ENPHASE.

TECHNICAL BRIEF

Enable optimisation and savings based on static time-of-use tariffs

Applicable regions: Europe, Australia, and New Zealand

Contents

1. Static time-of-use electricity tariff - definition

Static time-of-use tariffs offer two or more electricity rates at fixed times of the day and and may also vary depending on the day of the week. For example, prices are lower during the night and on weekends and higher during the day and on weekdays.

Electricity prices are low when the demand is low, and are elevated when the demand is high in the system. Enphase can enable savings based on these variable prices by moving energy usage to cheaper periods, thus helping to avoid peak prices.

2. Using static time-of-use tariffs with the Enphase Energy System to optimise savings

Homeowners can input their static time-of-use electricity rates into the Enphase App to maximize savings. The system intelligently imports and exports electricity based on favorable pricing and uses batteries (if installed) to avoid costly peak-time imports.

Further savings are possible by integrating the IQ Energy Router, which connects third-party devices like EV chargers and an electric water heater, allowing them to operate during off-peak hours. The operation will follow these main patterns:

Daytime operation:

- Solar panels power the home and charge the battery.
- Excess solar energy is exported to the grid, earning credits (if applicable).
- If solar production is insufficient, electricity is imported from the grid.

Evening peak hours:

- The home draws energy from the battery until its reserve level is reached.
- Additional electricity is imported at off-peak rates, provided battery energy is not sufficient.
- High-consumption devices (e.g., EV chargers, water heaters) are scheduled for off-peak operation to further enhance cost efficiency.
- In the **Self Consumption** profile, further operation strategies are available that are aimed at increasing the direct utilisation of solar surplus.

2.1 Requirements for Enphase components

To optimise and make use of static time-of-use tariffs, equip the Enphase Energy System with the IQ Gateway Metered. The following table shows the Enphase hardware required to take advantage of the **Savings** and the **AI Optimization** profiles.

IQ Microinverters	Required
Third-party inverters	Optional, but requires an IQ Battery
IQ Gateway Metered	Required
IQ Battery	Optional for **AI Optimization** profile, required for **Savings** profile

Third-party batteries	Not supported
IQ Energy Router	Optional – for third-party EV chargers and electric water heater integration
IQ EV Charger 2	Optional

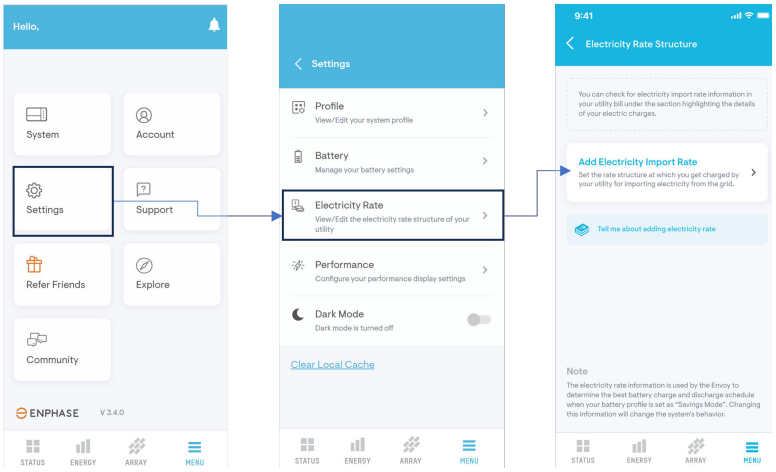
2.2 Configuration of time-of-use electricity rates and optimisation profiles

Using the Enphase App, you can view the energy usage and live consumption of each device connected to the Enphase Energy System. But it can do a lot more if properly configured.

