Enabling battery export for NEM 3.0 systems

Contents

Overview 2
Background 2
Design considerations for import and export mode 2
Understanding what load centers will be backfed by batteries when switching to export mode . 3
PART 1: Utility interconnection agreements 4
PG&E 4
SCE 4
SDG&E 5
PART 2: Enphase system 5
How to set the battery mode in Enphase Installer App 5
Setting the battery mode using Enphase Installer Portal activation 8
Revision history 9

Overview

This document is for Enphase Energy System installation partners in California. It provides instructions on enabling battery export for NBT (NEM 3.0) systems.

Battery mode is declared as **Export Only** in two locations:

1. On the utility Net Metering Interconnection agreement
2. In the Enphase Energy System, via
    a. Enphase Installer Portal activation
    or
    b. Enphase Installer App

This document will describe how to check what battery mode your system is currently configured under and how to enable battery export mode so your customer may benefit from high discharge rates in the fall.

Background

Since 2014, California investor-owned utilities (PG&E, SCE, and SDG&E) have required that energy storage systems paired with NEM PV choose either ESS operating mode.

- **Import Only:** Storage may charge from the grid but will not export to the grid.
- **Export Only:** Storage may discharge to the grid, but can only be charged from PV.

This ensures "NEM Integrity", i.e., NEM export credits are only paid for PV-generated energy.

Under NEM 1.0/2.0, most systems are **Import Only**, since there is no homeowner benefit to export energy from batteries to the grid.

NEM 3.0 incentivizes homeowners to configure their systems as **Export Only** to benefit from high export rates in the fall. More details on NEM 3.0 can be found at enphase.com/installers/nem3.

Other important details:

- NEM 3.0 and battery **Export Only** apply to systems interconnected in PG&E, SDG&E and SCE. For utilities outside of PG&E, SDG&E, and SCE, battery export is likely not required. Systems interconnected in municipal utilities like SMUD, LADWP, Lodi Electric Utility, etc., do not need to enable battery export.
- Third-party-owned systems connected under Power Purchase Agreements or Solar Leases should check with the system owner before making changes.
- Some utilities refer to **Import Only** as Non-Export, and **Export Only** as Non-Import.
- The installer will set the ESS operating mode at the time of commissioning. After seven days, this mode is locked and can only be adjusted by Enphase Support.
- The installer is responsible for confirming that the operating mode in the utility-approved NEM agreement matches the commissioned system. The installer MUST select the ESS operating mode. Homeowners cannot make changes to the battery mode setting.

