ENPHASE.

USER GUIDE

AI Optimization for Net Billing Tariff (NEM3.0) systems in California

This document describes the AI-based optimization to maximize savings under the Net Billing Tariff (NEM3.0).

Introduction

Every component in an Enphase Energy System is specifically designed to generate and use energy as efficiently as possible.

The new AI-based optimization model for Enphase Energy Systems uses solar production, home consumption, Enphase system configuration, electricity rates, and other system settings to generate value for system owners by maximizing financial savings.

System owners in California enrolled in the Net Billing Tariff (NEM3.0) program of the utilities PG&E, SDGE, or SCE are incentivized to configure their systems as Export Only to benefit from high export rates. Installers enable the correct setting for the battery operating mode during commissioning. Once that has been done, system owners only need to select the new profile called **AI Optimization** in the settings menu of their Enphase App to benefit.

To select the new profile, system owners can go to **Menu** > **Settings** > **Profile**. In the profile screen, select **Edit**, select **AI Optimization** as the new profile and click **Apply** to confirm.

Learn more about how to select a profile using the Enphase App.

July 2024
USG-00047-1.0

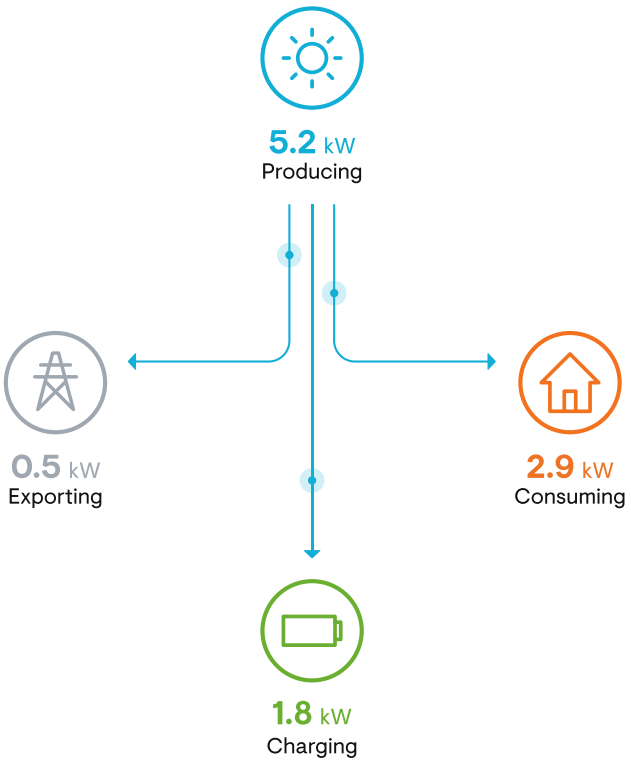
How is Enphase optimizing the system based on the Net Billing Tariff (NEM3.0)?

For NEM3.0 systems with Net Billing Tariff rates, import and export rates are dynamic and vary hourly. To maximize savings with NBT rates, it is important to predict the system's energy requirements in advance and look at the hourly electricity rates to determine how to prioritize the use of energy at home.
We have described key scenarios to understand how the Enphase Energy System behaves under the new AI Optimization profile based on changing parameters such as home consumption, solar power production, electricity rates, and other system settings.

Scenario 1

Behavior of the Enphase Energy System during off-peak hours when the import and export rates are low and solar production is higher than home consumption.
In this scenario, AI optimization works to maximize energy independence.

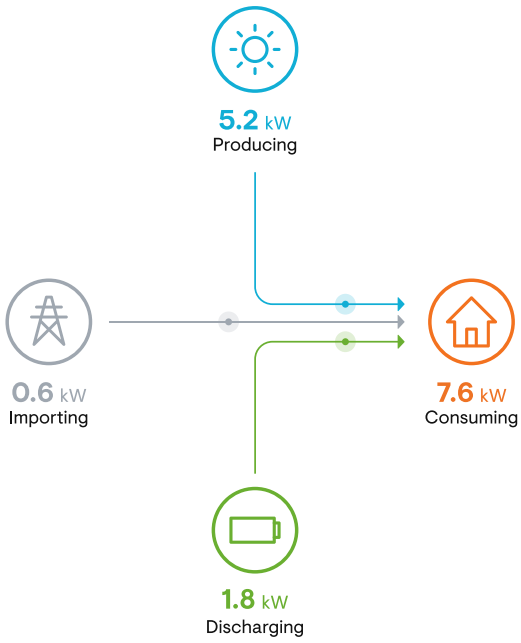
- The use of solar power in the home is prioritized
- Excess solar power is used to charge the battery first
- Remaining solar power is exported to the grid



Scenario 2

Behavior of the Enphase Energy System during off-peak hours when the import and export rates are lowest and solar production is less than home consumption.
In this scenario, AI optimization conserves batteries for peak periods. Energy independence might be reduced in favor of increased savings during peak periods.

