# EG4® 12kPV HYBRID INVERTER

## MONITOR SYSTEM WORKING MODES


The EG4 12kPV Hybrid Inverter has several different preset working modes that allow the user to configure the system to meet their demands through extensive customization. By following this guide, the user can easily set the station's needs depending on the time of day among several other factors.


VERSION 1.0 | INFORMATION SUBJECT TO CHANGE WITHOUT NOTICE.
MODEL #: IV-8000-HYB-AW / IV-8000-HYB-AW-00

## Working Mode Definitions:

**Backup Mode**
Used to save battery power as a last resort. The solar arrays power the loads, and when PV is insufficient, loads will pull from the grid. The inverter will only power loads with battery when there are no other options.

**Peak Shaving**
Peak shaving is used to avoid peak demand charges from the grid by using a combination of settings to limit the power drawn from the grid.

**AC Charge Mode**
The system will operate in a pre-set priority system. In this mode, the user will experience the inverter drawing power from the solar arrays to power the loads. When/if the solar power is insufficient, the inverter will then switch to bypass mode to power loads from AC input and will utilize grid power to charge the batteries. The inverter will only power loads with battery when there are no other options.

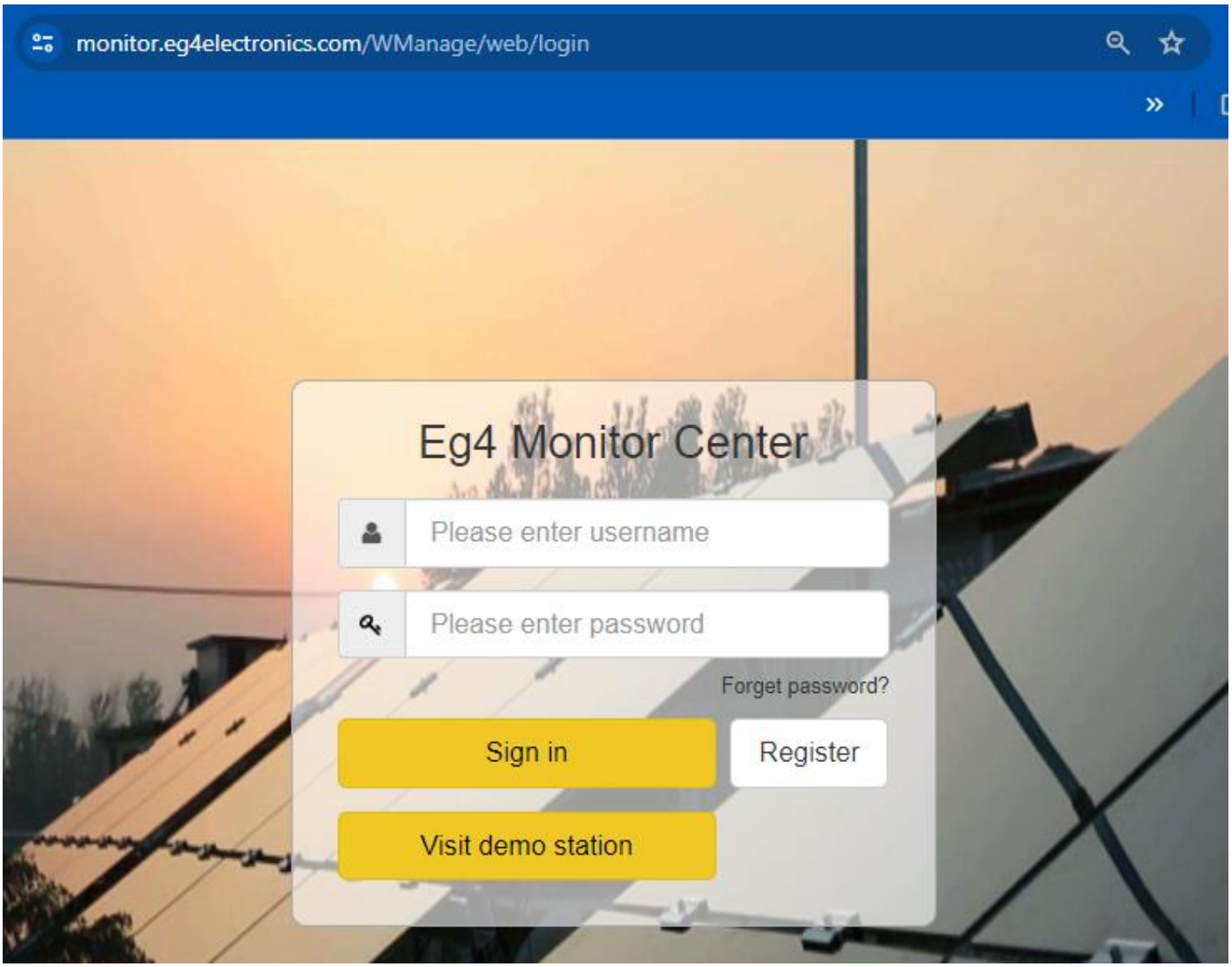
**PV Charge Priority**
This mode allows the user to prioritize battery charging from PV, specifically. If there is excess PV power after the batteries are charged, then the inverter will utilize the excess power to send to loads.

