lunar energy

Managing the Permission-to-Operate (PTO) Experience

Application Note

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Summary

Customers are eager to operate a solar and battery system on the day of installation. However, the system may be subjected to limited operation before being approved by utilities to ensure it's safe and compatible with the local grid. This utility approval process, known as Permission to Operate (PTO), is one of the most confusing steps of the customer journey.

Lunar offers a seamless onboarding process that manages customer experience before and after PTO. Pre-PTO settings, accessible via the Installer App or Gridshare fleet management portal, determine system behavior before the PTO date is identified. After receiving utility approval, installers may remotely move the site from pre-PTO mode to the post-PTO operation mode selected in the Lunar Installer App. Throughout the process, Lunar provides customers clear guidance of their Lunar System's expected operation in the Lunar App, confirming customers' new rate plans, and reducing customer support queries for installers.

This Applications Note describes the PTO management features for the Lunar System.

Select PTO settings in the Installer App

During commissioning, installers will be prompted to enter PTO settings under the Operation Settings section.

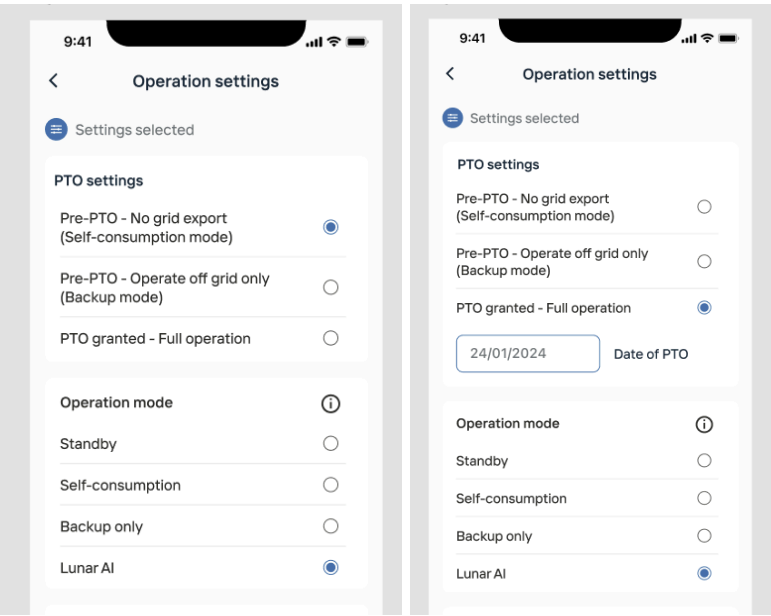


Figure 1: Selecting pre-PTO settings

Setting	Battery Export to Grid	PV Export to Grid	Charge battery from Grid	Inverter AC Output	PV Charges battery	Off-grid support
Pre-PTO: No grid export (Self-consumption mode)	No	No	Defined by PCS	Yes only to cover consumption	Yes	Yes
Pre-PTO: Operate off-grid only (Backup mode)	No	No	Defined by PCS	Yes only when off-grid	Yes	Yes
PTO granted - Full Operation	Defined by PCS	Yes	Defined by PCS	Yes	Yes	Yes

Table 1: System behavior for each pre-PTO setting

✓ **Note:** Pre-PTO settings will follow PCS settings selected for the site. For example, a Lunar System with PCS Export Only mode will not charge the battery from the grid.

PTO experience in the Lunar App

Customers will be able to (1) understand system operation pre-PTO and (2) switch their systems to post-PTO state after receiving utility approval in the Lunar App.

Understand system operation pre-PTO

When a customer enters the Lunar App before a PTO date is confirmed, the app will walk through the following information:

- What PTO is and its impacts on system operation
- Any action needed when PTO is received
- Expected behaviors of their pre-PTO system operation mode

