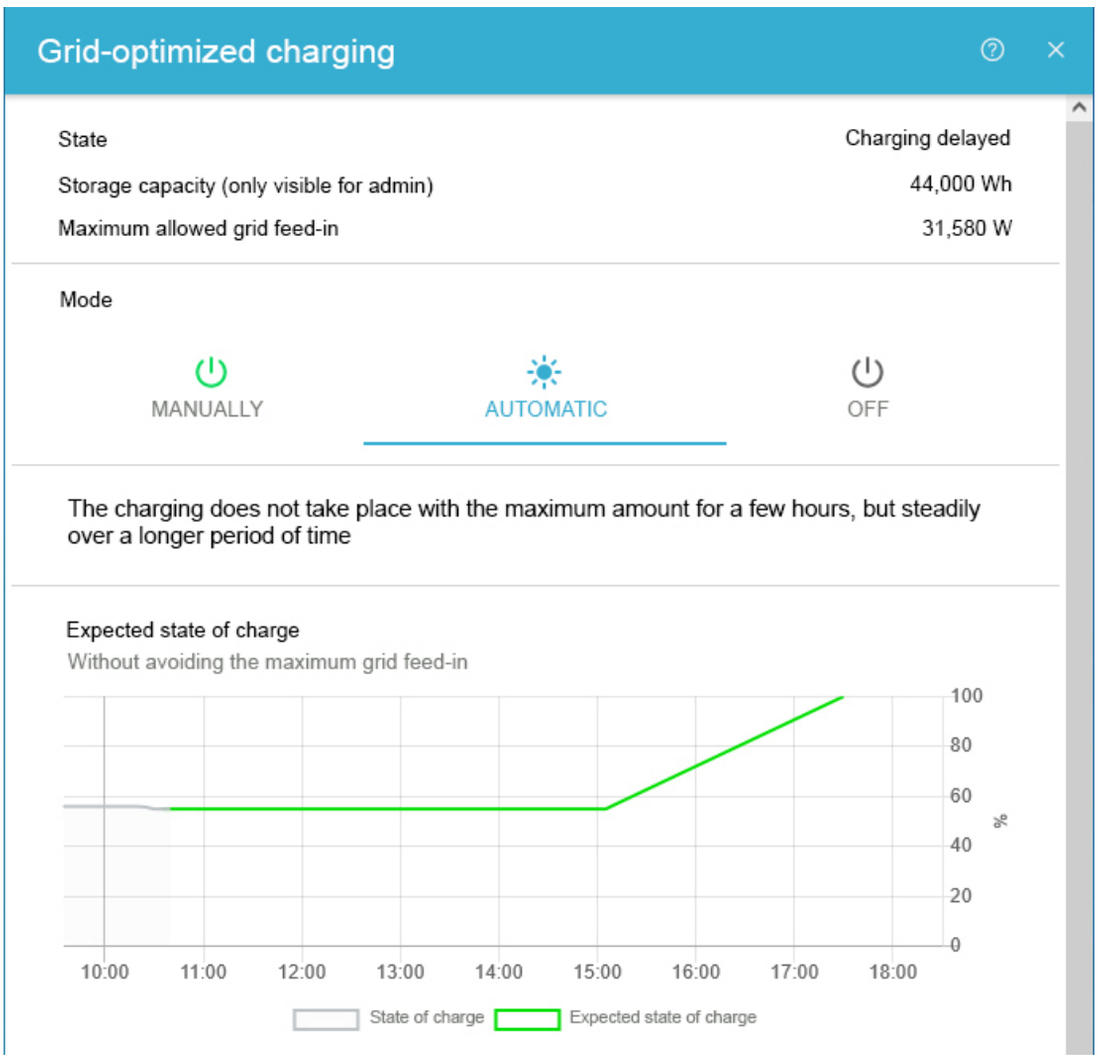

Figure 3. Extended display

Further information is provided here.

- Maximum permitted grid feed-in: Maximum power (of the PV system) that may be fed into the grid.

This value is either specified initially when the order is placed or recorded during commissioning. If this value has changed, it can be changed by the installer in this detailed view.

There are three different operating modes:

- **Manual**: The time at which the electrical energy storage should be fully charged must be set manually.