**Force Discharge/Export PV Only**
The user can configure the inverter to forcefully sell PV and/or battery power back to the grid through a combination of settings.

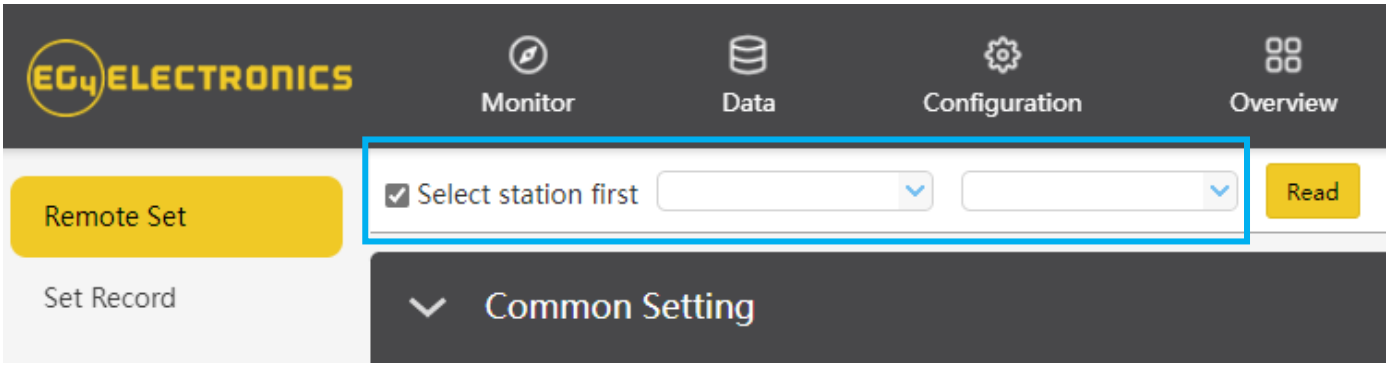
**Self-Consumption Mode**
The system will operate in a pre-set priority system. In this mode, the user will experience the inverter drawing power from the solar arrays to power the loads. When/if the solar power is insufficient, the inverter will then draw from the battery bank for loads. Only as a last resort will the inverter switch to bypass mode to power loads from AC input.

To activate these different working modes, the user must login to the EG4 Monitoring System through a web browser. Follow the steps listed in this guide to navigate to the working modes section of the monitoring system.