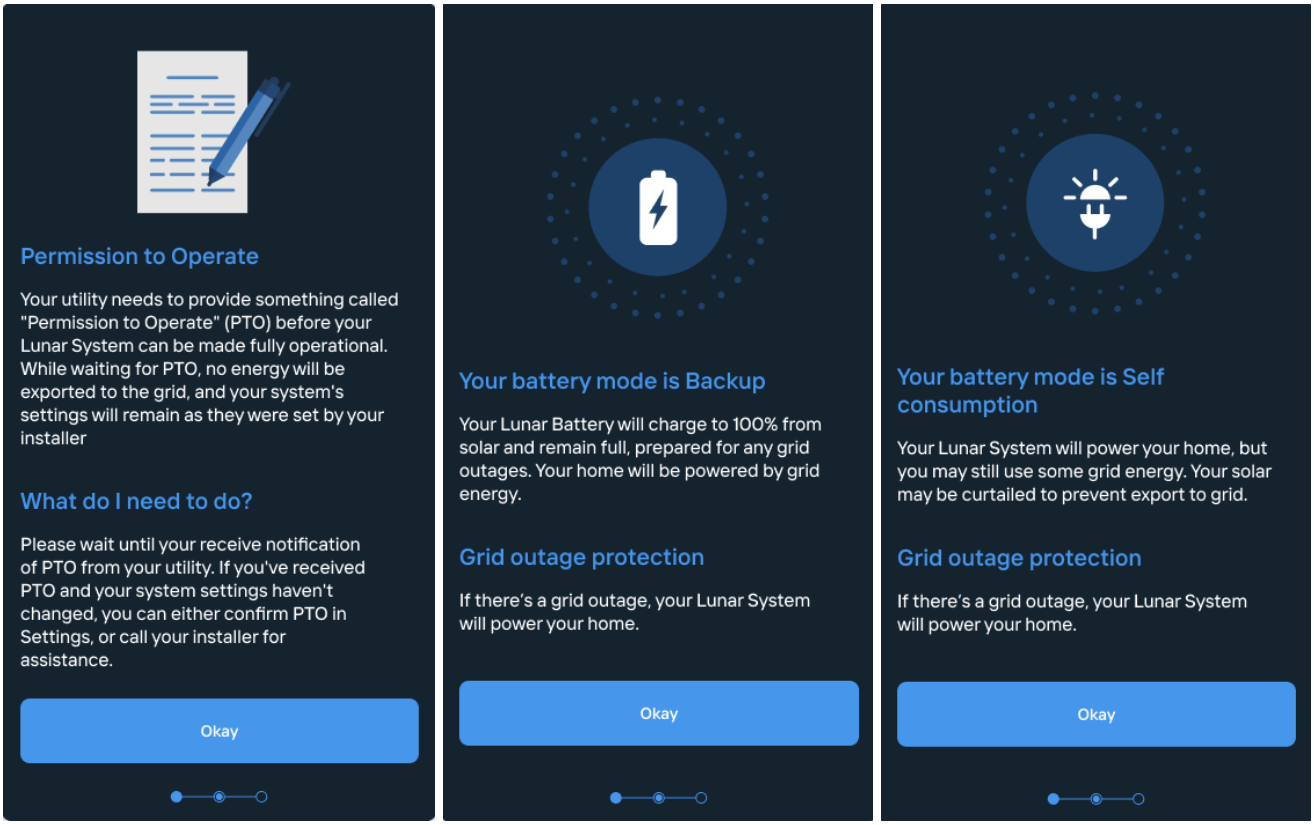


Figure 2: Explaining Pre-PTO settings in the Lunar App

Change operation settings after receiving PTO

Once receiving confirmation of PTO from their utility, customers may enter their PTO date in the Lunar App (**Figure 3**), which automatically transitions their system to the post-PTO Operation Mode set in the Lunar Installer App.

Note: This feature is enabled by default, but can be hidden if an installer prefers that customers not have the ability to set PTO date in the Lunar App.