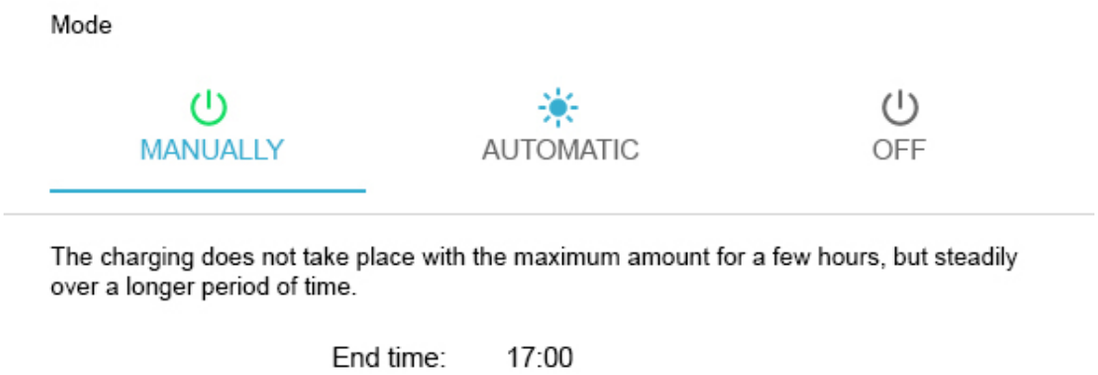

Figure 4. Operating mode — Manual

In this case, the default setting of 17:00 was used.

- **Automatic**: The time at which the electrical energy storage should be fully charged is determined by automatic calculation.

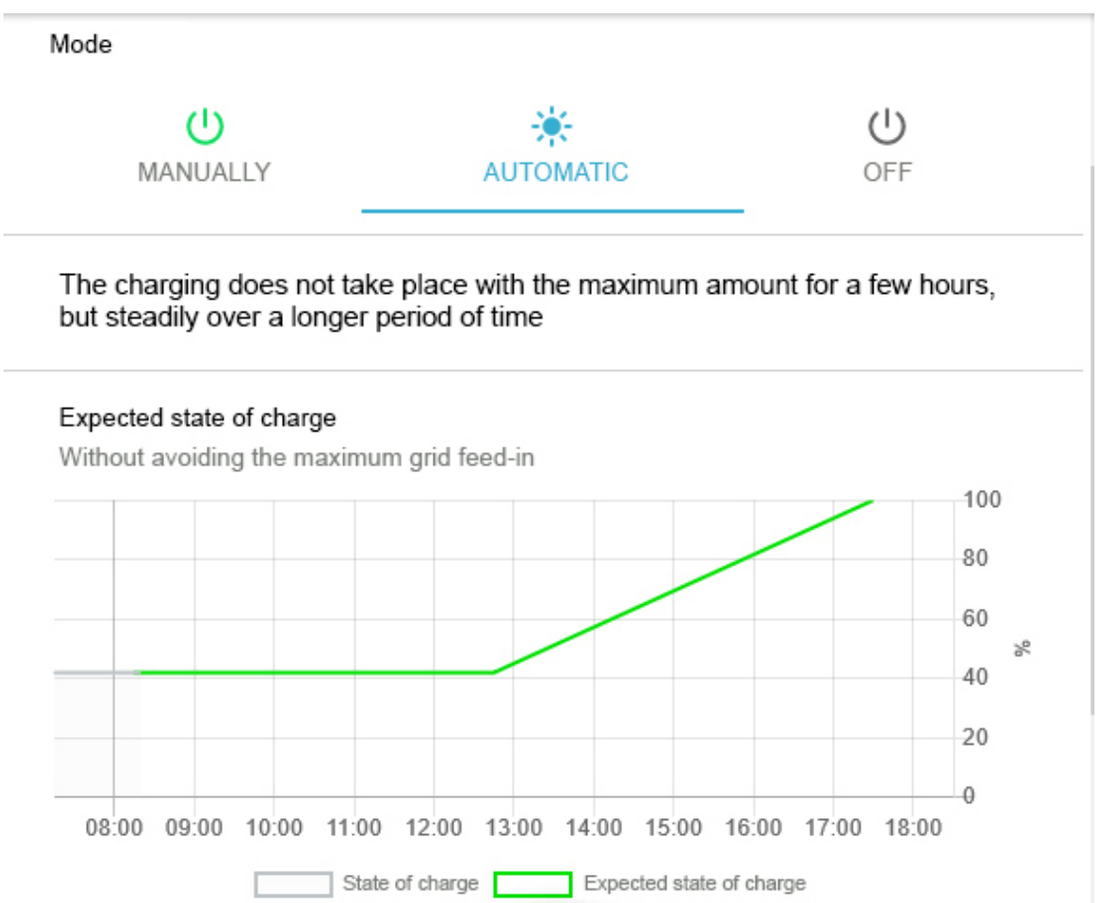

Figure 5. Operating mode — Automatic

- *Off: Grid-optimized charging is deactivated. The control of the electrical energy storage switches to self-consumption optimization. The maximum grid feed-in is still taken into account.

