GreenPowerMonitor
a DNV company

GPM PORTAL

User Guide

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GPM Portal User Guide

Disclaimer

The content of this document is not representative of every product configuration. Each product instance is configured to meet the needs of the intended users, who may or may not require certain features and options. Therefore, the features and options covered in this document may differ from those available on your product configuration.

Conventions

Typographical conventions

UI control	User interface controls, commands, and keywords in body text.
Blue-bold	Option in a menu.
Input field	Input field where user input is expected.
Underline	Link to another section of the guide.
`monospace`	Snippets of code that the user must input or can use as a reference.
<...>	Generic parameters that must be replaced by specific code or text.
[...]	Generic parameters that are replaced by dynamic text.

Notes and recommendations

ⓘ NOTE: Designates a note or reference related to the surrounding text.

BEST PRACTICE: Designates a usage recommendation related to the surrounding text.

⚠ CAUTION: Designates a warning or alert related to the surrounding text. You should exercise caution to avoid an undesirable outcome.

Get Started

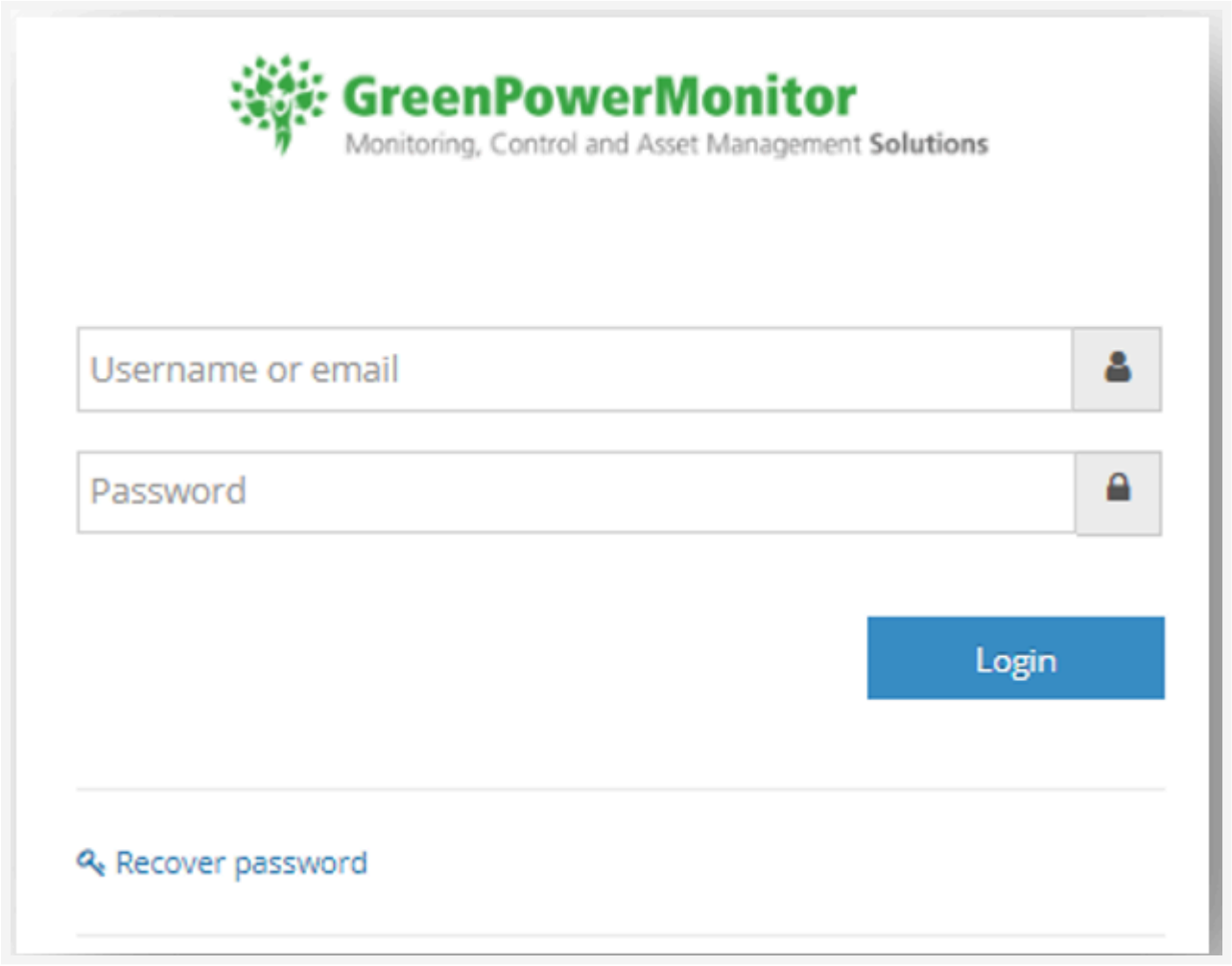
This section contains the information that you need to start using GPM Portal.

Platform Access

To access the web platform, you will need a user name and password. If you do not have these credentials, contact your supplier so it can provide you with these IDs. Visit https://gpmportal.greenpowermonitor.com on your web browser.

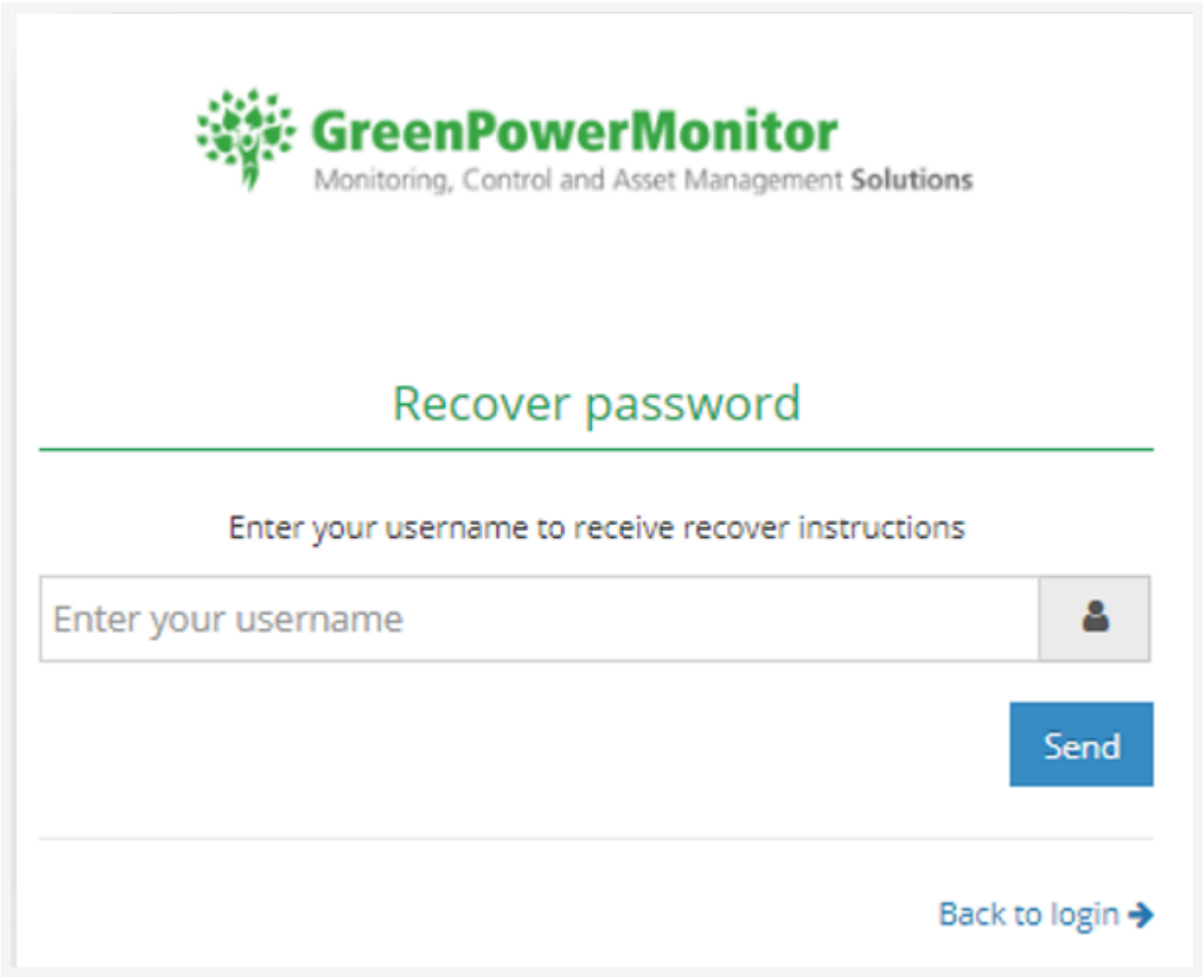
First, enter your username and the GPM Portal password to log in. If prompted by your browser, click on "Remember" to save your username and password for future log ins.

Portal login screen



If you forget your password, click on "Recover Password". This sends a recovery link to your email so you can set a new password.

Portal Password Recovery screen

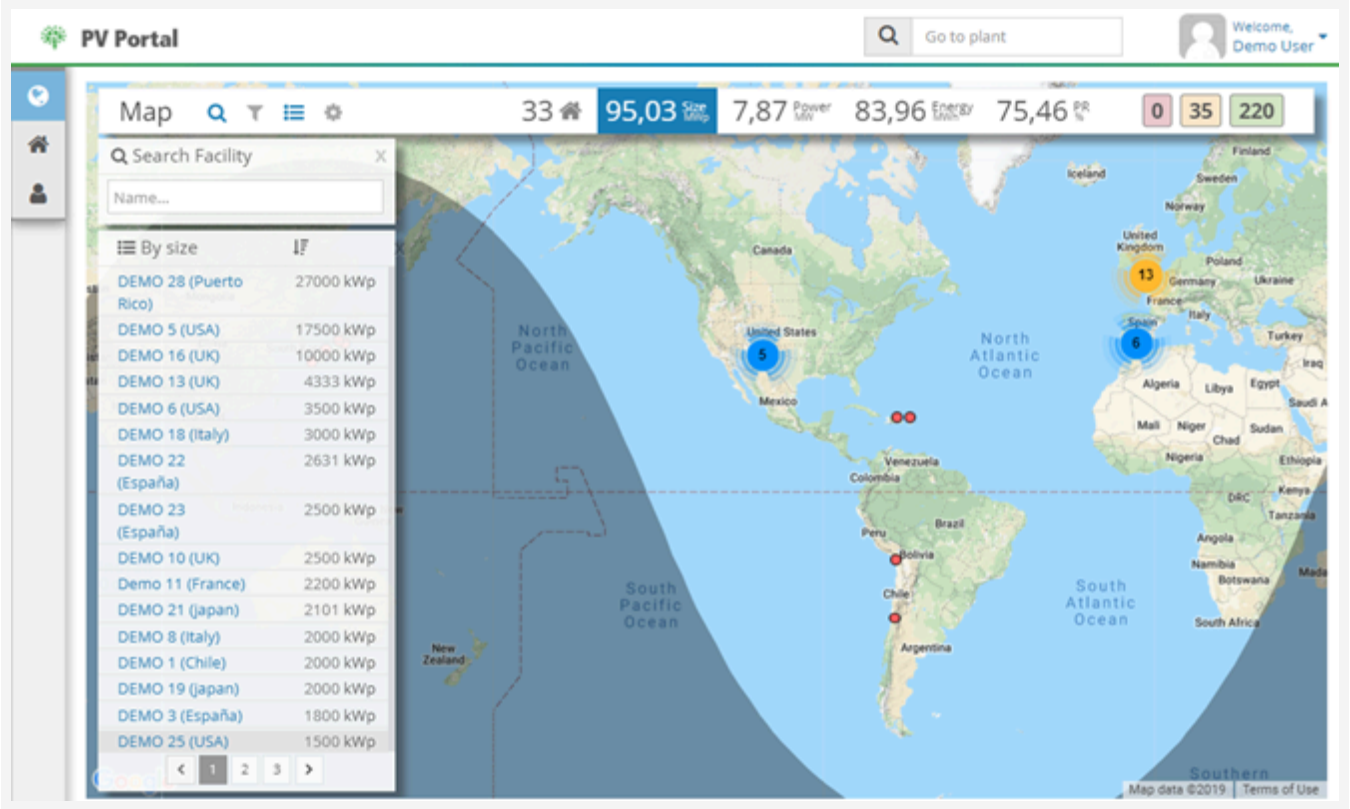


Tool Structure

GPM Portal is a tool composed of layers. These layers allow users to work at the portfolio, facility or system level, according to their needs. For this, the facility is defined as the specific administrative unit and the client portfolio as the general administrative unit.

You can find the general administrative tools are at portfolio level. The analysis and detail tools are available in each of your facilities.

Main screen



The upper portion of the screen is called the **upper bar**. Below it, you can find the main **content area**, and to the left, the **contextual toolbar**.. The next module explain these sections in more detail.

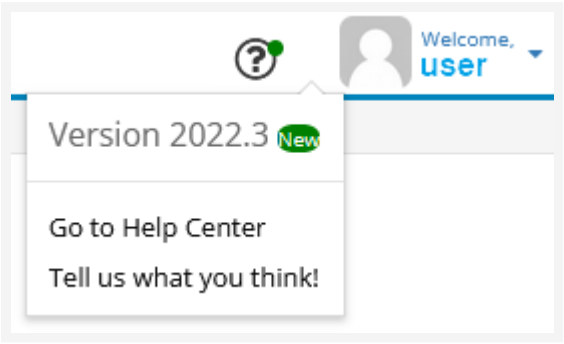
Upper Bar

The upper bar shows in the upper right corner the user name for the account who opened the session on the platform. To the left of the user name, there is a **search bar** that you can use to look for facilities.

Help

To access the Help menu, click the icon. A drop-down menu appears:

User options



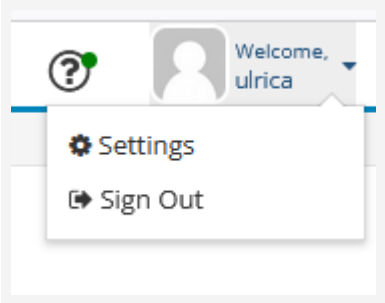
There are three options:

- **Version**: Displays the current version of GPM Portal. Click to open the version release notes.
- **Go to Help Center**: Click to open the GPM Portal user guide in the GreenPowerMonitor Help Center.
- **Tell us what you think!**: Click to fill out a quick survey to give us your feedback on GPM Portal.

User options

To access user options, click on the user name. A drop-down menu appears:

User options menu



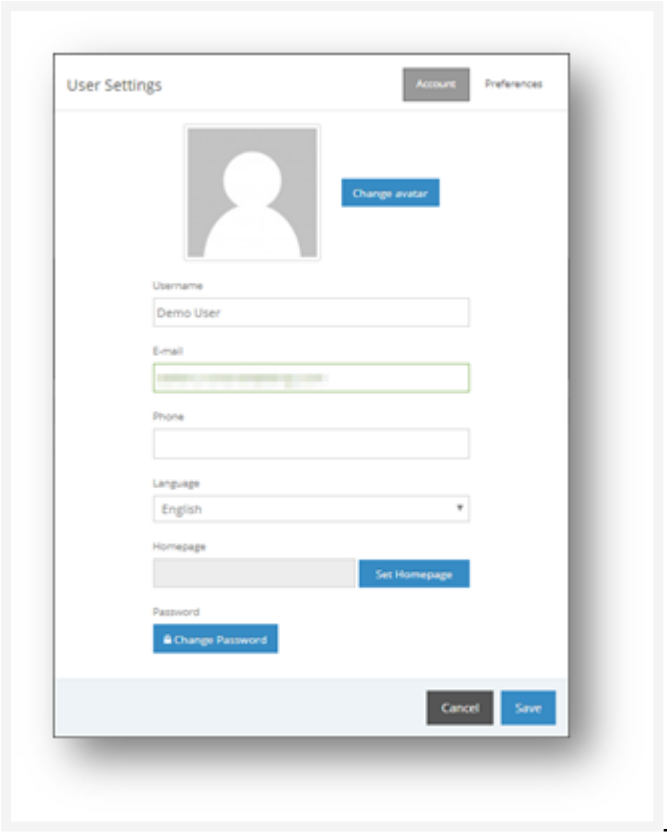
There are two options:

- **Settings:** Allows you to configure your user and platform preferences.
- **Sign out:** Logs out and takes you back to the log in window.

Settings

The Settings screen contains two tabs: **Account** and **Preferences**

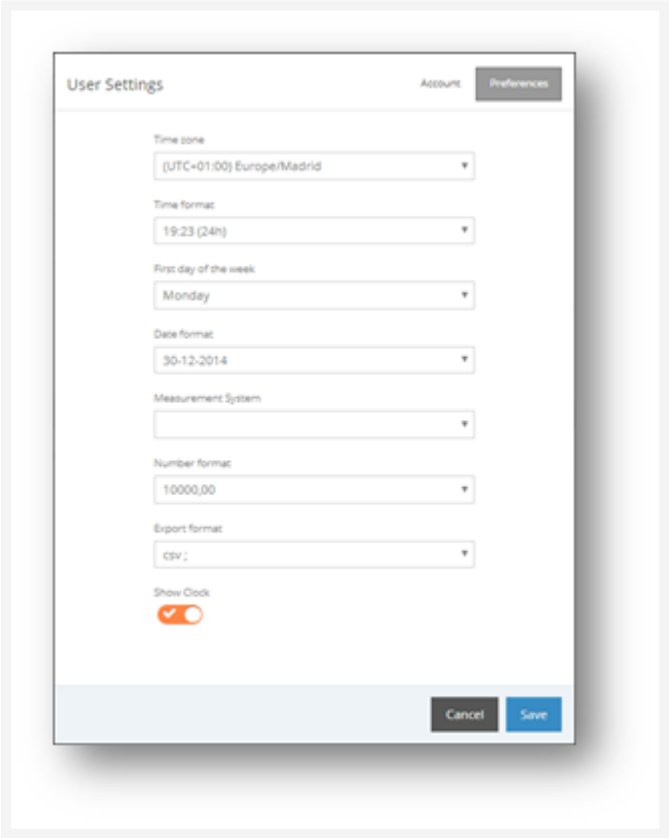
User Settings - Account



The **Account** screen shows the following:

- Avatar: Use the provided link to Gravatar free service to link an email account with a profile picture.
- Username: Your username.
- E-mail notifications: Define the email where you wish to receive platform notifications.
- Phone: Enter your phone number.
- Language: Set your language preferences.
- Homepage: Set your homepage. The application loads this page every time you log in.
- Change Password: Allows the platform access password to be changed.

User Settings - Preferences



The **Preferences** screen shows the following:

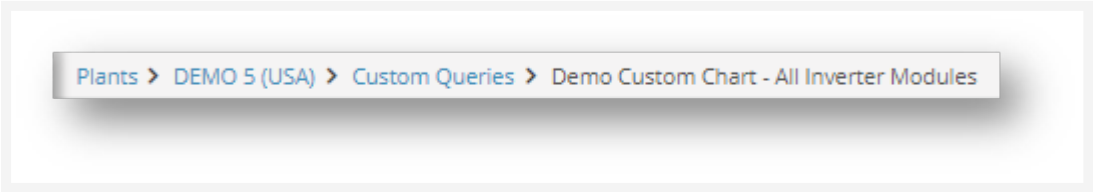
- Time Zone: Set your time zone.
- Time Format: Define your preferred time format.
- First day of the week: Select the starting day of the week.
- Date Format: Define your preferred date format.
- Measurement System: Select between metric or imperial system.
- Number Format: Set your preferred punctuation usage.
- Export format: Set the export format and the separator used in the exported file. Available options are:
  - Comma-separated CSV
  - Semi-colon-separated CSV
  - XLS
- Show Clock: Display the plant's local date and time on the plant dashboard.

Content Area

The Content Area is split into two sections: the navigation bar and a central zone.

The navigation bar contains a breadcrumb that helps you understand where you are in the application. You can quickly navigate to parent locations by clicking the hyperlinks in the breadcrumb:

Navigation Bar



Portfolio goes back to the initial Facilities Portfolio window.

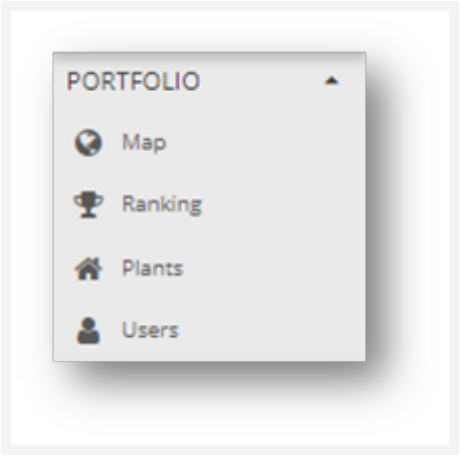
Click on any of the links in the navigation bar to be directed to this section. This updates the central zone with any relevant tools or content that you request.

Contextual Toolbar

The side bar to the left of the screen contains the different tools available to you depending on the current context (this is the content shown in the **Content Area**).

At the **Portfolio** level, you found the administrative tools to view and manage your users and plants. At the **Plant** level, you can manage the properties of individual plants.

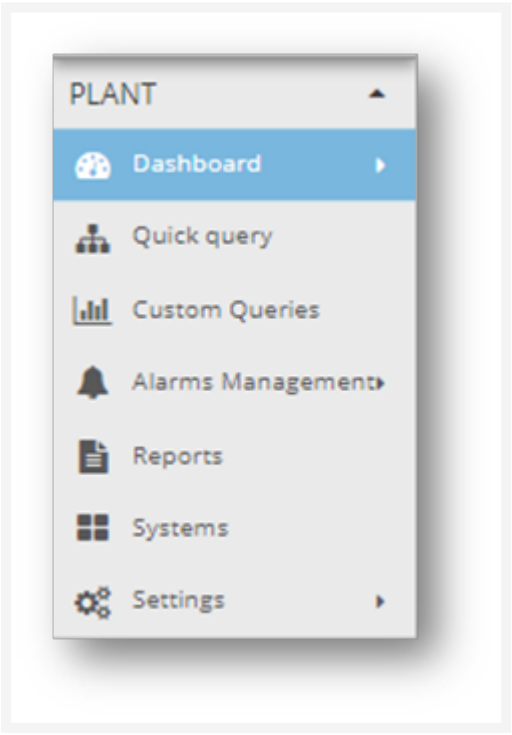
Portfolio level



Available options at the **Portfolio** level are the following:

- Map: Shows a map that displays the geographical locations of all the plants in your portfolio.
- Ranking: Shows a ranking of all plants, according to various criteria. You can sort them manually by any other criteria among those available to you.
- Plants: Shows a list of all the plants in your portfolio. From this list, you can edit the plant settings, access the plant dashboard, or manage the systems.
- Users: Shows a list of your users. From this list, you can manage user properties and permissions.

Plant level



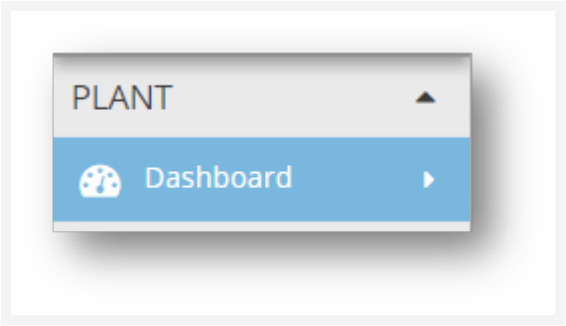
Available options at the **Plant** level are the following:

- Dashboard: Provides access to the Plant Dashboard and to the Dashboard Settings.
- Quick query: A view with tools to perform quick queries and display them as charts or tables.
- Custom queries: A view with tools to create and manage advanced queries and display them as charts or tables.
- Alarms Management: Provides access to Alarms Administration and the Alarms Log.
- Reports: Provides access to Reports Administration and the scheduling of their generation and recipients.
- Systems: Provides access to Systems Administration.
- Settings: Provides access to the Plant Settings, Plant Parameter Setup, and Plant Users.

Dashboards

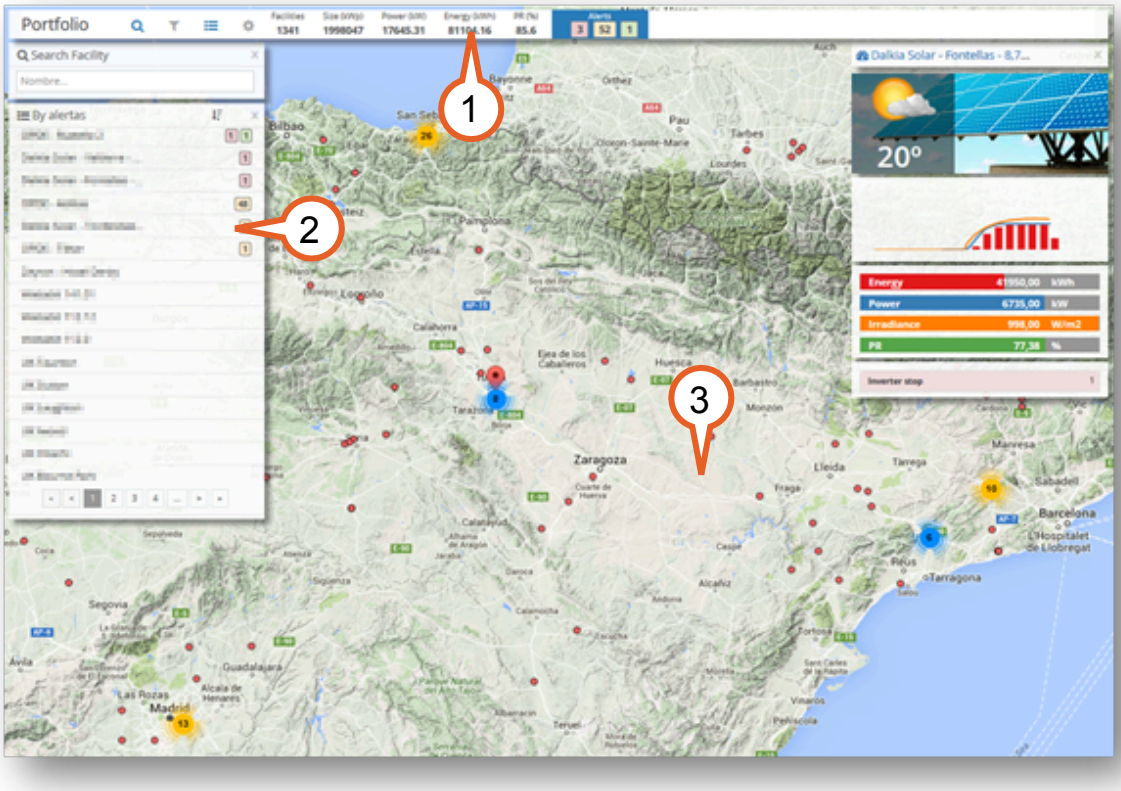
Dashboards are control panels that evaluate the general status of your portfolio and plants. Dashboards gather critical data that allow you to monitor situations and optimize your time when you need to solve issues in a timely and efficient manner.

