



ADVANTAGE BY POWR2

USER MANUAL

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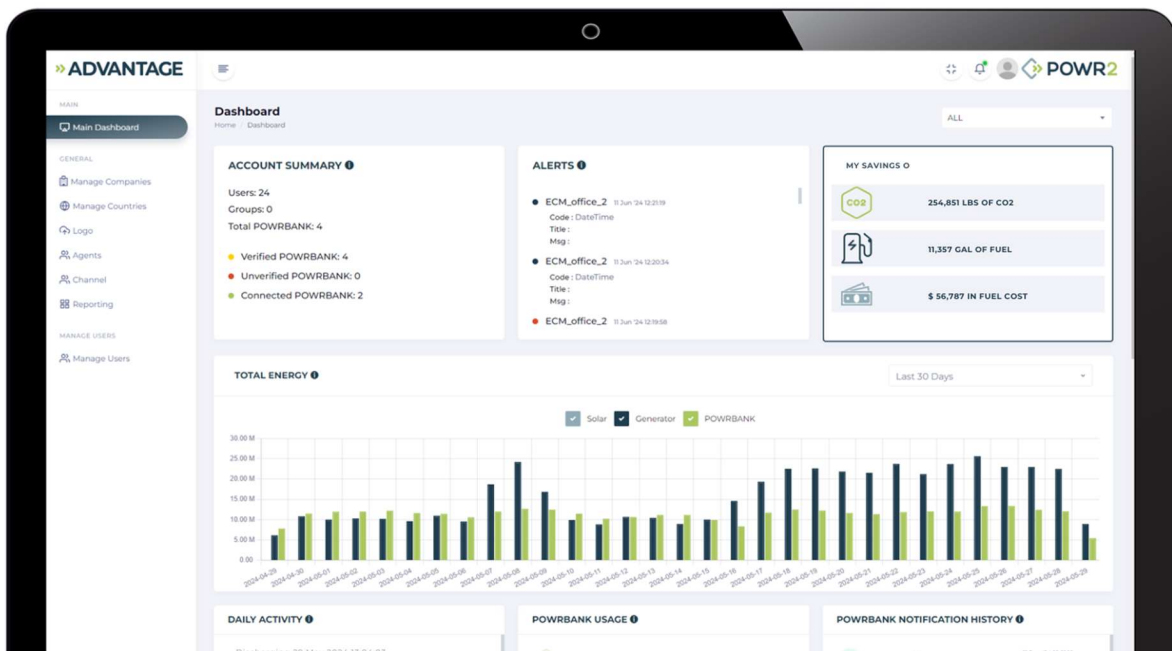


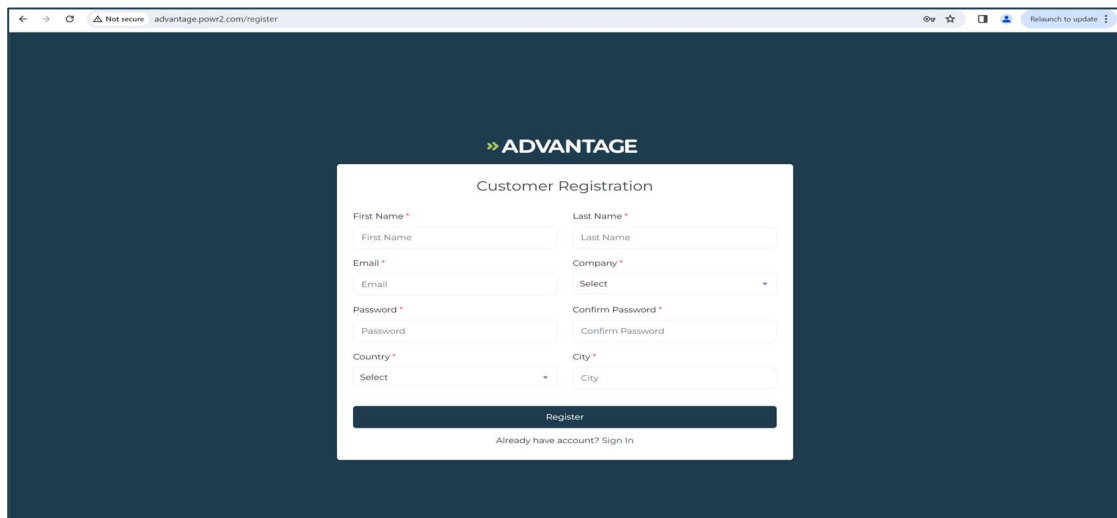
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Creating a New Account

Login to the POWR2 Portal: <http://advantage.powr2.com/login>

- 1 Click on “Create an Account”
- 2 Complete the registration form making sure the user type selected is SYSTEM PARTNER and click “Registration”.

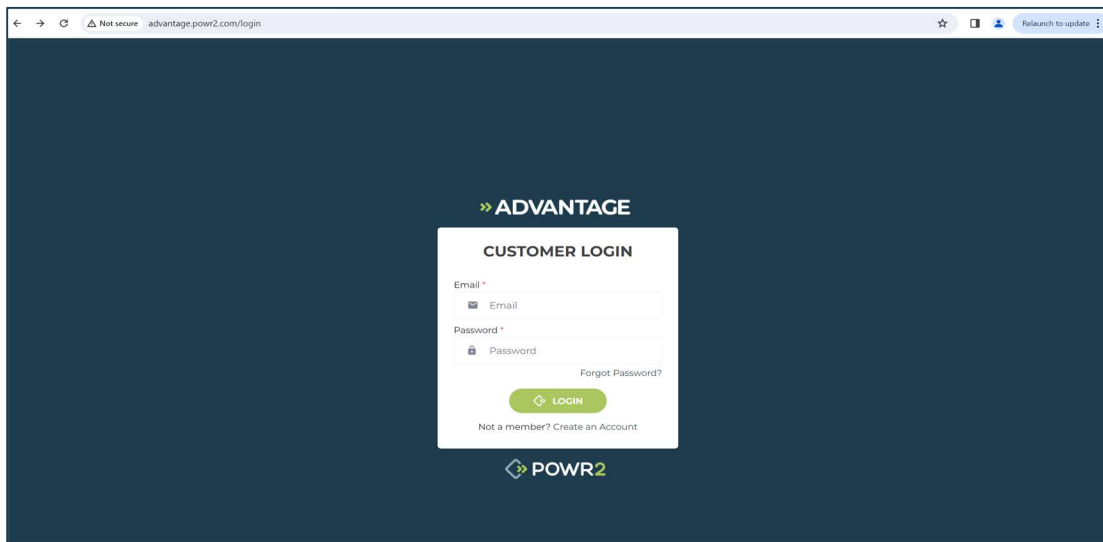


The screenshot shows a web browser window with the URL advantage.powr2.com/register. The page features a dark blue background with the 'ADVANTAGE' logo at the top. Below the logo is a white registration form titled 'Customer Registration'. The form contains the following fields: First Name, Last Name, Email, Company (a dropdown menu), Password, Confirm Password, Country (a dropdown menu), and City. A 'Register' button is located at the bottom of the form, and a link for 'Already have account? Sign In' is positioned below the button.