Figure 6. Operating mode - Off

6. State of charge of the electrical energy storage

In this view, the current and expected State of Charge of the electrical energy storage is displayed over time.

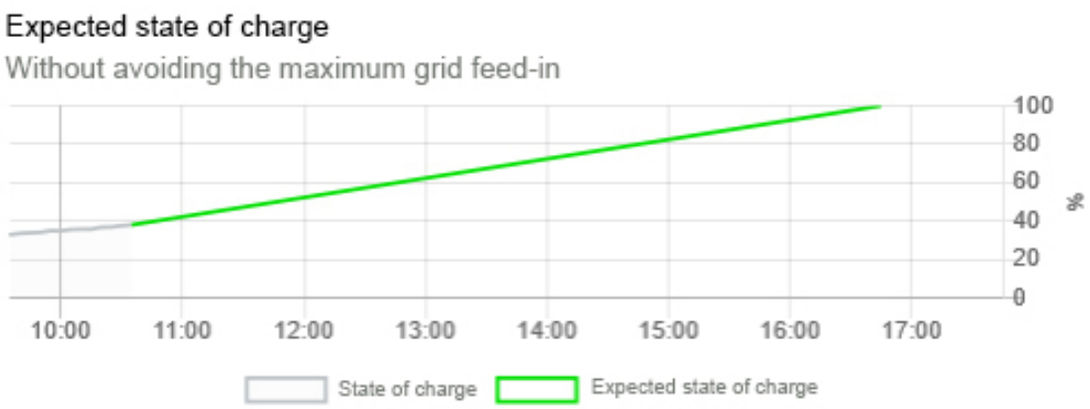

Figure 7. State of Charge indicator

7. Willingness to take risks

In this view, you can choose between three different types of readiness to assume risks:

- Low
- Medium
- High

Figure 8. Willingness to take risks

7.1. Low

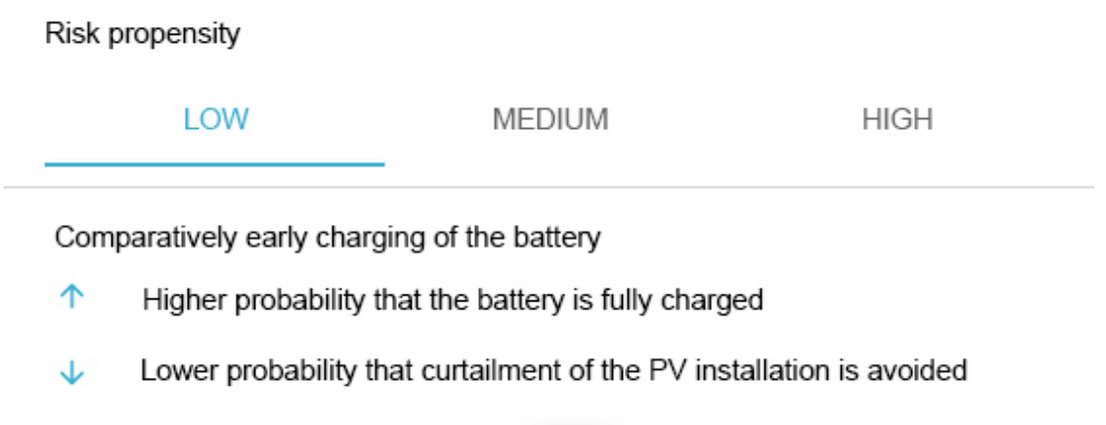

Figure 9. Risk-shy

- Very high probability that the electrical energy storage will be fully charged.
- Greater probability that the PV curtailment will take effect because the electrical energy storage system is already fully charged.

7.2. Medium

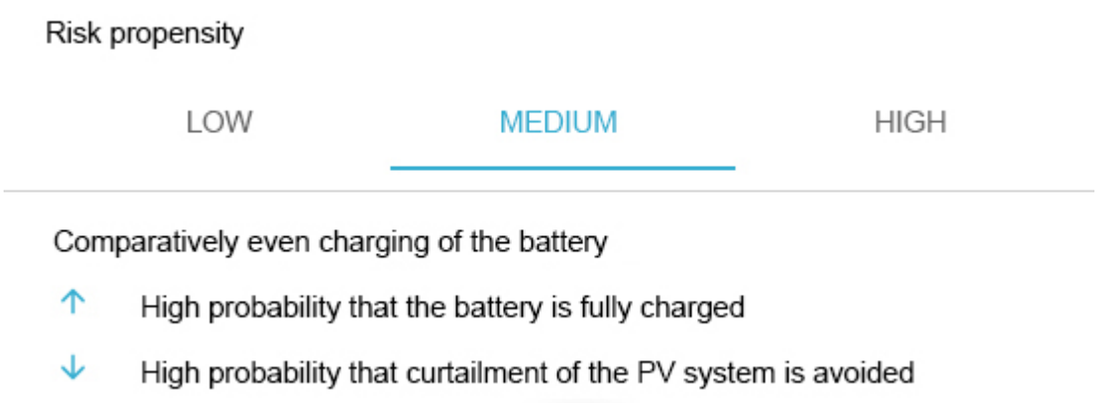

Figure 10. Medium level of risk

- High probability that the electrical energy storage will be fully charged.
- Low probability that the PV curtailment will take effect because the electrical energy storage system is already fully charged.