Design considerations for import and export mode

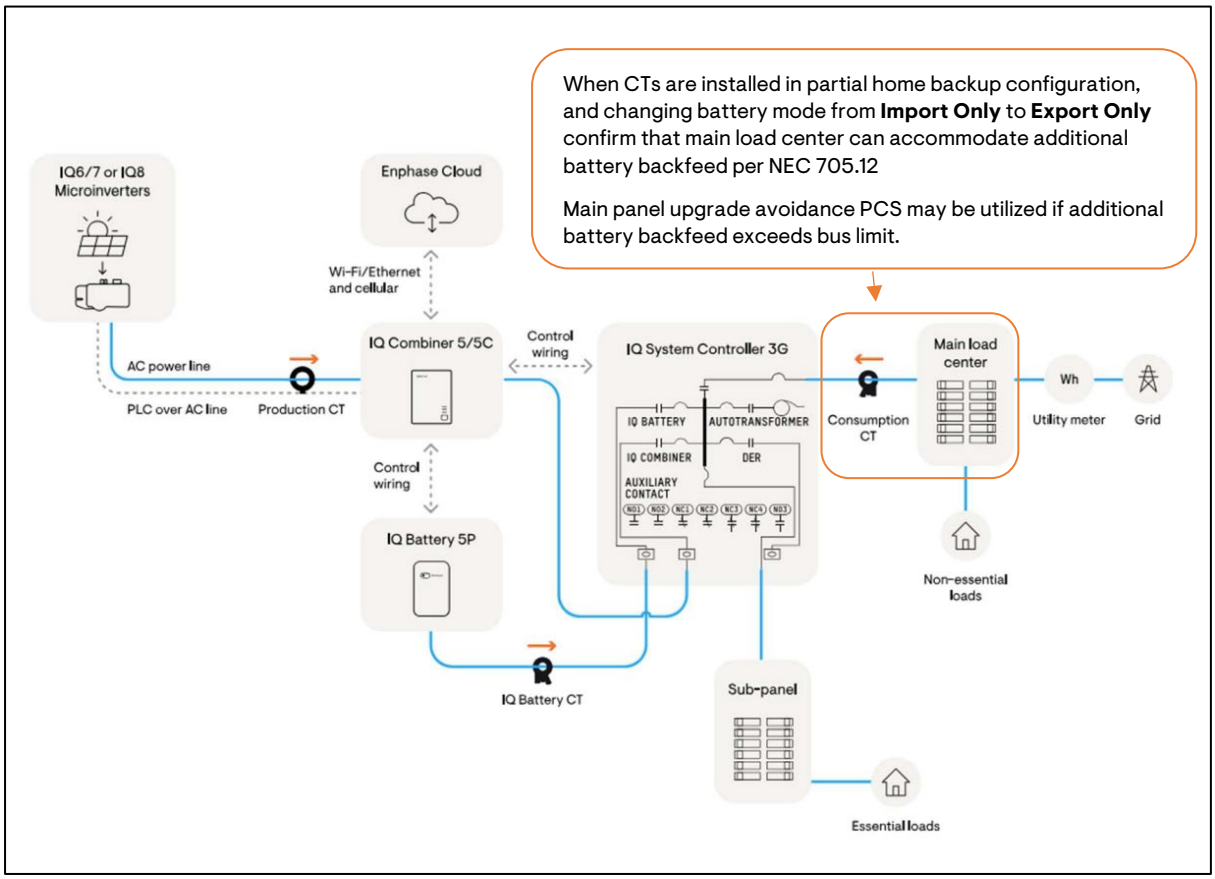
- Under **Import Only**:
    - Batteries will only dispatch to load centers metered by Consumption CTs
        - Interconnection amperage of batteries only needs to be considered in load centers metered by Consumption CTs (NEC 705.12)
    - Solar will dispatch beyond the Consumption CTs and out to the grid

    - Interconnection amperage of the solar system must be considered to the utility meter (NEC 705.12)
- Under **Export Only**:
    - Batteries will dispatch beyond the Consumption CTs and out to the grid
        - Interconnection amperage of solar and batteries must be considered to the utility meter (NEC 705.12)

Understanding what load centers will be backfed by batteries when switching to export mode

If you switch an already installed system from import to export, the batteries may begin backfeeding a new load center.

Example:



- Switching the system from import to export with the above system design will cause the batteries to backfeed into the main panel.
    - Confirm that your main panel can accommodate the additional battery backfeed per NEC 705.12 (120% rule) before switching.
- If the battery backfeed exceeds the main panel limits per 705.12, Power Control Systems features such as Main Panel Upgrade Avoidance can be enabled. Refer to Enphase Power Control System Tech Brief for more information.
- If your system monitors all loads in the home with the CTs, then the above risk does not exist. The system may be switched from **Import Only** to **Export Only** mode with no double check.

