io-base
value-added data

TERĒGA
SOLUTIONS

Indaba Explorer

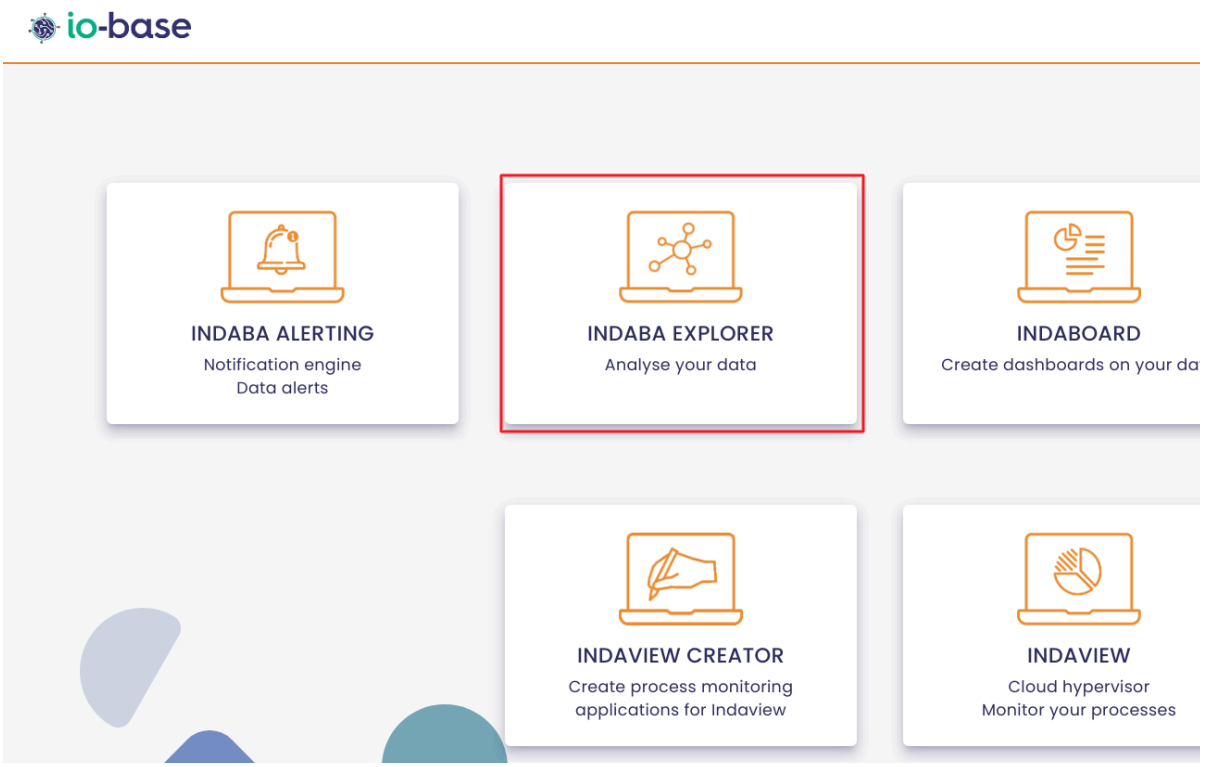
User Documentation

Content

1. Introduction

1.1 Access Indaba Explorer

To log in to Indaba Explorer, launch the IO-Base portal URL. You will land on the portal home page.

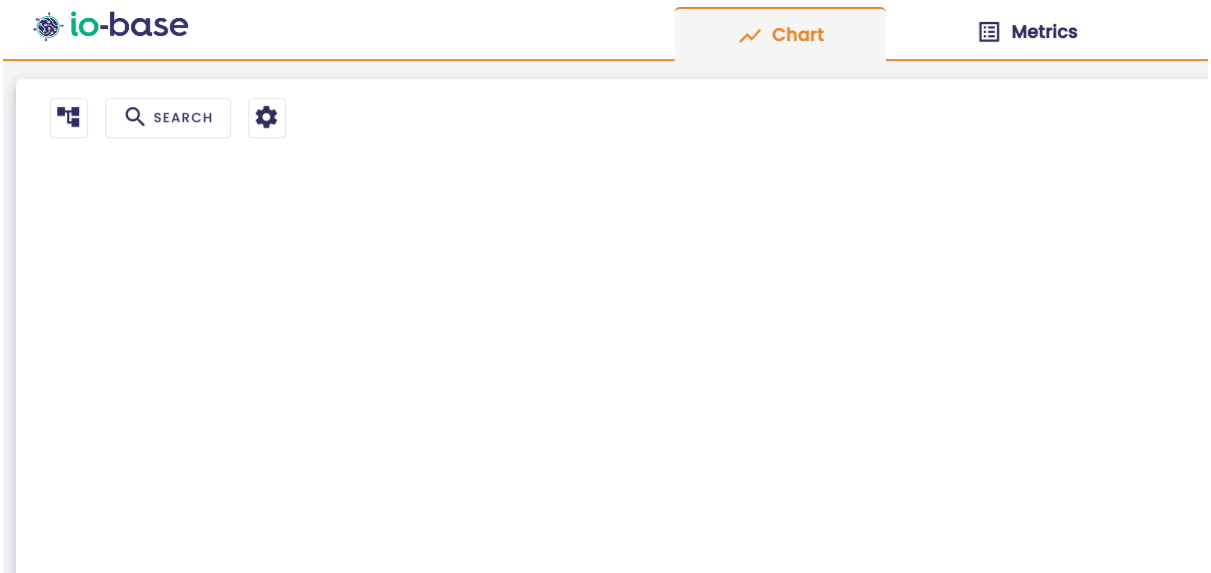


Click on the **Indaba Explorer** tile to open the application. You are led to Indaba Explorer, in the **Chart** menu.

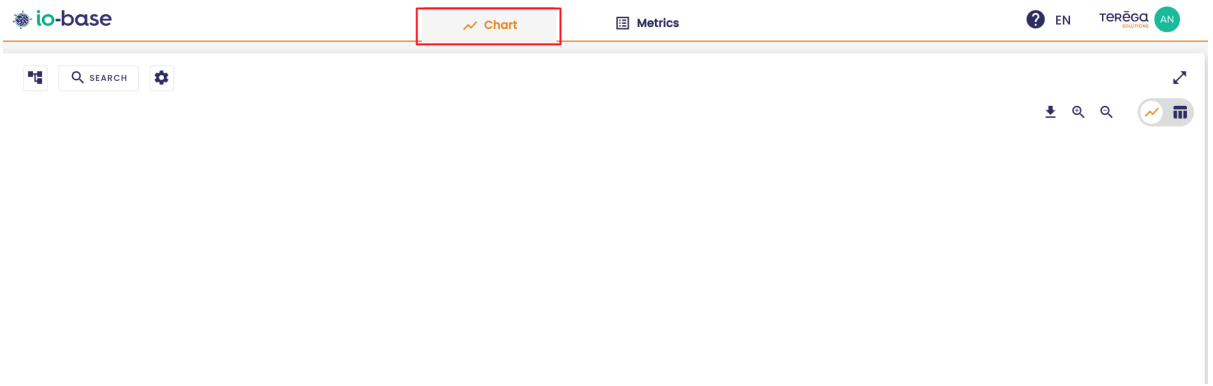
2. Curves

2.1 Accéder au menu des courbes

Open the **Indaba Explorer** application, available on the portal.



The **Chart** screen is the screen displayed by default.



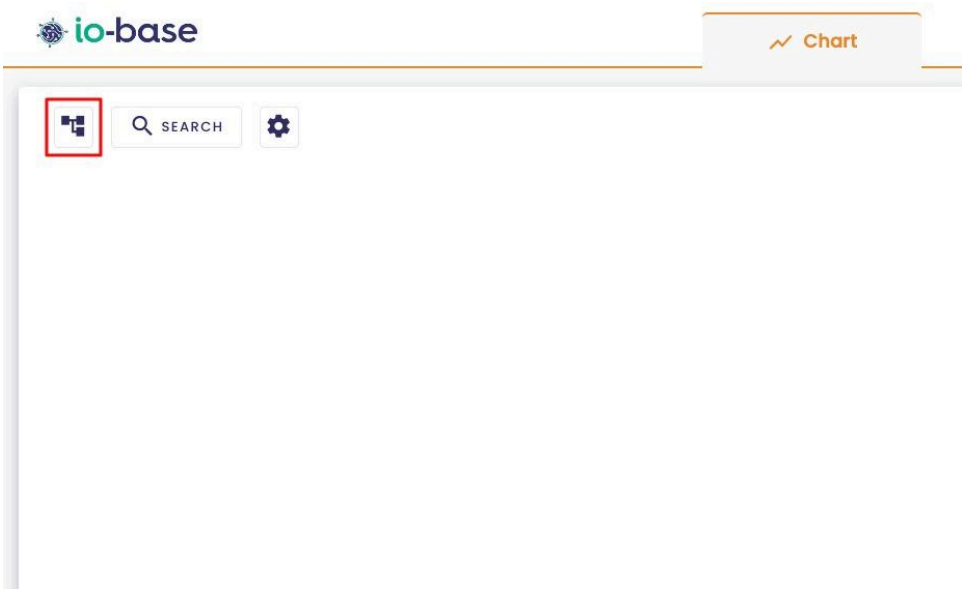
This screen displays the values of your metrics.

2.2 Display of curves from tree hierarchies

Prerequisite : be in the **Chart** menu of **Indaba Explorer**.

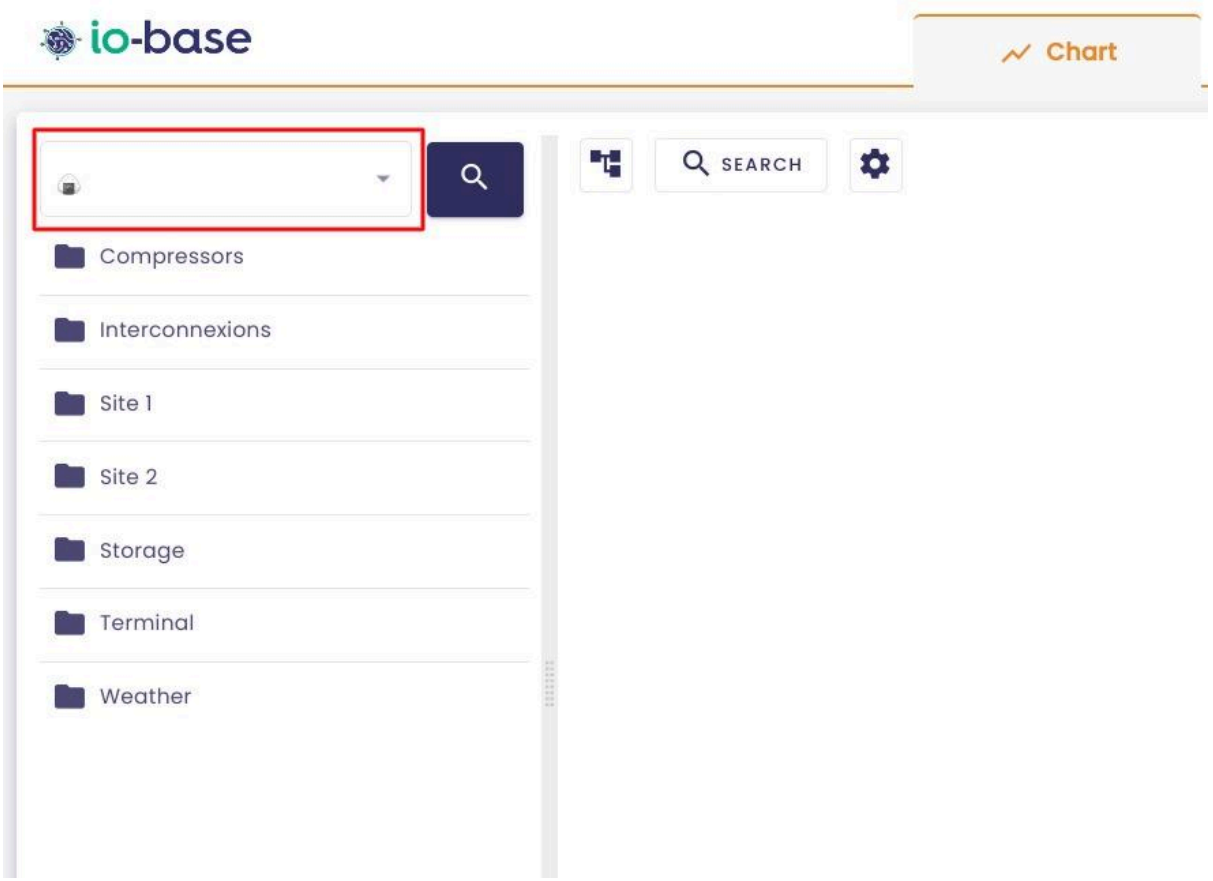
To find metrics from functional trees, click on the

button.



Tree navigation is displayed on the left side of the screen.

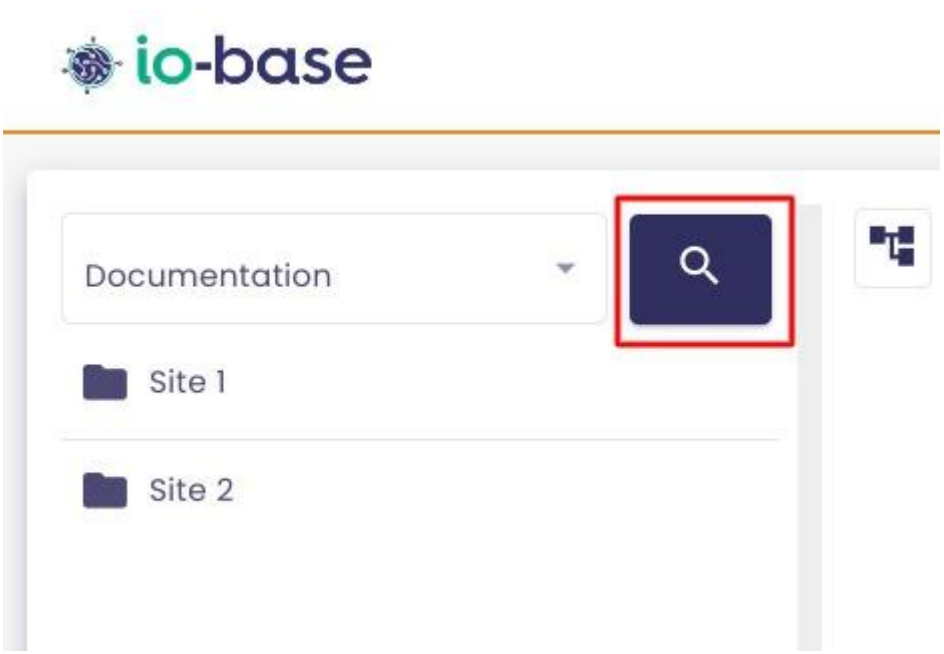
A drop-down list allows you to select the referential containing the metric you are looking for.



You can navigate inside the tree and click on the different folders to open them.

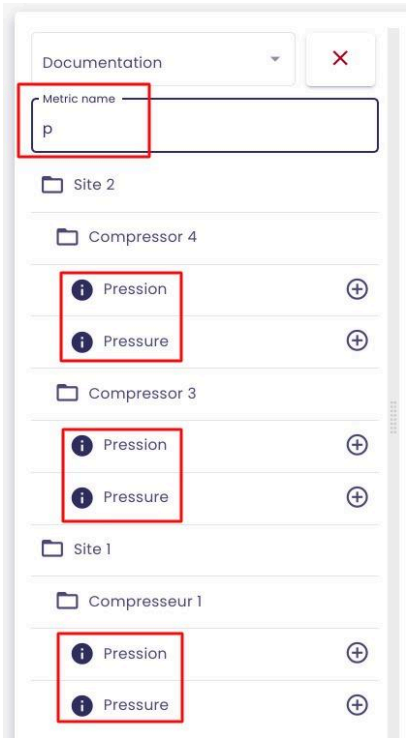
A **search** button is at your disposal to allow you to search for a metric quickly.

Click on the **search** button.



A search area opens, enter the name or part of the name of the metric you need.

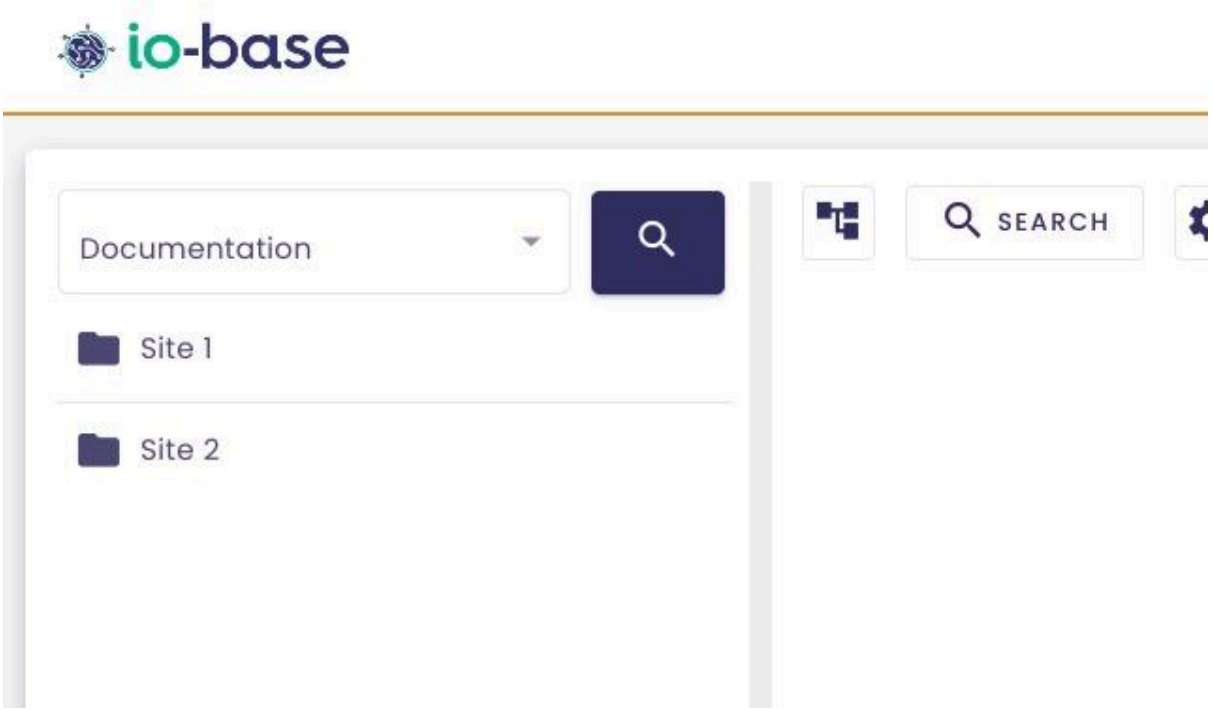
The metrics matching the search are displayed.



To cancel the search, click on

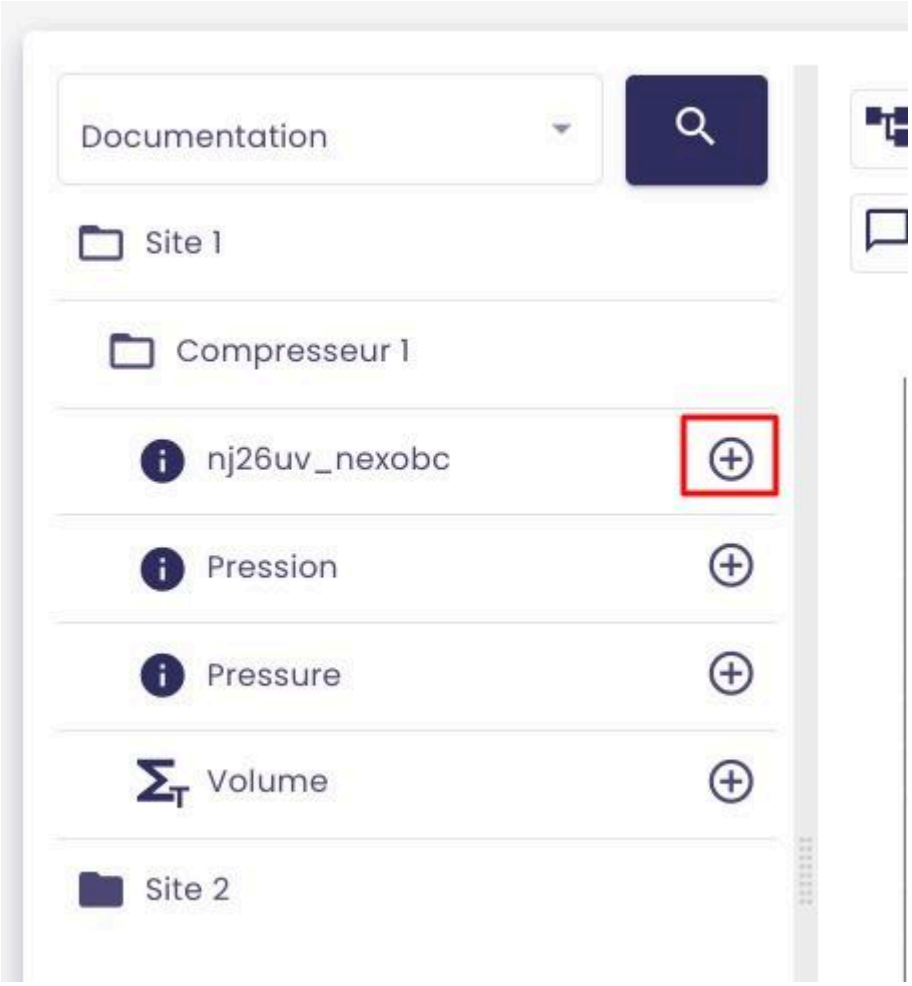
.

The tree view returns to its initial state.



Note : the trees and referentials are created by the administrators.

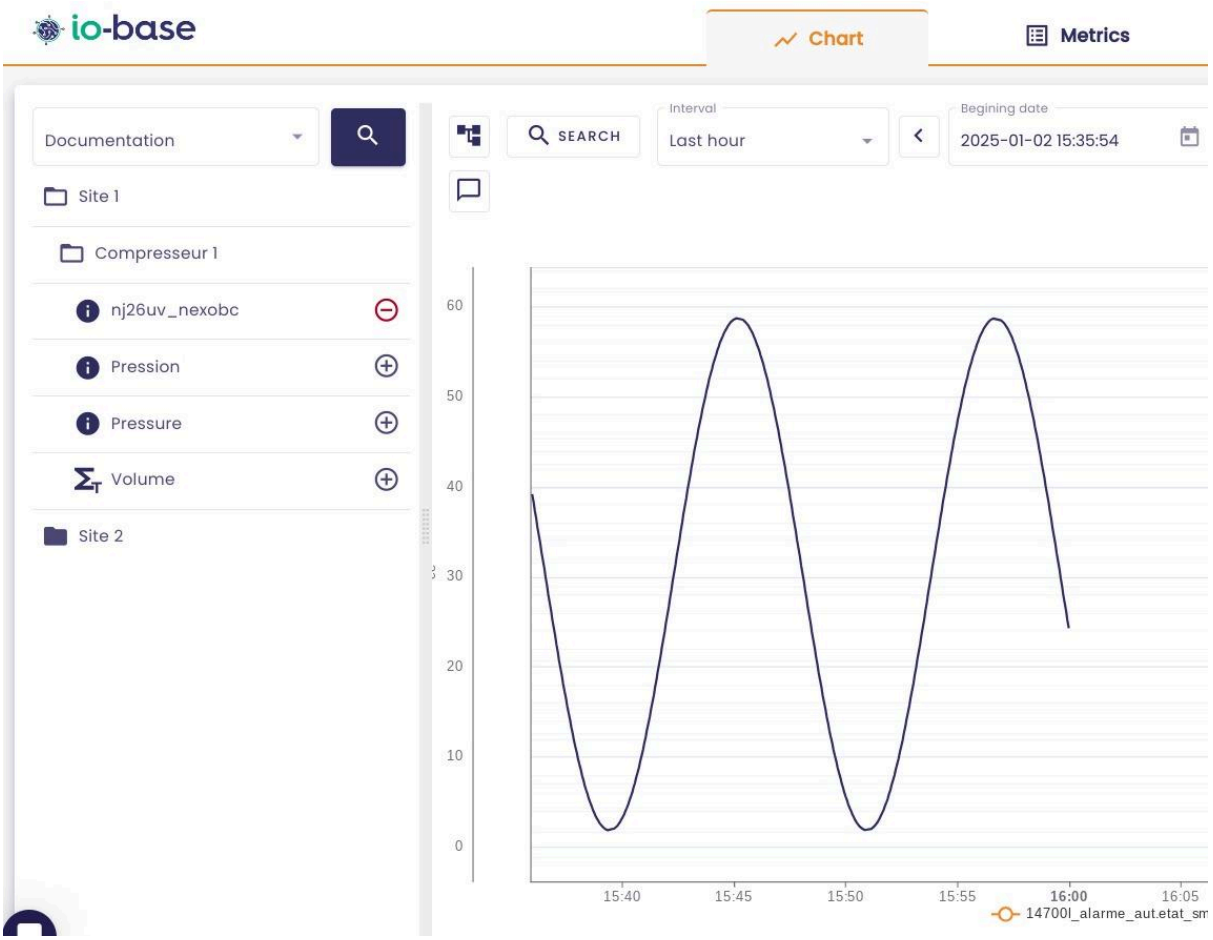
To view a metric's values, click on the **+** icon next to it.