- 3 Check your email information for an email confirming your registration. Please, check your Spam or junk folder just in case the confirmation email got delivered there instead of your inbox.
- 4 The portal account will be available after confirming the email by clicking on the link shown on the POWR2 Portal email confirmation as shown below.

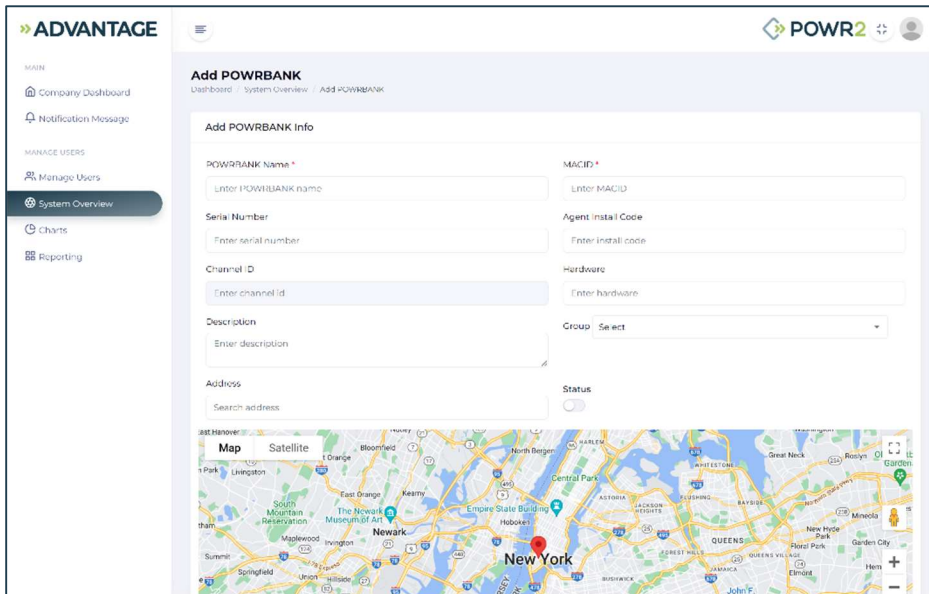
Login Page

- 1 Visit: <http://advantage.powr2.com/login>
- 2 Enter your account details

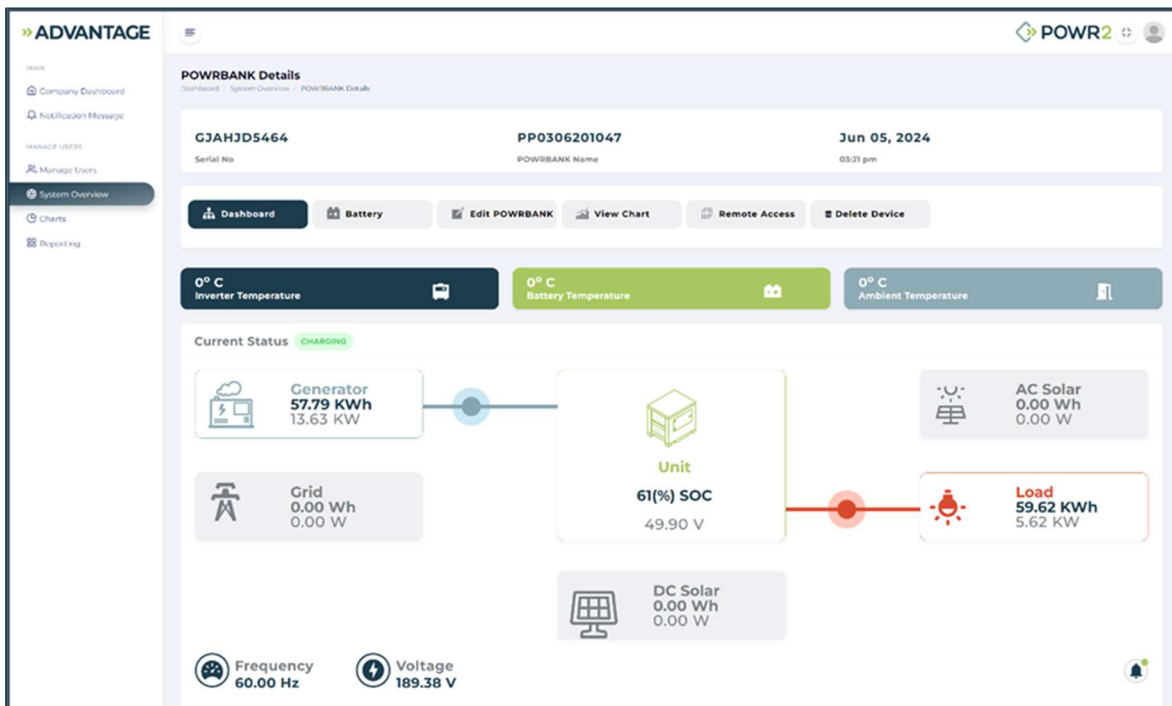


Adding New POWRBANK to the account

- 1 Go to System Overview
- 2 Click on "Add POWRBANK"