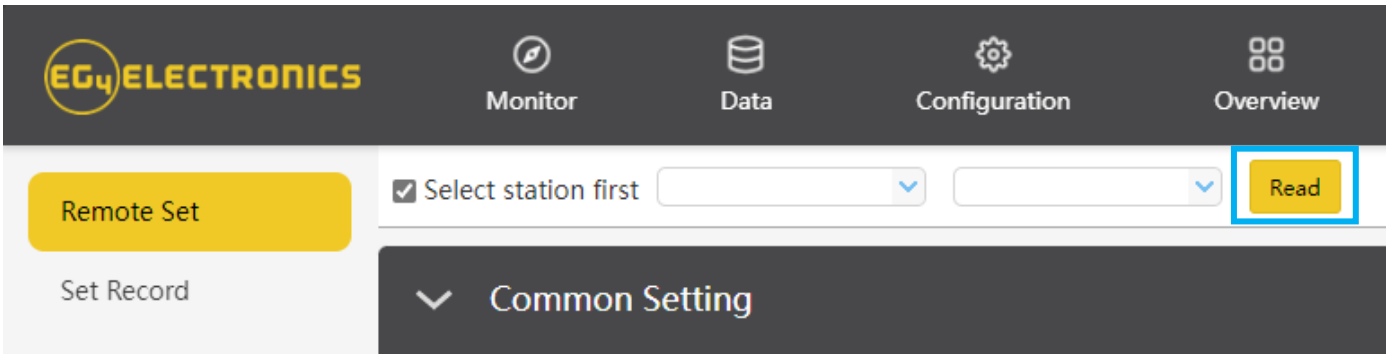
1. **Login to the EG4 monitor center.**



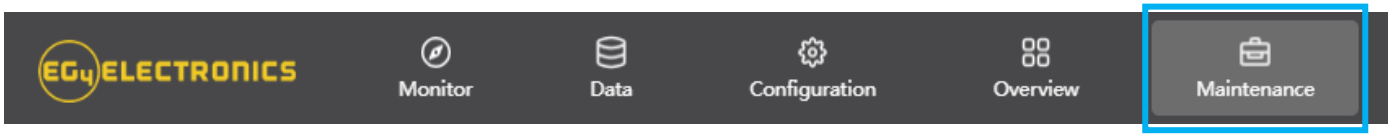

2. **Select the station to be configured.**



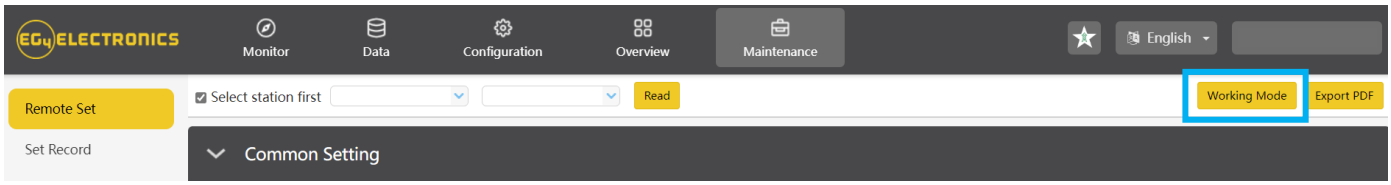
3. **Select “Read”.**



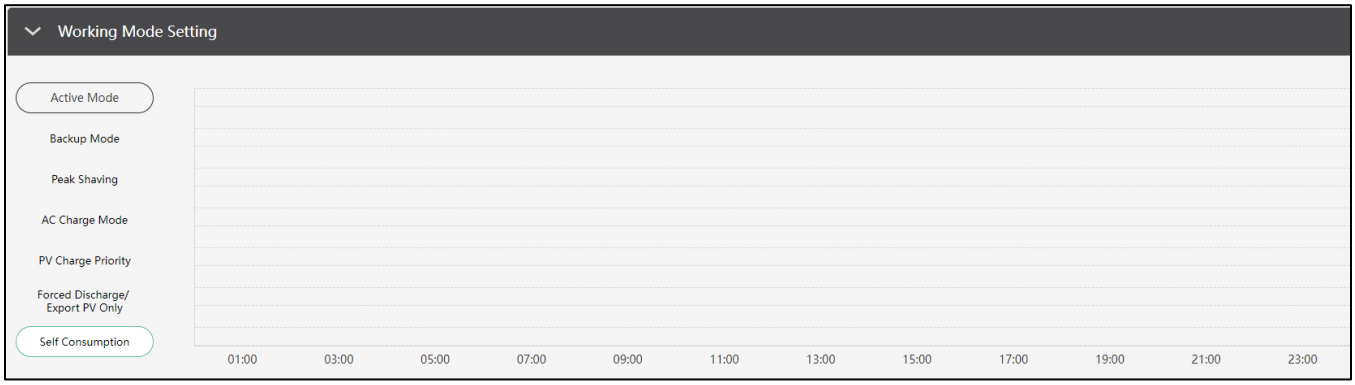

4. **Navigate to the “Maintenance” tab.**




5. **Select “Working Mode” in the top-right corner.**



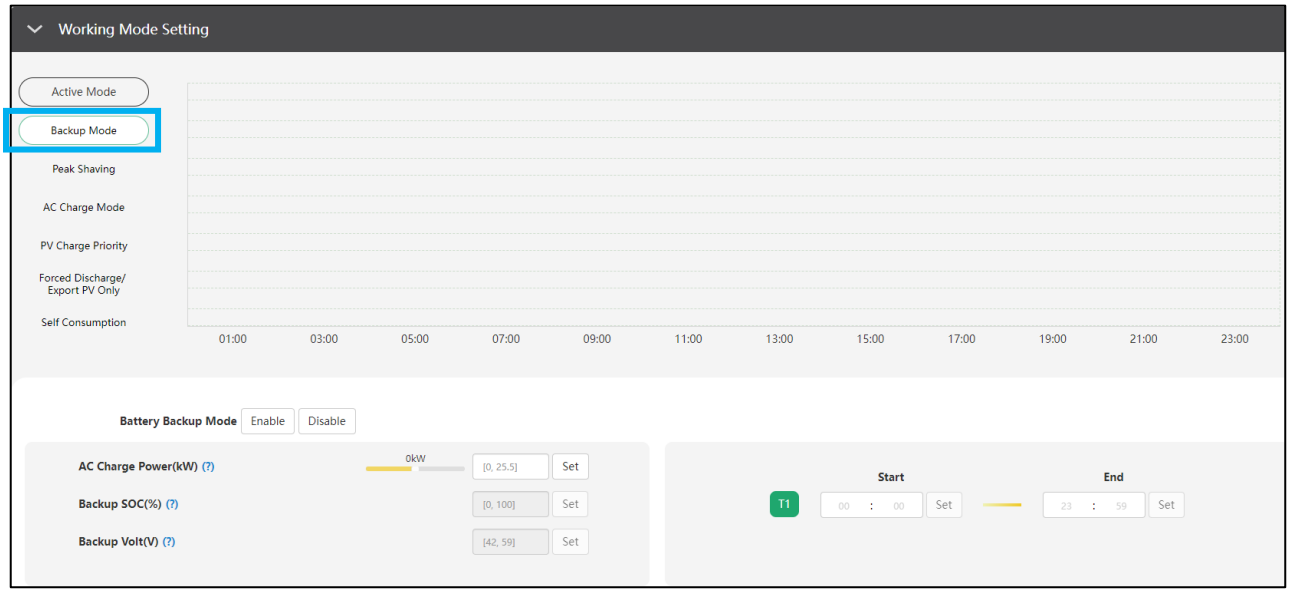

6. **Scroll down past “Application Setting” and find the “Working Mode Setting” section.**




The user will now have direct access to configure the system to their own needs by utilizing a combination of settings and time of use periods.

