LPEA's Guide to Optimizing your Enphase Battery System

Overview: This guide is intended to support LPEA members who own an Enphase battery system and want to operate it to maximize their financial savings. *These recommendations are specific to LPEA's General Service residential rate. If you are on the residential Time-Of-Use rate or another rate, please reach out to <u>communitypower@lpea.coop</u> for personalized guidance.*

The required settings for the LPEA Battery Rebate are explicitly shown in this guide with a

icon. If proof of the setting is required in the Battery Rebate application, you will see a icon. Additionally, there are several steps in this guide that have a icon. This icon identifies situations where you need to decide how to operate the system based on your goals.

If you are also applying for the <u>LPEA Bonus Battery Rebate</u> you will skip **STEP 5** and instead follow **STEP 6**.

Step-by-Step Instructions

STEP 1. Log into the Enphase App

1. Open your app and log in.

STEP 2. Select System Profile

- Once logged in, click on the "Menu" icon in the bottom right-hand corner.
- 2. Select **"Settings"** from the Menu options.



- 3. Select "Profile" from the list.
- On the Profile screen you will need to decide which System Profile best achieves your goals. To edit your System Profile, click on the "Edit" button on the right side of the screen. To receive LPEA's Battery Rebate you must

choose the Savings profile.

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Settings		< Profile
Profile View/Edit your system profile	>	Storm Guard Enabled Charges IQ Battery to 100% when Storm Alert Is On
Battery Manage your battery settings	>	P Help mo soloct a system profilo
Electricity Rate View/Edit the electricity rate structure of y	your utility	SYSTEM PROFILE
Connectivity Change your gateway internet connectivit	ty >	Self-Consumption Maximizes Energy Independence
Grid Control System is On Grid	Go Off Grid	Savings
Performance Manage your performance display setting:	s >	Full Backup Prepares home for power outages
, Dark Mode Dark mode is turned off	•-	
ar Local Cache		
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The **Savings** profile will likely be the most financially beneficial to you and LPEA because it prioritizes using energy from the battery during times when energy from the grid is more expensive.

The **Self-Consumption** profile will minimize your reliance on the grid and maximize the onsite consumption of self-generated solar energy. You can also maximize your consumption of self-generated solar energy in the **Savings** profile by enabling "Use battery after peak hours".

The **Full Backup** profile will only discharge the battery during an outage. This provides the maximum possible backup power but it minimizes your ability to reduce your electricity bill and minimizes onsite consumption of self-generated solar energy.

STEP 3. Set Reserve (aka State of Charge) Percent

1. After selecting the **Savings** profile, you will have the option to set a **Reserve** percent. This is the battery charge that you maintain all the time in case of an unexpected outage. The lower the reserve, the more you can reduce your electric bill and power your home from self-generated solar energy, but the less back-up power you are guaranteed to have.

This concern can be somewhat mitigated by enabling the **Storm Guard** feature described in STEP 4. To be eligible for LPEA's Battery Rebate your **Reserve** must

be 30% or less. 🗘 💿

*If you want to continue discharging your battery to its Reserve threshold after Peak Demand hours (4-9 PM), enable "Use battery after peak hours". This will maximize your onsite use of self-generated solar energy.



Once all settings have been selected, click "**Apply**" to confirm System Profile and Reserve settings.

STEP 4. Select Storm Guard mode status

 Decide whether to enable Storm Guard. When Storm Guard is enabled, the battery system will automatically charge to 100% and stay fully charged if a National Weather Service alert is issued for your area. Read more here. With Storm Guard enabled you have maximum back-up power at times when outages are more common and may feel more comfortable with a lower Reserve the rest of the time.

However, it may cause you to charge from the grid during Peak Demand hours or have a higher Peak Demand charge because your battery didn't discharge to serve home load during Peak Demand hours. You do have the ability to opt-out of active events in the App and/or adjust your settings seasonaly.



LPEA does require Storm Guard to be enabled or

disabled, but we would like to be able to track member preferences and know Storm Guard status when reviewing battery performance data so we ask for a picture of

your settings.

STEP 5. Set Electricity Rate (standard Battery Rebate Only)

If you are in an <u>Interconnection Limited Zone (Orange or Red area)</u> and are applying for the <u>Bonus Rebate</u> skip to STEP 6.