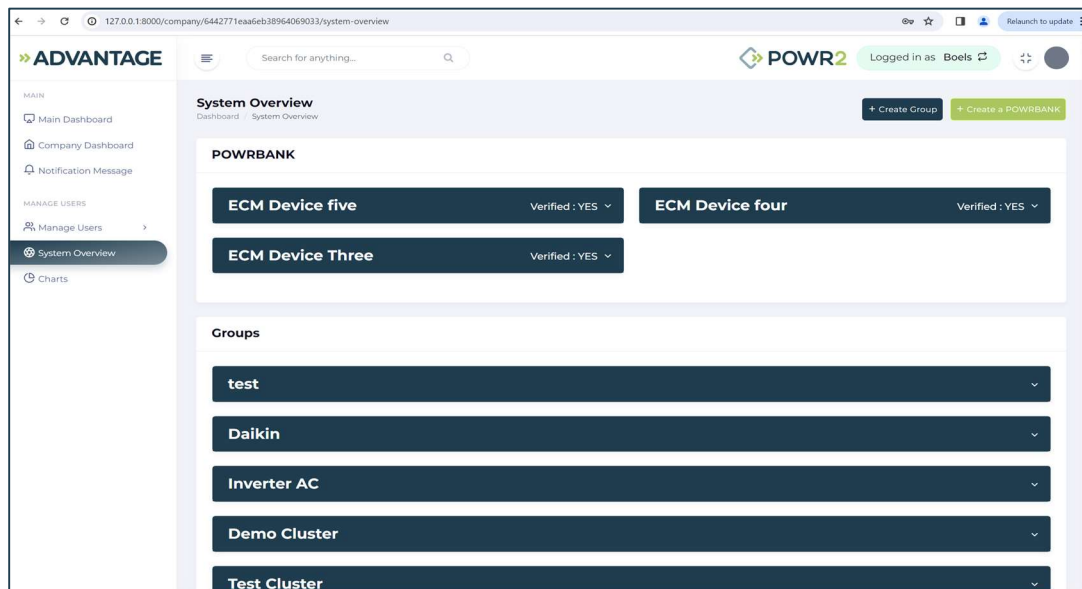


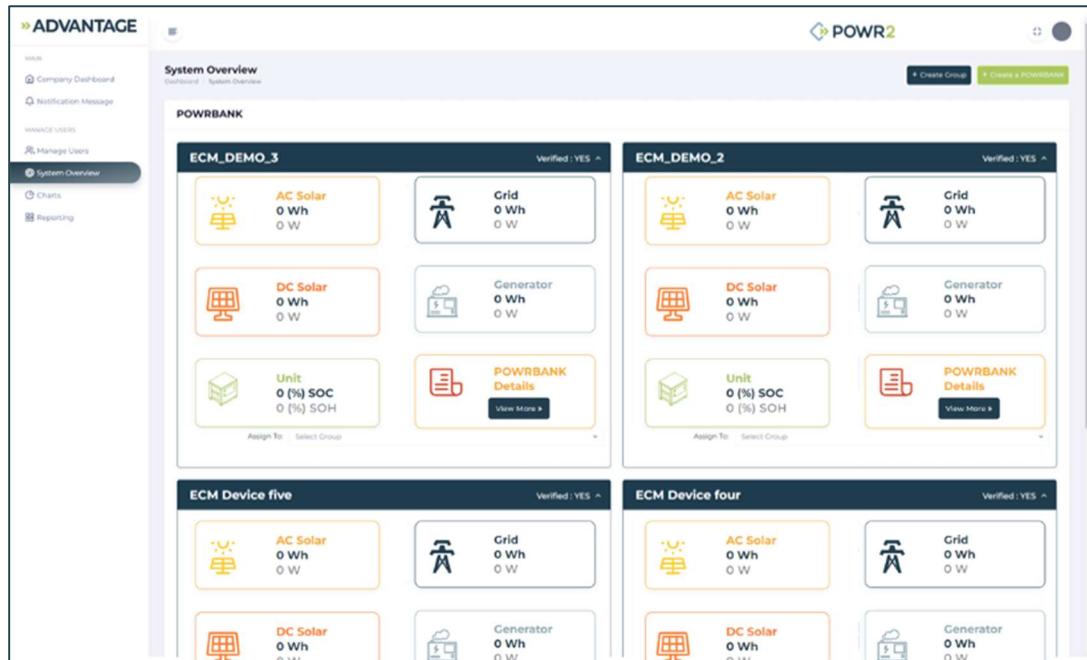
- 3 Enter the Serial Number and Unlock key which is unique to your POWRBANK. The “Device Name” field represents the name of your POWRBANK and it is only displayed on your account.
- 4 You can rename your unit anytime by clicking on the **Edit POWRBANK**



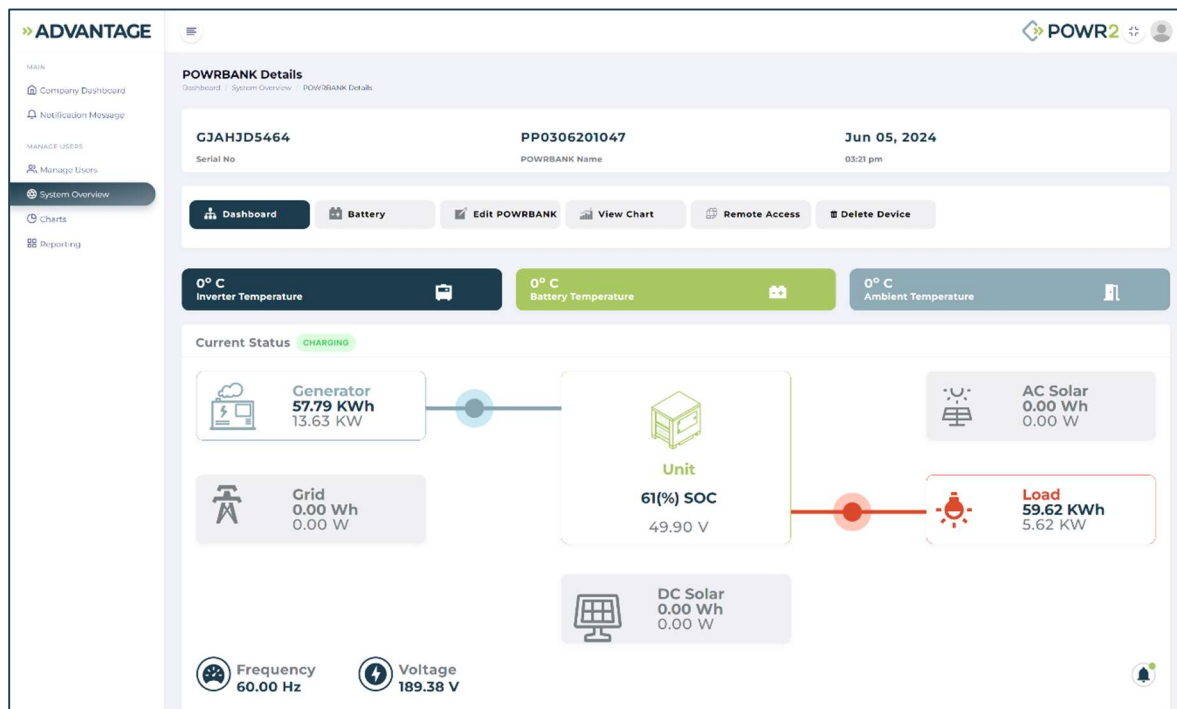
System Overview

The System Overview page displays the most relevant information of your POWRBANK fleet such as location, status, and performance of each individual unit. It is where users can monitor all their units on a single page as well as decide which unit they want to select for more advance information.