To view dashboards, open the corresponding menu option:



Portfolio Dashboard

The **Facilities Portfolio** is the start page of the GPM Portal platform. It shows a map of all the facilities in your portfolio and a ranking of these facilities.



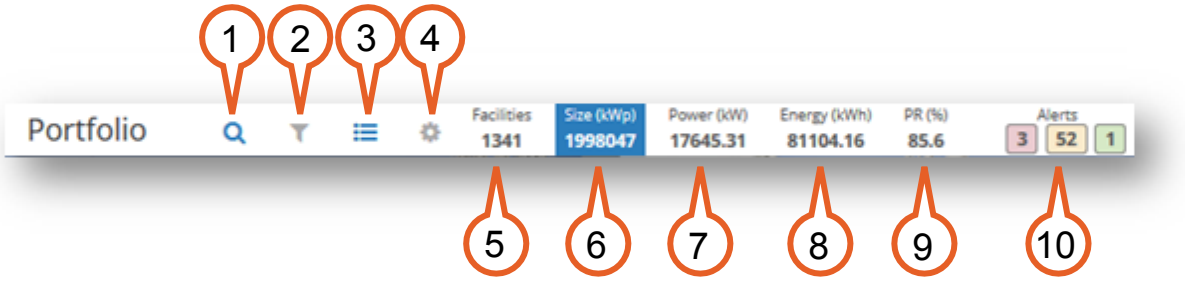
The Portfolio dashboard consists of four elements:

1. Portfolio Main Bar
2. Portfolio Tools
3. Portfolio Map

When you select a facility. the Map zooms to the location of this facility and opens an insert in the top-right corner of the screen to show the **facility details**, as shown in this screen capture.

Portfolio Main Bar

You can find the **Main Bar** at the top of your Portfolio Dashboard. The left section contains several **Tools**, and the right section contains **Values**:



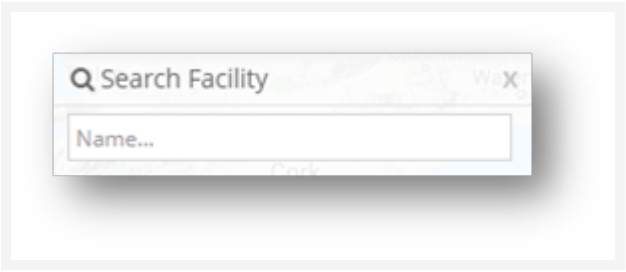
1. **Search:** Shows/hide the search panel
2. **Filter:** Shows/hide the filter panel
3. **List:** Shows/hide the list panel
4. **Settings:** Shows/hide the dashboard settings
5. **Facilities:** Total number of facilities
6. **Size (kWp):** Total aggregated Peak Power of all facilities
7. **Power (kW):** Total aggregated Last Current Power Value of all facilities
8. **Energy (kWh):** Total aggregated Last Daily Energy Value of all facilities
9. **PR (%):** Total aggregated Last Daily PR Value of all facilities
10. **Alarms:** Total aggregated Active Alarms for all facilities, grouped by severity

Select any value to use it as sorting criteria in the List panel: when you click on a value, the list sorts the facilities according to their value of the selected Total, in descending order.

Portfolio Tools

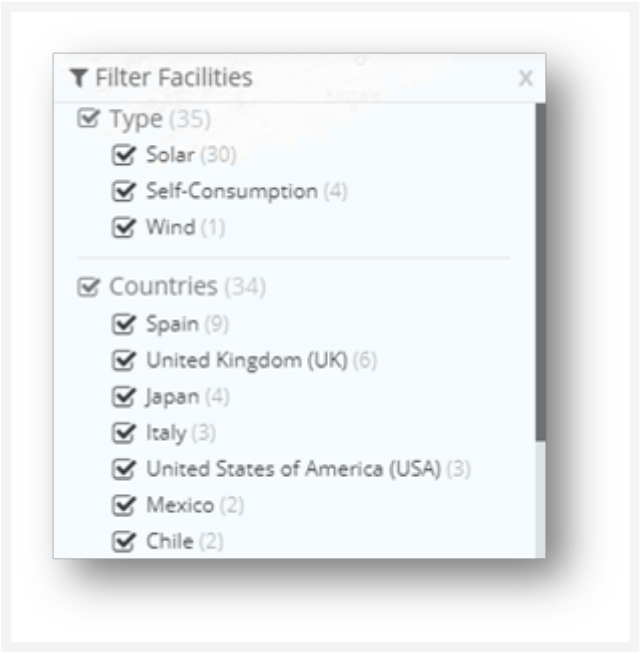
Active tools appear on your screen as floating panels that you can toggle on and off. The **Search** and **List** tools are toggled on by default. Here is a detailed explanation of the tools at your disposal:

Search



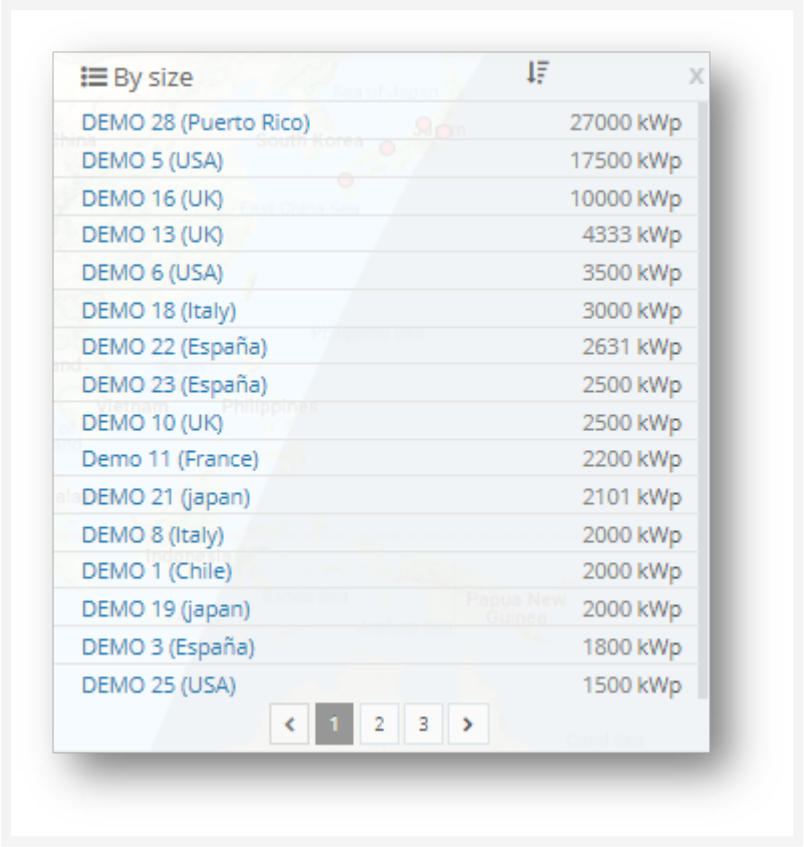
Type any facility name to locate it on the map and view its values in detail.

Filter



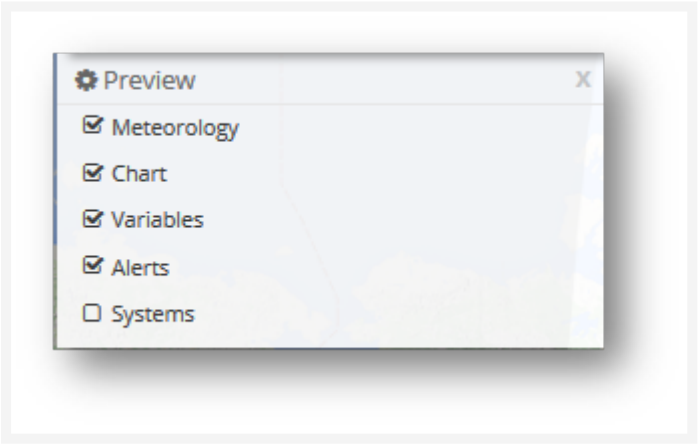
Select a Type or Country to filter your Portfolio by these criteria. By default, all countries and typologies are shown.

List



A list of all visible portfolio facilities sorted by the value selected in the Main Bar. You can use the small control on top of the list to switch between ascending value order, descending value order or alphabetic order by facility name. Click a facility to open its dashboard.

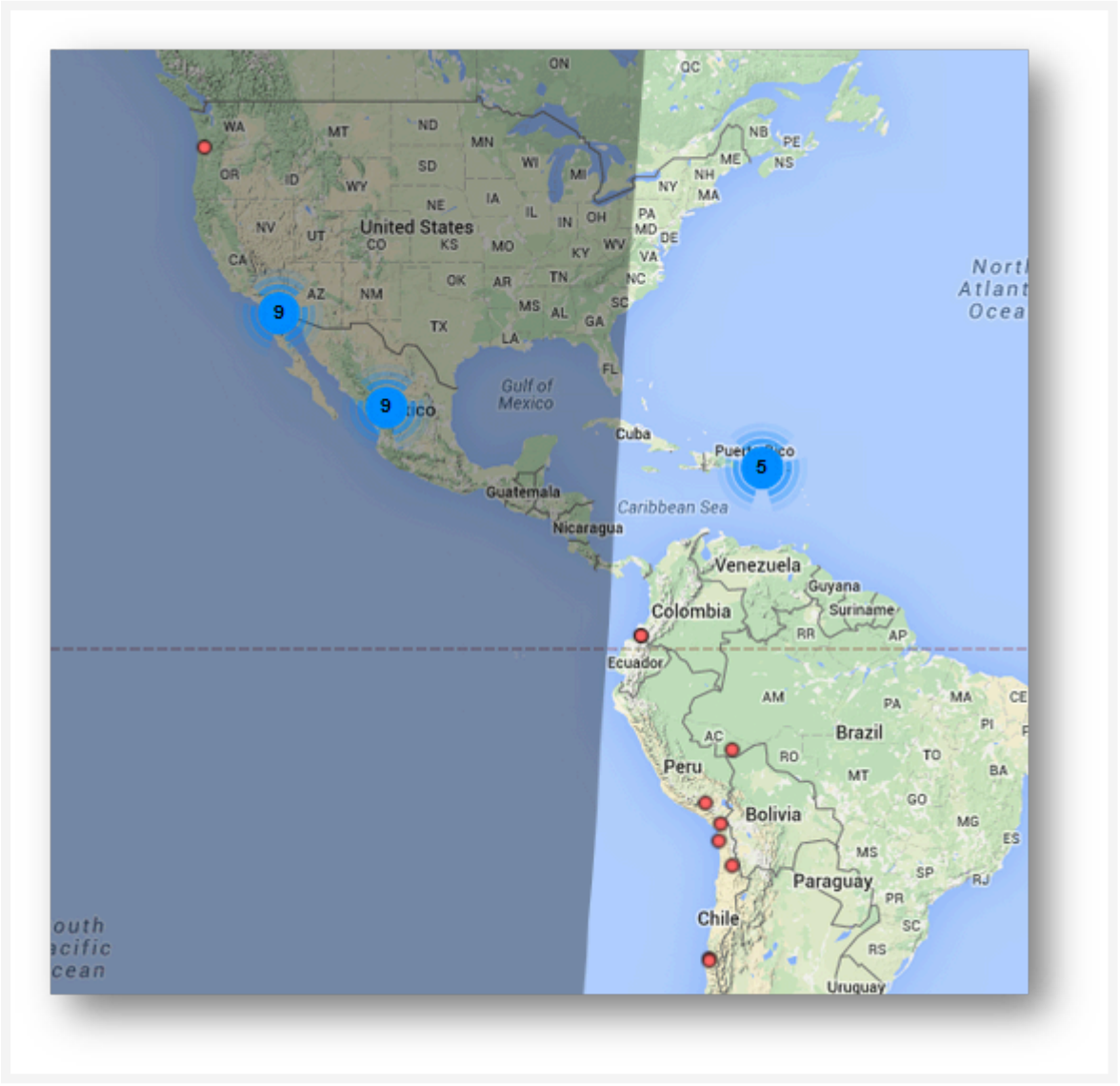
Settings



Enable or disable the type of information to preview for each facility, on the Facility detail view.

Portfolio Map

All the facilities in your portfolio are geolocated in the map.

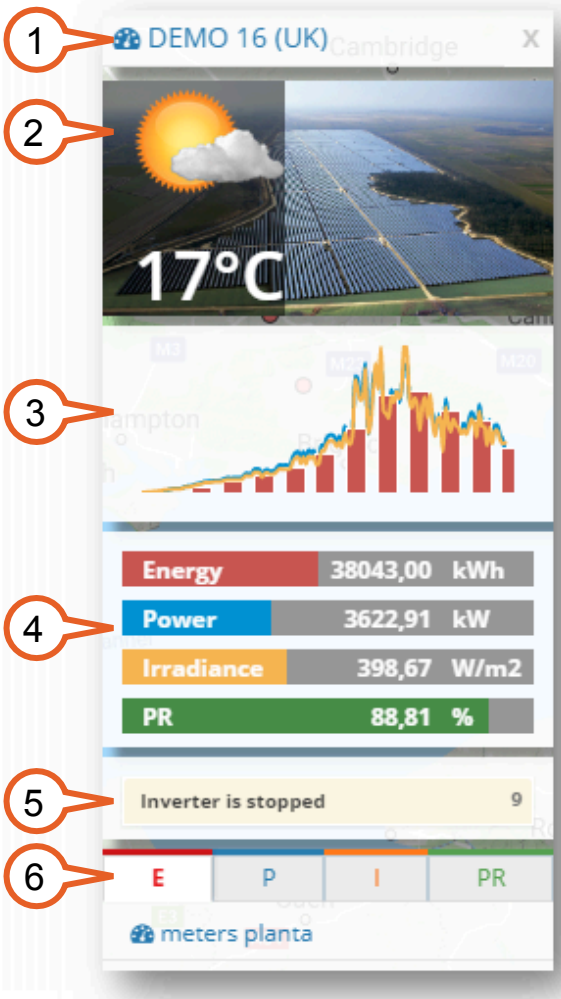


To use the map:

- Use the mouse scroll to zoom in and zoom out.
- With the view is sufficiently zoomed out, facilities that are close to each other are grouped into a colored cluster with a counter. Click on a cluster to zoom in and view the individual points.
- Click on any individual point to center the map and load the facility detail preview.
- The map shows a Shadow Area Layer. This layer shows in real time the facilities that are not currently receiving insolation.

Facility preview

To see a preview of a facility, click a dot on the map, or click the facility row on the Facility List located on the upper left area of the map. The floating preview window looks like this:

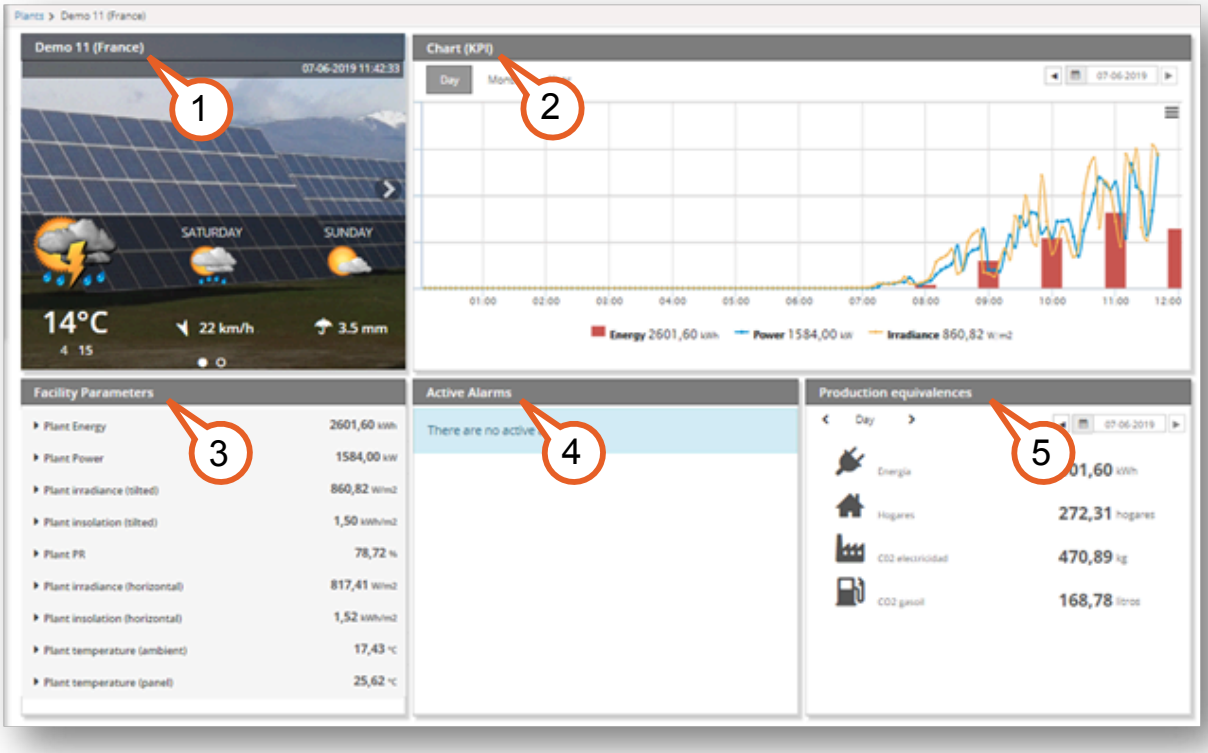


1. **Facility Name:** Click to access the Plant Dashboard.
2. **Meteo + Image:** Current weather forecast and average temperature for the day. The default image of the facility is used to quickly identify the facility.
3. **Production Chart:** Basic production Chart, with the Power, Irradiance and Energy of the selected facility. Hover over the chart to view the values.
4. **Main Values:** Basic production Data, with the Power, Irradiance, Energy and PR of the selected facility. All values are depicted against reference values.
5. **Active Alarms:** All alarms currently active in the facility. Each alarm shows the number of devices affected. The background color of the alarms corresponds to their severity.
6. **Systems Detail:** Basic System data. Click on each Tab to View overall System values:

Energy, Power, Irradiance and PR.

Facility Dashboard

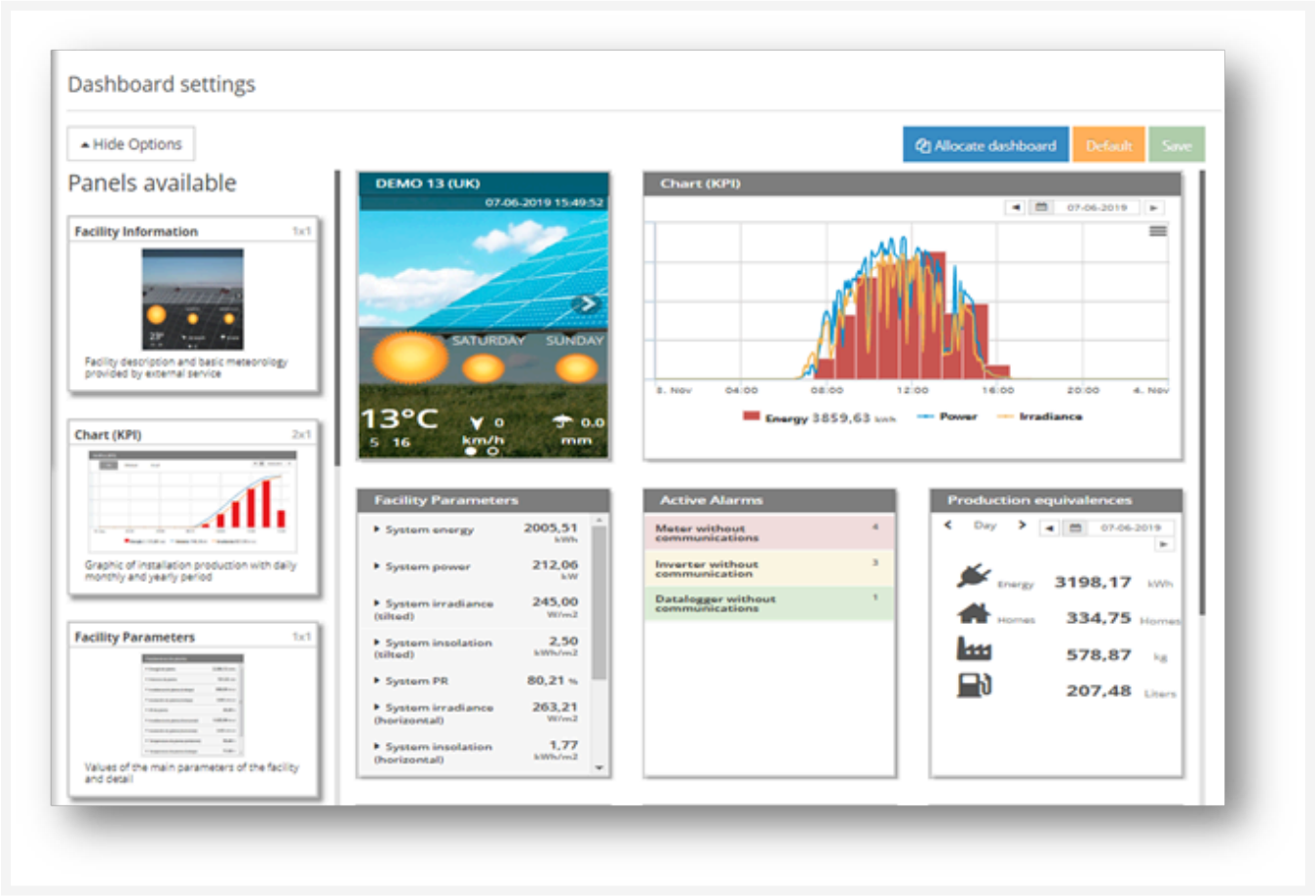
The plant summary screen is the initial screen of a facility. It takes the form of a grid that shows a variety of widgets. You can place the widgets freely according to your needs. The default configuration looks like this:



1. General information panel
2. Productive Chart Widget
3. Plant Parameter Widget
4. Active Alarms Widget
5. Production Equivalences Widget

Facility Dashboard settings

To access the dashboard settings, go to Dashboard on the Contextual Toolbar and then click Dashboard Settings.



The Settings consist of two sections: **Panels available** on the left, and the **Dashboard Widgets** on the right.

Panels Available

This columns contains a list of all the Widgets available for the facility. Drag and drop any widget to the Dashboard Widgets area, to add it permanently to the dashboard.

Widgets exist in two sizes: 1x1 and 2x1. Each row contains up to three spaces. There no limit to the number of rows that you can create in your dashboard.

Dashboard Widgets

All the widgets placed in this area appear in the facility dashboard in their depicted position. You can change the position of any widget by dragging and dropping it to a free position. Drop it over an existing widget switch their position.

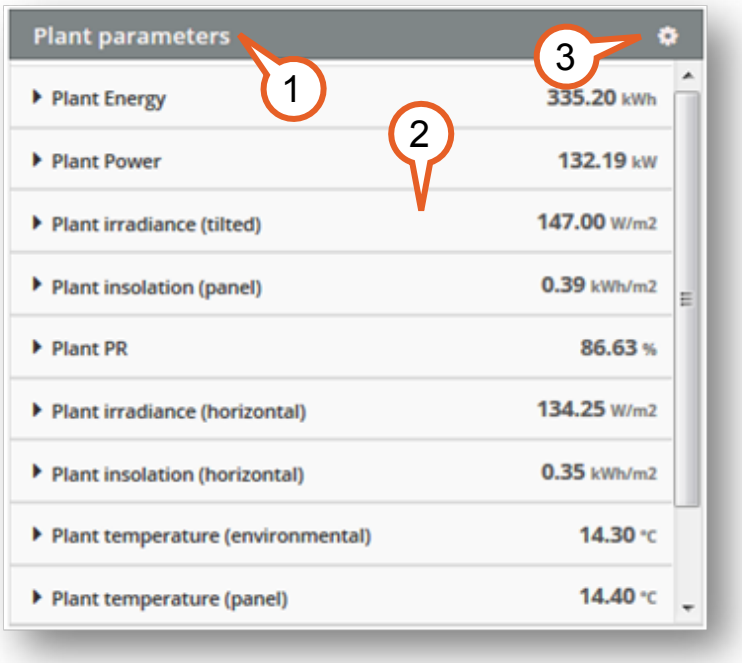
Click the X button at the bottom of a widget to remove it, or click the "Default" button to restore the original default widgets and layout. The Allocate dashboard button allows you to share the

dashboard settings with other users for their own use.