- Return to the Settings menu and select "Electricity Rate" from the list.
- On the next screen, select "Add Electricity Import Rate". Then on the following screen select "Manual". When asked, "Your electricity rate has peak and off-peak charges?" select "Yes".
- On the next screen, when asked "Does your electricity rate vary seasonally?" and "Does your electricity rate vary on weekends?", select "No" for both.



elect a mode to add your details	Your electricity rate has p charges? Yes Next	peak and off-peak	Electricity Rate Structure Electricity rate has peak and off-	e : Time of Use ^{peak charges.} rate vary seasonally
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- 4. On the Electricity Rate Structure: Time of Use screen input the following values:
 - 1. Off-Peak Rate: **0.1156** *This is the cost for each kWh of electricity on LPEA's General Service rate.*
 - 2. Peak -1 From **4:00 PM** To **9:00 PM** These are the Peak Demand hours on LPEA's General Service rate.
 - 3. Peak 1 Rate: 0.45

\$ 0.45 is an arbitrary value. What matters is that this value is significantly higher than the Off-Peak Rate. The purpose of this

Off-Peak Rate 0.1156		(\$/kWh)	Electric	ity Import Rat	ture : Time c	of Use
Peak - 1 From 04:00 pm Rate	To 09:00 pm			9117	80.450	510
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higher Peak Rate is to direct your battery system to discharge to meet home load during this time and avoid pulling electricity from the grid if possible. LPEA's Peak Demand charge is \$5.73/kW for the one hour a month between 4-9 PM when you use the most electricity from the grid. When complete, your screen should look

like the one above. Click "**Update"** and then when prompted "**Confirm** & **Save**".

5. Select "Add Electricity Export Rate". On the following screen Select your electricity rt plan 🏾 Electricity Import Rate select "NEM (Net Energy NEM (Net Energy Metering) k this if you have a net meter configuration . Your electricity import rate will be ed as your electricity export rate. Add Electricity Export Rate Add the rate structure at which you g Metering)" and the select ing your solar ge "Confirm & Save" when prompted. Net FIT (Net Feed-In Tariff) Check this if you only get paid for solar energy that go back into the grid from your house. Add Billing Cycle Set your biling cycle details Gross FIT (Gross Feed-In Tariff) Check this if you get paid for every unit of el generated by your solar panels. Tell me about adding electricity Other ck this if you are on any other plan

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STEP 6. Set Electricity Rate (Bonus Battery Rebate Only)

If you are in an <u>Interconnection</u> <u>Limited Zone (Orange or Red</u> <u>area)</u> and are applying for the <u>Bonus Rebate</u> follow these instructions.

> Return to the Settings menu and select
> "Electricity Rate" from the list.

< Settings	< Electricity Rate Structure	< Edit Electricity Import Rate
Vew/Edit your system profile	Add Electricity Import Rate Set the rate structure at which you get charged by your	Select a mode to add your details
Battery >	Add Billing Cycle	Autofill Import your electricity rate structure using the information from your utility.
Electricity Rate Vew/Edit the electricity rate structure of your utility	Set your biling cycle details	Manual Manually enter the details of your utilitys electricity structure.
2) Connectivity > Change your gateway internet connectivity		Which mode should I choose?
Crid Control		
S: Performance Manage your performance display settings		
Dark Mode	Note You can check for electricity import rase information in your utility bill under the action highlighting the details of your electric charges.	
<u>Slear Local Cache</u>	The electricity rate information is used to calculate your energy serings over time, and give you personalised recommendations to help you save your energy cost.	
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- 2. On the next screen, select "Add Electricity Import Rate". Then on the following screen select "Manual" and then when asked, "Your electricity rate has peak and off-peak charges?" select "Yes".
- On the next screen, when asked "Does your electricity rate vary seasonally?" select "Yes" and when asked "Does your electricity rate vary on weekends?", select "No".



- 4. On the Electricity Rate Structure: Time of Use screen, create 4 seasons:
 - 1. **Summer**: June-August
 - 2. Fall: September-October
 - 3. Winter: November-March
 - 4. Spring: April-May

- 5. For Summer and Winter set your schedule using the following inputs:
 - 1. Off-Peak Rate: 0.1156

This is the cost for each kWh of electricity on LPEA's General Service rate.

2. Peak -1

From 4:00 PM To 9:00 PM

These are the Peak Demand h	ours on LPEA's General	Service rate.

Add Peak 2

Summer June - August Edit

Off-Peak

.1156

Peak - 1

04:00 pm

.45

Electricity Rate Structure : Time of Use Electricity rate has peak and off-peak charges. Electricity rate structure varies only seasonally.