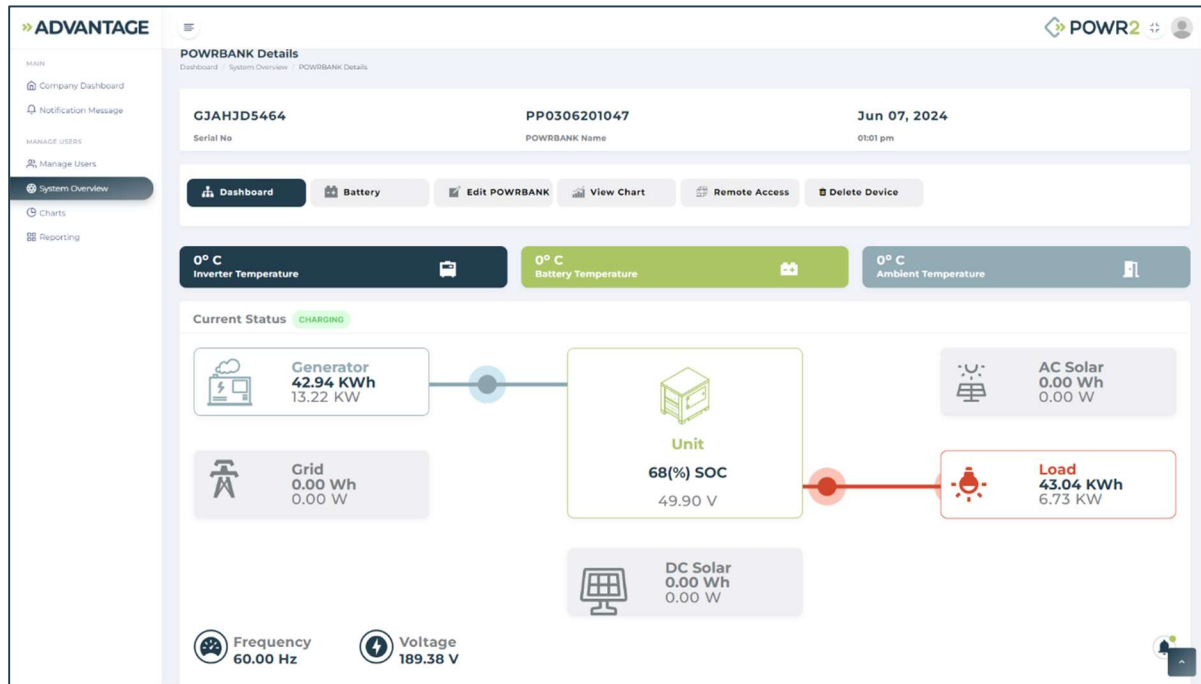




Click on **View More** for details on a specific device and the status of each component. This view is the main dashboard on the POWRBANK onboard Energy Control Module (ECM).

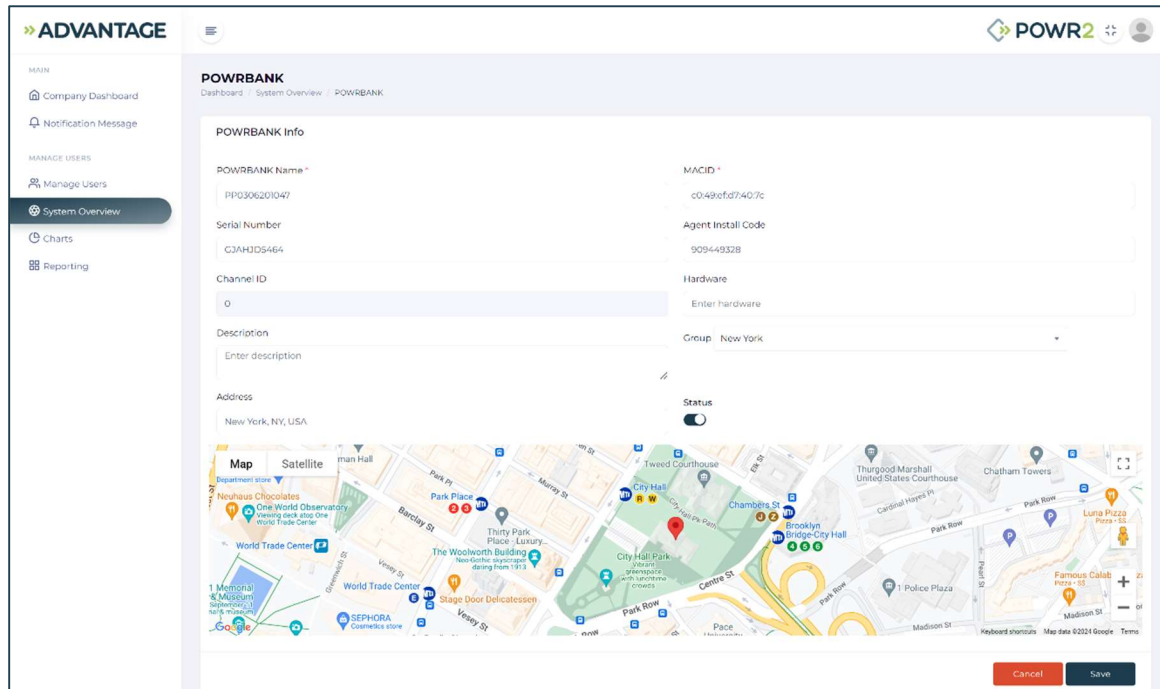


Click on **Battery** for more information about the battery and state.



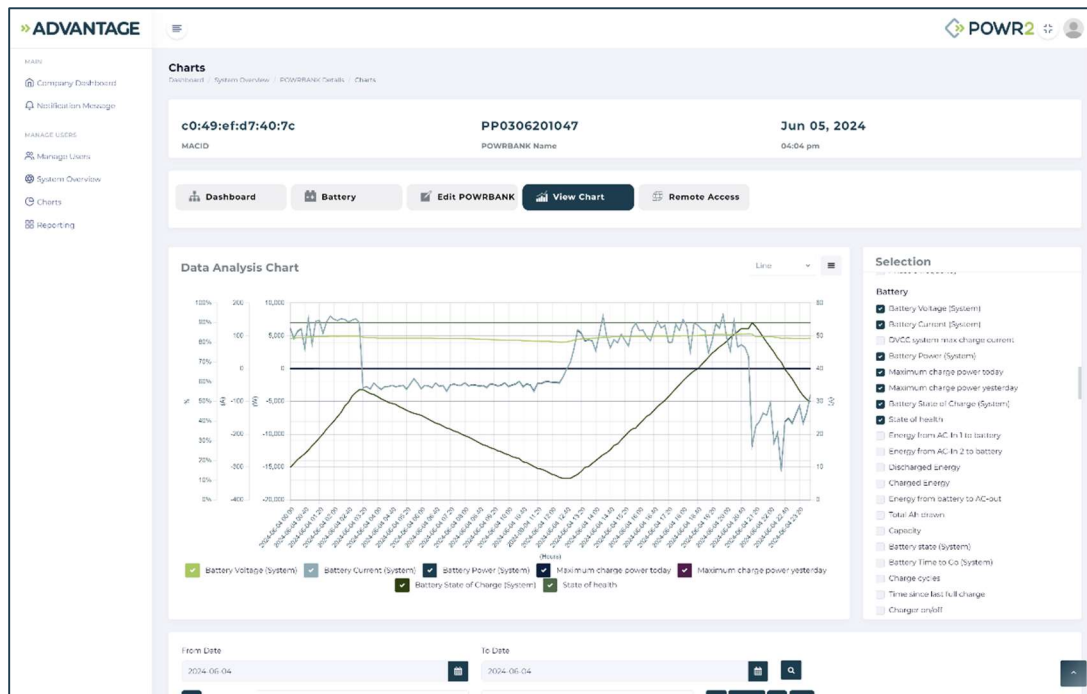
POWRBANK Modification

To update or modify details of the POWRBANK, click on **Edit POWRBANK**.