PART 1: Utility interconnection agreements

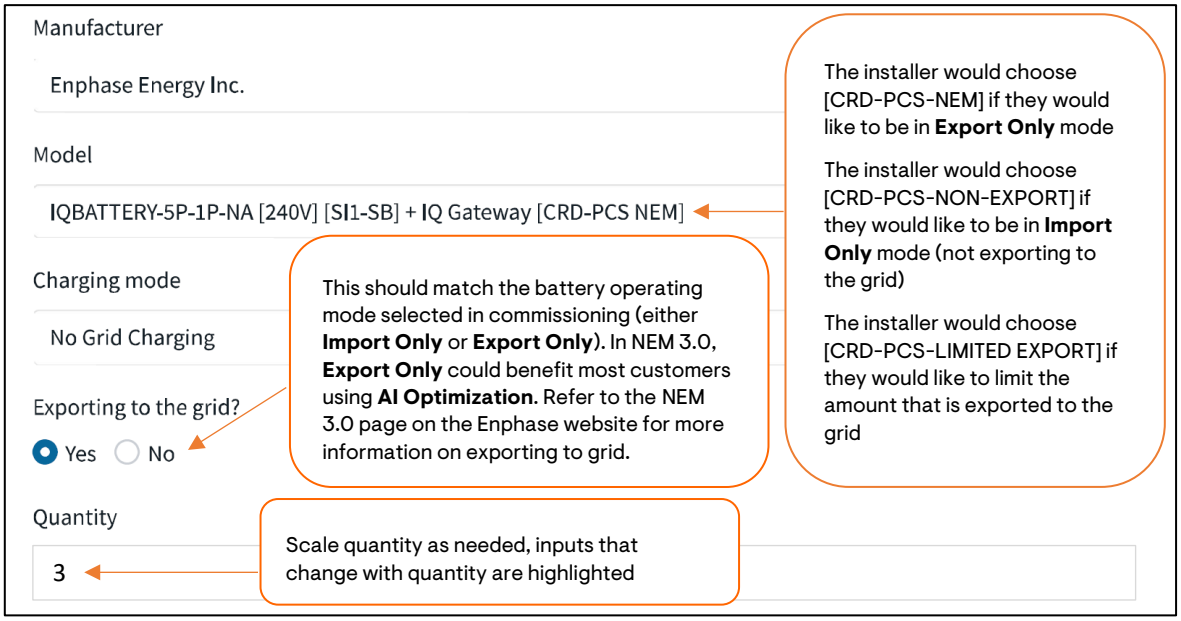
How to check the existing mode of a system and change from import to export?

NOTE: Utility interconnection agreement portals are subject to change without Enphase knowledge. Information is current as of the publication date.

PG&E

Check and modify battery mode for unsubmitted applications:

- PG&E's online portal allows installers to view existing applications.
- To enable export from the grid, select **Yes** under the **Exporting to the grid?** section.



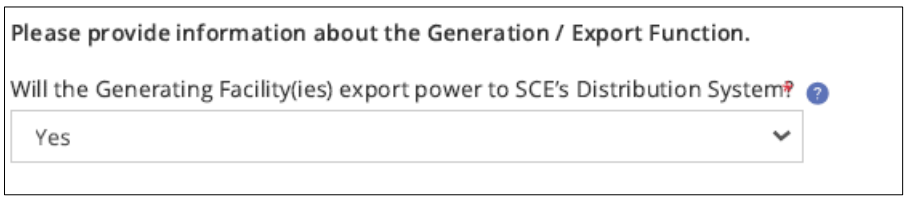
Check and modify the battery mode After PTO.

- After PTO, modifications to battery mode can be made by selecting the **Upgrade an Existing Facility** option.
- This option can be found by beginning a new application under **Connect solar panels**> **Simple solar and/or energy storage**>**Standard NBT/NEM**
- Select **Upgrade existing generating facility** under service type.
- A $145 modification fee is necessary.

SCE

The SCE online portal allows installers to view existing applications.

Yes reflects an NEM3.0 **Export Only** battery system. See the following image.



Check and modify battery mode for unsubmitted applications:

- Select **Yes** to the question **Will the generating facilities export power to SCE's distribution system?**

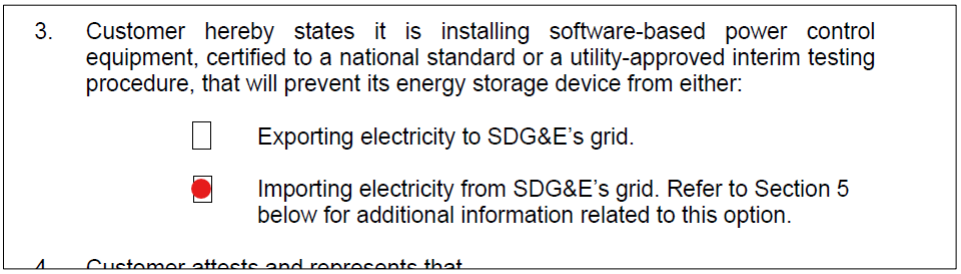
Modify battery mode After PTO

- Two options exist:
    1. Email nem@sce.com (or the assigned engineer) to request that the project temporarily have PTO rescinded while the change to export is studied by the utility (preferred route).
    2. Create a new application with export to grid enabled. ($94 fee)