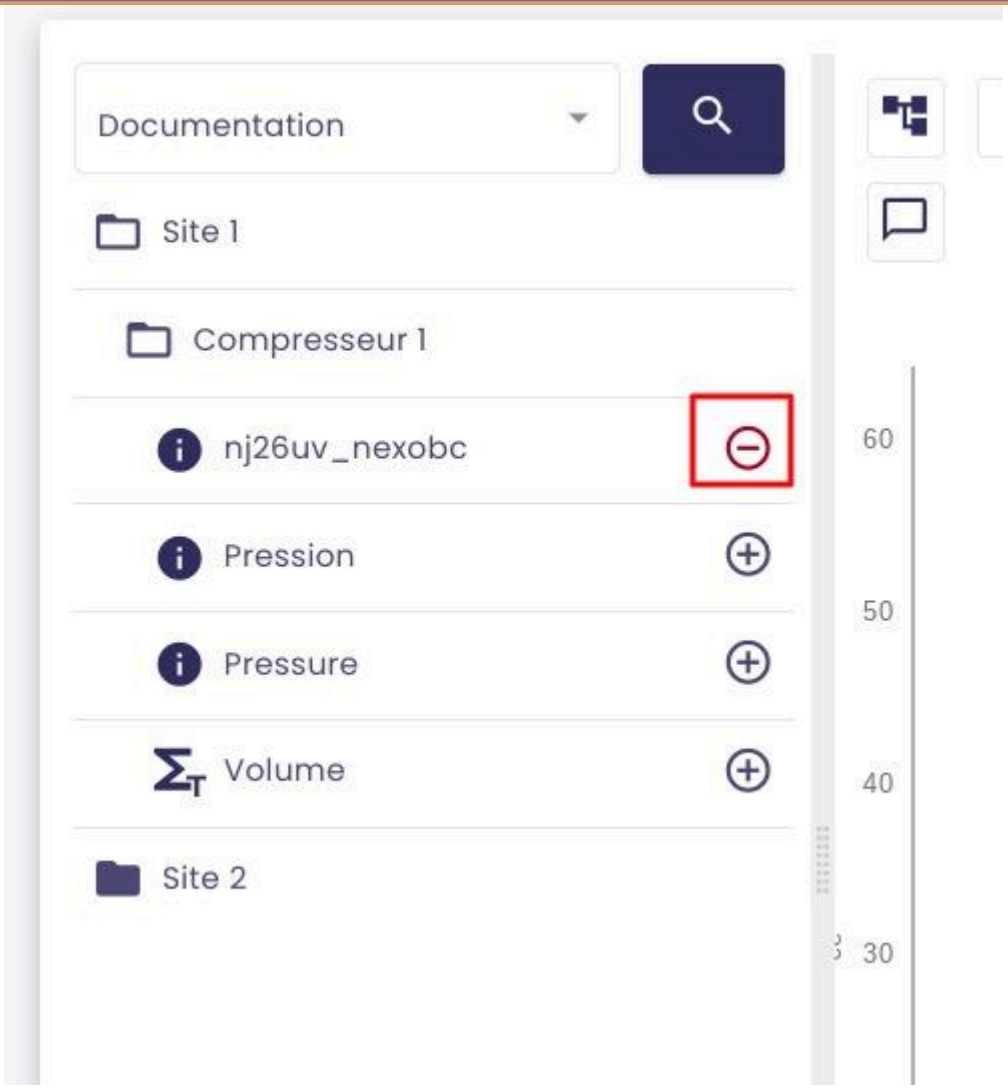
The curve showing the metric's values is displayed in the middle of the screen.

You can select multiple metrics simultaneously, to display multiple curves on the graph.

Note : you can display up to 50 metrics at the same time.

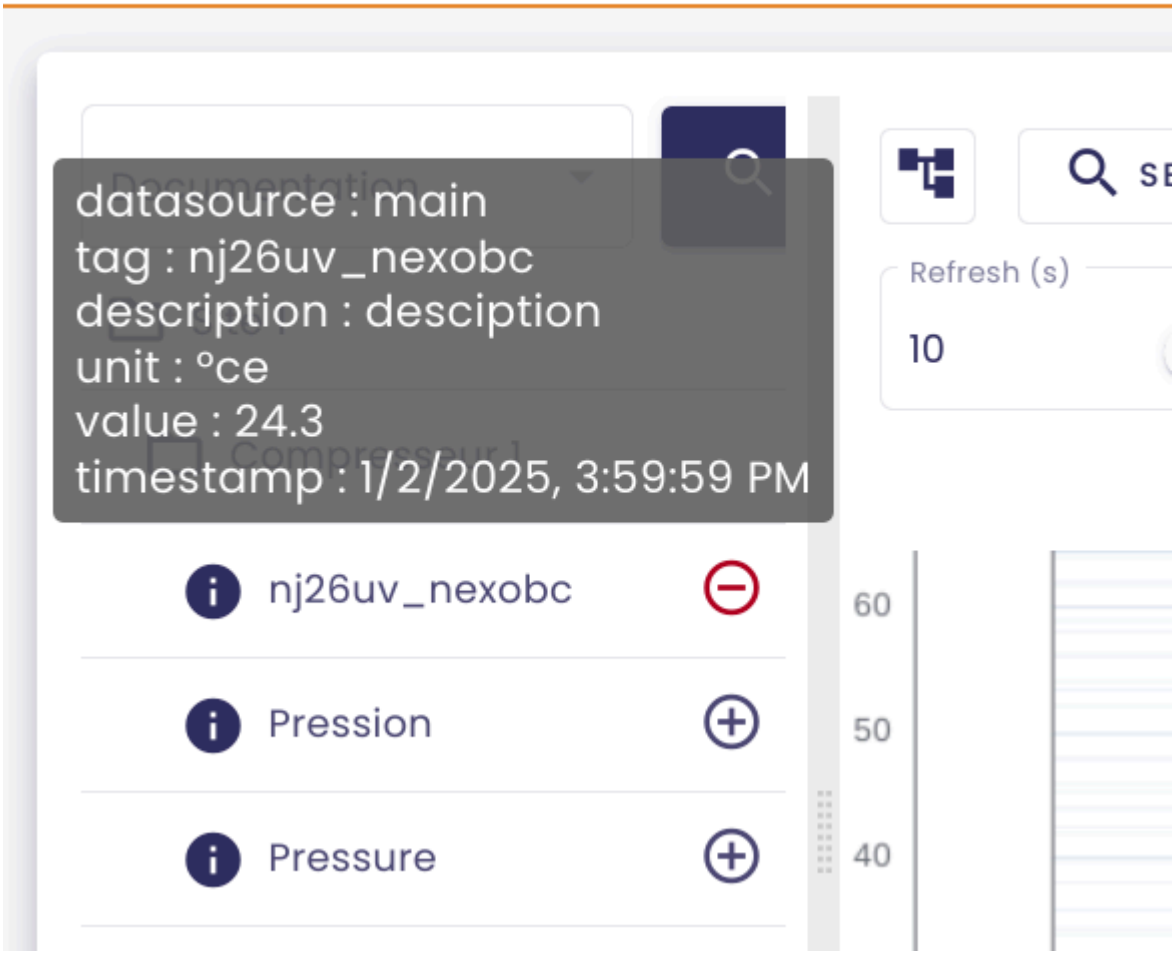


By clicking on " **-** " , the metric is removed from the curve.

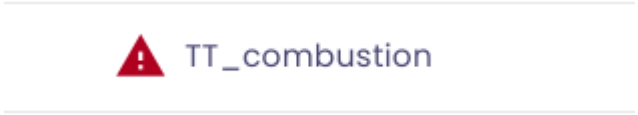


The legend indicating the metrics displayed is located under the graph.

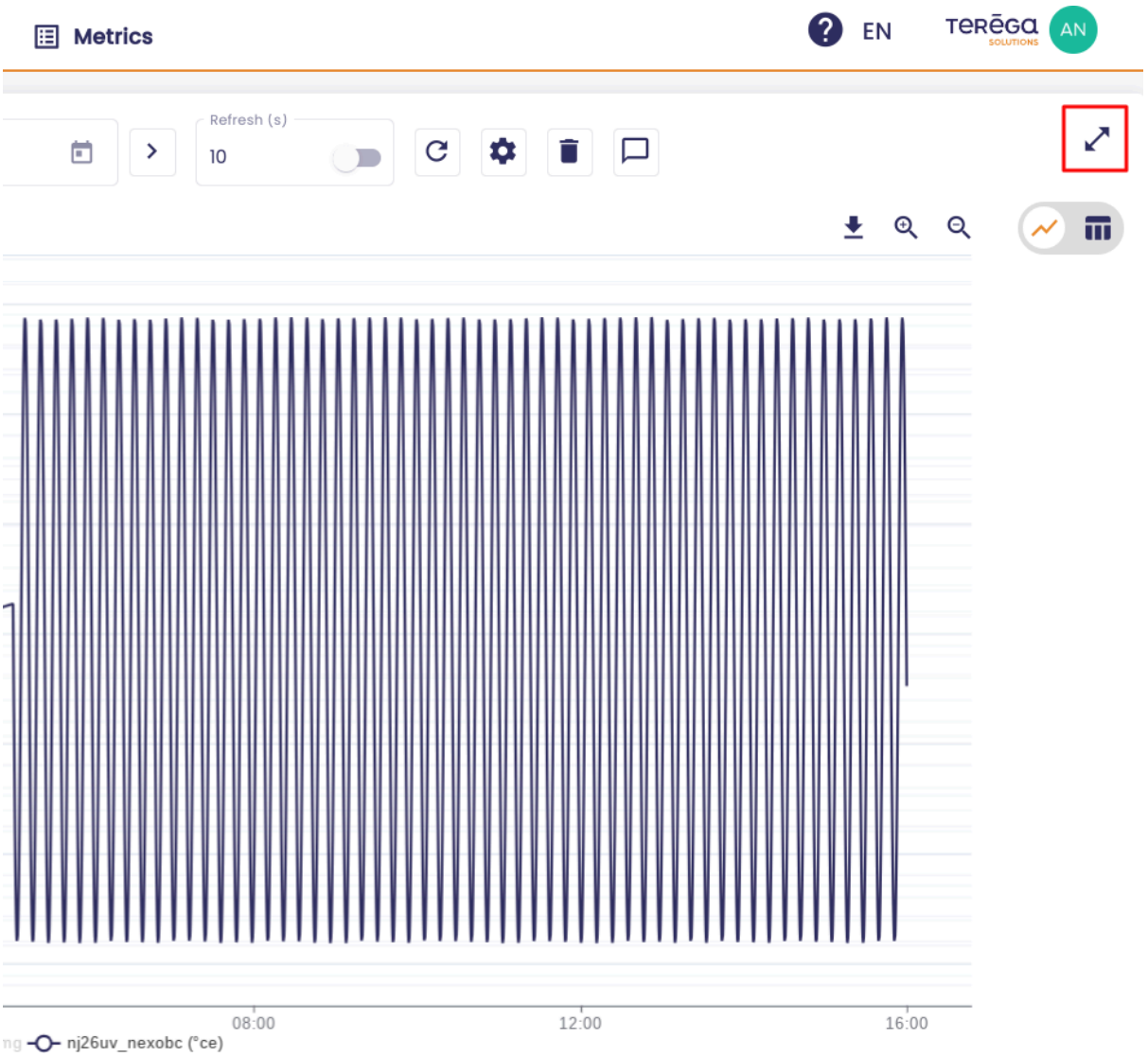
In the tree view, when you hover the mouse over, the "**i**" icon displays additional information about the metric.



Note : When no value for a metric has been reported for longer than 30 minutes, a red icon is displayed to indicate a problem.



Note : the double-arrow icon in the upper right corner allows you to optimize the display by switching to full-screen mode.

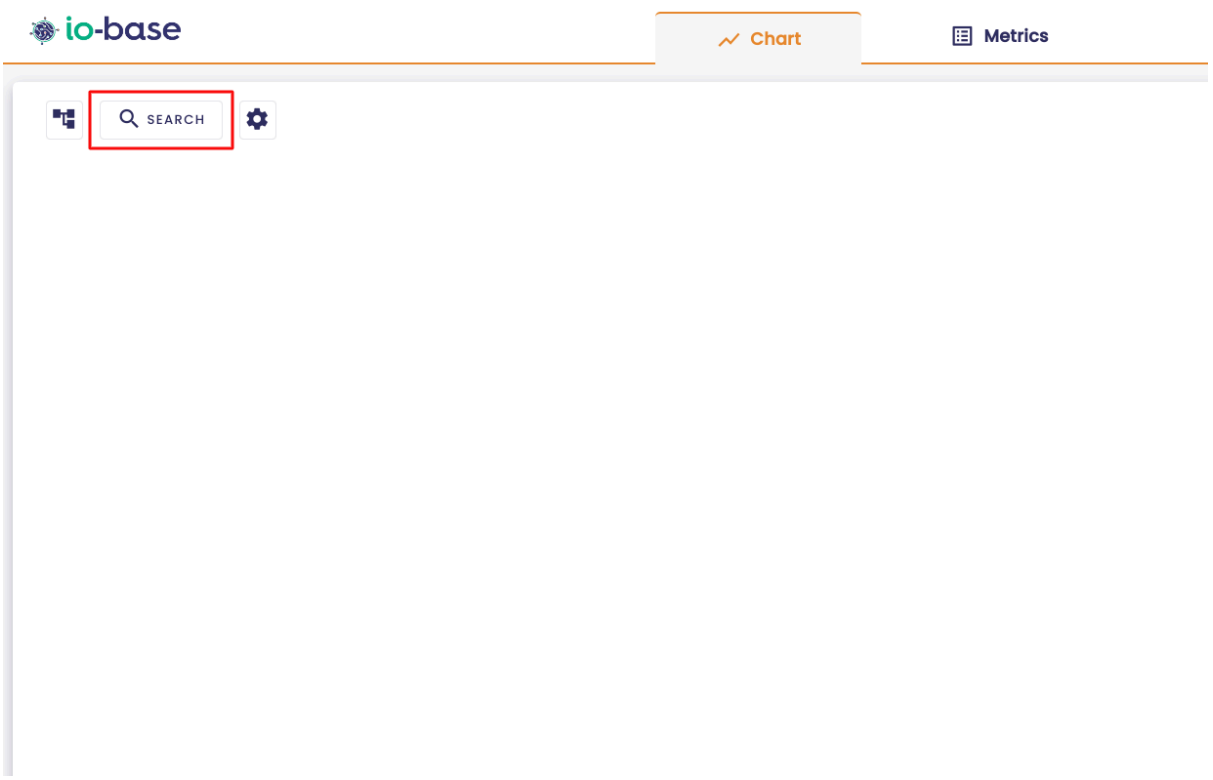


Note : In tree views, only metrics for which the user has rights appear. However, administrators can see all metrics.

2.3 Display metrics from the search

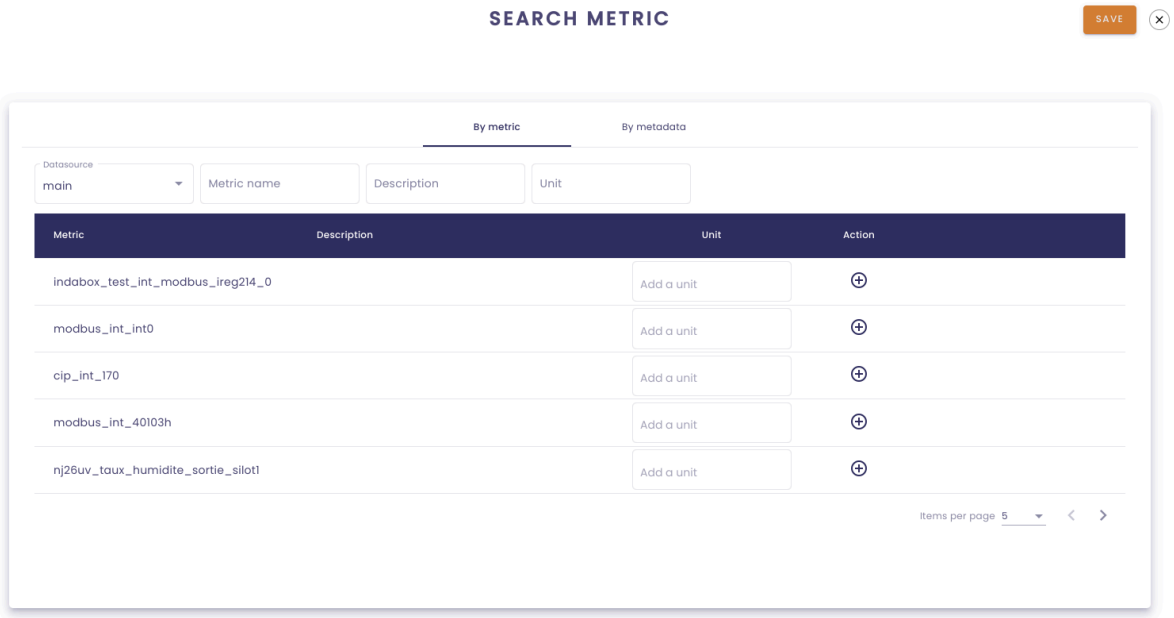
Prerequisite : be in the **Curves** menu of Indaba Explorer

Click on the **Search** button to open the search window.



The search window contains two tabs :

- Search by metadata
- Search by metric name



You can select metrics from both tabs at once.

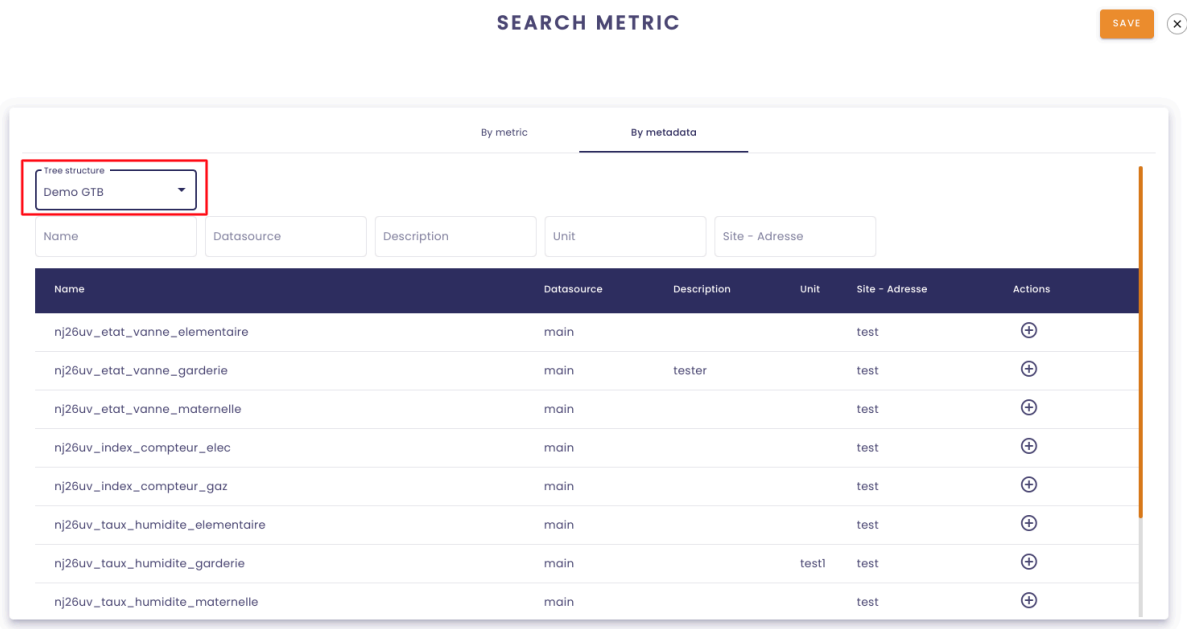
Select the metrics you want, then click on **OK**. The curves will be displayed.

Note : you can display up to 50 curves simultaneously on the graph. You can therefore select up to 10 metrics.

2.3.1 Search by metadata

In this tab, you will be able to do a metric search based on metadata.

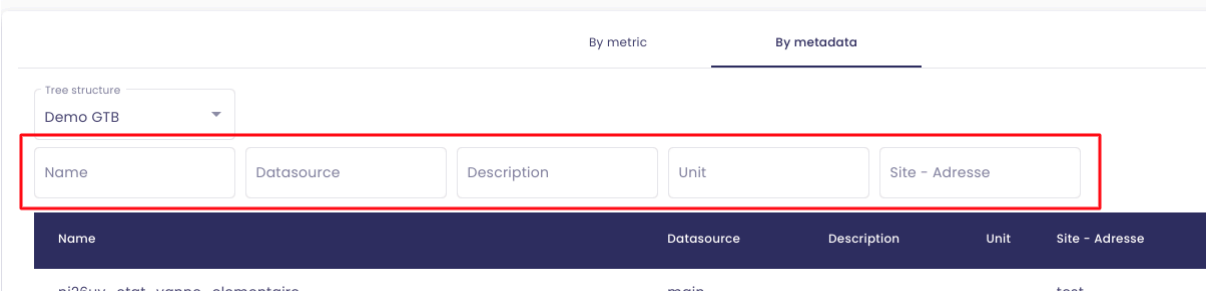
In the drop-down list, select a tree. The metrics list is updated.



Note : You have the possibility to choose the number of results displayed per page.

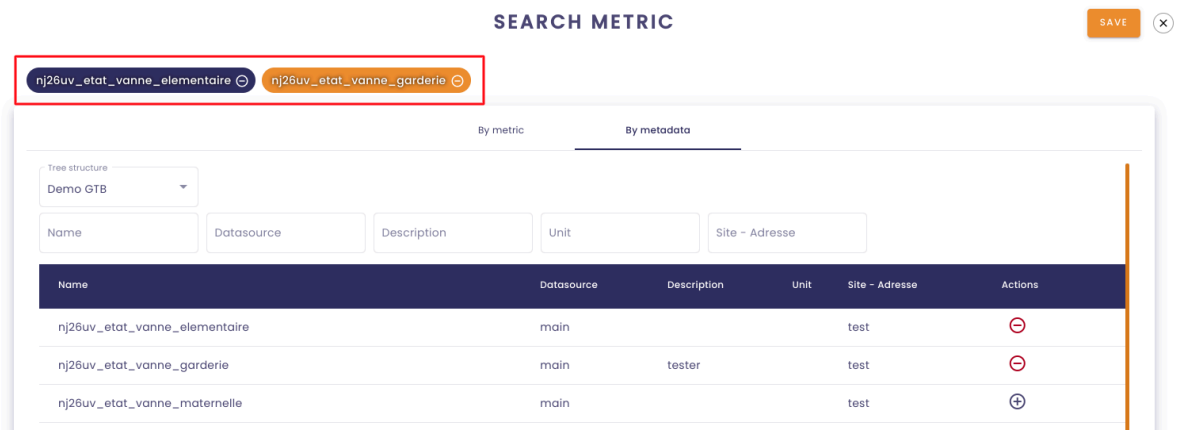
The search areas make it easier for you to find a metric. Simply fill in the search values and click on the **Search** button.

The table below is updated.



To add a metric to the selection, click on the + button.

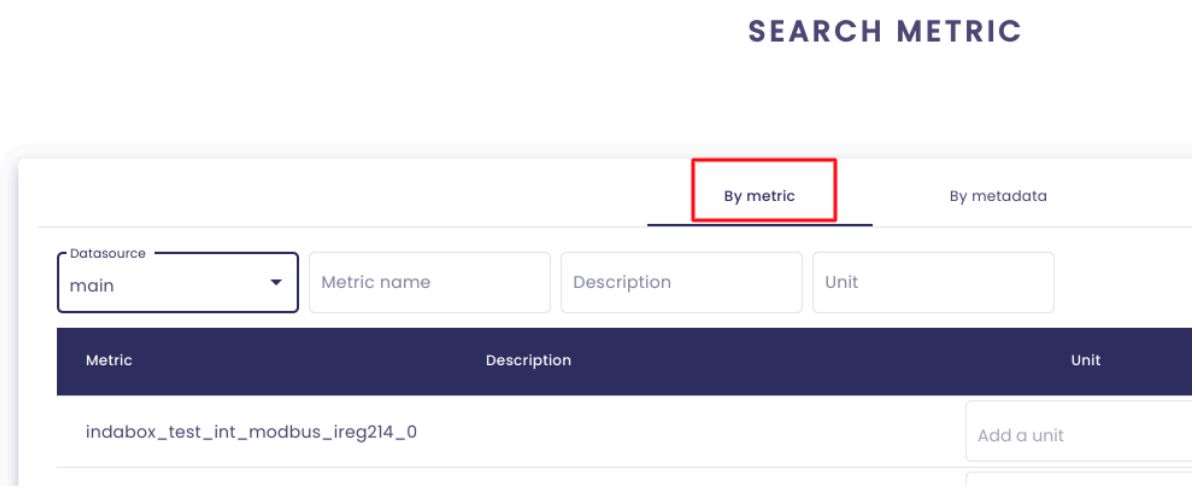
The list of selected metrics is displayed at the top of the window.



To cancel the selection of a metric, click on the delete button in the **Action** column.

2.3.2 Search by metric name

This type of search is based on the metric's name. Therefore, you can search a metric



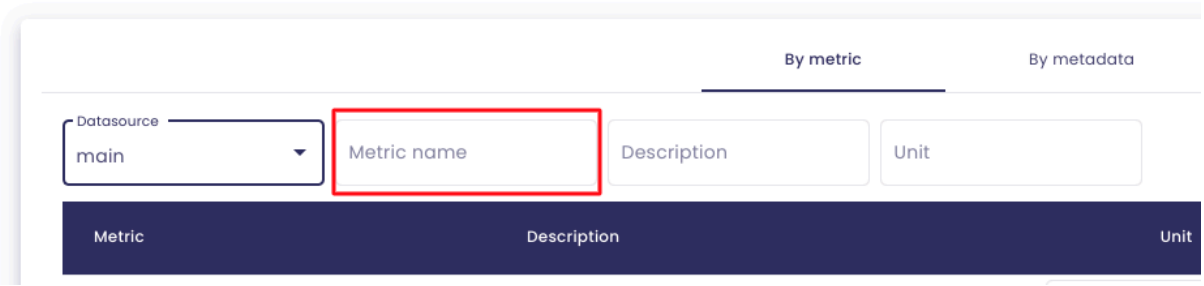
The first drop-down list is used to select the database in question.

Note : in general, the production database is called **prod**.

Once the database is selected, start typing the metric's name.

The results are displayed in the table.

Note : You can also search for a metric using its description or unit.



You can click on the + button to select more metrics.