View Chart

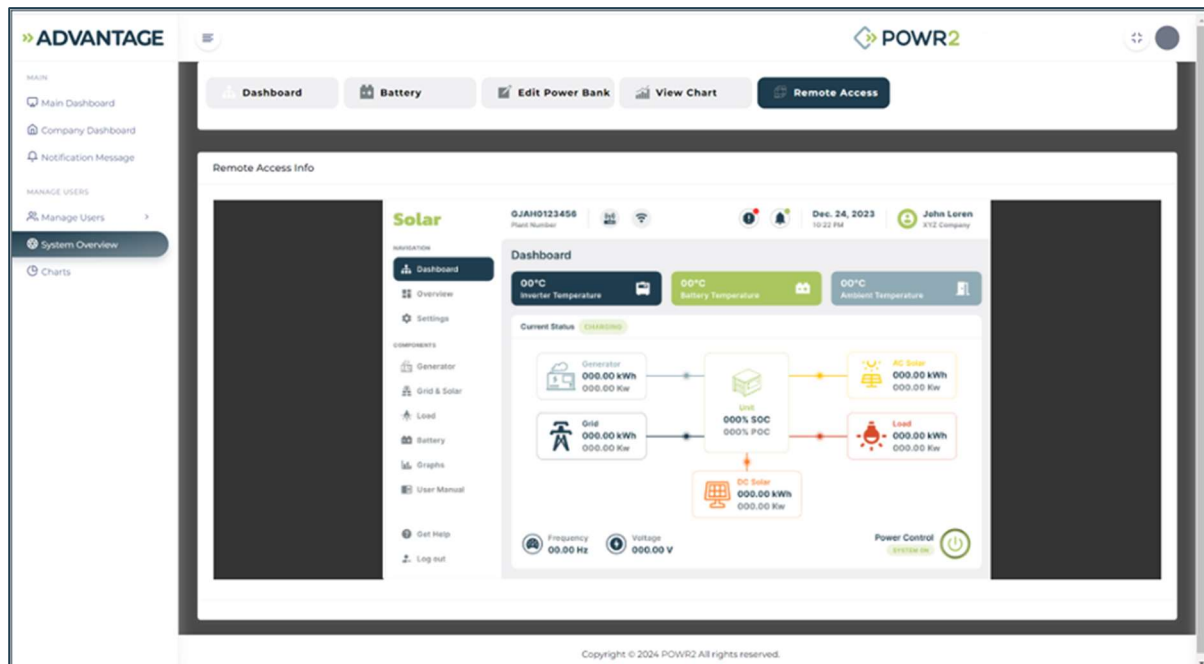
Click on **View Chart** for the ability to select multiple parameters and generate data analysis graphs in bar or line form like below.



Data Analysis charts can also be displayed on a Yearly, Monthly, and daily basis. It also includes a global option. Zoom in and out of the chart with the help of toggle button.

Remote Access

Use the **Remote Access** option to remotely control the POWRBANK through the onboard Energy Control Module (ECM). From this screen you can change the POWRBANK operations and settings.



Charts

This section contains customizable charts which can be saved in system as a template.

» ADVANTAGE
POWR2

MAIN

- Company Dashboard
- Notification Message

MANAGE USERS

- Manage Users
- System Overview
- Charts
- Reporting

Charts List

Dashboard / Charts List + Create Chart

Charts List Info

SN	TITLE	CHART TYPE	STATUS	CREATED AT	ACTION
1	Load VS Genset	line	Active	2024-03-28 07:03 PM	✎ 👁
2	Week	line	Active	2024-03-27 04:03 PM	✎ 👁
3	Monthly	line	Active	2024-03-08 02:03 PM	✎ 👁

Showing 1 to 3 of 3 entries

Previous 1 Next

» ADVANTAGE
POWR2

MAIN

- Company Dashboard
- Notification Message

MANAGE USERS

- Manage Users
- System Overview
- Charts
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View Chart

Dashboard / Charts List / View Chart

View Chart



Phase 1 current
 Phase 2 current
 Phase 3 current
 Battery Voltage (System)
 Battery Current (System)

Select POWRBANK

Select POWRBANK

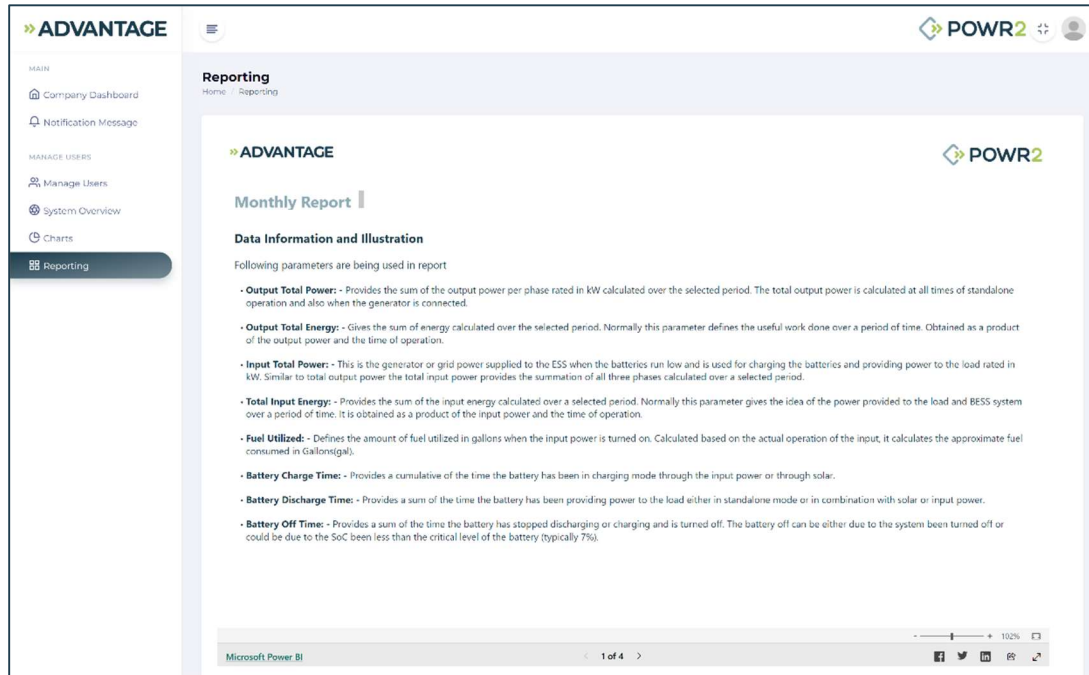
Selection

- Phase 1 current
- Phase 2 current
- Phase 3 current
- Battery Voltage (System)
- Battery Current (System)

From Date: To Date:

Reporting & Analytics

This section consists of reports which can be shared easily via email or on social networks. Admins can also schedule reports from the administration account.



User Management

Admins can create accounts and assign them to specific user roles. Portal accessibility is as per user role hierarchy. Admins can change a user's role of a user at any time.

