
# Power Cloud

## Energy monitoring platform

## User Manual

**Eco-Adapt**

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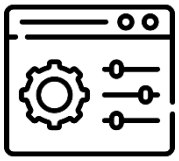
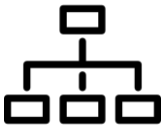
# 1. Introduction

Power-Cloud is a complete energy monitoring platform. To make the most of the platform's possibilities, it is important to properly configure your environment to highlight the energy profile of your installation and determine the energy efficiency actions with the best impact.

To do this, this document will allow you to configure your environment in three main steps:



**Configure** user and administrator access rights, email lists, sites and areas owned by your organization.



**Organize** grouping objects to recreate the metering architecture of your installation and configure the attributes of the different equipment.

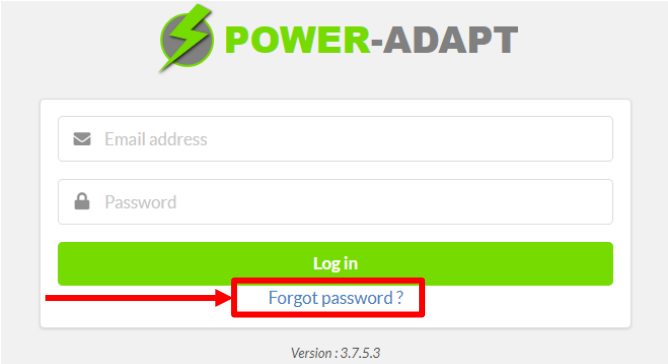
**Analyze** data at several scales and different formats and through the creation of tools such as analyzes or alerts.

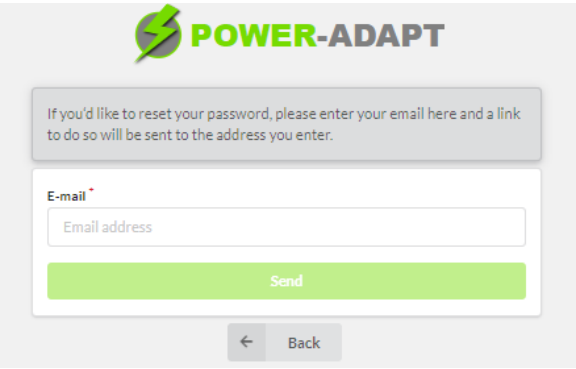
## 1.1 Connection to the platform

### First connection

When your account is created by an administrator in your Organization, you will receive an e-mail from Eco-Adapt inviting you to join the platform. Click on the link to create your password.

If you do not receive this e-mail after creating your account, you can go directly to https://poweradapt.com/ and click on "*Forgotten password?*". Enter your e-mail address and click **Send** to receive a new link. If you are unable to make the forgotten password request, your account may not have been created correctly. In this case, please contact our team for support.




### Usual Connections

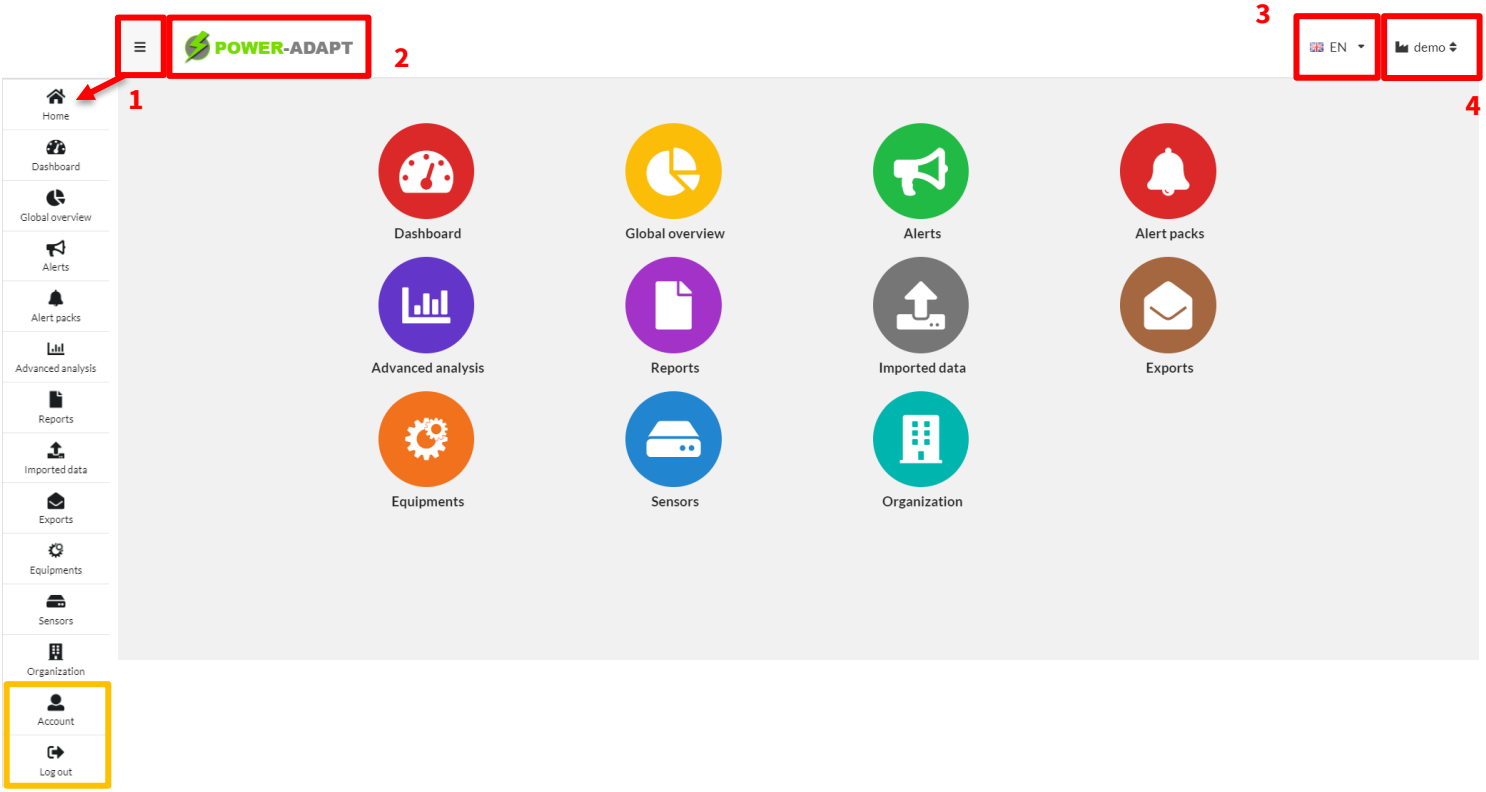
For usual connections, go directly to https://poweradapt.com/ and enter your login details. If you've forgotten or lost your password, use the "*Forgot your password?*" button.

## 1.2 Home page

The platform's home page is the gateway to all its functionalities.

Here, you'll find :

- **1.** A menu on the top left, which allows you to navigate through the tools without having to return to the home page, as well as to access **Account** or **Log out**.
- **2.** The Power-Adapt logo, which allows you to return to the home page from any page.
- **3.** A language selector at top right.
- **4.** Your Organization name in the top right-hand corner. If you are subscribed to more than one Organization, you can click on the Organization name to display a drop-down menu with all the Organizations you belong to.



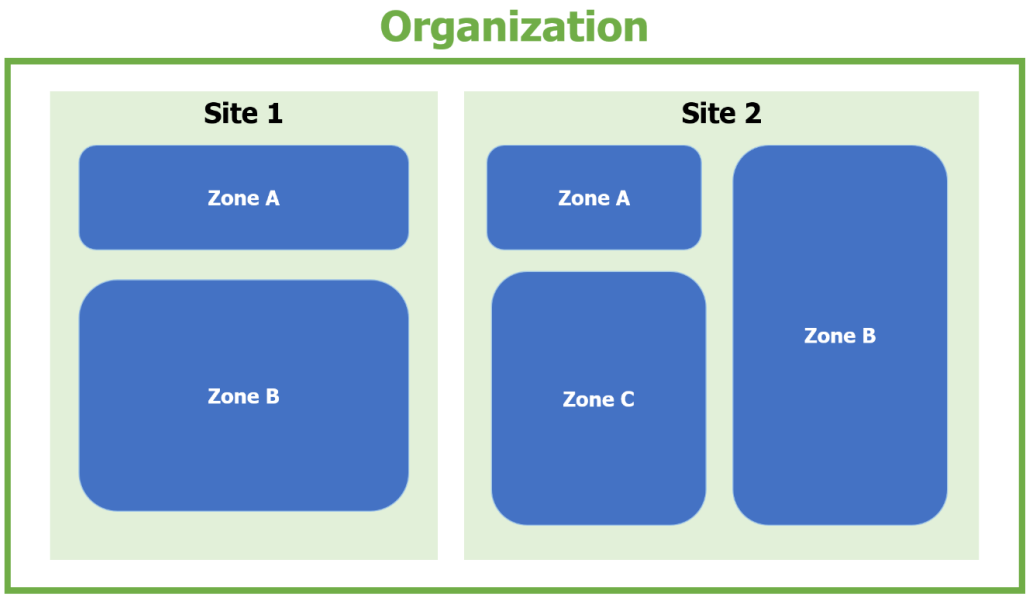
## 1.3 Tools introduction

The platform is organized around several objects and tools that enable Equipment to be organized as closely as possible to the real installation. These are described below.

### “Hierarchical” grouping tools

The **Organization** is the environment in which all your data is stored and displayed. The name of the Organization is usually that of the company, for example "Eco-Adapt". You'll find this name in the top left-hand corner of the screen. It is sometimes possible for a User to belong to more than one Organization. In this case, a drop-down menu allows you to navigate between Organizations.

**Sites** are subsets of an Organization. They usually correspond to the company's various geographical Sites, e.g. "Paris", "Toulouse". Within these Sites are **Areas**, which are subsets of the Sites, most often corresponding to a building, part of a building, a production line, a floor, etc. e.g., Building A, Hot Rolling Mill, etc

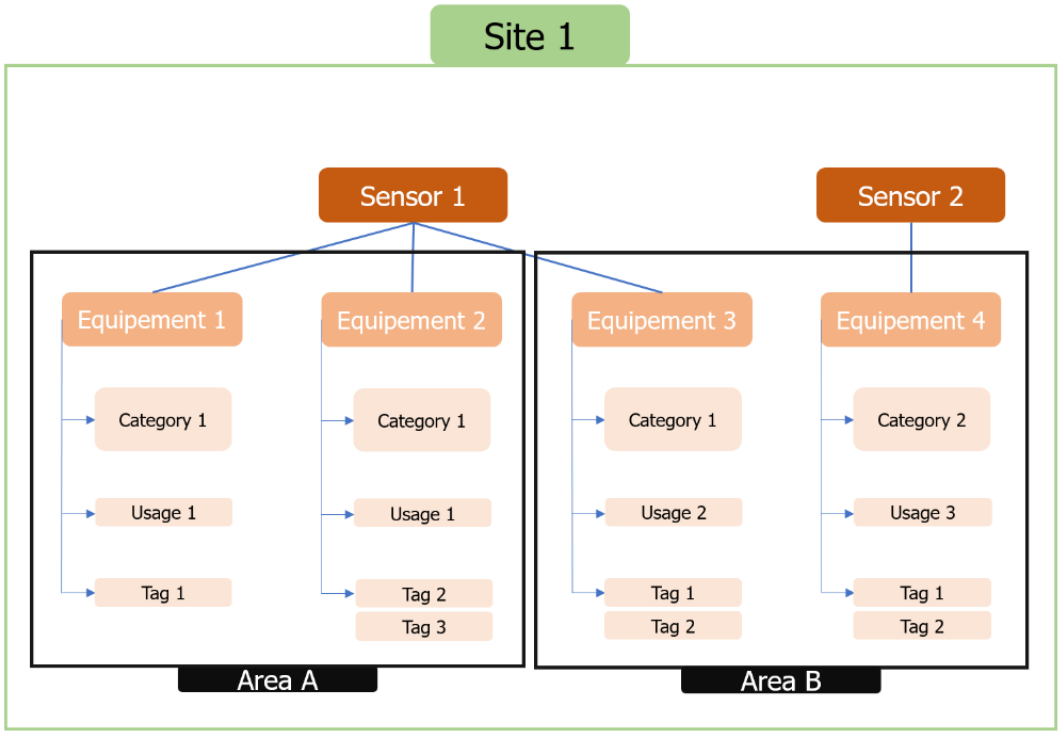


## “Functional” grouping tools

A Sensor is only associated with an Organization and a Site. An Equipment, on the other hand, can have several other attributes:

- **Usage**: represents the type of Equipment use. Ex: Industrial process, HVAC, Filtration, Compressed air, General, Lighting, etc. These usages can be customized.
- **Tags**: completely personalized, tags can be used to group any Equipment together. Tags can also be customized.
- Equipment measurements belong to a **Category**, determined by the type of Sensor from which they originate.