Facility Dashboard Widgets

A **Widget** is a small tool that shows either data or visual information from a specific facility. You select the type of data to show depending on the context and needs: If you want, you can configure a widget dashboard for each facility and user.

All widgets share the same structure:



1. Widget tittle
2. Widget content
3. Widget settings

Available widgets for Facility Dashboards are as follows:

- Information Panel
- Plant Parameters
- Productive Chart
- Active Alarms
- Production equivalences
- Custom Charts
- Plant Systems
- Web Viewer

Information Panel

The Information Panel shows basic descriptive information about the Facility. This panel is divided in two sections: **Weather** and **Location**. Use the left and right arrows to navigate between sections.

Info panel: Weather

Info panel: Location

Weather

The weather forecast comes from an external service. It uses the geographical coordinates set for the facility to provide the following:

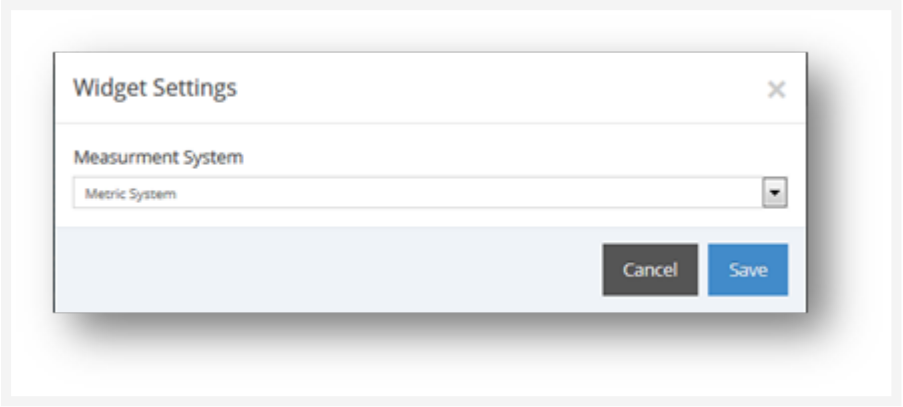
- Today Weather
- 24 hours weather forecast
- 48 hours weather forecast
- Today Temperature (Last Value, day min, day max)
- Today Wind (Last Direction, Last speed)
- Today Precipitation (Last volume)

Location

Location shows the position of the plant according to its coordinates on the map. It includes detailed postal address and facility data (installed power and starting date).

Settings

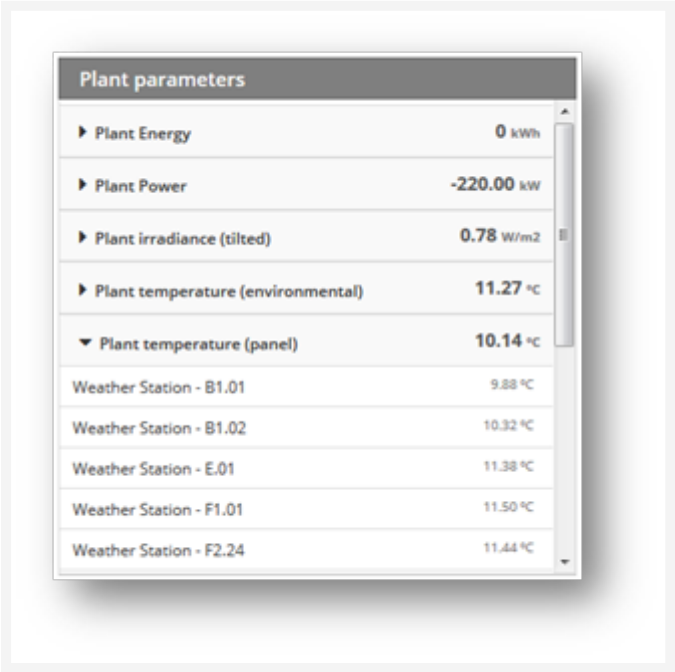
Click on the upper gear button to open the Widget Settings:



Select which Measurement System to employ to display the units on this panel (Metric or Imperial), then click **Save**.

Plant Parameters

The Plant Parameter shows the key parameters of the Facility:



These standardized parameters provide the key performance indicators (KPIs) that derive from the values of different monitored variables.

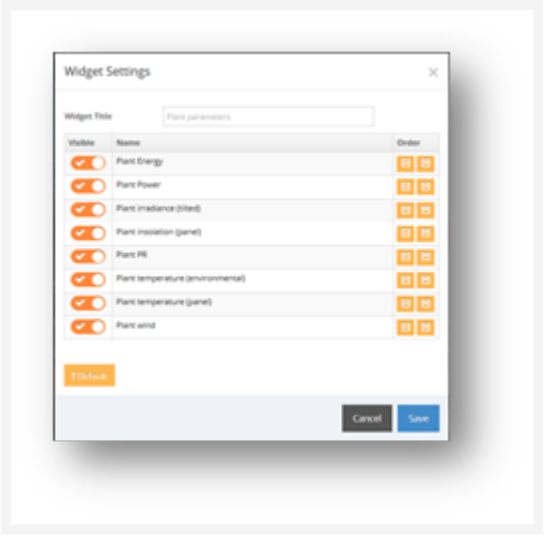
Click on any indicator to see the details and sources of each of these indicators. The indicator expands to show the individual devices or variables from which it takes its data.

> ⓘ NOTE: Certain indicators, such as energy, insolation or PR, show values accumulated during the entire day. Others, such as power or irradiance, show the current values of the facility in real-time .

For a detailed description of each of the parameters and its generation, see the Plant Metrics Appendix.

Settings

Click on the upper gear button to open the Widget Settings:



Select the Order and Visibility of all available parameters.

To revert your choices and restore original settings, click the **Default** button.

Productive Chart

The Productive Chart Widget shows the main productive variables of the facility.

This KPI chart gives you a summary of the performance of the facility.

There are three granularity levels: **Daily**, **Monthly** and **Annual**. Use the Period Selector to consult the values of a specific day, month or year.

Daily Chart

The **Daily Chart** shows the Power of the plant, the Irradiance of the plant, and the Energy that the plant generated during the course of a given day. It shows the current day by default. The Totalizers under the chart show the accumulated value of Energy and the latest Power and Irradiance data for the selected day.

Monthly Chart

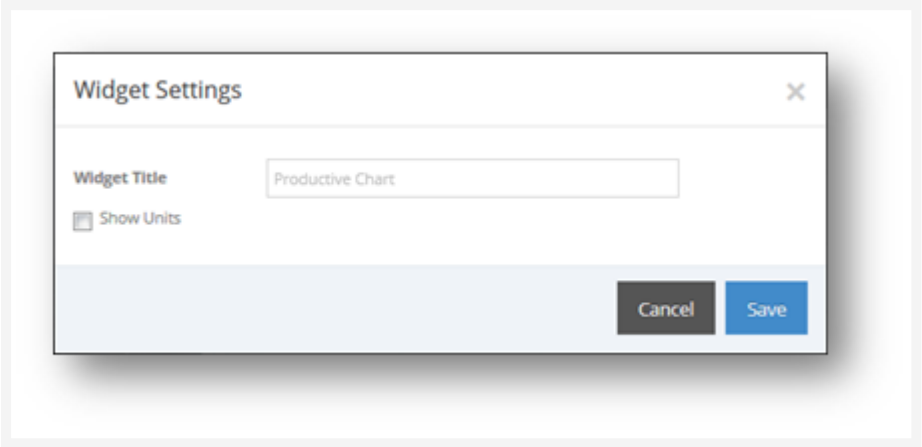
The **Monthly Chart** shows the PR of the plant, the Insolation of the plant, and the Energy that the plant generated every day during the course of a given month. It shows the current month by default. The Totalizers under the chart show the accumulated values of Energy, Insolation and PR for the selected month.

Annual Chart

The **Annual Chart** shows the PR of the plant, the Insolation of the plant, and the Energy that the plant generated every month during the course of a given year. It shows the current year by default. The Totalizers under the chart show the accumulated values of Energy, Insolation and PR for the selected year.

Settings

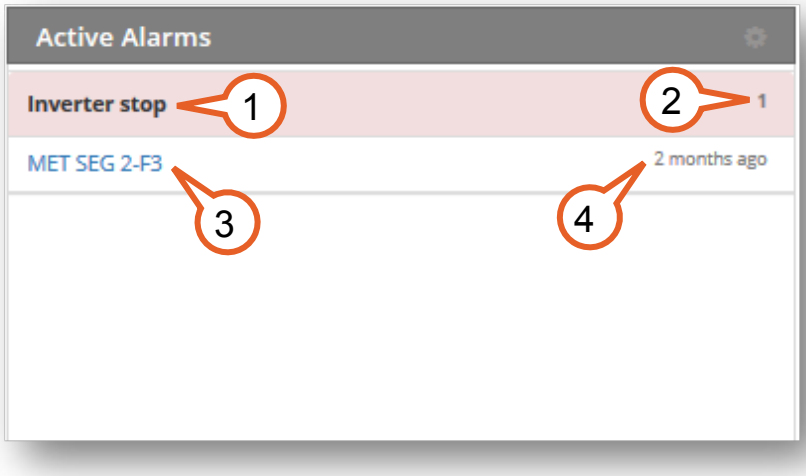
Click on the upper gear button to open the Widget Settings:



You can edit the Widget Title and whether the chart shows units or not.

Active Alarms

The Active Alarms Widget shows all the devices with an active alarm:

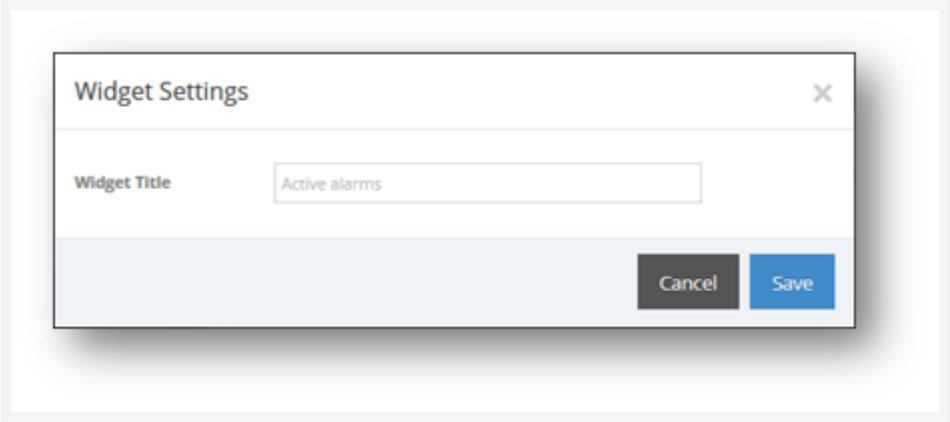


An alarm triggers when the conditions for its activation are met in one of your facility's devices. The Widget shows a list of all alarms currently active at the plant, ordered by priority and date of activation. It has four components:

1. **Alarm Name:** Alarms are grouped and ordered by name in the panel. This makes it easier for you to monitor and manage your alarms. The color of the band represents the severity of the alarm. Click the band to see the details of each device.
2. **Number of affected devices:** The counter represents the number of devices that currently have an active alarms of this type (For example, the image above shows there is one active "Inverter Stop" alarm).
3. **Affected device:** This shows the name of the affected device (one device per row), so you can identify where the alarm occurred.
4. **Time elapsed since activation:** This shows how long the alarm has been active.

Settings

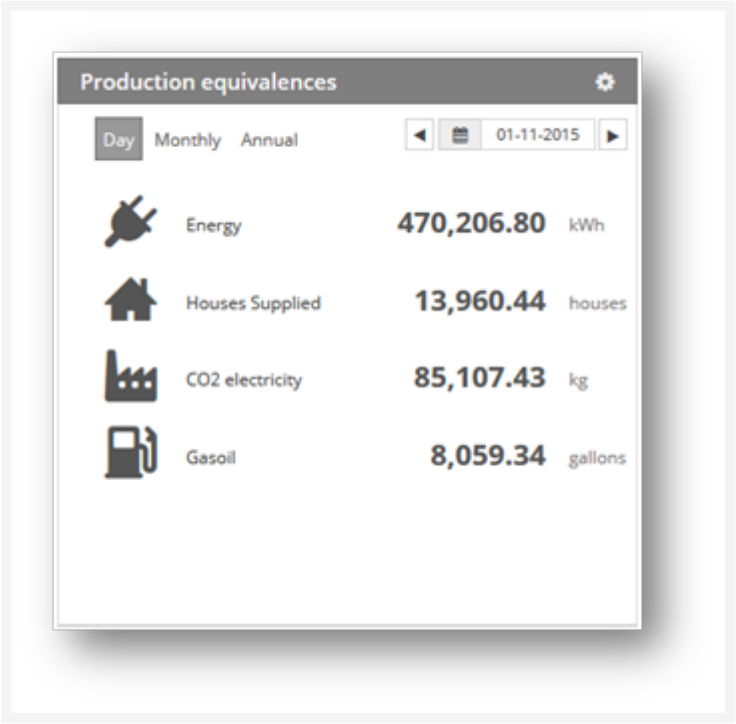
Click on the upper gear button to open the Widget Settings:



You can edit the Widget Title.

Production equivalences

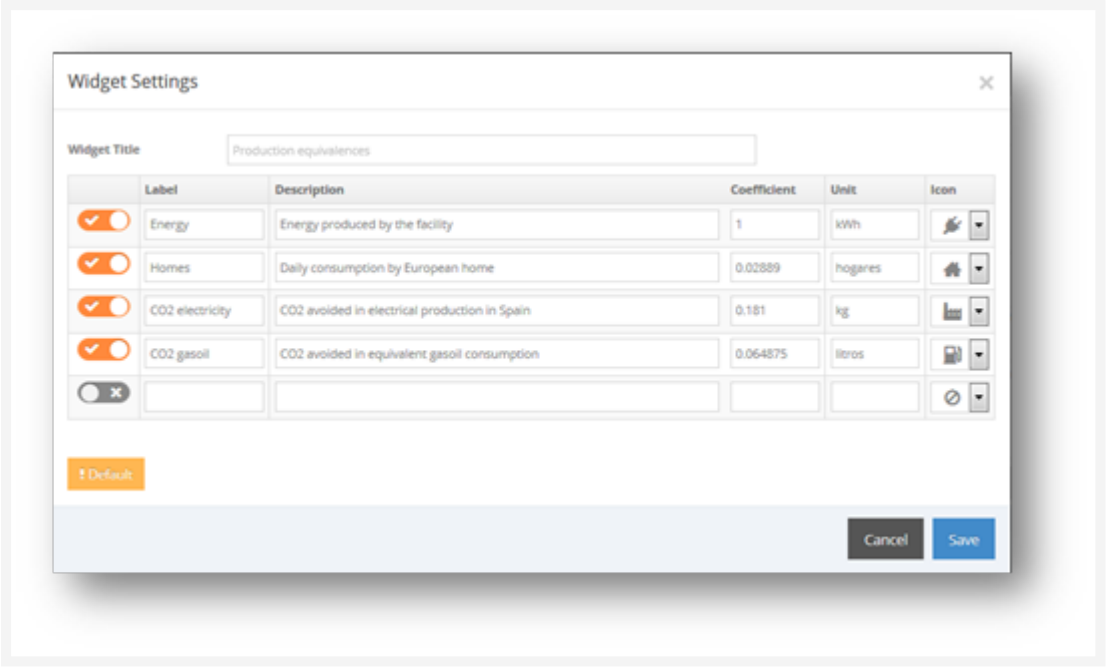
The Production Equivalences Widget shows custom variables from your Plant.



Use the controls at the top to select between daily, monthly or annual production, and to define the period that you want to cover. The Widget uses the Plant Energy values as a reference to show the production of the selected period. You can add any environmental, energy or economic equivalences that are of interest to you. Energy production values depend on the conversion factors that you list in the settings of this Widget (see below).

Settings

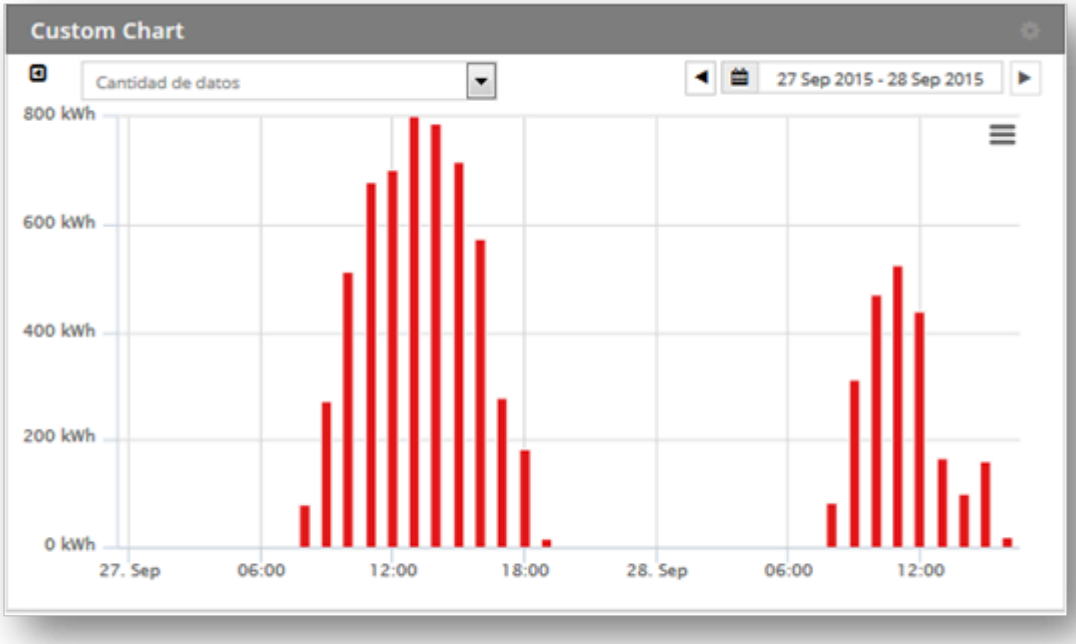
Click on the upper gear button to open the Widget Settings:



You can edit the Widget Title, the visibility of the various equivalences, as well as their respective label, description, coefficient, unit and icon.

Custom Charts

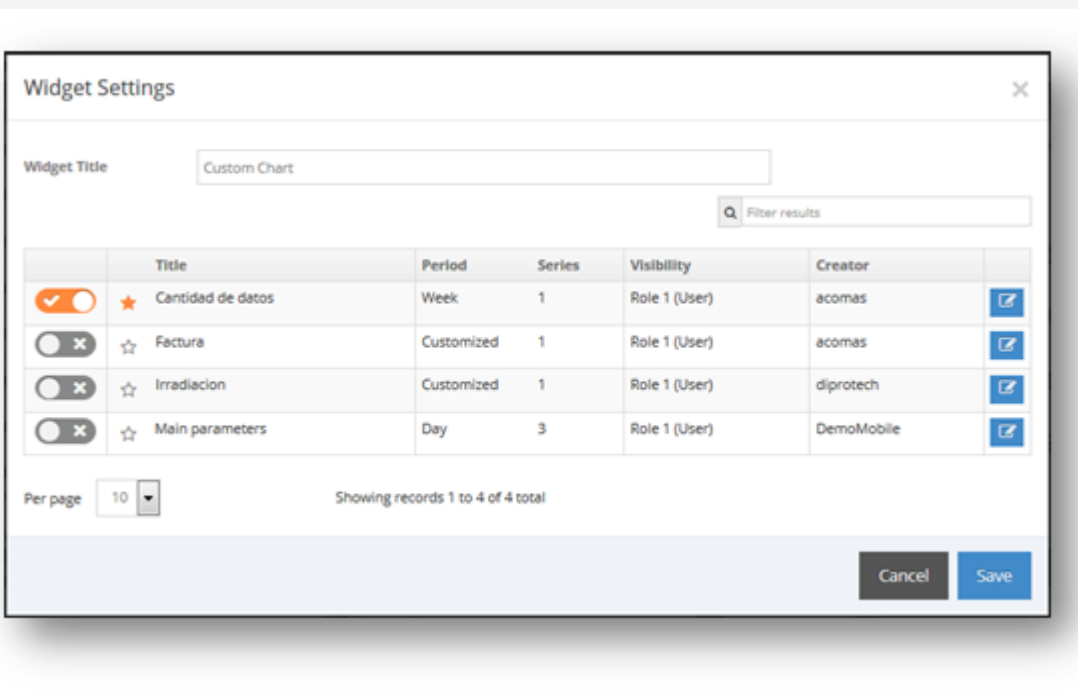
The Custom Charts Widget can show any customized query available for the selected facility.



Use the top selector to change between all available queries.

Settings

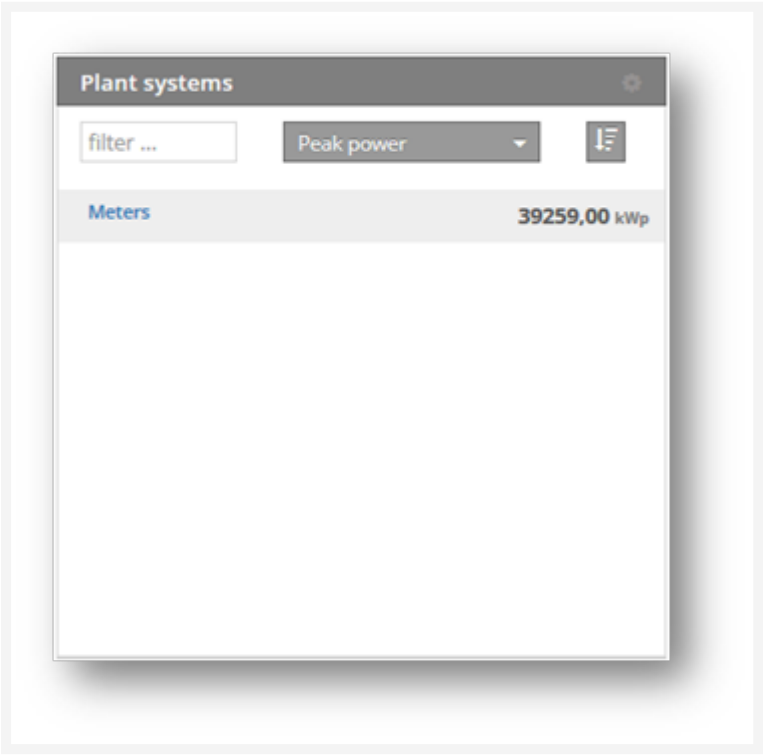
Click on the upper gear button to open the Widget Settings:



You can edit the Widget Title, the Charts visibility and the default one.

Plant Systems

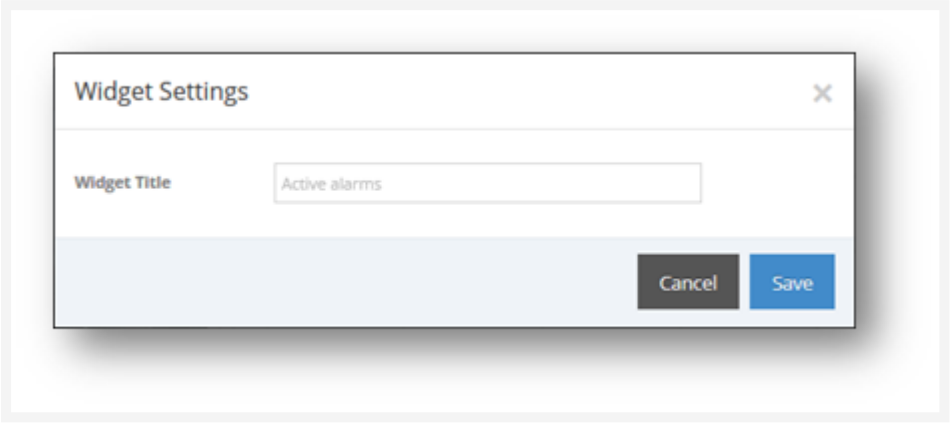
The Facility System Widget can show any Parameter for all existing Systems.



Use the top selector to select the parameter for which you want to see a list of systems. Use the filter field to see only certain names or numbers. Click any System name to open the corresponding System Dashboard.

Settings

Click on the upper gear button to open the Widget Settings:



You can edit the Widget Title.

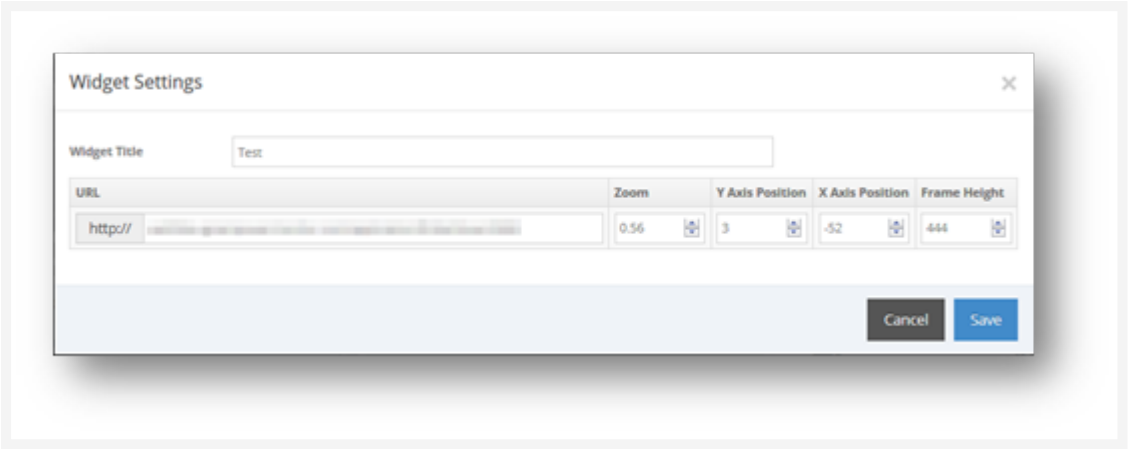
Web Viewer

The Web Viewer Widget allows you to embed web resources into the Dashboard.