ADVANTAGE POWR2

MAIN
 Company Dashboard
 Notification Message

MANAGE USERS
Manage Users
 System Overview
 Charts
 Reporting

Add Users
 Dashboard / Users / Add users

Add Users Info

First Name*
 First Name

Last Name*
 Last Name

Email*
 Enter Email

Company* Select

Country* Select

City*
 City

Password
 Password

Confirm Password
 Confirm Password

Role* Select

Is Active

Weight Unit* LBS

Liquid Unit* Gallons

Currency* USD - US Dollar

User Management	Chart Management
User Management List <input type="checkbox"/>	Chart List <input type="checkbox"/>
User Management Add <input type="checkbox"/>	Chart Add <input type="checkbox"/>
User Management Edit <input type="checkbox"/>	Chart Edit <input type="checkbox"/>
User Management Delete <input type="checkbox"/>	Chart View <input type="checkbox"/>

Device Management	Notification Message Management
POWRBANK Management List <input type="checkbox"/>	Notification Message List <input type="checkbox"/>

ADVANTAGE POWR2

MAIN
 Company Dashboard
 Notification Message

MANAGE USERS
Manage Users
 System Overview
 Charts
 Reporting

User Management	Chart Management
User Management List <input type="checkbox"/>	Chart List <input type="checkbox"/>
User Management Add <input type="checkbox"/>	Chart Add <input type="checkbox"/>
User Management Edit <input type="checkbox"/>	Chart Edit <input type="checkbox"/>
User Management Delete <input type="checkbox"/>	Chart View <input type="checkbox"/>

Device Management	Notification Message Management
POWRBANK Management List <input type="checkbox"/>	Notification Message List <input type="checkbox"/>
POWRBANK Management Add <input type="checkbox"/>	Notification Message Add <input type="checkbox"/>
POWRBANK Management Edit <input type="checkbox"/>	Notification Message Edit <input type="checkbox"/>
POWRBANK Management Delete <input type="checkbox"/>	

Live View	Remote Access Management
Live View <input type="checkbox"/>	Remote Access View <input type="checkbox"/>

Cluster Management	Device Notification Management
Group Management List <input type="checkbox"/>	POWRBANK Notification View <input type="checkbox"/>
Group Management Add <input type="checkbox"/>	POWRBANK Warning View <input type="checkbox"/>

ECM Device Panel

ECM device panel has four different modes:

Operation: Standard mode where the POWRBANK is ready to be attached alongside an available AC power source.

Maintenance: When the single-phase inlet is being used to slowly charge or maintain the batteries at full level.

Stand-by: The POWRBANK automatically switches off if left on idle for a long period of time to avoid discharging the batteries.

Off: When the POWRBANK is switched for transport or while in long-term storage.

ECM device panel system alarms and resolutions:

GX COMMUNICATION ERROR:

- Reattach cables (ECM/Router) and (GX/Router)
- Reset GX device by disconnecting its power cable

E-STOP PUSHED: Deactivate the emergency stop

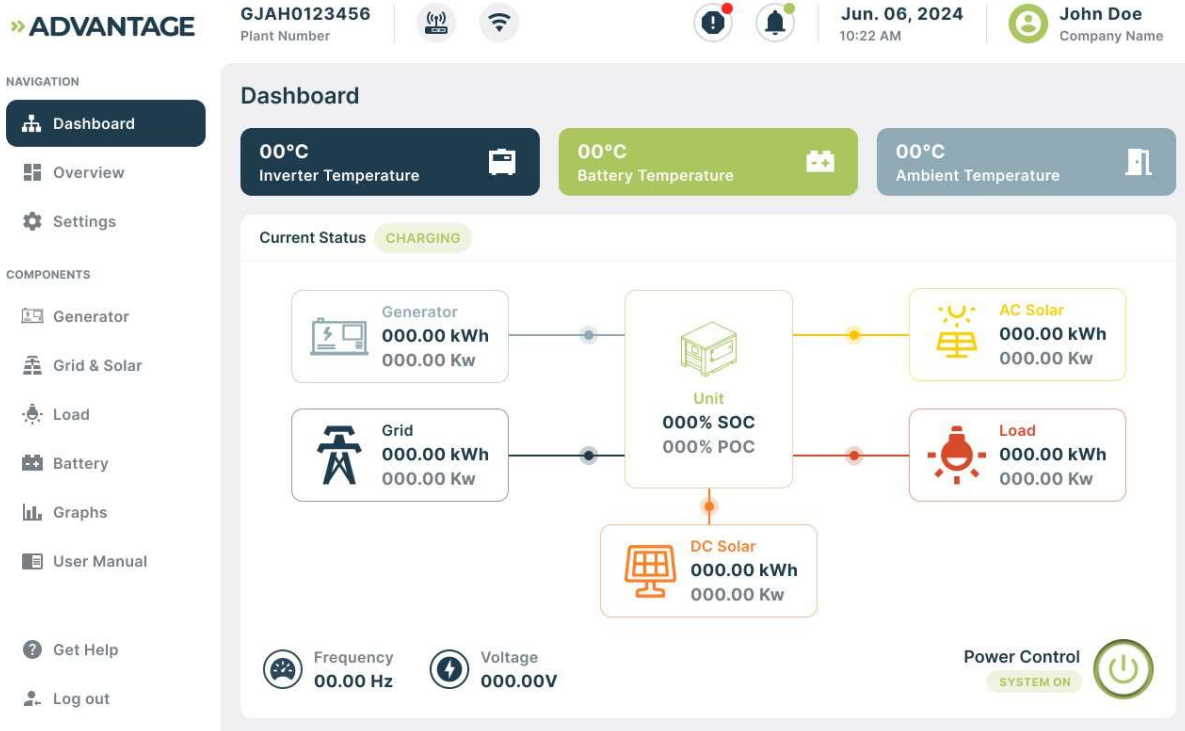
BOTTOM DOOR OPEN: Close the bottom front door

RCD TRIP: Close the POWRBANK main output breaker

OVERDISCHARGE PROTECTION: - Connect an AC-IN source to enable loads

ECM Dashboard

The ECM Dashboard is available on the onboard screen and can be viewed remotely.