2.3.3 Using wildcards

To search for metrics, you can use the wildcard " ***** " to represent an undefined sequence of characters. The symbol can be used at any position in the search :

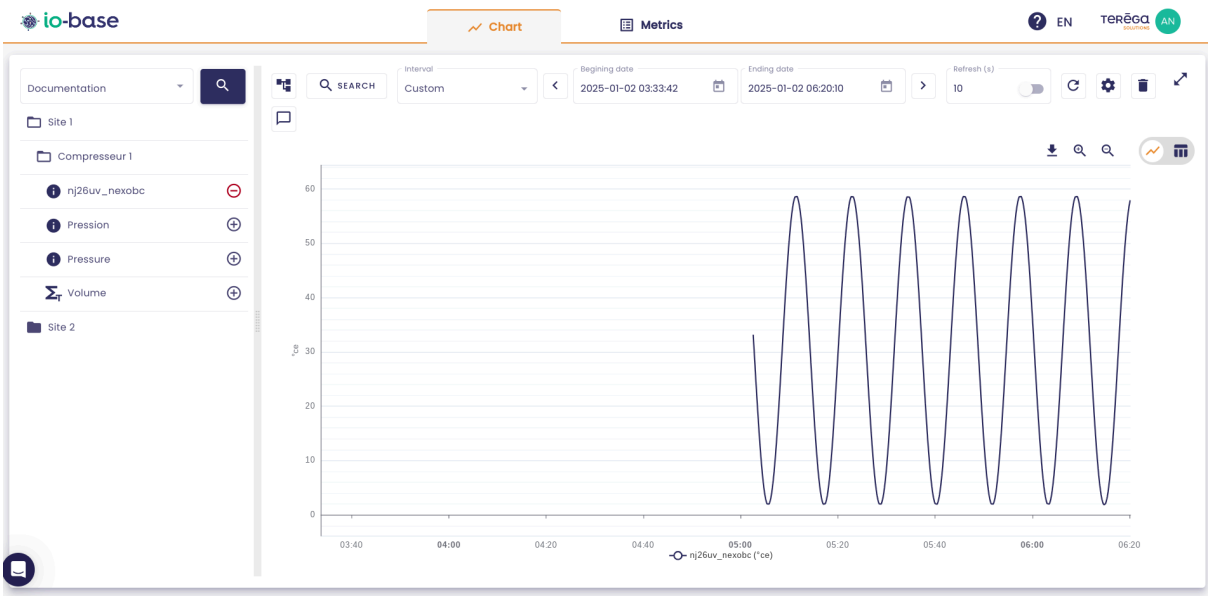
- If you enter **mytag**, the search automatically performs as ***mytag***, finding all occurrences containing "**mytag**" (e.g., **abc_mytag_xyz**).
- If you enter ***mytag**, the results will show metrics that end with "mytag" (e.g., **sfdjkosfj_mytag**).
- If you enter **mytag***, the results will show metrics that start with "mytag" (e.g., **mytag_123**).
- If you enter **my*tag**, you will get metrics containing "my" followed by "tag" with any characters in between (e.g., **my_xyz_tag)**.
- You can also use " ***** " at the beginning, end, or in the middle of your search term to refine the results according to your needs.

2.4 Handling curves

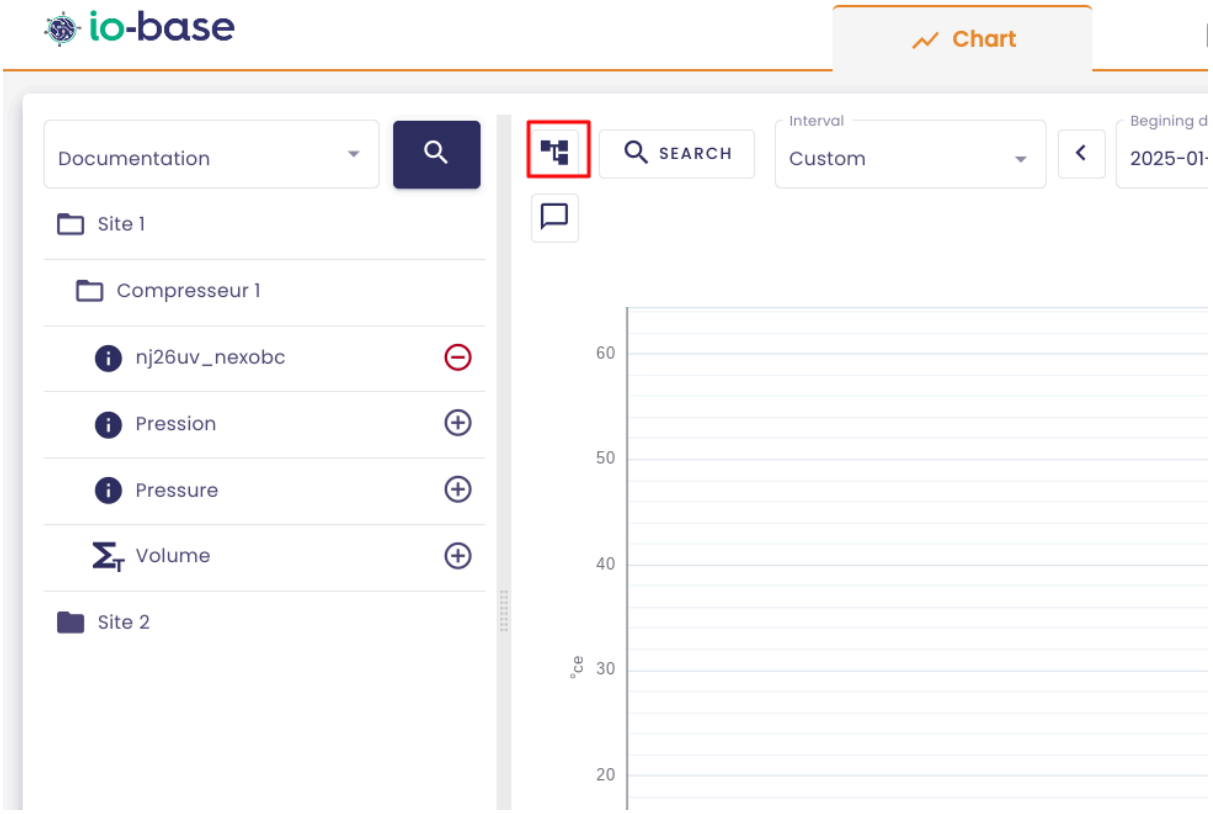
Pré-requis : be in the **Curves** menu of **Indaba Explorer**.

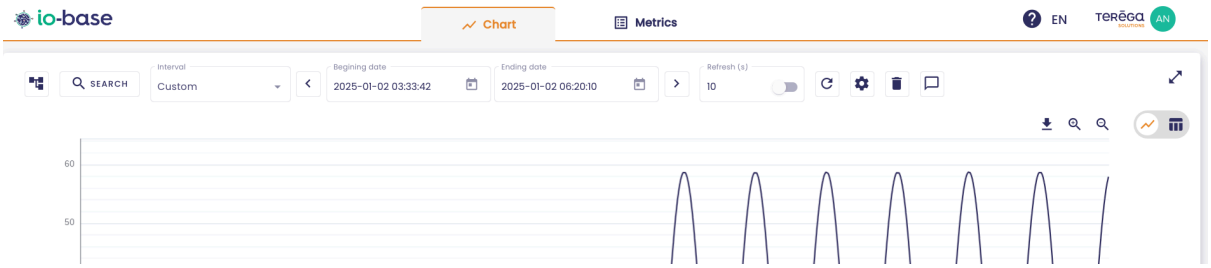
Select the metric(s) you want to display.

The curve is displayed in the centre of the page.



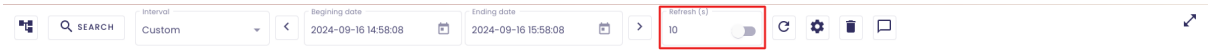
To optimize the graph size, you can click on the **treeview** button to hide the treeview.





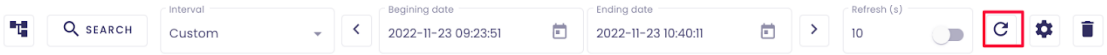
2.4.1 Refreshing the values

In the top toolbar, you can set the values to automatically refresh and specify the time in seconds between updates



Note : if you switch windows in your browser, or change the start and end dates of the chart, automatic refresh is deactivated.

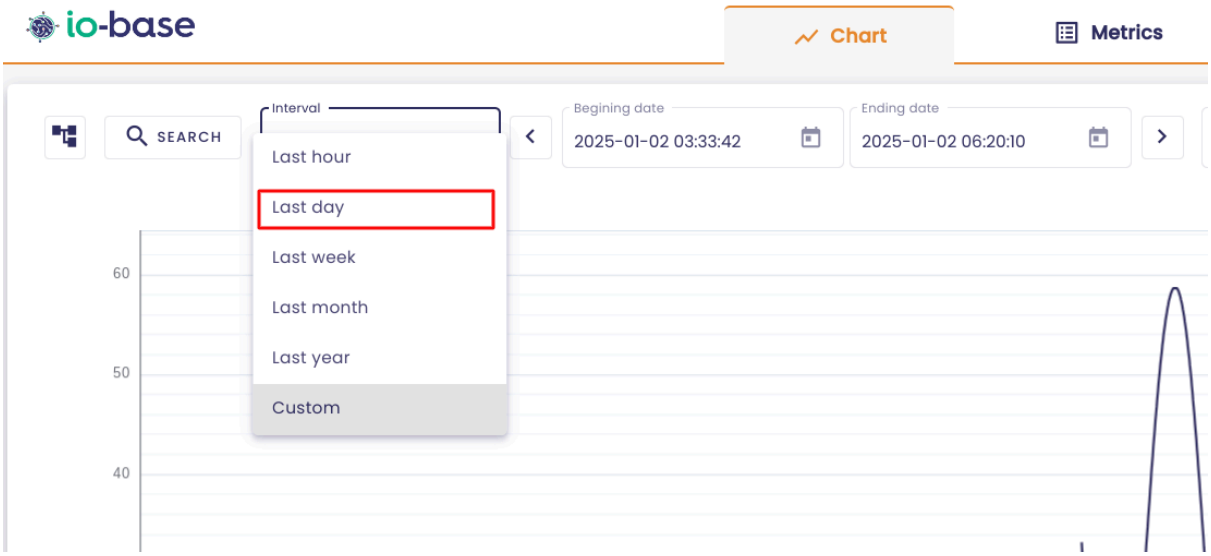
To refresh the data once, click on the highlighted button:



2.4.2 Configuration of the data period

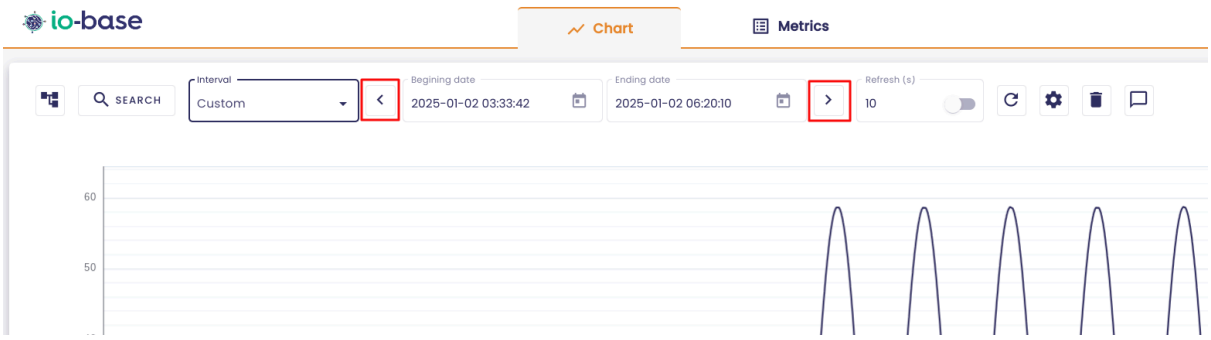
You can change display period of the metric data. There are several possibilities:

- Last hour
- Last day
- Last month
- Last year
- Custom (enter the desired start and end dates)



The graph updates as soon as the period is selected.

When you are in a **Customised** period, you can navigate through time, using the **left** and **right** arrows.



2.4.3 Zoom option

On the graph, at the top right, there are two buttons to Zoom in / Zoom out.

This allows you to change the start and end dates.

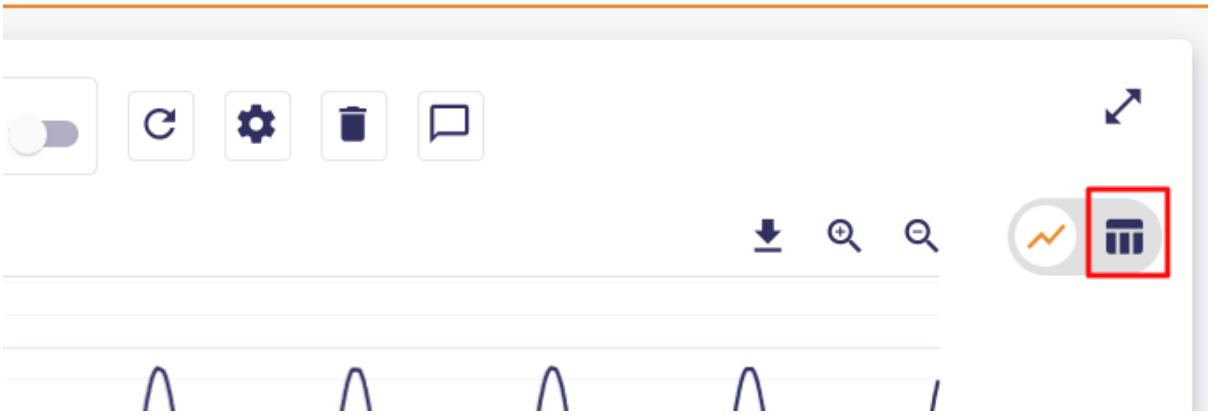
Note : when you click on the zoom buttons, the graph automatically switches to the **Customised** period.

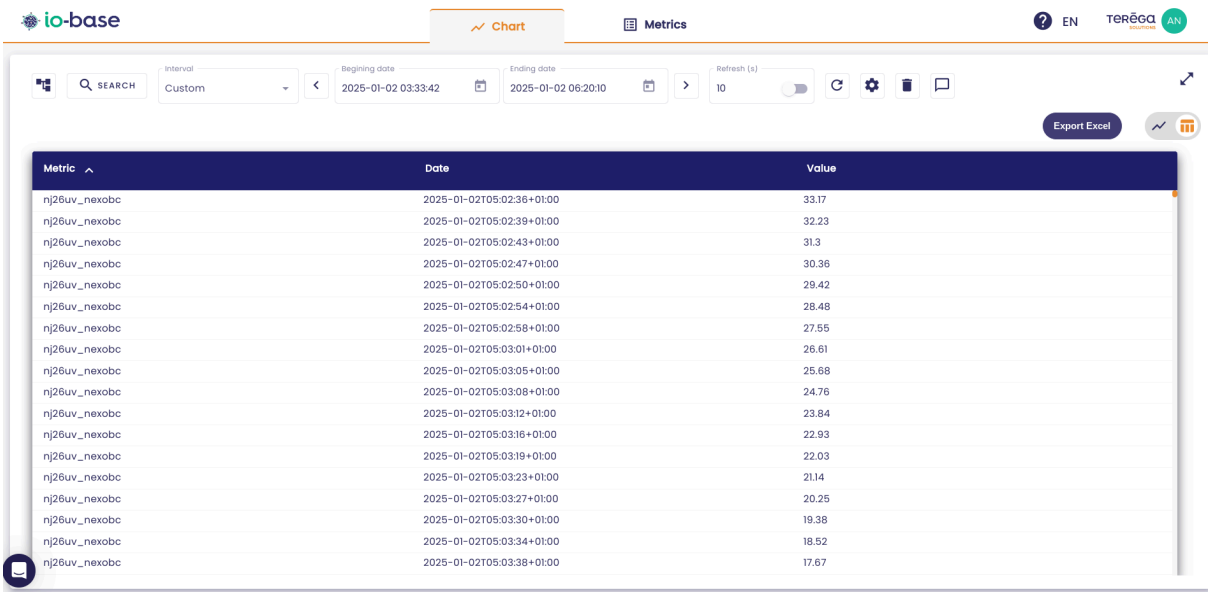
2.4.4 Saving the displayed graph as an image

The button in the upper right corner allows you to save the graph currently on the screen as an image.

2.4.5 Viewing the values of the displayed curves

A button at the top right allows you to display the list of the displayed metrics values.



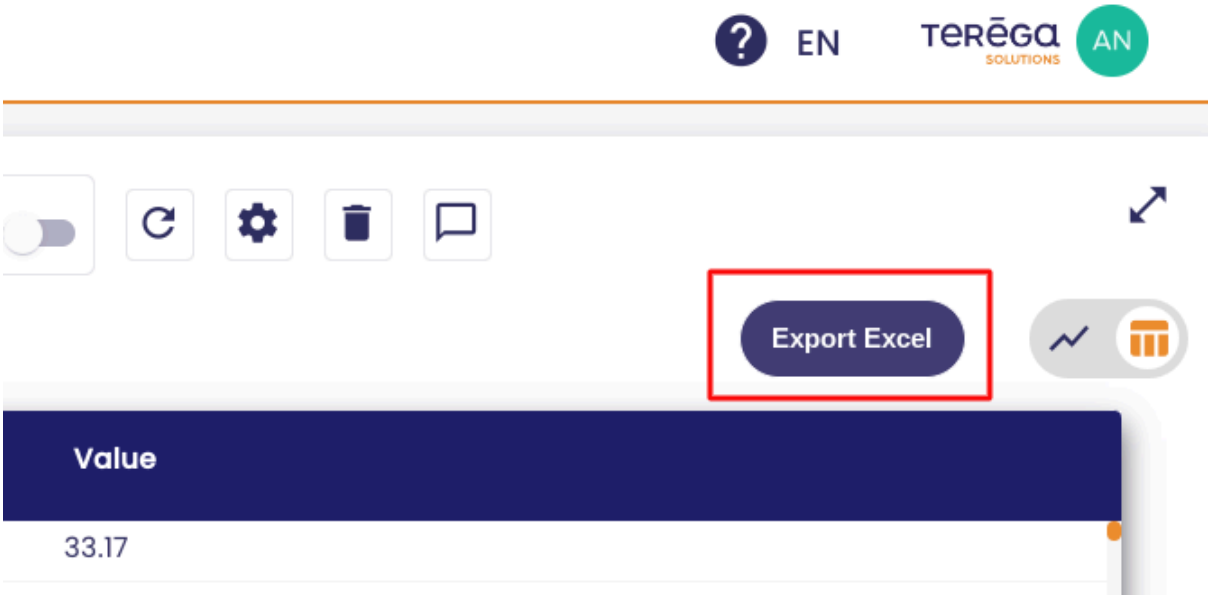


Note : to return to the graph view, you can click on the

button.

You can export this data into an Excel file.

To do this, click the "**Export Excel**" button :



An Excel file containing the data shown on the graph is downloaded :

data (1).xlsx

Fichier Modifier Insérer Format Aide

Calibri 12

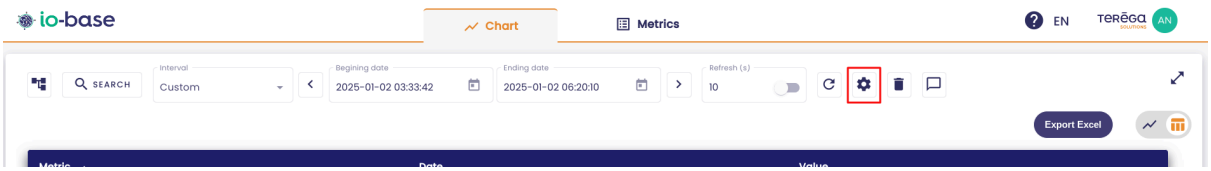
metric

	A	B	C	D
1	metric	timestamp	value	
2	nj26uv_etat_vanne_elementaire	2024-09-16T13:11:09+02:00	77.25	
3	nj26uv_etat_vanne_elementaire	2024-09-16T13:11:12+02:00	-95.31	
4	nj26uv_etat_vanne_elementaire	2024-09-16T13:11:16+02:00	45.79	
5	nj26uv_etat_vanne_elementaire	2024-09-16T13:11:20+02:00	-59.32	
6	nj26uv_etat_vanne_elementaire	2024-09-16T13:11:23+02:00	-178.73	
7	nj26uv_etat_vanne_elementaire	2024-09-16T13:11:27+02:00	133.16	
8	nj26uv_etat_vanne_elementaire	2024-09-16T13:11:30+02:00	-63.29	
9	nj26uv_etat_vanne_elementaire	2024-09-16T13:11:34+02:00	47.39	
10	nj26uv_etat_vanne_elementaire	2024-09-16T13:11:38+02:00	41.02	
11	nj26uv_etat_vanne_elementaire	2024-09-16T13:11:41+02:00	114.11	
12	nj26uv_etat_vanne_elementaire	2024-09-16T13:11:45+02:00	-17.43	
13	nj26uv_etat_vanne_elementaire	2024-09-16T13:11:49+02:00	99.53	
14	nj26uv_etat_vanne_elementaire	2024-09-16T13:11:52+02:00	-48.93	
15	nj26uv_etat_vanne_elementaire	2024-09-16T13:11:56+02:00	92.26	
16	nj26uv_etat_vanne_elementaire	2024-09-16T13:12:00+02:00	14.56	
17	nj26uv_etat_vanne_elementaire	2024-09-16T13:12:03+02:00	109.66	
18	nj26uv_etat_vanne_elementaire	2024-09-16T13:12:07+02:00	-128.93	
19	nj26uv_etat_vanne_elementaire	2024-09-16T13:12:10+02:00	77.16	
20	nj26uv_etat_vanne_elementaire	2024-09-16T13:12:14+02:00	193.77	
21	nj26uv_etat_vanne_elementaire	2024-09-16T13:12:18+02:00	-130.53	
22	nj26uv_etat_vanne_elementaire	2024-09-16T13:12:21+02:00	59.24	
23	nj26uv_etat_vanne_elementaire	2024-09-16T13:12:25+02:00	-78.16	
24	nj26uv_etat_vanne_elementaire	2024-09-16T13:12:29+02:00	-57.2	
25	nj26uv_etat_vanne_elementaire	2024-09-16T13:12:32+02:00	-23.02	
26	nj26uv_etat_vanne_elementaire	2024-09-16T13:12:36+02:00	160.2	
27	nj26uv_etat_vanne_elementaire	2024-09-16T13:12:39+02:00	113.38	
28	nj26uv_etat_vanne_elementaire	2024-09-16T13:12:43+02:00	82.84	
29	nj26uv_etat_vanne_elementaire	2024-09-16T13:12:47+02:00	-138.25	
30	nj26uv_etat_vanne_elementaire	2024-09-16T13:12:50+02:00	-144.11	
31	nj26uv_etat_vanne_elementaire	2024-09-16T13:12:54+02:00	17.73	
32	nj26uv_etat_vanne_elementaire	2024-09-16T13:12:58+02:00	183.2	
33	nj26uv_etat_vanne_elementaire	2024-09-16T13:13:01+02:00	13.27	
34	nj26uv_etat_vanne_elementaire	2024-09-16T13:13:05+02:00	92.42	
35	nj26uv_etat_vanne_elementaire	2024-09-16T13:13:08+02:00	-36.23	
36	nj26uv_etat_vanne_elementaire	2024-09-16T13:13:12+02:00	-85.31	
37	nj26uv_etat_vanne_elementaire	2024-09-16T13:13:16+02:00	-186.44	
38	nj26uv_etat_vanne_elementaire	2024-09-16T13:13:19+02:00	118.75	
39	nj26uv_etat_vanne_elementaire	2024-09-16T13:13:23+02:00	185.67	
40	nj26uv_etat_vanne_elementaire	2024-09-16T13:13:27+02:00	-119.02	
41	nj26uv_etat_vanne_elementaire	2024-09-16T13:13:30+02:00	-69.82	

data

2.4.6 Configuration of curves

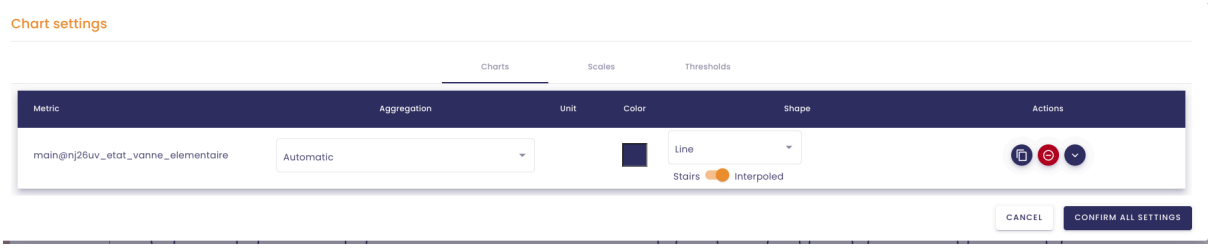
To access configuration of the curves, click on the following button :



The control panel is displayed. It contains 4 tabs:

- Charts
- Scales
- Thresholds

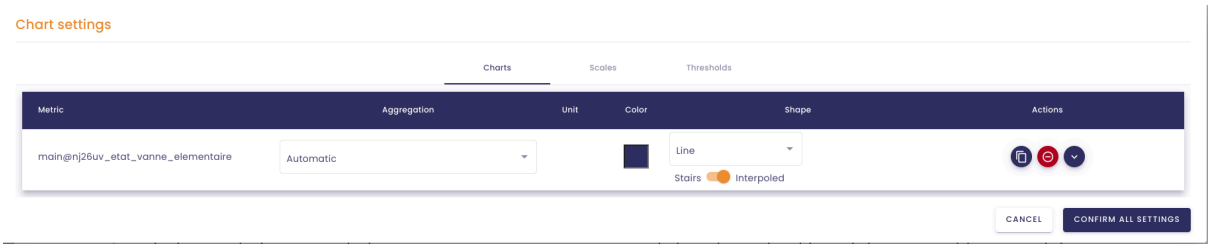
Once you have configured all the desired values, click on **Confirm all configurations**.



Note : the confirm button saves the settings made on all the tabs of the control panel.

2.4.6.1 Chart tab

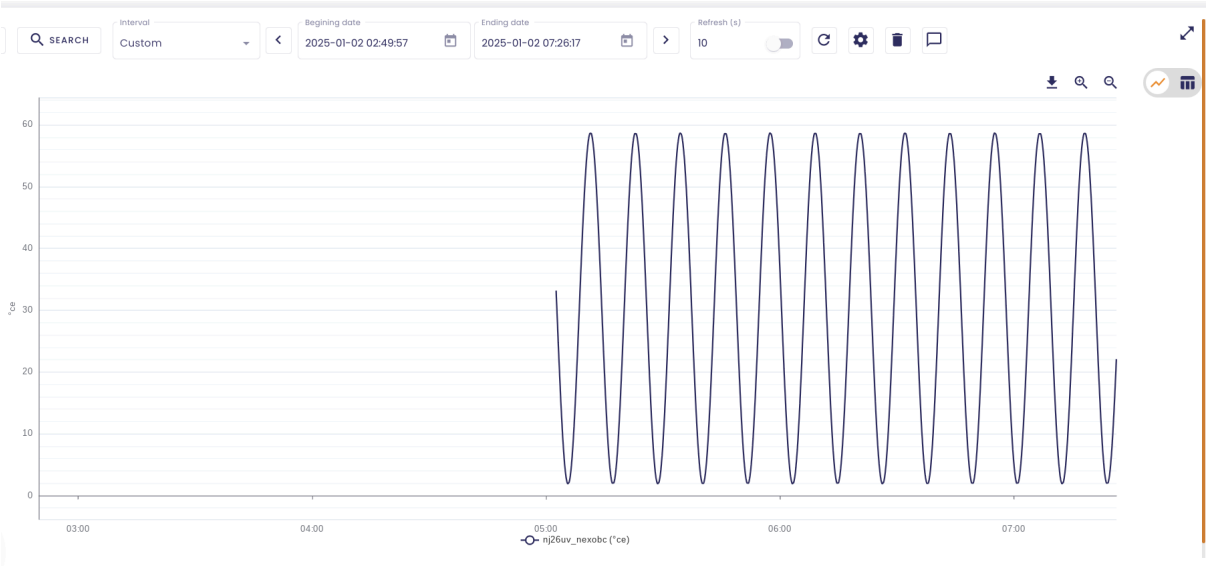
In this tab, you can make several changes to the configuration of your charts.