The architecture of grouping tools can be represented as follows:

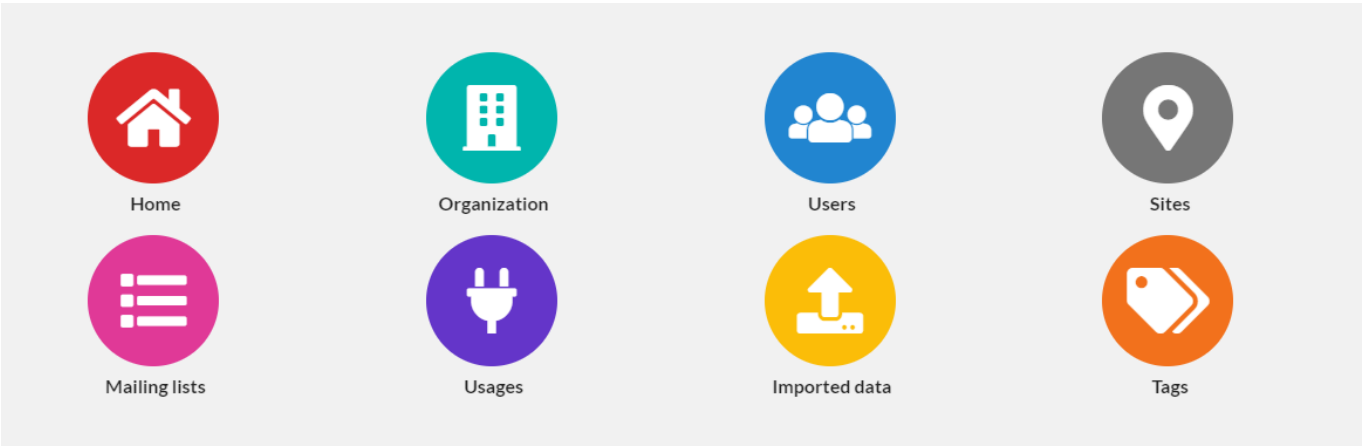



It is important to properly configure all these tools in order to be able to differentiate your consumption and optimize the use of the platform's tools.

# 2. Organization setup

This section describes how the **Manage** tool works. This tool's purpose is to create Users and Mailing lists, manage rights and administrators and creating and managing Sites. The creation and management of Areas is also covered in this section.

On the **home page**, click on the **Manage** icon:  The following page appears:




## 2.1 Site configuration

To create or modify a Site, click on **Sites**. A page displaying the various Sites appears. You can modify a Site by clicking on its name or click on **Add Site** at the top left.

*N.B.: a lot of data is associated with a Site, including User rights, Sensors, Alert Packs and some analyses.*

The attributes of a **Site** are:

- Site **name**
- **External ID** (for API)
- **Description** and **Address** are optional fields for information purposes.
- Time Zone for managing export sending times, Alerts, etc.
- **Conversion table** for entering conversion factors from kWh, $m^3$ or $Nm^3$ to kgCO2eq or currency (€, $ etc.). This does not apply to Predict-Adapt data.
- **Weather station** to retrieve Unified Degree Day (UDD) information to create kWh/UDD analyses to qualify the energy efficiency of HVAC processes. This does not apply Predict-Adapt data.
- **Time Zone**

## 2.2 Areas creation

Once a site is created, a new section appears in the **Site** modification form. An **Area** is a subset of a Site. If the Site groups together the Sensors, the Area groups together the Equipments. Two Equipments from the same Power-Elec-6 can for instance be associated to two different sites.

To create or modify an Area, go to the **Site** modification form (as for create it).

The attributes of an Area are as follows:

- **Name**: Area name
- **Description**: Area description

An Area is also the group of Equipment on which analyses and imported data are based. It is a representation of a part of a building, a building, a production line, etc. It is therefore important to create several Areas in line with your installation.

## 2.3 Users management

On the **Manage** page, click on **Users**. A page displaying the various Users appears. You can then edit a User by clicking on its e-mail address or click on **Add User** in the top right-left corner. Modifying a User allows you to change their first name, last name, site permissions or e-mail address.

When creating a User, you will first need to choose if he/she will be Administrator or not, then enter his/her e-mail address and click on validate to send confirmation and account creation e-mail to the user. If the user is admin, you will only need to fill his/her name and surname.

If the user is not admin, you will need to give him/her site permissions. To do so, after you clicked on validation, new fields **Rights on the sites** appears. Click on **Add rights on sites** create a site permission. Select the level of rights needed and sites on which it will be given. You will then be able to change it site by site. Click on validate in the **Add rights on sites** form and then below the **Rights on the sites table.**

*N.B.: Any changes made by a User only take effect the next time the User logs in. Users must log out and log back in if they wish to apply changes immediately. Otherwise, they must wait no longer than the 24-hour automatic logout period. This applies to Site rights as well as to administrator rights.*

The differences between rights are the following:

- Vizualiser can only vizualise data, analyses, alerts and so on.
- Technician can create tags, usages, analyses, alertes and modify some other one's objects. Technician cannot create user, change organization name, or do anything on multisite level.

## 2.4 Mailing lists management

**Mailing lists** are used to automatically send Alerts, Reports and data exports to a certain number of people. A Mailing list can contain as many e-mails as you wish, including recipients without an account on the platform.

To create or modify a list, go to **Mailing lists.** To modify a list, click the modify icon in the **Actions column**. To create a list, click on **Add mailing list** in the top right-left corner. Enter the list name and the recipient's e-mail addresses. Click on **Save** to create the Mailing list.

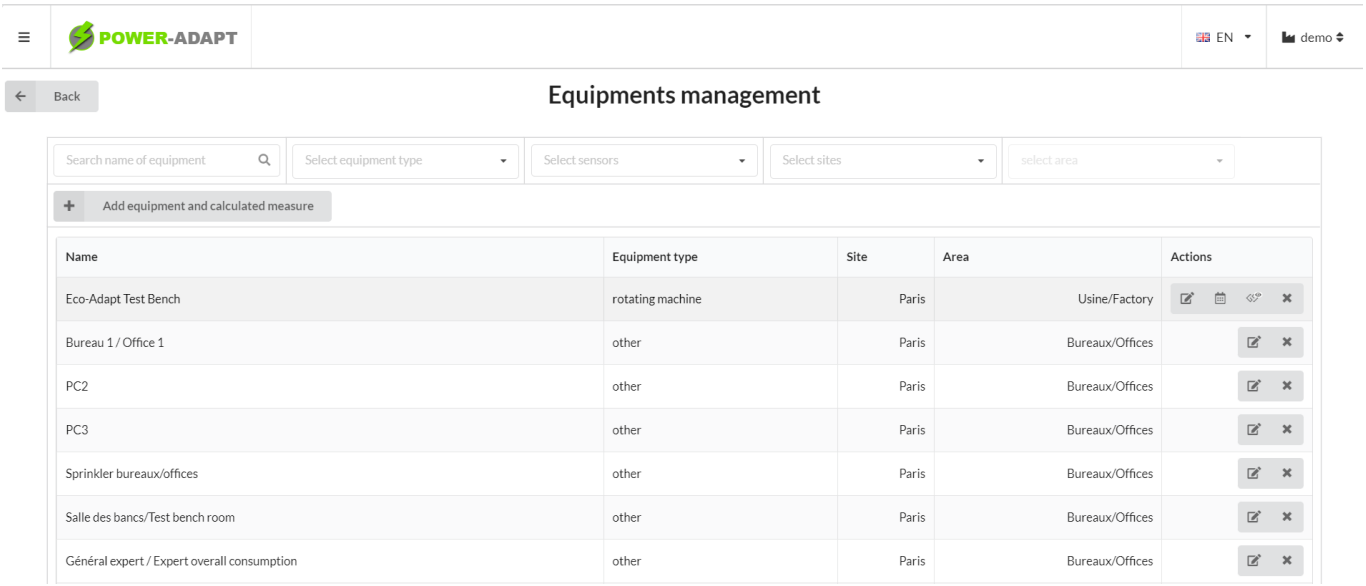
Once the Organization has been set up, you can move on to Equipment configuration.

# 3. Equipment configuration and management

## 3.1 Configuration or modification of equipment

On the **home page**, click on the **Equipment** icon: 

A list of your **Organization's Equipments** then appears.



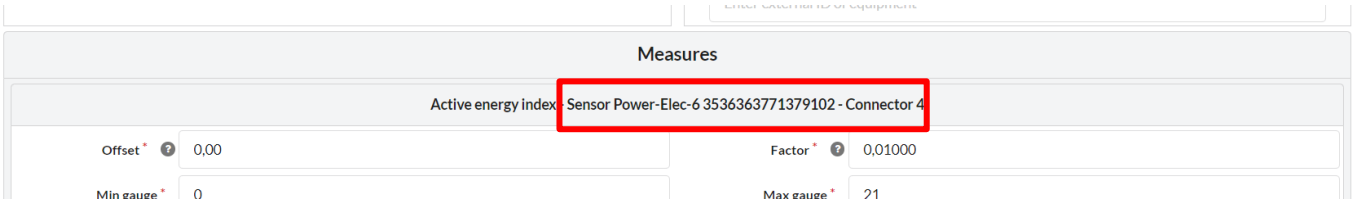

You can search for an Equipment by its identifier (its name), type, Site, Area or by the Sensor from which the measurement originates. Click on the column name to change the sorting order (alphabetical by default).

