



# User Guide (Installer)

## Online Energy Monitoring & Analysis (EMA)

Rev 4.0 12/16

APsystems  
1 Yatai Road, Jiaxing 314050, China  
TEL: +86 -573-83986967 info@altenergy-power.com  
www.APsystems.com

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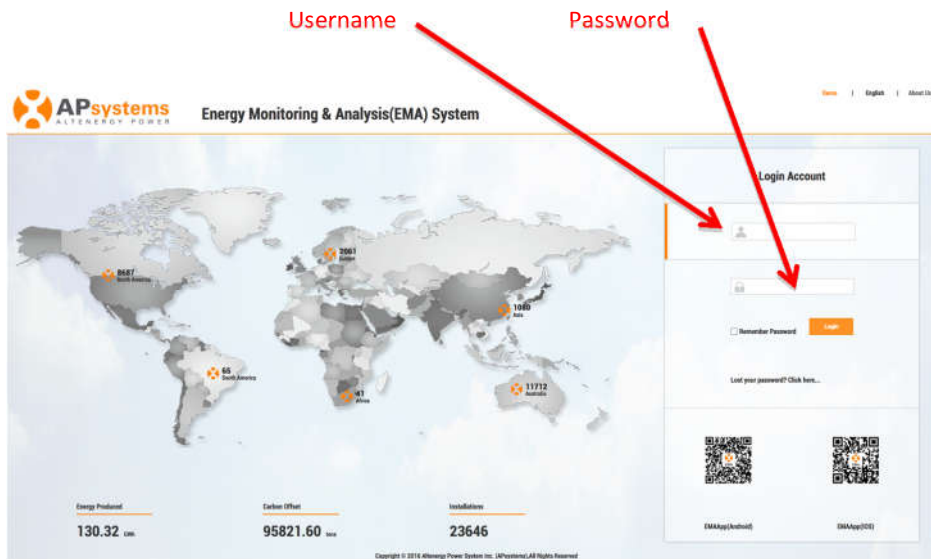
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## Log onto EMA Website

1. Go to <http://www.apsystemsema.com>

The APsystems EMA Login page is displayed.



**Note:** You are issued a permanent Username, and a temporary Password when you complete Installer Training with APsystems. Contact APsystems Technical Support to register for Installer Training (go to <https://usa.apsystems.com/resources/training>, or call 1.844.666.7034).

2. Enter your “Username” and “Password”.

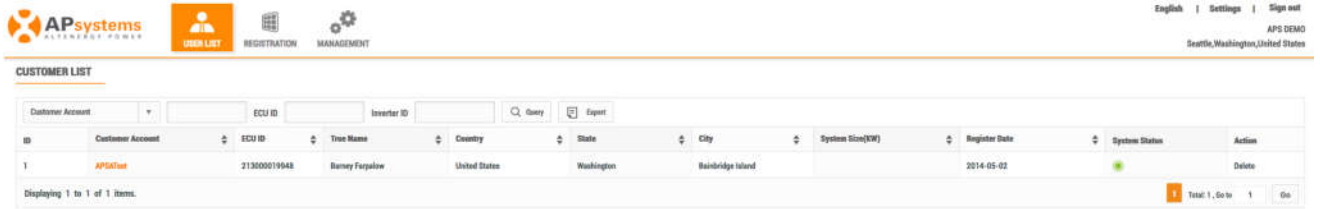
**Note:** The Password is case sensitive.

**Note:** If you forget your password, select “Lost your password? Click here ...”.

3. Press the “Login” button.

Your specific Customer List page is displayed.

*Continued ...*



**Note:** You won't have any customers in your Customer List the first time you log into the system.

## Add a New Customer Installation

There are five (5) major steps involved in adding a new installation (registering) in the EMA.

Step 1: Entering the customer's personal information.

Step 2: Configuring the Energy Communication Unit (ECU).

Step 3: Configuring the inverter information.

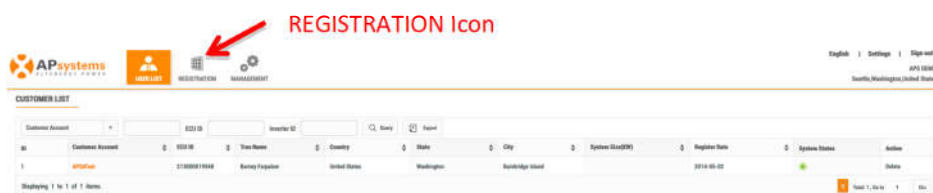
Step 4: Configuring the Group View.

Step 5: Uploading the installation drawings and/or photo.

### Step 1: Entering the Customer's Personal Information

1. Log onto the EMA.

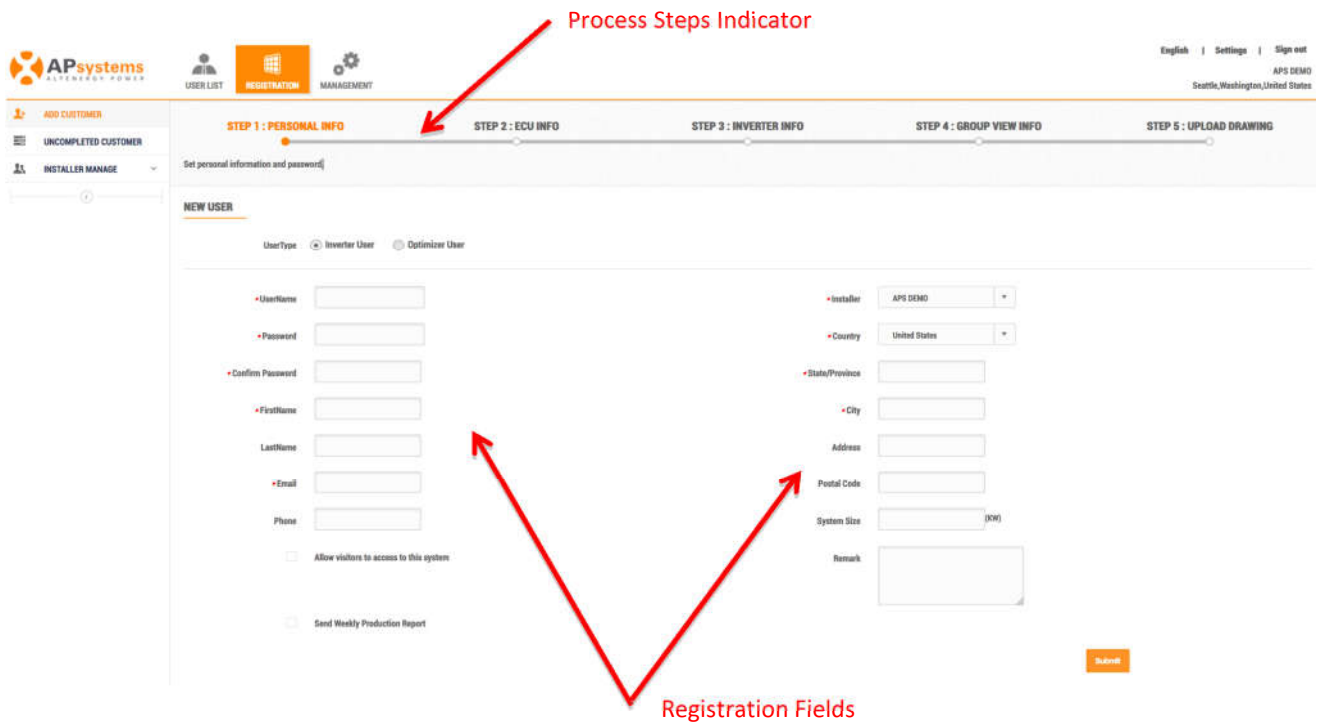
Your specific Customer List page is displayed.



2. Select the REGISTRATION icon at the top of the page.

The New User page is displayed.

*Continued ...*



Note: Optimizer not available in all regions.

3. Fill in the customer details by field, making sure to include all required information.

**UserName** This is a single “name” (typically the customer’s last name) that identifies this specific customer’s installation. The username appears in the customer’s area on the EMA. **(Required)**

Only “letters”, “numeric digits”, “underscores”, “@”, “spaces”, and “.” Can be used when creating a username.

**Note:** A username cannot be modified once it has been submitted.

**Password** This is a temporary password that is emailed to your customer so they can access their account on the EMA. Your customer can change their password should they so choose. **(Required)**

**Confirm Password** Enter the same password again to confirm. **(Required)**

Continued ...

<i>Email</i>	This is your customer's email address. (Required)  APsystems sends your customer their password and all system related notifications to this email address.
<i>First Name</i>	Your customer's first name. (Required)
<i>Last Name</i>	Your customer's last name. (Optional)
<i>Phone Number</i>	Your customer's phone number. (Optional)
<i>Installation Company</i>	This field is automatically generated by the system and can be changed using the pull down selector if necessary. (Required)
<i>Country</i>	This field is automatically generated by the system and can be changed using the pull down selector if necessary. (Required)
<i>State/Province</i>	Customer's state or province. (Required)
<i>City</i>	Customer's city. (Required)
<i>Address</i>	Customer's street address. (Optional)
<i>Postal Code</i>	Customer's postal code. (Optional)
<i>System Size</i>	Calculate the overall system size and enter it here. (Optional)
<i>Remarks</i>	Add any notes that you may find useful at a later date. (Optional)

4. Select whether to "Allow visitors to access this site".

**Note:** This is an optional selection step. If selected, the system displays an authorization code to be used in embedding this specific customer's EMA data within another website.

5. Select whether to have APsystems "Send a weekly production report".

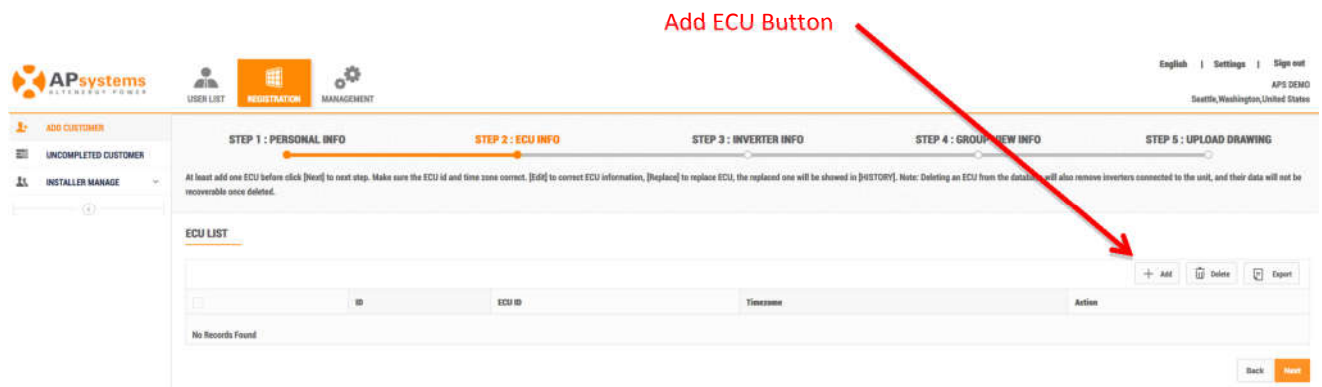
**Note:** This is an optional selection step. If selected, the customer will receive an automatically generated production report on a weekly basis.

*Continued ...*

6. Select the "Submit" button.

**Note:** Once you have selected either the "Next" or "Submit" buttons in any of the major registration steps (1-5), your customer information is saved in the system and you can step away from the process and resume by selecting "Incomplete Customer" (see page 21 –**Resume an Incomplete Registration**).

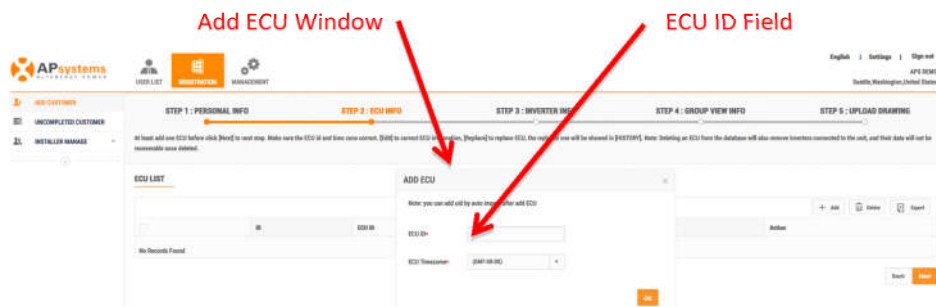
The ECU Information page is displayed.



### Step 2: Configure the ECU

7. Press the "Add" ECU button.

The Add ECU window is displayed.



8. Enter the 12-digit ECU UID number(s) into the ECU ID field.

Continued ...



The ECU UID is located on the top of the ECU, as well as on the front flap of the shipping box.



**Note:** The ECU UID is a unique APsystems “serial number” that is assigned to the ECU during manufacture. It is **NOT** the IP Address of the device.

It is critical that you enter the ECU UID correctly because the EMA uses this number to identify the system it is monitoring and reporting.

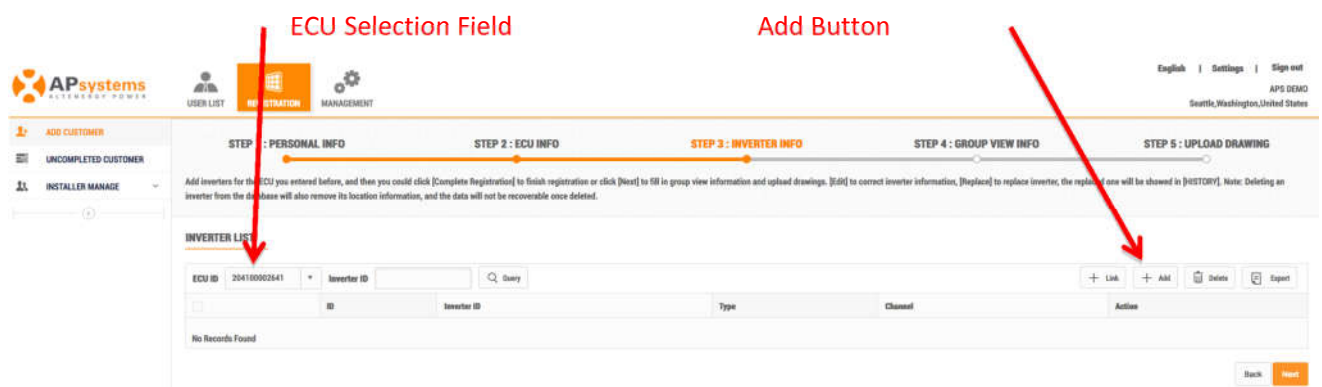
- 9. Select the time zone where the ECU is to be installed.
- 10. Press the “OK” button.

**Note:** Check **Resume an Incomplete Registration** – Page 21 if you get a system message that indicates that the UID already exists while making these entries.

Once you have entered all of the ECU UID numbers to be installed at a specific location ...

- 11. Press the “Next” button.

The Inverter Information page is displayed.

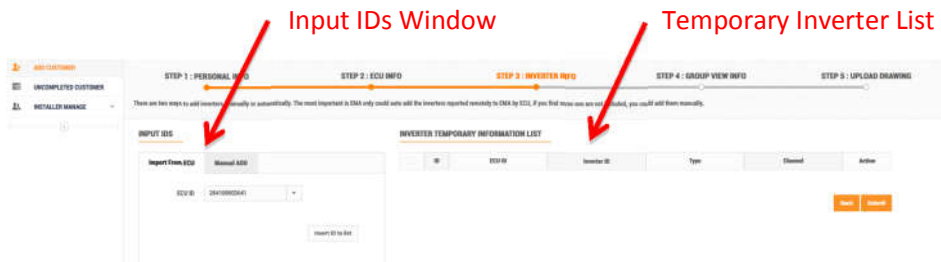


### Step 3: Configure the Inverters

In this step you are assigning the inverters to their associated ECU(s).

12. Select the ECU (ECU Selection field).
13. Press the "Add" button.

The Input Inverter IDs page is displayed.