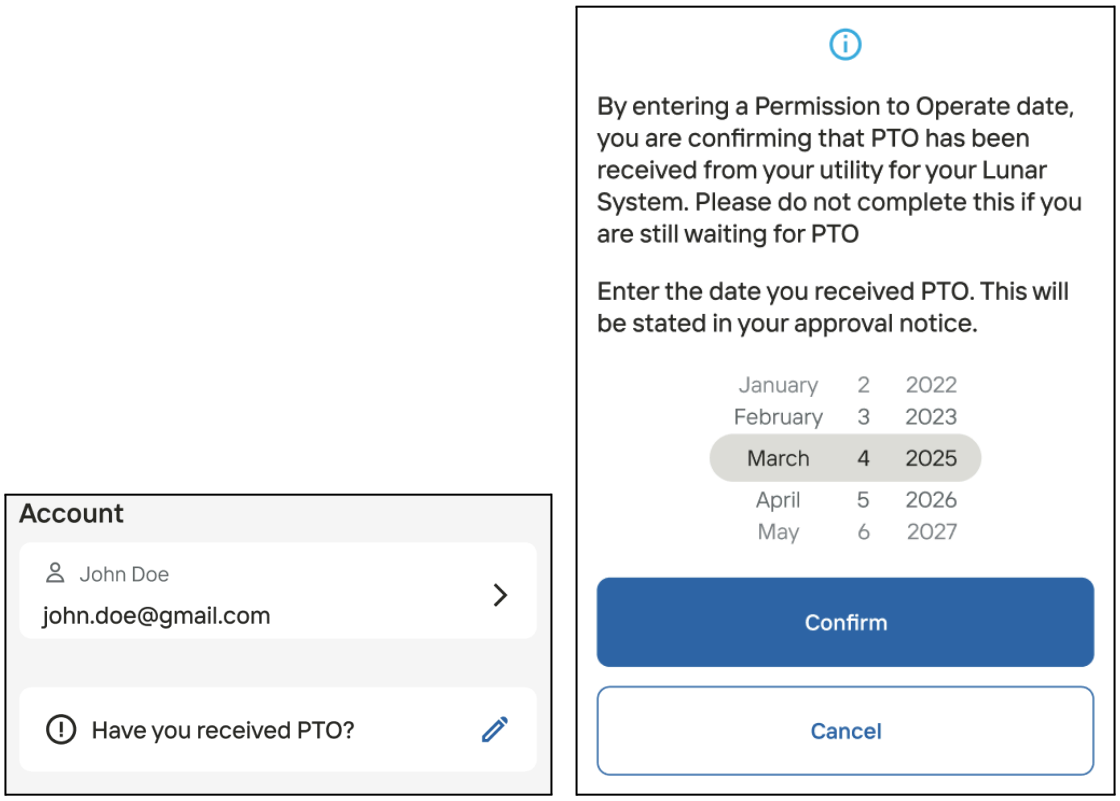


Figure 3: Entering PTO date in the Lunar App

Confirm battery settings and utility rate plan

Once a PTO date has been entered, the customer will receive an app notification and will be asked to confirm their rate plan (**Figure 4**).

The Lunar App allows users to edit battery settings (e.g. operation mode, battery reserve) any time after PTO is received.

Note: This feature is enabled by default, but can be hidden if an installer prefers that customers not have the ability to edit battery operation settings in the Lunar App.