An Equipment corresponds to any monitored measurement (Power-Elec-6 connector, PowerTempH measurement…). The default Equipment name is:

Sensor: Serial_number|Channel :channel_number|Category :Category

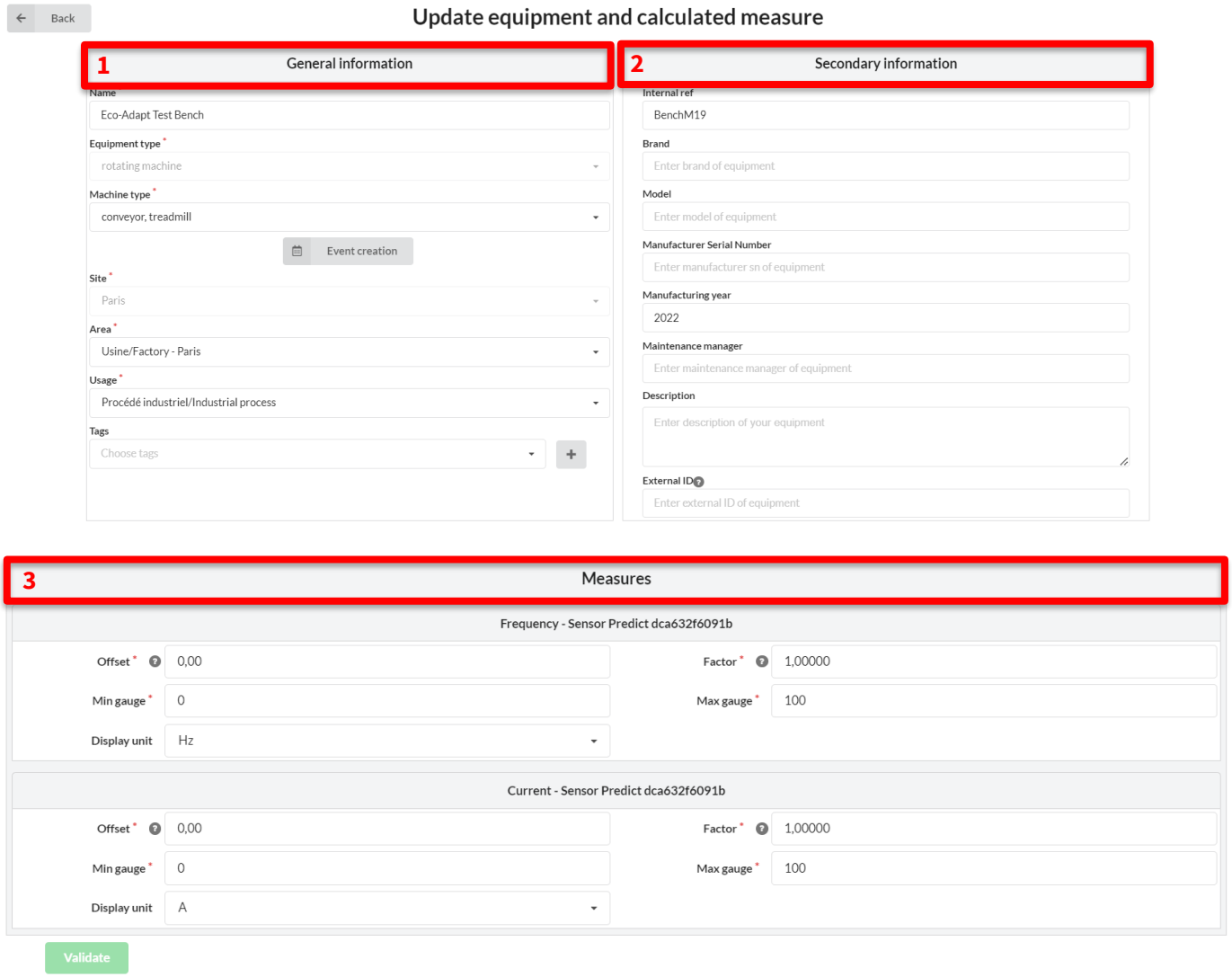
*e.g.* Sensor: 8c1f64c380fd5045|Channel :0|Category:elec

This default name should be modified according to the measurement plan. Information about the corresponding connector will appear at the top of the “Measures” fields:



To modify an Equipment, click on its edit icon:
A page containing all the Equipment's information is then displayed, in three parts:

- **General information**: name, type of Equipment and configuration of grouping tools (usage, Area, Tag, etc.).
- **Secondary information**: optional information that has no impact on the Equipment or its attributes.
- **Measurements**: measurement configuration, *i.e.* type of measurement (electric, gas, fluids, etc.), meter offset, gauge bounds, etc.




Fields marked with a red asterisk * are mandatory.

Here's what the different fields correspond to:

- The **Equipment type,** which you can leave to “other” for any equipment, or “Rotating machine” for Predict-Adapt equipment.
- **Machine type**: allows you to specify the type of machine being monitored if equipment type is “Rotating machine”. Select "rotodynamic pump" if the instrumented Equipment is a centrifugal pump. This will enable you to benefit from the "Pump Monitoring" functions and analyze your pump's operation in depth.
- As the **Site** is associated with the Sensor and not with the Equipment, it is not possible to modify it on this page, but on the **Sensors** page.
- **Area, Usage** and **Tags**: select according to registered Areas, uses and Tags.

For the measure(s) :

- **Offset** corresponds to the counter's starting index. If metering has already been carried out or is in progress on the Equipment via another measurement system, enter the index of this meter to synchronize its Eco-Adapt measurements. This field does not concern Predict-Adapt measurements.
- The **factor** corresponds to a factor to be applied to the measurement to obtain the converted value (often due to a physical parameter of the installation). The display unit has no effect on this parameter or on the measurement.
- **Min gauge** and **Max gauge** – determine the extremum values of the dashboard gauge.
- **Display Unit** allows measurements to be displayed in a single unit, regardless of the value of that measurement. **Auto unit** adapts the unit to the measurement value.
- **Standby treshold :** Standby power consumption of the machine, allow the platform to calculate standby consumption.

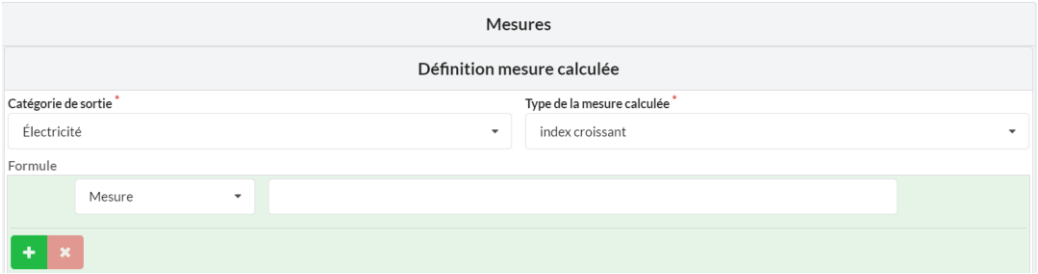
## 3.2 Creation of equipment – calculated measurement

It is possible to create equipment and therefore a measurement from existing measurements. This makes it possible to calculate a total/general or conversely to deduce the consumption of equipment from a general and its other sub-countings.

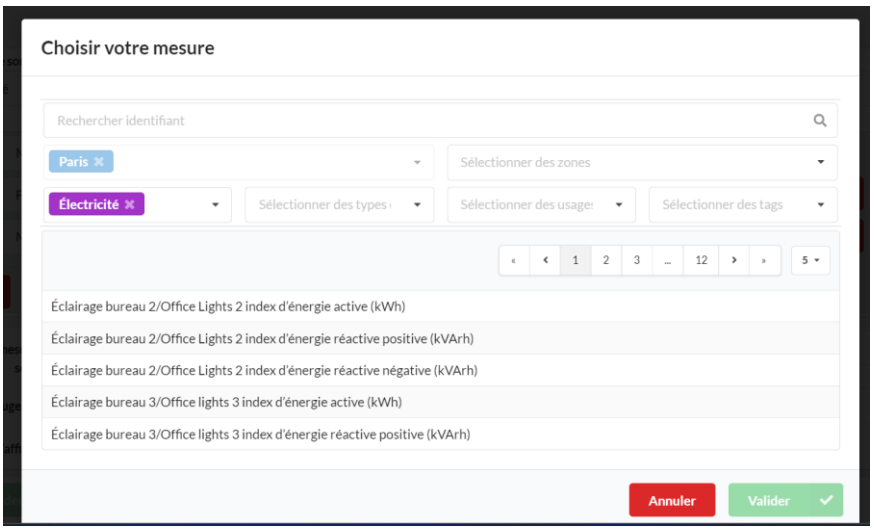
To do this, click on **Add equipment and calculated measurement** in the equipment management page. The General Information and Secondary Information sections are the same as the standard Equipment Modification form. Once at least the site has been selected, the calculated measurement definition form becomes available.

Then enter the output category and the type of the calculated measurement, among:

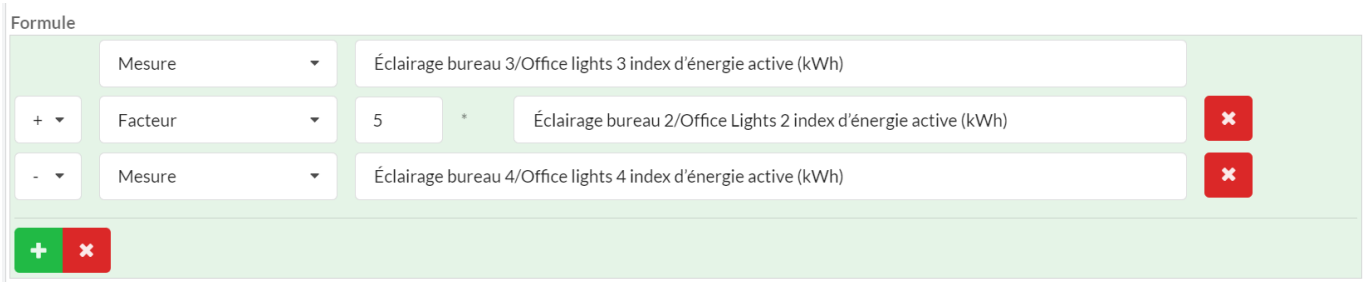
- Increasing index: the calculated measurement can only have positive values. It will therefore take as a minimum 0
- Increasing or decreasing index: the calculated measurement may take negative values.




Then move on to the formula for calculating the measurement. You can then add as many lines as necessary to create the measure. Each line can be either an addition or a subtraction and can be either a simple measurement or a measurement with a factor applied. Click on the empty box so that the measure selection tool appears:



Select your measurement and **Validate**.




Once all the operations have been completed, you can then define the latest information, just as you can do for other equipment.

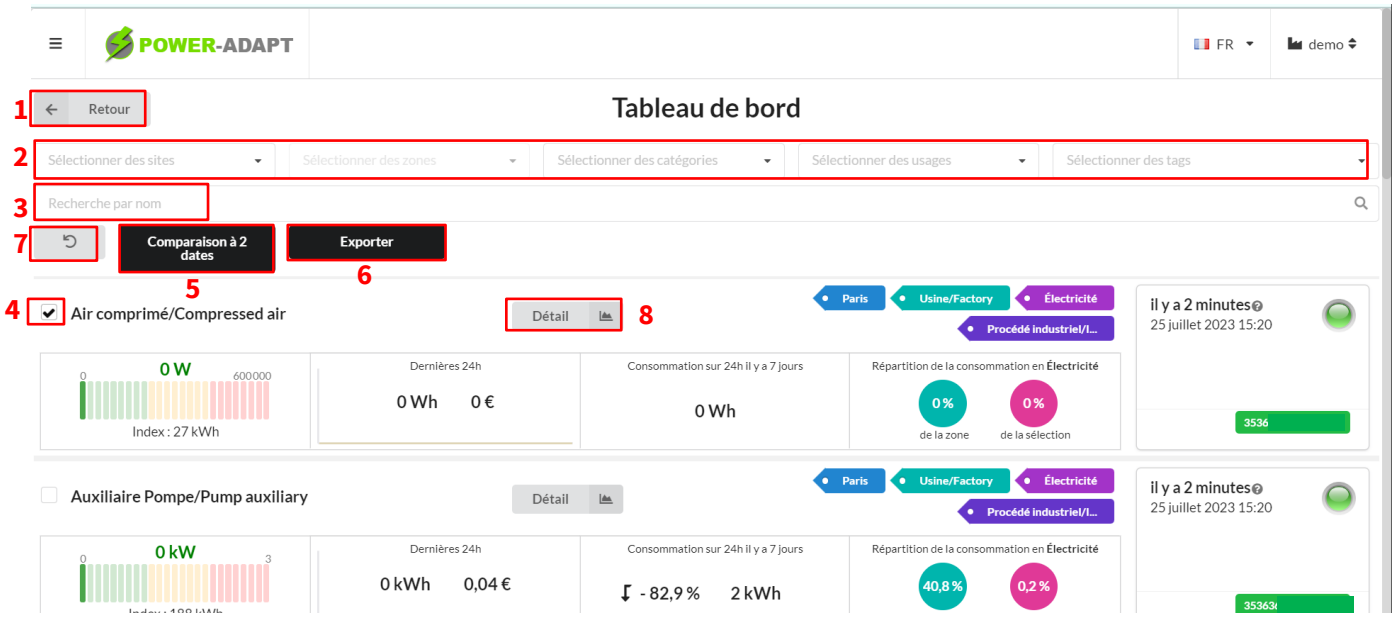
# 4. Data visualization

## 4.1 Dashboard

The dashboard allows the visualization of all equipment consumption data every 10 minutes. It also allows the comparison of load curves between measured equipment or the visualization of the daily consumption history by equipment.