You can use this Widget to embed a website or any resource that has a URL, such as webcam streams, corporate videos, imagery, etc.

Settings

Click on the upper gear button to open the Widget Settings:

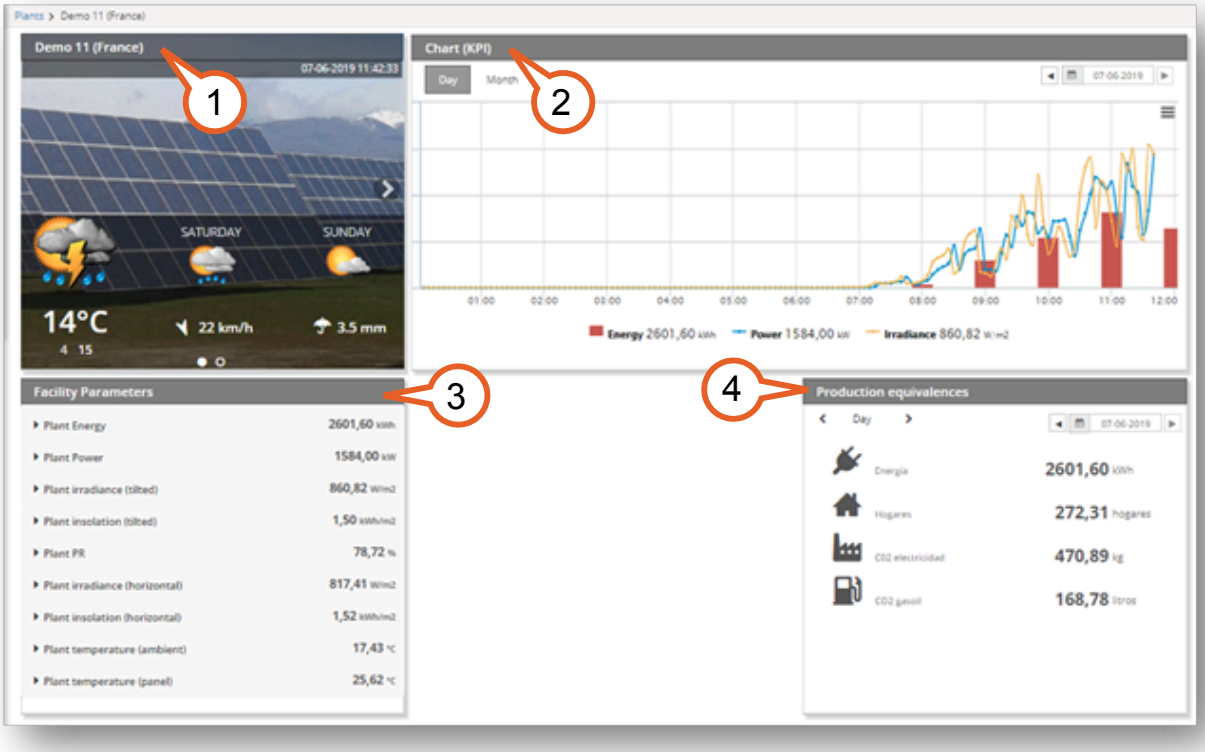


Input the reference URL, then set your desired values for the Zoom, Y-Axis, X-Axis and Height of the Web Frame. You can also edit the Widget Title.

System dashboard

The **System dashboard** is the initial screen of a system. It consists of an Information grid, where you can place a variety of widgets. It is very similar in form and function to the Facility Dashboard , but it there less widgets available for it.

This default configuration looks like this:



The System Dashboard has four main components:

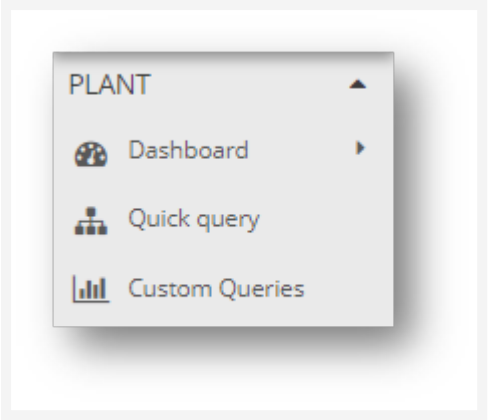
1. a panel that shows general information about the system
2. a Productive Chart widget
3. a System Parameter widget
4. a Production Equivalences widget

> ⓘ NOTE: A System Dashboard works like a Facility Dashboard, however it does not have Alarm or Facility Systems widgets available.

Analysis Tools

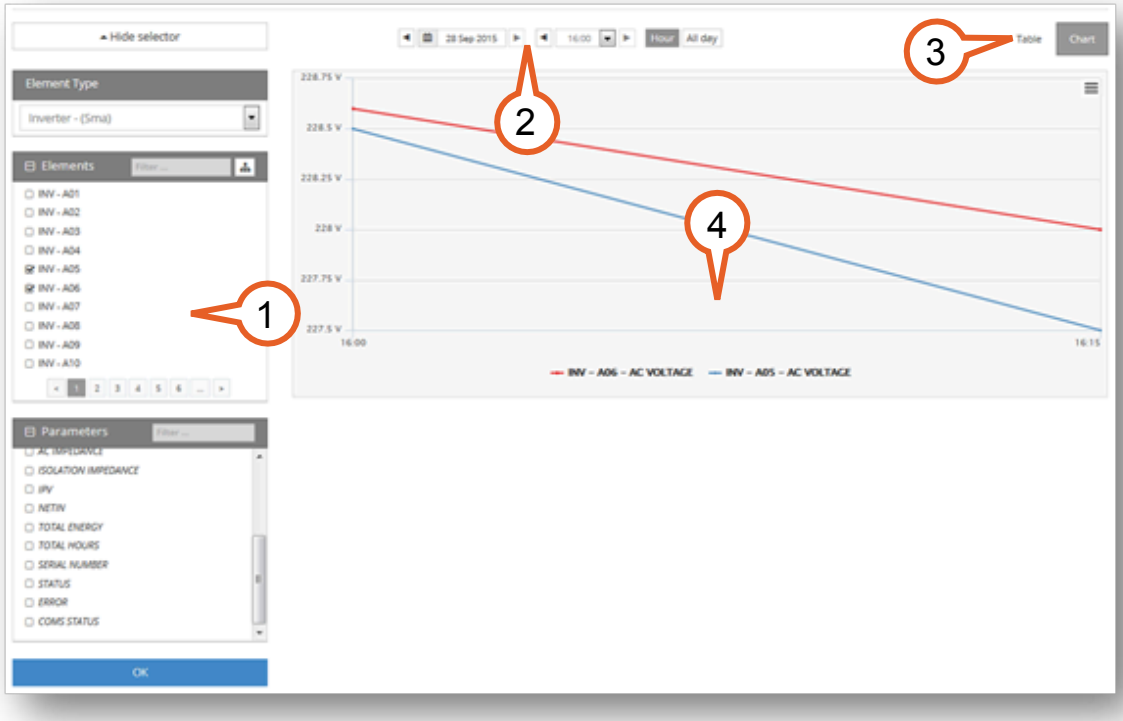
When you navigate to the Facility or System level, you can run a variety of queries to view monitored and customized variables, and consult the specific values of your asset or devices.

These **Analysis Tools** exist in two versions: **quick query** and **custom query**:



Quick Query

The **Quick Query** tool is designed for the evaluation of one or more devices of the same type. It shows the monitored values of each variable with the maximum level of detail for a single, specific day.

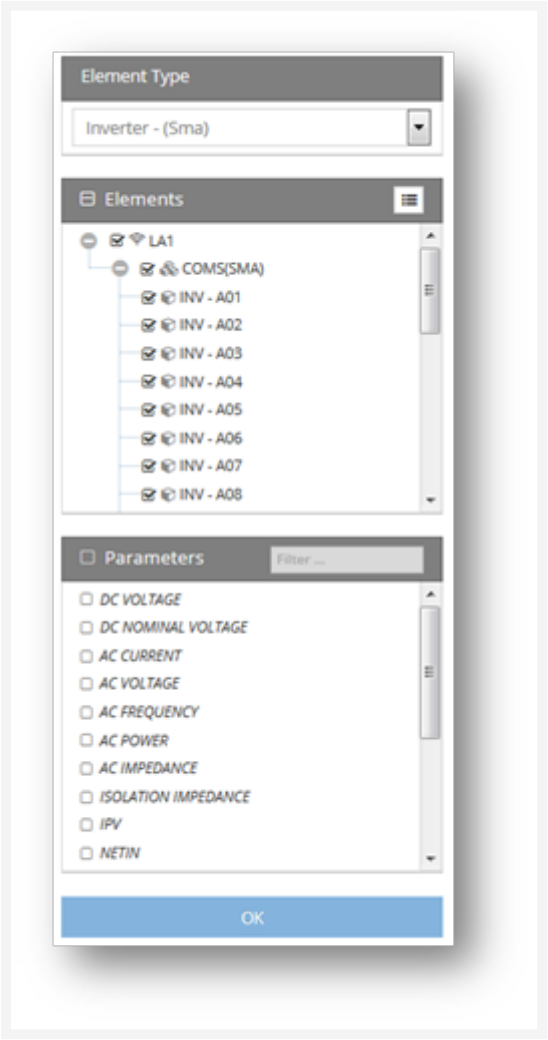


The screen consists of four elements:

1. Parameter Selector
2. Period Selector
3. Visualization Mode toggles
4. Data area

Parameter Selector

The **parameter selector** consists of three selectors. From top to bottom, these selectors are, respectively: element type selector, elements selector, and parameters selector.



These three controls represent the three steps of the selection:

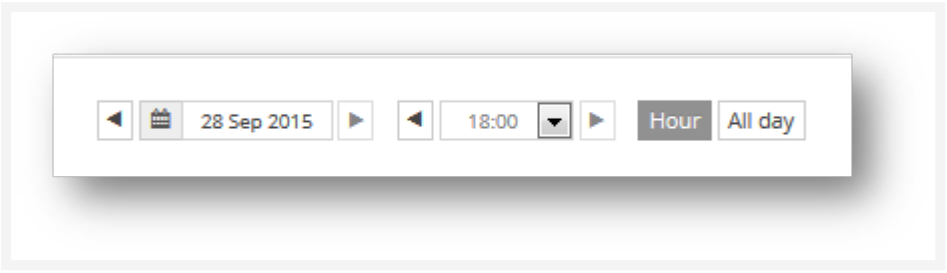
1. For greater efficiency, the elements and their variables are first organized by type. This way, you can differentiate between elements, for example devices of a different brand or model.
2. Once you select the desired type, the corresponding available elements are sorted according to communicative hierarchy: dataloggers, communications cards and finally devices. Click the button on the top-right of the element selector to sort the list by name: This button switches the sorting order between tree and list mode.
3. Finally, once you select one or more elements, you can see the group of parameters available for these elements.

> ⓘ NOTE: If you select a parameter that is common to one or more devices, these common parameters and elements are not merged together. The results of the query show a series for each parameter and element.

4. When you finish your selection, click **OK** to show the result of your query in the data area

Period Selector

The period selector allows you to select the date and the time slot that your query should cover.



The date selector lets you select what day you want to consult. The selector shows the current date by default. Use the arrows on the sides to navigate back or forward one day at a time, or click the calendar icon to select a day directly.

The time slot selector lets you select what time slot of the selected day you want to consult.To see the values for the entire day, click the "All day" button. Leave "Hour" selected to consult a particular hour. The arrow selector works like the same as the date selector, or you can use the drop down to select an hour directly.

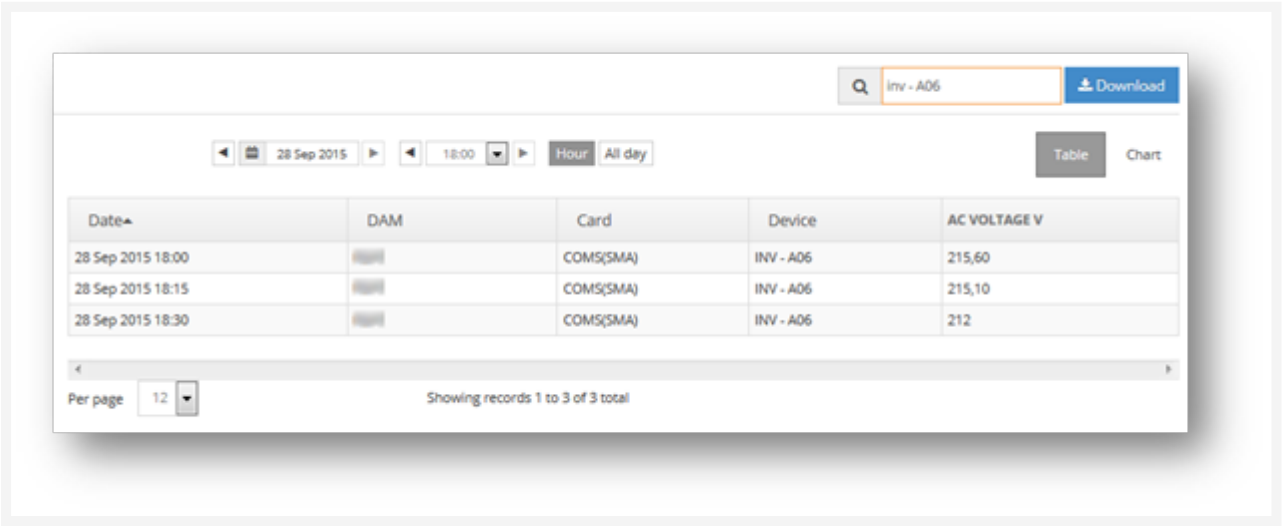
Visualization Mode toggles

Select the display method for the data area: chart or table. For more details, see Data area.

Data area

Table

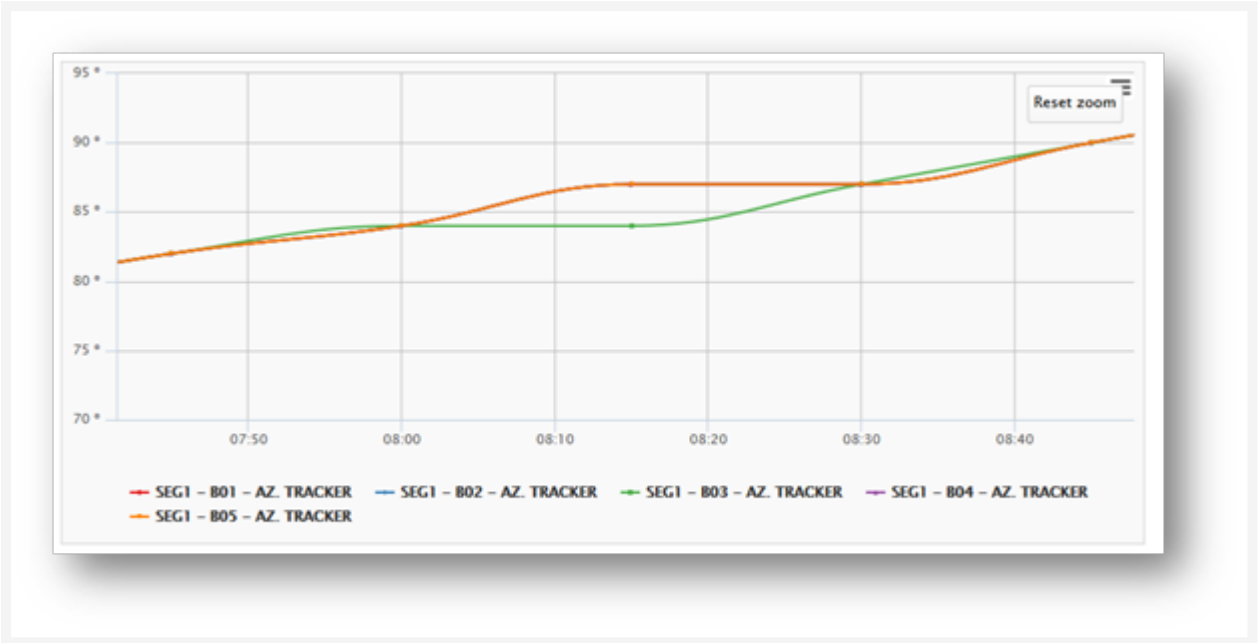
The table format shows the values of the selected parameters for the selected period, in chronological order (oldest first). use keyboard controls to navigate the table, or use the search box to find any number or text string.



Use the Download button in the top-right corner of the screen to export the filtered data grid as a CSV file.

Chart

depending on the type of data queried, the chart format shows the values as lines or bars. The caption for each series shows at the bottom under the chart.



Click any caption to hide or show the corresponding series. Click and drag to zoom in a particular area in the chart. Click **reset zoom** in the top-right corner to restore the original zoom level. To export the data, click on the menu button in the top right corner and select among the available export formats.

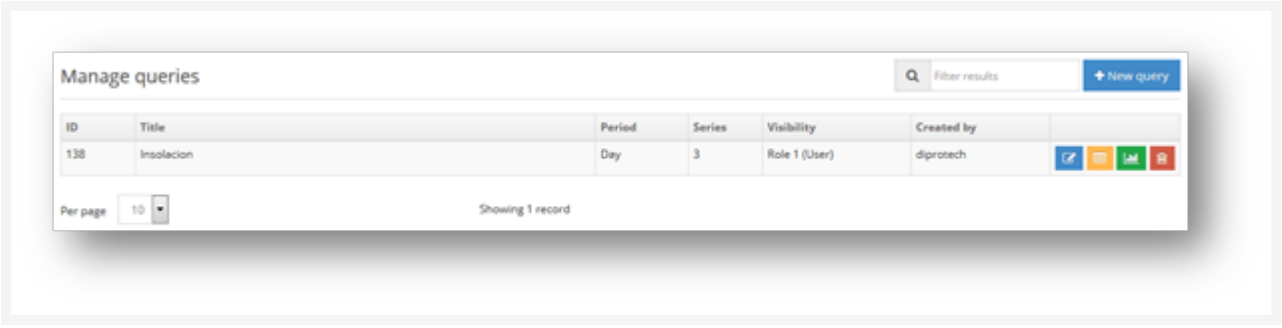
Values appear with maximum granularity. You cannot group or modify them with expressions. If you require greater flexibility and customization, use custom queries.

Custom Query

The **Custom Query** tool allows you to create complex queries and save them for each facility. You can define periods, granularity level, value group types, as well as labels and colors for the different variables. You can consult any custom query directly in the Custom Query section, or later in your dashboards with a Custom Chart Widget.

Managing custom queries

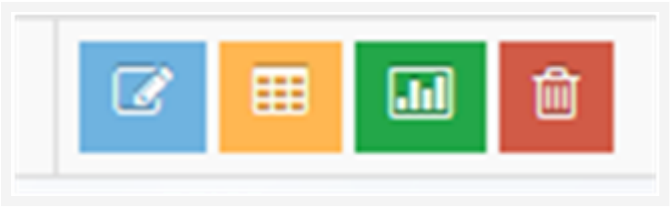
The administration window shows a table that contains all the custom queries that exist for the plant.



You can group, edit and display queries according to your needs. Click **New Query** to create a new query for the current plant.

Actions

Each query shows four actions to the right of the screen:

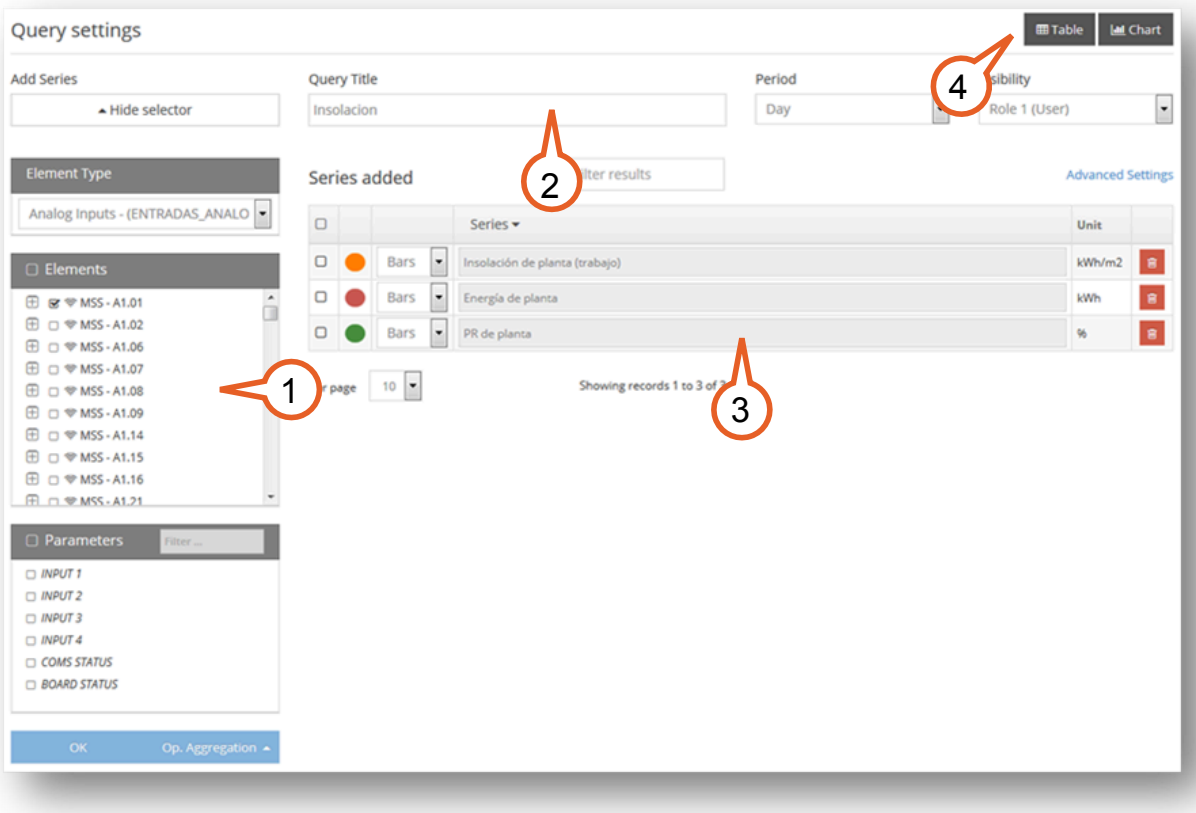


From left to right, these actions are:

1. **Edit:** access the query settings
2. **Table:** view the query as a table
3. **Chart:** view the query as a chart
4. **Delete:** delete the query

Query settings

This screen lets you define the properties of a query and the corresponding series and their characteristics.

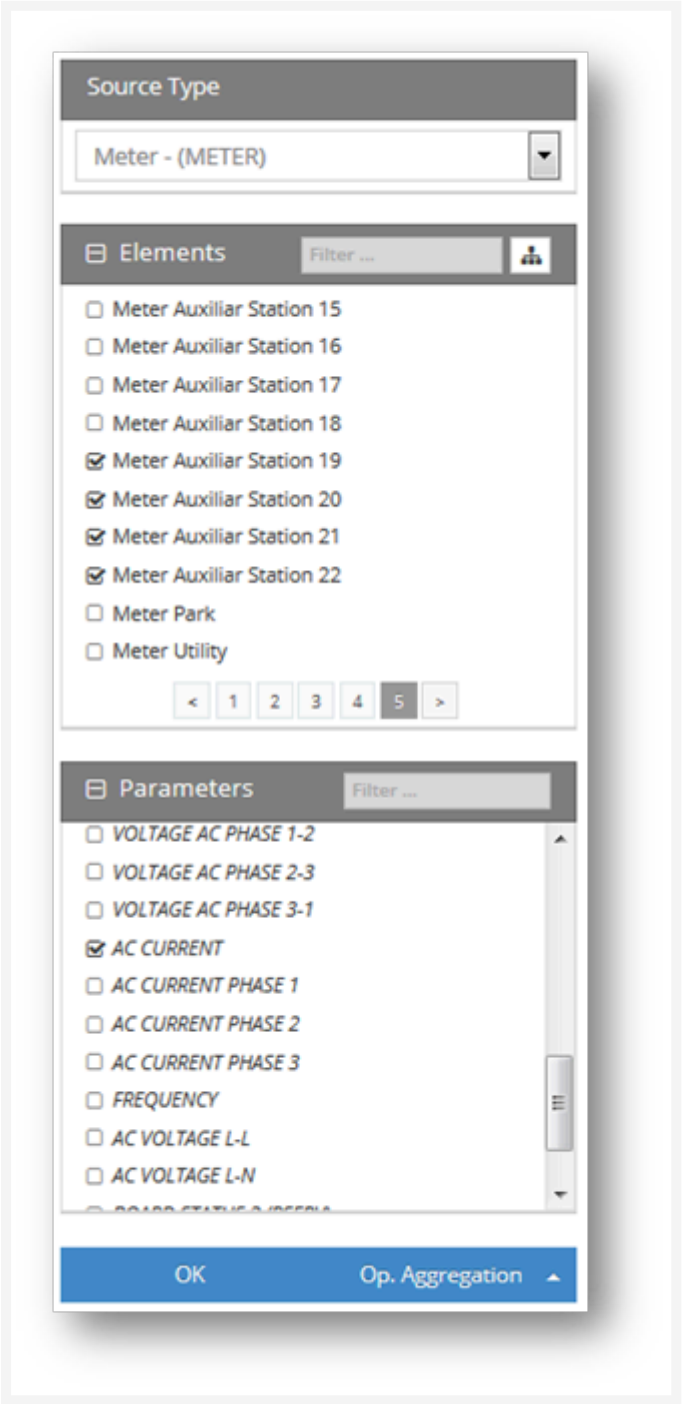


Settings are divided into four areas:

1. Series selector
2. Query details
3. Series table
4. Query view

Series selector

The **series selector** consists of three selectors. From top to bottom, these selectors are, respectively: source type selector, elements selector, and parameters selector.