The following section describes the different modes of operation and descriptions of each setting associated with each mode.

## Backup Mode




When setting the station in this mode, the inverter will use batteries as a last resort. The user will be able to configure the system to set how much power is drawn from the grid; at what percentage, voltage, and time to stop and start charging.

Upon selecting the working mode, the system must be configured using the settings listed below:

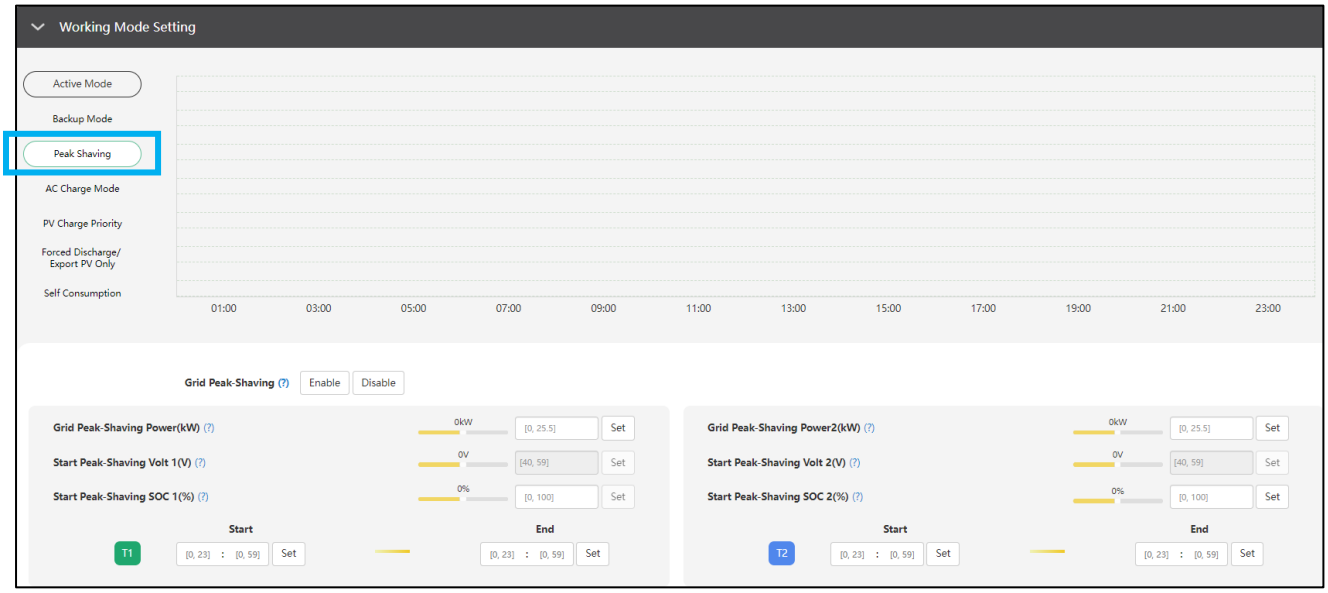
**Battery Backup Mode**
*Set to enable. The system will use the batteries as a last resort during the set timeframes.*

