



User Guide -- System Owner

Online Energy Monitoring & Analysis (EMA)

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The APsystems EMA, our robust wireless Energy Monitoring and Analysis software, enables comprehensive, web-based monitoring that analyzes and reports the performance of each module in your solar array. This real-time data can be accessed from any web-connected device, anywhere, anytime.

Unlike conventional “string” inverter monitoring, the APsystems EMA allows users to view each individual module and microinverter in the solar array, for more detailed performance data and improved troubleshooting.

Networked with the advanced APsystems ECU, the APsystems EMA promptly detects any performance issues in your solar array, pinpointing the location and nature of the problem and providing precise guidance for necessary maintenance, all within our user-friendly graphic interface.

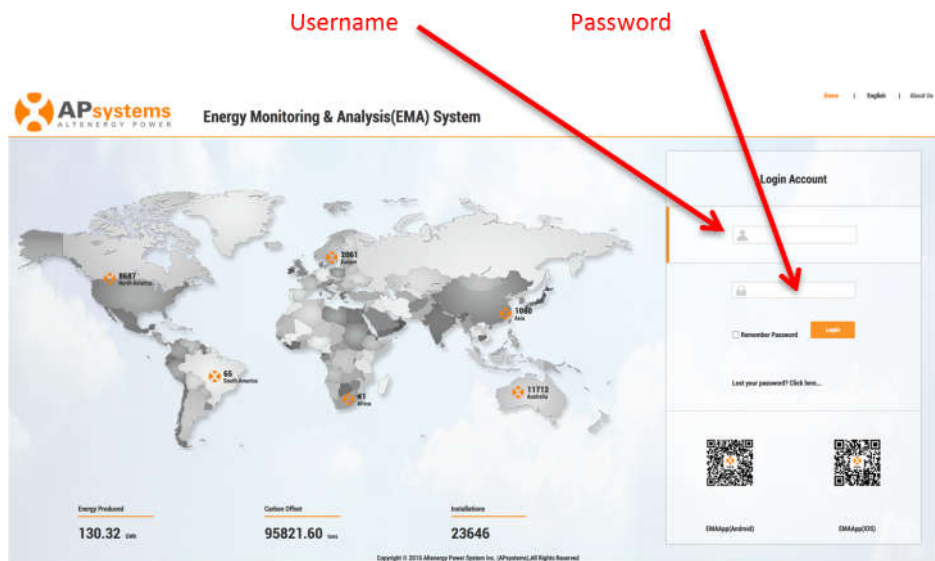
Features

- Monitors and allows analysis of each solar module and microinverter
- Allows remote access to the solar array
- Shows performance issues and alerts the user to inverter events
- Communicates in real time

To Log onto EMA Website

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

The APsystems EMA Login page is displayed.