- The use of solar power in the home is prioritized
- If the home needs more power, the Enphase Energy System may prioritize the use of power from the battery or import electricity from the grid
- The battery will be used to power the home if the battery charge is sufficient to power the home during upcoming peak price periods
- Electricity will be imported from the grid to power the home if the battery charge is not enough for upcoming peak price periods*

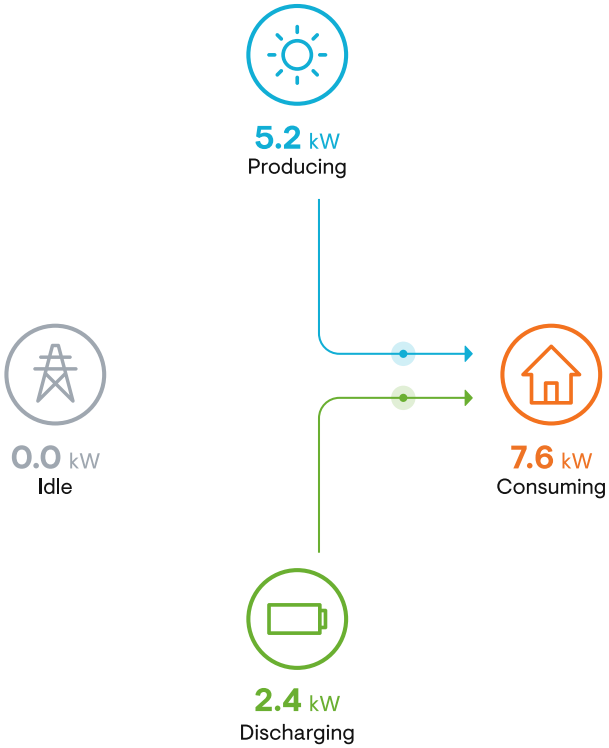


*Only applicable if Battery grid mode is Import Only. As per Net Billing Tariff (NEM3.0) regulation, the battery can either operate in Export Only mode or Import Only mode.

Scenario 3

Behavior of the Enphase Energy System during peak hours when the import rates are higher than export rates.
In this scenario, AI optimization works to maximize energy independence.

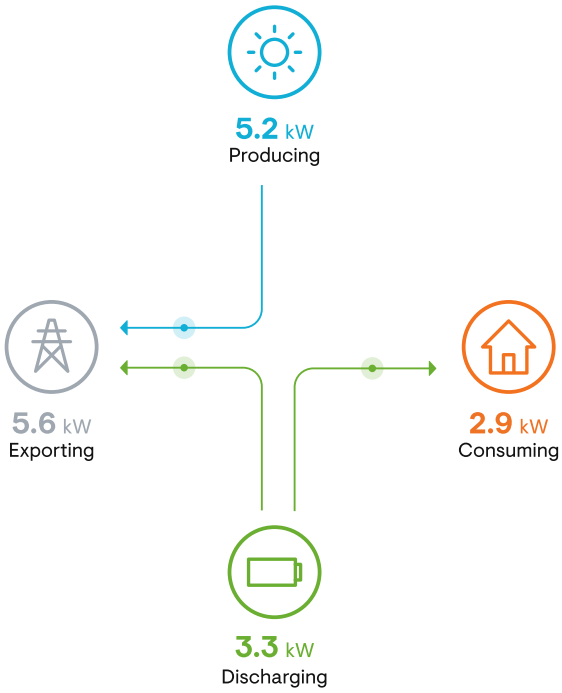
- Battery and solar power are prioritized to power the home to minimize grid import
- Export to the grid is minimized, and the excess solar power is used to charge the battery



Scenario 4

Behavior of the Enphase Energy System during peak hours when the export rates are higher than import rates.
In this scenario, AI optimization de-prioritizes energy independence to optimize savings during peak periods.

- The battery is discharged to power the home and the excess power is exported to the grid**
- Solar power is exported to the grid to help maximize export credits

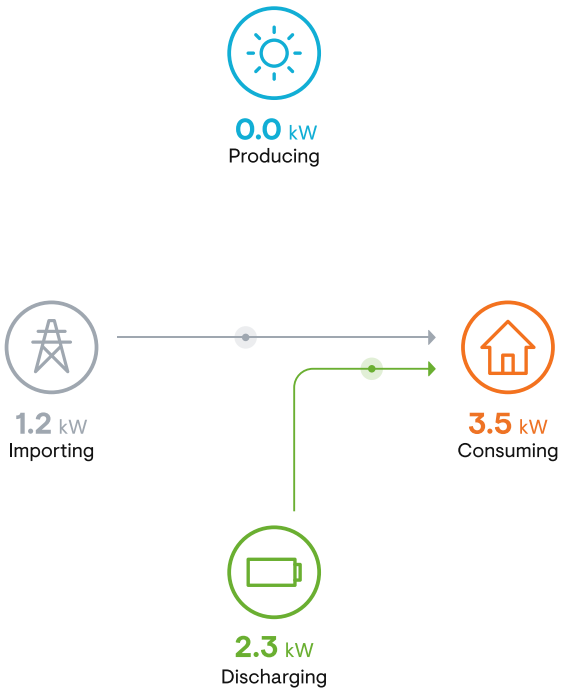


**Only applicable if Battery grid mode is Export Only. As per Net Billing Tariff (NEM 3.0) regulation, the battery can either operate in Export Only mode or Import Only mode.

Scenario 5

Behavior of the Enphase Energy System at night when solar is not available.
In this scenario, AI optimization prioritizes the use of battery to power home loads.

- The battery is discharged to power the home
- Electricity will be imported from the grid to power the home if the battery charge is not enough



Revision history

REVISION	DATE	DESCRIPTION
USG-00047-1.0	July 2024	Initial release.