**AC Charge Power(kW)**
*Set the maximum power drawn from the grid to charge batteries.*

**Backup/Stop AC charge SOC(%)/Volt (V)**
*Percentage at which the system will stop charging batteries from the Grid.*

**T1 Start/T1 End**
*Set the start and end time of charging.*

## Peak Shaving




When setting the station into this mode, the inverter will use peak-shaving to avoid peak demand charges from the grid. The user will be able to configure the system to pull limited (or no) power from the grid for charging batteries or powering loads by setting maximum power in kW, according to SOC/voltage, and by setting time of use.

Upon selecting the working mode, the system must be configured using the settings listed below:

**Grid Peak-Shaving**
*Set to enable or disable grid peak-shaving.*

**Grid Peak-Shaving Power(kW)/Grid Peak-Shaving Power2(kW)**
*Set the maximum amount of power that will be drawn from the grid.*

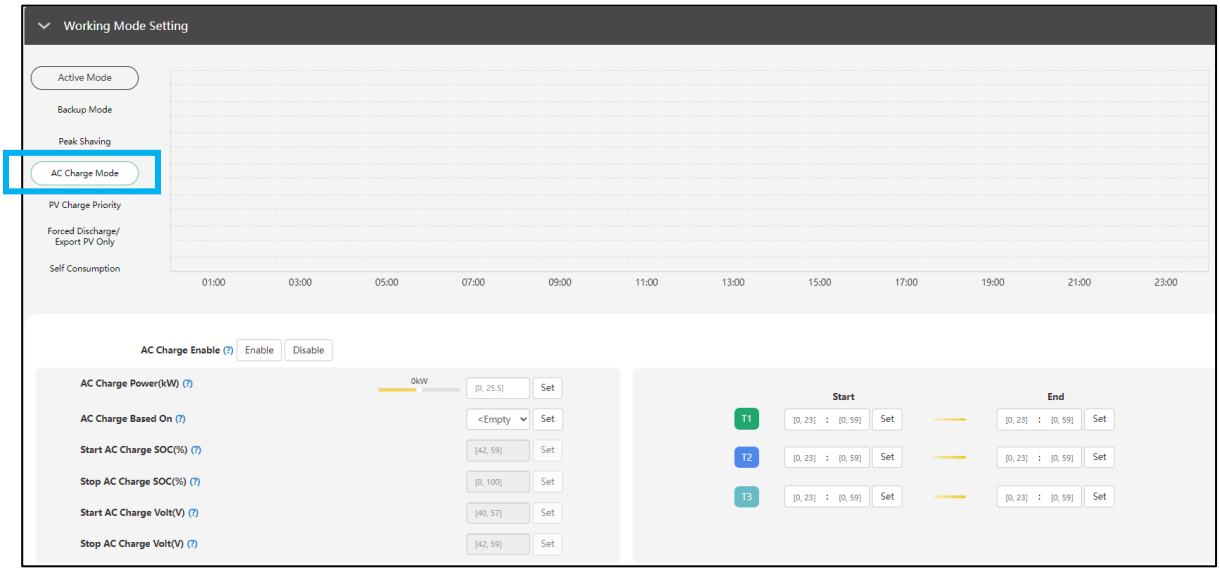
**Start Peak-Shaving Volt 1(V)/Start Peak-Shaving Volt 2(V)**
*Set the starting point of peak-shaving when using voltage setpoints for batteries.*