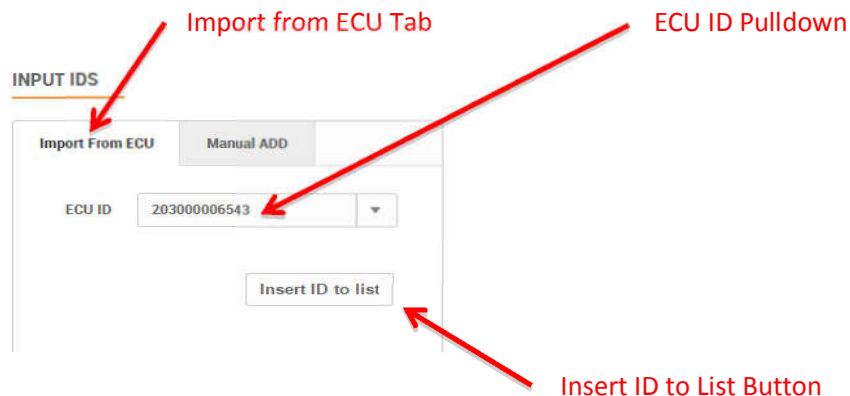
14. Enter the 12-digit inverter ID numbers.

There are two (2) methods for adding inverters to the EMA:

- 1) Importing them from the ECU.
- 2) Manually entering them into the EMA.

#### **Method 1: Importing the IDs from the ECU**

**Note:** When importing the inverter IDs from the ECU, make sure that you have entered all of the inverter IDs into the ECU, and that the ECU is correctly connected to the Internet so that the APsystems server can retrieve the IDs.

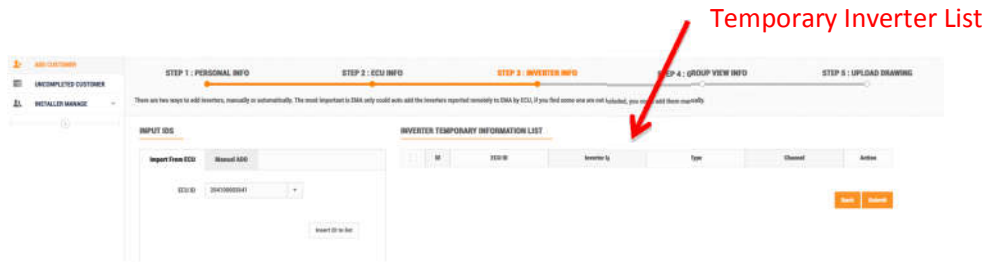


- 1) Select the "Import From ECU" tab.

*Continued ...*

- 2) Select the ECU from the “ECU ID” pulldown.
- 3) Press the “Insert ID to List” button.

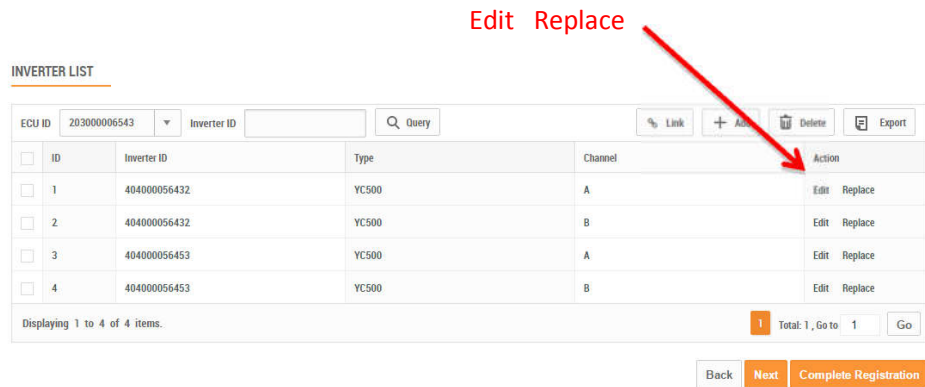
The EMA begins importing all of the inverter IDs on the ECU and placing them onto the Temporary Inverter List.



- 4) Verify that the temporary list of inverter IDs is complete and correct.
- 5) Press the “Submit” button.

The “permanent” inverter list is displayed.

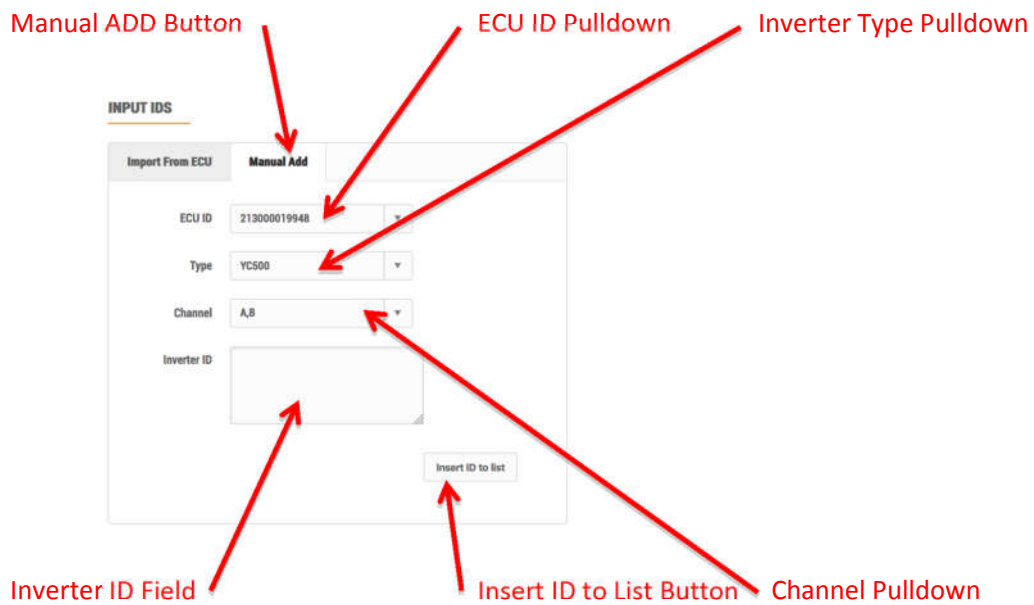
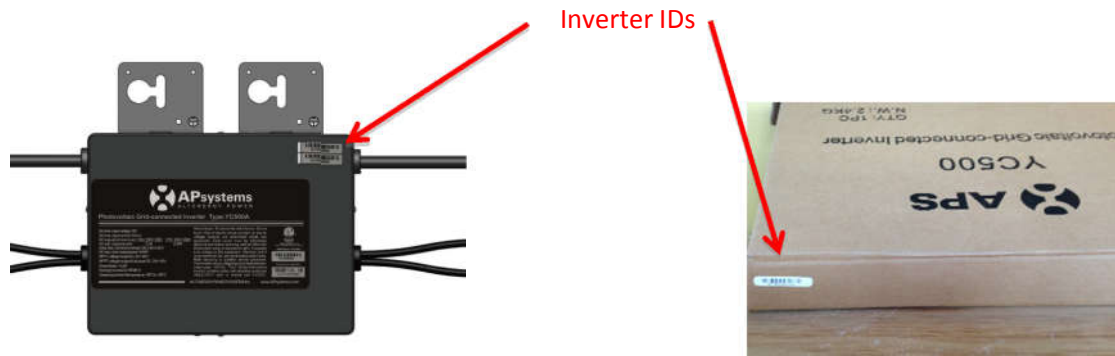
**Note:** This list can be edited if necessary by selecting either “Edit” or “Replace” for each inverter and its associated channel.



Go to Step 4: Configuring Group View to complete the Registration Process.

## Method 2: Manually Entering IDs into the EMA

Each inverter has a unique UID which is located on the front of the inverter, as well as on the back flap of the inverter's shipping box.



- 1) Select the "Manual ADD" button.
- 2) Select the ECU from the "ECU ID" pulldown.
- 3) Select the Inverter type from the "Inverter Type" pulldown.
- 4) Select the Channel(s) for the inverter type.

Continued ...

**Note:** You'll be presented with a number of inverter types. Select the type you are installing, remembering that the YC500 has two (2) channels (A & B), and the YC1000 has up to four (4) channels (1, 2, 3 & 4).

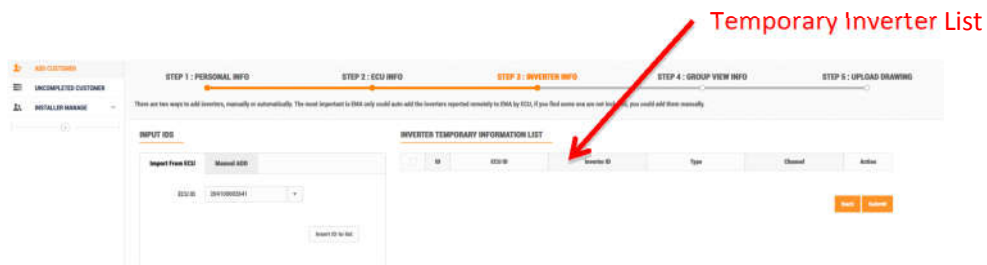
5) Enter the 12-digit inverter ID numbers.

**Tip:** You can scan the inverter UIDs into a spreadsheet and then copy and paste the UIDs from the spreadsheet into the EMA, which makes the entry process easier to manage. The EMA does however have a limitation of 20 UIDs per paste.

**Note:** Check **Resume an Incomplete Registration** – Page 21 if you get a system message that indicates that the UID already exists while making these entries.

6) Press the “Insert ID to List” button.

The EMA places the inverter onto the Temporary Inverter List.



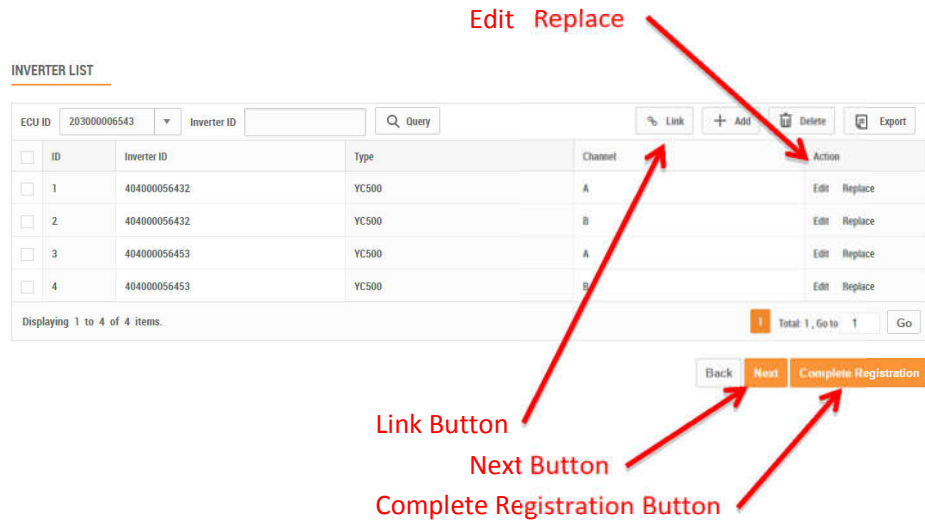
7) Verify that the temporary list of inverter IDs is complete and correct.

8) Press the “Submit” button.

*Continued ...*

The “permanent” inverter list is displayed.

**Note:** This list can be edited if necessary by selecting either “*Edit*” or “*Replace*” for each inverter and its associated channel.



9) Press the “*Link*” button to remotely link the inverters to the ECU.

At this point in the registration process you can decide to “complete the registration”, capturing the customer’s personal information, ECU configuration, and Inverter IDs, coming back to mapping the inverters at a later time(see page 16 -- Step 4: Configuring Group View) – or – continue to move forward with the inverter mapping before completing the registration.

**Note:** If you choose to “complete the registration” at this time, you’ll still need to return to the customer’s account to finish the job by mapping the inverters. Once you have “completed the registration”, the customer account will move from “INCOMPLETED” to the standard customer list and your customer will be able to view their account online.

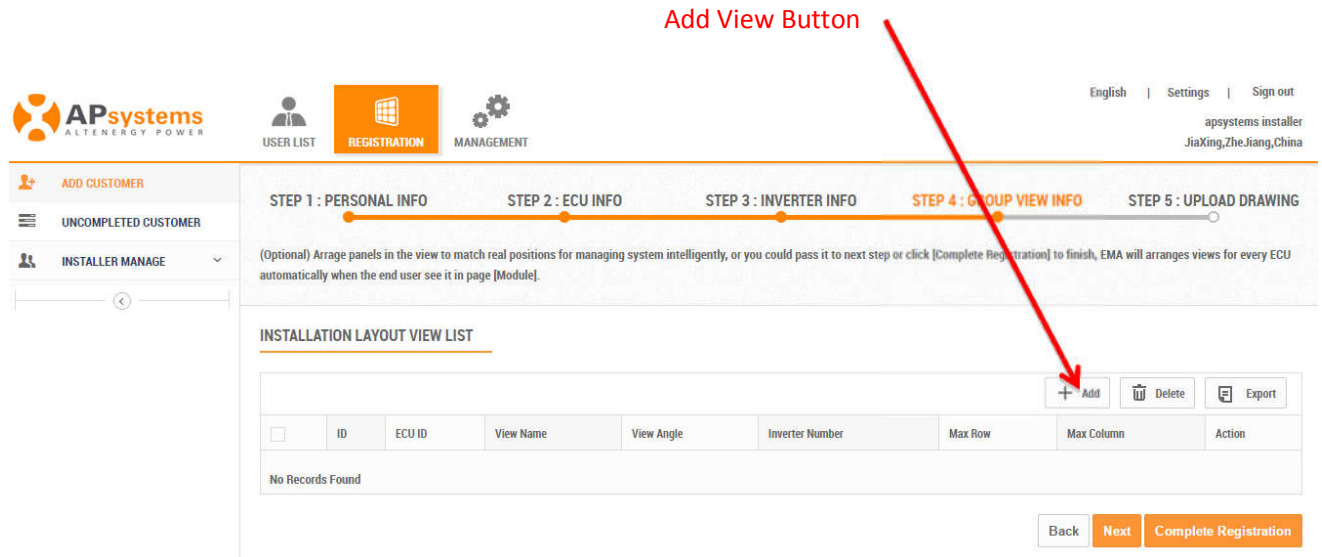
To “complete the registration” process, press the “*Complete Registration*” button.

To continue with the mapping process before completing the registration, press the “*Next*” button.

#### Step 4: Configuring Group View

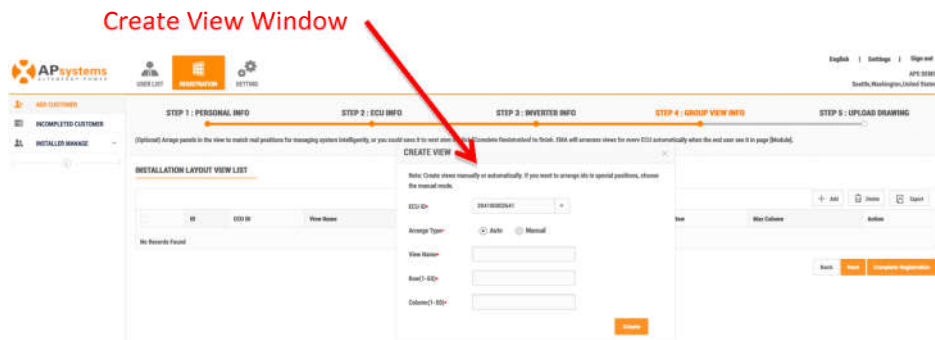
This step assumes you have pressed the “Next” button after entering the inverter IDs.

The Group View page is displayed.



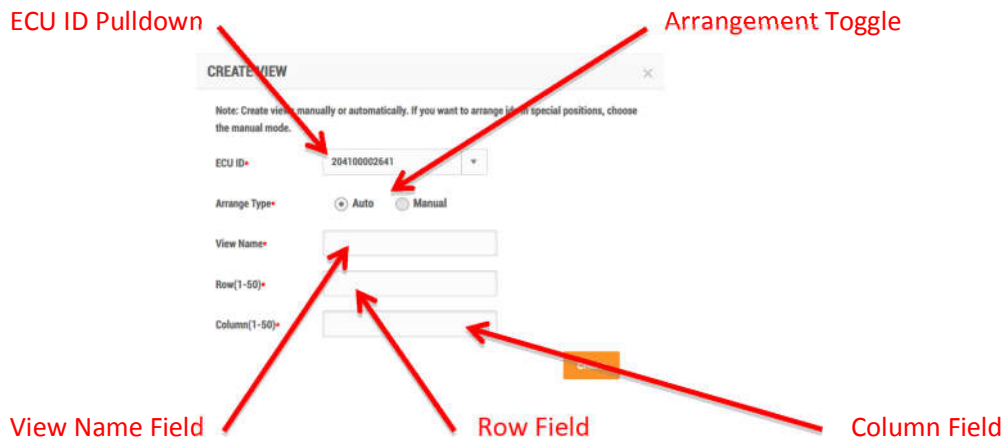
15. Press the “Add” view button.