To do this, click on the **Dashboard** icon.

A line on the dashboard corresponds to a piece of equipment. You will find on this page:



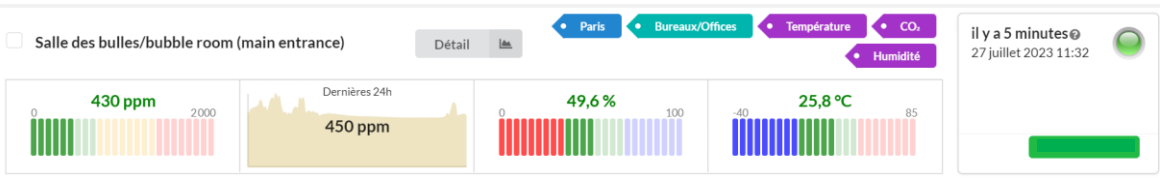

- **1.**Back button leading to the home page.
- **2.**Equipment filter.
- **3.**Search field by name.
- **4.**Equipment selection button.
- **5.**Comparison of selected equipment – allows you to display data from each equipment on the same graph, over a given date range.
- **6.**Export of data from selected equipment.
- **7.**“Deselect all” button.
- **8.** Detailed view of the equipment, notably containing its load curve.

Each line presents the data of a piece of equipment. Depending on the type of sensor (Power-Elec, PowerPulse, PowerTempH, etc.) it is possible to find several types of strip.

Power-Elec and PowerPulse:

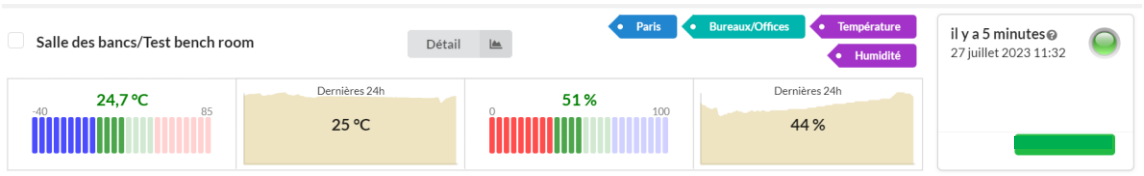

- **1.**Equipment name.
- **2.**Last active power/flow value (average over the last 10 minutes) and placement of this value on a power/flow gauge.
- **3.**Total energy index
- **4.**Consumption over the last 24 hours of the equipment in kWh or $m^3$ and cost (if provided)
- **5.**Consumption over the last 24 hours compared to that of the same period 7 days previously.
- **6.**List of equipment attributes (site, zone, category, usage, tags)
- **7.**Distribution of consumption of the equipment in its category compared to other equipment in its zone and the selection (from filters and search by name)
- **8.**Communication status of the sensor corresponding to the equipment: Date and time of the last data transmission, sensor serial number and color indicator of the communication status (Green < 3h; Orange < 24h; Red > 24h).

PowerTempHCO2 :




The dashboard line of a PowerTempHCO2 displays the $CO_2$ rate in ppm of the last data report, the trend for the last 24 as well as the latest humidity and temperature measurements.

PowerTempH :




The dashboard line of a PowerTempH differs from that of a PowerTempHCO2 in that there is no $CO_2$ rate measurement. The $CO_2$ rate measurements are therefore replaced by the temperature and humidity trend over the last 24 hours.

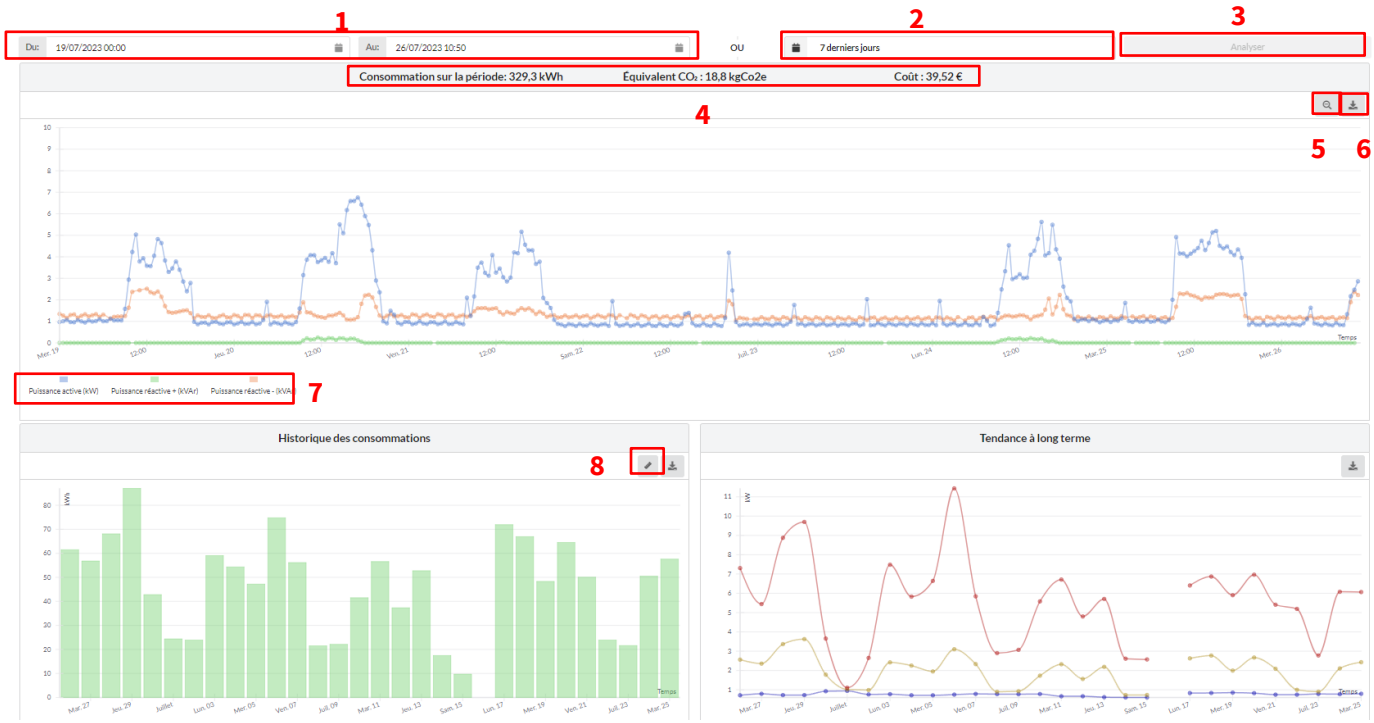
## 4.2 Detail view

The detail view provides access to all equipment consumption data as well as Power-Elec data in expert mode. It is separated into several tabs, the number of which may vary depending on the configurations (expert mode, presence of a pump, etc.). Click on Detail to access the detail view of a piece of equipment (see dashboard legend)

### 4.2.1 Energy efficiency

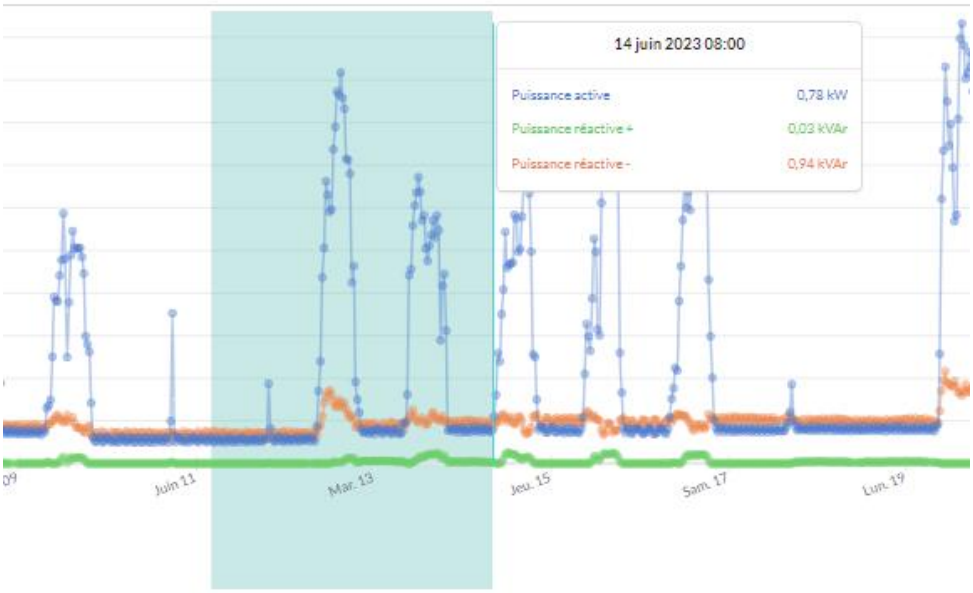
The Energy Efficiency tab presents the load curve, a histogram of daily or weekly consumption and a long-term power trend.

It is possible to choose a preconfigured or personalized date range using the date selection tool. The tools on this view are :




- **1.**Manual and custom date range selection
- **2.**Selection of preconfigured ranges
- **3.**Analyze button - date range validation
- **4.**Total consumption/carbon footprint/cost of equipment over the period
- **5.**Zoom reset
- **6.**Instant download of chart data in CSV format
- **7.**Selection/deselection of measurements. Clicking on a measurement makes it disappear/appear from the graph.
- **8.**Choice of metric (consumption in kWh, carbon footprint in $kgCO_2e$, cost in €/$/…)

The load curve displays power or flow versus time over the selected date range. Power or flow rate are averages calculated based on the difference in energy/flow index between two points. It is possible to zoom in on the curve by clicking on a point on the graph and dragging the mouse to the second terminal while holding the click. The area where the crop will be performed is highlighted in blue. Then use the zoom reset (**5**) to return to the original display.




The data available on this load curve is different depending on the original sensor and its configuration. A summary table of the data available according to the sensors can be found in Appendix 1.

Even if the data is transmitted with a step of 10 minutes, displaying it is not always possible at this step due to the number of points to display. Data aggregation is therefore put in place to allow the best possible display. Below 48 hours, there is a point for 10 minutes. On the other hand, for a period of 7 days, there will be a point every 30 minutes or even a point every 3 hours for a display over 3 months.

### 4.2.2 Power-Elec-6 Expert tabs

Certain “Expert” indicators depend on configurable parameters on the web interface of the Power-Elec measurement unit in Electrical configuration > Advanced options. Tooltips provide details on the calculation of the different indicators or what they represent. To do this, simply hover over the tooltip with your cursor.