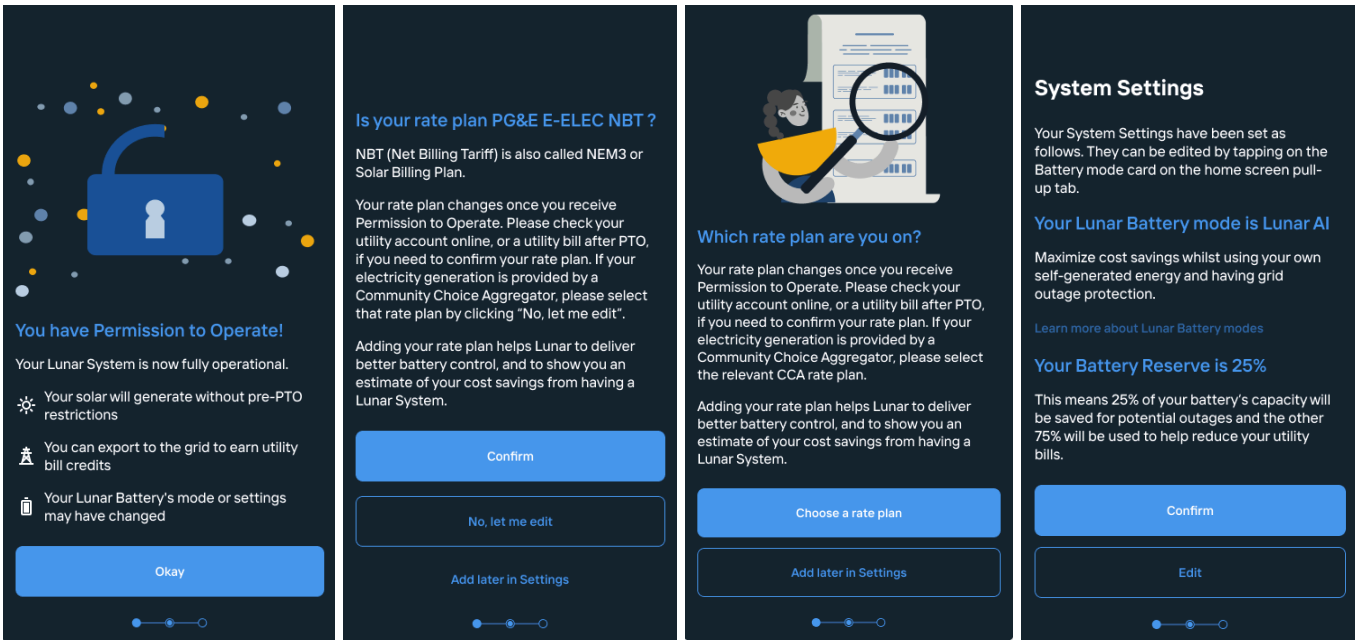


Figure 4: Explaining settings and confirming rate plan post-PTO.

Managing PTO in Gridshare Fleet Portal

The Gridshare fleet portal gives installers the ability to remotely track and manage the interconnection status of their Lunar Systems.

Track PTO status

To understand PTO status in Gridshare, installers can navigate as follows:

- Go to the site-specific page by searching site reference or site ID in the **search bar**