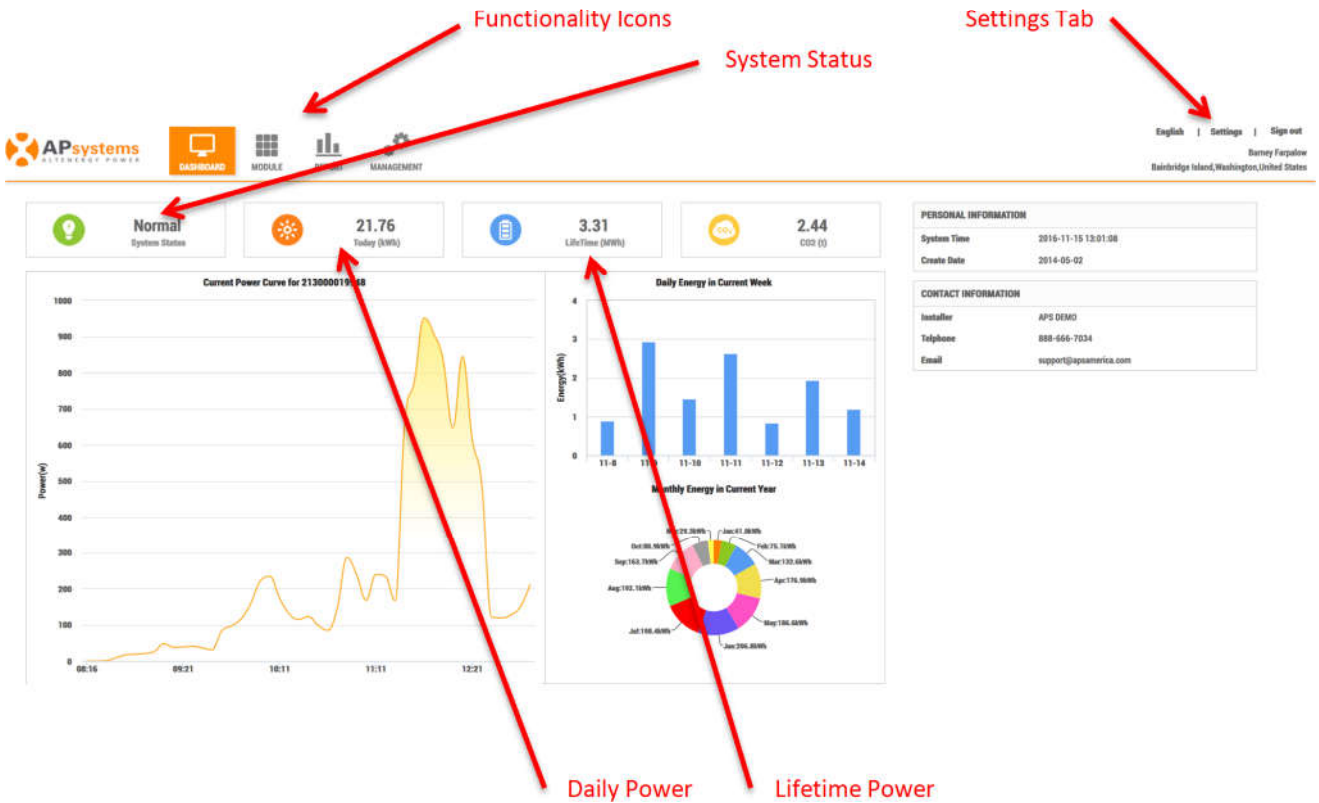
2. Enter your "Username" and "Password".

Note: The Password is case sensitive.

3. Press the "Login" button.

Your system's Dashboard is displayed.


Introduction to Your 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.

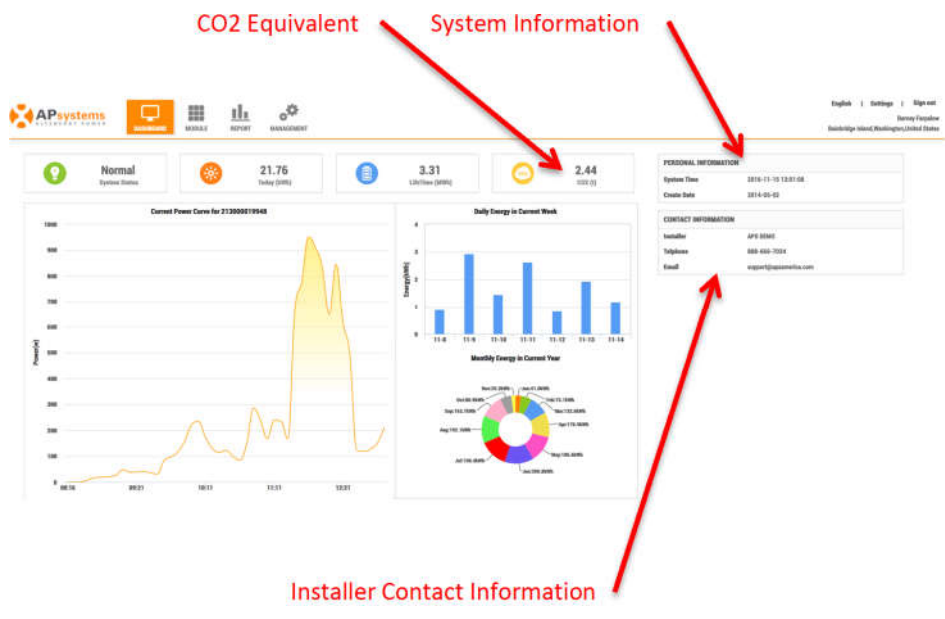
Daily Power

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

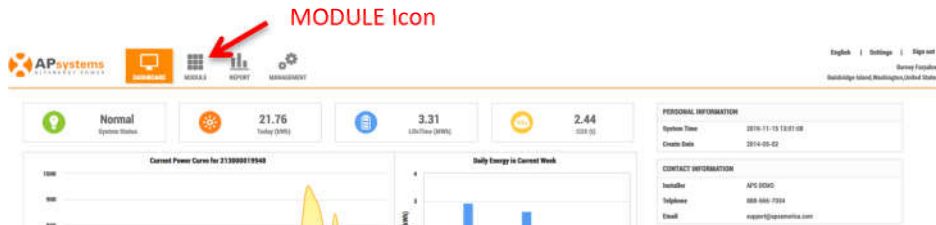
Graphic representation of the energy that has been generated each day during the current seven day period.