#### *4.2.2.1 Electrical distribution*

The electrical distribution tab displays data from Power-Elec power stations in Expert mode allowing the quality of electrical distribution. In the same way as the energy efficiency tab, it is possible to modify the date range at the very top of the page, to zoom in/out on the graphs and to download the data instantly. The tab presents the following data:

- Voltage imbalance
- Voltage sags and swell
- Trips
- Cable overheating

#### *4.2.2.2 Electrical state*

The Electrical State tab displays the data allowing the qualification of the electrical status of the equipment. We find there:

- Harmonic distorsion or THD
- Power imbalance
- Neutral current

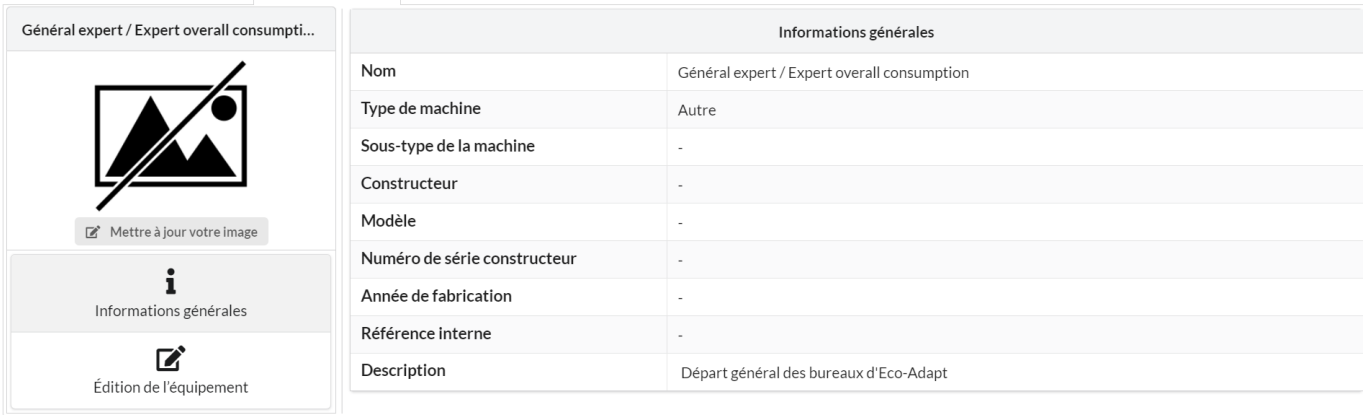
#### *4.2.2.3 Operational*

The operational tab presents data relating to the operating conditions of the monitored equipment. This tab contains features also available in standard version such as power distribution. We find there:

- The counter of operating hours and number of restart cycles
- Analysis of the operating regime
- Power distribution

### 4.2.3 Description

The description tab is a summary of general information about the equipment.




It is possible to go to the equipment edition form from this page, or to enter an image of the machine or equipment.

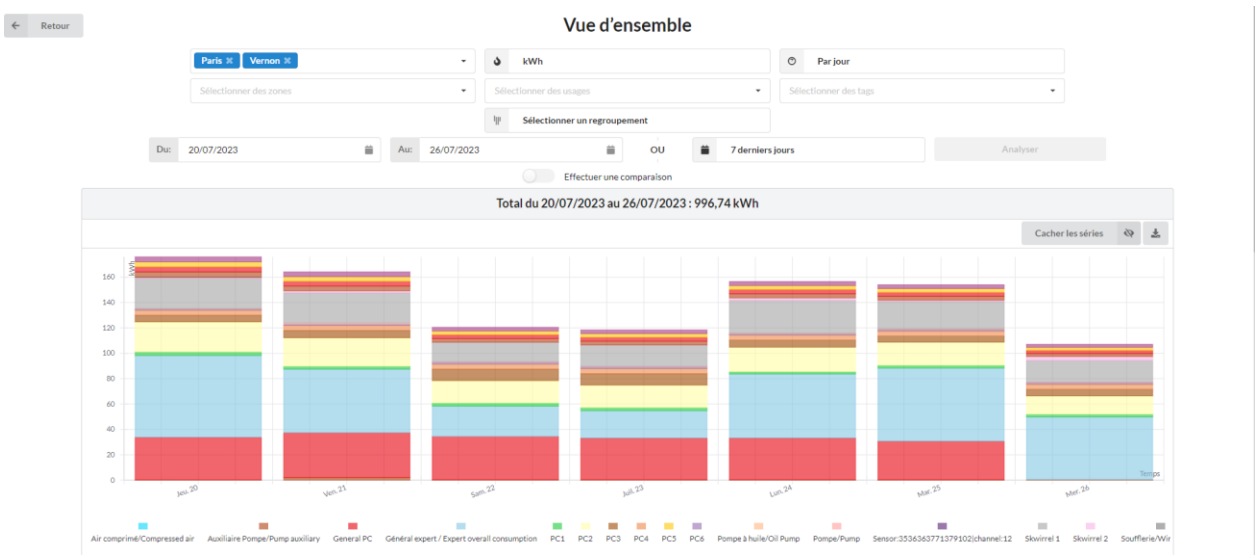
### 4.2.4 Temperature, Humidity and $CO_2$

The Temperature, Humidity and $CO_2$ tabs are arranged identically. They each display the curve of their measurement versus time, as well as the long-term trend of their measurement.

## 4.3 Overview

The overview is a tool for relating all the consumption of the organization's equipment. It allows you to compare the consumption of equipment, sites, zones, tags, or even uses between them. It also makes it possible to analyze the evolution of the total daily, weekly, or monthly consumption of a site or an area as a function of time.

On the home page, click the Overview icon to navigate to the following page:




The page is made up of several parts:

- The form allowing you to select the consumption of interest as well as the grouping according to which they will be displayed
- A stacked histogram graph of consumption
- A summary table of these consumptions
- Two pie charts of consumption distribution by zone and use.

In the form, it is possible to filter consumption by:

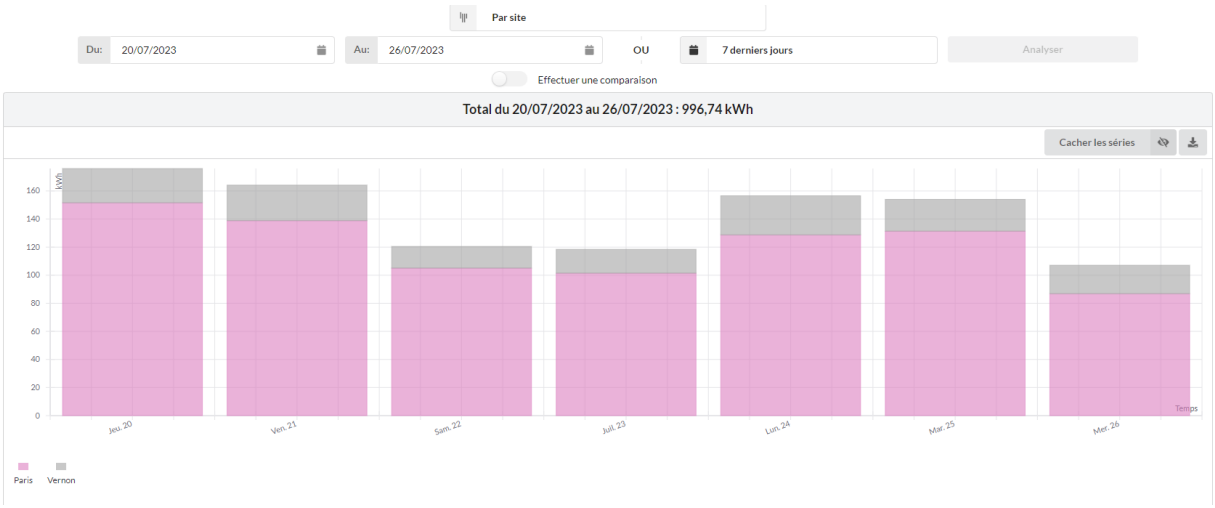
- Sites – selection of one or more sites
- Type of measurement – kWh, $m^3$, $Nm^3$, Ambiance, $kgCO_2e$ or currencies (€, $...).
- Zones – default all
- Uses – default all
- Tags – default all

In addition, you can define the grouping of consumption:

- Per day, week, or month.
- By tags, uses, site or even zone. No grouping corresponds to grouping by equipment.

Finally, it is possible to define a personalized or preconfigured date range and compare the consumption of two date ranges.

Example 1: selection of Paris and Vernon sites, no other filter, grouping by site. We therefore have a box for each site, grouping together the consumption of all its equipment.




Example 2: Comparison of electricity consumption for the first 6 months of 2022 and 2023, for the Paris site.

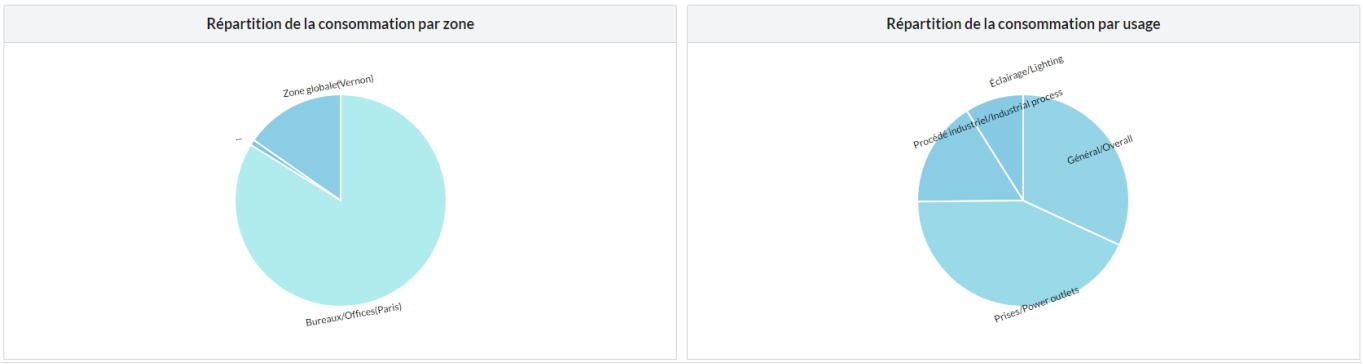
Below the first graph is a data summary table. You can sort this table in ascending or descending order for each column. It therefore allows you to quickly see which equipment consumes the most and their share in the total consumption of the site or zone.