The Create View window is displayed.



There are two (2) methods for creating a view (inverter layout) in the EMA:

- 1) Having the system do it for you automatically.
- 2) Laying out the panels manually.



### Method 1: Creating a view automatically.

Automatic view creation is best for relatively simple layouts.

- 1) Select the ECU from the "ECU ID" pulldown.
- 2) Select the "Auto" arrangement toggle.
- 3) Enter a view name in the View Name field.
- 4) Enter a number (1-50) in the Row field (rows are horizontal).
- 5) Enter a number (1-50) in the Column field (columns are vertical).
- 6) Press the "Create" button.

The EMA arranges the panels (and their associated inverters) are laid out from top-left to bottom right based on their entry into the Inverter List.

### Method 2: Creating a view manually.

Manual view creation is best for more complex installations where you'll want to have complete control of where the panels (and their associated inverters) are laid out.

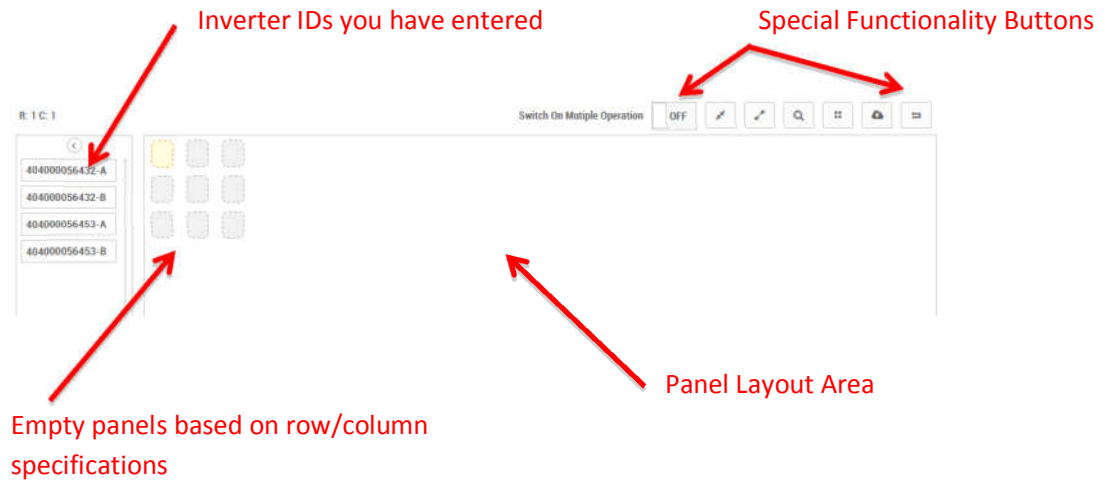
- 1) Select the ECU from the "ECU ID" pulldown.
- 2) Select the "Manual" arrangement toggle.
- 3) Enter a view name in the View Name field.
- 4) Enter a number (1-50) in the Row field (rows are horizontal).
- 5) Enter a number (1-50) in the Column field (columns are vertical).
- 6) Press the "Create" button.

The EMA arranges the panels, without the associated inverters, on a panel layout page based on the rows and columns you have specified.

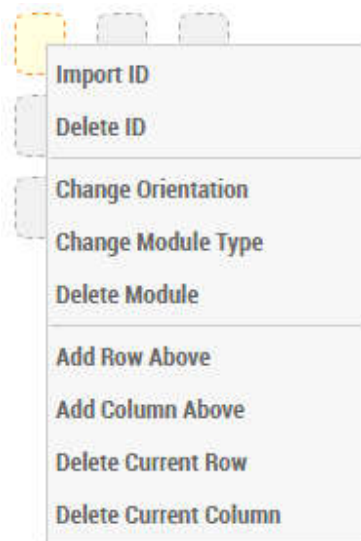
*Continued ...*



The panel layout page is displayed.



**Note:** Right clicking on any individual panel exposes a list of possible shortcuts.



*Import ID* Import a specific inverter ID to the selected panel.

*Delete ID* Delete a specific inverter ID from the selected panel.

*Change Orientation* Change panel's orientation to vertical or horizontal.

*Continued ...*

*Change Module*

*Type* Change the module type for the specified panel.

*Delete Module*

Delete both the inverter ID and panel position.

*Add Row Above*

Adds a row above the current panel location.

*Add Column Above*

Adds a column next to the current panel location.

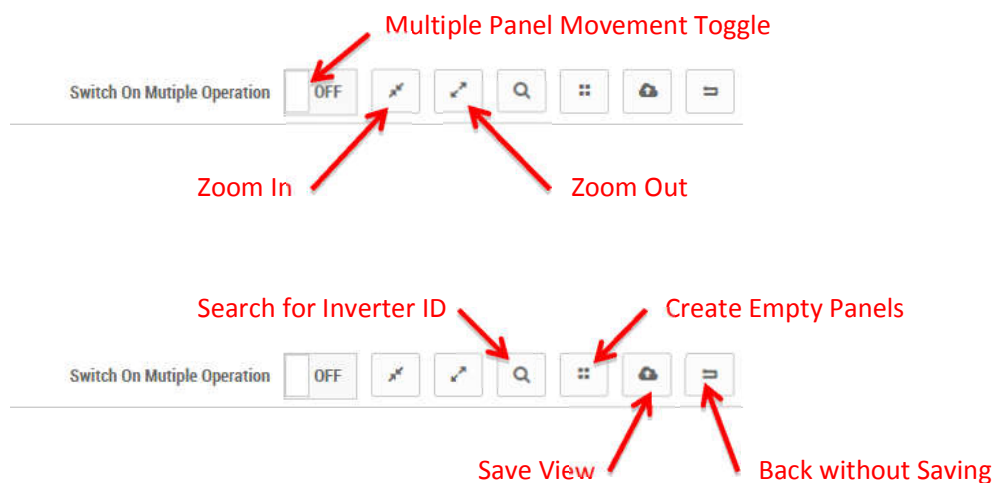
*Delete Current Row*

Delete the row where the specified panel is located.

*Delete Current Column*

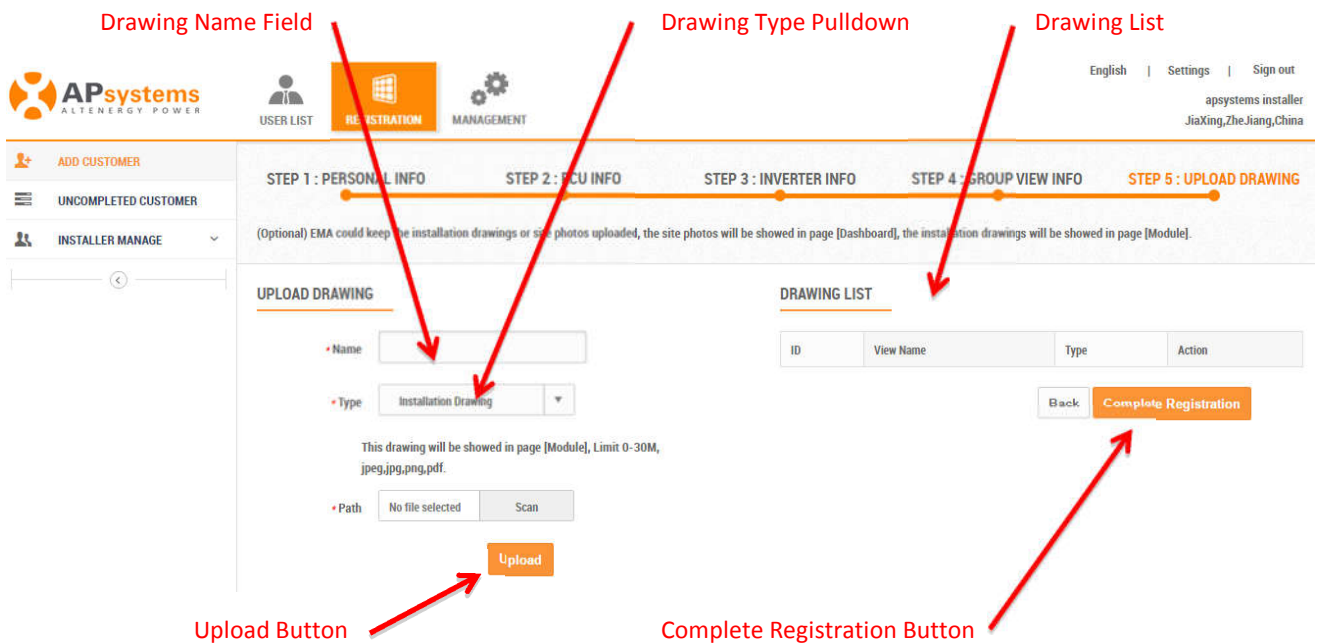
Delete the column where the specified panel is located.

Special Functionality Buttons



- 7) Drag and drop Inverter IDs onto specified inverters.
- 8) Drag the panels on the layout area as they are arranged on the site.
- 9) Press the "Save" button.

The Upload Drawings page is displayed.



### Step 5: Uploading the installation drawings and/or photo

The installation drawings are displayed on the customer’s Module Performance page, and the site photo is displayed on the customer’s Dashboard.

Only the following drawing and photo formats are supported:

- jpeg – jpg
- png
- pdf

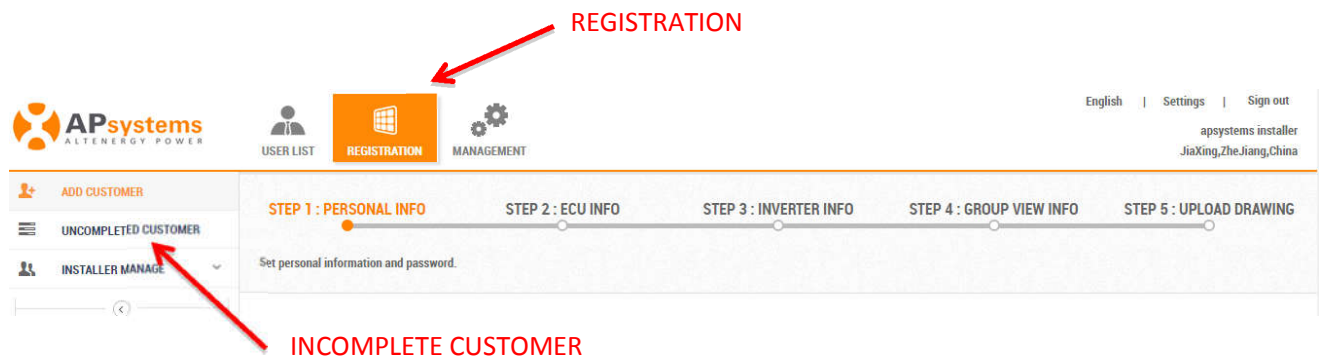
16. Enter the drawing’s name in the “Drawing Name” field.
17. Select drawing type in the “Drawing Type” pulldown.
18. Locate the file you want to upload (Scan button functions just like a Browse button)..
19. Press the “Upload” button.

The drawings you want uploaded to the EMA are reflected in the Drawing List.

20. Press the “Complete Registration” button.

## Resume an Incomplete Registration

Once you have selected either the “Next” or “Submit” buttons in any of the major registration steps (1-5), your customer information is saved in the system and you can step away from the process and resume by selecting “Incomplete Customer” under Registration.



1. Log onto the EMA.

Your specific Customer List page is displayed.

2. Select the “REGISTRATION” icon.
3. Select the “INCOMPLETE CUSTOMER” in the left side bar.

A list of your incomplete customer registrations is displayed.

The screenshot shows the APsystems installer web interface with the 'CUSTOMER LIST' page. The table displays a list of incomplete customer registrations. The table has columns for 'ID', 'Customer Account', 'Customer Name', 'Country', 'State', 'City', 'System Size(KW)', 'Register Date', and 'Action'. There are four rows of data. Below the table, there is a pagination bar showing 'Displaying 1 to 4 of 4 items.' and 'Total 1, Go to 1 Go'.

ID	Customer Account	Customer Name	Country	State	City	System Size(KW)	Register Date	Action
1	testuser7872	testuser7872	China	testuser7872	testuser7872		2016-11-25	Delete
2	12	12	China	1	1		2016-11-25	Delete
3	testuser11	testuser11	China	Zhejiang	Jiaxing		2016-11-24	Delete
4	testuser2016111701	zzz	United States	alut	tal		2016-11-17	Delete

4. Select the customer account you want to complete.
5. Continue where you left off following the steps in the previous section.

## Edit an Existing Customer's Password

**Note:** Your customer can change their own password by going into the Setting section on their account page.

1. Log onto the APsystemsEMA website.

Your specific Customer List page is displayed.

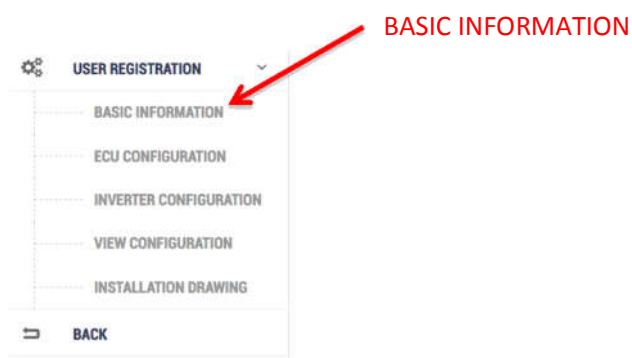
2. Select the customer that wants to have their password changed.

The customer's Dashboard is displayed.



3. Select "USER REGISTRATION" in the left side bar.

The USER REGISTRATION pulldown is displayed.



Continued ...

4. Select *"BASIC INFORMATION"* under *"USER REGISTRATION"*.

The user's basic information page is displayed.

Edit Password Fields

The screenshot shows the 'Customer Information Configuration' page in the APsystems Admin Panel. The left sidebar has 'USER REGISTRATION' expanded, with 'BASIC INFORMATION' selected. The main content area has two tabs: 'CUSTOMER INFORMATION' and 'EDIT PASSWORD'. The 'EDIT PASSWORD' tab is active, showing two input fields: 'Password' and 'Confirm Password', with a 'Submit' button below them. A red arrow points from the text 'Edit Password Fields' to the 'Password' field.

5. Enter the new password in the *"Password"* field.
6. Confirm the new password.
7. Press the *"Submit"* button.

## Modify an Existing User Account

### Adding an ECU

1. Log onto the EMA website.

Your specific Customer List page is displayed.

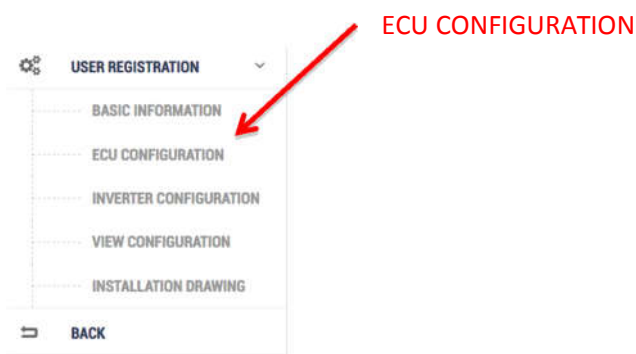
2. Select the customer account you want to modify.

The customer's DASHBOARD is displayed.



3. Select "USERREGISTRATION" in the left side bar.

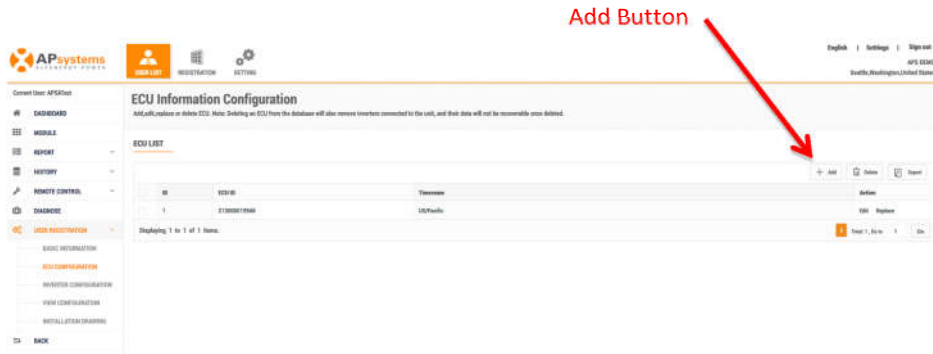
The USER REGISTRATION pulldown is displayed.