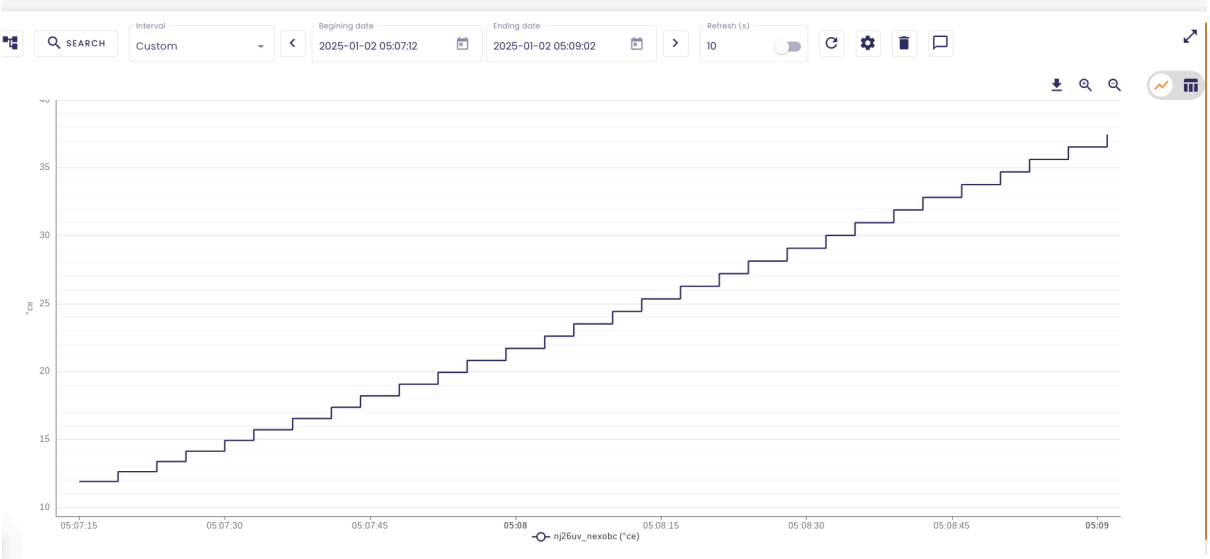
- change the name of the displayed metric (this changes the legend)
- change the aggregation type : When you choose "**None**", the raw values will be displayed. When you choose "**Automatic**", the system optimises the display of the curve. If too many points are returned for the display, then an average aggregation will be automatically be applied to display the values.
- the colour of the curve on the graph
- the type of display
    - curve

    - histogram
    - scatter graph
- interpolated display (the curve is marked from point to point) or a stepped display

Example of an interpolated curve :



And the same curve as a stepped line graph :

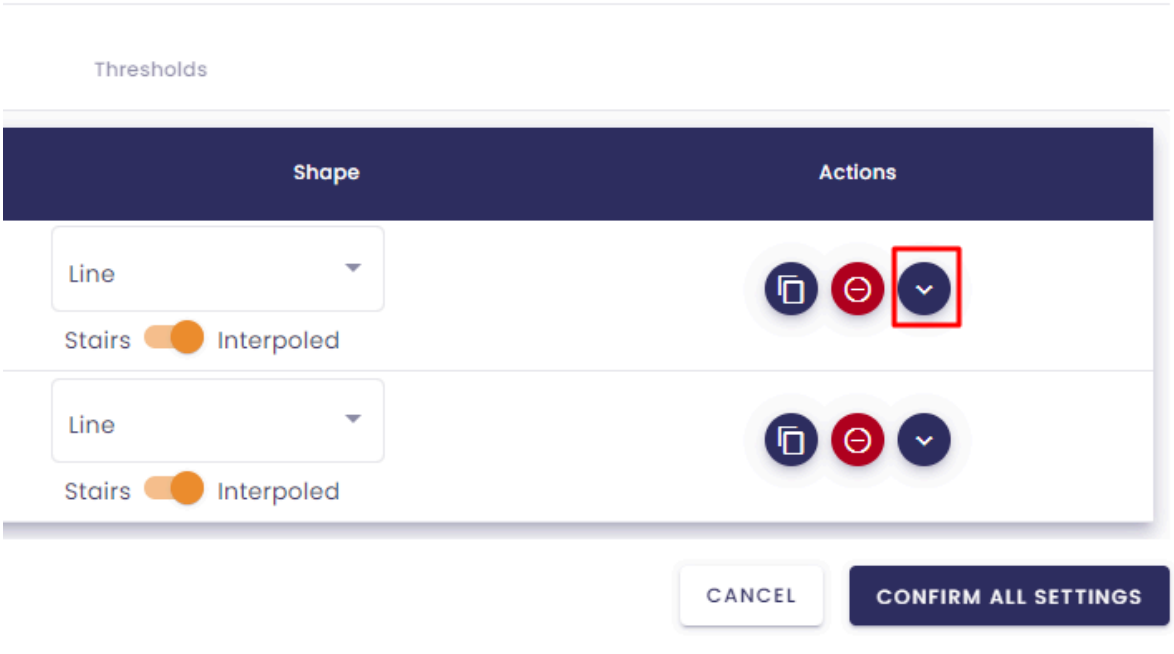


In the **Actions** column, you can duplicate or delete a chart.

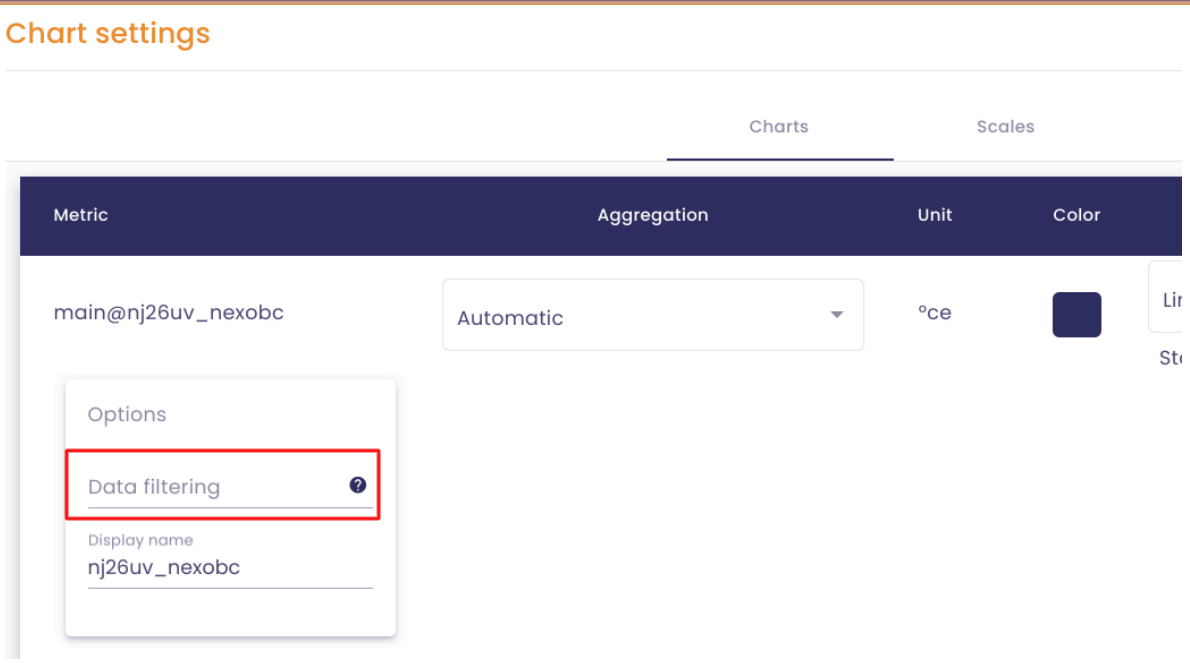
2.4.6.2 Filtering data

You can filter the data displayed on a chart.

To do so, in the **Actions** column, click on the arrow highlighted below :



An input field appears below the metric name, allowing you to specify the data filter to apply :

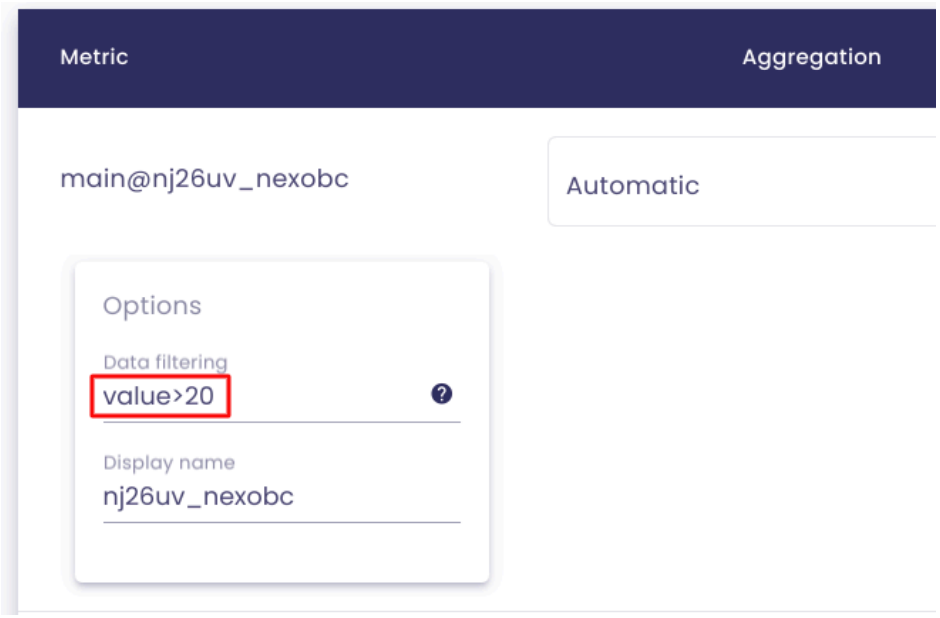


To specify a data filter, you must follow the syntax below :

- The data will be named 'value'.
- The allowed operators are: >, >=, <, <=, +, *, /, (,), AND, OR.

For example, if you only want to display the data greater than 20, you need to enter :

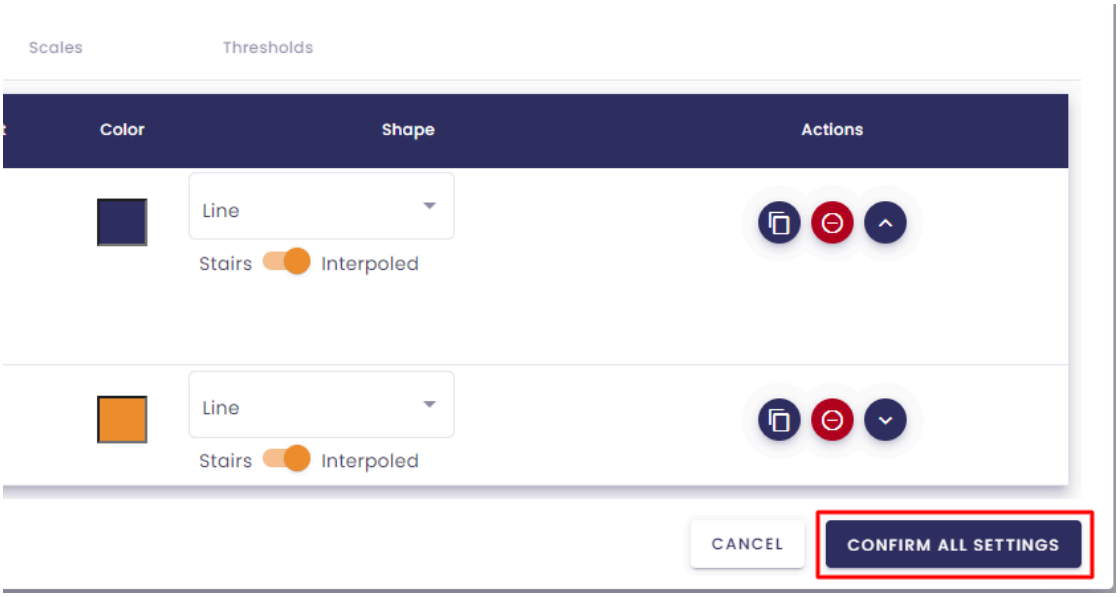
value > 20



Another example, if you only want to display the values between 20 and 60, you need to enter :

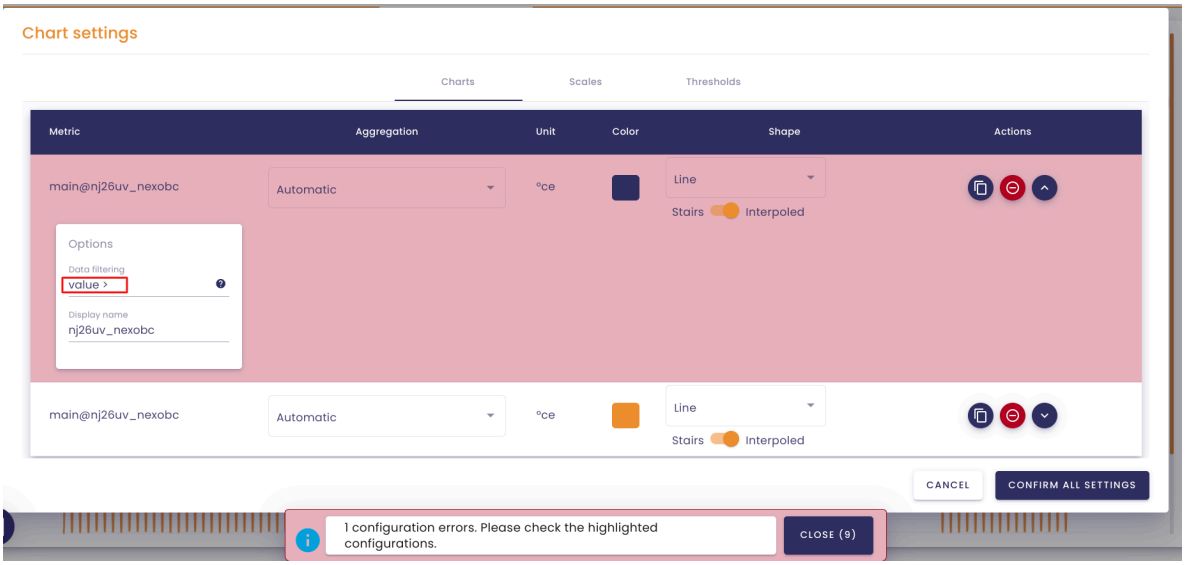
value > 20 and value < 60

Once your filter is entered, click on "**Confirm all settings**".

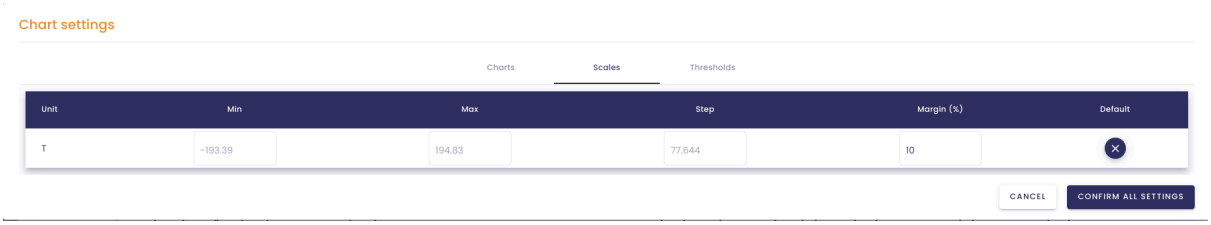


Only the metric values between 20 and 60 will be displayed in the chart.

Note : If there is an incorrect entry, the configuration will not be validated, and the following error message will appear :



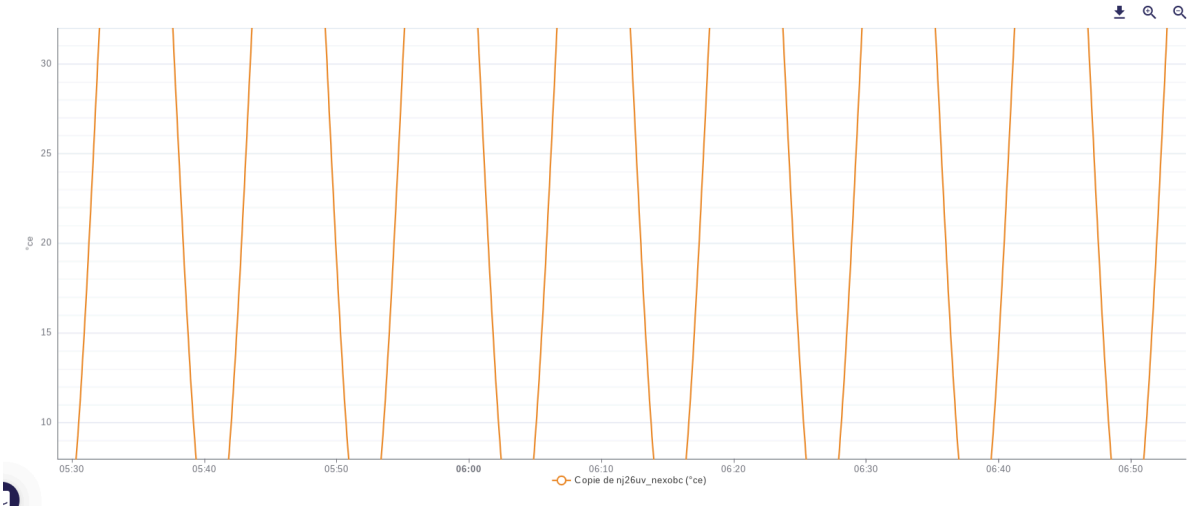
2.4.6.3 Scales tab



In this tab, you can set the minimum and maximum values that you want to display on the chart. Therefore you can hide part of the curve :

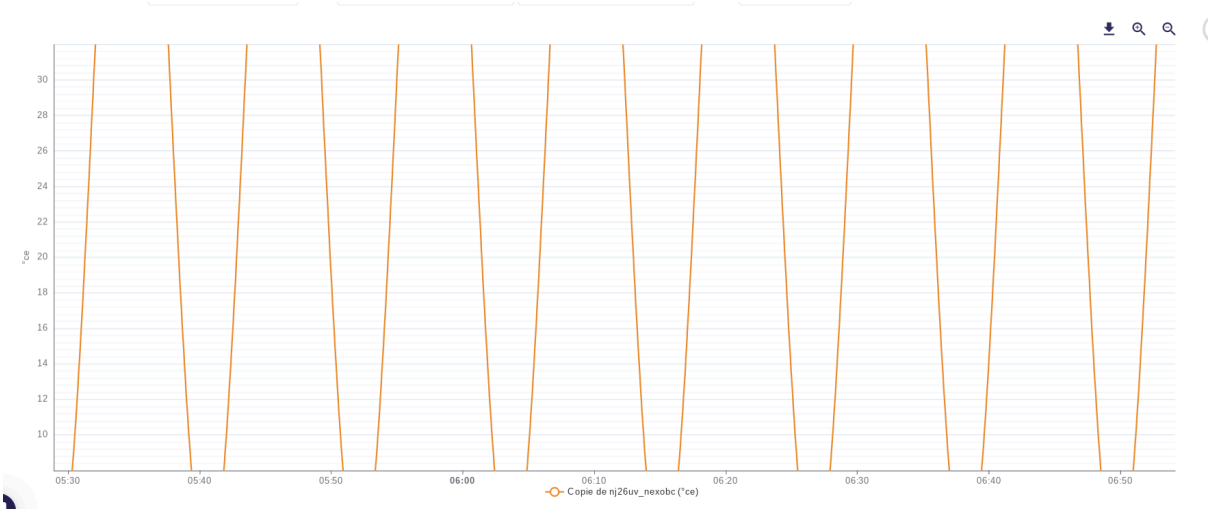
Before configuring the values :

Configured values : Min= 10 and Max=30

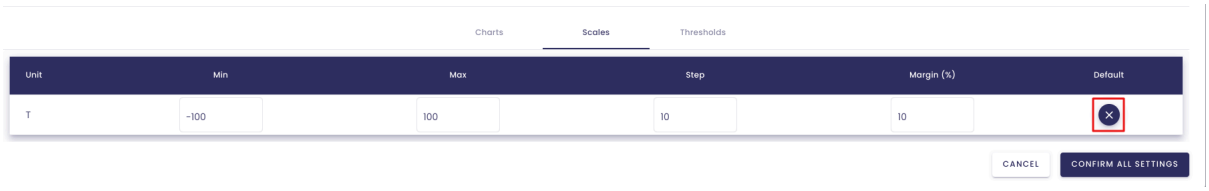


Note : If you want to set 0 as the minimum value, you will need to set a margin value greater than 0.

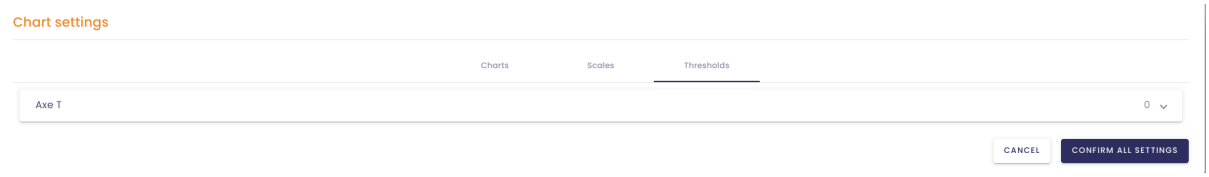
The **Step** field allows you to choose the interval between the marks on the y-axis. For example, the previous curve with a "**Step**" of 2 :



The cross button allows you to return to the initial configuration



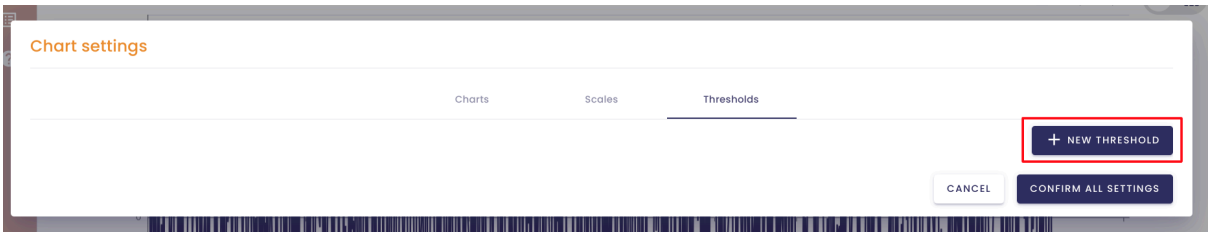
2.4.6.4 Threshold tab



In this tab, you can set thresholds that will be displayed on your graph.

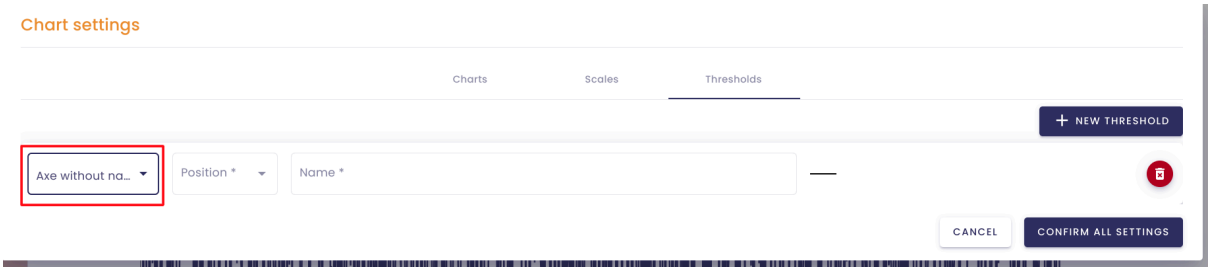
By default, there is no threshold.

Click on the **New threshold** button :

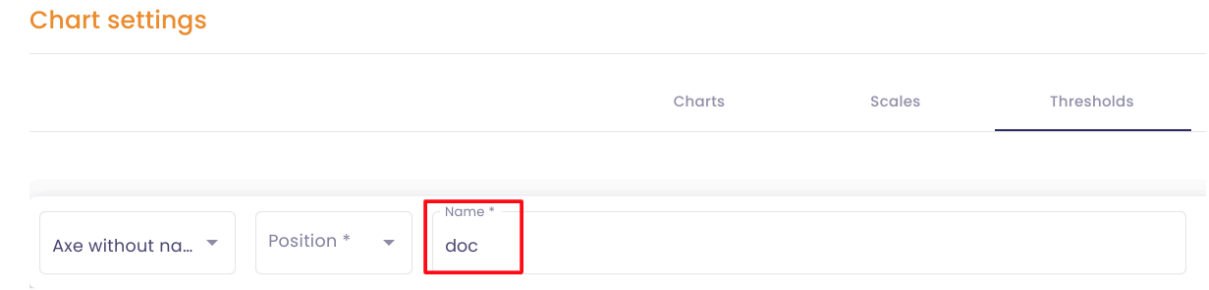


Configuration fields will appear, allowing you to define the new threshold.

Start by selecting the axis for which you want to create a threshold.