Yearly Energy by Month Graph

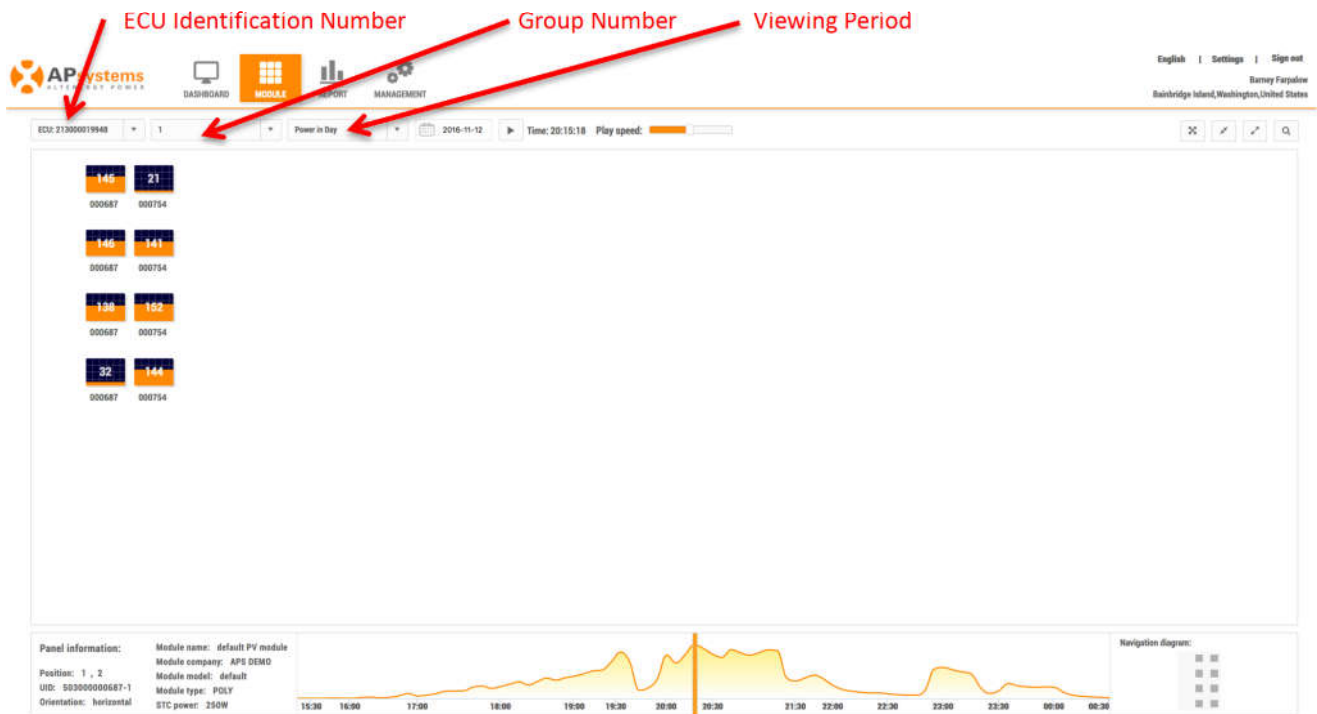
Graphic representation of the energy that has been generated each month during the last 12 month period.

View Individual Module Performance

1. Select the “MODULE” icon at the top of the page.



The Module Performance page is displayed.



ECU Identification Number (UID)

The ECU number that is assigned to your system.

Group Number

Select the number for the “group” you want to view. Depending on the complexity of the panel/module layout, your installer may have designed your system with multiple groups.

Viewing Period

Module performance can be viewed daily, or over the last 30 day period.

Introduction to Module Performance



Panels/Modules A graphic representation of how your array is laid out. The number in the center of each module represents the current power being generated by the panel (expressed as watts - DC). You can identify the inverter assignment of each panel by selecting (clicking on) the panel you want to identify.

Note: The power being generated by each panel will vary based on the amount of solar exposure.