1. **Source Type:** The complete list of all available device types in the facility. Select which device types you want to filter by. The Source type "Facility" will return the Main and Custom Plant Parameters
2. **Elements:** Select the element or elements either by tree selection or by list. Use the top

button to toggle between these two options. The tree shows the communication hierarchy, whereas the list sorts alphabetically all the elements of the select source.

3. **Parameters:** All the available parameters for the selected Elements.
4. **Opt. Aggregation:** For each element and parameter selected, a new series will be added to the query with the OK button. If you want to aggregate the same variable of multiple elements, you can instead use the Op. Aggregation Button, and select either SUM or AVERAGE.

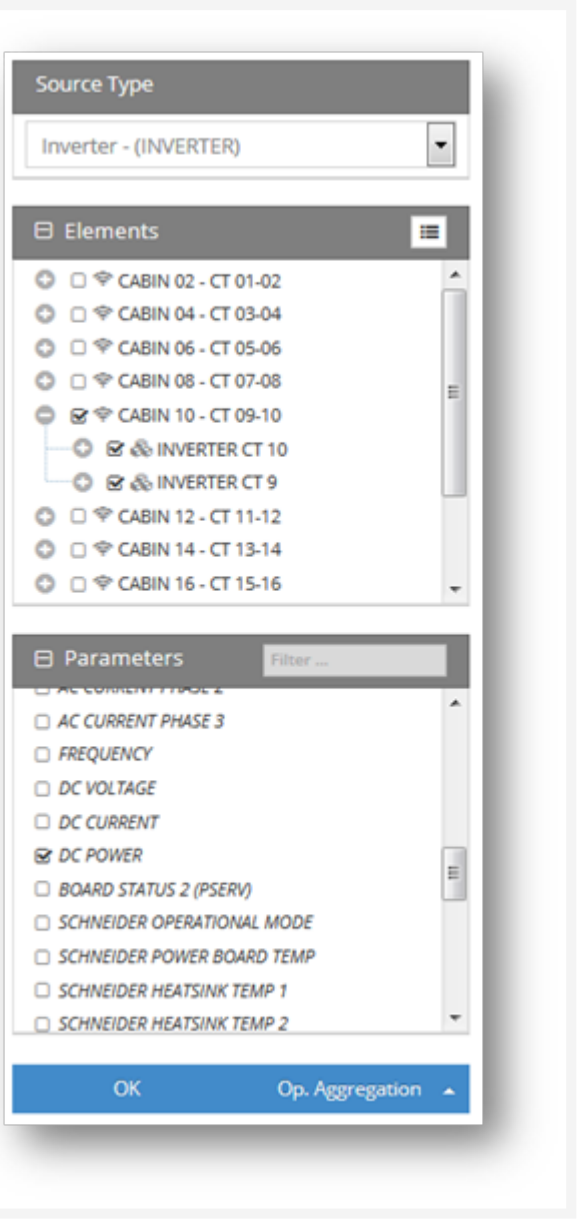
Basic selection

1. For greater efficiency, the elements and their variables are first organized by type. This way, you can differentiate between elements, for example devices of a different brand or model.
2. Once you select the desired type, the corresponding available elements are sorted according to communicative hierarchy: dataloggers, communications cards and finally devices. Click the button on the top-right of the element selector to sort the list by name: This button switches the sorting order between tree and list mode.
3. Finally, once you select one or more elements, you can see the group of parameters available for these elements.

> ⓘ NOTE: If you select a parameter that is common to one or more devices, these common parameters and elements are not merged together. The results of the query show a series for each parameter and element.

4. When you finish your selection, click **OK** to show the result of your query in the data area

Selecting Variables from Devices

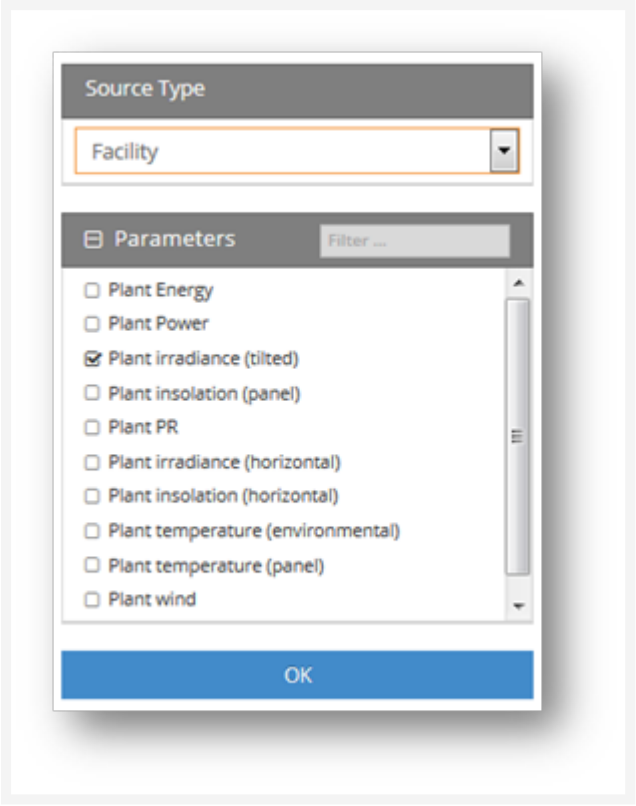


To add variables from a device to a query:

1. Select the desired Source Type
2. Select one or more specific elements
3. Select one or more parameters
4. Click **OK**

The series now appears in the Series Table.

Selecting Plant Variables

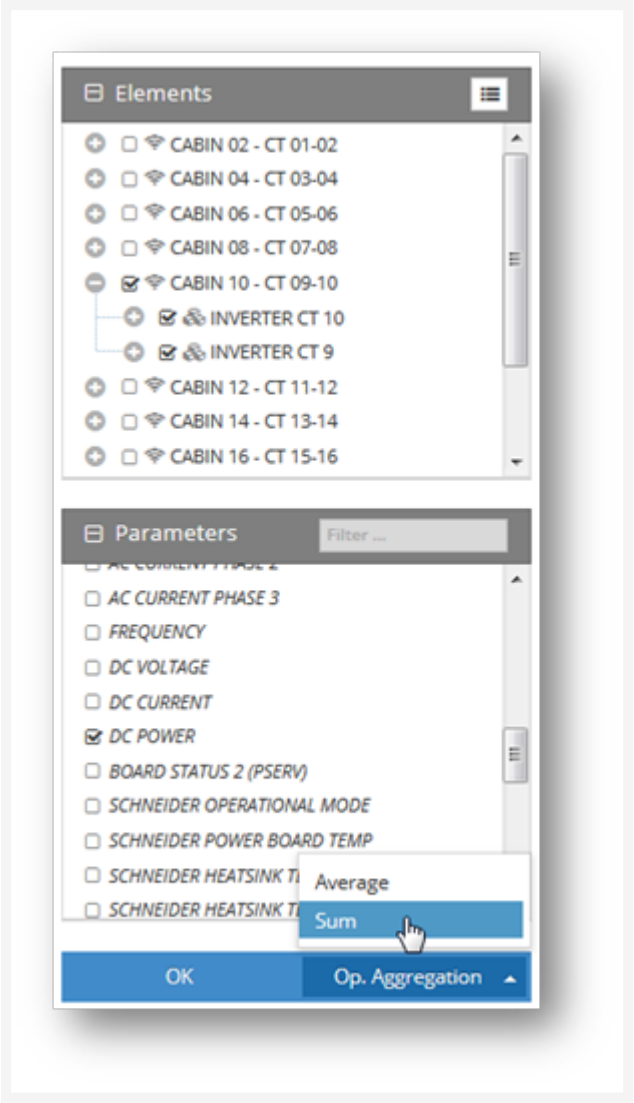


To add variables from a device to a query:

1. Select "Facility " as Source Type
2. Select one or more parameters
3. Click **OK**

The series now appears in the Series Table.

Selecting Aggregated Variable from Multiples Devices

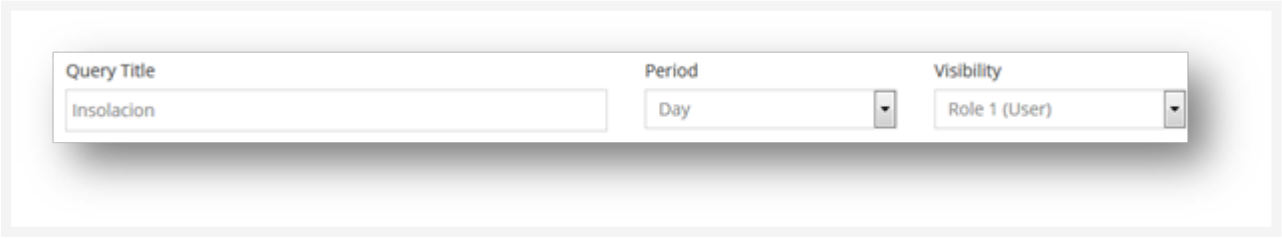


To add variables from a device to a query:

1. Select the desired Source Type
2. Select all the elements that you want to add
3. Select a single, common parameter
4. Click "Op. Aggregation" and select the desired operation (SUM or AVERAGE)
5. Click **OK**

The series now appears in the Series Table.

Query details



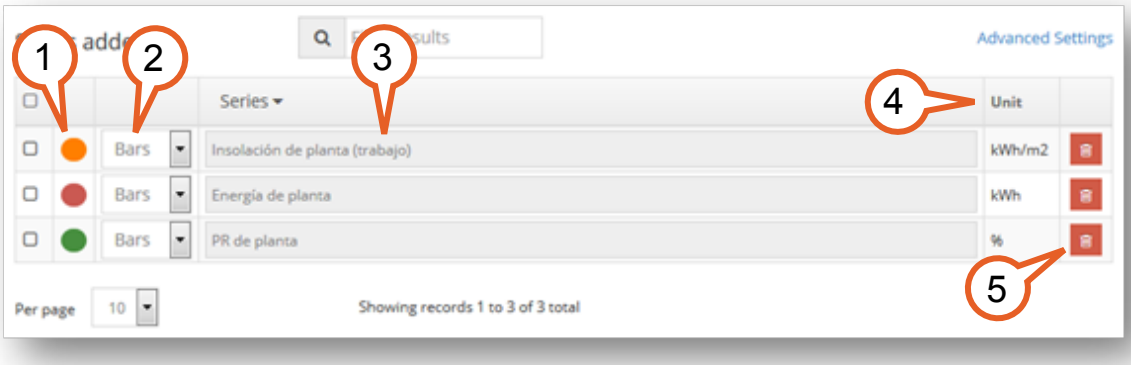
You can define the following details:

- a title for the query
- the period that the query covers: defines the default granularity of the values. The greater the period is, the lower the granularity. The available options are Day, Week, Month or custom.
- the visibility of the query: define the minimum role that a user should have to view the query

Series table

The "series added" table shows a list of all existing series to date. You can open and edit these series.

Basic view



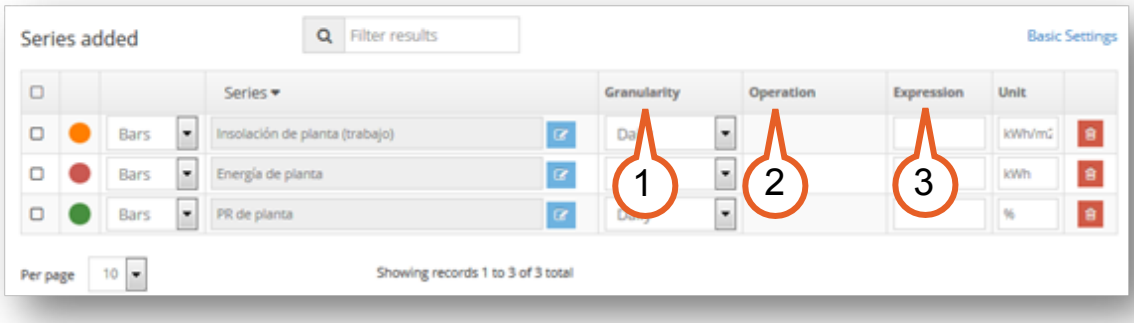
1. **Color:** Select a color to show the series in the chart.
2. **Format:** Select whether the series shows as a continuous line, as bars, or is not shown in the chart.
3. **Series:** Edit the name of the series in the table or chart. Click on the column header to sort by alphabetical order, either ascending or descending.
4. **Unit:** Define the unit used in the series.
5. **Delete:** Delete the series . This action cannot be undone.

Use the search box at the top to look for a specific series in the table. Use the check selector to the left to edit or delete more than one series at the same time.

Click **Advanced Settings** to view additional options for each series.

Advanced Settings view

The **Advanced settings** give you additional properties to configure for each series.



In addition to the basic view options, the following additional settings are available:

1. **Granularity:** Edit the granularity of the series. The default is the period you configured for the query. Allowed values are:
   - no granularity
   - 5 min
   - 10 min
   - 15 min
   - 30 min
   - 1h
   - 1day
   - 1 month
   - 1 year.
2. **Operation:** Define the operation to use to add the values of the series in time. Allowed values are:
   - average
   - sum
   - difference
   - last
   - minimum
   - maximum.
3. **Expression:** Define a simple or complex expression to modify the monitored values:
   - Use X to represent the value.
   - Use * / + - ( ) to define the expression.

   > ⓘ NOTE: For example, if you put (X*100)-100, this multiplies X by 100, then subtracts 100 from the result..

Click **Basic Settings** to return to the original view.

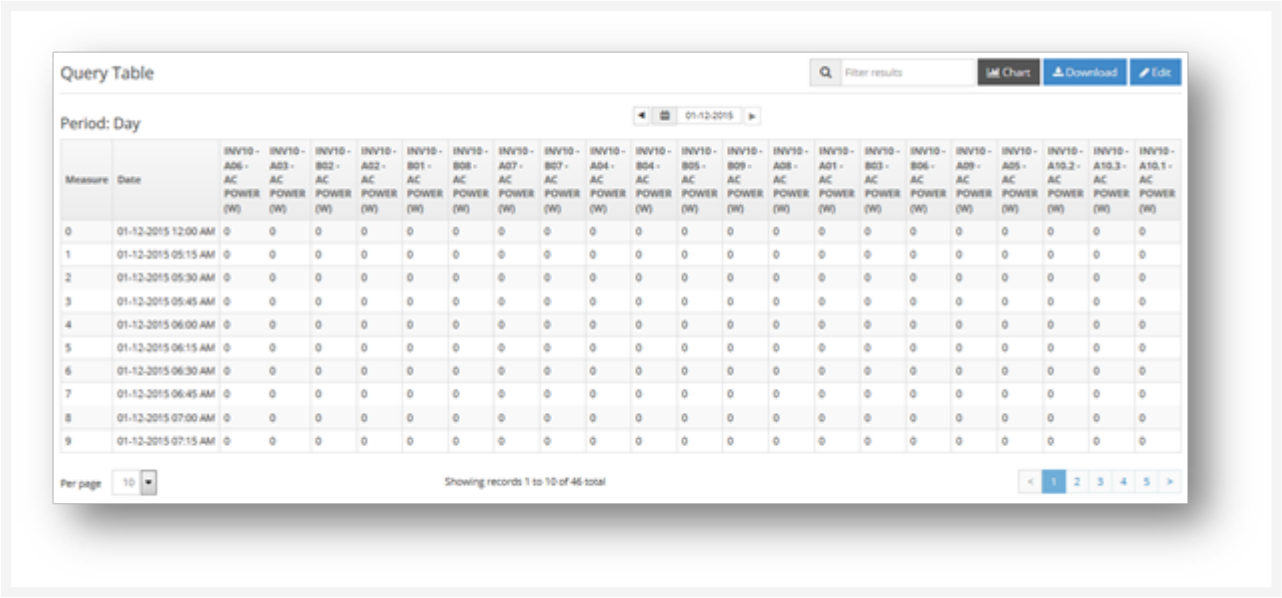
Query view

Each query has two view modes: as a table and as a chart. use this control to toggle between the two modes.

Table

This view shows the query series in table format, where each series is a column. Each row represents a time slot according to the granularity of the series. To display the values in more detail, increase the granularity of the series to fractions of a minute. To display the added values in hours or days, reduce the granularity.

Use the top filter to look for specific values in the table, and the date selector to navigate through the series chronologically (the period depends on the settings).



You can download the values of the table in CSV format with a click on the **Download** button in the top-right corner of the screen.

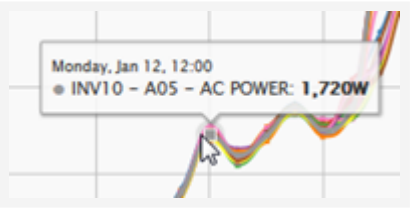
Chart

This view shows the query series as a chart.

Each point in the chart represents a value according to the granularity of the series. To display the values in more detail, increase the granularity of the series to fractions of a minute. To display the added values in hours or days, reduce the granularity.

Navigating the Chart:

- Use the caption table under the chart to select or deselect the series to show.
- Use the date selector to navigate through the series chronologically (the period depends on the settings).
- Click and drag your mouse over any particular area of the chart to zoom in. Click on the Reset Zoom button to go back to the original view.
- You can download the values of the table in CSV format with a click on the **Download** button in the top-right corner of the screen
- Place the cursor on any point of the series to see the details:



Alarms

The Alarms tools in GPM Portal allow you to define and analyze events in your facility.

Plant alarms and customized alarms

With GPM Portal, you can cyclically analyze the values of the devices in your facility and generate alarms when certain conditions, or "triggers", are met.

Each of these triggers can have a certain priority, and you can configure them so that their activation is only visible for certain roles or users.

When the activation conditions of an alarm are met, this triggers an event in the system that is usually shown in the active alarm panel of the Facility Dashboard. You can configure the alarm to dispatch notifications by email or SMS to predetermined recipients.

When the activation conditions of an alarm stop being met for whatever reason, the alarm is deactivated and the event stops being visible on the Facility Dashboard.

All events, active and inactive, are visible in the History of Alarms.

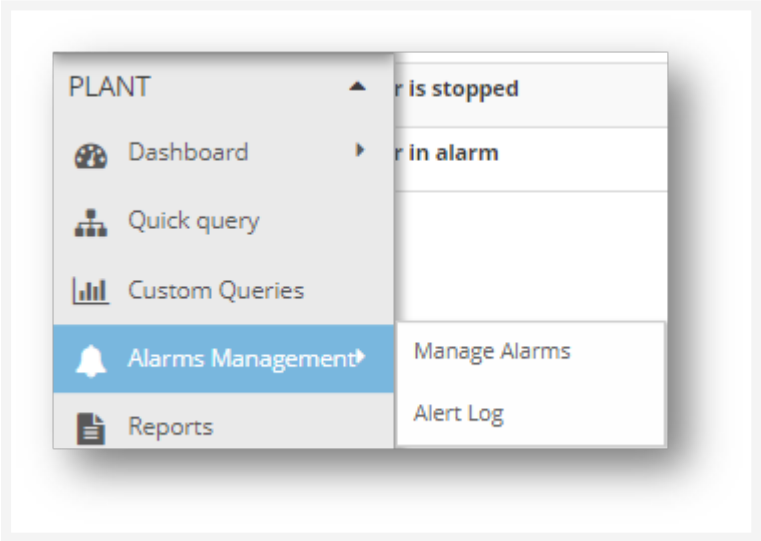
Alarms are classified into two types: **Plant Alarms** and **Customized Alarms**.

- **Plant Alarms:** These are the most common alarms. They allow common conditions to be defined for all devices of the same type. GPM Portal suggests that you use this group of alarms as a minimum basis for the correct administration of your portfolio.
- **Customized Alarms:** With customized alarms you can define multi-conditioning activations in great detail. This type of alarms is typically used in a limited manner, for example to define unconventional alarms, or alarms that involve different types of devices and need specific conditions for each one.

Manage Alarms

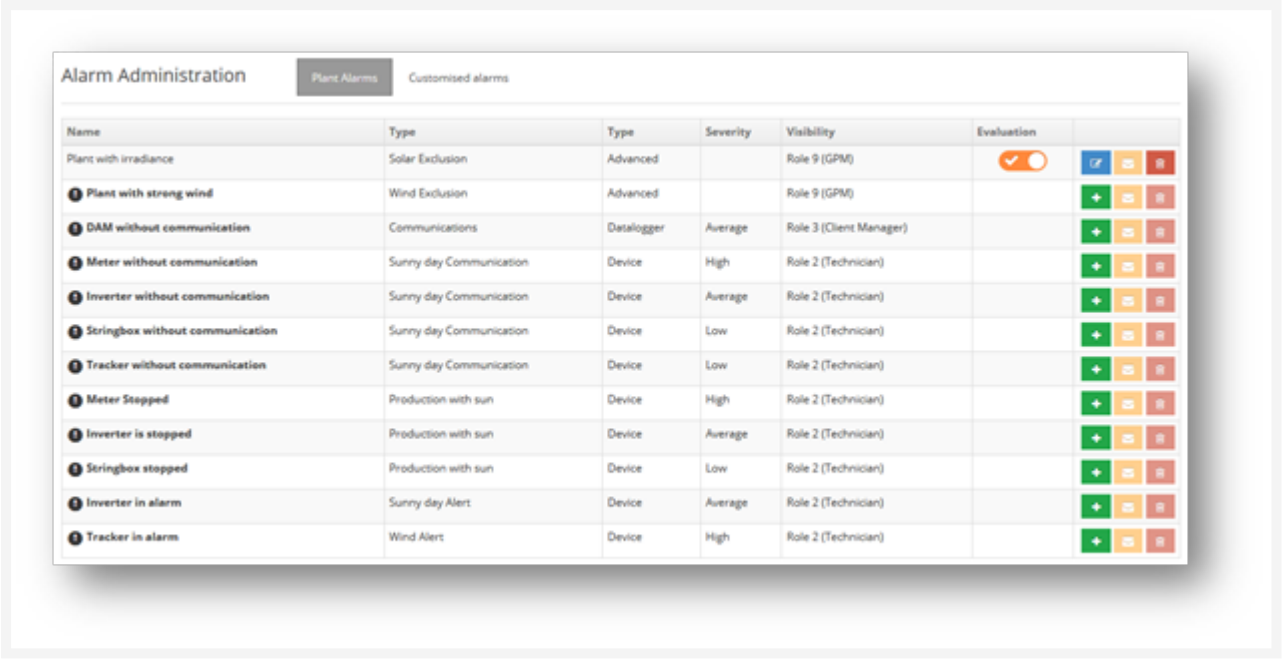
To manage Plant Alarms and Customized Alarms:

1. Open *Alarm Management* > *Manage Alarms*.
2. The **Alarms Administration** opens.



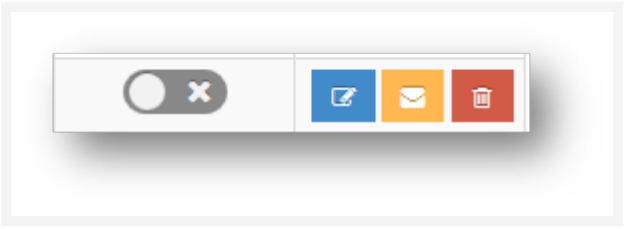
From this screen, you can manage your alarms, and edit their trigger conditions and notification recipients. You can also delete or temporarily deactivate any alarm from this screen.

The Alarms Administration screen has two tabs: **Plant Alarms** shows the facility´s default Plant Alarms, and **Customized Alarms** shows the facility´s customized alarms and the tools to create new alarms.



Actions

Each alarm has the following set of actions available:

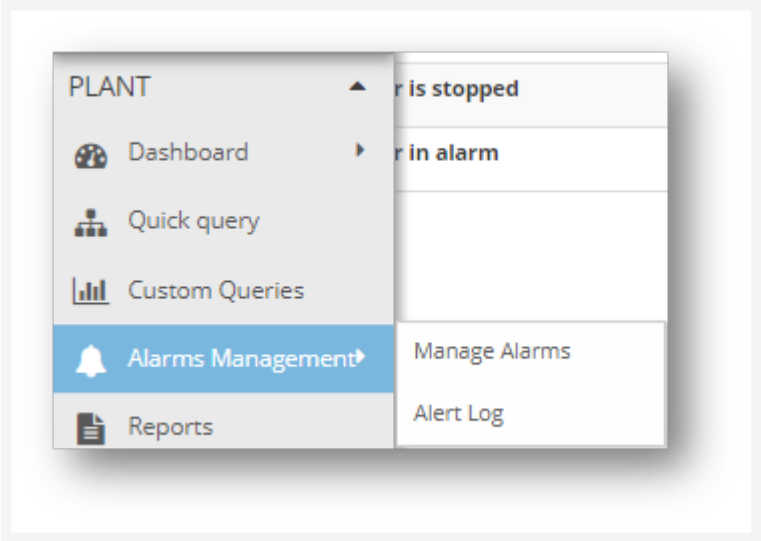


- **Enable/Disable switch:** Use it to activate or deactivate the evaluation of the alarm (if it exist).
- **Create/Edit Alarm:** To access the alarm settings.
- **Recipients:** To access the management of the recipients of the notification for the alarm.
- **Delete:** To delete the alarm.