Continued ...

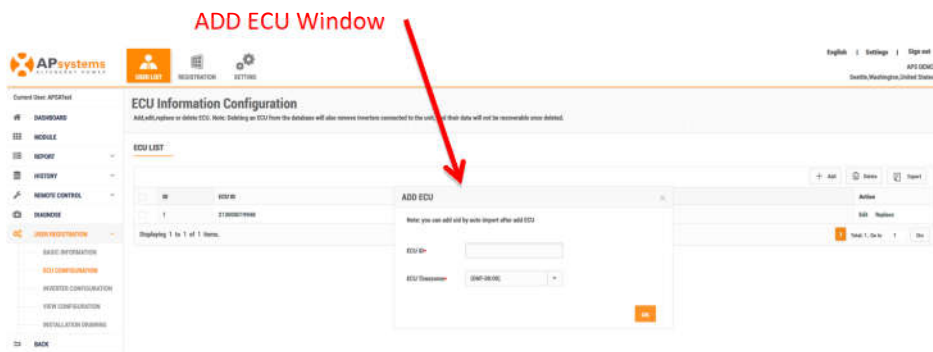
4. Select "ECU CONFIGURATION" under "USER REGISTRATON".

The ECU information page is displayed.



5. Press the "Add" button.

The ADD ECU window is displayed.



6. Enter the 12-digit ECU UID number(s) into the ECU ID field.
7. Select the time zone where the ECU is to be installed.
8. Press the "OK" button.



## Editing an ECU

1. Log onto the EMA website.

Your specific Customer List page is displayed.

2. Select the customer account you want to modify.

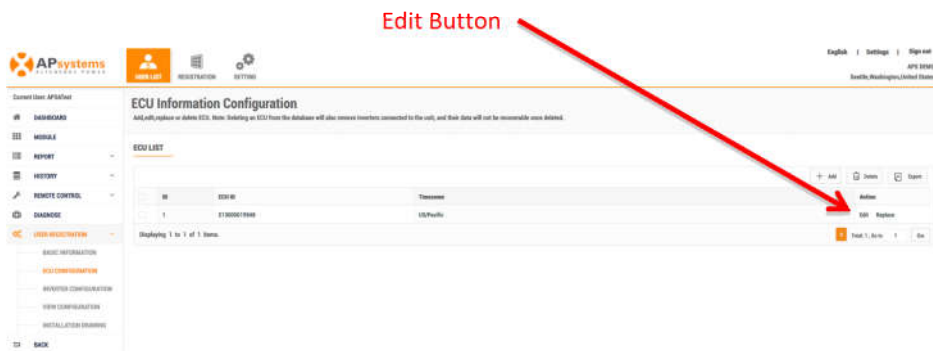
The customer's DASHBOARD is displayed.

3. Select "USERREGISTRATION" in the left side bar.

The USER REGISTRATION pulldown is displayed.

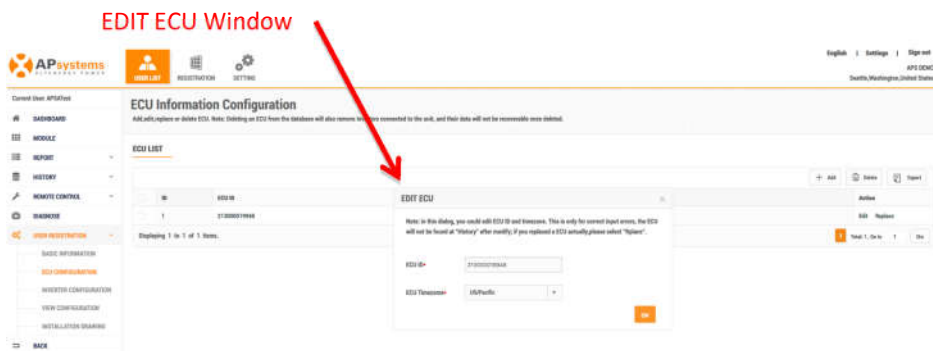
4. Select "ECU CONFIGURATION" under "USER REGISTRRTATION".

The ECU information page is displayed.



5. Press the "Edit" button.

The EDIT ECU page is displayed.



Continued ...

6. Edit the ECU UID and/or the time zone.
7. Press the “OK” button.

**Note:** Editing the ECU does not update the system “History”, so no record of the changes are made. Go to Replace an ECU (see below) if you have replaced an ECU and want it recorded in the system “History”.

### Replacing an ECU

1. Log onto the EMA website.

Your specific Customer List page is displayed.

2. Select the customer account you want to modify.

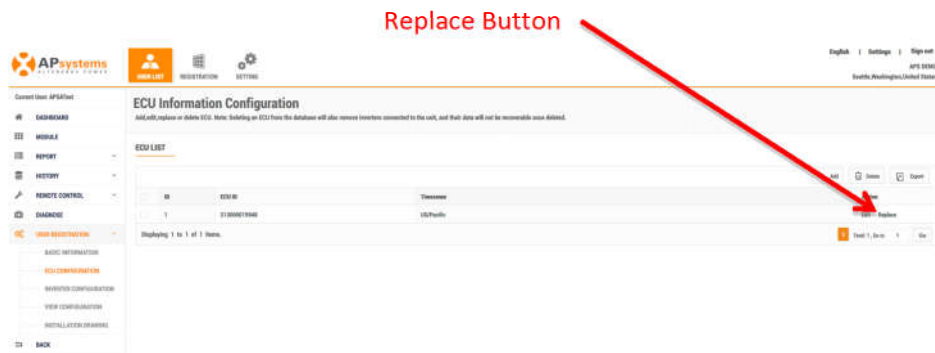
The customer’s DASHBOARD is displayed.

3. Select “USERREGISTRATION” in the left side bar.

The USER REGISTRATION pulldown is displayed.

4. Select “ECU CONFIGURATION” under “USER REGISTRATATION”.

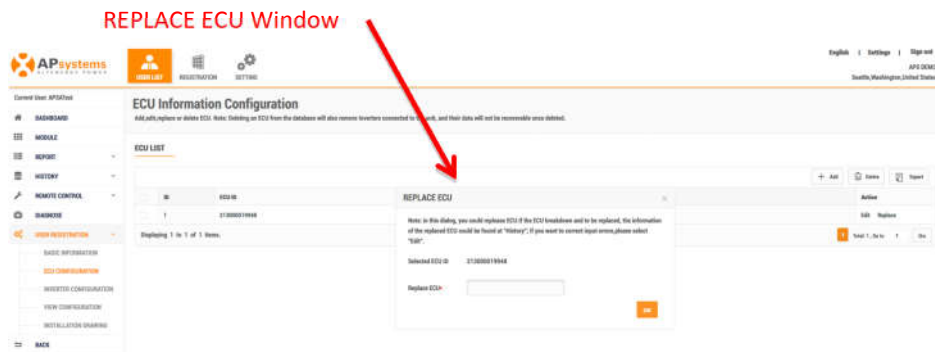
The ECU information page is displayed.



5. Press the “Replace” button.

Continued ...

The REPLACE ECU window is displayed.



6. Select the ECU you want to replace.
7. Enter the new 12-digit ECU UID number into the "Replace ECU" field.
8. Press the "OK" button.

### Deleting an ECU

1. Log onto the EMA website.

Your specific Customer List page is displayed.

2. Select the customer account you want to modify.

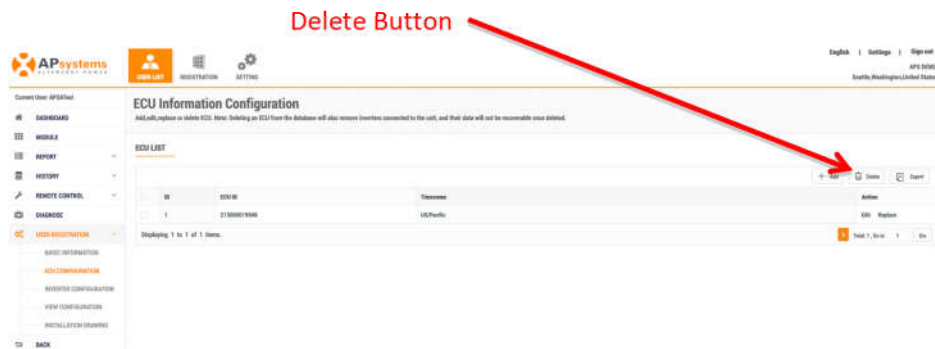
The customer's DASHBOARD is displayed.

3. Select "USERREGISTRATION" in the left side bar.

The USER REGISTRATION pulldown is displayed.

4. Select "ECU CONFIGURATION" under "USER REGISTRATION".

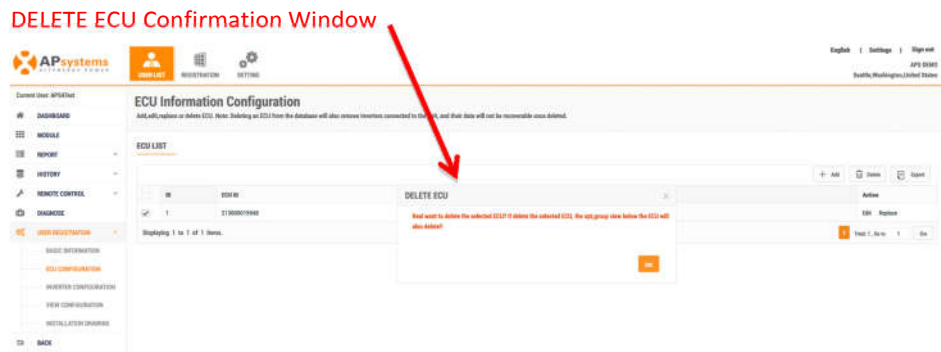
The ECU information page is displayed.



Continued ...

5. Press the “Delete” button.

The DELETE ECU confirmation window is displayed.



6. Select the ECU you want to delete.
7. Press the “OK” button.

## Adding an Inverter

1. Log onto the EMA website.

Your specific Customer List page is displayed.

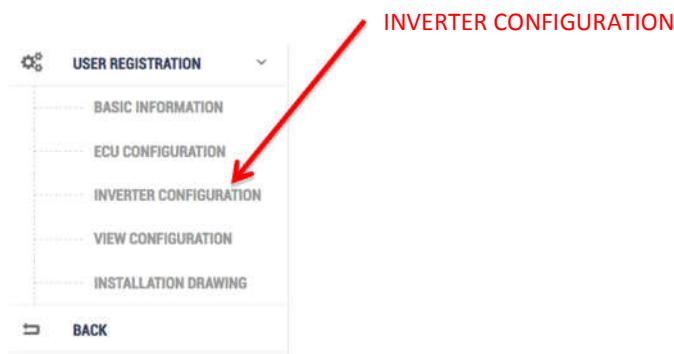
2. Select the customer account you want to modify.

The customer's DASHBOARD is displayed.



3. Select "USERREGISTRATION" in the left side bar.

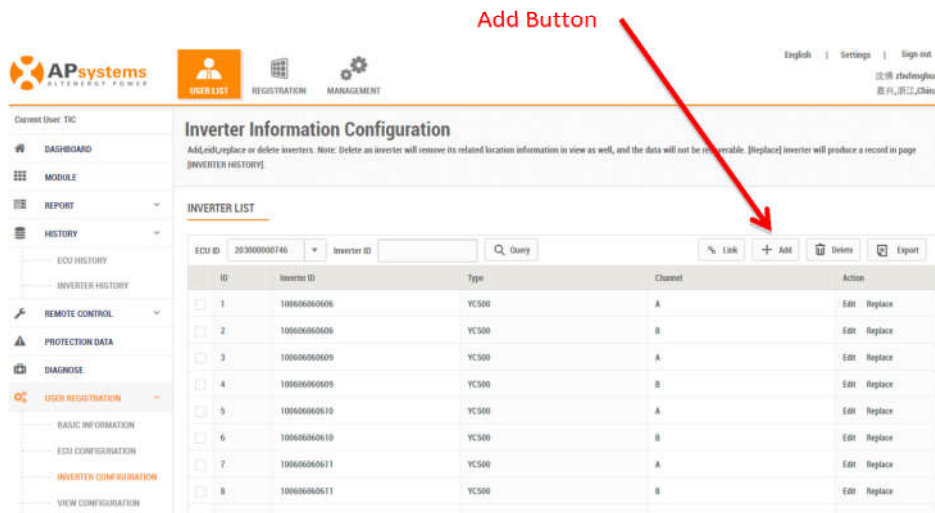
The USER REGISTRATION pulldown is displayed.



4. Select "INVERTER CONFIGURATION" under "USER REGISTRATION".

Continued ...

The Inverter Information page is displayed.



5. Press the “Add” button.

The Input Inverter IDs page is displayed.



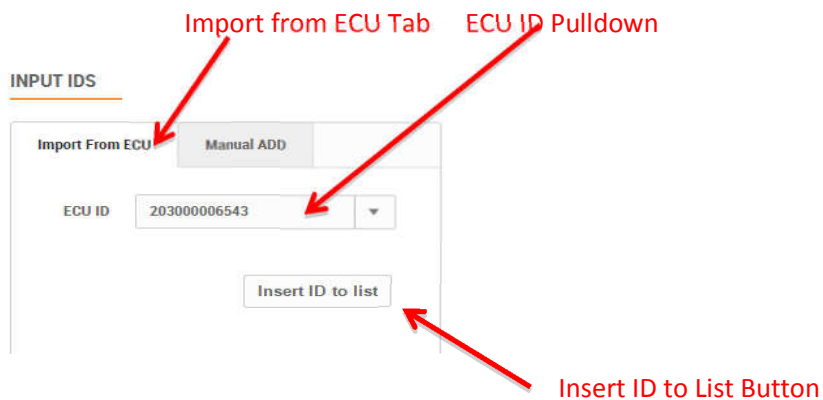
There are two (2) methods for adding inverters to the EMA:

- 1) Importing them from the ECU.
- 2) Manually entering them into the EMA.

### Method 1: Importing the IDs from the ECU

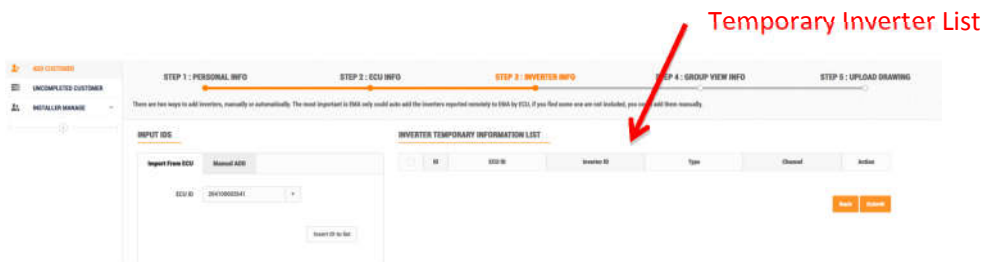
**Note:** When importing the inverter IDs from the ECU, make sure that you have entered all of the additional inverter IDs into the ECU, and that the ECU is correctly connected to the Internet so that the APsystems server can retrieve the IDs.

Continued ...



- 1) Select the "Import From ECU" tab.
- 2) Select the ECU from the "ECU ID" pulldown.
- 3) Press the "Insert ID to List" button.

The EMA begins importing all of the inverter IDs on the ECU and placing them onto the Temporary Inverter List.



- 4) Verify that the temporary list of inverter IDs is complete and correct.
- 5) Press the "Submit" button.

The "permanent" inverter list is displayed.

**Note:** This list can be edited if necessary by selecting either "Edit" or "Replace" for each inverter and its associated channel.

Continued ...

Edit Replace

**INVERTER LIST**

ECU ID	Inverter ID	Type	Channel	Action	
20300006543					
<input type="checkbox"/>	1	404000056432	YC500	A	Edit Replace
<input type="checkbox"/>	2	404000056432	YC500	B	Edit Replace
<input type="checkbox"/>	3	404000056453	YC500	A	Edit Replace
<input type="checkbox"/>	4	404000056453	YC500	B	Edit Replace

Displaying 1 to 4 of 4 items. Total: 1, Go to 1 Go

Back Next Complete Registration

## Method 2: Manually Entering IDs into the EMA

Each inverter has a unique UID which is located on the front of the inverter, as well as on the back flap of the inverter's shipping box.