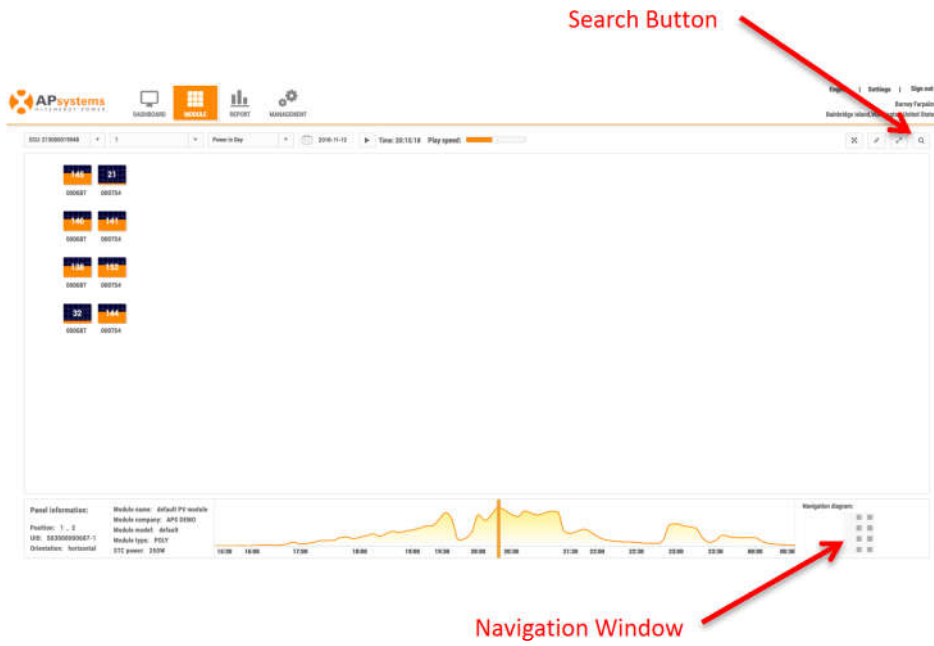
Query Date You can select the date you want to view.

Timeline Controller The timeline controller turns ON and OFF the System Performance Timeline at the bottom of the page.

Playback Speed A slider control that allows you to determine the speed of the System Performance Timeline playback.

System Performance Timeline Graphic representation of the power being generated by the entire system during the current viewing period.

Time Marker Time indicator for timeline. Power is simultaneously displayed on the panels/modules. You can also drag the marker across the timeline to view a specific production time.

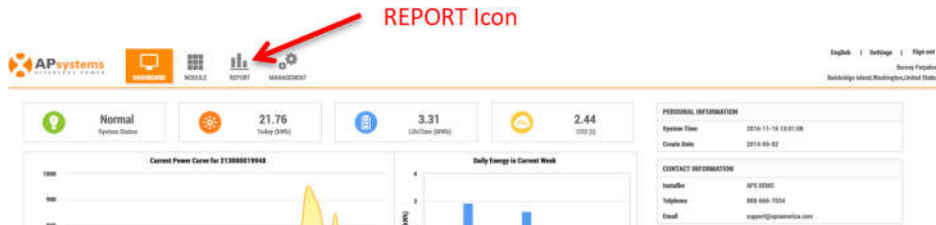


Search Button Allows you find a specific inverter (using its UID) on your array.