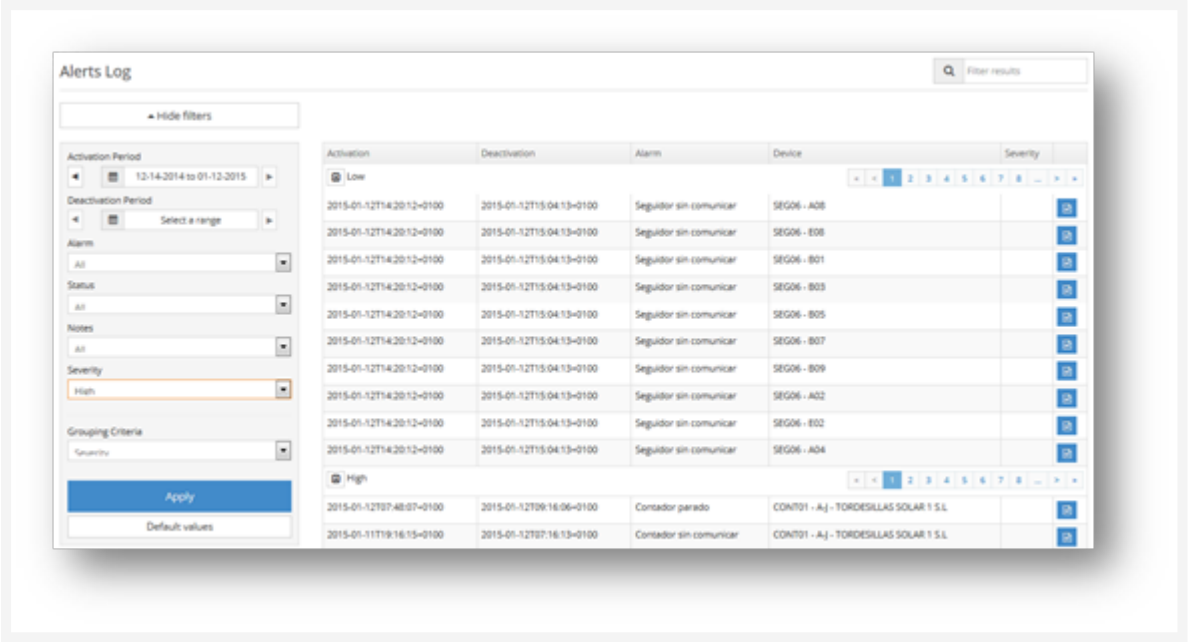
Alarms Log

To see your past and current alarms:

1. Open *Alarm Management* > *Alarms Log*.
2. The **Alarms Log** opens.



From this screen, you can see a permanent record of all the alarms in your plant. A set of **filters** to the right of the screen defines what alarms you see on the table to the right.



Filters

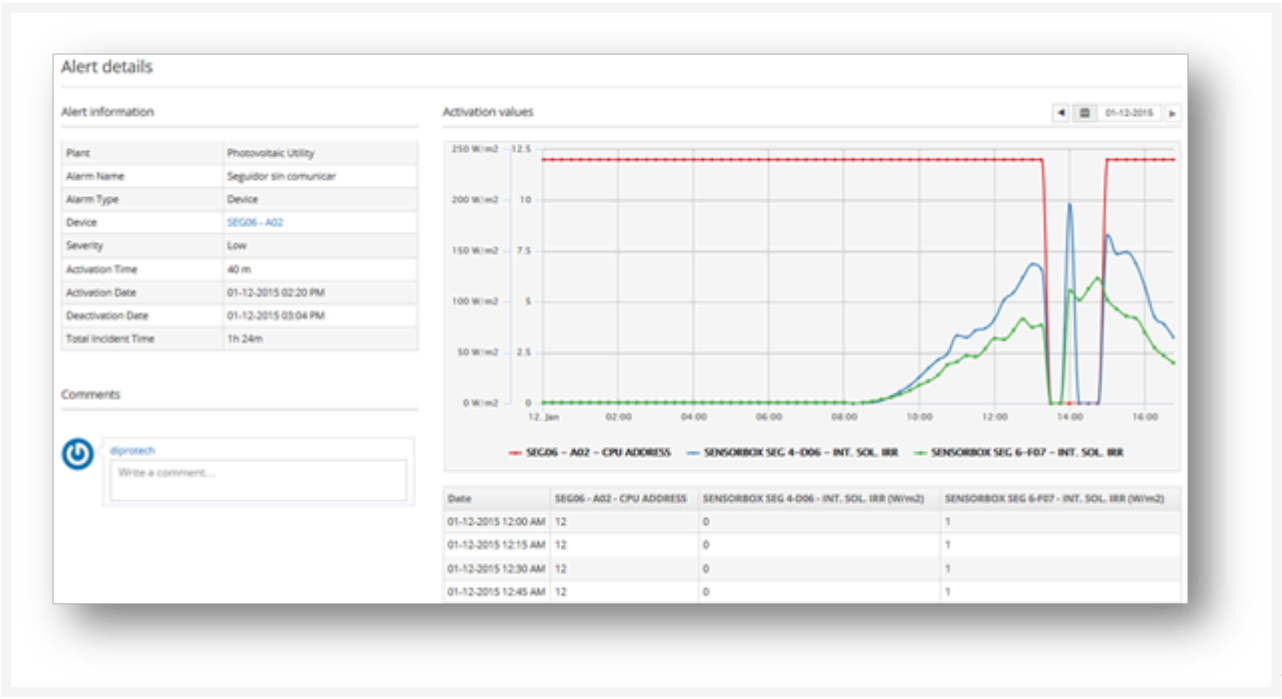
The following filters are available:

- **Activation period**: When the alarm was activated (default is Today)
- **Deactivation period:** When the alarm was deactivated (default is Undefined)
- **Alarm**: Name of the alarm (default is all).
- **Status**: Current status of the alarm. The options are "Active", "Inactive" or "All" (default is only active alarms).
- **Notes:** If the alarm contains comments. The options are "With Notes", "Without Notes", "All" (default is All).
- **Severity:** The configured severity of the alarm. The options are "High", "High and Medium", "Medium", "Medium and Low", "Low", "All".
- **Grouping Criteria**: The table shows alarms ungrouped by default. You can group the results in the table by the following criteria: Alarm Name, Severity, Status, Date of Activation.

In addition, each alarm has a **Details** button ( ) . Click on this button to open the **Alarm details**.

Filters

Click the **Details** button ( ) of an alarm to open the **Alarm details** screen. This is an in-depth view of each system alarm.



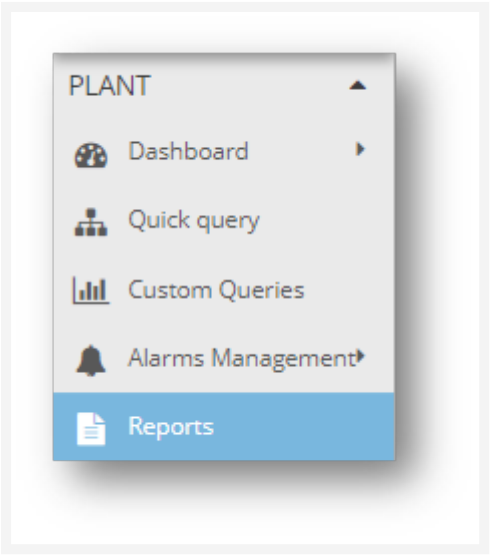
The Alarm details screen shows the following information:

- **Plant:** Shows the plant where the alarm is coming from.
- **Alarm Name**: Shows the name of the alarm.
- **Alarm Type**: Shows the type of alarm.
- **Device**: Shows the affected device. Click this to see a Quick Query of all the day's values from the device.
- **Severity:** Shows the severity of the alarm.
- **Activation Time:** Shows the time accumulated since the activation.
- **Date of Activation:** Shows the exact date of activation of the alarm.
- **Date of Deactivation:** Shows the exact date of the deactivation.
- **Total Time of Incident:** Shows the time accumulated between activation and deactivation.
- **Activation Values:** This chart tabulates the values of the series linked to the alarm. The values that match the activation triggers are shown in red.
- **Comments:** The comments field allow you to write notes to manage maintenance or leave permanent remarks regarding the alarm. You can use comments to assign maintenance

tasks, report interventions, record comments about activation or deactivation, or rule out false positives. All comments record the date they were posted and their author. You can filter alarms in the the Alarms Log by whether they have comments or not.

Reports

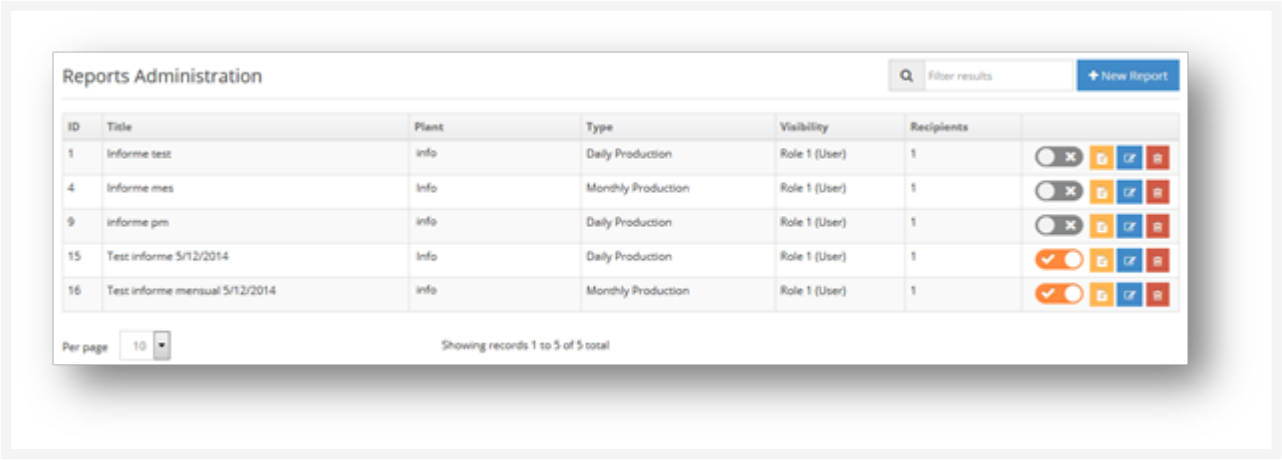
Go to *Plant* > *Reports* to view and manage your facility's reports:



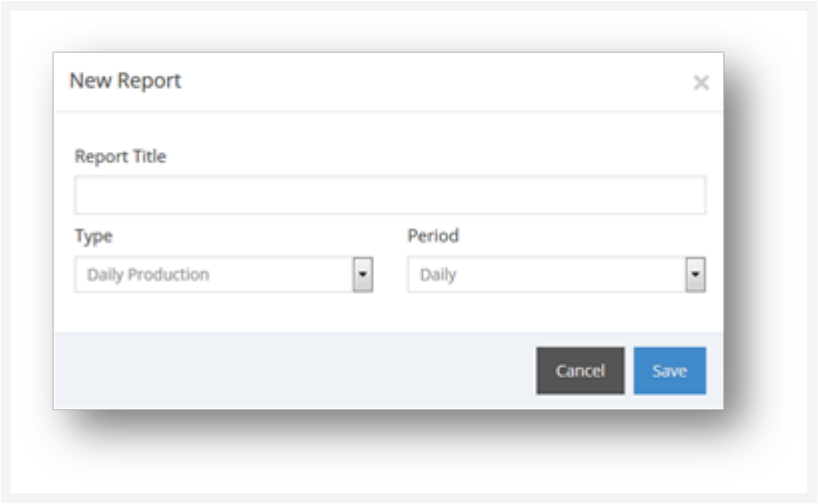
You can configure and schedule the generation of reports to receive key data for the administration of your portfolio at regular intervals. There are six types of production reports, depending on the period they cover and the data they show. You can define the information in your reports according to your needs and those of your users.

Managing reports

You can define new reports from the **Reports Administration** screen. You can also edit existing reports and edit their intended recipients.



Click on **New Report** in the top-right corner to open the New Report panel:



You must specify the following:

- a **Report Title** so you can easily identify the report in the Administration table.
- a **Type**. There are six types available:
  - Daily production: a daily production report of the installation
  - Monthly production: a monthly production report of the installation
  - Daily custom: a daily custom report of the installation. It generates a report containing the daily values of one or more Customized Queries
  - Monthly custom: a monthly custom report of the installation. It generates a report containing the daily values of one or more Customized Queries
  - Daily systems: a daily report of the installation systems

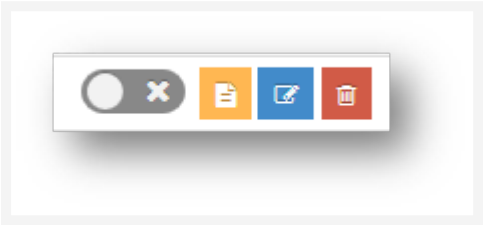
    - Monthly systems: a monthly report of the installation systems
- **Period** defines how often the Report is generated.

> ⓘ NOTE: The Report Types define the type of data the reports contain, not how often the Reports are generated.

Click **Save** to save the new report.

Report actions

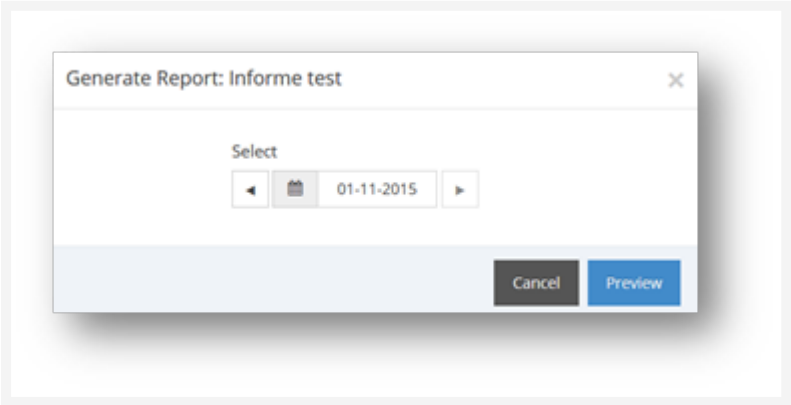
Each report in the **report Administration** screen offers the following options:



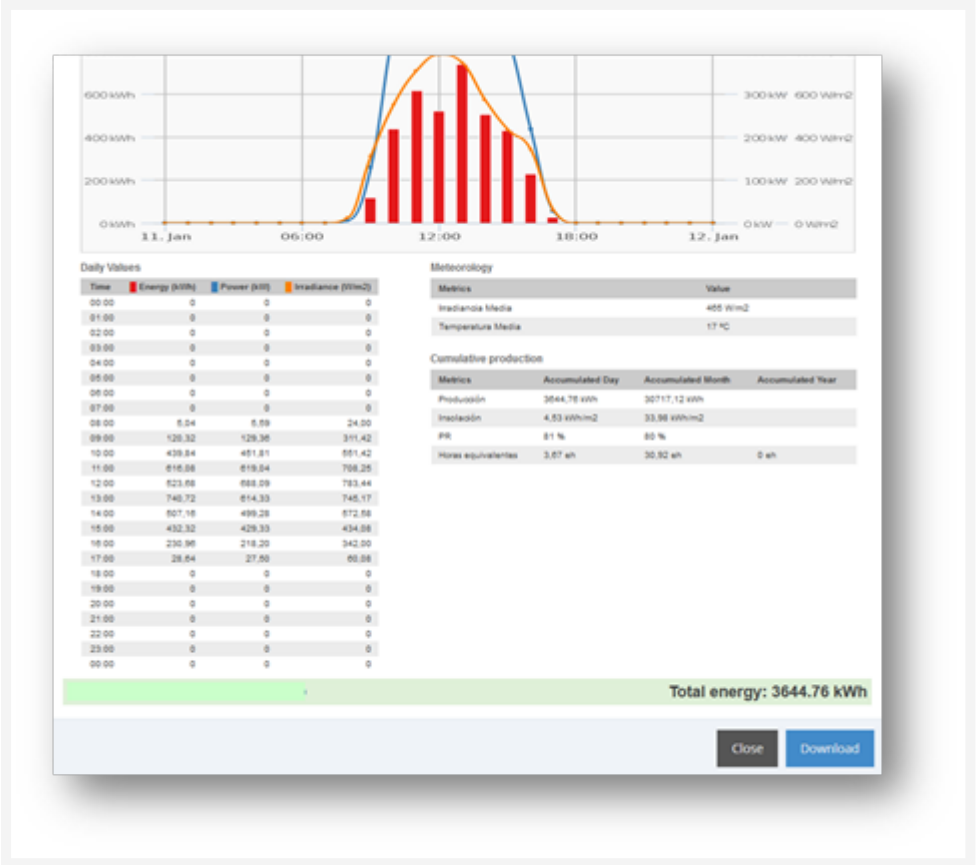
- **Enable/Disable switch:** to turn on and off the generation and dispatch of the Report.
- **Generate Report:** to generate a Report, regardless of the period set in the Report´s settings (see Generating a Report).
- **Edit Report:** to view and edit the settings of the Report.
- **Delete Report:** to delete the Report. This action cannot be undone.

Generating a report

Click the **Generate Report** button opens the following panel:



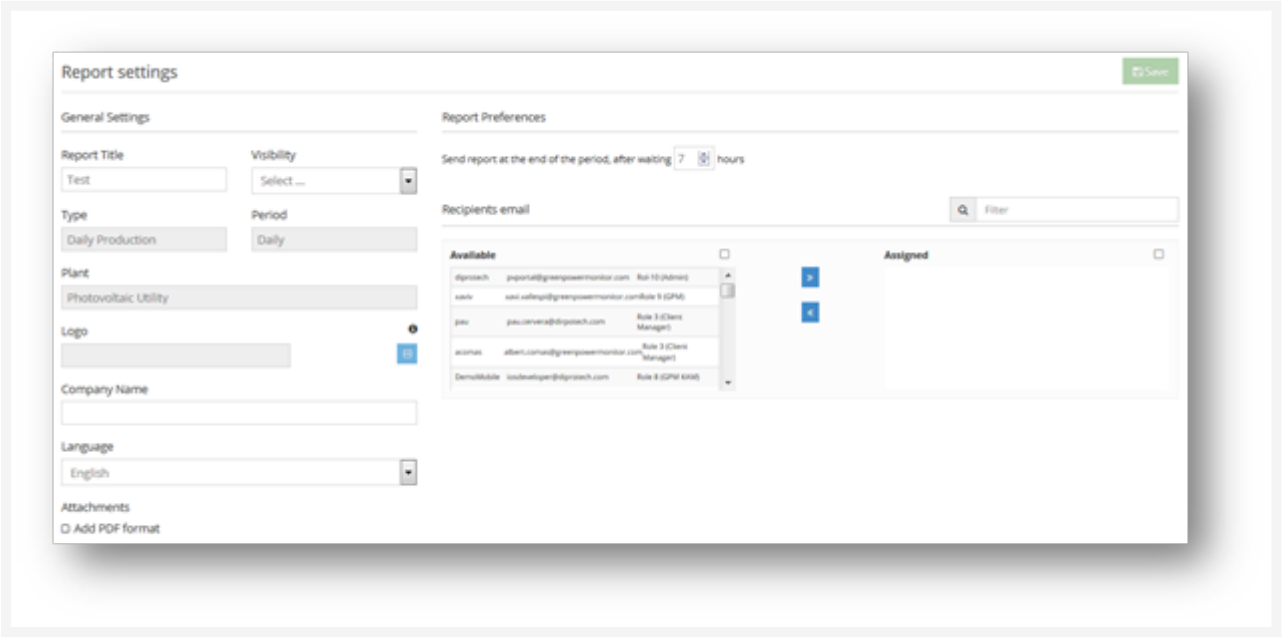
Select the desired period, then click **Preview**. A preview of the report opens:



You can download this preview in PDF format.

Editing reports

Click the **Edit Report** button to customize reports details, such as adjusting the schedule and the recipients, or aligning the reports to your corporate branding.



You can edit the following settings:

- **Report Title:** the title that shows on the report and in the Reports Administration table
- **Visibility:** to define the roles who can view the report
- **Type:** the type of report that is being edited (See Managing Reports)
- **Period:** how often the Report is generated
- **Plant:** the plant covered by the report
- **Logo:** You can load an image of up to 45x200 pixels. This image is visible in the report heading.
- **Company Name:** You can define a corporate name to show in the report heading.
- **Language:** the default Language of the Report.
- **Add PDF Format:** Adds a copy of the Report to the dispatch email in PDF format (The standard dispatch already includes the Report in HTML format).
- **Report Preferences**: You can set a waiting time before the System generate and send the report at the end of the defined period. GPM recommends that you leave a margin to make sure the report contains all the data, especially in facilities equipped with wireless communications.

> ⓘ NOTE: Depending of the Type of report, you may need to specify additional information. In Custom Reports, you must provide the selection of custom queries, the format and the order.

- **Recipients Email:** Select the people who should receive the report among a list of available recipients. Once you define a recipient, their email appears in the **assigned** column. All assigned recipients receive the report in their email in HTML format as soon upon its generation. To disable the generation and dispatch of the report, deactivate it from Reports Administration (See Report actions).

Systems

Systems represent a subset of any installation or facility, for administrative or access control purposes. You can split any installation into one or more systems, each one with their own monitored variables, parameter configuration, settings and user access.

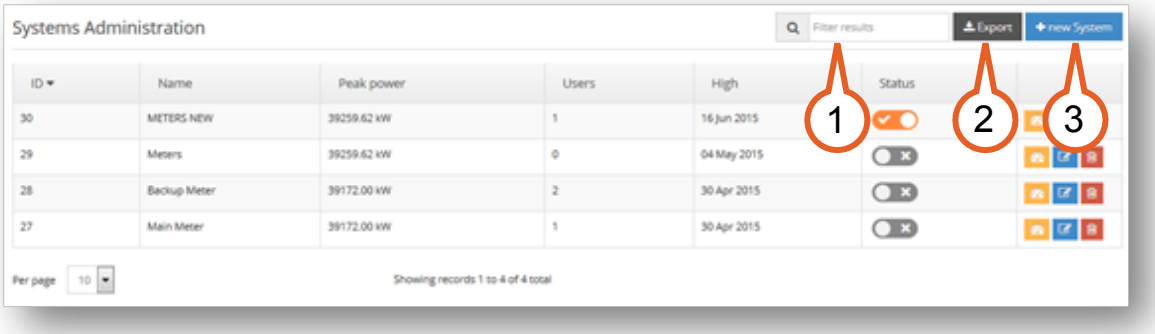
You can generate system divisions in the following scenarios:

- Multi-user facilities, where the end user only needs to access their respective data.
- Large facilities, where the administration of each section or part need special care.

> ⓘ NOTE: You can define Reports, Queries and Dashboards at the System level, but you must define Alarms at the Facility Level.

System Administration

The **System Administration** grid shows a list of all the systems in a given facility:



To use the System Administration grid:

1. **Search box:** Type any string of text to filter the grid by the string value.
2. **Export:** to obtain a CSV file of the grid values.
3. **New System:** to create a new System in the current Facility.

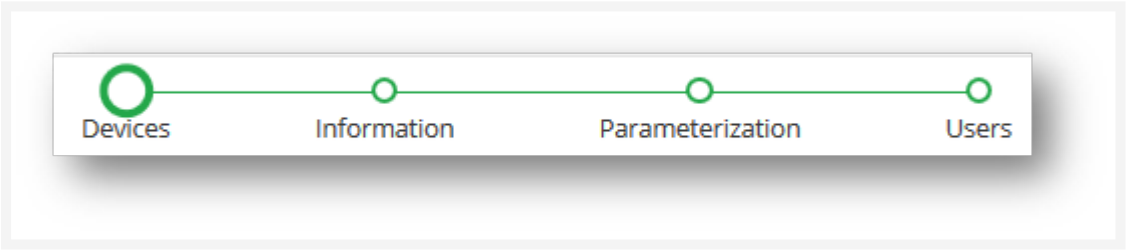
System actions

Each System has the following options:

1. **Enable/Disable:** Activate or deactivate the visibility of the System
2. **Dashboard:** Send you to the specific System Dashboard
3. **Edit:** Access System Settings
4. **Delete:** Delete System.