Manual ADD Button      ECU ID Pulldown      Inverter Type Pulldown

**INPUT IDS**

Import From ECU    **Manual Add**

ECU ID: 213000019948

Type: YC500

Channel: A,B

Inverter ID:

Insert ID to list

Inverter ID Field      Insert ID to List Button      Channel Pulldown

- 1) Select the "Manual ADD" button.
- 2) Select the ECU from the "ECU ID" pulldown.
- 3) Select the Inverter type from the "Inverter Type" pulldown.
- 4) Select the Channel(s) for the inverter type.

Continued ...



**Note:** You'll be presented with a number of inverter types. Select the type you are installing, remembering that the YC500 has two (2) channels (A & B), and the YC1000 has up to four (4) channels (1, 2, 3 & 4).

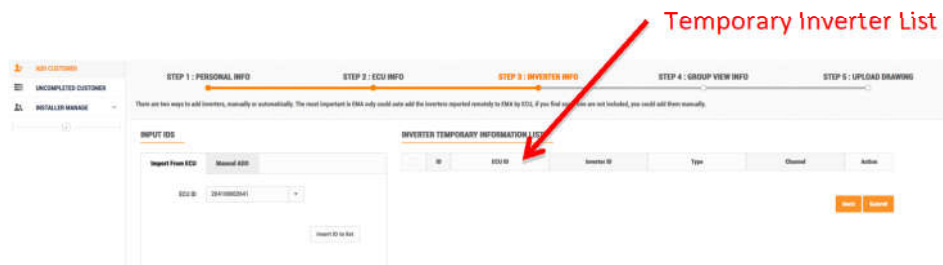
5) Enter the 12-digit inverter ID numbers.

**Tip:** You can scan the inverter UIDs into a spreadsheet and then copy and paste the UIDs from the spreadsheet into the EMA, which makes the entry process easier to manage. The EMA does however have a limitation of 20 UIDs per paste.

**Note:** Check **Resume an Incomplete Registration** – Page 21 if you get a system message that indicates that the UID already exists while making these entries.

6) Press the *“Insert ID to List”* button.

The EMA places the inverter onto the Temporary Inverter List.



7) Verify that the temporary list of inverter IDs is complete and correct.

8) Press the *“Submit”* button.

The *“permanent”* inverter list is displayed.

**Note:** This list can be edited if necessary by selecting either *“Edit”* or *“Replace”* for each inverter and its associated channel.

*Continued ...*

Edit Replace

**INVERTER LIST**

ECU ID: 20300006543    Inverter ID:     Query:     Link    + Add    Delete    Export

ID	Inverter ID	Type	Channel	Action
1	404000056432	YCS00	A	Edit Replace
2	404000056432	YCS00	B	Edit Replace
3	404000056453	YCS00	A	Edit Replace
4	404000056453	YCS00	B	Edit Replace

Displaying 1 to 4 of 4 items.    Total: 1, Go to: 1    Go

Back    Next    Complete Registration

Link Button    Next Button    Complete Registration Button

- 9) Press the "Link" button to remotely link the inverters to the ECU.
- 10) Press the "Next" button.

VIEW CONFIGURATION

- 11) Select "VIEW CONFIGURATION" under "USER REGISTRATION".

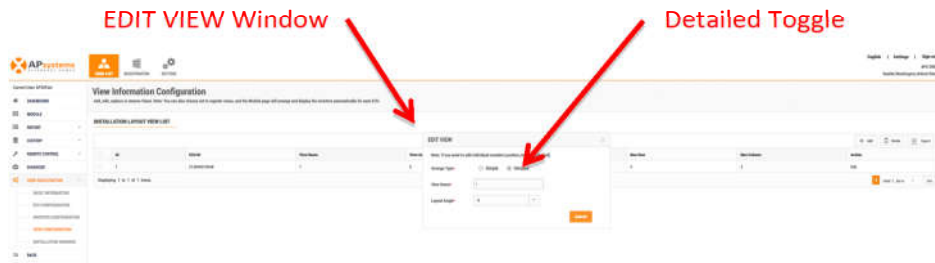
The View Configuration page is displayed.

Edit

Continued ...

6. Select *“Edit”*.

The EDIT VIEW Window is displayed.



7. Select the *“Detailed”* toggle.
8. Press the *“Submit”* button.

The panel layout page is displayed.



9. Drag and drop the new inverters into position on the layout map.
10. Press the *“Save View”* icon.

### Editing an Inverter

1. Log onto the EMA website.

Your specific Customer List page is displayed.

2. Select the customer account you want to modify.

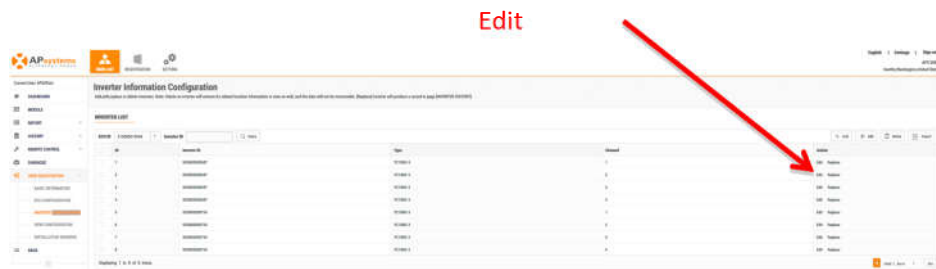
The customer's DASHBOARD is displayed.

3. Select "USERREGISTRATION" in the left side bar.

The USER REGISTRATION pulldown is displayed.

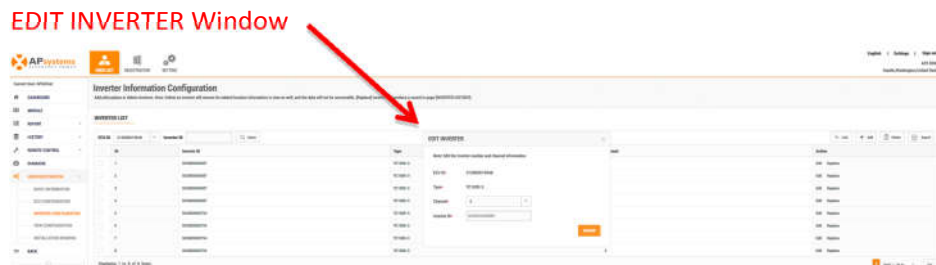
4. Select "INVERTER CONFIGURATION" under "USER REGISTRATION".

The Inverter Information page is displayed.



5. Select "Edit" for the inverter you want to edit.

The EDIT INVERTER window is displayed.



Continued ...

6. Edit the inverter information.
7. Press the "Submit" button.

Replacing an Inverter

1. Log onto the EMA website.

Your specific Customer List page is displayed.

2. Select the customer account you want to modify.

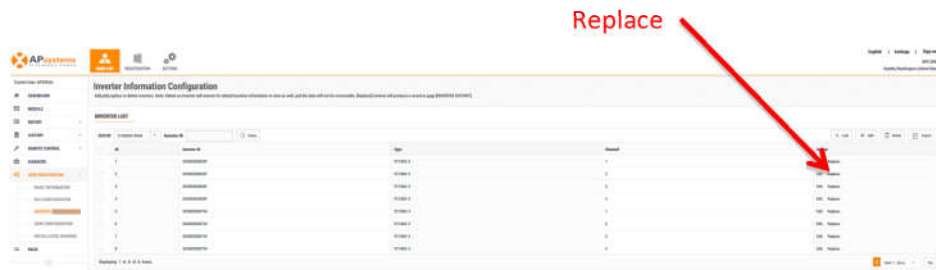
The customer's DASHBOARD is displayed.

3. Select "USERREGISTRATION" in the left side bar.

The USER REGISTRATION pulldown is displayed.

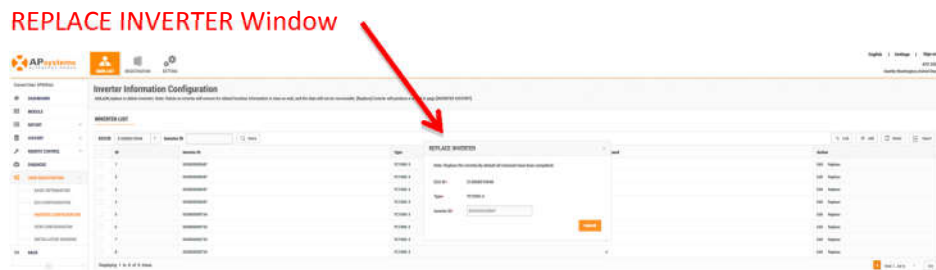
4. Select "INVERTER CONFIGURATION" under "USER REGISTRATION".

The Inverter Information page is displayed.



5. Select "Replace" for the inverter you want to replace.

The REPLACE INVERTER window is displayed.



Continued ...

6. Enter the new/replacement inverter's ID in the Inverter ID field.
7. Press the "Submit" button.

### Deleting an Inverter

1. Log onto the EMA website.

Your specific Customer List page is displayed.

2. Select the customer account you want to modify.

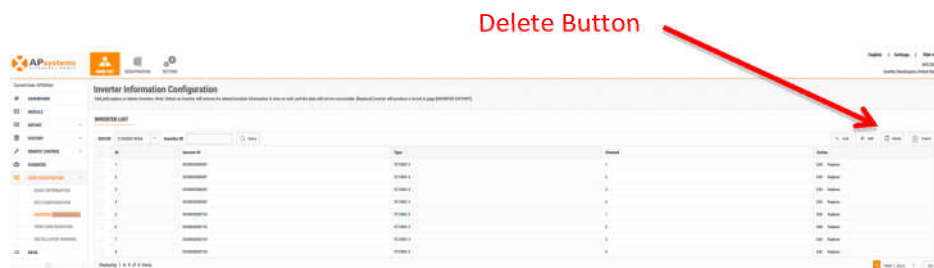
The customer's DASHBOARD is displayed.

3. Select "USERREGISTRATION" in the left side bar.

The USER REGISTRATION pulldown is displayed.

4. Select "INVERTER CONFIGURATION" under "USER REGISTRATION".

The Inverter Information page is displayed.



5. Select the inverter you want to delete.
6. Press the "Delete" button.

A confirmation message is displayed.

7. Press the "Submit" button.

## Editing Basic Customer Information

1. Log onto the APsystemsEMA website.

Your specific Customer List page is displayed.

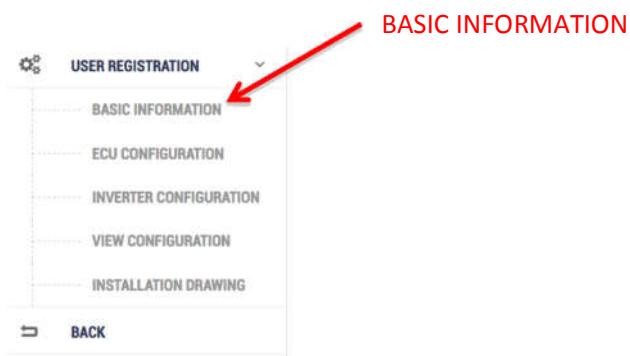
2. Select the customer that wants to have their password changed.

The customer's Dashboard is displayed.



3. Select "USER REGISTRATION" in the left side bar.

The USER REGISTRATION pulldown is displayed.



Continued ...

4. Select “BASIC INFORMATION” under “USER REGISTRATION”.

The user’s basic information page is displayed.

The screenshot shows the 'Customer Information Configuration' page in the APsystems web interface. The page is titled 'Customer Information Configuration' and includes a sub-header 'Set customer information or password.' The main content area is divided into two sections: 'CUSTOMER INFORMATION' and 'EDIT PASSWORD'. The 'CUSTOMER INFORMATION' section contains several form fields: Username (APSystem), Email (auser@examplerealm.com), First Name (John), Last Name (Doe), Phone (8008882222), Gender (Male), Country (United States), State/Province (Washington), and City (Seattle). The 'EDIT PASSWORD' section contains two input fields for Password and Confirm Password, and a Submit button. The sidebar on the left shows the navigation menu with 'USER REGISTRATION' expanded and 'BASIC INFORMATION' selected.

5. Edit the information you want changed.
6. Press the “Submit” button.



## Monitoring and Analysis

### Reviewing the Customer's Dashboard

1. Log onto the APsystemsEMA website.

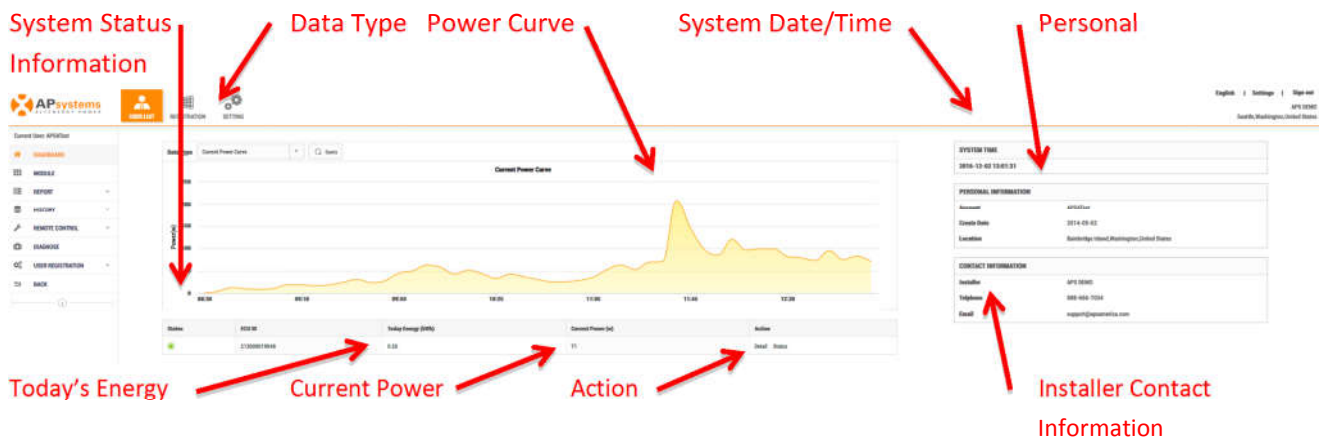
Your specific Customer List page is displayed.

ID	Customer Account	ECU ID	True Name	Country	State	City	System Size(KW)	Register Date	System Status	Action
1	APD4764	21300019948	Barry Ferguson	United States	Washington	Bainbridge Island	2.0	2014-05-02	<span style="color: green;">●</span>	Delete

2. Select the customer you want to review from the customer list.

The installer's view of the customer's Dashboard is displayed.

**Note:** While you are viewing the customer's system data, it is presented differently than the System Owner's view.





Continued ...


## Customer View for Comparison



### System Status

 Working normally.

 No Data – System not reporting in as expected. System requires attention.

 System configured without Internet connection.

### Data Type

Data reporting period; Power for the current day, daily power for the current month, monthly for the current year, and yearly for the lifetime of the system.

### Power Curve

Graphic representation of each of the data types.

### System Date/Time

The date and time at the array location.

### Personal Information

The customer's personal information.

### Today's Energy

The amount of energy produced for today's date – expressed in kWh.

### Current Power

The amount of energy being produced at this given time – expressed in watts.

### Action

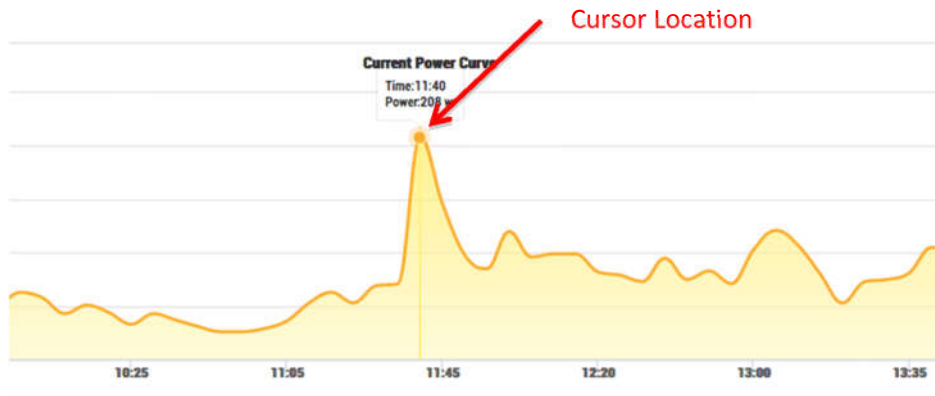
A short cut to ECU reporting (Detail) and reviewing the ECU status (Status).