Tableau de synthèse (kWh)

| Nom | Total | ↓ Répartition (%) | Minimum | Moyenne | Maximum | Date du minimum | Date du maximum |
|---|---|---|---|---|---|---|---|
| Général expert / Expert overall consumption | 317,53 | 31,86 | 21,6 | 45,36 | 64,5 | 23/07/2023 | 20/07/2023 |
| General PC | 198,99 | 19,96 | 30,37 | 33,17 | 35,29 | 25/07/2023 | 21/07/2023 |
| Skwirrel 1 | 144,28 | 14,47 | 15,29 | 20,61 | 25,93 | 22/07/2023 | 24/07/2023 |
| PC2 | 133,5 | 13,39 | 14,42 | 19,07 | 23,73 | 26/07/2023 | 20/07/2023 |
| PC3 | 45 | 4,52 | 4,89 | 6,43 | 9,07 | 25/07/2023 | 22/07/2023 |
| PC4 | 26,6 | 2,67 | 3,79 | 3,8 | 3,81 | 22/07/2023 | 24/07/2023 |
| Éclairage bureau 2/Office Lights 2 | 22,43 | 2,25 | 2,42 | 3,2 | 3,98 | 26/07/2023 | 20/07/2023 |
| Éclairage Bureau 1/Office lights 1 | 22,38 | 2,25 | 2,42 | 3,2 | 3,97 | 26/07/2023 | 20/07/2023 |
| Éclairage bureau 4/Office lights 4 | 22,31 | 2,24 | 2,41 | 3,19 | 3,96 | 26/07/2023 | 20/07/2023 |
| Éclairage bureau 3/Office lights 3 | 22,19 | 2,23 | 2,4 | 3,17 | 3,95 | 26/07/2023 | 20/07/2023 |

Items par page 10 ‹ 1 2 ›

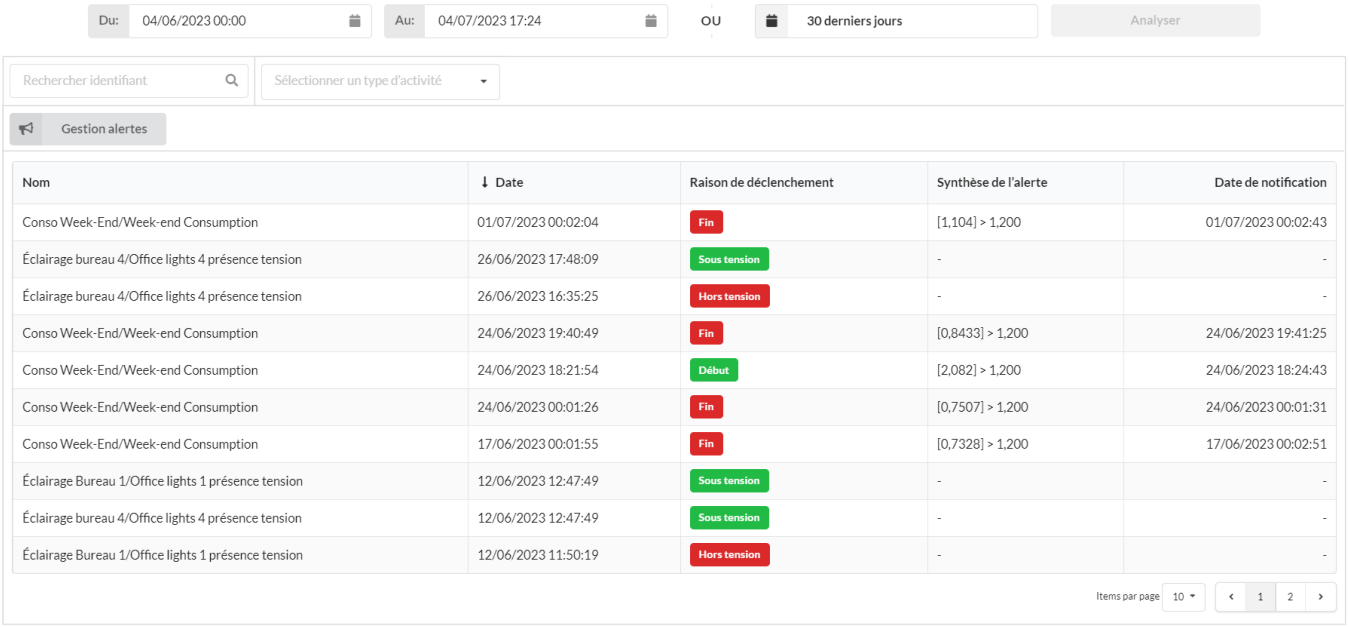
Finally, two pie charts present the distribution of consumption by zone and use.



# 5. Configuring alerts

On the **home page**, click on the icon **Alerts**

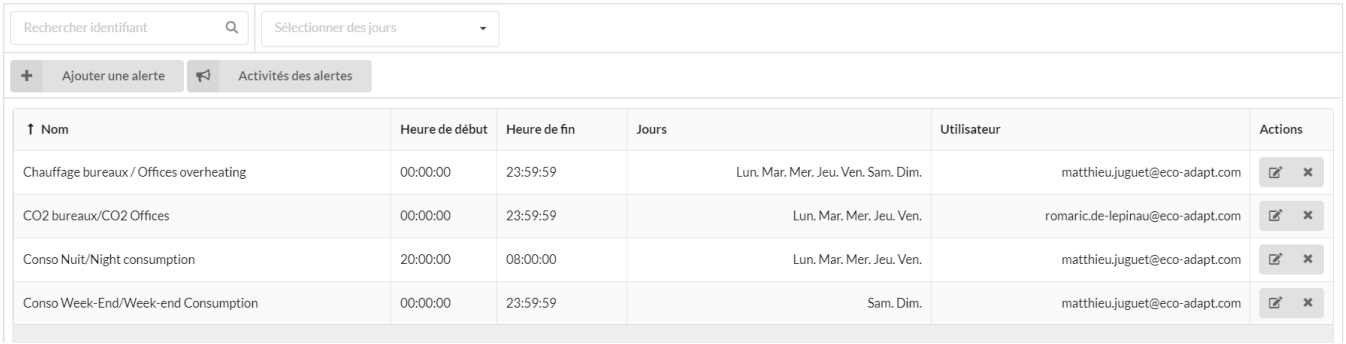
A page presenting the alert log is displayed:




It is possible to choose a date range and filter alerts by identifier (the name of the alert) or by type. An Event more particularly designates a disjunction or a presence/absence of voltage while an Alert corresponds to a configured alert rule.

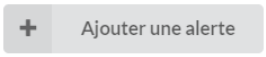
By default, no alert exists (except for power meters in Expert mode). To create one, go to 


The alert management page is displayed.

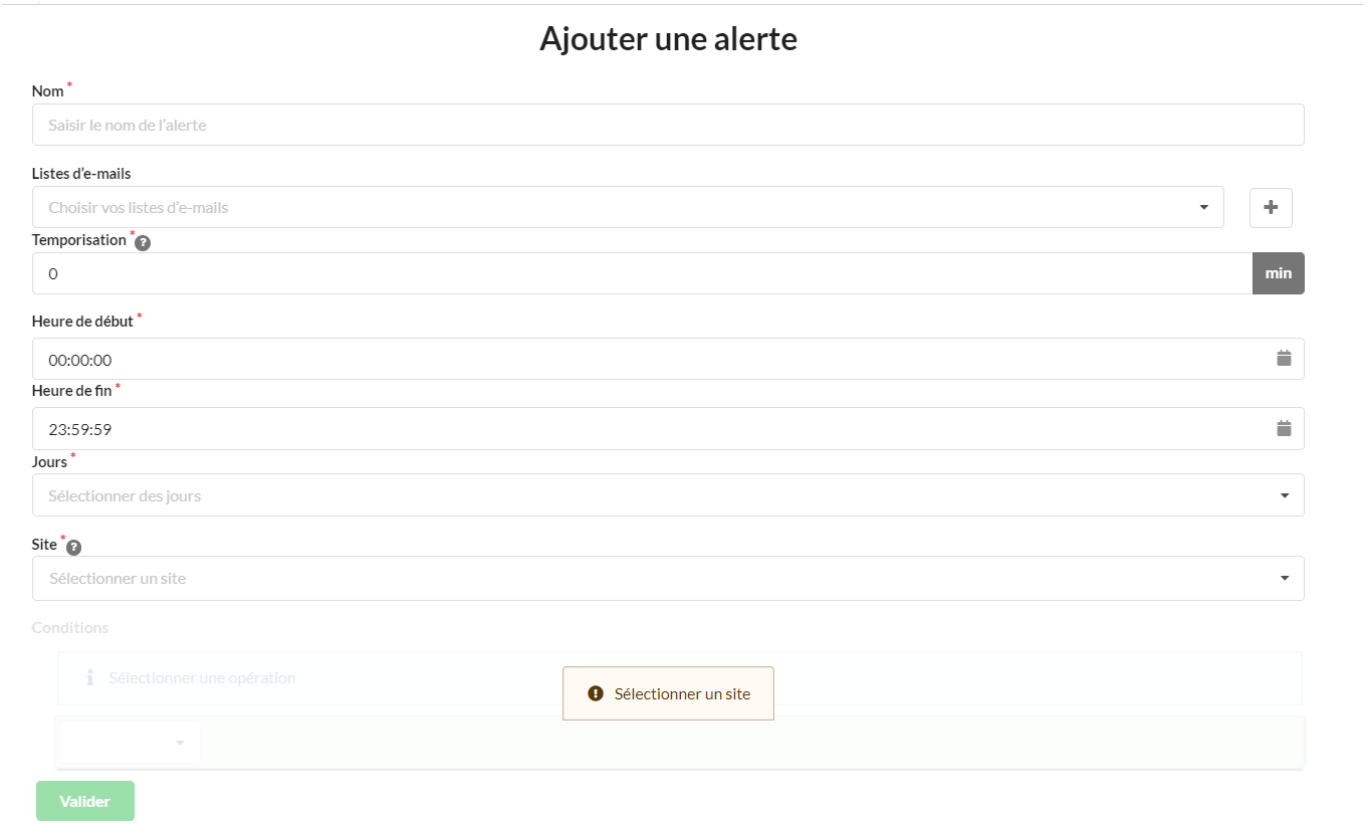


On this page, you will find the different alert rules created as well as their characteristics (Hours and days of validity, Name, user). You can modify or delete them using the end of line buttons. It is also possible to filter them by day of validity or filter them by name.

To return to the alert activity log, click 


To create an alert, click 


You then arrive at the following alert creation form:

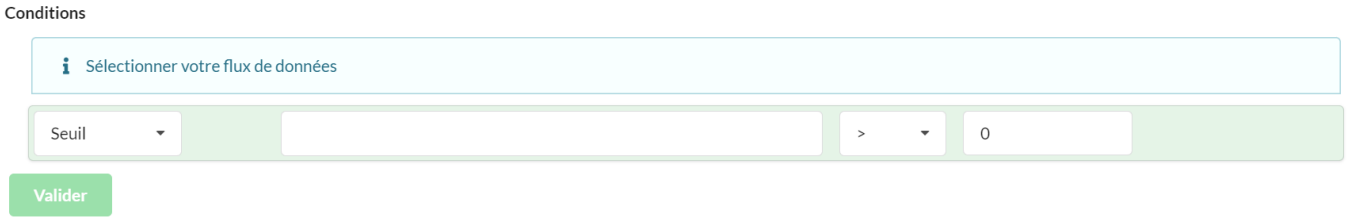



The different fields are:

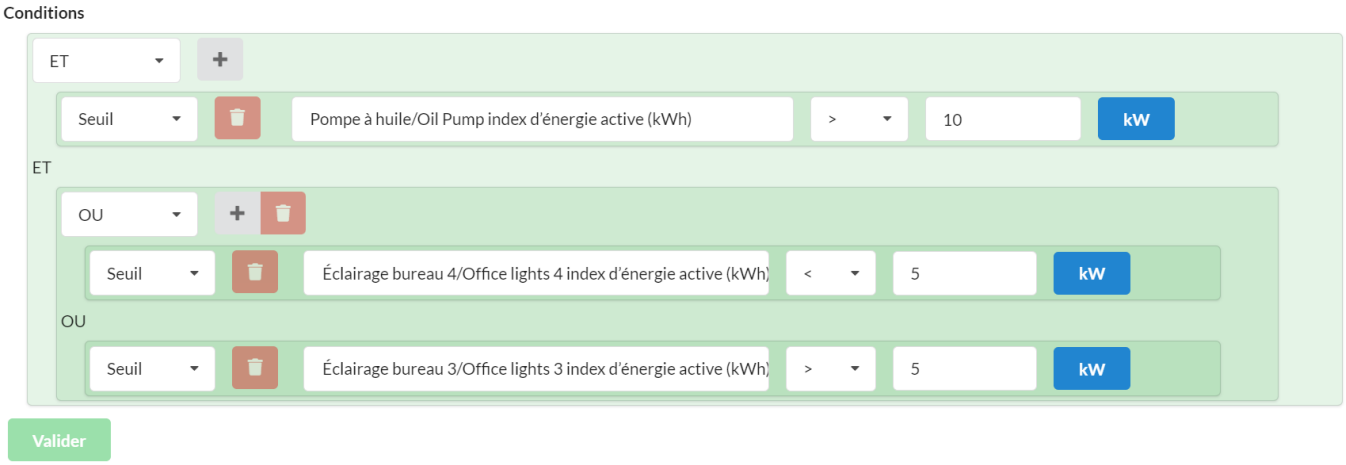
- **Name**: the name you want to give to the alert. This will be the subject of the alert email you will receive.
- **Email lists**: all email lists you want to share this alert with
- **Duration threshold** : Delay before triggering an alert. This corresponds to the period during which all the data meets the alert rule. This delay allows the issuance of alerts during rapid fluctuations. By default, at 0 min, the alert is sent as soon as data satisfies the alert rule.
- **Start hour** and **End hour**: Start and end times when the alert is valid. Any conditions met outside of these hours will not be the subject of an email alert.
- **Days**: Days of validity of the alert.