Editing Systems

System Settings consist of four sections:

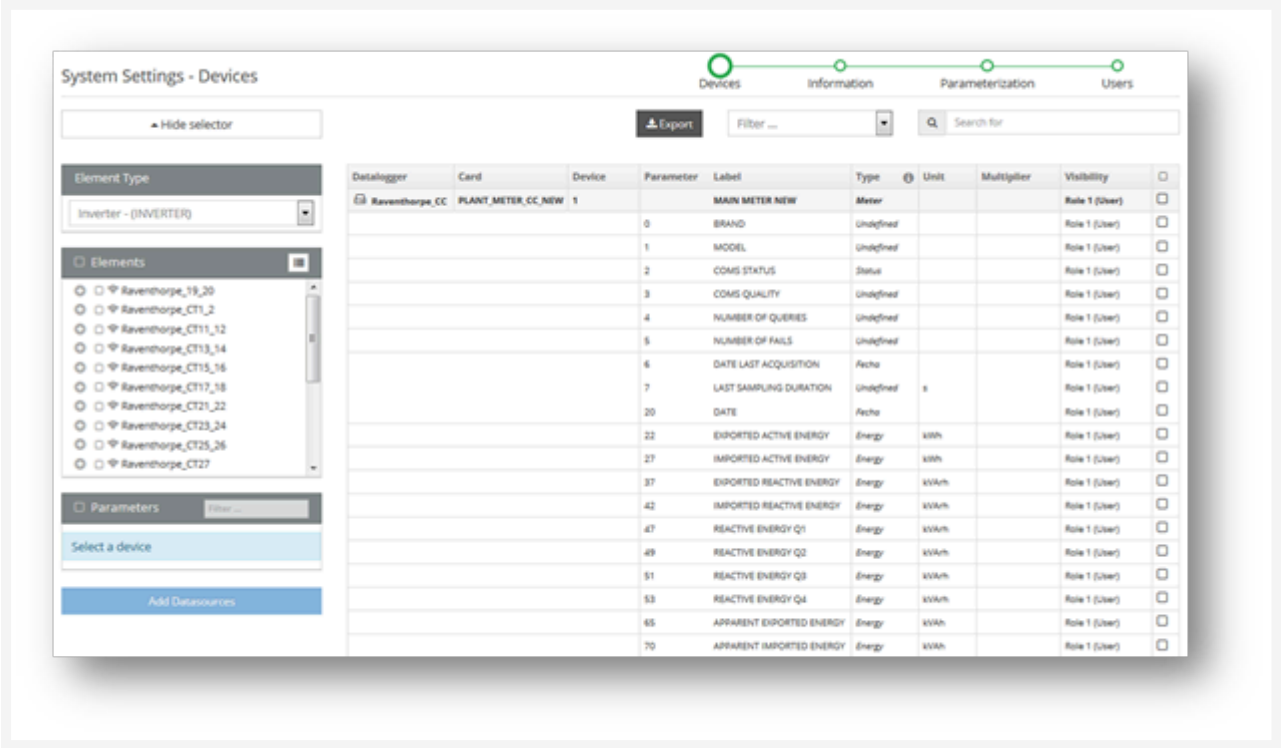


From left to right, the four sections are:

- Devices
- Information
- Parameters
- Users

Devices

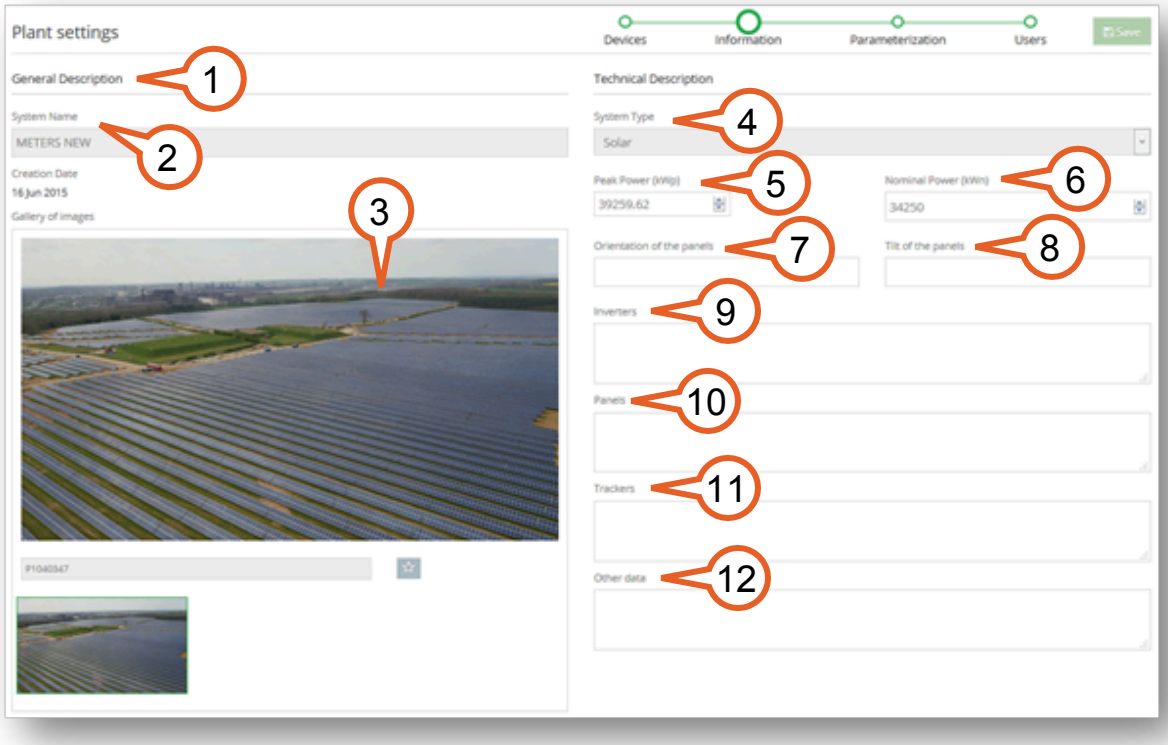
In this section we select and edit the devices and variables linked to this System. Usually, the devices to include in a system are specific meters (production values) and weather stations (irradiance values).



Use the selector on the left-hand side to add specific devices and datasources to this System. All devices and variables currently included appear in the main grid to the right-hand side. Check the boxes to the right of any device or variable to select and remove it from the system. You can include all the datasources that you want to show at the System Level. Only the datasources included in the System are available for the configuration or parameters.

Information

The information section lets you define basic Information about the system.



It consists of two sections: **General Description** (on the left) and **Technical Description** (on the right).

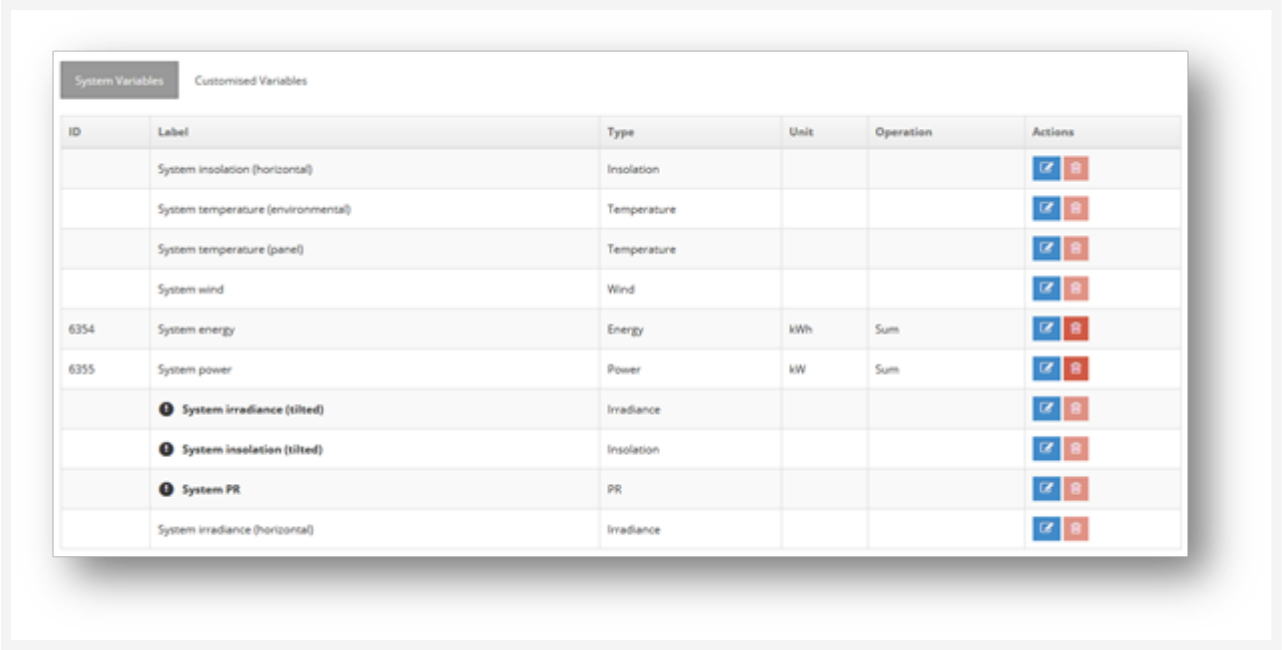
1. **System Name:** Use the provided link to the free Gravatar service to link an email account with a profile picture.
2. **Creation Date:** This is the start date of the facility
3. **Image Gallery:** This shows all the available images in the Facility Gallery. Use one of them as the default System Image for the Dashboards. Use the Star Button to mark an Image as Favorite.
4. **System Type:** This is the facility type. This tag is available as filter criteria in the portfolio dashboard.
5. **Peak Power (kWp)**: This is the installed power of the system. It is used as the reference value in various power comparisons and in PR calculations.
6. **Nominal Power (kWn):** This is the designed power of the system. (for reference only)
7. **Orientation of the panels:** (for reference only) Specifies the orientation of the panels in solar plants.
8. **Tilt of the panels:** (for reference only) Specifies the inclination in degrees of the panels in

solar plants.

9. **Inverters:** (for reference only) Specifies the number, brand and Model of the Inverters.
10. **Panels:** (for reference only) Specifies the number, brand and Model of the Solar Panels.
11. **Trackers:** (for reference only) Specifies the number, brand and Model of the Trackers.
12. **Other Data:** (for reference only) use this field to add any useful note (communications, contractual details, etc.)

Parameters

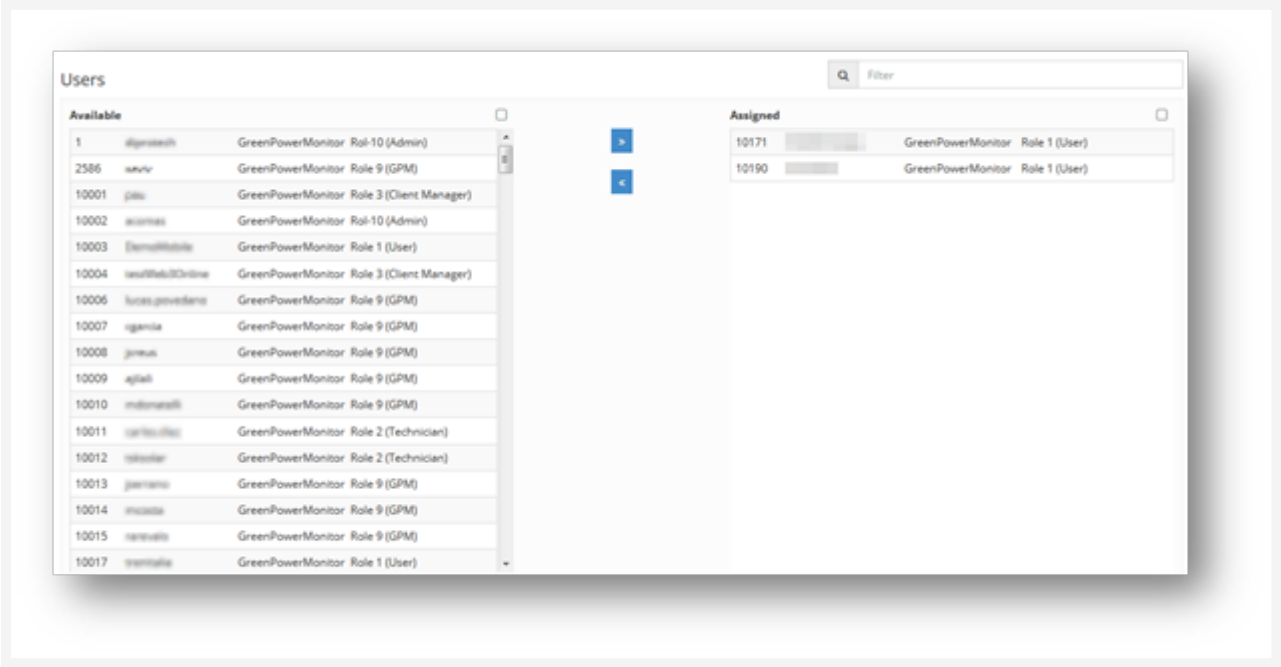
This section lets you define the System Parameters. Only the datasources included in the system are available to generate Parameters.



Users

This section lets you grant or revoke user access to the System. The table on the left shows all the Available Users. The table on the right shows Assigned Users, the users assigned to this system.

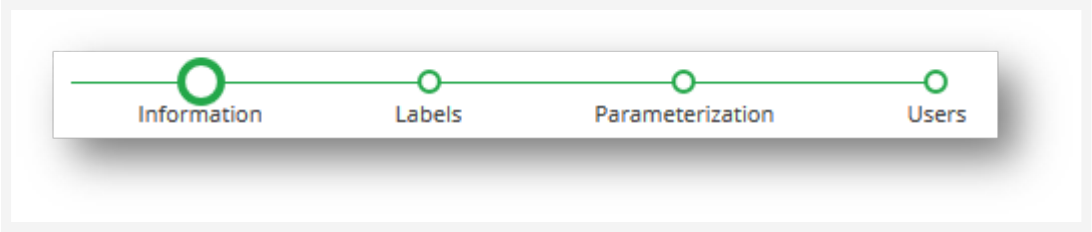
Select the users in any table and use the arrows between the tables to move them from Available to Assigned and conversely.



ⓘ NOTE: You can also manage access to Systems for specific Users from their User Settings.

Plant Settings

Plant Settings consists of four sections:

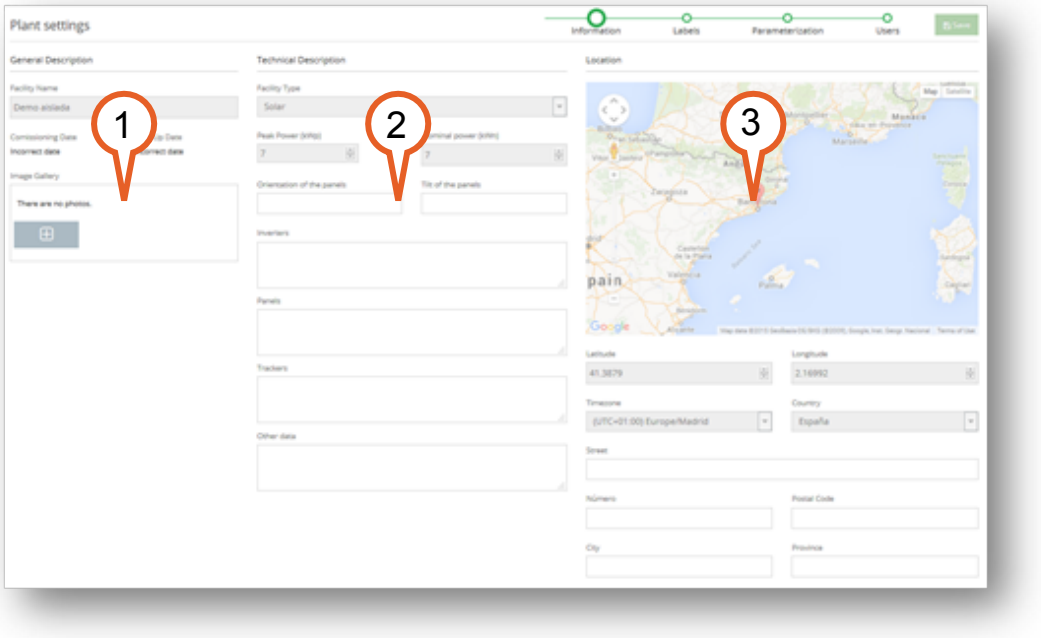


From left to right, the four sections are:

- Information
- Labels
- Parameters
- Users

Information

The **Information** screen lets you view and edit key details about the facility. You can also edit the gallery of images and the description.



It consists of three columns:

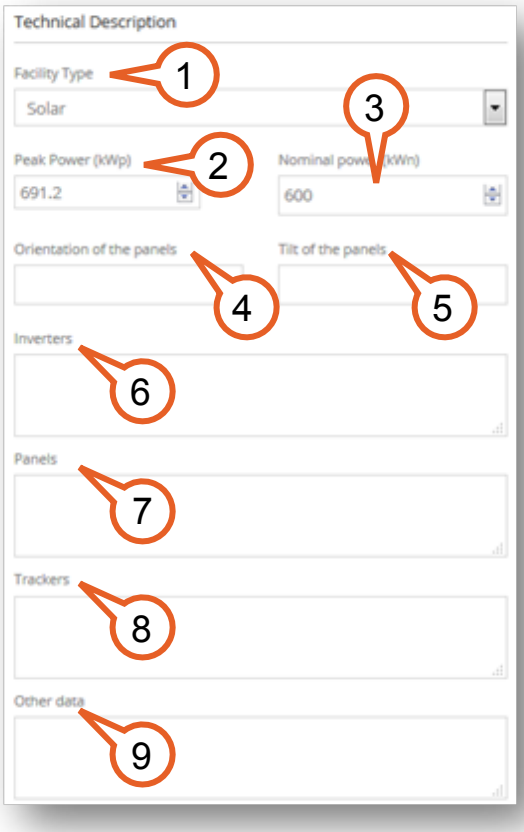
1. General description
2. Technical Description
3. Location

General Description

The **General Description** lets you define:

1. **Facility Name:** the name of the facility
2. **Commissioning Date:** the date the facility was commissioned
3. **Start-Up Date:** the date the facility became active
4. **Image Gallery:** Load one or more pictures of the facility to use as the default Facility Image in the Dashboards.
5. Use the **Star button** to mark the selected image as Favorite.
6. Use the **Add button** to upload an image from your computer.
7. Use the **Delete button** to remove the selected image from the gallery.

Technical Description



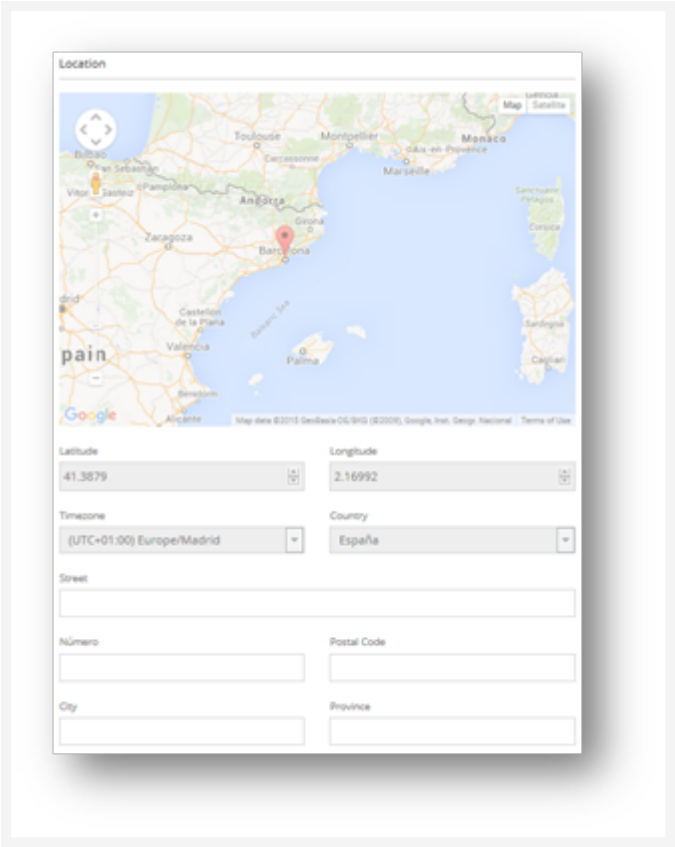
The **Technical Description** lets you define:

1. **Facility Type:** This is the facility type. This tag is available as filter criteria in the portfolio dashboard.
2. **Peak Power (kWp)**: This is the installed power of the system. It is used as the reference value in various power comparisons and in PR calculations.
3. **Nominal Power (kWn):** This is the designed power of the system. (for reference only)
4. **Orientation of the panels:** (for reference only) Specifies the orientation of the panels in solar plants.
5. **Tilt of the panels:** (for reference only) Specifies the inclination in degrees of the panels in solar plants.
6. **Inverters:** (for reference only) Specifies the number, brand and Model of the Inverters.
7. **Panels:** (for reference only) Specifies the number, brand and Model of the Solar Panels.
8. **Trackers:** (for reference only) Specifies the number, brand and Model of the Trackers.
9. **Other Data:** (for reference only) use this field to add any useful note (communications, contractual details, etc.)

Location

Use the **Location** map to pinpoint the exact location of your facility. The location data is used to depict the facility on the Maps and obtain the weather forecast. easily locate your facility in few steps:

1. Enable the location edition at the top
2. Navigate and click the map to show a location red mark.
3. Check the values for Latitude and Longitude below the map.
4. Continue clicking until the red mark is on the exact spot you want. Alternatively, if you already know the Latitude / Longitude coordinates, you can edit them directly.
5. Disable the Map edition when you're done.

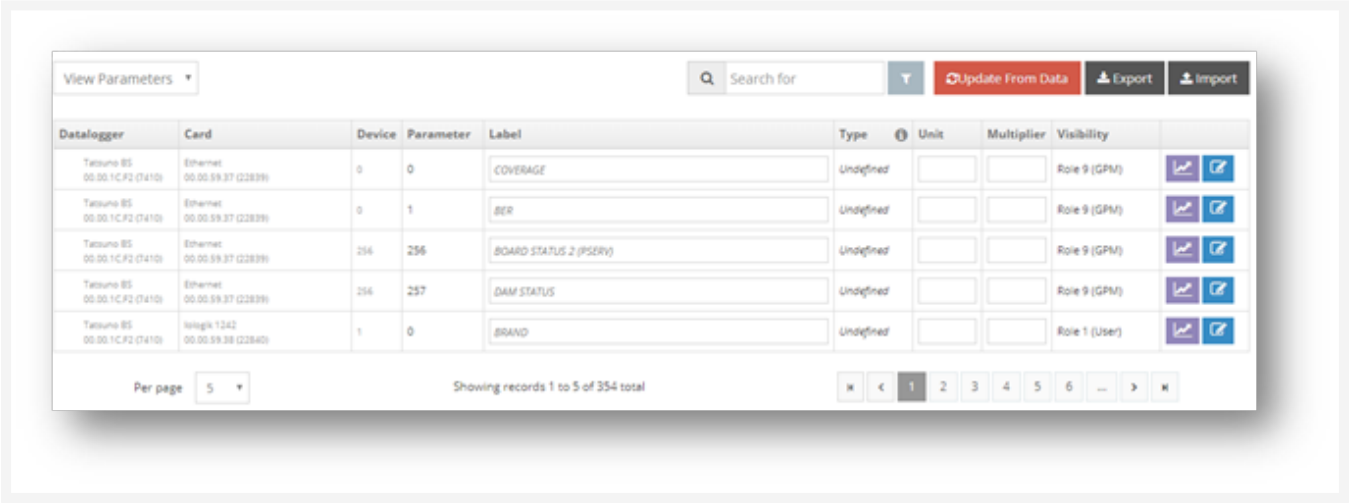


Next, you can set additional details:

- **Time Zone:** This information is used to adjust the timestamps for alarms and monitored values.
- **Country:** Specify in which country the facility is located. This tag is available as a filter criteria in the portfolio dashboard.
- **Postal Address:** Street name, street number, postal code, city and province. Used for reference only.

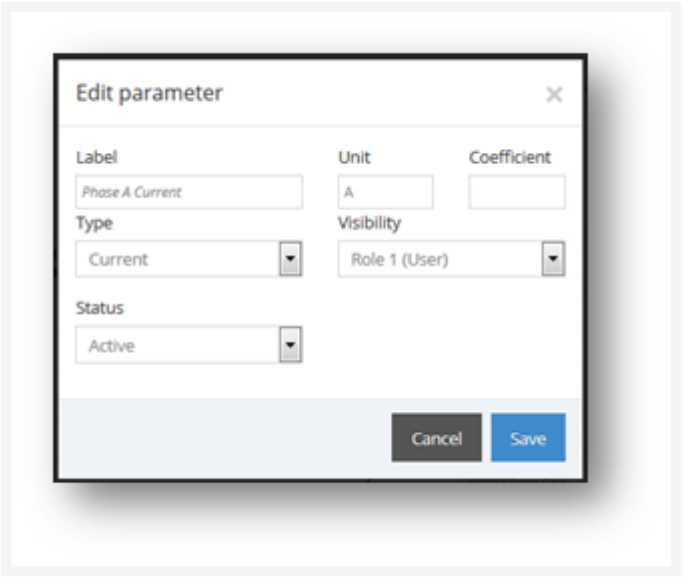
Labels

Labels are optional tags you can define for specific facility elements. The system uses labels to tune in certain monitored variables.



Use the filters on the left-hand side of the screen to select the datalogger or boards you want to edit. Available devices and monitored variables show on the central grid.

You can edit labels directly from the grid. Alternatively, click on the blue "Edit" button to the right of the row to open the Edit Parameter window:



You can edit the following details (Left to right, top to bottom):

- **Label:** the label of the device or parameter.
- **Unit:** the measurement unit of the parameter.
- **Coefficient:** a multiplier to apply to the parameter value

- **Type:** the type of parameter or element. This is used internally to classify elements and parameters.
- **Visibility:** the minimum user Role that can see this element or parameter. This is useful to hide very specific parameters or status parameters from End Users.
- **Status:** set to the parameter to active or inactive (Active by Default).

Parameters

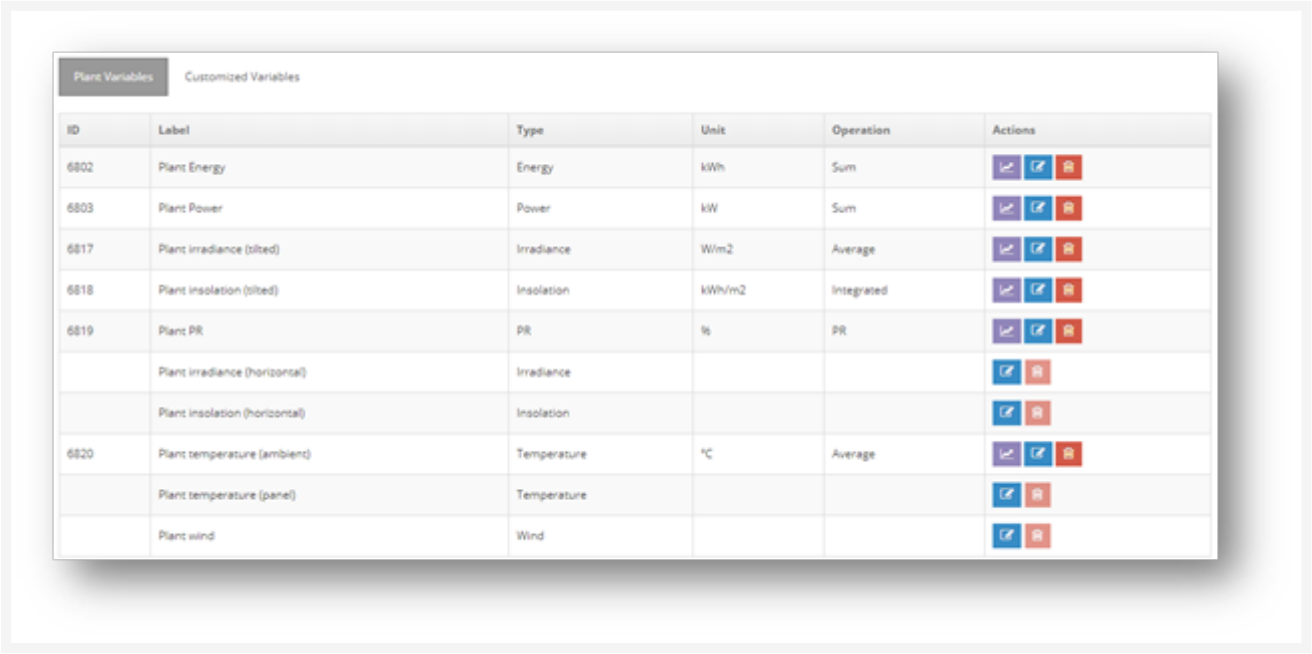
A facility requires a set of core variables to return the added values of yield, production, availability and others. In the **Parameters** section, you generate these major variables by aggregating and processing the values of the monitored elements.