INVERTER SWITCH: On or Off

- ON: Inverters and Solar are Active
- OFF: Inverters and Solar are Off

GENERATOR STATUS: Running, Idle or Off

- Data: Instantaneous Power and Daily Energy

GRID: Status On or Off

- Data: Instantaneous Power and Daily Energy

DC SOLAR STATUS: Producing, Idle or Off

- Data: Instantaneous Power and Daily Energy

AC SOLAR Status: Producing, Idle or Off

- Data: Instantaneous Power and Daily Energy

LOAD STATUS: On, Idle or Off

- Data: Instantaneous Power and Daily Energy

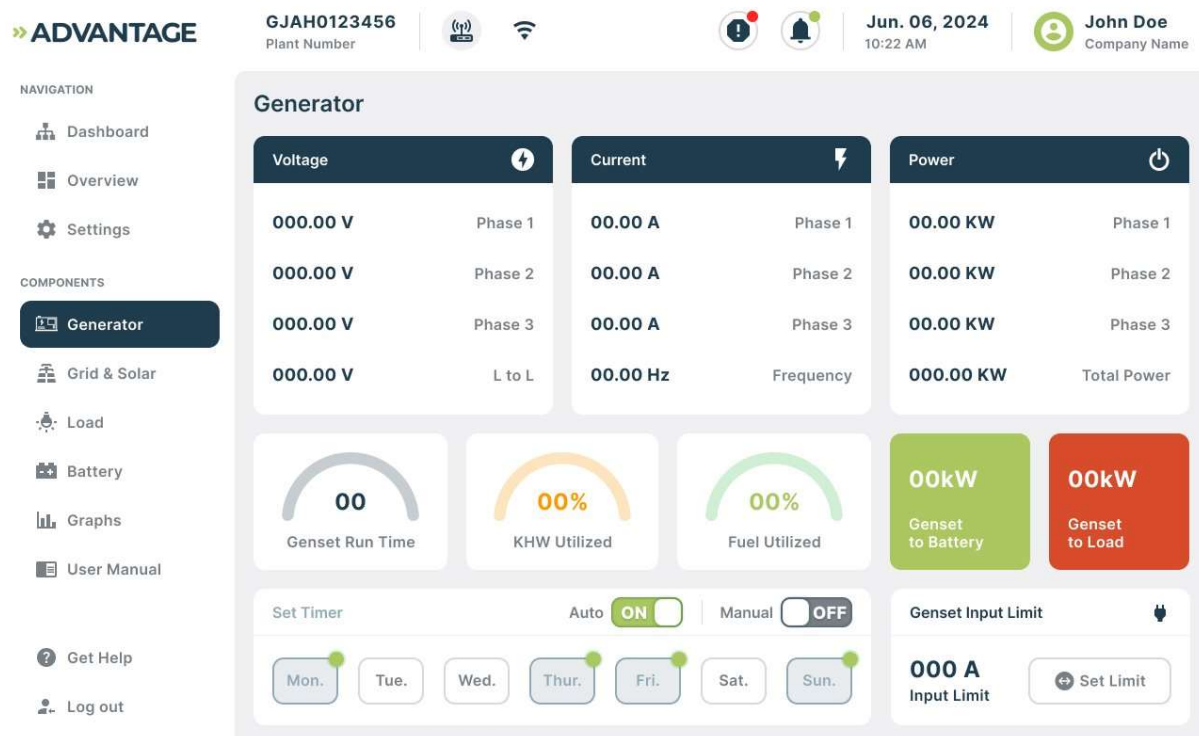
BATTERY STATUS: Charging, Discharging, Idle or Disconnected

- Data: Instantaneous Charging and Discharging Power and SOC

- **INVERTER TEMPERATURE:** Temperature Near the Inverters
- **BATTERY TEMPERATURE:** Temperature Near the Batteries
- **AMBIENT TEMPERATURE:** Temperature Outside the Unit

ECM Generator

ECM Generator screen is visible on the device panel and in remote access:



The screenshot displays the ADVANTAGE interface for the ECM Generator. At the top, it shows the plant number GJAH0123456, connection status (cellular and Wi-Fi), date and time (Jun. 06, 2024, 10:22 AM), and user information (John Doe, Company Name). The left sidebar contains navigation and component menus. The main area is titled 'Generator' and features three data tables for Voltage, Current, and Power across three phases and a total power summary. Below these are three gauge charts for Genset Run Time, KWH Utilized, and Fuel Utilized, all showing 00. To the right are two power limit indicators for Genset to Battery and Genset to Load, both at 00kW. At the bottom, there is a 'Set Timer' section with a weekly schedule (Mon-Sun) and an 'Auto' toggle set to ON, and a 'Genset Input Limit' section showing 000 A and a 'Set Limit' button.

GENSET INFO:

- **Per Phase Parameters:** Voltage, Current and Power
- **Genset to Battery:** Daily kWh that is used for charging the battery.
- **Genset to Load:** Daily kWh that is used for powering the load.
- **Timer:** Set three timers for Turning on and Off based on a particular time.
- **AUTO/MANUAL:** Genset in auto or manual condition.
- **Genset Input Limit:** Used to set the input current limit for each unit
- **Genset Run Time:** Used to show the total amount of time the unit is running
- **KWH Utilized:** Daily Energy utilized to charge the battery
- **Fuel Utilized:** Shows the daily fuel utilization from the genset.

GENSET CONTROL SETUP:

- For genset to be in Auto Start
- Genset controller needs to be in Auto Mode
- Remote Start Signal Wires Connected
- Manually Control the Genset

GENSET ALARM:

- **Genset In Manual Mode:** Switch to Auto Mode & setup genset control to AUTO
- **Genset Fail to Start:**
 - ✓ Check Diesel Fuel Level
 - ✓ Switch diesel genset to auto and set up control to Auto
 - ✓ Reattach the Remote Start Signal Cable

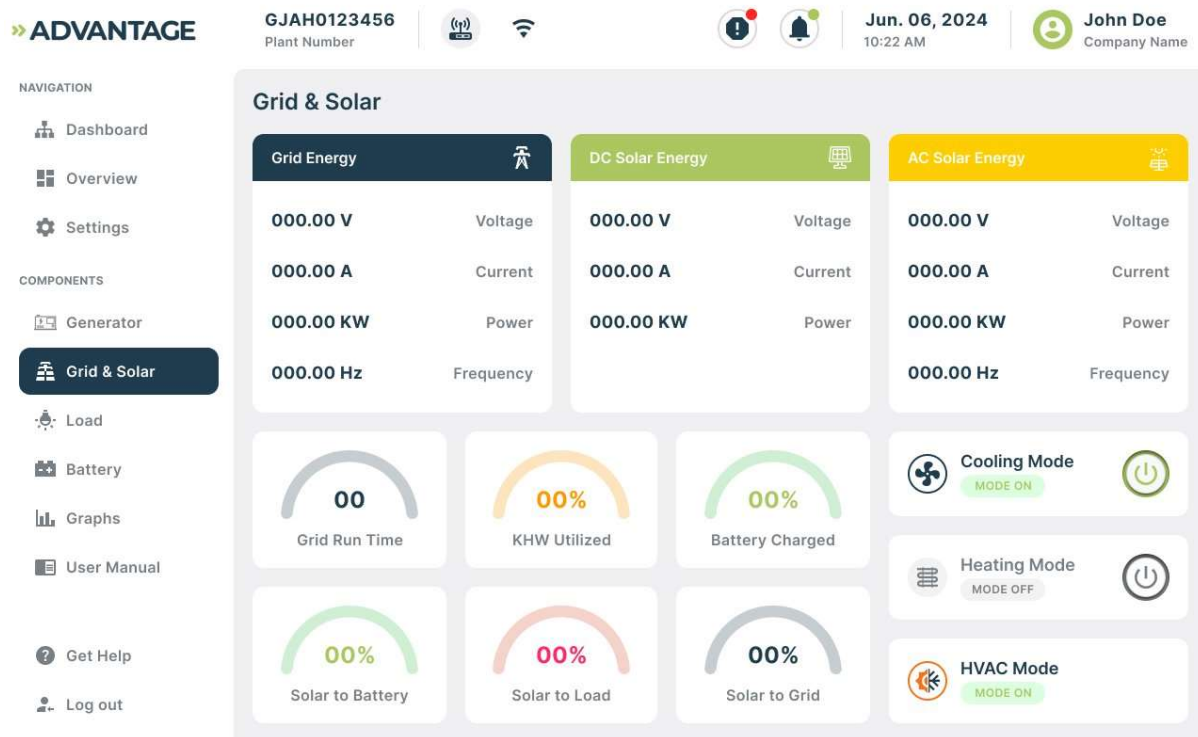
GENSET AUTO START INFO: - The POWRBANK remotely controls the genset based on the following conditions