**Start Peak-Shaving SOC 1(%)/Start Peak-Shaving SOC 2(%)**
*Set the starting point of peak-shaving when using SOC setpoints for batteries.*

**T1/T2 Start**
*Set the start time of peak-shaving depending on SOC/voltage as configured above.*

**T1/T2 End**
*Set the end time of peak-shaving depending on SOC/voltage as configured above.*

## AC Charge Mode




When setting the station into Backup/AC Charge mode, the user can configure the system to prioritize charging batteries from grid power. The user can configure to charge with grid based on maximum power in kW, SOC/voltage, and by setting times of use.

Upon selecting the working mode, the system must be configured using the settings listed below:

**AC Charge Enable**
*Set to enable or disable the system's ability to charge batteries from the grid.*

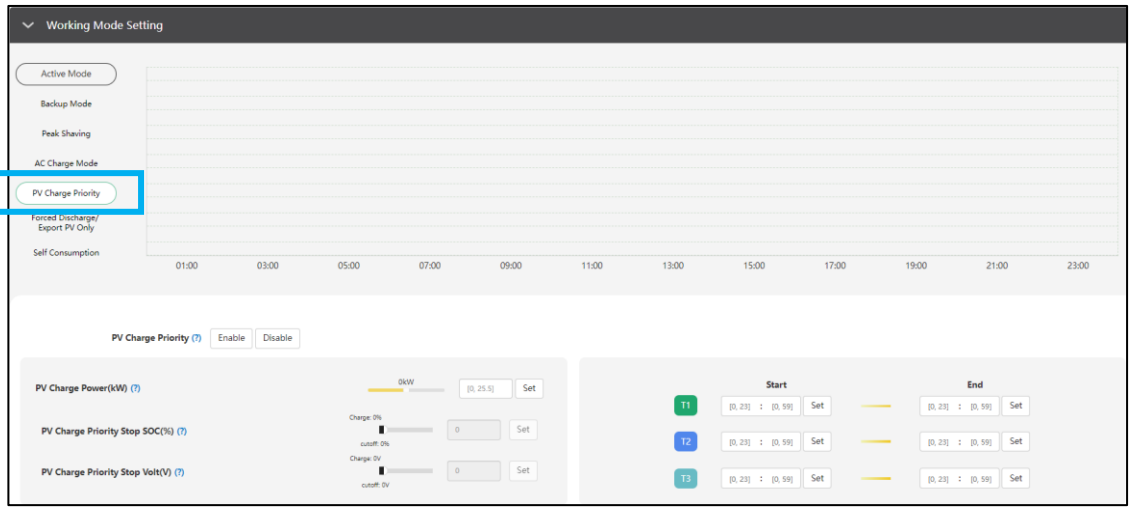
**AC Charge Power(kW)**
*Set the maximum power drawn from the grid to charge batteries.*

**AC Charge Based On(SOC/Volt/Time)**
*Configure how the system will charge batteries from the grid by setting custom voltage points, SOC% of batteries, or by time.*

**Backup/Stop AC charge SOC(%)/Volt (V)**
*Percentage at which the system will stop charging batteries from the Grid.*

**Battery Backup Mode**
*When enabled, the system will use the batteries as a last resort during the set timeframes.*

## PV Charge Priority




When setting the station into this mode, the order of priority for solar will be Battery > Load > Grid. During the PV Charge Priority period, loads are first supplied from grid power. If there is excess solar power after charging the batteries, the excess solar will power the loads along with the grid.

Upon selecting the working mode, the system must be configured using the settings listed below:

**PV Charge Priority**
*Set to enable or disable the battery priority/PV Charge Priority working mode.*

**PV Charge Power(kW)**
*Set the maximum amount of power to charge the batteries from solar.*

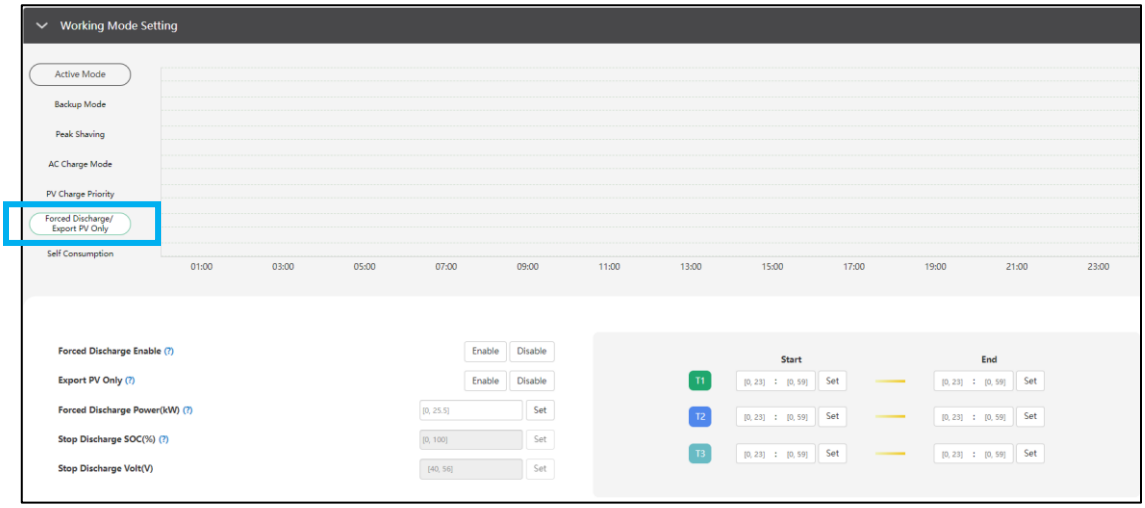
**PV Charge Priority Stop SOC(%)**
*Set the stop point for Battery Priority according to SOC%.*

**Battery Priority Stop Volt(V)**
*Set the stop point for Battery Priority according to voltage.*

**T1/T2/T3**
*Set up to 3 different start and stop times for the PV Charge Priority working mode.*

**Off-Grid Mode**
*Set to disable.*

## Forced Discharge/Export PV Only




When setting the station into this mode, the batteries will be forced to discharge within the set periods of time. During this period, the inverter will discharge the battery at the power set by “Forced Discharge Power(kW)” until the battery SOC or voltage set point reaches the “Stop Discharge” value.

Upon selecting the working mode, the system must be configured using the settings listed below:

**Forced Discharge Enable**
*Set to enable this setting to forcefully discharge the station’s battery bank.*

**Export PV Only**
*Enable this setting to sell back generated PV power to the grid.*

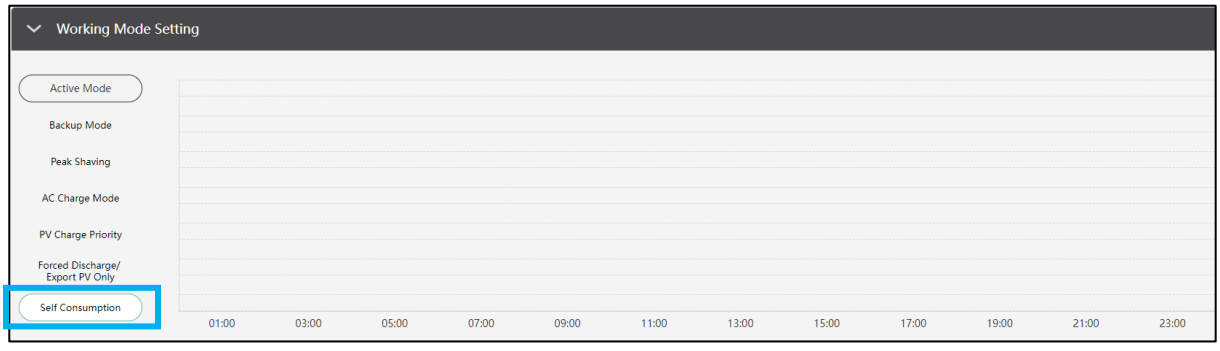
**Forced Discharge Power(kW)**
*Set the maximum power limit of battery discharge.*

**Stop Discharge SOC(%)**
*Stop the forced discharge upon reaching the set SOC%.*

**Stop Discharge Volt(V)**
*Stop the forced discharge upon reaching the set voltage point.*

**T1/T2/T3**
*Set up to 3 different start and stop times for the Force Discharge/Sell To Grid working mode.*

## Self-Consumption




The station will default to Self-Consumption mode. The order of priority for powering loads is Solar > Battery > Grid. The order priority for solar power is Load > Battery > Grid which creates an ideal scenario when needing to prioritize solar power generation over other types of power.