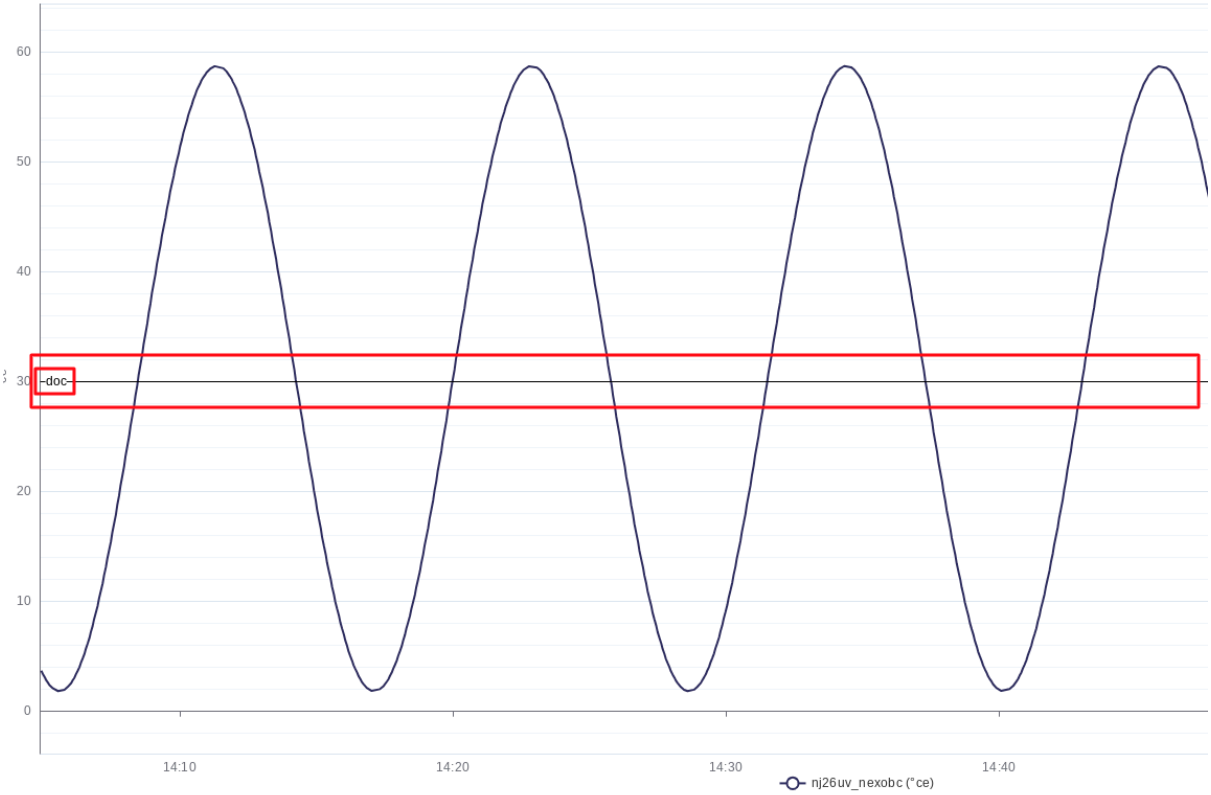


Name your threshold :

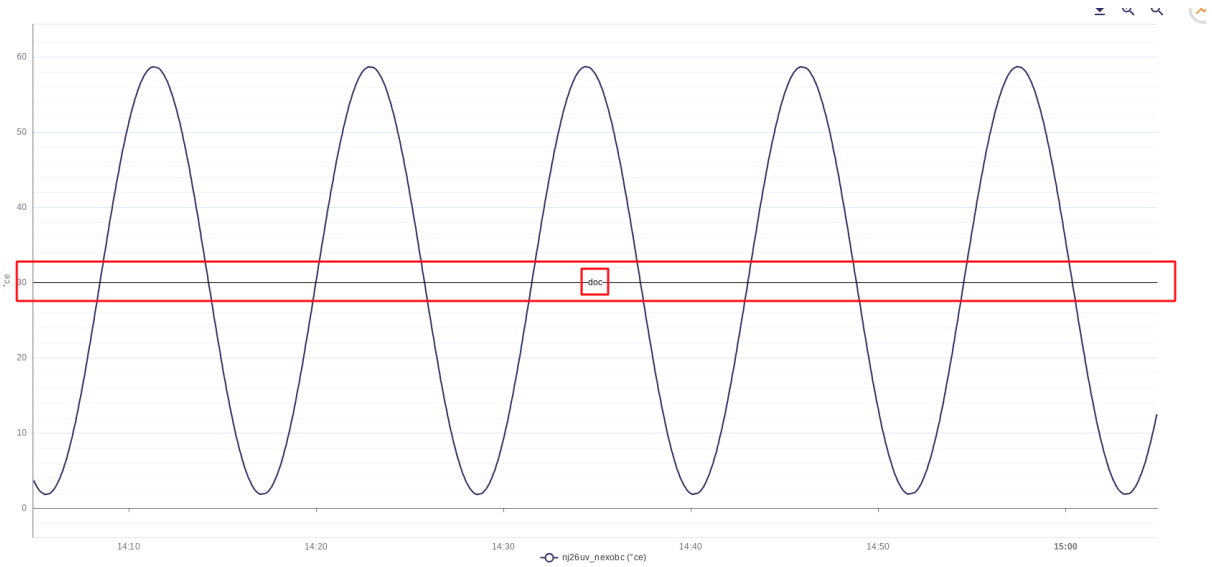


Then, indicate the position where you would like the threshold label to appear on your chart:

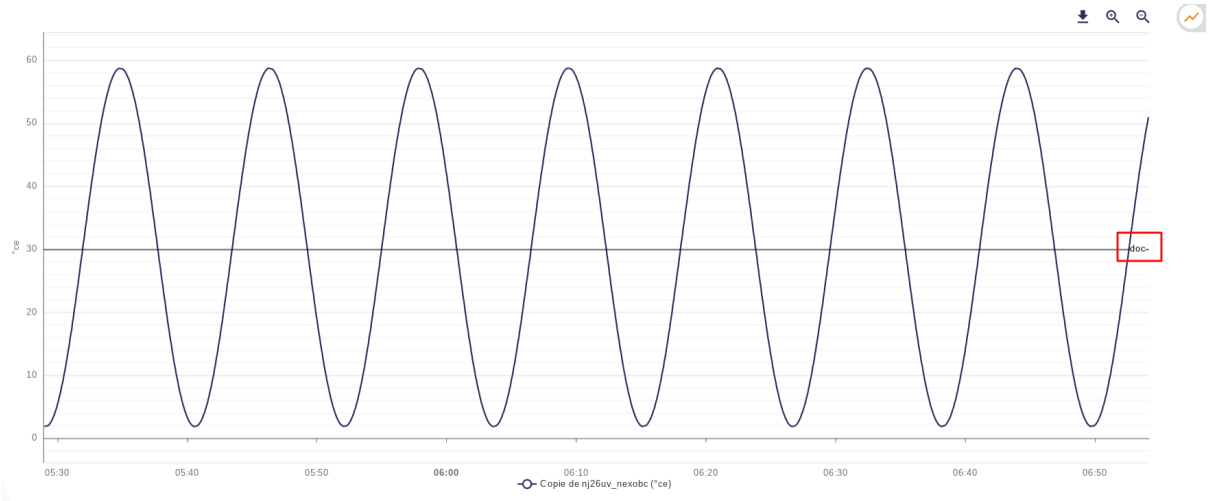
- **at the beginning** :



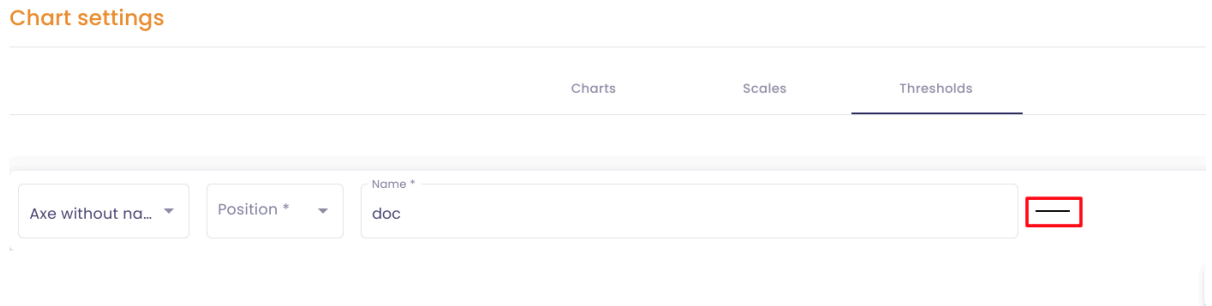
- **in the middle** :



- **in the end** :

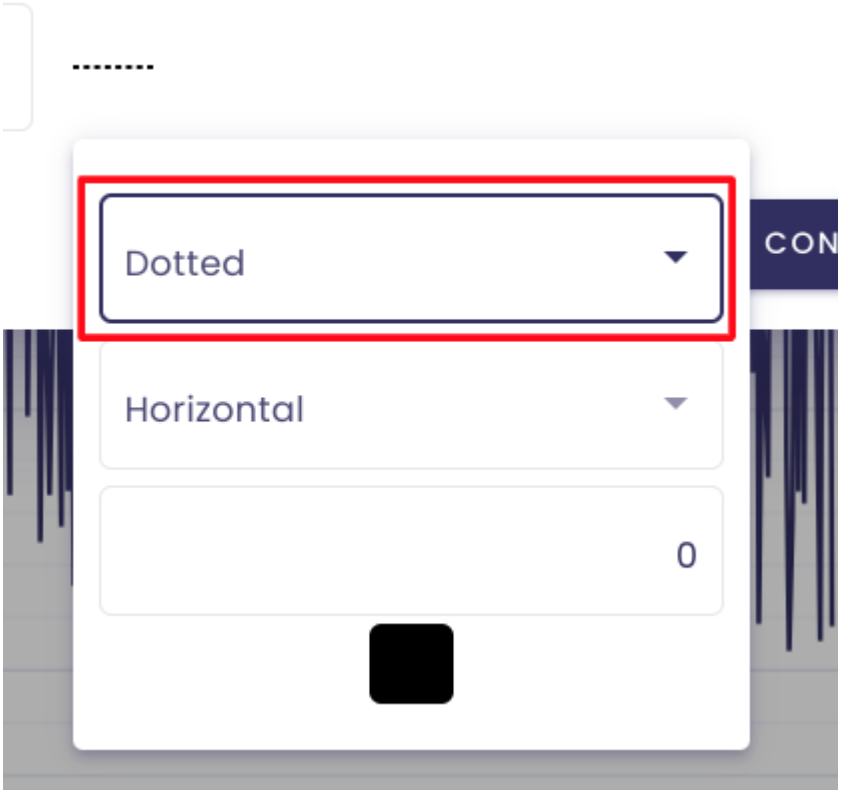


You can then configure the definition of your threshold by clicking on the button representing the threshold :

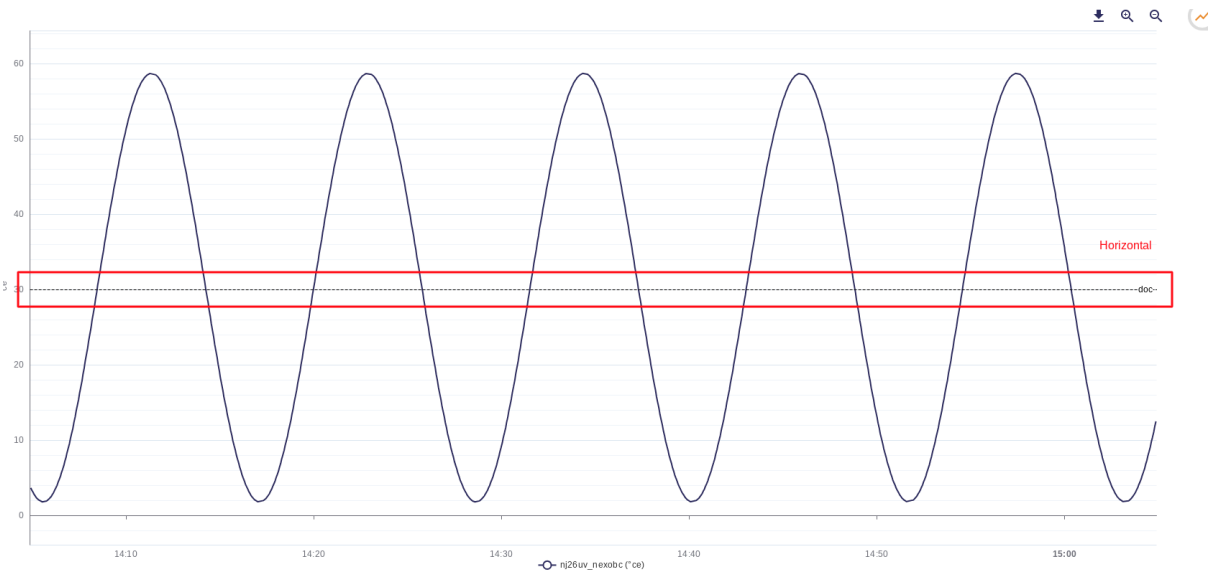


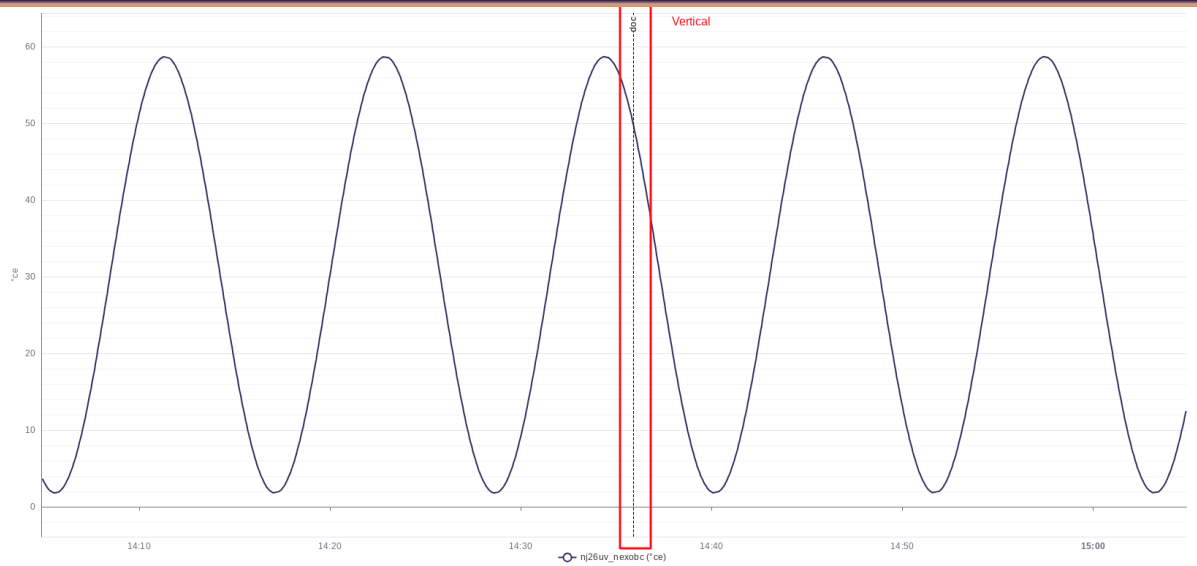
Specify :

- **dotted or straight line** :

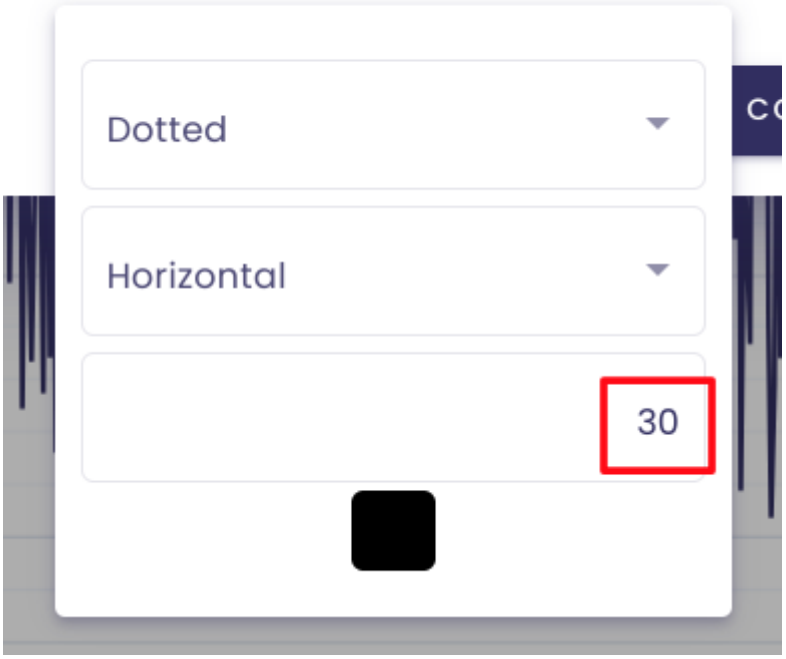


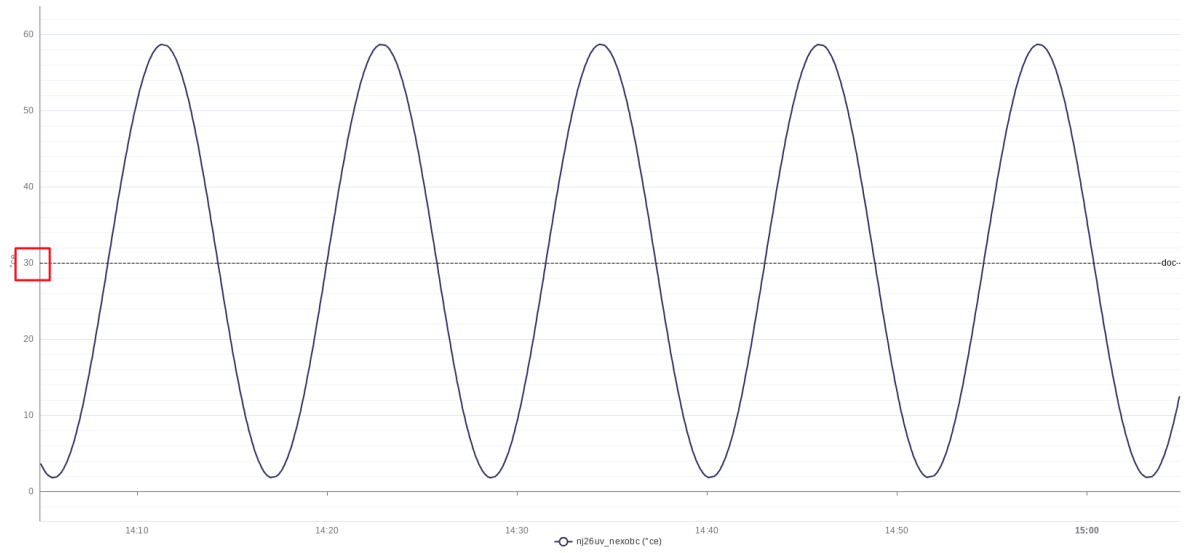
- **threshold position** : horizontal or vertical



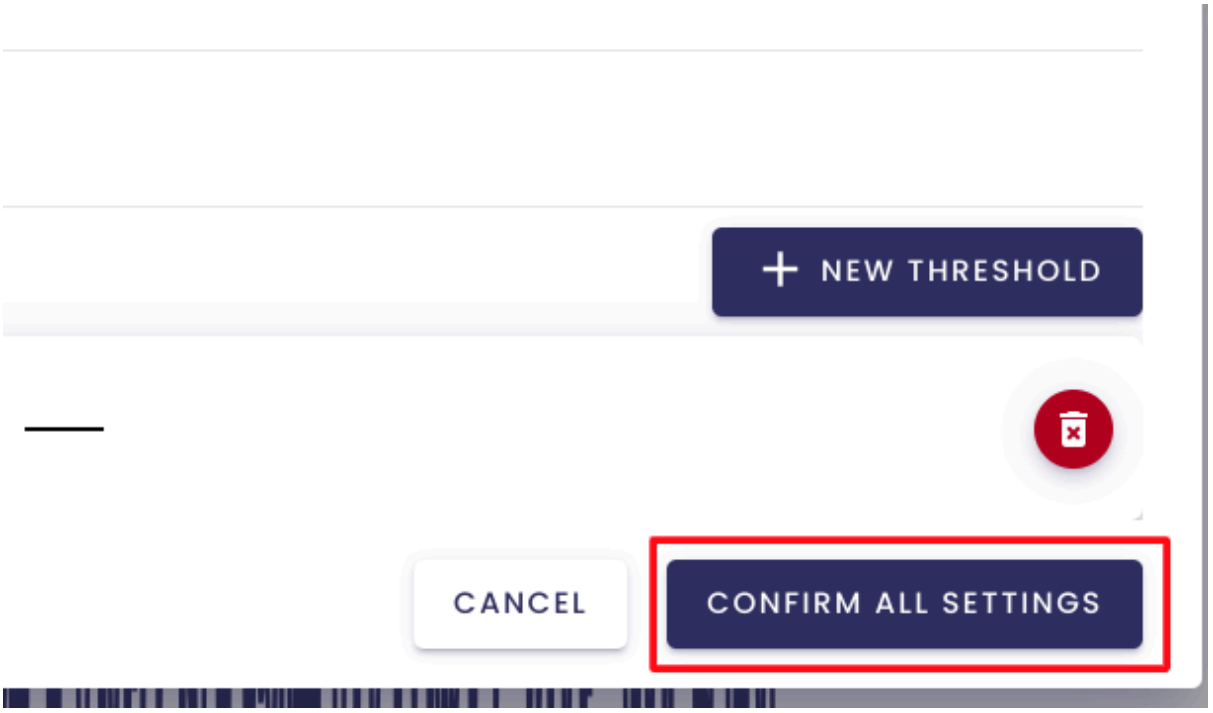


- **Threshold value** : the value where the threshold line will be drawn
  Example below with the value "30" :



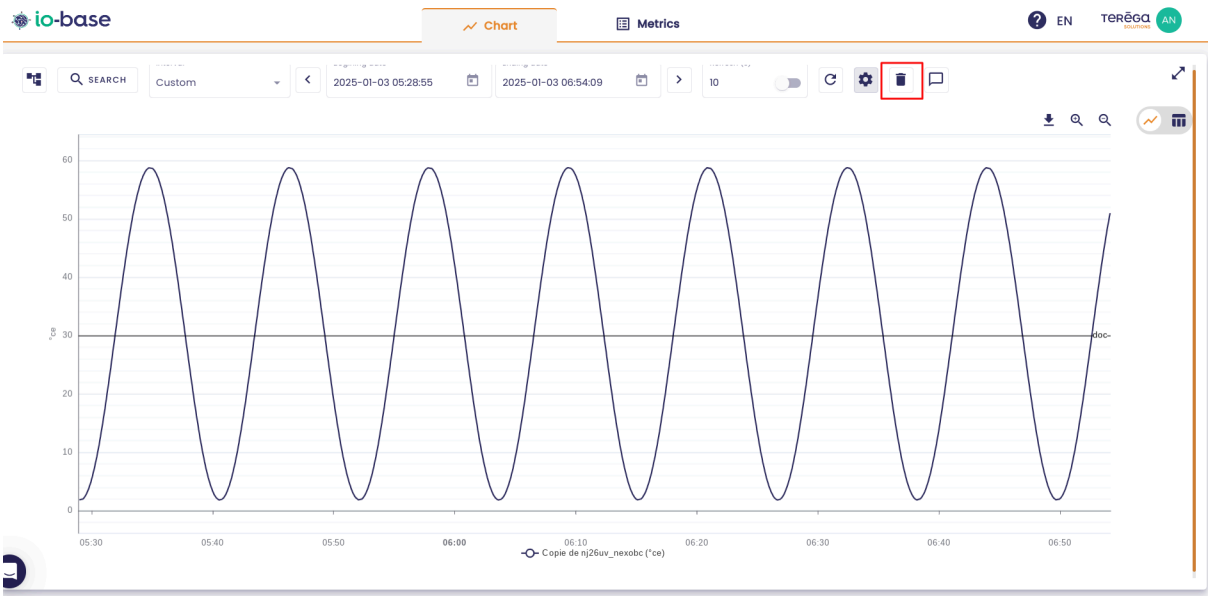


Once all the settings are complete, click on "**Confirm all settings**".



2.4.7 Graph reset

To reset the graph (reset of periods and deletion of selected metrics), use the **Bin** button :



Tip : The URL can be copied and shared: all the settings will be kept.

2.5 Annotating values

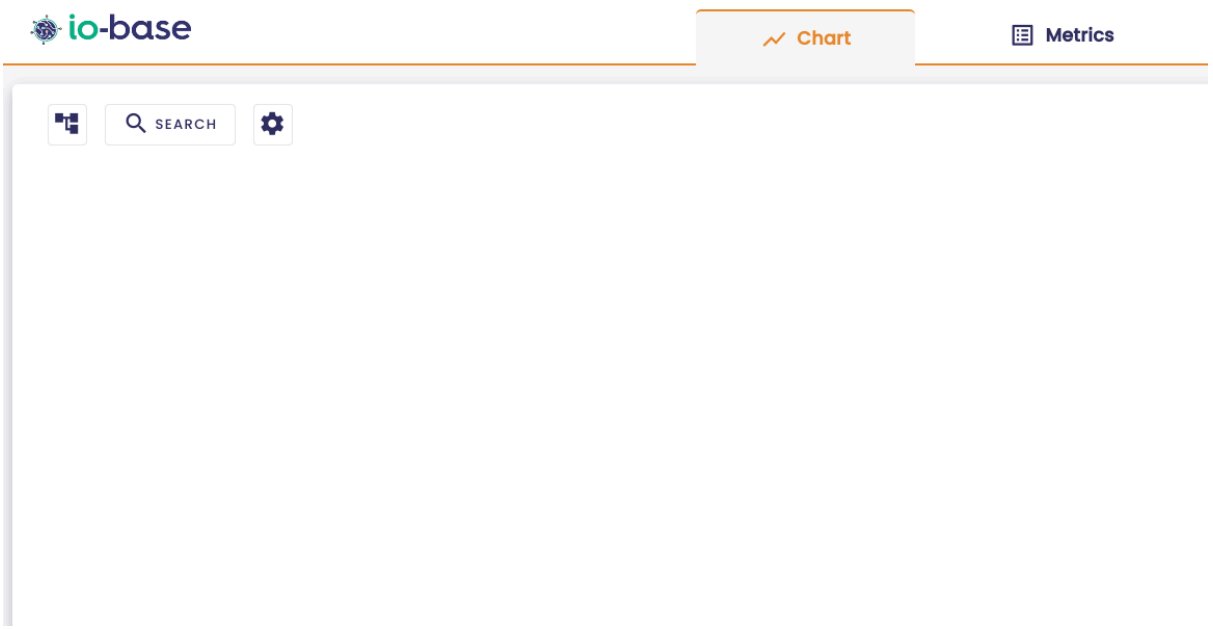
In **Indaba Explorer**, you can create annotations for a specific value of a metric.