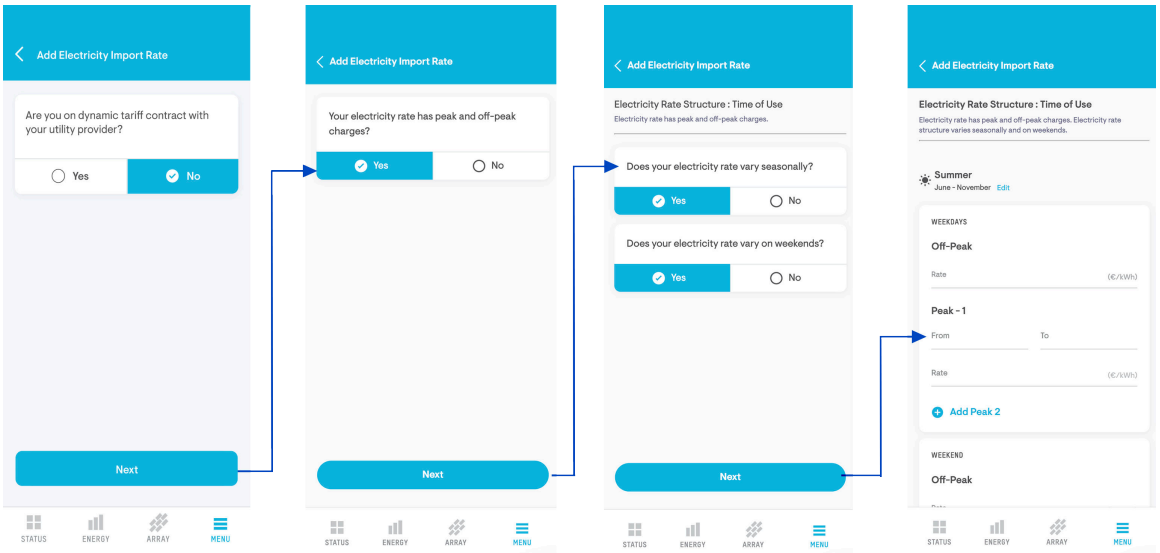
To configure your Enphase Energy System to optimise savings based on static time-of-use tariffs, follow these steps:

1. Ensure you have a static time-of-use tariff contract with your utility.
2. Open the Enphase App on your smartphone.

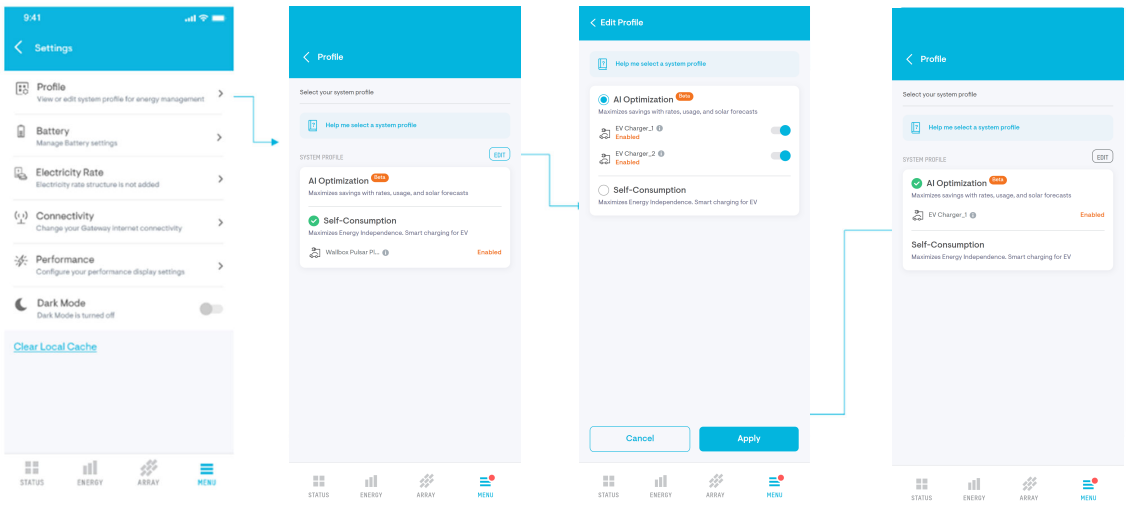
3. Go to **Menu** > **Settings** > **Electricity Rate** > **Add Electricity Import Rate**.



4. Select the following options:
   - **No**, if you are not on a dynamic tariff contract. Then tap **Next**.
   - **Yes**, to confirm that your electricity rate has peak and off-peak charges. Then tap **Next**.
5. On the next screen, select your electricity plan and tap **Next**.
6. Enter your peak, shoulder, and off-peak rates.
7. Read and agree to the terms of use and tap **Proceed**.
   You have now configured your Enphase Energy System to make use of static time-of-use tariffs.