### Installer Contact Information

The installer's contact information. This information shows up on your customer's view of their account.

*Continued ...*

**Note:** You can check power production at any given point along the "Power Curve" graphs by moving the cursor to the specific time or date in question.



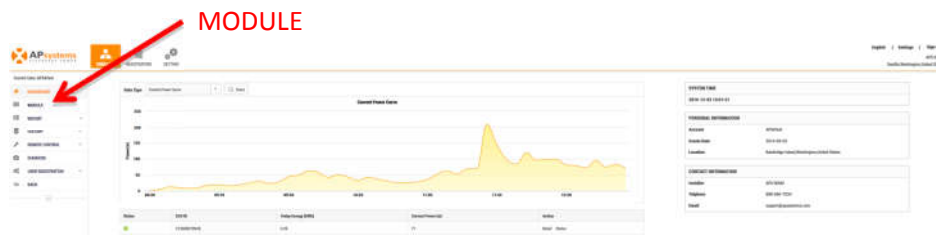
## Reviewing the Customer's Modules

1. Log onto the APsystemsEMA website.

Your specific Customer List page is displayed.

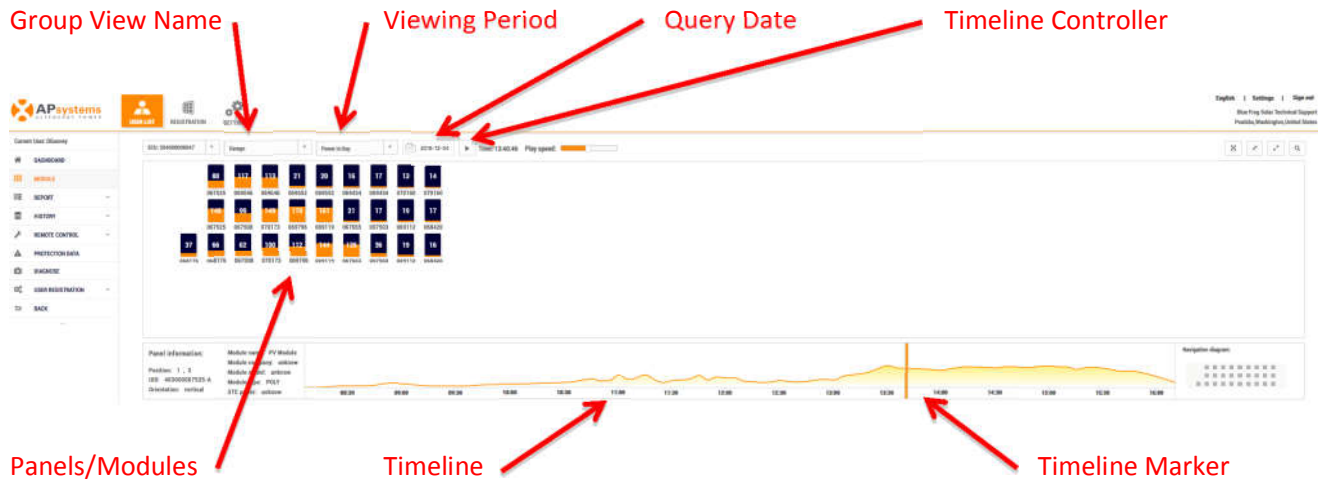
2. Select the customer you want to review from the customer list.

The installer's view of the customer's Dashboard is displayed.



3. Select "MODULE" in the left side bar.

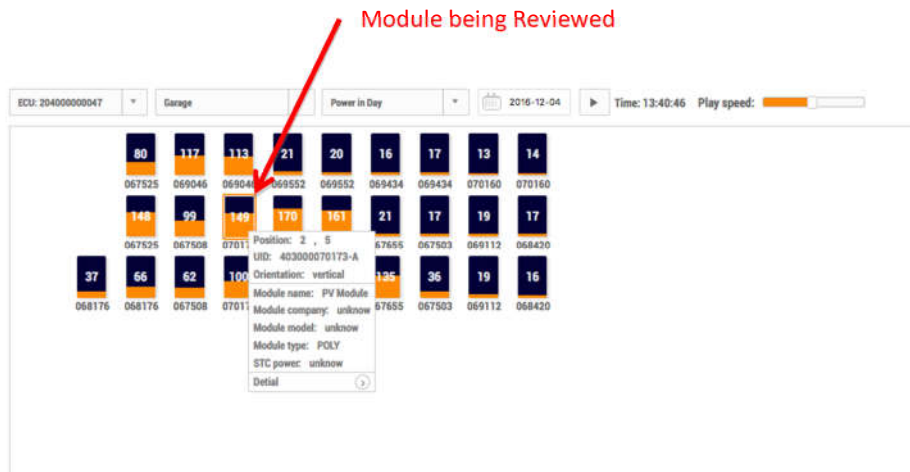
The Module Performance page is displayed.



*Continued ...*

<i>Group View Name</i>	Pulldown of the group names associated with this account.
<i>Viewing Period</i>	Viewing period selection; Power for the current day, and daily energy over the last 30 days.
<i>Query Date</i>	Select date you want to review.
<i>Timeline Controller</i>	Advances the Timeline Marker on the timeline.
<i>Panels/Modules</i>	A graphic representation of how the array is laid out. The number in the center of each module represents the power being generated by the module at the current time – expressed in watts/DC.
<i>System Performance the Timeline</i>	Graphic representation of the power being generated by the entire system during current viewing period.
<i>Timeline Marker</i>	Time indicator for timeline. Power is simultaneously displayed on the panels/modules. There are two ways to display power across time; One, select the time period and Press the “Timeline Controller”, and two dragging the timeline marker across the timeline to view a specific production time.

**Note:** Detailed information on each module can be reviewed by clicking on the module.



Reviewing the Customer's Systems Reports

1. Log onto the APsystemsEMA website.

Your specific Customer List page is displayed.

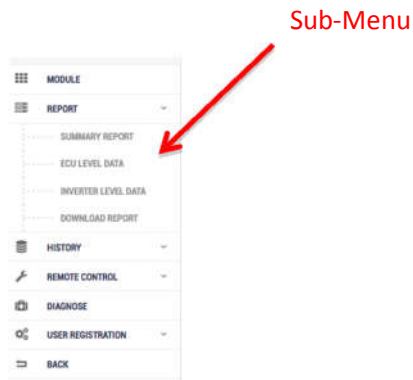
2. Select the customer you want to review from the customer list.

The installer's view of the customer's Dashboard is displayed.



3. Select "REPORT" in the left side bar.

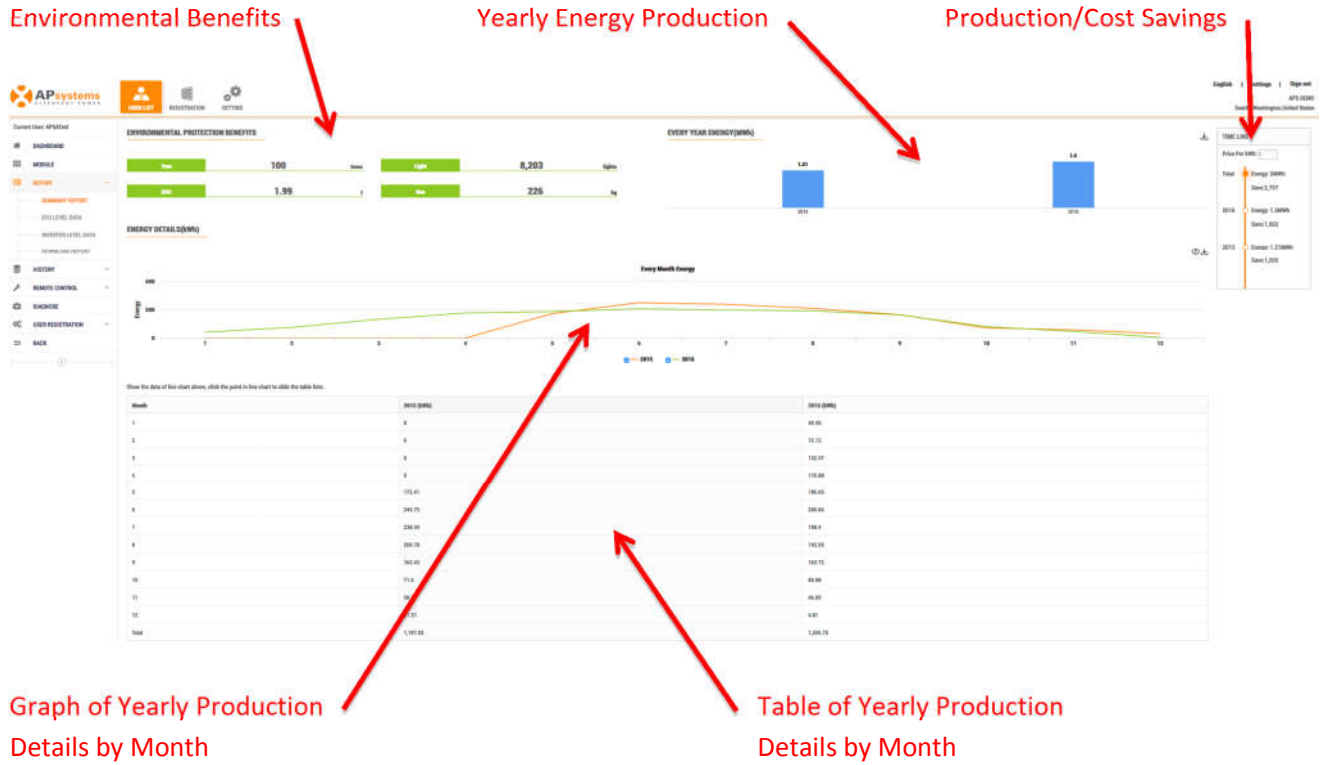
The sub-menu areas are displayed under "REPORT".



## Summary Reports

1) Select “SUMMARY REPORT” under “REPORT” in the left side bar.

The Summary Report page is displayed.

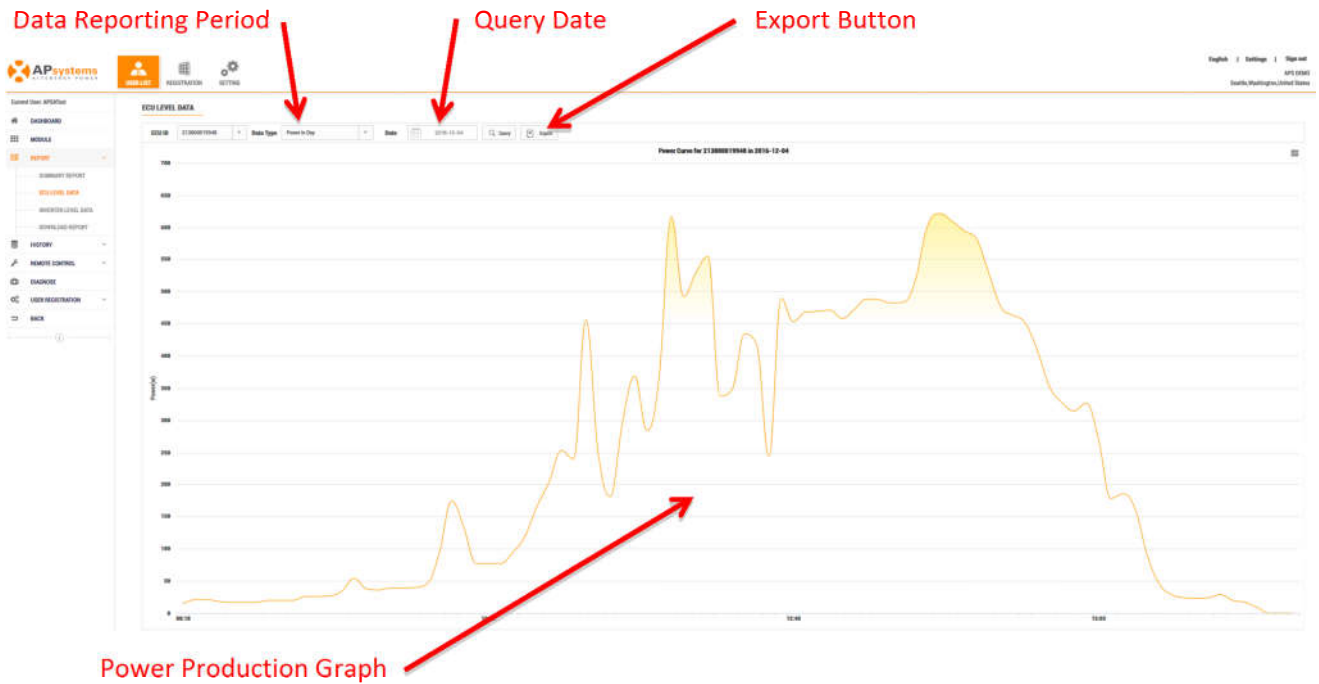


**Note:** The savings reflected in the Production/Cost Savings timeline are calculations based on the utility company’s price per kWh at this location. The price per kWh is entered in the “Price Per kWh” field in the timeline.

## ECU Reports

1) Select “ECU LEVEL DATA” under “REPORT” in the left side bar.

The ECU level data page is displayed.



### *Data Reporting Period*

Data reporting period; Power for the current day, daily power for the current month, monthly for the current year, and yearly for the lifetime of the system.

### *Query Date*

Select date you want to review.

### *Export Button*

Exports the data in a spreadsheet format.

### *Power Production Graph*

Graphic representation of the system’s power production over time.



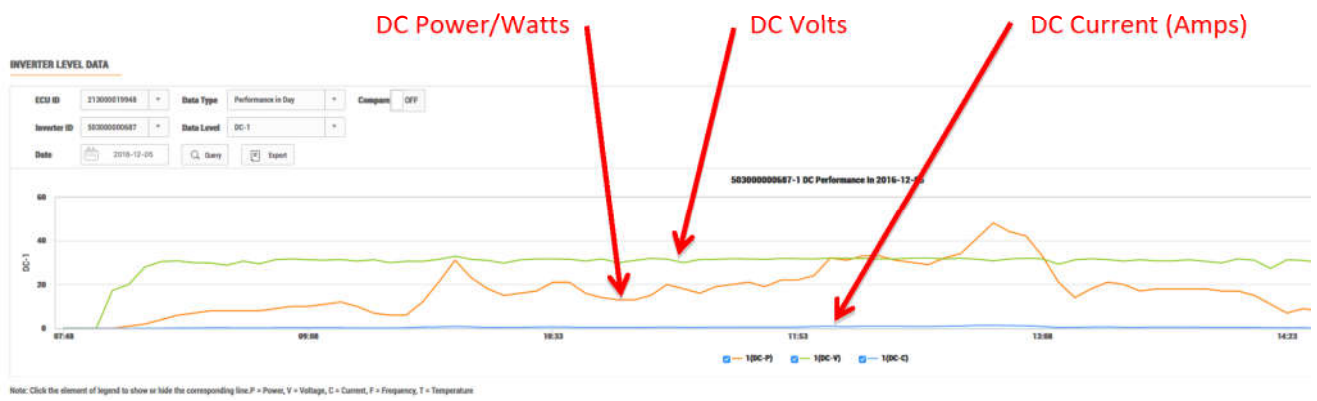


*Data Level* Pull-down field for selecting AC or DC data by channel.

*Data Graph* Graphic representation of the selected data types and data levels over time.

*Data Toggles* Used to toggle Data Levels graphs ON or OFF.