- 3. Peak 1 Rate: **0.45** \$ 0.45 is an arbitrary value. What matters is that this value is significantly higher than the Off-Peak Rate. The purpose of this higher Peak Rate is to direct your battery system to discharge to meet home load during this time and avoid pulling electricity from the grid if possible. LPEA's Peak Demand charge is \$5.73/kW for the one hour a month between 4-9 PM when you use the most electricity from the grid.
- 6. For Spring and Fall set your schedule using the same inputs for Summer and Winter and then click on "Add Peak 2" and add the following inputs
 - 1. Peak -2 From 9:00 AM To 12:00 PM
 - 2. Peak 2 Rate: 0.30

\$ 0.30 is an arbitrary value. What matters is that this



value is higher than the Off-Peak Rate and less than the Peak 1 rate to establish priority. When complete, your screen should look like the four

above. Click "**Update**" and then when prompted "**Confirm & Save**".



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09:00 pm

Winter

Off-Peak .1156

Peak - 1

04:00 pm

🔂 Add Peak 2

.45

(\$/kWh)

09:00 pm

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We are asking you to enter an artificial peak time with an artificially inflated rate so that the system wants to send power back to the grid when it thinks electricity is more valuable to export to the grid and charge the battery later in the day when

electricity is perceived to be less valuable. By delaying the charging of your battery and exporting excess power in the morning instead of the afternoon, you are helping balance generation and load in your region of the grid.

< Edit Electricity Export Rate 7. Select "Add Electricity Export Rate". On the following screen Select your electricity export plan @ Electricity Import Rate select "NEM (Net Energy NEM (Net Energy Metering) Add Electricity Export Rate Add the rate structure at which you get p exporting your solar generated electricit Check this if you have a net meter configuration a home. Your electricity import rate will be copied as your electricity export rate. Metering)" and the select "Confirm & Save" when prompted. Net FIT (Net Feed-In Tariff) Check this if you only get paid for solar energy that goes back into the grid from your house. Add Billing Cycle Set your billing cycle details Fell me about adding electricity rate Gross FIT (Gross Feed-In Tariff) Check this if you get paid for every unit of electricity generated by your solar panels. Other Check this if you are on any other plan. Ity rate information is used to calculate your energy r time, and give you personalised recommendations to 111 STATUS ull. MENU

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STEP 7. ⁽²⁾Enable Grid Charge

This is an optional but recommended step. If you want to minimize your potential Peak Demand charges and support the grid you should complete this step. However, if you want to minimize your reliance on the grid you can omit this step.

- Return to the Settings menu and select "Battery" from the list.
- 2. Enable "Charge Battery from Grid". You will receive a prompt like the one

shown above. Here is a link to the <u>IRS webpage describing this tax credit</u>. Please reach out your installer or <u>communitypower@lpea.coop</u> with questions.

- 3. If you select "**Confirm**", you will have the ability to click on "Also up to 100% during this schedule."
 - To minimize potential Peak Demand charges and provide maximum grid support, you will want to set your schedule to Start at 2:45 pm and End at 4pm. This will ensure that your battery is fully charged before the Peak Demand hours of 4-9pm, even on days when it's cloudy or the panels are covered in snow. Once you have entered these settings, select "Apply".
- If your goal is to maximize the amount of time your battery is fully charged to be prepared for unexpected outages at night, you may want to enable grid charging from 10 pm-

12am instead. Enphase currently allows only one window of time for grid charging. Although this better protects you in the case of outages it has the downsides of:

- i) not guaranteeing you enter the Peak Demand window with a full charge
- *ii)* not allowing you to charge your batteries from your solar panels unless you add a second "On-Peak" time in the morning to discharge your batteries
- iii) cycling your batteries ~2x per day which is in excess of <u>Enphase's 10-yr, 4000-</u> cycle warranty.





STEP 8. Enable Data Sharing with LPEA

To receive a Battery Rebate from LPEA you are required to provide information about your experience with this program and your battery system's performance to LPEA so that LPEA can evaluate the value and effectiveness of this rebate program.

The easiest way to share battery system performance data is to add <u>communitypower@lpea.coop</u> as an additional user on your account. Follow the steps described <u>here</u> or shown below to add LPEA as an additional user. This will give LPEA the ability to access system data but will not give LPEA the ability to make any changes to your system.

1. Log in to the Enphase App, and select MENU.



2. Select Account.



3. Select My Access Control.



 Scroll down to the User Access Settings section, enter the user's email address you want to grant access to and tap Grant Access.



For user email, enter communitypower@lpea.coop.