- **Power Start:** On If one of the phases is higher than the set threshold in the setting Off if all the phase / legs are lower
- **Battery Low:** Starts When the SoC is below the threshold, and turns off if it's above a threshold

- **Genset Timer:** Autostart when the timer is On

ECM Grid & Solar

ECM Grid and Solar screen is visible on the device panel and in remote access:



ADVANTAGE GJAH0123456 Plant Number Jun. 06, 2024 10:22 AM John Doe Company Name

NAVIGATION

- Dashboard
- Overview
- Settings

COMPONENTS

- Generator
- Grid & Solar**
- Load
- Battery
- Graphs
- User Manual
- Get Help
- Log out

Grid & Solar

Grid Energy	DC Solar Energy	AC Solar Energy
000.00 V Voltage	000.00 V Voltage	000.00 V Voltage
000.00 A Current	000.00 A Current	000.00 A Current
000.00 KW Power	000.00 KW Power	000.00 KW Power
000.00 Hz Frequency		000.00 Hz Frequency

Grid Run Time: 00, KWH Utilized: 00%, Battery Charged: 00%

Solar to Battery: 00%, Solar to Load: 00%, Solar to Grid: 00%

Cooling Mode: MODE ON, Heating Mode: MODE OFF, HVAC Mode: MODE ON

SOLAR:

- **PV DC POWER:** Instantaneous PV Production (kW)
- **PV DC Current:** MPPT DC Output Current (A)
- **PV AC POWER:** Instantaneous PV AC Production (KW)
- **PV AC CURRENT:** Instantaneous PV AC Current (A)
- **PV AC VOLTAGE:** Instantaneous PV Voltage (V)
- **PV AC Frequency:** System Frequency (Hz)

TILES:

- **GRID RUN TIME:** Daily No of Hours of Grid On Time
- **KWH UTILIZED:** Energy Consumed from Grid
- **BATTERY CHARGED %:** Percent Battery Charged from Grid
- **SOLAR TO BATTERY (KWH):** Total KWH from Solar to Battery
- **SOLAR TO LOAD (KWH):** Total KWH from Solar to Load
- **SOLAR TO GRID:** Total kWh From Solar back to Grid

GRID ENERGY:

- **VOLTAGE:** AC Input Voltage (V)
- **CURRENT:** AC Input Current (A)
- **POWER:** Instantaneous Input Power (kW)
- **FREQUENCY:** Input Instantaneous Frequency (Hz)

SYSTEM CONDITION:

- **COOLING MODE:** Fan Test Button / Indication for Fan On
- **HEATING MODE:** Heater Test Button / Indication for Heater On
- **HVAC Mode:** On/Off for indication

ECM Battery

ECM Battery status is visible on the device panel and in remote access session:

NAVIGATION

- Dashboard
- Overview
- Settings

COMPONENTS

- Generator
- Grid & Solar
- Load
- Battery**
- Graphs
- User Manual

- Get Help
- Log out



BATTERY SYSTEM PARAMETERS:

- **GENSET:** Instantaneous Genset Power and Daily Energy
- **AC/DC SOLAR:** Combined Solar Power and Daily Energy
- **LOAD:** Instantaneous Power and Daily Energy
- **GRID:** Instantaneous Power and Daily Energy
- **STATE OF CHARGE:** Real time Battery Storage %
- **BATTERY STATE:** Charging / Discharging / Idle / Off
- **STATE OF HEALTH:** Battery State of Health
- **BATTERY VOLTAGE:** Instantaneous Battery Voltage
- **BATTERY CURRENT:** Instantaneous Battery Current
- **BATTERY POWER:** Instantaneous Battery Power
- **STATE OF CHARGE:** Instantaneous Battery SoC Condition
- **TIME SINCE LAST CHARGE:** No of Hours Elapsed since genset turned on
- **NO OF CYCLES:** No of times the battery has been cycled on and off.
- **CHARGE TIME:** No of Hours the unit is charged Daily

- **DISCHARGE TIME:** No of hours the unit is discharged daily.
- **IDLE TIME:** No of hours the unit is idle daily
- **OFF TIME:** No of hours the unit is off daily

BATTERY ALARMS: -

- **BATTERY LOW OR CRITICALLY LOW:** Charge the batteries
- **BATTERY ERROR:** Contact if Alarms on Batteries Indicated by a solid Red Light
- **CHECK DESCRIPTION ON ALARM SECTION:**
 - ✓ Battery Communication Error
 - Clear alarm of GX Communication Error
 - Reset the battery through sleep and wakeup procedure.
 - ✓ Battery Restricted to Charge and discharge
 - Check Temp Restrictions
 - ✓ Battery Module Offline
 - Check Battery Modules Power Switches and LEDs

BATTERY TEMPERATURE RESTRICTIONS: -

- **BATTERY TEMP 11C TO 35C:** No Restrictions
- **BATTERY TEMP >35C AND <10C:** Charge Rate 0.2C / Discharge Rate: No Restrictions
- **BATTERY TEMPE >45C AND <2C:** Charge Rate 0.05C / Discharge Rate: No Restrictions
- **BATTERY TEMP >50C:** Restricted Charge / Discharge

ECM Load

ECM Battery status and functioning is visible on the device panel and in remote access session:

NAVIGATION

- Dashboard
- Overview
- Settings

COMPONENTS

- Generator
- Grid & Solar
- Load**
- Battery
- Graphs
- User Manual

- Get Help
- Log out

Load

Voltage	Current	Power
000.00 V Phase 1	00.00 A Phase 1	00.00 KW Phase 1
000.00 V Phase 2	00.00 A Phase 2	00.00 KW Phase 2
000.00 V Phase 3	00.00 A Phase 3	00.00 KW Phase 3
000.00 V L to L	00.00 Hz Frequency	00.00 KW Total Power

Outlet TIMER ENABLED

1

2

3

4

00

Load Run Time

000

KWH Utilized

00

Power Bank Run Time

Set Timer Auto Manual

Mon.

Tue.

Wed.

Thur.

Fri.

Sat.

Sun.

Load Variation Limit ⚡

000

Input Limit

Set Limit

LOAD PARAMETERS:

- **PER PHASE PARAMETERS:** Instantaneous Voltage, Current and Power
- **LOAD RUN TIME:** Used to show how much time the load was on per day.
- **KWH UTILIZED:** Depicts the total energy consumed per day.
- **POWRBANK Run Time:** Shows the total run time that the unit is used to run for the entire day without the genset
- **TIMER:** Set three timers for Turning on and off based on a particular time. For a particular outlet or all the outlets.
- **LOAD VARIATION LIMIT:** Used to provide a limit for the output current
- **OUTLET:** Configurable timer-based outlets used to turn off / on Automatically / Manually.

LOAD INFORMATION:

- **LOAD DISABLED IF FOLLOWING CONDITIONS:**

- ✓ SoC Below 9.00% and AC Input Not Available
- ✓ Bottom Door Opened and Estop Pressed
- ✓ Inverter Switch Off
- **LOAD IS ALWAYS ENABLED IF THE FOLLOWING CONDITONS:**
 - ✓ AC Input is available and inverter switch on



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