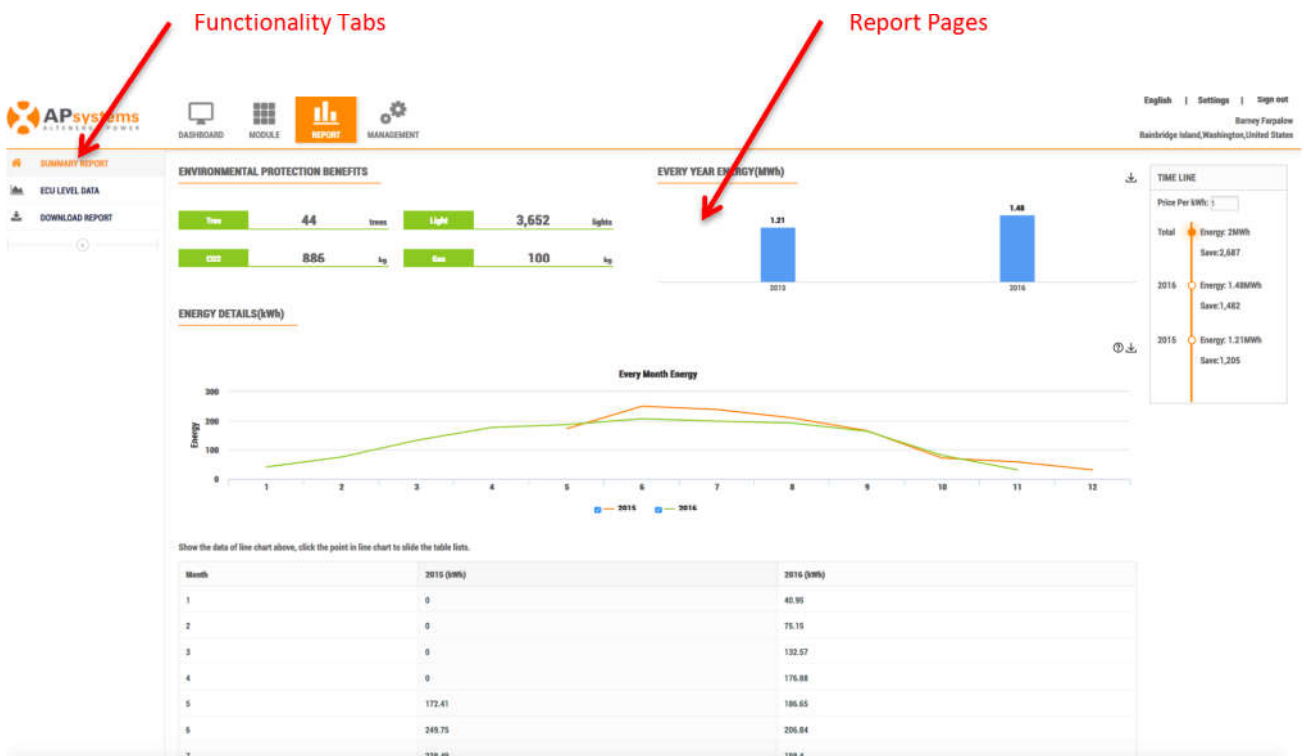
Navigation Window Used with arrays that are larger than will fit on a single module page.

View System Reports

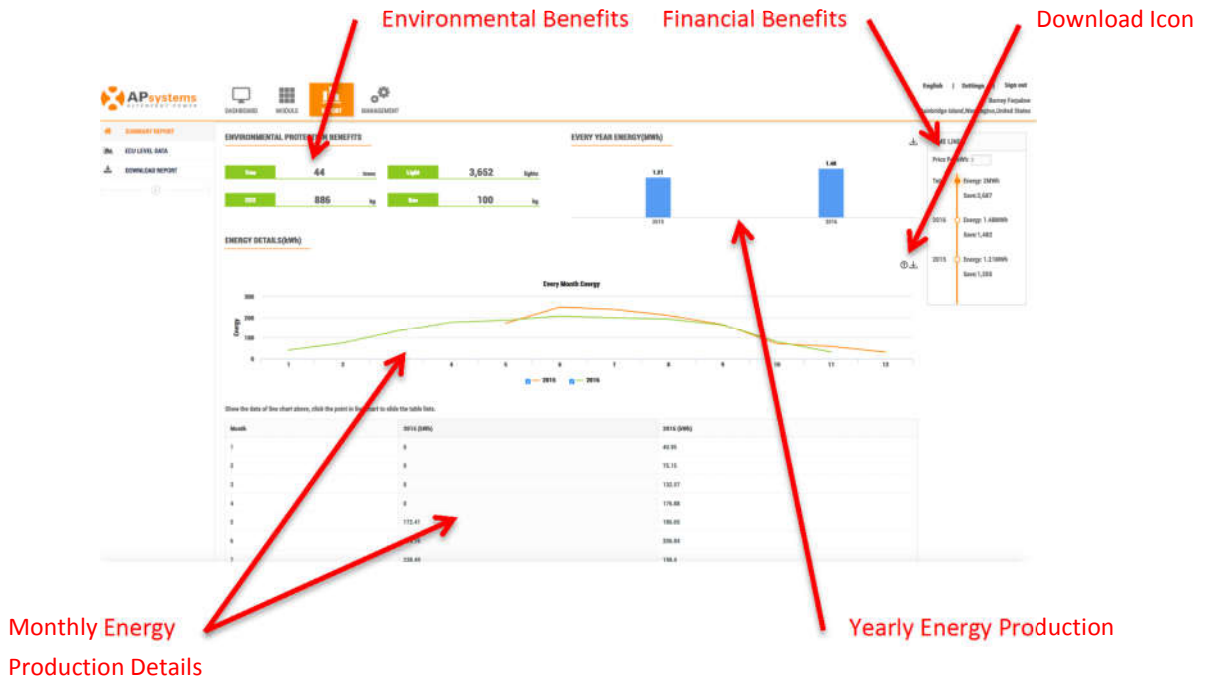
1. Select the "REPORT" icon at the top of the page.