In other words, you can add comments to explain a value.

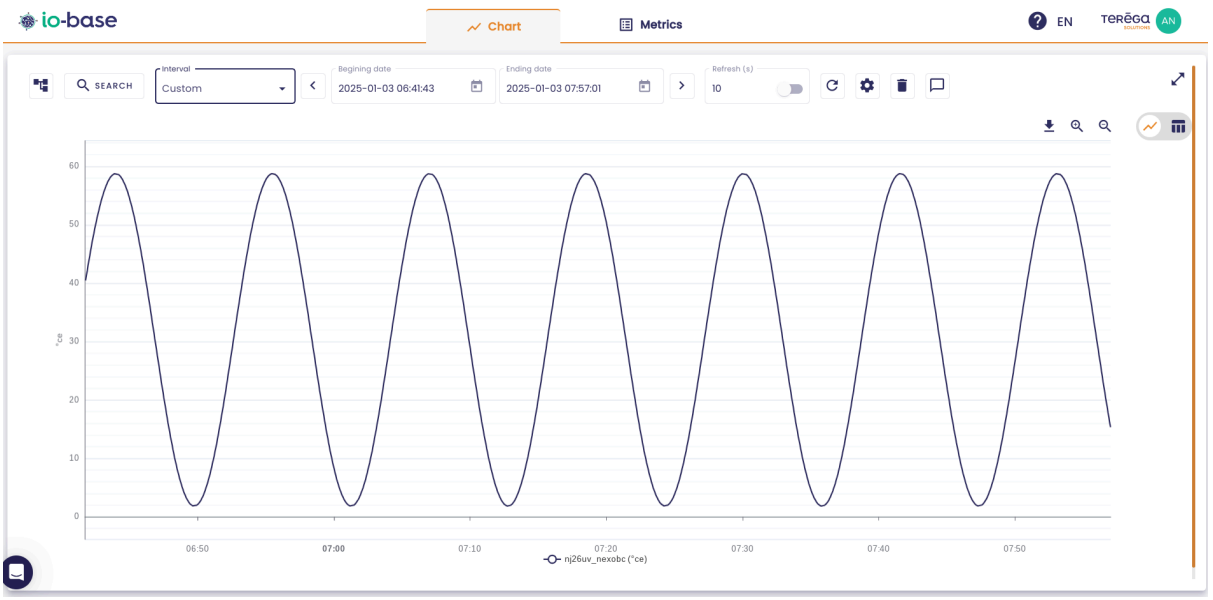
The feature is available for every user, as long as they have read rights on the metric they wish to comment on.

2.5.1 Accessing the value annotations

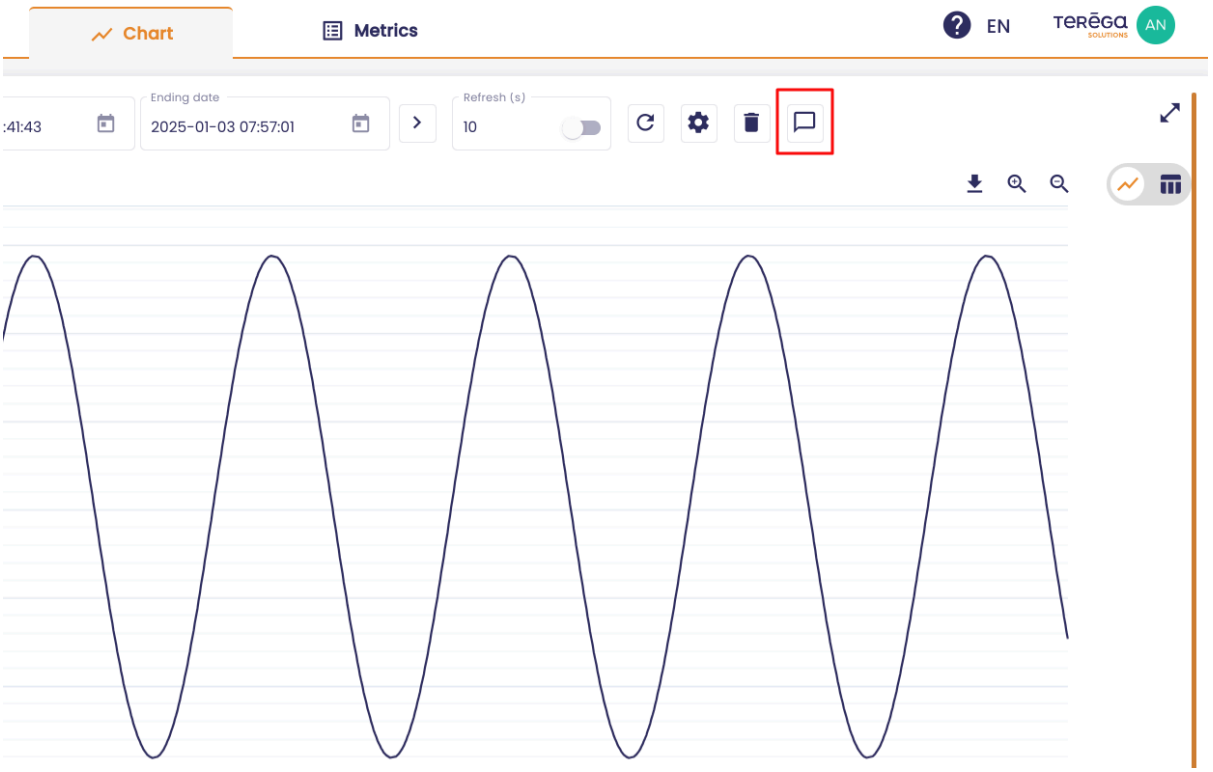
Access **Indaba Explorer** from the Io-base portal.



Display the chart for a metric.



In the settings, activate the **Annotations** option.



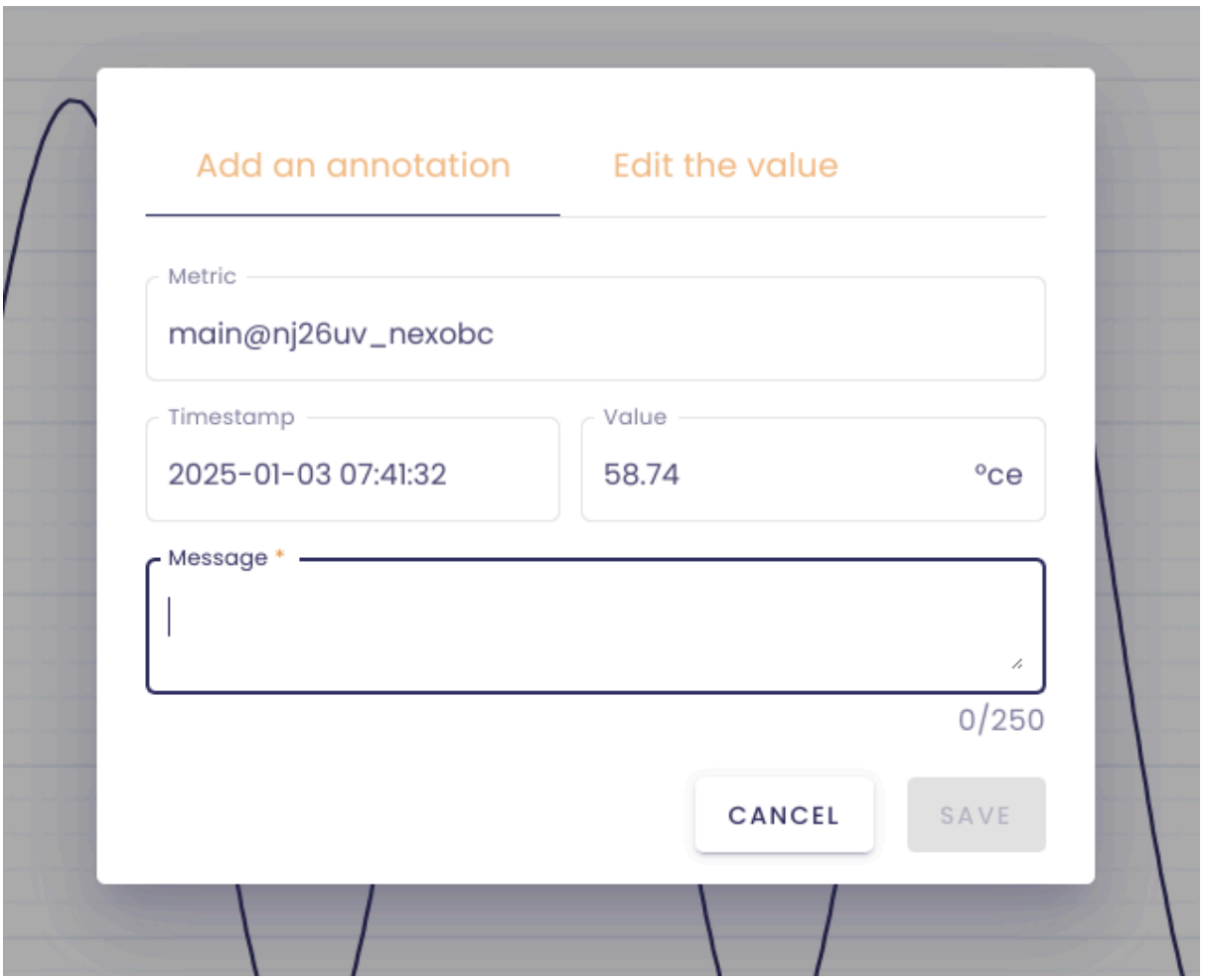
Note: You can deactivate the Annotation mode at any time by clicking the button again.

2.5.2 Create an annotation

To create an annotation, you must double click on this value directly from the curve.

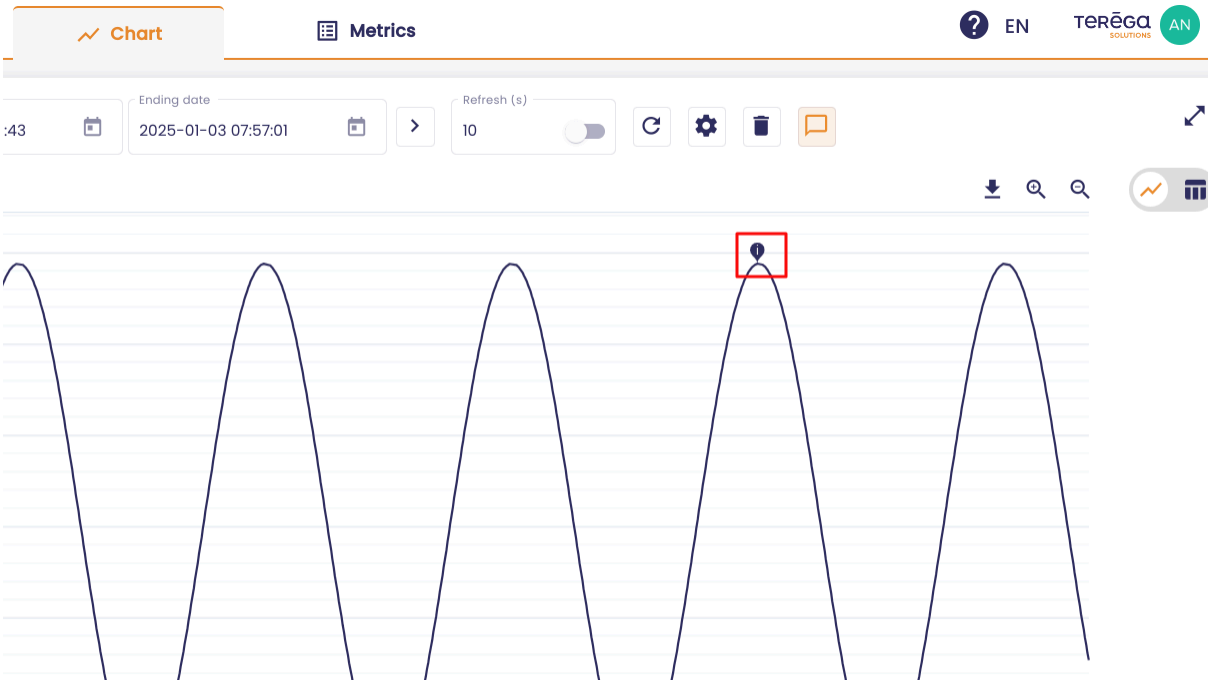
Warning, the **Annotation mode** must be activated in order to create an annotation.

By double clicking on a point of the curve, a window is displayed, allowing you to type your comment.



The metric, as well as the timestamp and the value are not editable.

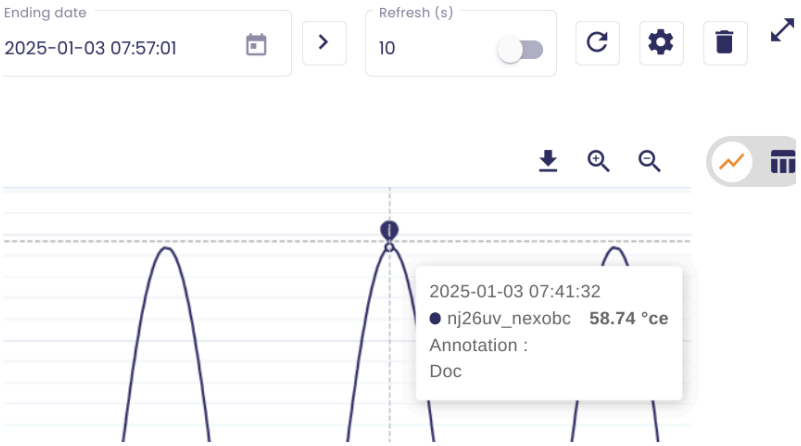
Type your message, then click on **Save**.



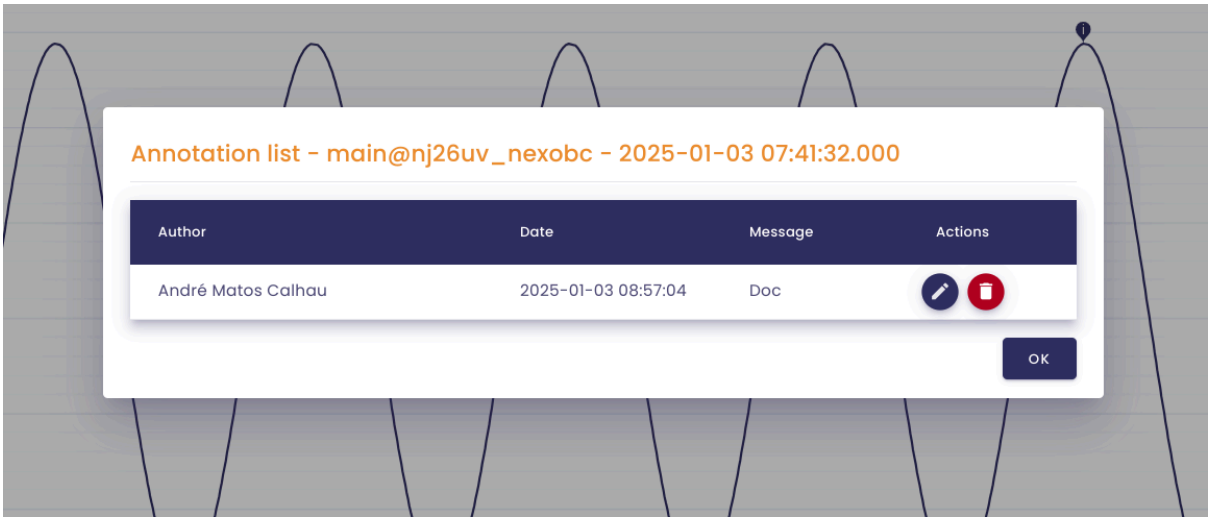
The message is saved. An icon appears on the curve to indicate that a message exists.

2.5.3 Viewing the annotations of a point

The annotations are visible by hovering the mouse over the curve.



For a complete view of the annotation, click on

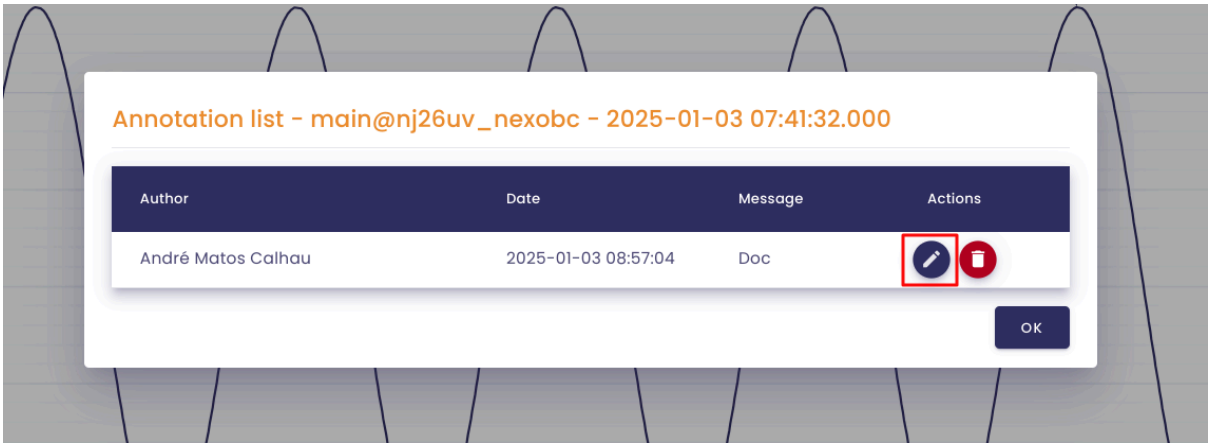


It is possible to create several different annotations for the same point. Annotations can be created by different users for the same point.

2.5.4 Editing and deleting an annotation

Each user can modify and delete their own annotations. However, you cannot delete the annotation of another user.

To edit or delete an annotation, click on the edit button :



2.6 Correct a value

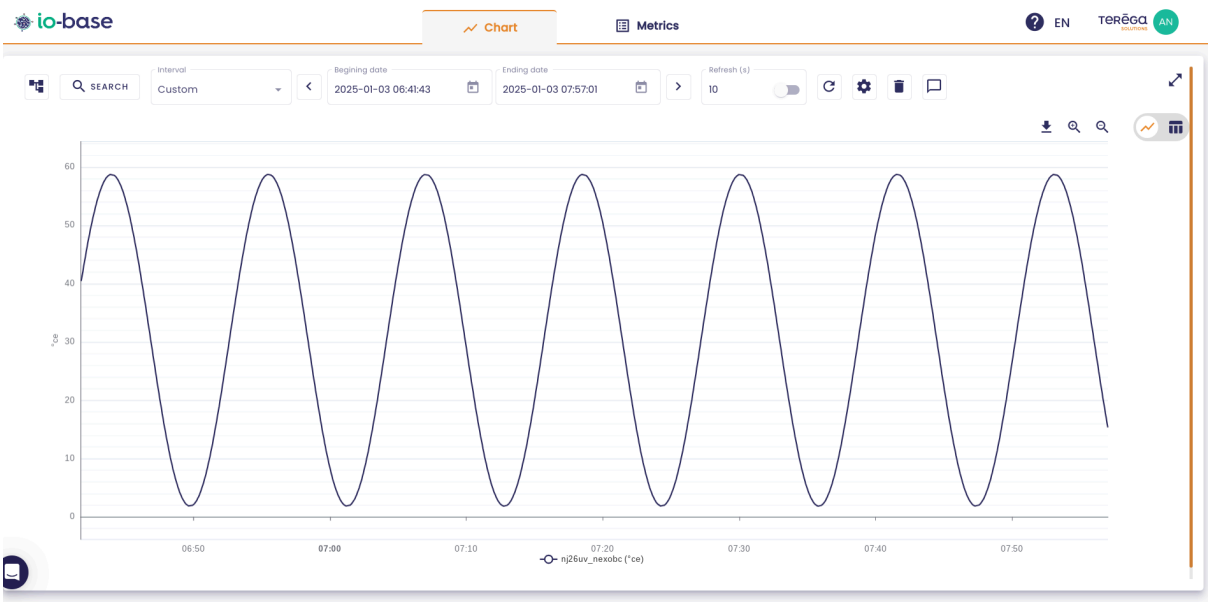
Prerequisites:

- Have a sufficient role to be able to modify the value of a metric (**Writer**).
- Have **Read/Write** authorizations on the metric for which you want to correct the value.

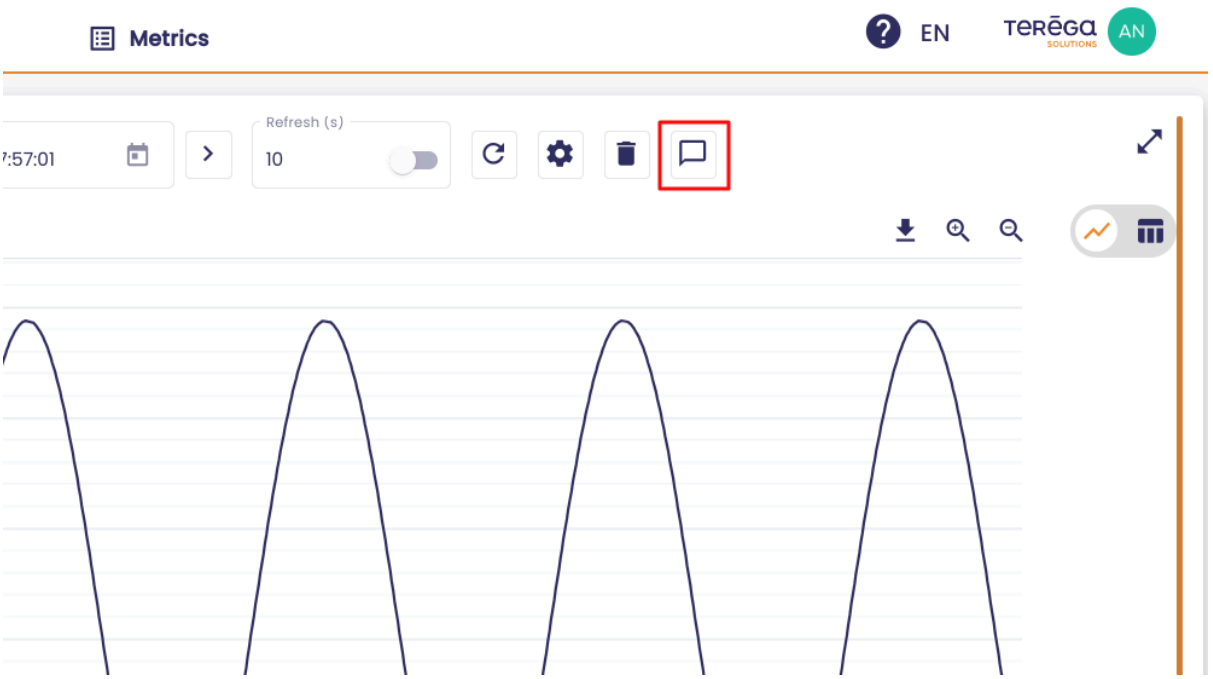
Log in to **Io-base** and access **Indaba Explorer**.

You have the option to correct the value of a data point on the chart.

First, select the metric for which you want to correct a value.



Then, click on the **Display annotations / correct a value** button.



Select the data point for which you want to make a correction.

A pop-up window opens, go to the **Edit the value** tab.

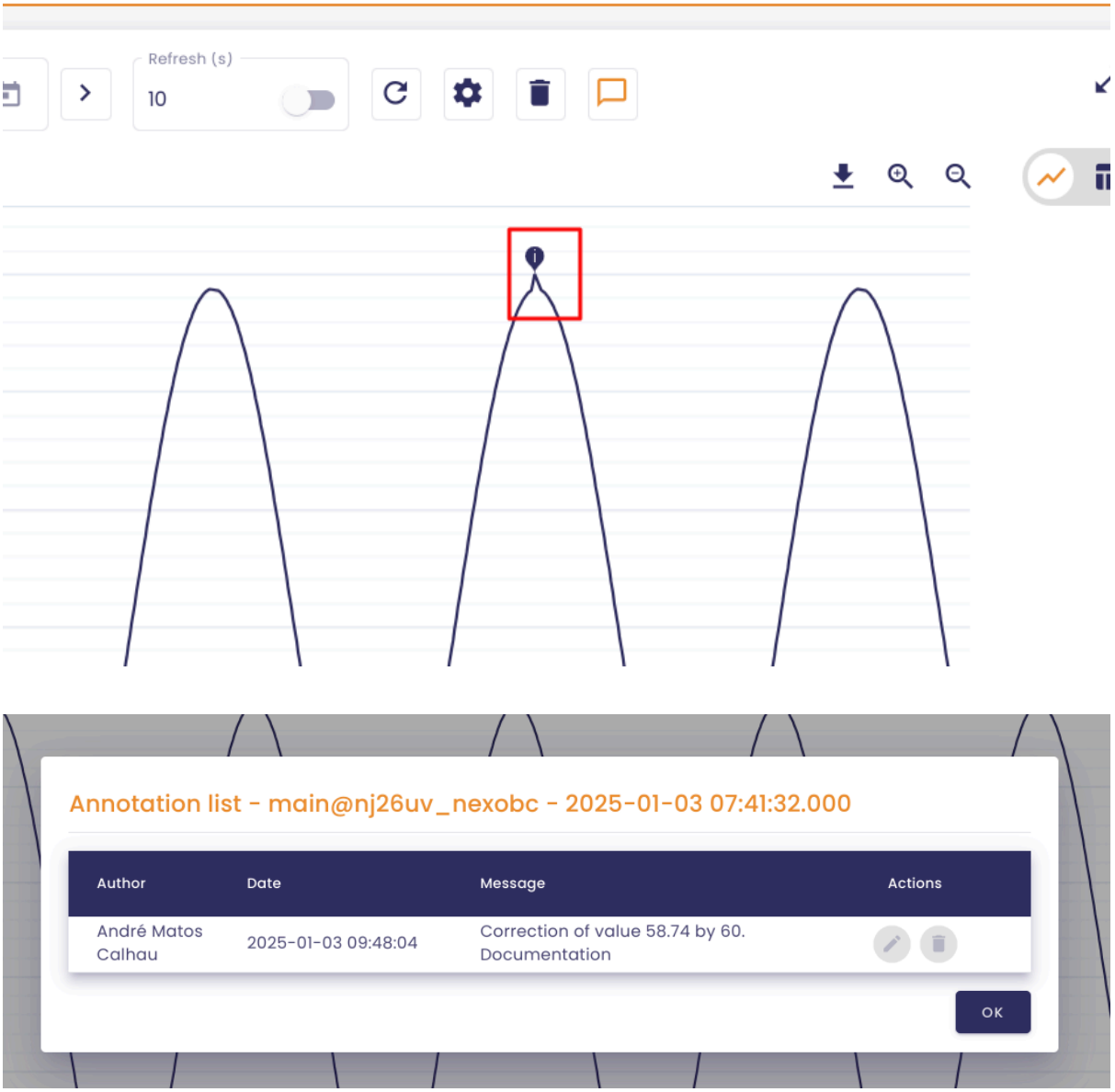
Provide the new value.