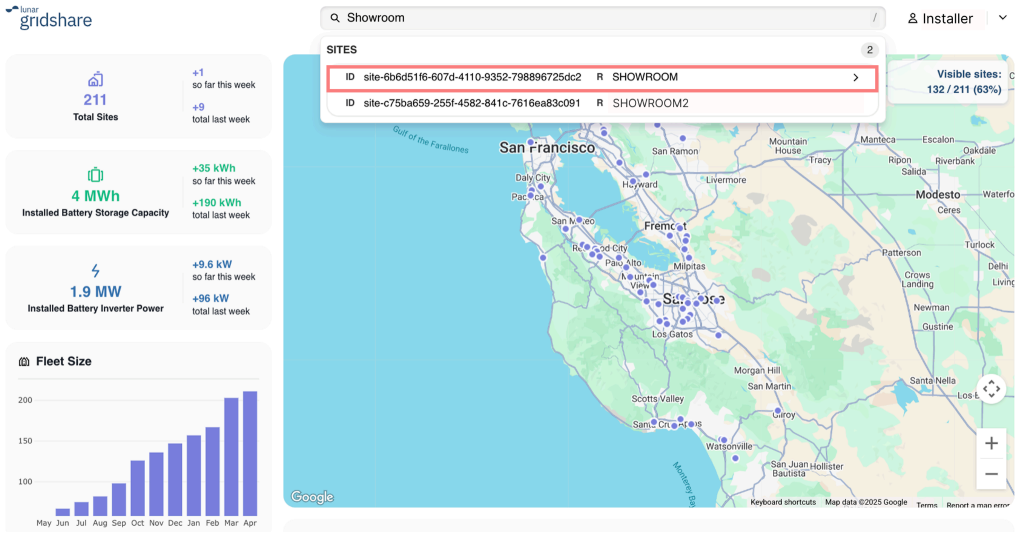


Figure 5: Find site via search bar

- Under **Devices**, click on **Lunar Inverter**

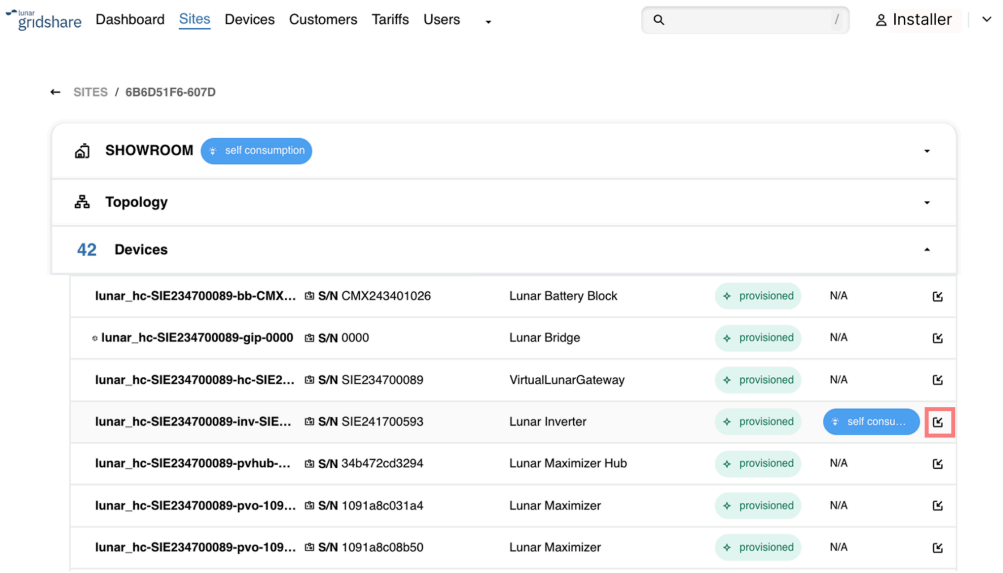


Figure 6: Go to inverter device page

- Under **Manage Interconnection Settings**, users can either set the PTO date or check the PTO date as previously entered

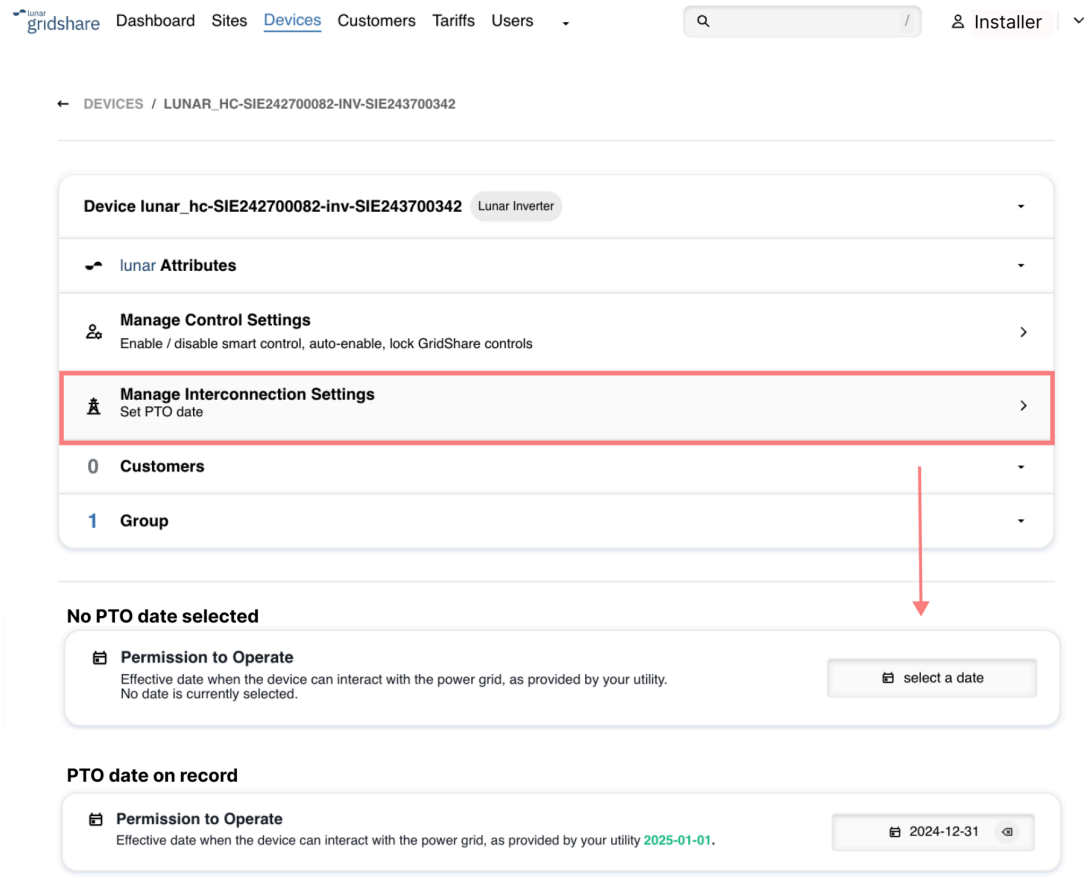


Figure 7: manage PTO dates

- The Lunar System should then transition to the post-PTO Operation Mode (for example Lunar AI) immediately. The current operation mode will be displayed on both the site page and inverter device page.



Figure 8: Operation mode display on site page

Update Rate Plans

Selecting the correct rate plans is important as it enables Lunar AI to optimize battery control and provide utility bill savings. If a customer doesn't select their rate plan in the Lunar App, installers can assign this on the Gridshare fleet portal.