The Summary Report page is displayed.



Introduction to System Reports

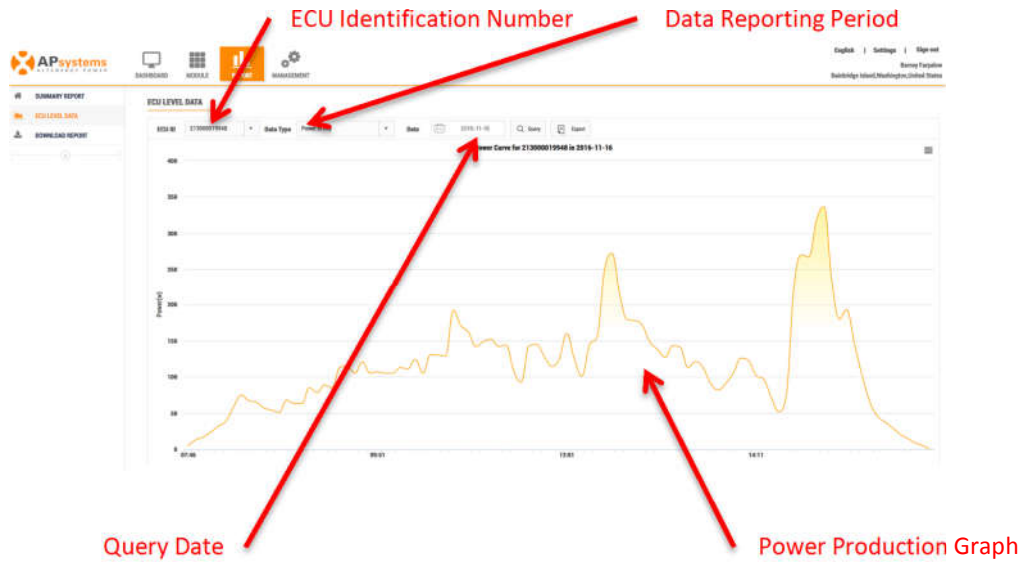


Summary Report

- Environmental Benefits** Represents environmental equivalent benefits.
- Financial Benefits** Calculates and represents financial benefits based on your specific utility's cost per kilowatt.
- Monthly Energy Production Details** Both graphic and table views of monthly production details for 12 month period
- Yearly Energy Production** Graphic representation of yearly power production.

Note: You can download the reported data by selecting the "Download Icon".

ECU Level Data



ECU Identification Number (UID)	The ECU number that is assigned to your system.
Data Reporting Period	Pulldown for selecting reporting period and specific data type .
Query Date	You can select the date you want to view.
Power Production Graph	Graphic representation of the selected reporting period and data type.

Download Report

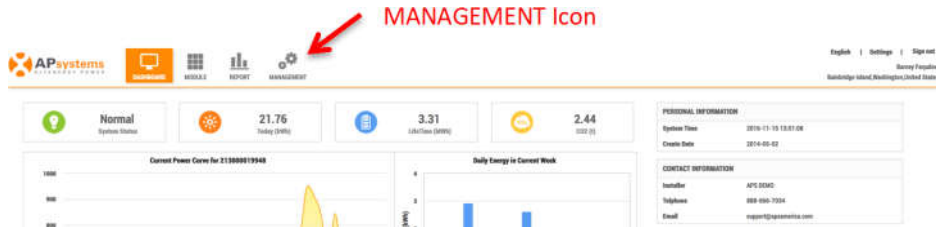
The screenshot shows the 'DOWNLOAD REPORTS' interface. At the top, there are navigation icons for 'ACCOUNT', 'RESULTS', and 'MANAGEMENT'. The main content area includes a 'Note: This is a report on the energy hour usage in selected data.' Below this, there are three input fields: 'ECU ID' (set to '21200071946'), 'Type' (set to 'Hourly Energy in Day'), and 'Date' (set to '2018-11-30'). Below these fields is a table with columns 'Hour' and 'Energy(kWh)'. The table contains 24 rows of data, with values ranging from 0 to 0.1 kWh.