Optionally, you can add a comment.

Click on **Save**.

The correction has now been applied.

An annotation is automatically generated to keep track of value corrections for a point.



Note : The **Message** column starts with an automatically returned value correction message, followed by an optional comment, in this case, "Documentation'."

Note : You can make multiple corrections on a data point.

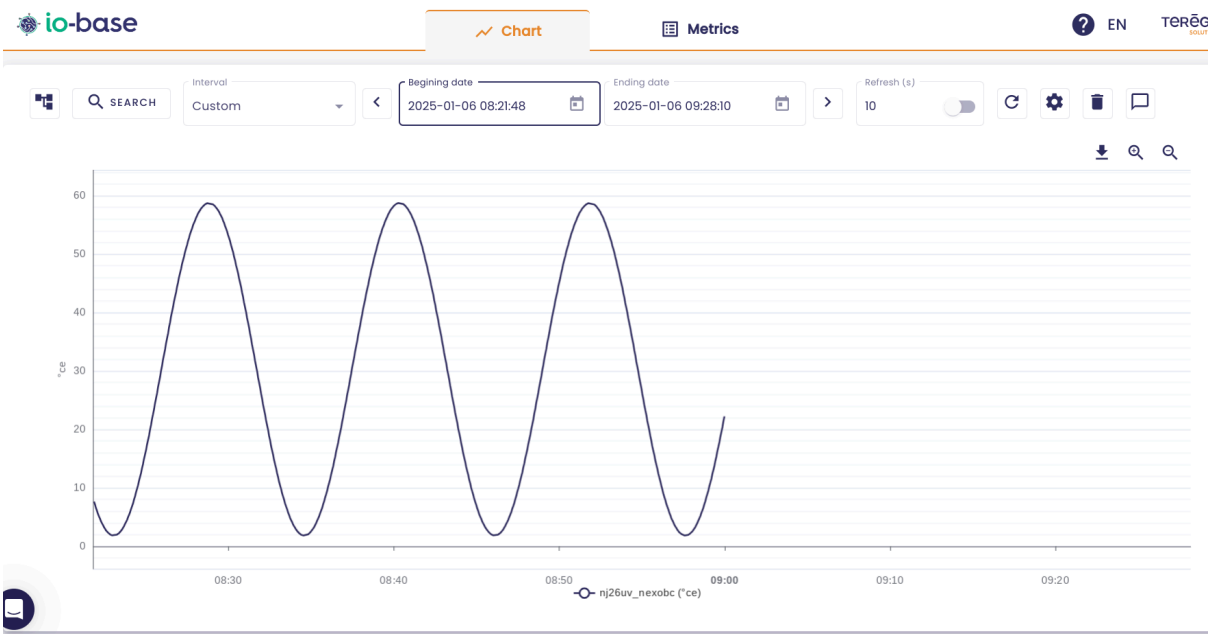
2.7 Making data predictions

You can make data predictions directly from Explorer. This feature allows you to compare predicted values with actual values to detect potential anomalies in your data or predict when values will cross a specific threshold.

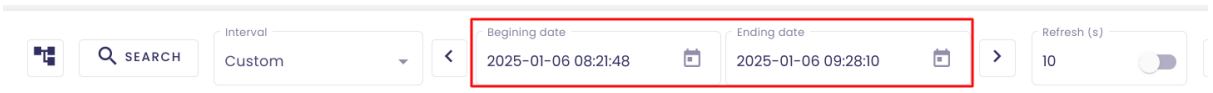
Warning : The data prediction feature is effective only for curves that show cyclical behavior over a fixed period. For non-cyclical curves, its use will not be appropriate and may produce unreliable results.

Connect to Io-base and access the Indaba Explorer menu.

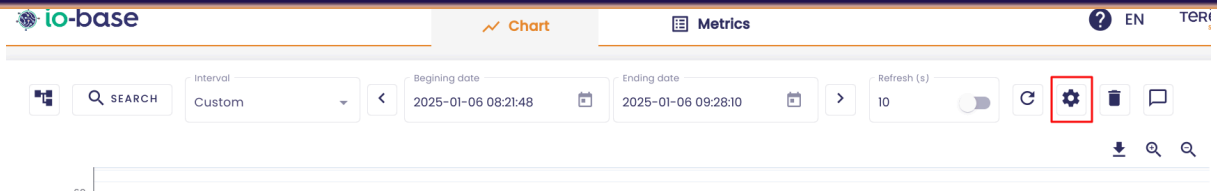
Your prediction will be based on the data for the period selected for the displayed curve.



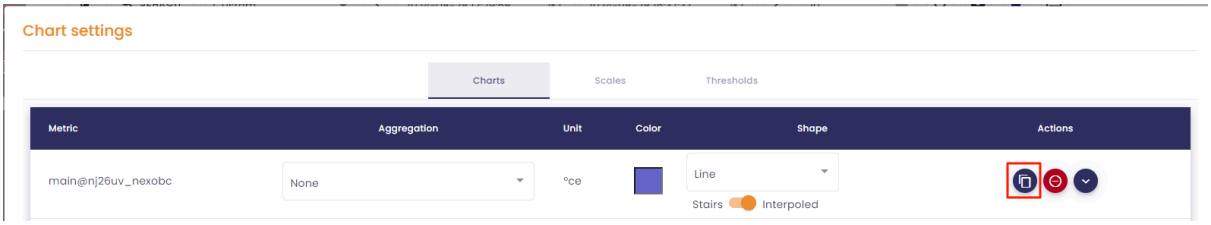
Make sure to select the period you want to use as a reference.

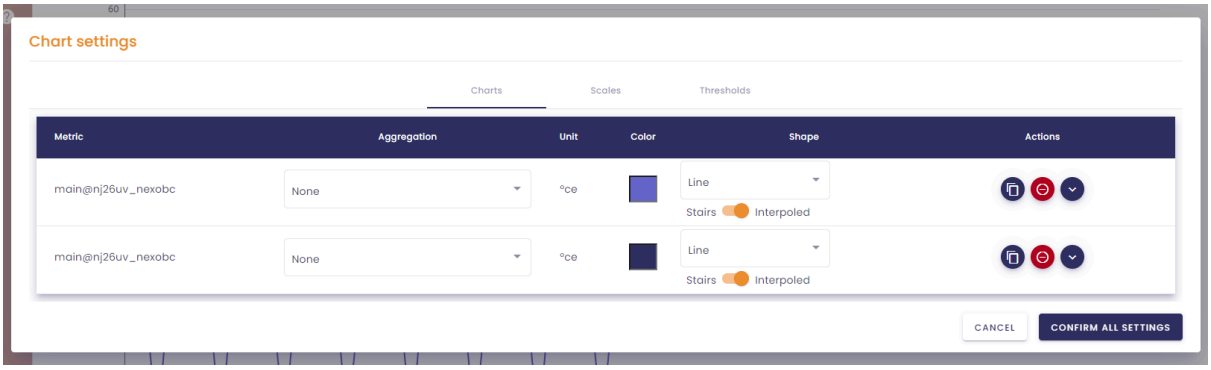


Once your curve is displayed, click on the gear icon located at the top right of your screen.

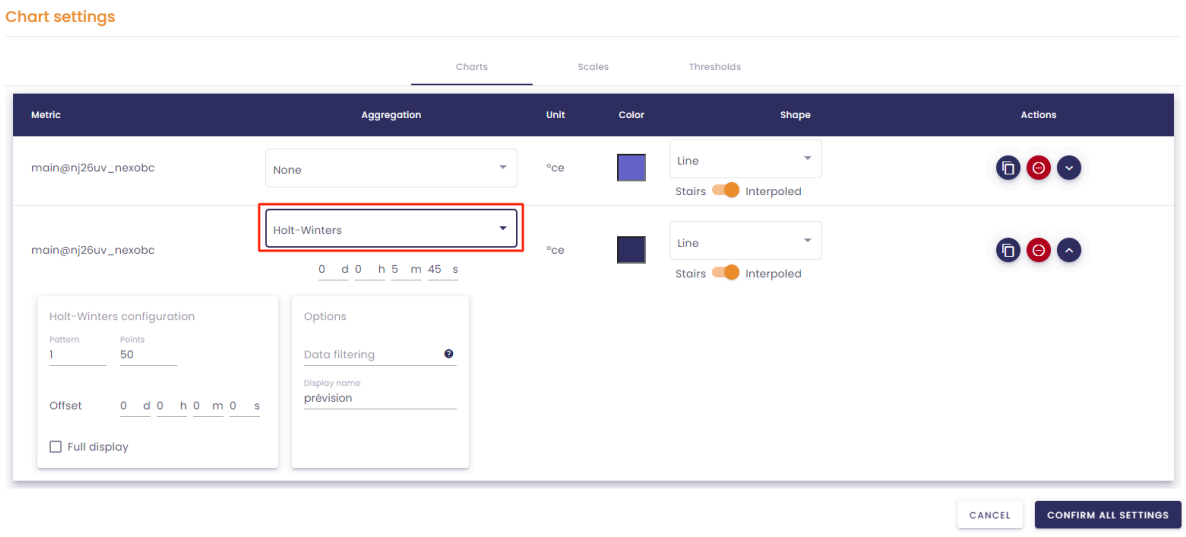


Start by duplicating the selected metric, so you can compare the curve of actual data with that of predicted data.

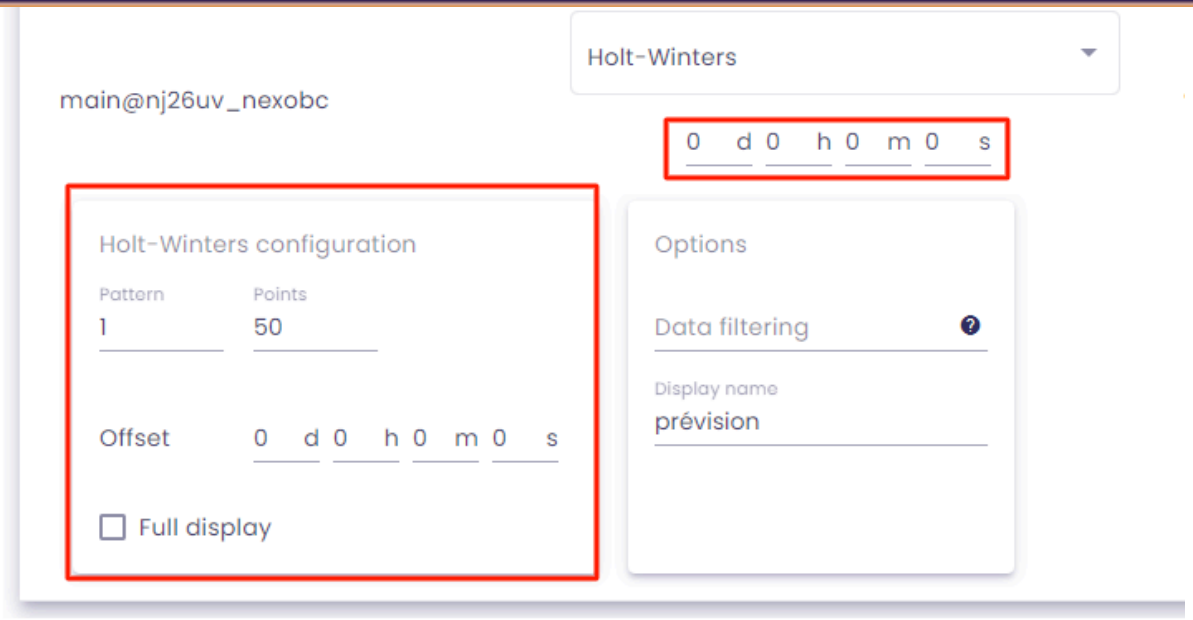




Next, select the "**Holt-Winters**" aggregation for the duplicated metric.

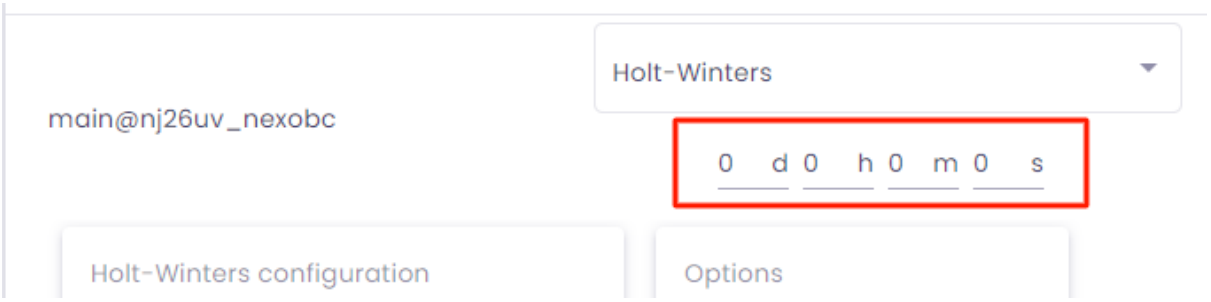


Several parameters will appear to configure your prediction:

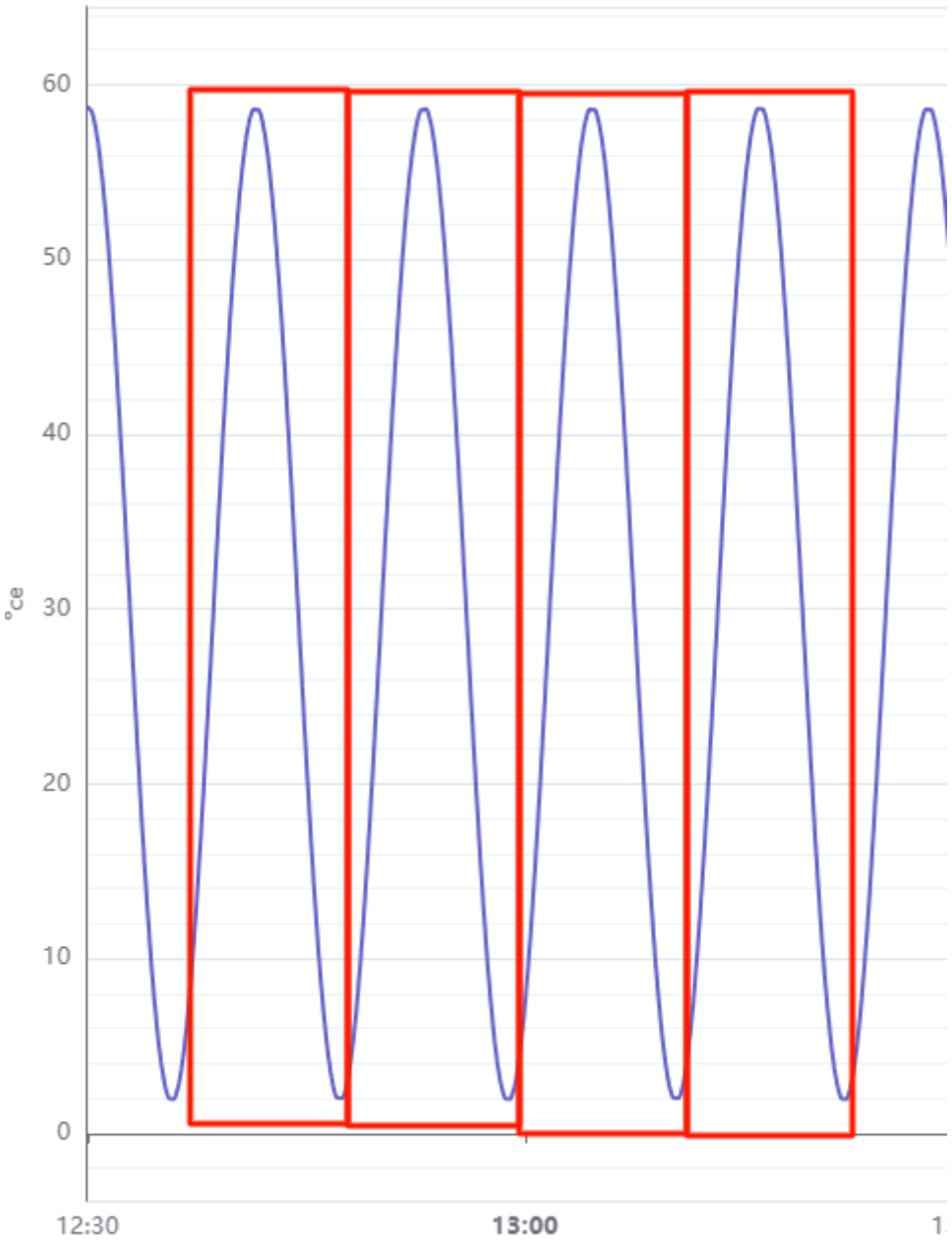


To fill them out, observe the curve on which your prediction will be based :

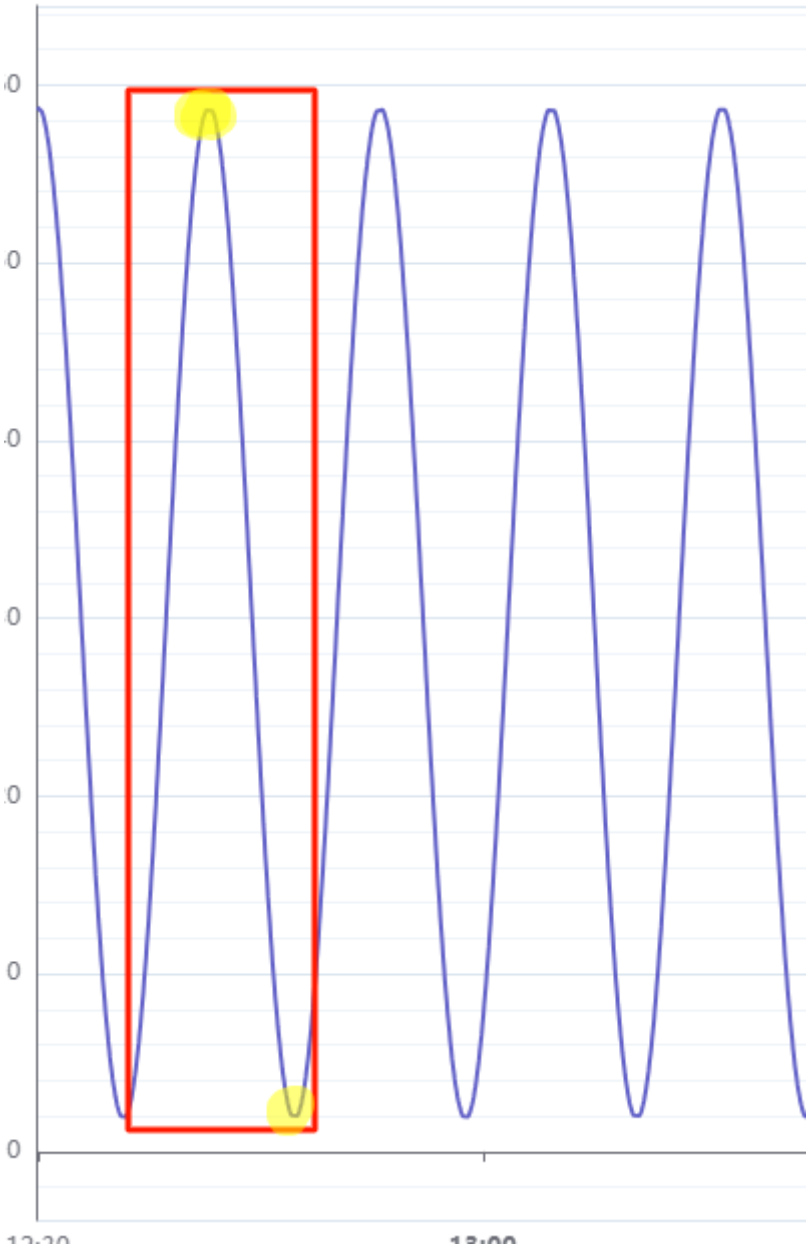
- **First parameter:**



Observe the curve on which the predictions are based and identify a trend.
In our example, we observe the following trend :



Next, identify the significant points of this trend. In our example, the following points are noted :

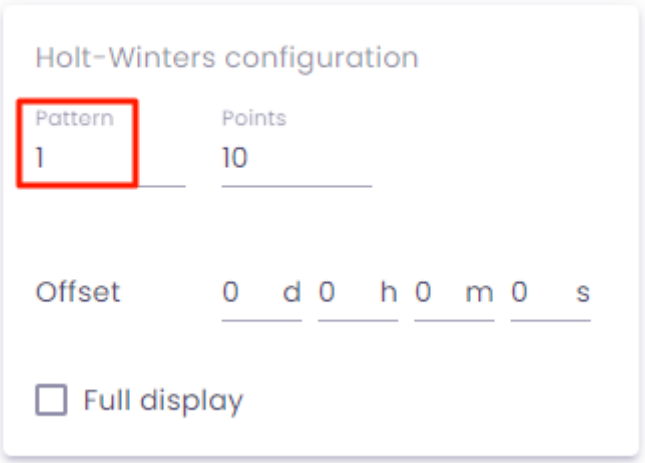


Observe the times at which these points occur and calculate the difference (in duration) between these two times.

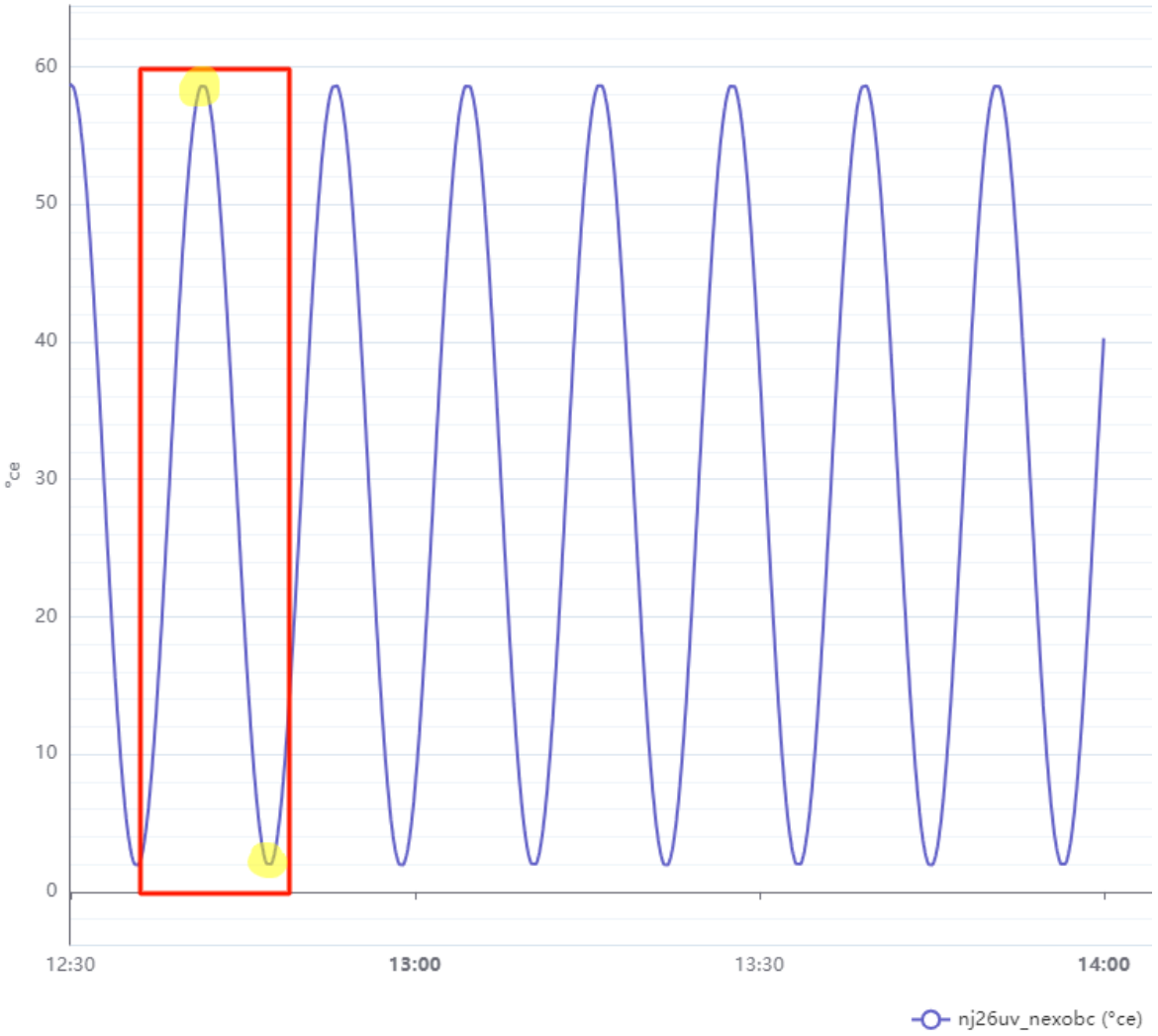
In our example, the first significant point of the trend occurs at 09:14:04 and the last significant point of the trend occurs at 09:19:49, which results in a difference of 00:05:45 (5 minutes and 45 seconds).

Therefore, enter "5 minutes and 45 seconds" for this first parameter.

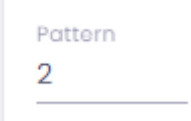
- **"Pattern" parameter:**



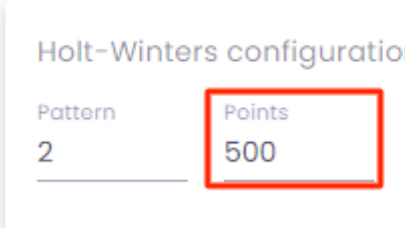
We observe that in each iteration of the trend, there are two points of variation.



The pattern parameter will thus be set to 2.