### Examples of Inverter Data Graphs



Note the following in the example above:

ECU ID: 21300019948 – Because of 213 prefix, it is a zigbee based ECU

Inverter ID: 50300000687 – Because of 503 prefix, it is a YC1000 inverter, which will have up to four (4) Channels identified as 1, 2, 3, and 4

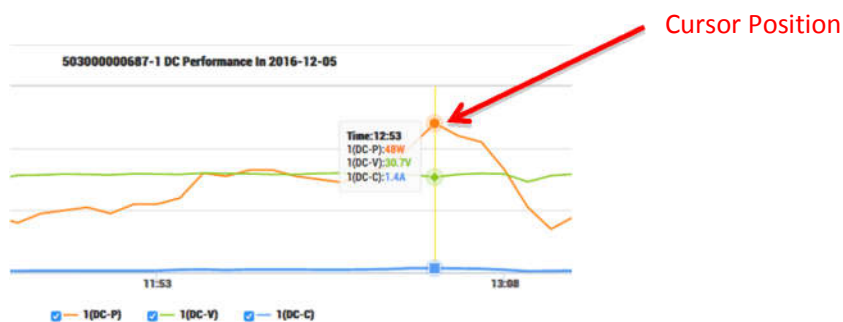
Query Date: Dec 5, 2016 (2016-12-05 in international date format)

Data Type: Power for the current day

Data Level: DC Power/Watts, Volts, Current (Amps)

Comparison: OFF (so only seeing one inverter channel and/or data level)

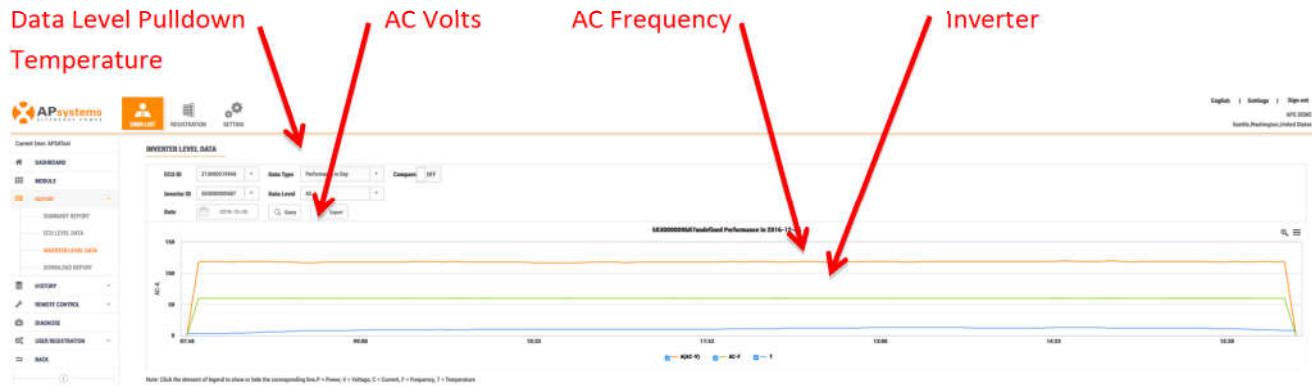
You can see power levels for a specific time by dragging the cursor along the graph.



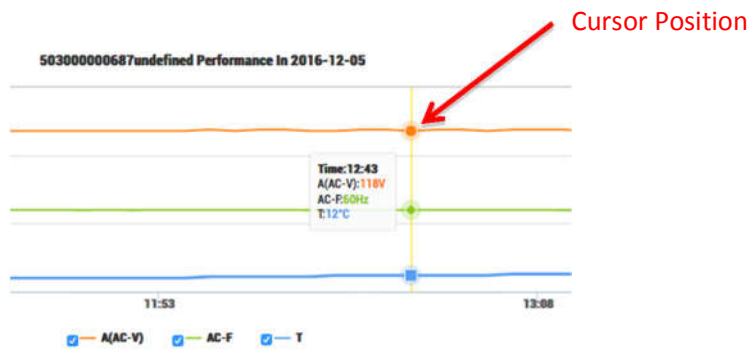
*Continued ...*

To view the AC (grid) parameters on the same channel for the same inverter:

- 1) Select "AC-1" in the "Data Level" pulldown.



You can see parameters for a specific time by dragging the cursor along the graph.



Continued ...

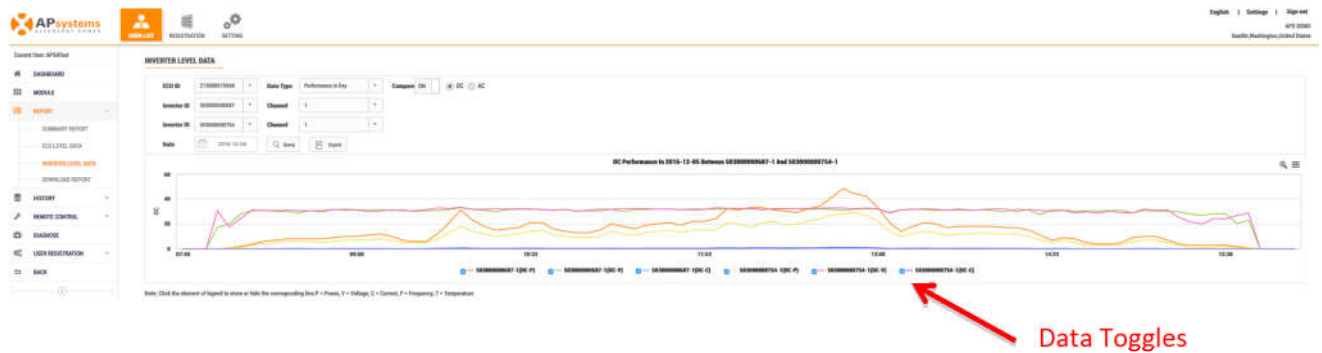
To compare the data levels for two different inverters:

- 1) Turn ON the “Compare” toggle.
- 2) Select the inverters you want to compare.

**Note:** You can select the same inverter and compare different channels if required.

- 3) Select the Channels you want to compare.
- 4) Select whether you want to compare DC or AC.

The graph with both inverter data levels is displayed.



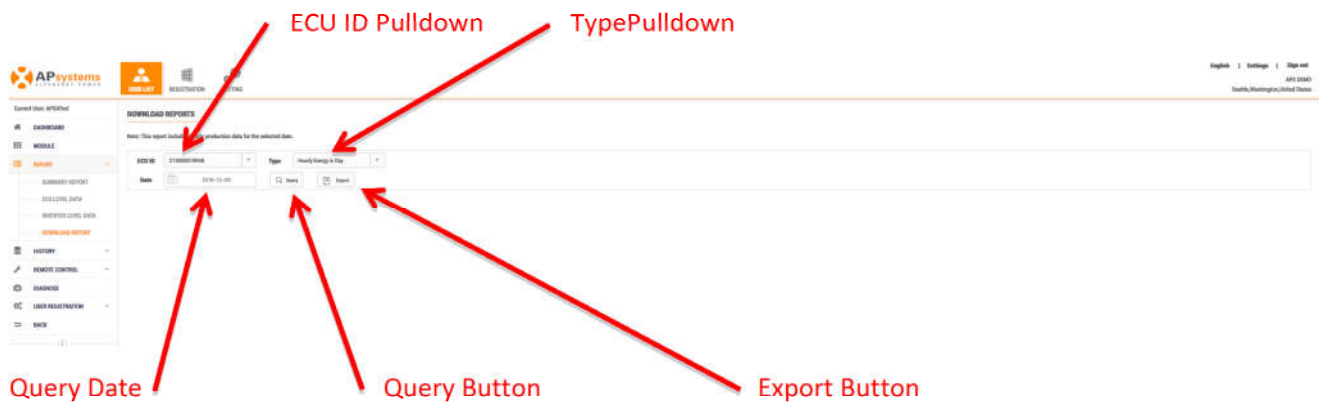
**Note:** You can toggle graph data elements ON and OFF by using the Data Toggles if needed for clarity of the data.

## Download Reports

The reports in this area are detailed numeric reports that can be exported to a spreadsheet.

1) Select “*DOWNLOAD REPORT*” under “*REPORT*” in the left side bar.

The Download Reports data page is displayed.



### *ECU ID Pulldown*

Pulldown field for viewing and selecting the ECU ID.

### *Type Pulldown*

There are a number of report “types” you can select.

- Hourly Energy for the day
- Detailed Daily Energy for a week (prior to the Query Date)
- Daily Energy for a specified period
- Daily Energy for a specified year
- Weekly Energy for a specified year
- Monthly Energy for a year
- Yearly Energy for the lifetime of the system

### *Query Date*

Select date, or data range where appropriate, you want to review

### *Query Button*

The Query Button activates the reporting process for the Type and Date(s) You have selected.

### *Export Button*

Exports the data in a spreadsheet format.

## Reviewing System Maintenance History

1. Log onto the APsystemsEMA website.

Your specific Customer List page is displayed.

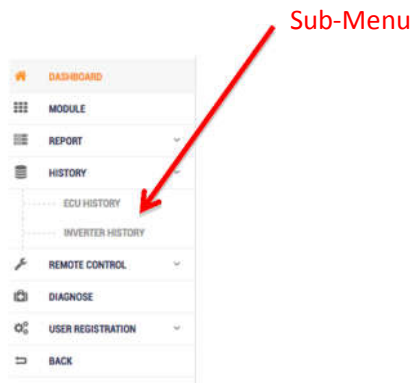
2. Select the customer you want to review from the customer list.

The installer's view of the customer's Dashboard is displayed.



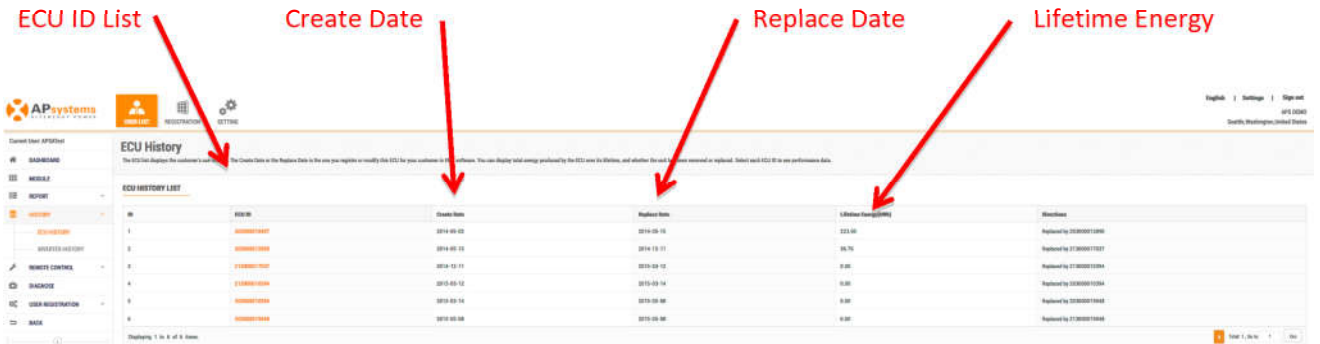
3. Select "HISTORY" in the left side bar.

The sub-menu areas are displayed under "HISTORY".



1) Select “ECU HISTORY” under “HISTORY” in the left side bar.

The ECU History page is displayed.



*ECU ID List* A list of all of the ECU that have been on the system.

*Create Date* The date the ECU was activated on the EMA.

*Replace Date* The date the ECU was replaced and edited on the EMA.

*Lifetime Energy* A history of the amount of energy (expressed in kWh) produced while the ECU was on the system.

**Note:** Clicking on the ECU ID in the ECU ID List allows you to review power production from the date the ECU was first activated on the EMA.





## Remote ECU Management

The ECU has been designed with remote connection and management functionality. You can access this remote functionality through the EMA website, using your installer login credentials. Changes made remotely through the EMA do not take affect until the ECU’s next reporting cycle.

**The ECU must first be installed with verified Power Line Communication [PLC] and Internet connectivity.**

Refer to the ECU Installation/User Manual for detailed ECU installation and operation instruction.

The ECU remote functionality allows you to do the following:

- Set the ECU Status
- Set Time Zones
- Manage Inverter UIDs

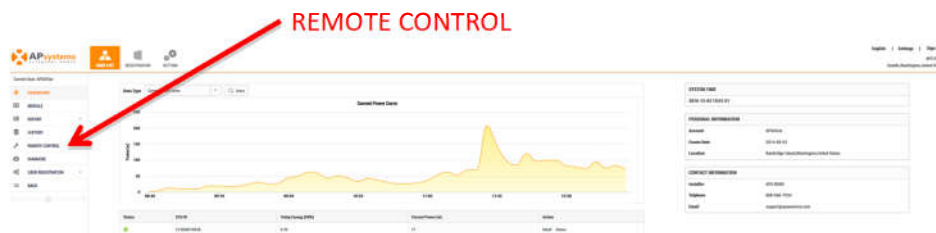
### Managing the ECU Remotely

1. Log onto the APsystemsEMA website.

Your specific Customer List page is displayed.

2. Select the customer you want to review from the customer list.

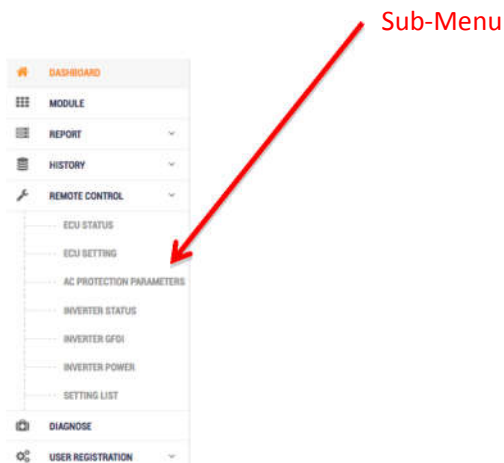
The installer’s view of the customer’s Dashboard is displayed.



3. Select “REMOTE CONTROL” in the left side bar.

The sub-menu areas are displayed under “REMOTE CONTROL” .

Continued ...

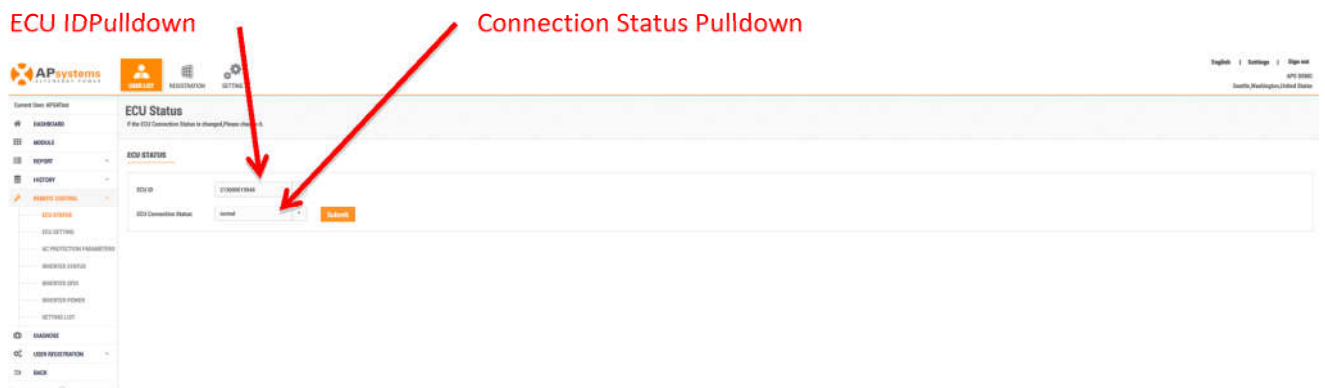


## ECU Status

Entering the ECU Status is for “information only”.

- 1) Select “*ECU STATUS*” under “*REMOTE CONTROL*” in the left side bar.

The ECU status page is displayed.

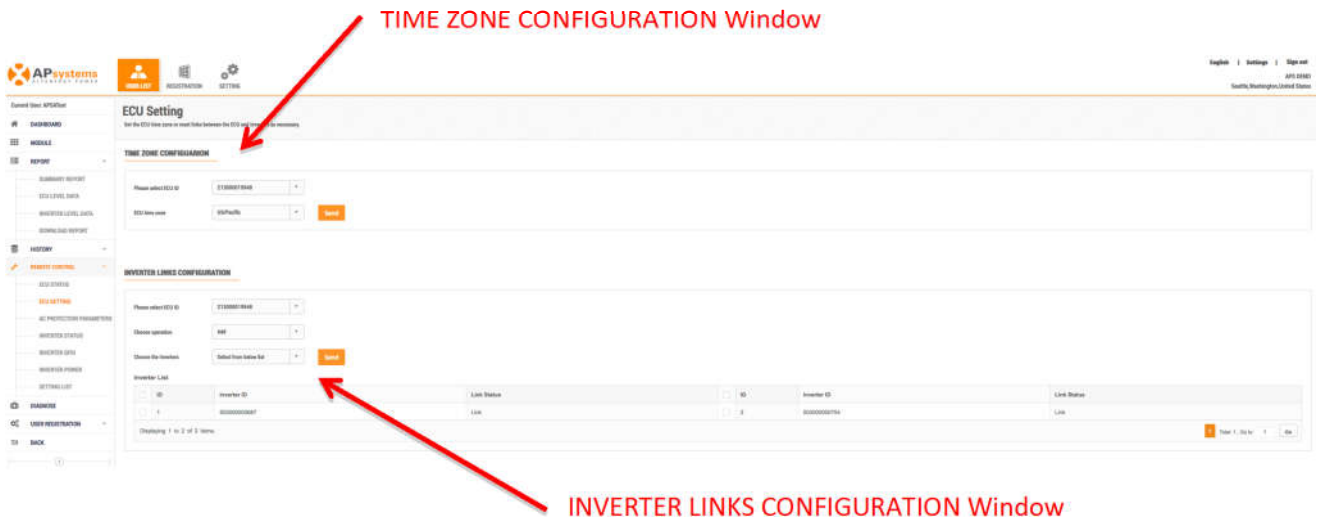


- 2) Select the ECU ID from the ECU ID pull-down.
- 3) Select the current connection station from the pull-down.
- 4) Press the “*Submit*” button.