Hour	Energy(kWh)
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0.0001
8	0.00
9	0.01
10	0.10
11	0.14
12	0.18
13	0.12
14	0.10
15	0.1

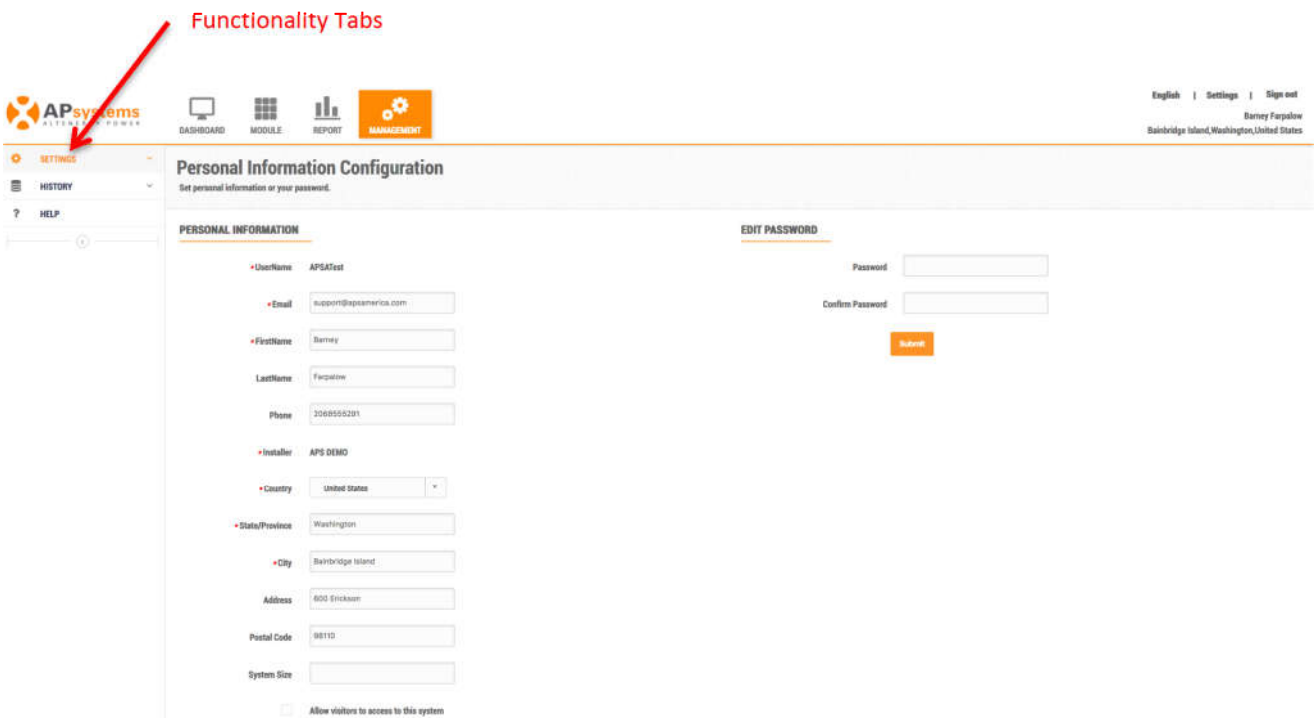
- ECU Identification Number (UID) The ECU number that is assigned to your system.
- Data Reporting Period Pulldown for selecting reporting period and specific data type .
- Query Date You can select the date you want to view.
- Data Table Table view for the selected reporting period and data type.