The most common variables for a photovoltaic plant are the following:

- **PR (Performance Ratio)**: the percentage of energy generated with regards to the potential energy of the facility or device in a certain period. The calculation of the potential energy depends on the peak power of the facility and the Insolation recorded during the period.
- **Plant Power:** the total instant power monitored by all the meters (or inverters, depending on the facility).
- **Plant Energy**. the total energy monitored by all the meters (or inverters, depending on the facility).
- **Plant Temperature (ambient / panel)**: the Temperature average of the different sensors of a facility. The **type of temperature** depends on whether the sensors are on the outside (ambient) or whether they are on the panels (panel).
- **Plant irradiance (horizontal / tilted)**: the Irradiance average of the different sensors of a facility. The **type of irradiance** depends on whether the sensors are oriented horizontally (horizontal) or at the same angle as the panels (tilted).
- **Plant insolation (horizontal / panel):** the Plant Irradiance values of a facility. The **type of insolation** depends on the type of Irradiance used.
- **Plant Wind:** the Wind Speed average of the different sensors of a facility. It is used in wind facilities, but also in photovoltaic facilities with solar trackers.

Plant variables

You can create and edit any of Plant Variables for the Facility. The grid shows the variables currently defined, their type, unit and the type of aggregation operation:

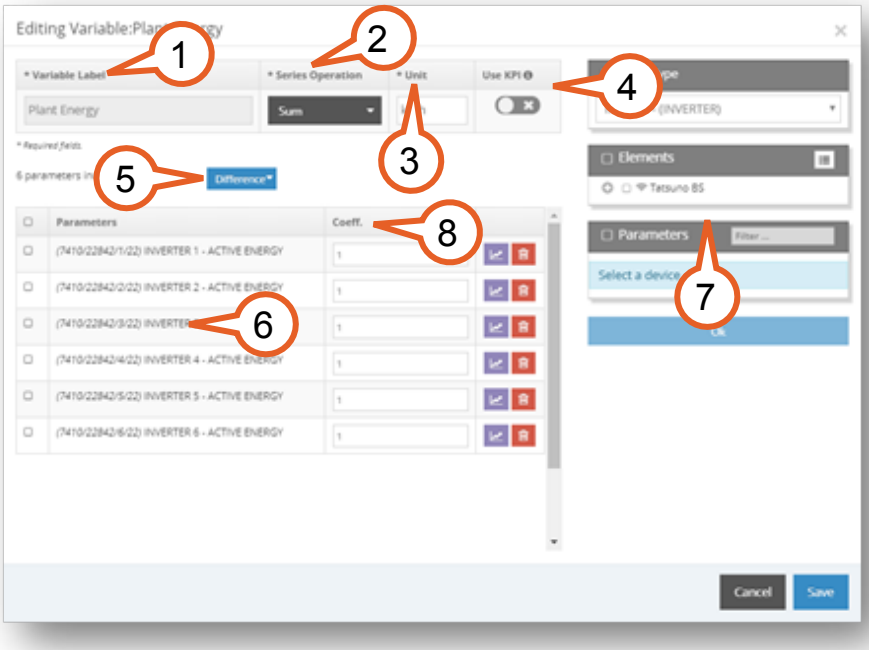


Navigating plant variables

- Click the **Add** or the **Edit** buttons to open the specific edition window of each variable.
- Click the **Delete** button to clear the configuration
- Click the **Custom Variables** tab at the top of the table to navigate to Custom Plant Variables.

Editing plant variables

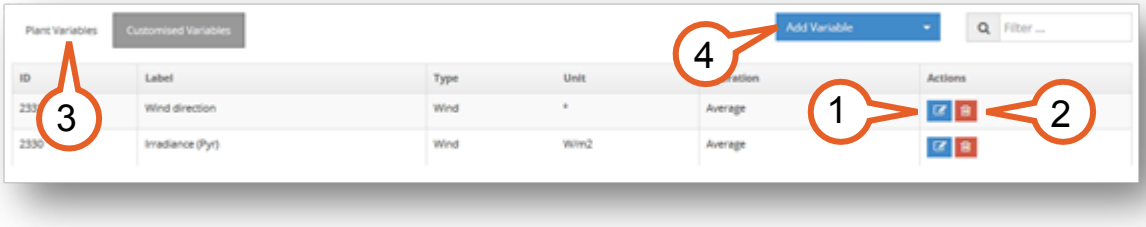
Each variable comes with its specific edition window. Plant variables that aggregate more than one monitored variable follows the same structure:



1. **Variable Label:** the display name for the variable in the platform.
2. **Series Operation:** the type of aggregation operation between the included parameters values. Usually Sum or Average.
3. **Unit:** the unit of the resulting value. It enables to change magnitudes if needed.
4. **Use KPI:** to force the KPI to be calculated locally instead of using the Data Provider method.
5. **Value Operation**: to change how the values of each included parameters are aggregated in time (For example, Power parameters use AVERAGE and Energy parameters use DIFFERENCE as Value Operations by default). Available options are: Sum, Difference, Last, Maximum and Minimum.
6. **Included Parameters:** All the monitored variables included in the calculation of this Plant Variable. Use the Series Selector on the right to include new variables. Use the Upper Delete Button to remove all parameters from the calculation. Use the Red "Bin" Button on each row to remove only that specific parameter.
7. **Series selector:** to include Parameters to the variable.
8. **Coefficient:** a Value multiplier that can be either positive or negative. Use this feature to change the sign of a given parameter, or to change the magnitude.

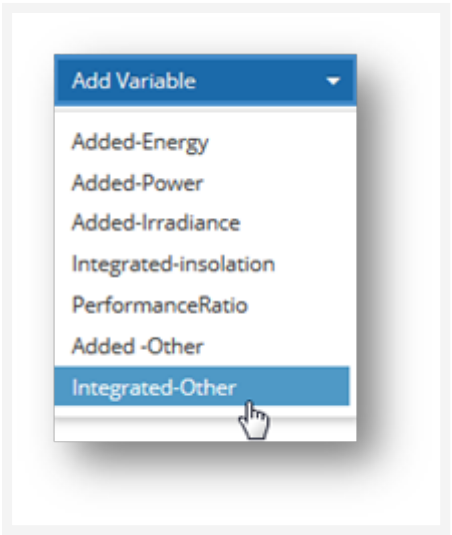
Custom Variables

You can create and edit Custom Variables for the Facilit. The grid shows the variables currently defined, their type, unit and the type of aggregation operation:



Navigating custom variables

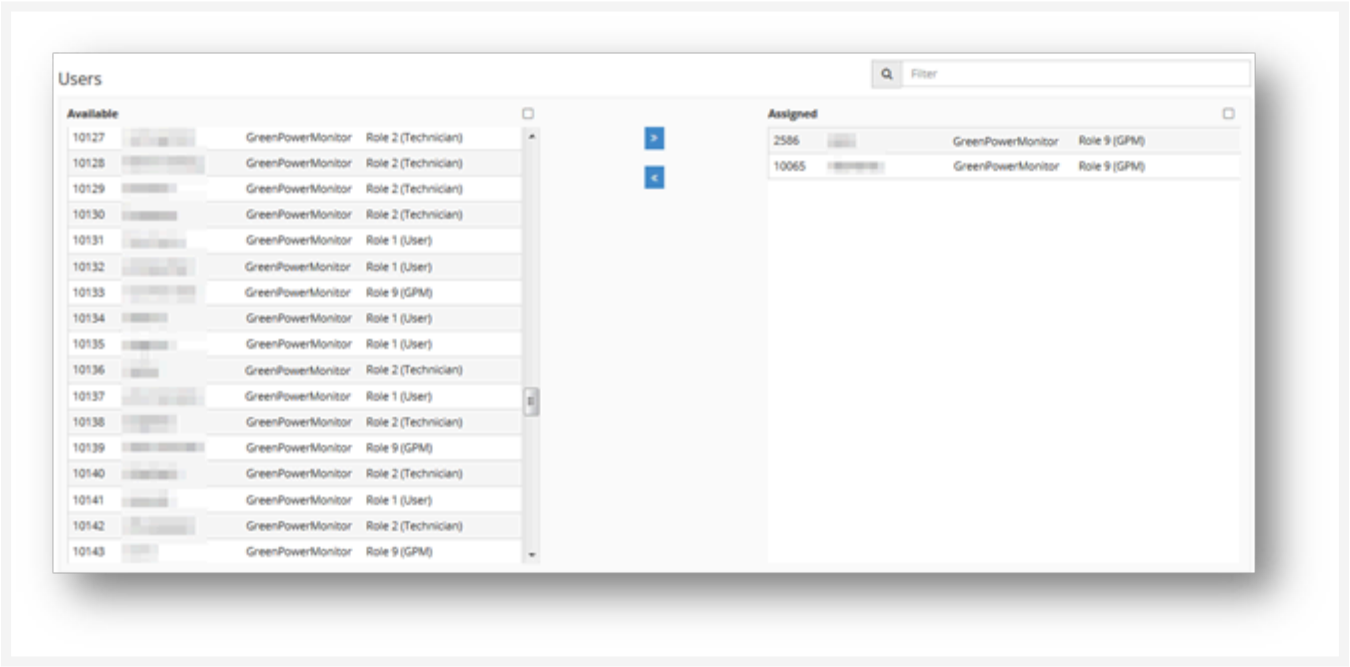
1. Click the **Edit** button to open the specific edition window of each Variable.
2. Click the **Delete** button to permanently delete a Custom Variable.
3. Click on the **Plant Variables** tab to navigate back to to Plant Variables.
4. To create a new variable, click on the blue **Add Variable** dropdown button, then select the type of Variable that you want to create:



Users

This section lets you grant or revoke user access to the System. The table on the left shows all the Available Users. The table on the right shows Assigned Users, the users assigned to this system.

Select the users in any table and use the arrows between the tables to move them from Available to Assigned and conversely.



ⓘ NOTE: You can also manage the Access to Systems for a specific User on their User Settings.

ⓘ NOTE: To create a new user, see the User Administration section.

Users

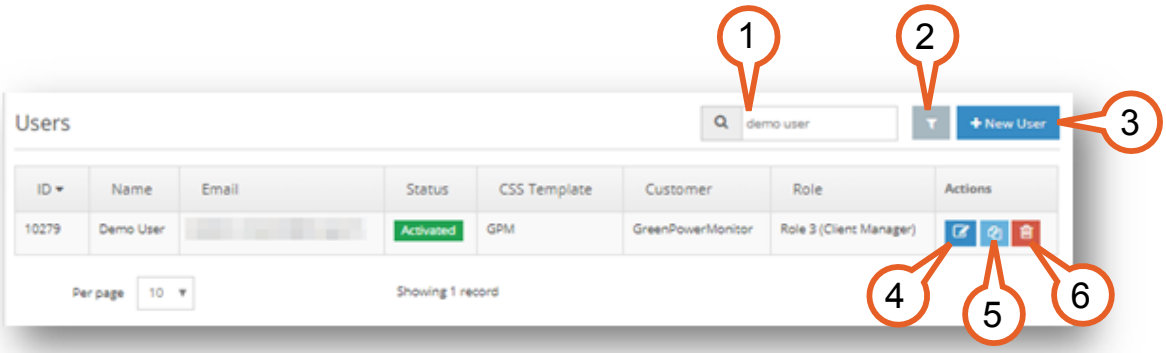
User Administration

In this section, you can create, edit and delete users of the GPM Portal platform.

To go to the **Users** screen:

1. Go to *Portfolio*
2. In the *Manage* section, you can find the Plants and Users administration.

Users screen



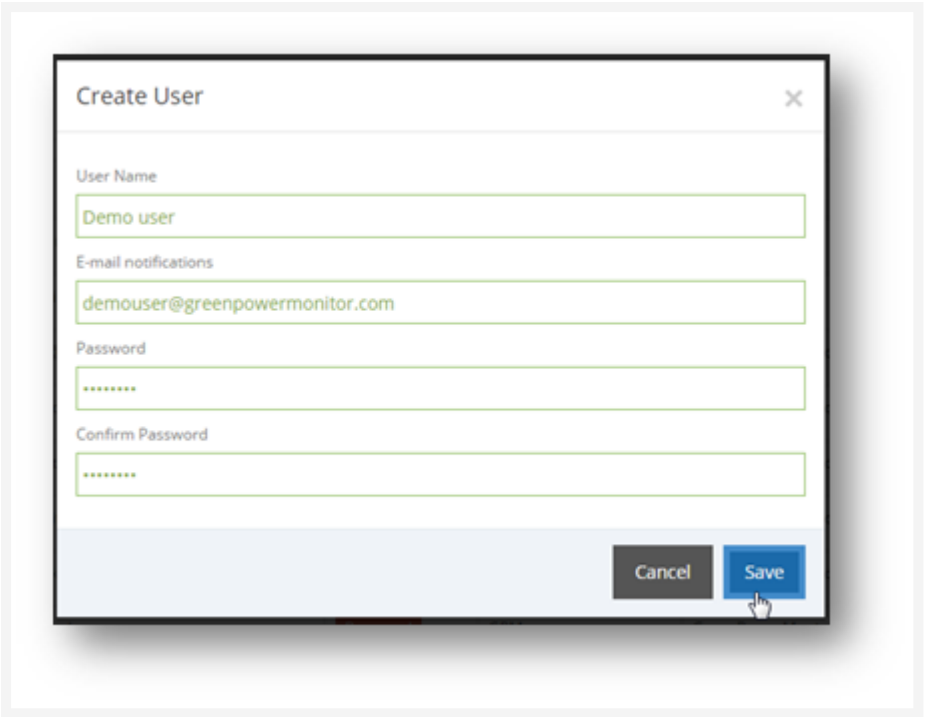
The following options are available:

1. Search bar: to look for a particular user
2. Filter: to activate the advanced filter. You can use filters to only see users that have a certain status, role or customer.
3. New User: to generate a new platform user.
4. Edit: to edit the user in the row.
5. Clone: to clone the user in the row.
6. Delete: to delete the user in the row.

New User

Creating a new user

To create a new user, click the **New User** button at the top-right corner of the screen. A pop-up window opens where you can define the minimum information required to generate a user:

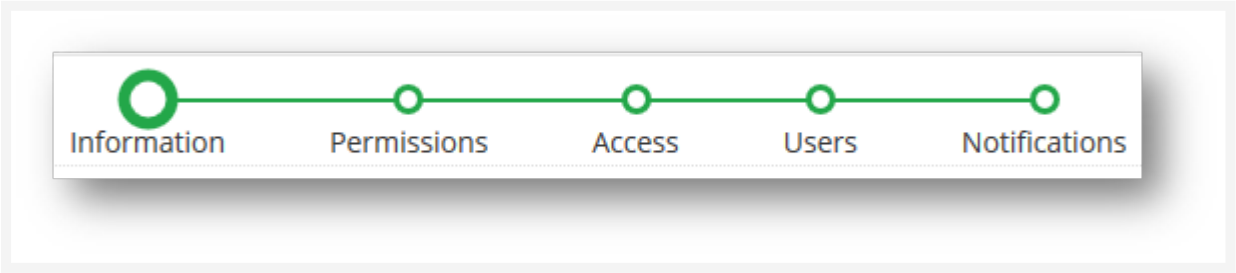


When you finish, click **Save** to generate the user. After you do this, the user appears in the *Users* table and you can edit it normally.

Edit Users

Editing a user

Click the **Edit User** button to open the editing window. User data is divided into five categories:



The categories are, from left to right:

- **Information:** to define basic user information and preferences.

  > ⓘ NOTE: Users can edit some basic information themselves from their user preferences.

- **Permissions:** to manage permissions to the various sections and tools of GPM Portal.

  > ⓘ NOTE: This feature is restricted to certain administrative roles.

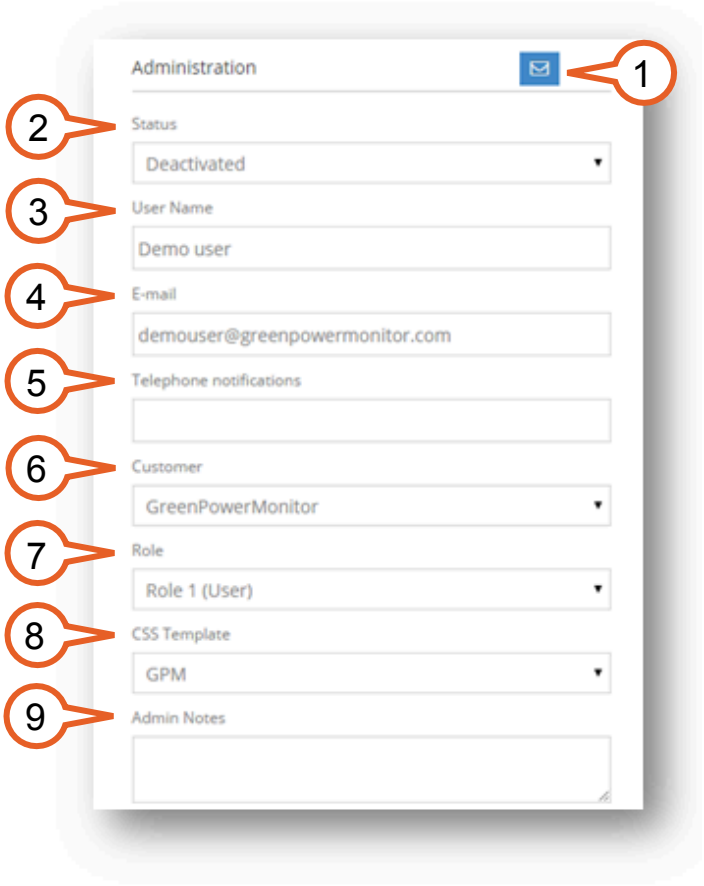
- **Access:** to define and grant access to the distinct assets of the company: the whole portfolio, specific facilities or even a single System.
- **Users:** to define whether the user has permissions to manage other users and assign or unassign these users.
- **Notifications:** to add or remove Alarm Activation and Report Availability notifications for the user.

Each category is explained in detail in the following sections.

Information

In this section. you can define the basic information for the user. It is divided into two sub-sections: *Administration* and *User Preferences*.

Administration



The Administration sub-sections contains the following elements:

1. **"Send Invitation" button:** Click this button to send a GPM Portal introductory mail to this user. This mail will enable the user to set up a confidentially new password. The following values are expected to be defined by the administrator
2. **Status:** A user can be either Active or Inactive. Only Active Users can log in the GPM Portal platform and receive notifications.
3. **User Name:** The visible name of the user in the platform.
4. **E-mail:** You must specify a a unique e-mail address to register each user. This address is also used for all the email notifications of GPM Portal.
5. **Telephone notifications** (optional): Fill in a phone number to send SMS notifications.
6. **Customer:** the Company responsible of the user.
7. **Role:** Select the User Role to give increasing Permissions:

- Role 1: End User. Dashboards and Charts
- Role 2: O&M. Alarms and Advanced Queries
- Role 3: Manager. Facilities, Reports and Users Management

8. **CSS Template:** Select a CSS Template to change the header Logo and Background color of the GPM Portal for that user.
9. **Admin Notes:** This is a free text area to write down any relevant note.

User preferences

Some values in *User preferences* are set by default because they are inherited from the values of the Administrator to facilitate the process of configuration. These value include Customer, CSS Template, Language or date and number format preferences.

> ⓘ NOTE: Users can edit some of their user preferences at a later point.

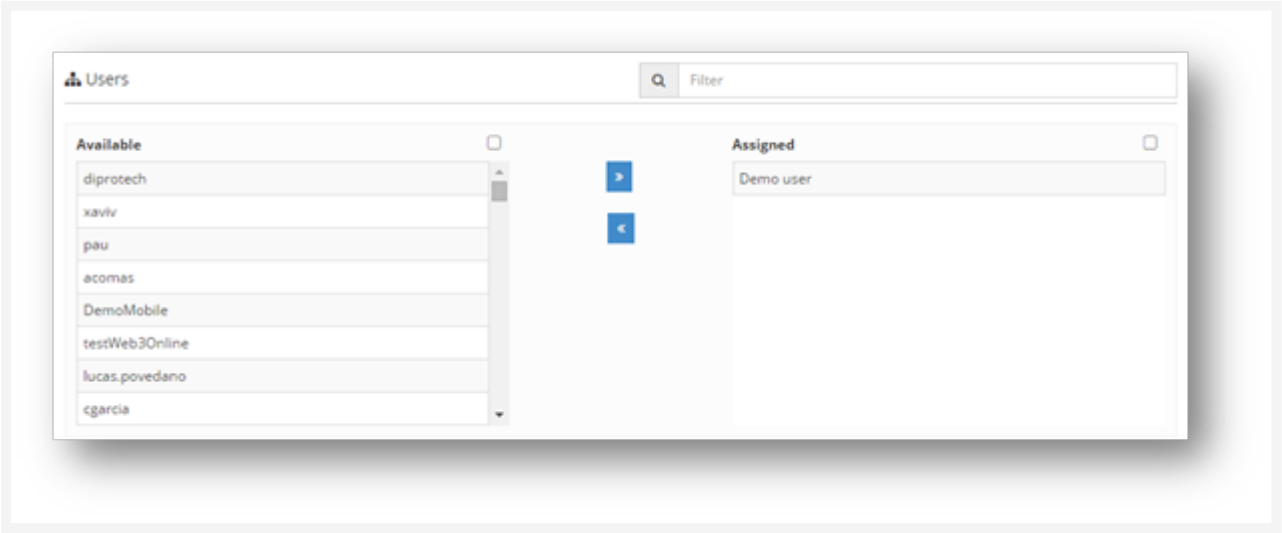
Access

Use this section to define the Companies, Installations or Systems this user can access. There are three levels of access:

- **Company Assignation:** to grant user access to all present and future Installations linked to this company. This access is usually only given to administrative roles.
- **Facility Assignation:** to grant user access to one or more Installations. Available Plants may vary according to the administrator: you can only grant or remove user access to the facilities that you yourself have access to.
- **System Assignation:** to grant user access to one or more Systems. Available Systems may vary according to the administrator: you can only grant or remove user access to the systems that you yourself have access to.

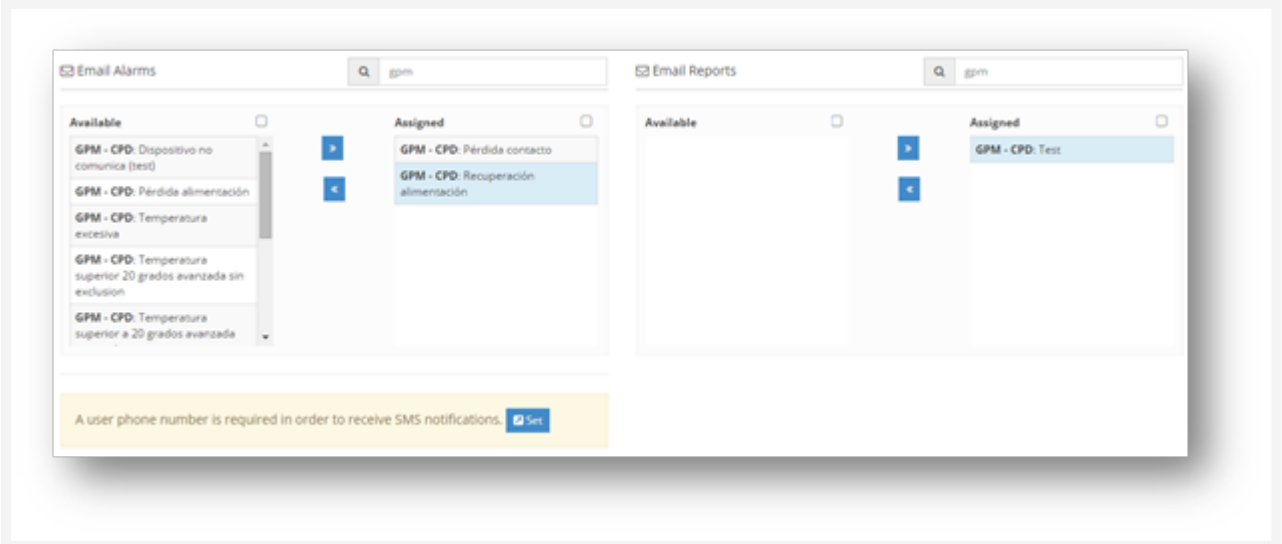
Users

Use this section if the user should manage other users and have specific edition rights to their profile.



Notifications

This is where you manage the notifications settings for the user. This section shows all the Alarm and Reports available for notification, based on the user's permissions and role.



ⓘ NOTE: To enable SMS notifications, you must specify a phone number in the information section.

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