## ECU Settings

1) Select “*ECU SETTINGS*” under “*REMOTE CONTROL*” in the left side bar.

The ECU settings page is displayed.



## Manage Time Zone

ECU ID Pulldown

ECU Time Zone Pulldown



- 1) Select the ECU ID from the ECU ID pulldown.
- 2) Select the correct time zone corresponding to the ECU's location.
- 3) Press the “*Send*” button.

## Manage Inverter Links

ECU ID Pulldown

Operation Pulldown

ID	Inverter ID	Link Status	ID
1	503000000687	Link	2

Inverter List

Choose the InvertersPulldown

- 1) Select the ECU ID from the ECU ID pulldown.
- 2) Select the operation (Add, Clear, or Delete) from the Operation pulldown.
- 3) Select the inverter from the Inverter List, or input the inverters.
- 4) Press the "Send" button.

## **AC Protection Parameters**

The AC protection parameters are preset at the factory, but can be adjusted to meet the specific local grid requirements.

- 1) Select "AC PROTECTION PARAMETERS" under "REMOTE CONTROL" in the left side bar.

The AC Protection Configuration page is displayed.

ID	Inverter ID	ID	Inverter ID
1	503000000687	2	503000000687

Parameter Fields

Inverter List

Choose the InvertersPulldown

Continued ...

- 2) Select the ECU ID from the ECU ID pulldown.
- 3) Enter the parameters that need to be adjusted.

**WARNING: Be extremely careful when adjusting these parameters. All APsystems microinverters are factory-set to inherently meet IEEE 1547 / UL 1741 by-design and do-not require adjustment by the site owner or installation team. APsystems microinverters monitor voltage disturbances, frequency disturbances, loss of synchronization and/or loss of phase. If required, please consult your local Authorities Having Jurisdiction (AHJ) and APsystems Technical Support before adjusting any parameters.**

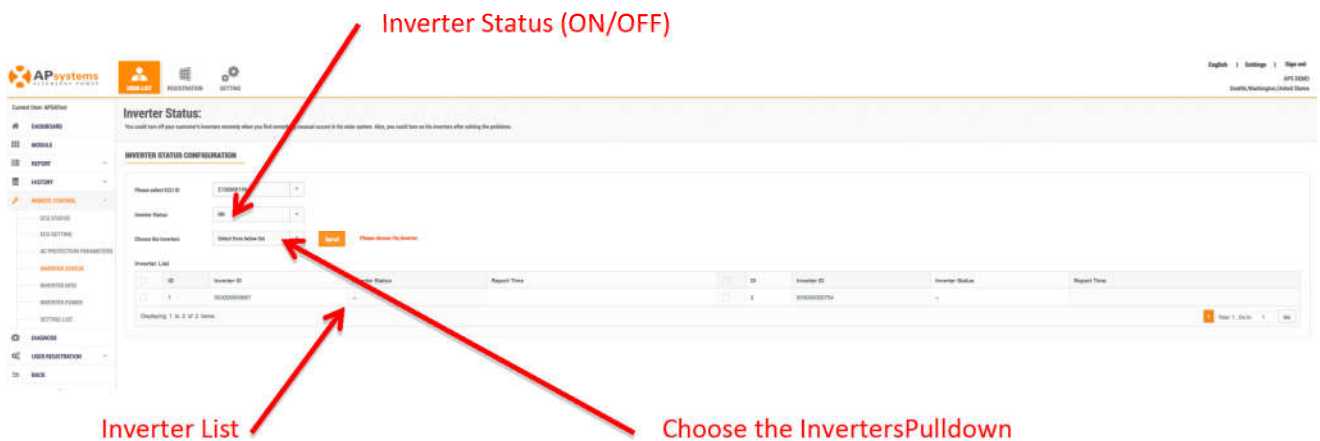
- 4) Using the “Choose the Inverters” pulldown, decided whether you want to adjust all of the inverters, or specific ones from the Inverter List.
- 5) Press the “Send” button.

### Inverter Status

The Inverter Status area is for turning ON and OFF the inverters.

- 1) Select “INVERTER STATUS” under “REMOTE CONTROL” in the left side bar.

The Inverter Status page is displayed.



- 2) Select the ECU ID from the ECU ID pulldown.
- 3) Select either ON or OFF.
- 4) Using the “Choose the Inverters” pulldown, decide whether you want to turn ON or OFF all of the inverters, or specific ones from the Inverter List.
- 5) Press the “Send” button.



The screenshot shows the 'Setting List' interface for 'ECU CONTROL COMMAND LIST'. The table below is a representation of the data shown in the image:

#	Command	Send Time	Reply Time
1	Reset Leds Configuration	2016-01-13 08:40:10	2016-01-13 08:40:27
2	Reset Leds Configuration	2016-01-13 08:26:07	2016-01-13 08:26:24

Labels with red arrows pointing to the table columns:

- Command List (points to the Command column)
- Send Time (points to the Send Time column)
- Reply Time (points to the Reply Time column)

*Continued ...*

- 2) Select the ECU ID from the ECU ID pulldown.
- 3) Select the command that you want confirmed from the Command pulldown.

The Send and Reply times are displayed once the commands have been sent and received.

**Note:** It can take a few reporting cycles for the commands to be reflected in the monitoring sections of the EMA.

## Managing Your Installer Account Information

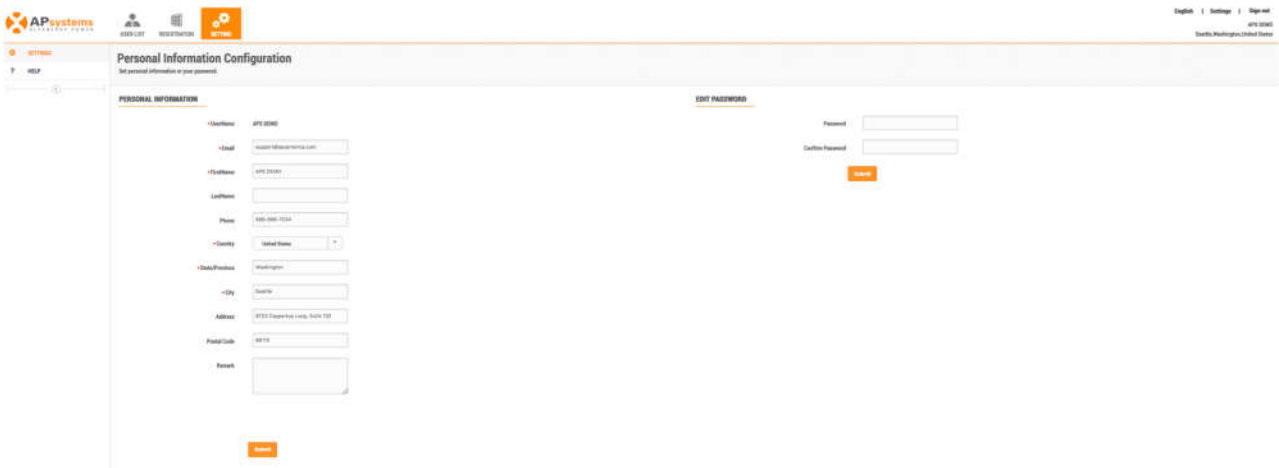
1. Log onto the EMA.

Your specific Customer List page is displayed.



2. Select either the "Setting Icon" or "Setting" tab (they both do the same thing).

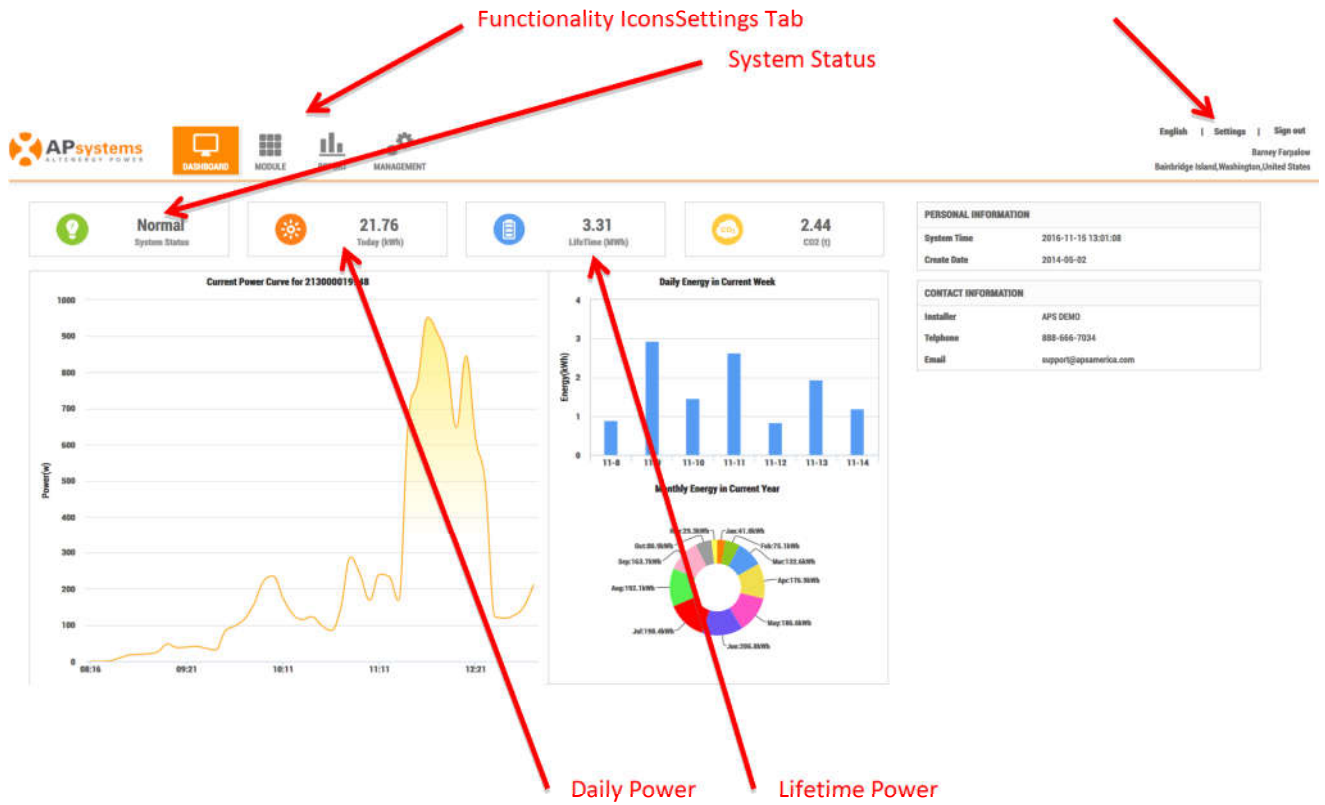
The Installer Account Personal Information Configuration page is displayed.



3. Edit the Personal Information form, or change your password.
4. Press the "Submit" button.




# Introduction to Your Customer's System Dashboard




**Functionality Icons**

Select area of the EMA site that you want to review: DASHBOARD, MODULE, REPORT, or MANAGEMENT.

**System Status**

Green  (Normal) – The system is operating and reporting as expected.

Grey  (No Data) – There is a system malfunction that should be investigated. No Production data is being communicated to the EMA server. Check the ECU connection to see if you can isolate the problem. If not, contact your installer.

**Settings Tab**

Where you can change your personal information, including your password.

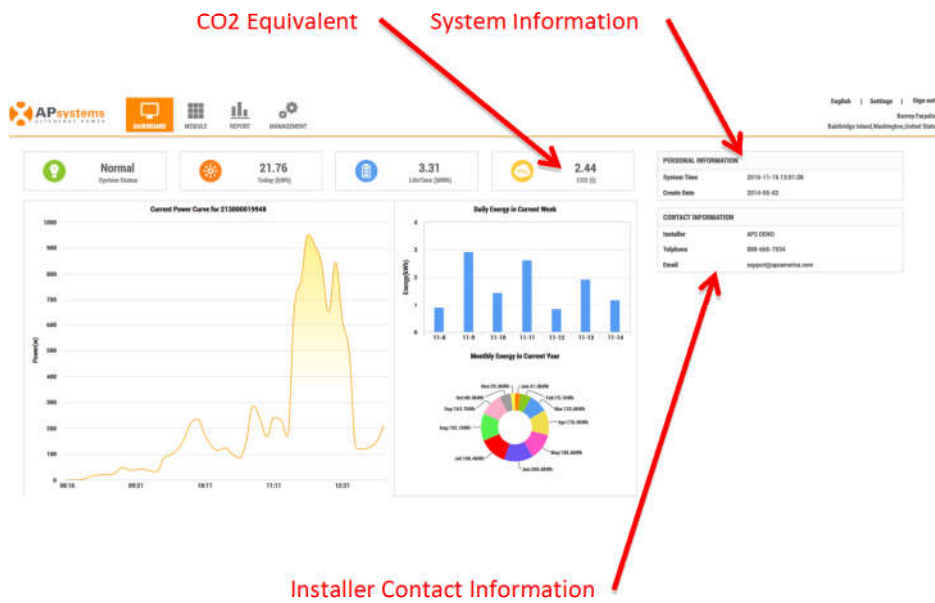
**Daily Power**

The amount of power generated during the current day.

**Lifetime Power**

The amount of power the system has generated during its lifetime.

Continued ...



*CO2 Equivalent*

The equivalent amount of CO2 (expressed in tons) benefit the system has provided in its lifetime.

*System Information*

The current date and time for the system, and the date the original account was created.

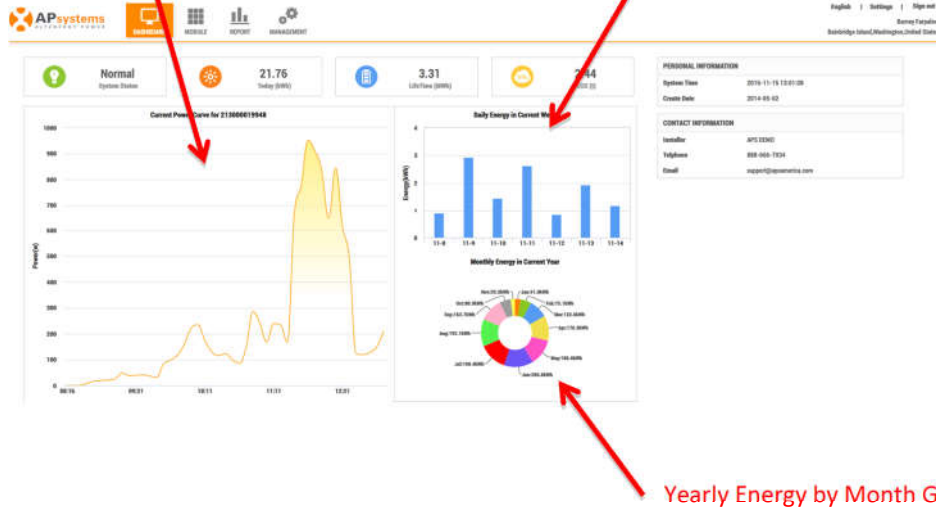
*Installer Contact Information*

Your installer’s company name, phone number and email address.

Continued ...

Current Daily Power Graph

Current Weekly Energy Graph



Yearly Energy by Month Graph

*Current Daily Power Graph*

Graphic representation of the power being generated during the current day.

*Current Weekly Power Graph*

Graphic representation of the energy that has been generated each day during the current seven day period.

*Yearly Energy by Month Graph*

Graphic representation of the energy that has been generated each month during the last 12 month period.