SDG&E

As of June,2024, the online SDG&E DIIS portal does not include ESS Operating mode in its application. Instead, SDG&E requires a separate form, 142-02775. "Power Control Based Equipment Attestation" to be emailed to their net metering department when submitting a net metering application. To confirm the operating mode for an existing PTO system, installers may need to find it in their sent emails or reach out to SDGE to receive a copy. Refer to the SDGE NEM/NBT Documents and SDGE net metering department for current guidance.

Screenshot of form 142-02775 reflecting **Export Only**/Non-import battery system:



3. Customer hereby states it is installing software-based power control equipment, certified to a national standard or a utility-approved interim testing procedure, that will prevent its energy storage device from either:

☐ Exporting electricity to SDG&E's grid.

☉ Importing electricity from SDG&E's grid. Refer to Section 5 below for additional information related to this option.

4. Customer attests and represents that

Modify battery mode for unsubmitted applications

- Refill the form 142-02775 to reflect the exporting to SDG&E's grid, and submit with the completed application.

Modifying battery mode after PTO

- The installer must submit a new application, a new Battery Attestation form, and pay the $132 application fee. The project will need to be reviewed for potential transformer overload issues.

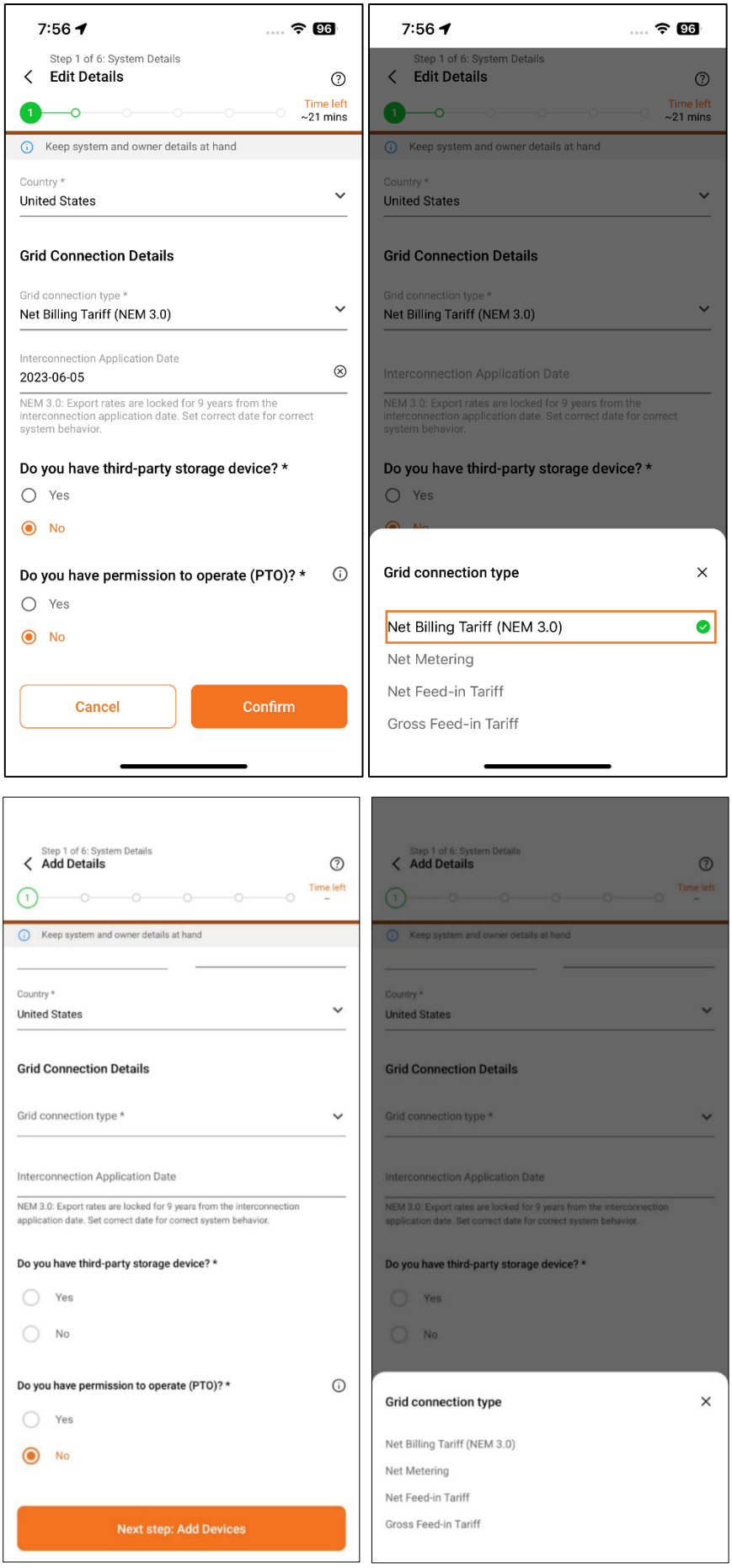
PART 2: Enphase system

How to set the battery mode in Enphase Installer App

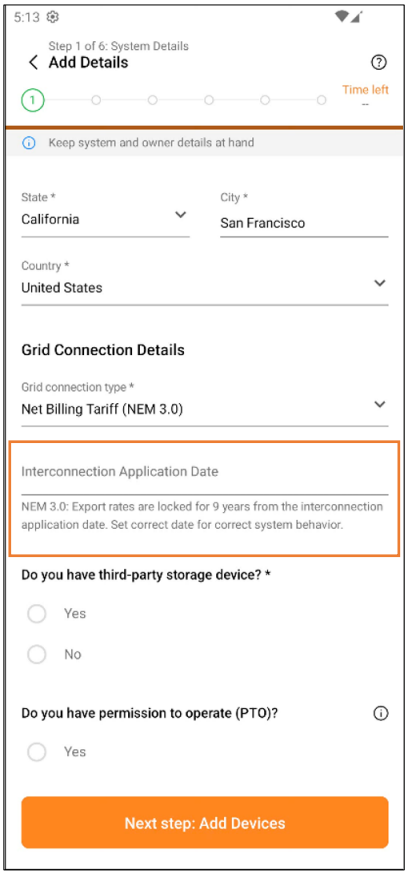
1. Select the correct grid connection type.
   Currently, the Enphase Installer App accepts any one of the four mentioned settings as the grid connection type:
    1. **Net Billing Tariff (NEM 3.0)**
    2. **Net Metering**
    3. **Net Feed-in tariff**
    4. **Gross Feed-in tariff**

Select **Net Billing Tariff (NEM 3.0)** as the grid connection type.

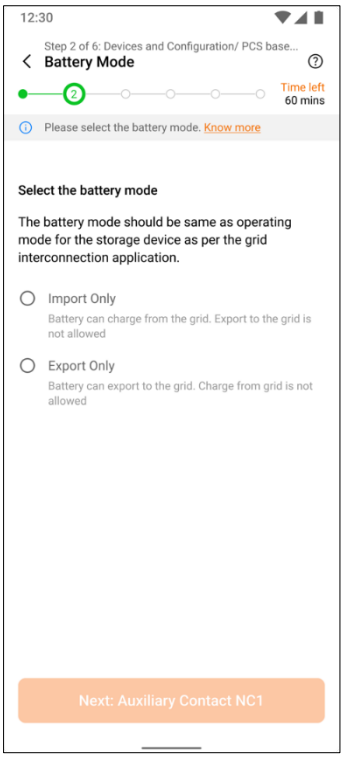
If NEM 3.0 is not selected, battery export cannot be enabled.