View System Management

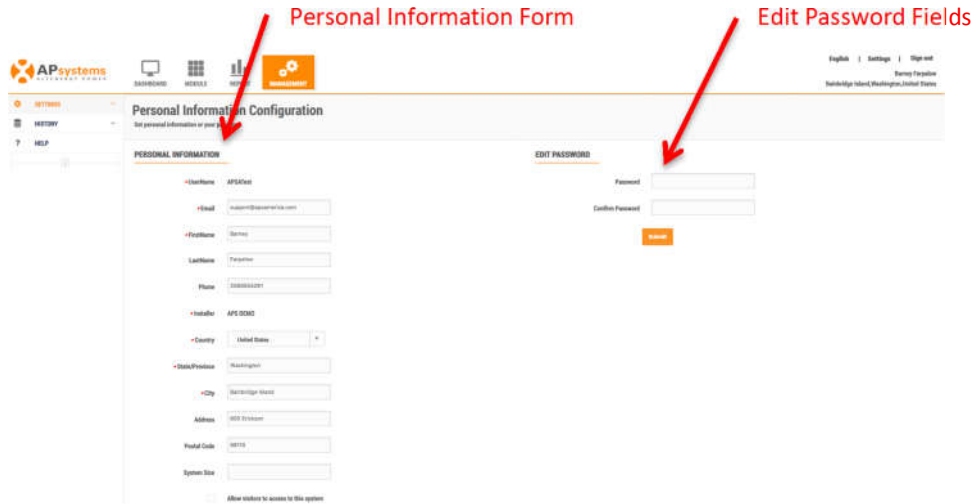
1. Select the "Management" Icon at the top of the page.



The Settings page is displayed.



Introduction to System Management



Settings

Personal Information Form

Edit any of your personal information (except for your Username). Contact your installer if you need your username changed.

Edit Password Fields

Edit your password.

History – ECU History

ECU Maintenance History

The ECU list displays the customer's use records. The Create Date or the Replace Date is the one you register as ready for use for your customer in ERM software. You can display total energy produced by the ECU over its lifetime, and whether the unit has been removed or replaced. Select each ECU ID to see performance data.

ID	ECU ID	Create Date	Replace Date	Lifetime (Energy/kWh)	Shutdown
1	0000000001	2014-05-02	2014-05-10	225.90	Replaced by 0000000002
2	0000000002	2014-05-10	2014-12-11	30.70	Replaced by 0000000003
3	0000000003	2014-12-11	2015-03-12	0.00	Replaced by 0000000004
4	0000000004	2015-03-12	2015-03-14	0.00	Replaced by 0000000004
5	0000000004	2015-03-14	2015-05-08	0.00	Replaced by 0000000004
6	0000000004	2015-05-08	2015-05-08	0.00	Replaced by 0000000004

Displaying 1 to 6 of 6 items. Page 1 of 1

History – Inverter History

Inverter Maintenance History

The Inverter list displays the customer's use record. The Create Date or the Replace Date is the one you register as ready for use for your customer in ERM software. Click on the Inverter ID, you could get more details of this Inverter.

ID	Inverter ID	Create Date	Replace Date	Shutdown
1	0000000001-0	2014-05-02	2014-03-12	Replaced by 0000000001-0
2	0000000002-0	2014-05-02	2014-12-09	Delete
3	0000000003-0	2014-05-02	2014-08-09	Delete
4	0000000004-0	2014-05-02	2014-12-09	Delete
5	0000000001-0	2014-05-02	2014-12-09	Delete
6	0000000001-0	2014-05-02	2014-12-09	Delete
7	0000000003-0	2014-05-02	2014-08-09	Delete
8	0000000003-0	2014-05-02	2014-08-09	Delete
9	0000000007-0	2014-05-02	2014-12-09	Delete
10	0000000003-0	2014-05-02	2014-12-09	Delete
11	0000000003-0	2014-05-02	2014-03-12	Delete
12	0000000001-0	2014-05-02	2014-12-09	Delete
13	0000000002-0	2014-05-02	2014-12-09	Delete
14	0000000001-0	2014-05-02	2014-12-09	Delete
15	0000000001-0	2014-05-02	2014-12-09	Delete

Displaying 1 to 15 of 15 items. Page 1 of 1

Help

FAQ

Get some help.

- How do I change my personal information?**
 - Enter ERM.
 - Click "MANAGEMENT" or "Settings" at the upper right corner of your ERM page. Change your personal information.
 - Click "Submit" at the bottom of the page to save your changes.
 - Note: The information has marked with an "*" are required to be filled in. If these fields are blank, you are not able to save the modified information.
- How do I change my password?**
 - Enter ERM.
 - Click "MANAGEMENT" or "Settings" at the upper right corner of your ERM page, you'll find the "Modify Password" fields.
 - At the right side of the page, type in your new password and confirmed password at the "Modify Password" fields.
 - Click "Submit" to save your change.
 - Note: Please make sure your email address is correct as you will receive your new password via email.
- Where can I get my installer's contact information?**

Your installer's contact information is located on the lower right corner of each page of your ERM. If you have any questions, please contact your installer.