- **Site**: Site in which the alert rules will be defined. An alert rule cannot concern two devices from several different sites.

Once the site is selected, the Conditions form is displayed:




It is in this form that the alert rule is created, which can be simple or complex. Three types of operators exist: Threshold, AND and OR. The alert condition is conditioned by a Threshold (measurement < or > at a value) and these conditions can be linked by logical operators to create multiple conditions. In the example below, an alert is sent if the oil pump has a power >10kW and either office lighting 4 consumes less than 5kW or office lighting 3 consumes more than 5kW.



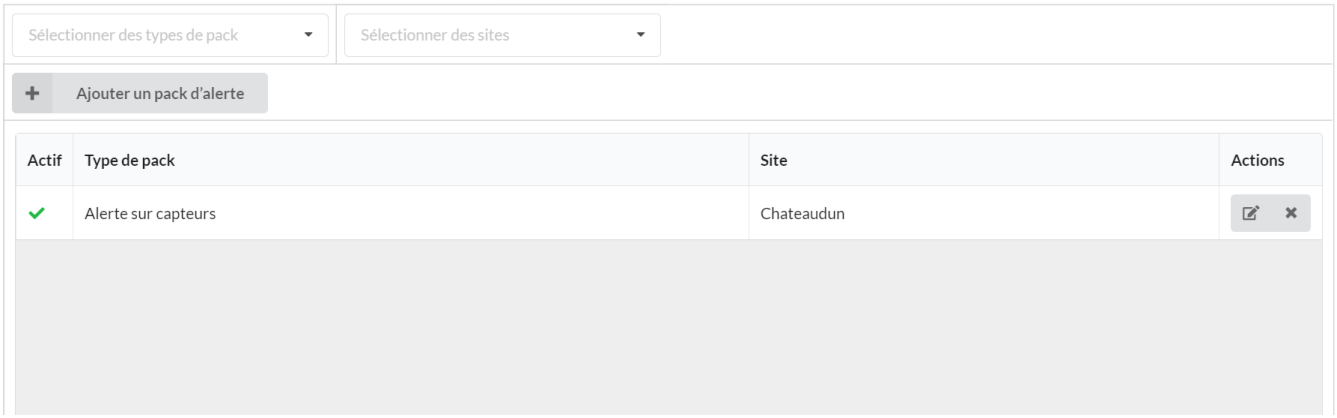

It is possible to create an alert rule with conditions on different measurement types (fluid, gas, electricity, temperature, etc.). Once the conditions have been configured, click on validate. The alert rule has been created; you will receive an email each time this alert occurs.

# 6. Configuring alert packs

*Warning: only an administrator can create or modify alert packs*

On the **home page**, click on the icon **Alert packs** 

The alert pack management page appears.




Unlike alerts, alert packs are preconfigured alerts that apply to all sensors on a site.

By clicking Add alert pack, the alert pack creation form is displayed.


Then select the site on which the alert pack will be effective, then select the type of pack.

There are three types of alert packs for Power-Elec sensors:

- Sensor alert: alert in the event of prolonged disconnection of a sensor
- Electrical distribution alert: alert in the event of anomalies in the electrical distribution (cable overheating, voltage peaks and troughs, voltage imbalance)
- Electrical malfunction alert: alert in the event of high THD thresholds or power imbalance, high number of starts per hour, etc.)

Then select the language in which the alert email will be sent, then the associated email list(s). Finally, click Validate to make the alert pack effective.

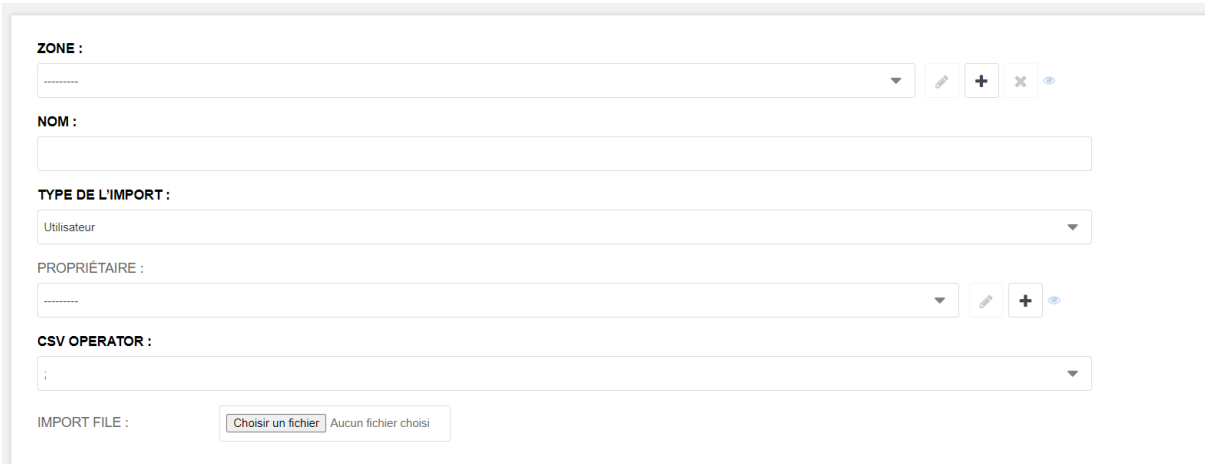
Once validated, you can return to the form via the modify action button at the end of the line. At the bottom of the form, you can then add exception rules on the site's sensors. These exception rules make it possible to consider possible sensors that operate differently from other sensors, and which could have an impact on the behavior of the variables concerned by the alert packs.

# 7. Advanced analytics, reports and imported data

The analyzes allow the creation and monitoring of energy performance indicators, which can be compiled into automatic reports. For certain analyzes (kWh/Ton, kWh/Unit, etc.), it is necessary to import your production data.

## 7.1 Imported data

On the **Manage** page, click the Imported Data icon  Then **Add imported dataset.**




A dataset contains daily production data from a Zone to which it is associated. There cannot be several datasets of the same type in the same zone. Data import is done via a csv file. In the form, you will find the following fields:

- **Area** : Area to which the data corresponds
- **Name: Name** of the data set (e.g.: factory production)
- **Import type:** Type of imported data: Units produced;,Tons produced…
- **Owner (optional):** User creator or owner of the dataset. Another technician or administrator user can still modify or delete this dataset.
- **CSV operator:**CSV operator of the file containing the imported data ( " ; " Or " , " ).

You are then asked to choose the file containing the data. This file must be a CSV format file containing in column 1 the dates in the format **YYYY-MM-DD** and in column 2 the data with the decimal separator corresponding to the CSV operator type (see Appendix 2).

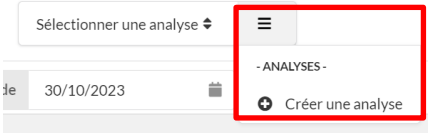
## 7.2 Advanced analytics

An advanced analysis is a tool allowing you to monitor the evolution of energy performance ratios or consumption of several groups of equipment on the same page.

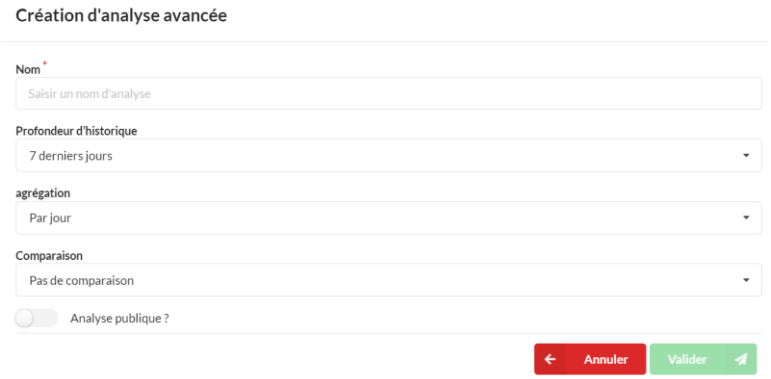
On the home page, click the Advanced Analytics icon 

The advanced analytics management page appears. On it, you can access the drop-down menu for choosing the analysis, the end of period selector as well as the action menu.


By default, no analysis is displayed. You can then select an existing analysis by clicking on the Select analysis drop-down menu or create one via the action menu:

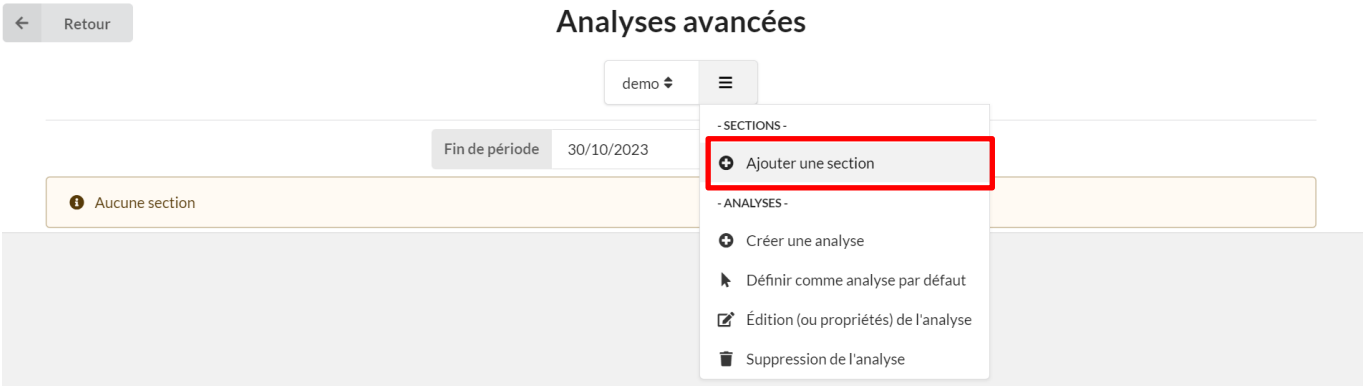



The advanced analysis creation interface is as follows:




The fields you find are similar to those present in the overview. They will condition the display of all the graphs that the advanced analysis will contain. By checking “Public analysis? ", you declare the analysis as being public and visible to all those with viewing rights to the associated site(s). An analysis that is not public will only be visible to you and the organization's administrators.