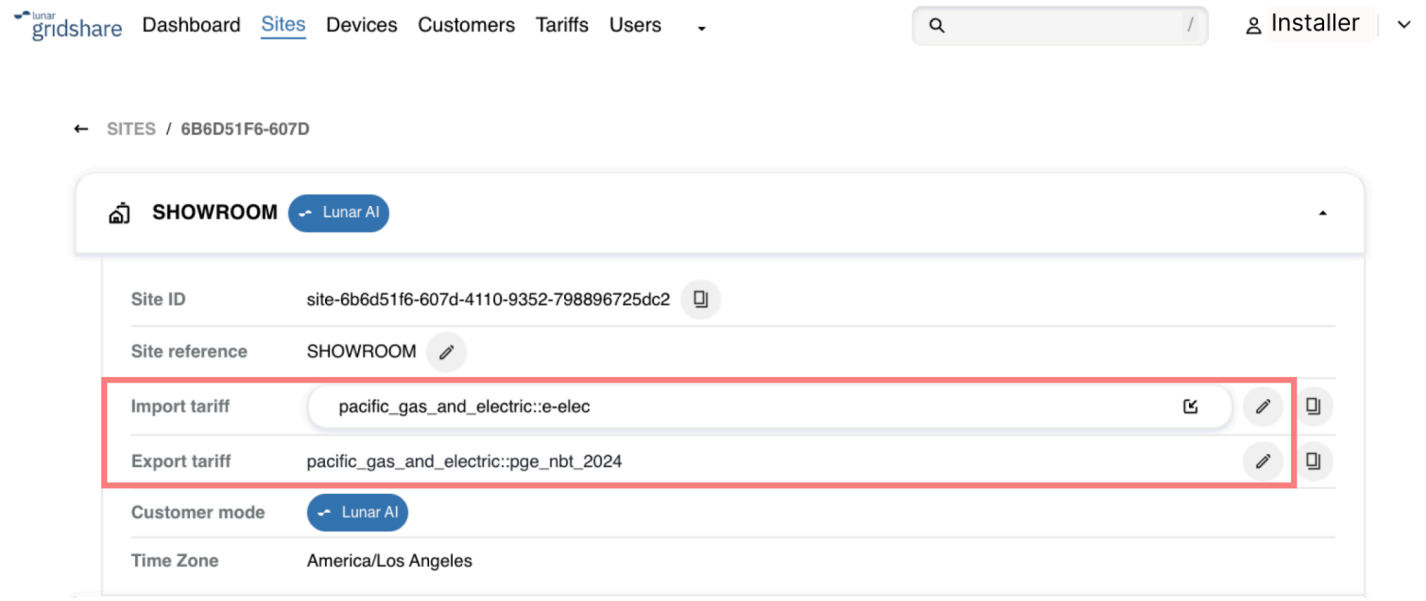


Figure 9: Update rate plans

For all new NEM3 customers whose interconnection application was submitted in 2025, here are the export and import rates that should be assigned in Gridshare.

Utility	Import Rate Name	Export Rate Name
PG&E	pacific_gas_and_electric::e-elec	pacific_gas_and_electric::pge_nbt_2025
SCE	southern_california_edison::tou-prime	southern_california_edison::sce_nbt_2025
SDG&E	san_diego_gas_and_electric::ev-tou-5	san_diego_gas_and_electric::sdge_nbt_2025

Table 2: NEM3 rate plans for CA IOUs

✔ **Note:** For Community Choice Aggregator customers, the import rate selected should be the CCA import rate, and the export rate should be the IOU NBT rate.

FAQs

How do I ensure a great PTO experience for my customer?

- Educate customers about PTO and PTO settings on the day of installation.
- Enter PTO date in the Gridshare fleet portal as soon as possible after PTO is granted by the utility, and ensure the date entered is as described in the interconnection confirmation letter.
- Confirm battery mode has changed to the expected mode after PTO date entry using the Gridshare fleet portal.
- Confirm import and export rates are correctly entered.

What should I do if my customer's rate plan is not on Lunar's list?

Please contact Lunar at support@lunarenergy.com.

How do I know if I configured the correct rate plan?

Check the interconnection confirmation letter, or ask the customer to check their online utility account after PTO.

How do I remove customer access to battery settings and set PTO date on the Lunar App?

Please contact Lunar at support@lunarenergy.com and we will configure this for your customers.

Version History

Revision	Description of Change	Effective Date
1	Initial Release	4/8/2025
2	Updated Customer App images	4/14/2025