7.3. High

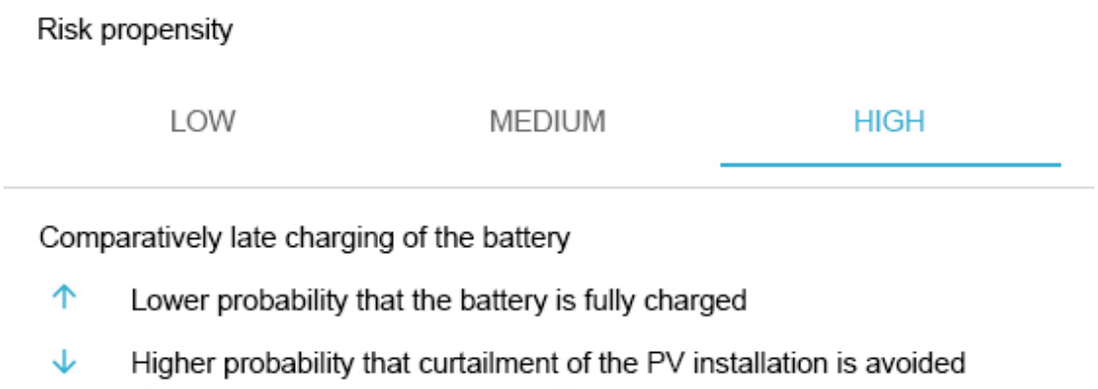

Figure 11. High willingness to take risks

- Lower probability that the electrical energy storage will be fully charged.
- Very low probability that the PV curtailment will take effect because the electrical energy storage system is already fully charged.

7.4. History

The "History" tab can be used to view the behavior of Grid-Optimized Charging over time.

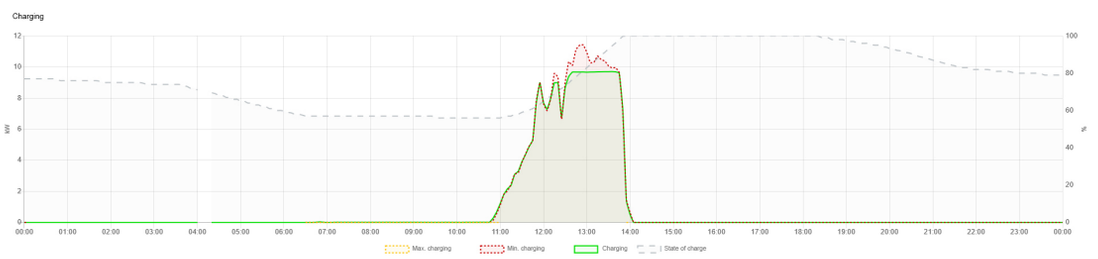

Figure 12. History

If the app has only just been put into operation, the historic view will for sure take more time to unfold.

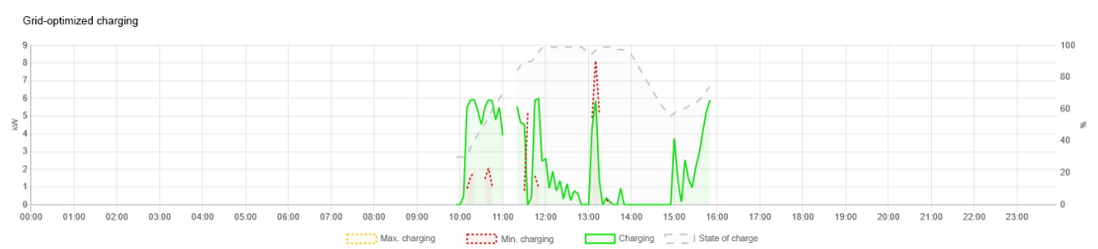

Figure 13. History incomplete

8. Contact

For support, please contact:

Symphon-E Service

Telephone service: +49 (0) 371 45 85 68 - 100

E-mail service: symphon-e@heckert-solar.com

9. Directories

9.1. List of illustrations