After the analysis is created, a message appears informing you that it does not contain any sections. You must then click on the action menu to add a section:



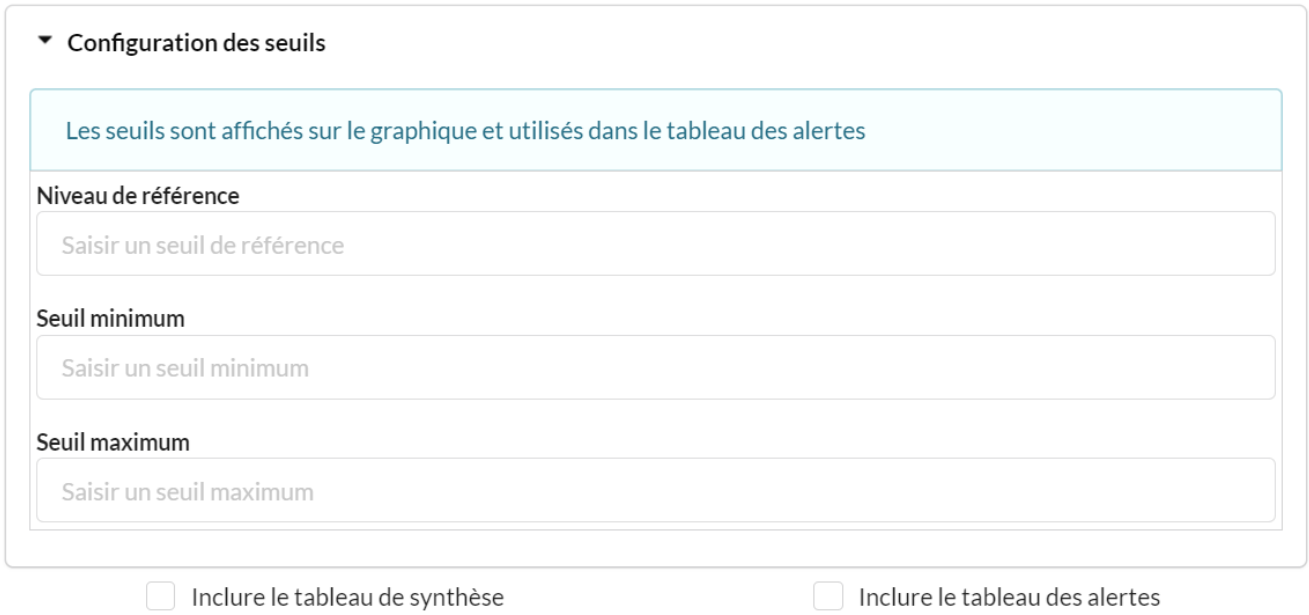

You can then create the first section using a name. A section can be of several types:

- **Stacked bar :** chart of the same type as the first chart in the overview. It is defined by filters (sites, zones, uses, etc.) and can represent several types of measurement (energy, flow, cost, etc.).
- **Pie chart :** pie chart, like those at the bottom of the overview page. It is also defined by filters but only displays the distribution of consumption/flow over the entire period.
- **Ratio:** graphic in the form of stacked bars representing a ratio defined by a numerator (consumption/throughput) and a denominator which can be a measurement, imported data (Tons produced, Units produced, etc.) or other data such as DJUs or a simple factor. This graph allows the monitoring of an energy performance indicator of an area, a process, or a machine.

To configure the section, click on the edit icon at the top left of it. Below the name, you find the choice of section type. The following form depends on this type of section.

### 7.2.1 Stacked Bar Chart

The stacked bar chart form matches that of the overview (see overview). However, it is also possible to define threshold lines to visualize reference, minimum or maximum daily, weekly or monthly consumption.




It is also possible to include or not the summary and alert tables in the event of exceeding the maximum threshold.

### 7.2.2 Circular diagram

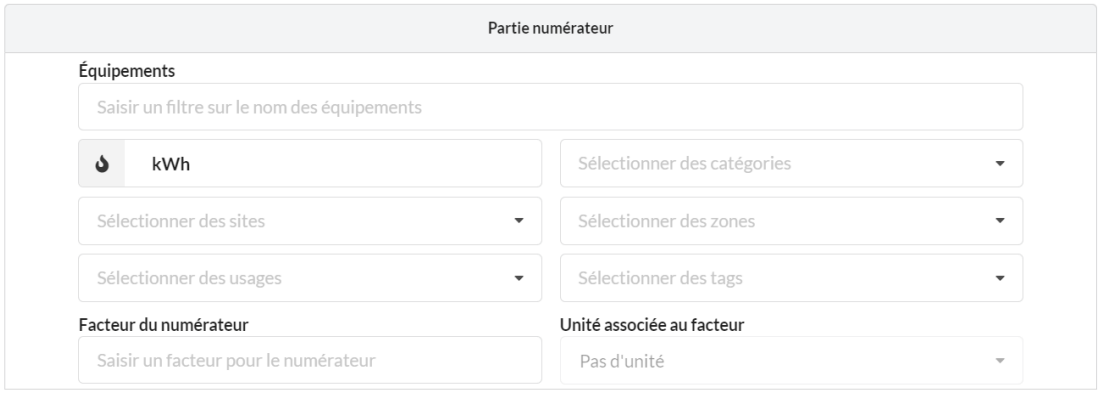
The form for creating a pie chart is the same as for the overview, without the possibility of adding the alert and summary tables. The restitution of the selected data is done on a circular diagram as at the bottom of the overview.

### 7.2.3 Ratio

A ratio is presented in the form of a stacked bar chart representing the consumption of a group of equipment divided by another series of data or by a piece of equipment.

The form is made up of two parts:

*Numerator*




It is possible to choose a group of equipment:

- **By name**: by writing “pump”, we take the consumption of all the equipment having “pump” in their name.
- **By filters**: by selecting the usual filters

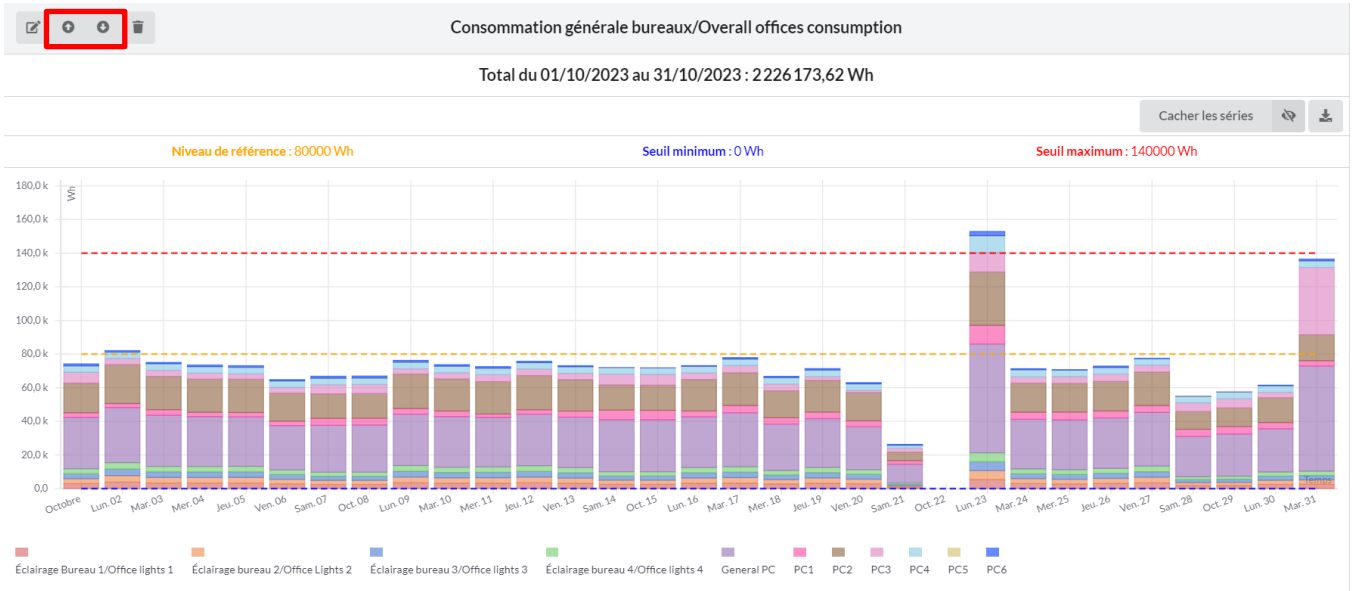
A factor can also be applied to the numerator in order, for example, to convert it to another unit.

*Denominator*


The denominator can be imported data (ton produced, unit produced, etc.), the DJU imported by information from the weather station or even measured equipment. It is again possible to apply a factor to the denominator.

Summary and alert tables are available for a ratio type graph.

Once the sections have been created, you can change their order of appearance on the page using the arrows at the top left:



## 7.3 Reports

Once advanced analyzes are created, they can be compiled into automatic reports sent by email in PDF format.

On the **home page**, click the Reports icon 

The report management page appears. You can modify a report, delete it, or generate it (send it by email instantly instead of waiting for its configured deadline).


Click Add Report to create a new report.

The form fields are as follows:

- **Name**: Name of the report.
- **Description:** Description of the report.
- **Frequency:** Frequency at which the report will be generated (daily, weekly, or monthly).
- **Day, Hour, Minute:** Depending on the frequency, the day of the week or month as well as the time the report will be sent.
- **Mailing lists:** Email lists to whom the report will be sent. Several possible lists.
- **Analysis :** This is where you select the different analyzes you want to appear in your report. There is no limit to the number of analyzes in a report. You can also select the order in which analyzes will appear in the report. To add an analysis, click on the “+” box.

Once the report is created, it will be sent to you as soon as it is due.

# 8. Scheduled exports

To be able to use the data locally on your computer or server, or to store the platform data on your own server, it is possible to program data exports in Excel or csv format.

On the **home page**, click on the Exports icon 

Like the reports, the page that appears allows you to modify, delete or generate an export. Similarly, you can create an export by clicking **Add Export**.

A certain number of fields are identical to those for creating the report. New fields nevertheless exist:

- **Frequency** and **Hour (UTC):** time the export was sent. This time is in UTC. Please note that it is strongly recommended to enter a date/time with a delay of at least 4 hours between the end of the period to be exported and the moment the export is generated.
- **Depth of history**: time range over which to return the data (the start date is calculated from the sending date and the chosen history depth).
- **File transfer method**: For exports, you can send the files by e-mail or to an FTP, SFTP or FTPS server. In the case of sending to a server, you will be asked to enter the address and the necessary authentication parameters.
- **Export type** :
    - **Detailed curve**: all the measurement points at the smallest data reporting step (may vary depending on the sensors).
    - **Daily curve**: daily consumption of equipment (1 data/day)
- **File format:** CSV (choice of separator possible) or Excel
- **Measurements:** Choice of all the desired measurements in the export.
- **Associated power/flow** (if detailed curve):
    - **Associated index:** Increasing counter index
    - **Associated power/flow:** Power calculated from the index difference between each point.

If you wish to obtain a detailed curve of the active power of a piece of equipment, select the “Active energy index (kWh)” type measurement and choose “Associated power/water flow”. Once the form is validated, the export will be generated at the chosen deadlines.

# APPENDICES

## Appendix 1: Table of load curve measurements according to the sensors and their configuration

| Sensor and configuration | Measurements available on the load curve |
|---|---|
| Power-Elec standard – frame profile 1 | Active power |
| Power-Elec standard – frame profile 2 | Overall active and reactive power |
| Power-Elec Expert – frame profile 3 | Active, reactive + and reactive - power |
| PowerPulse/PowerPulseATEX | Flow or power depending on equipment configuration (output category and output measurement type) |

## Appendix 2: Format and example of csv file for importing production data

Production data can be imported via a csv file containing two columns:

- Column 1: date in yyyy-mm-dd format
- Column 2: value of production in tons or units

Example of a csv line with semicolon separator:

2022-01-08;15.04
2022-01-09;15.40
2022-01-10;15.74
2022-01-11;15.54
2022-01-12;15.49
2022-01-13;15.89
2022-01-14;15.80
2022-01-15;15.62
2022-01-16;15.56
2022-01-17;15.85
2022-01-18;15.02


POWER-ADAPT