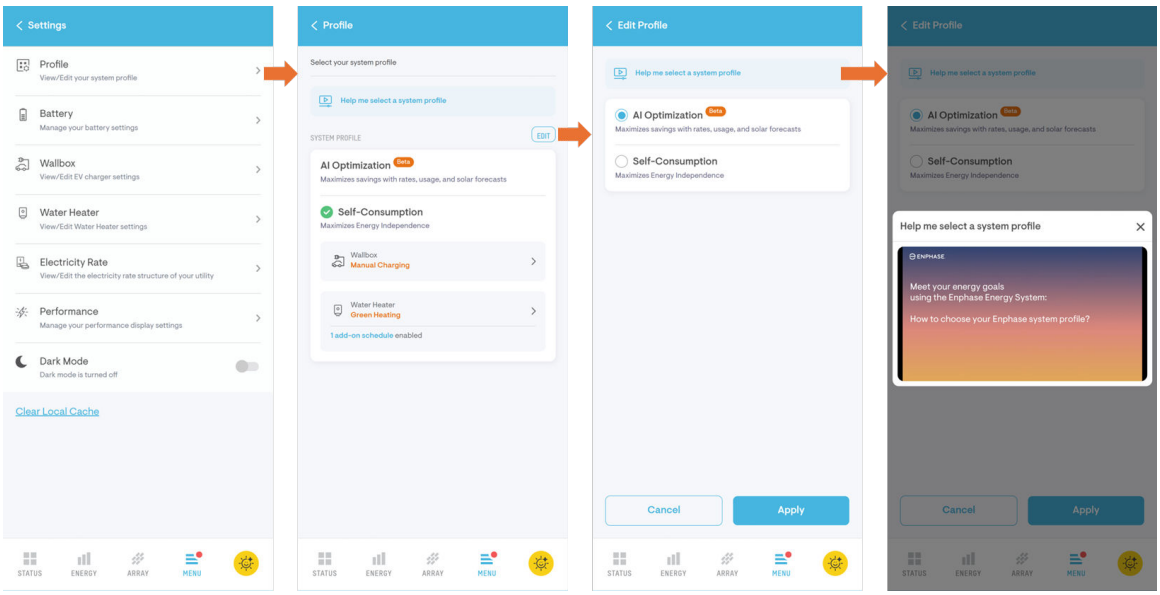


8. Enter your electricity export rate or credit in order to enable a proper value calculation for your feed-in. This also enables the Enphase system to calculate trade-offs, e.g., for settings where higher export credits are paid by the respective energy retailer or grid operator.
9. Enphase uses both your electricity import and export rates to plan the best battery charge and discharge schedule when the profile is set to **AI Optimization**. To enable AI optimization mode for your Enphase Energy System, go to **Menu** > **Settings** > **Profile** > **Edit**.
10. Select **AI Optimization** and tap **Apply**.



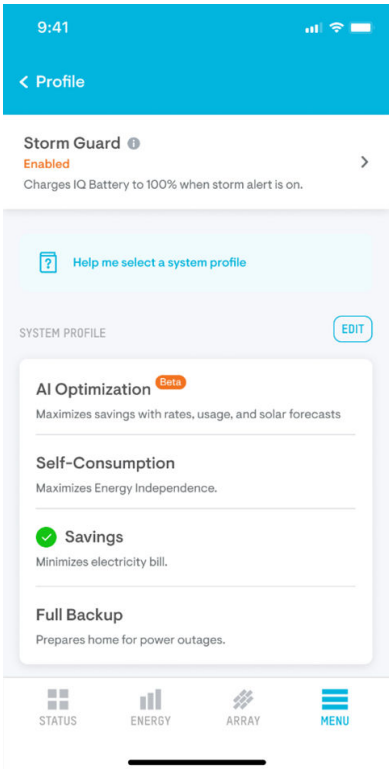
The configuration is now complete, and your Enphase Energy System will start to optimise all your connected devices in the next few hours.

In the Enphase App, you can also find a detailed explanation of how the energy system is optimised in different system profiles.



2.2.1 Availability of Savings and Full Backup profiles

Sites equipped with an IQ Battery and already operating under the **Savings** profile will continue to function in this configuration. Any devices subsequently added to the site will default to a self-consumption control logic unless manually scheduled otherwise.



In order to exploit the full potential for economic savings, we recommend utilising the **AI Optimization** profile.

Full Backup is the profile that is available for sites that have an IQ System Controller installed and are thus equipped to operate also when the power supply from the grid is interrupted. This mode aims at conserving energy in order to power your backup circuits for a longer period.

2.2.2 Examples of how Enphase Energy System optimizes your energy flows

The Enphase Energy System consolidates multiple energy sources to optimize consumption and lower overall electricity costs. The following example demonstrates how these sources operate in conjunction.

1. The system supports heating or charging during off-peak hours, typically at night and early morning. During this period, any solar energy stored in the battery is utilized first, while low-cost grid power supplements the supply to meet demand.
2. The system can also intelligently operate in the self-consumption mode, which allows the home to operate directly on available solar energy and e.g., run the water heater (Nr. 2 on the left), and charge the EV during the daytime when solar energy is well available (Nr. 2 on the right).
3. It also charges the battery using excess solar energy for later use when electricity rates are high. Your own low-cost solar power is used to charge your EV, supply power to a water heater, and run the home during peak hours using the energy stored earlier. Altogether, these features help maximize independence from the grid and lower energy costs.

3. Revision history

Revision	Date	Description
TEB-00336-1.0	December 2025	Initial release.