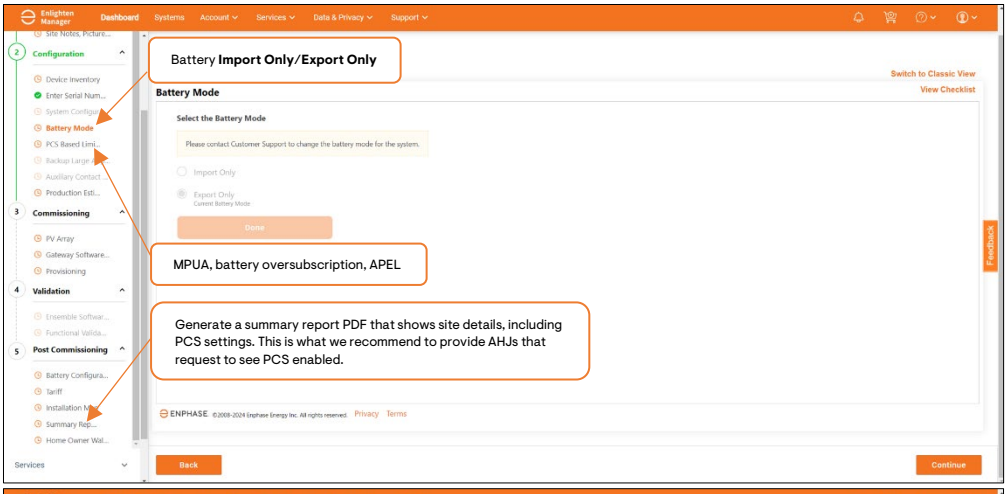
2. Add the correct interconnection application date.
   The interconnection application date locks in the system's NEM3.0 export rates. Enphase uses this data to fetch export rates for the selected NEM3.0 rate plan automatically.
   Savings optimization uses the export rates to decide when to export power to the grid to maximize export credit and reduce electricity bills.

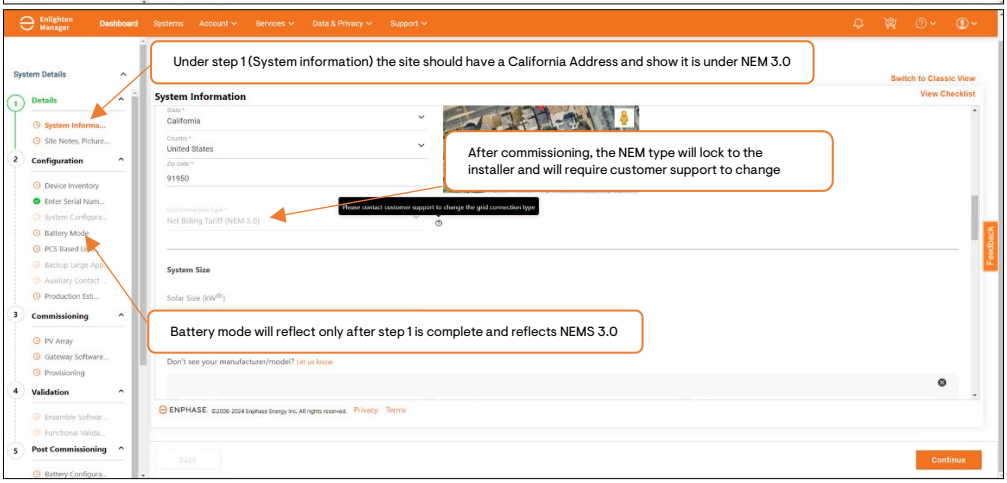


3. Select the right **Battery Mode** (**Export Only**/**Import Only**)
   For best savings, most NEM 3.0 systems should choose **Export Only**.
   - **Import Only** mode
     The battery can charge only from the grid (ideally during low compensation periods), but energy cannot be exported to the grid (from the battery).
     This mode is ideal if the homeowners want to use the most solar energy possible and minimize grid dependence.
   - **Export Only** mode
     The battery is allowed only to discharge energy to the grid (ideally during high compensation periods) but not to import energy from the grid.
     It is ideal if the homeowners want to maximize their savings.



Setting the battery mode using Enphase Installer Portal activation





Revision history

Revision	Date	Description
TEB-00179-1.0	June 2024	Initial release.