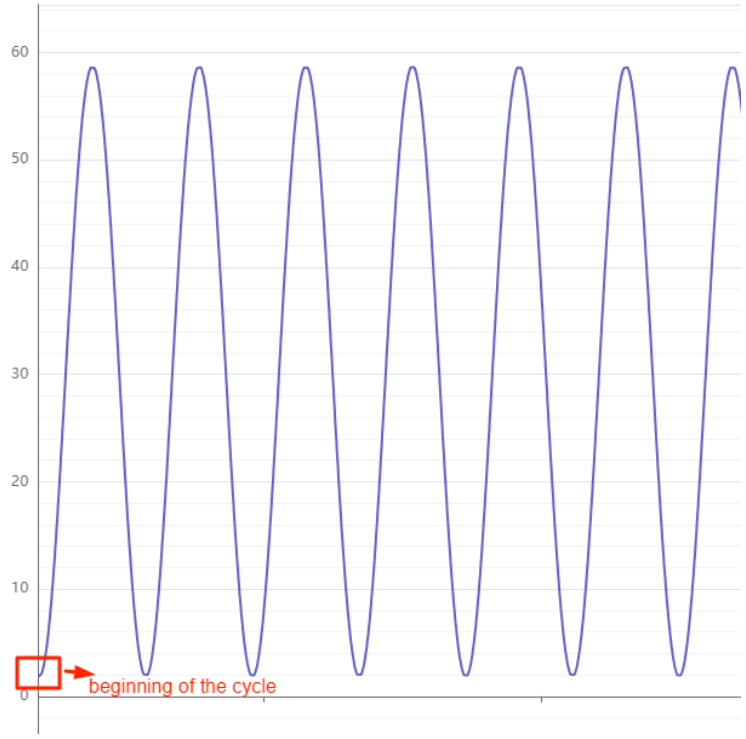
- **"Points" parameter :** This parameter specifies the number of points you want to generate in the prediction.



Note: The maximum number of predicted points is limited to 1000.

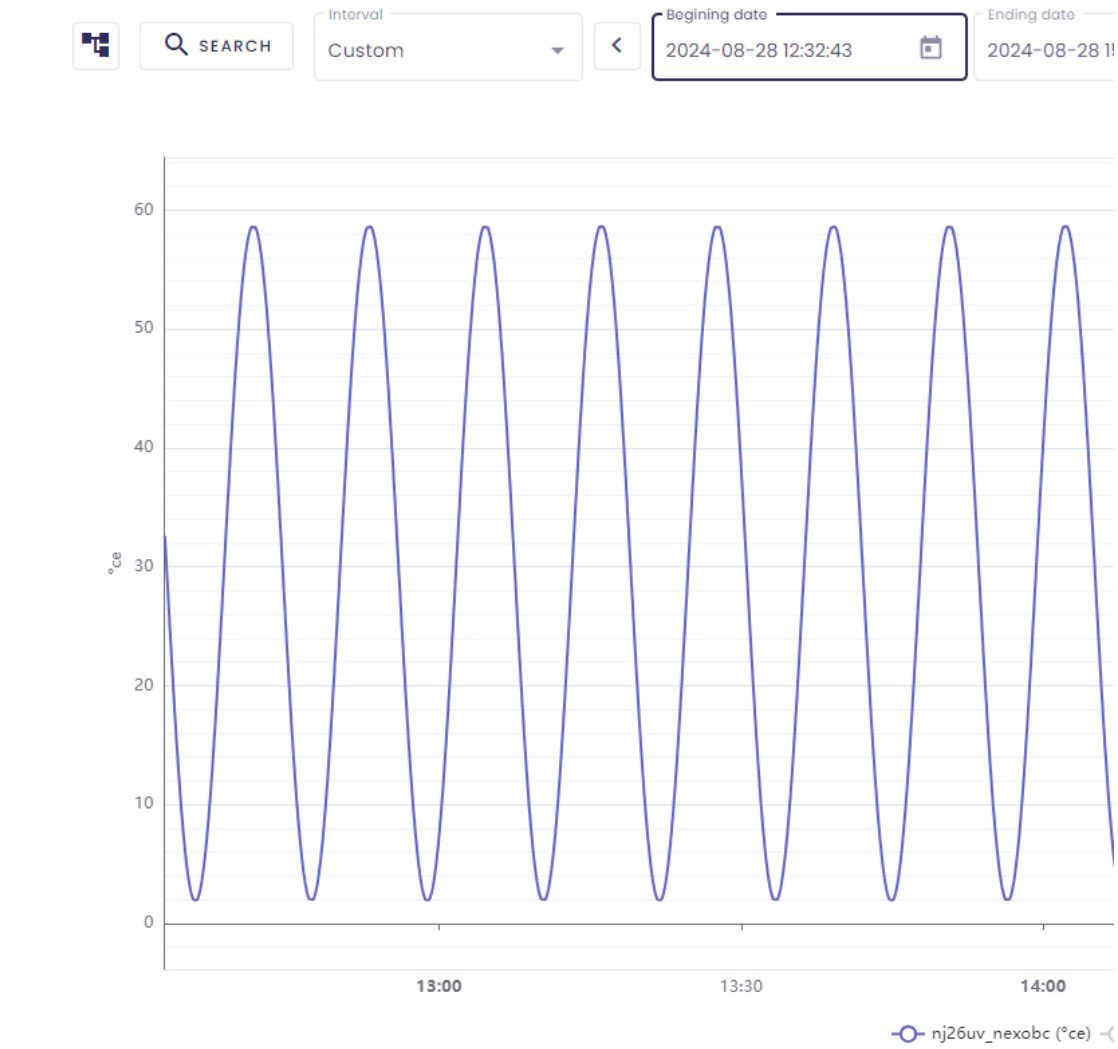
- **"Offset" parameter :**

As previously mentioned, the prediction model will be based on the data displayed in the curve.
To ensure the model is accurately predicted, position yourself at the beginning of a trend cycle.

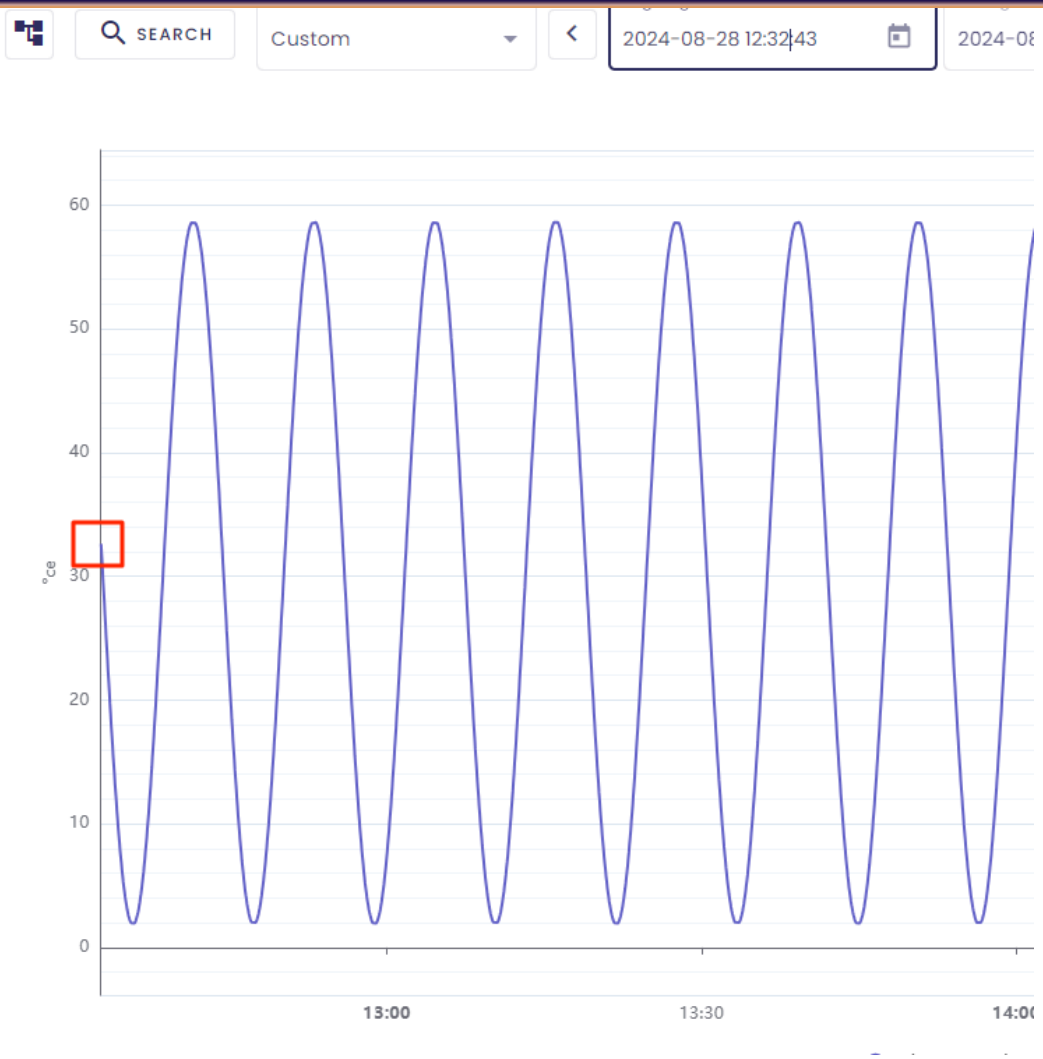


When the value at the beginning of the curve does not correspond to the start of the cycle, you can use the offset parameter to adjust the selected period on the graph to the start of the cycle.

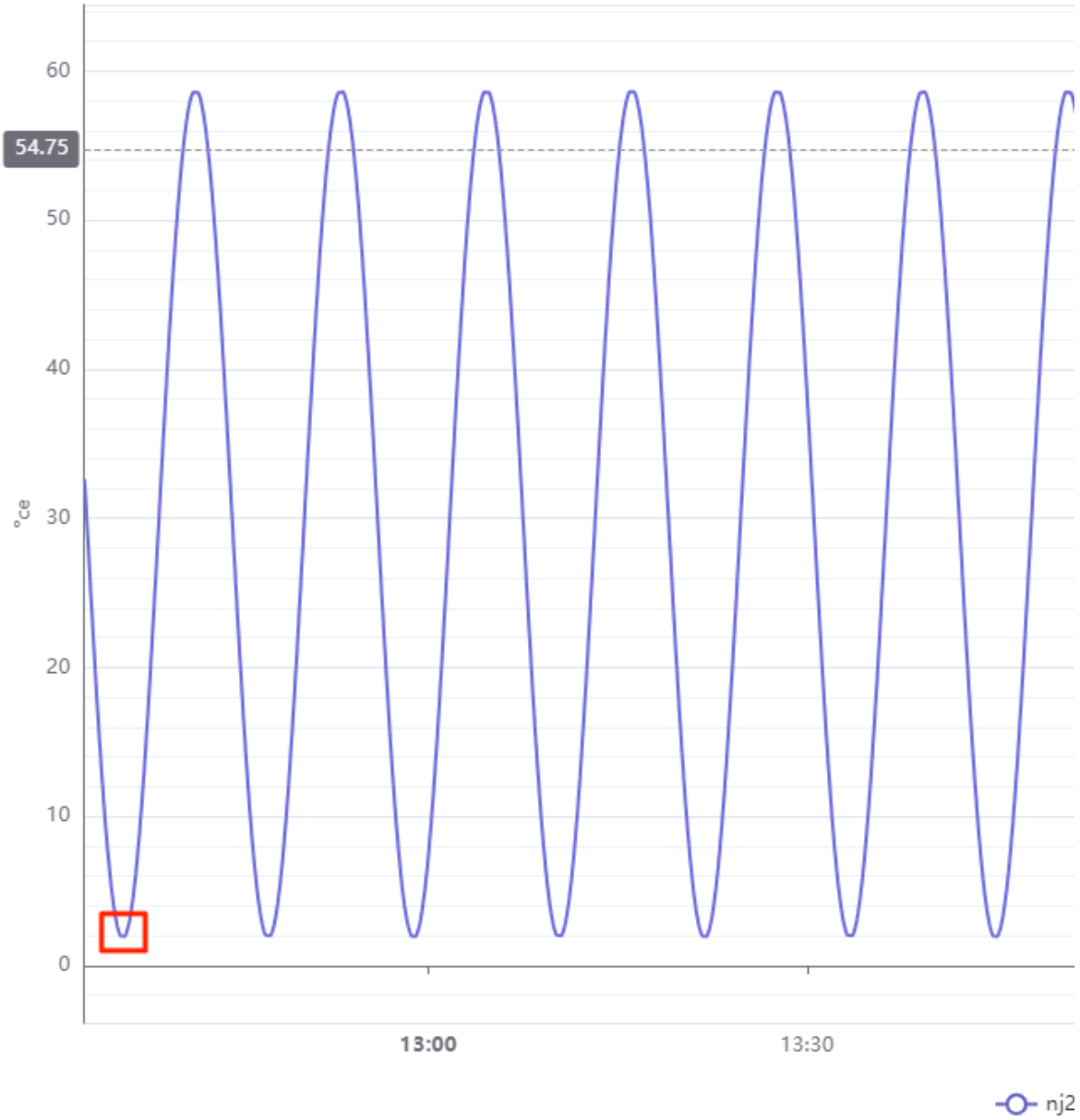
For example, imagine the displayed curve looks like this :



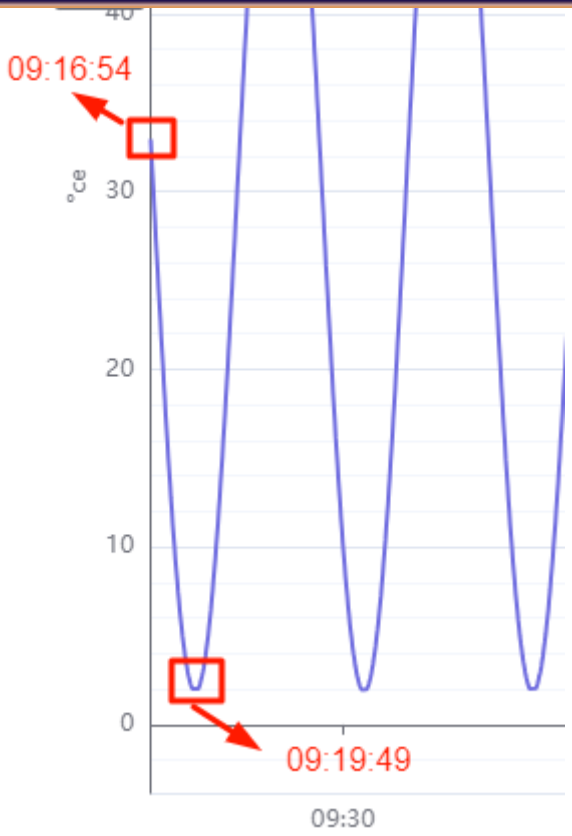
We see that the beginning of the curve does not match the start of a cycle :



We would like the curve to start at the point marked below (start of the cycle) :

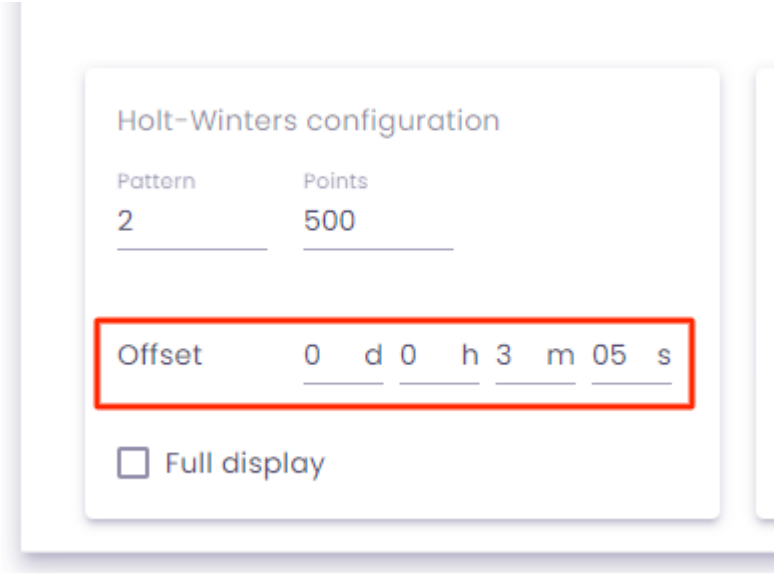


Simply look at the date when the cycle start point occurs and calculate the difference with the current start date of the curve :

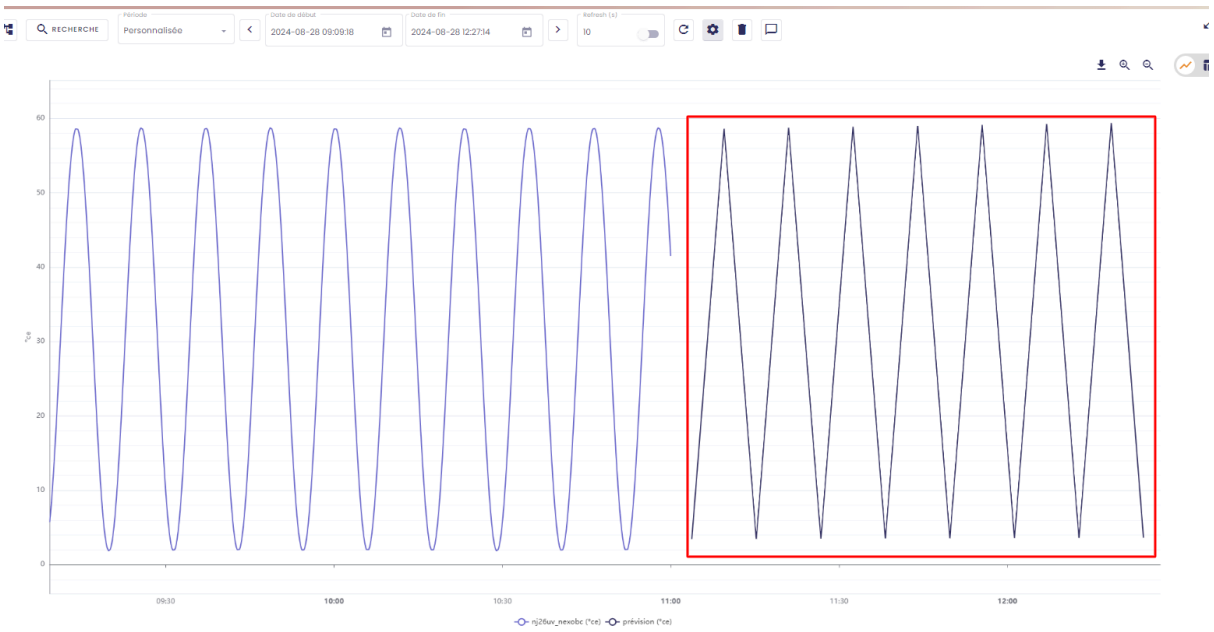


09:19:49 - 09:16:54 = 00:03:05

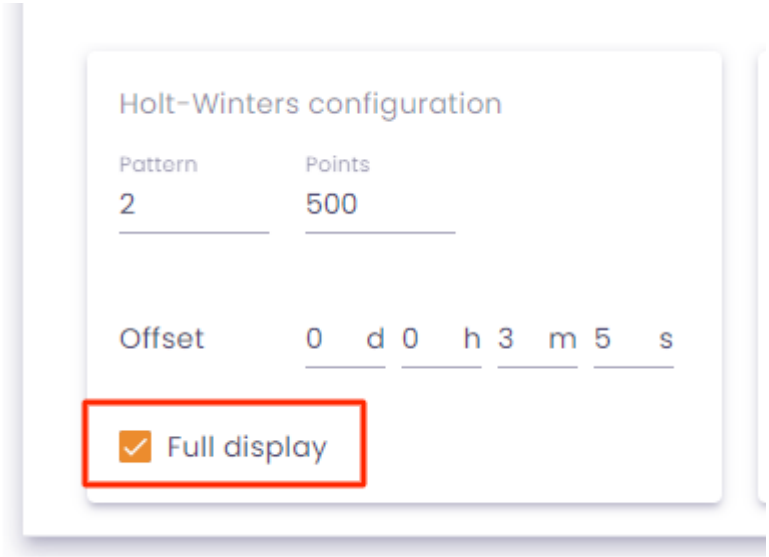
You would then enter "00:03:05" for the offset parameter to ensure the curve starts at the beginning of a cycle.



After completing this configuration, click on “Apply all settings.” Your prediction curve (highlighted below) will be displayed :



If you want to overlay the prediction curve on your actual data curve, return to the configuration screen and check the "Full Display" box :



For more details, refer to the Influx documentation :

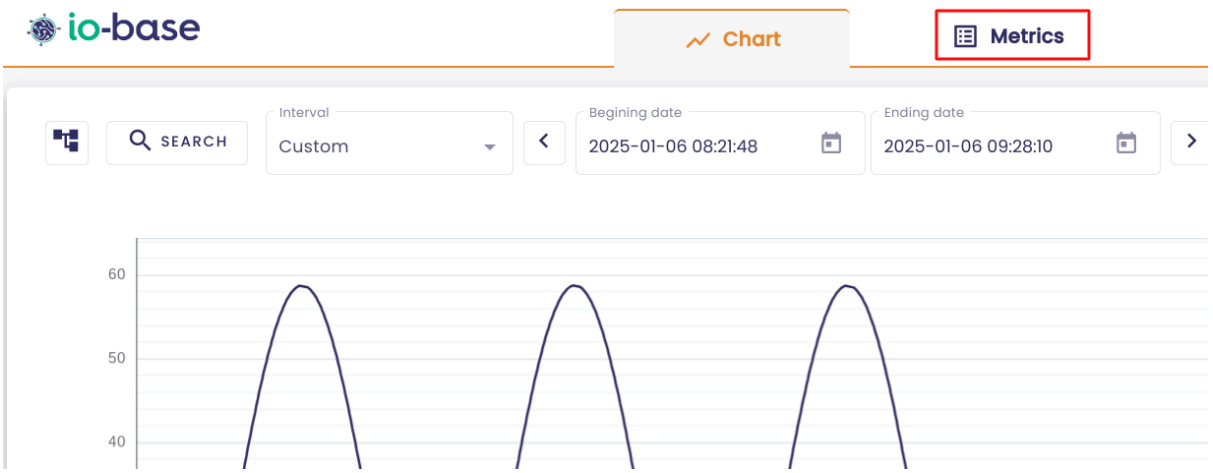
https://docs.influxdata.com/enterprise_influxdb/v1/query_language/functions/#holt_winters

3. Metrics

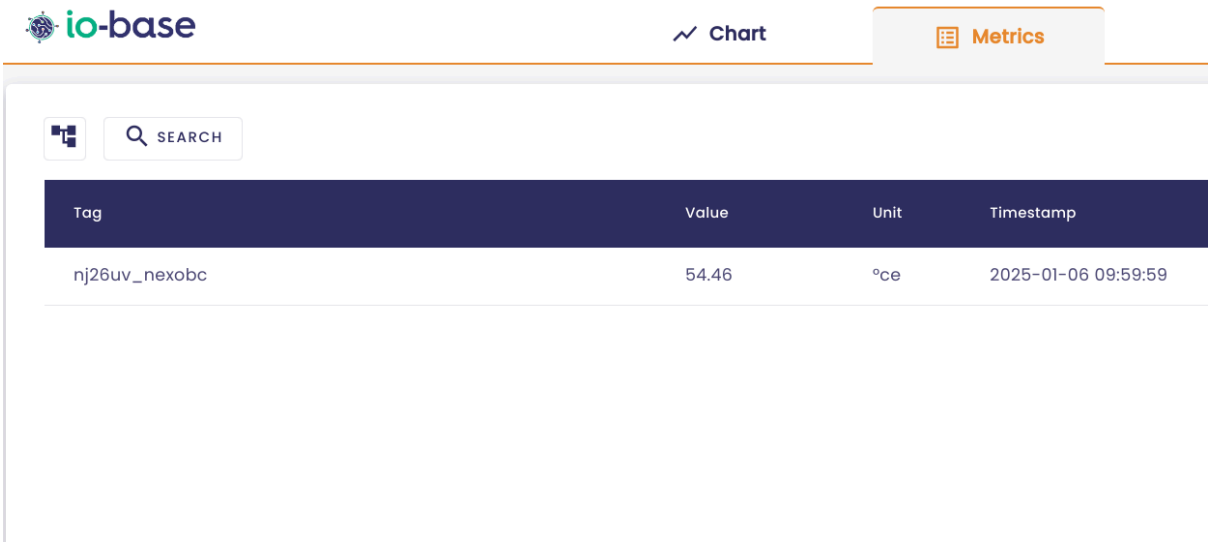
3.1 Access the metrics menu

Run the **Indaba Explorer** application (available on the portal).

In the left-hand menu, click on **Metrics**.

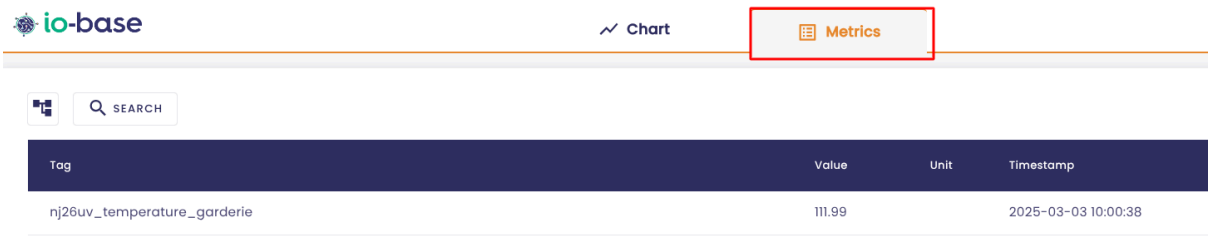


On this screen, you will be able to view the latest metric values.



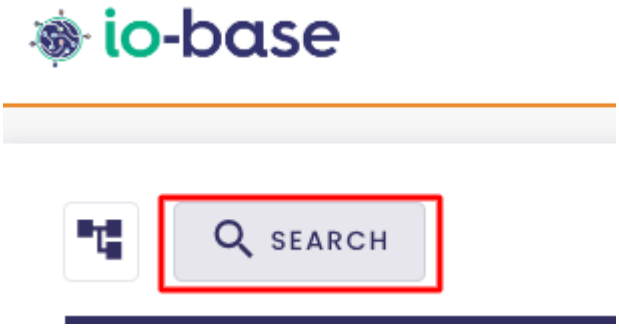
3.2 Viewing metrics

Open the **Indaba Explorer** application, then click on the **Metrics** menu.

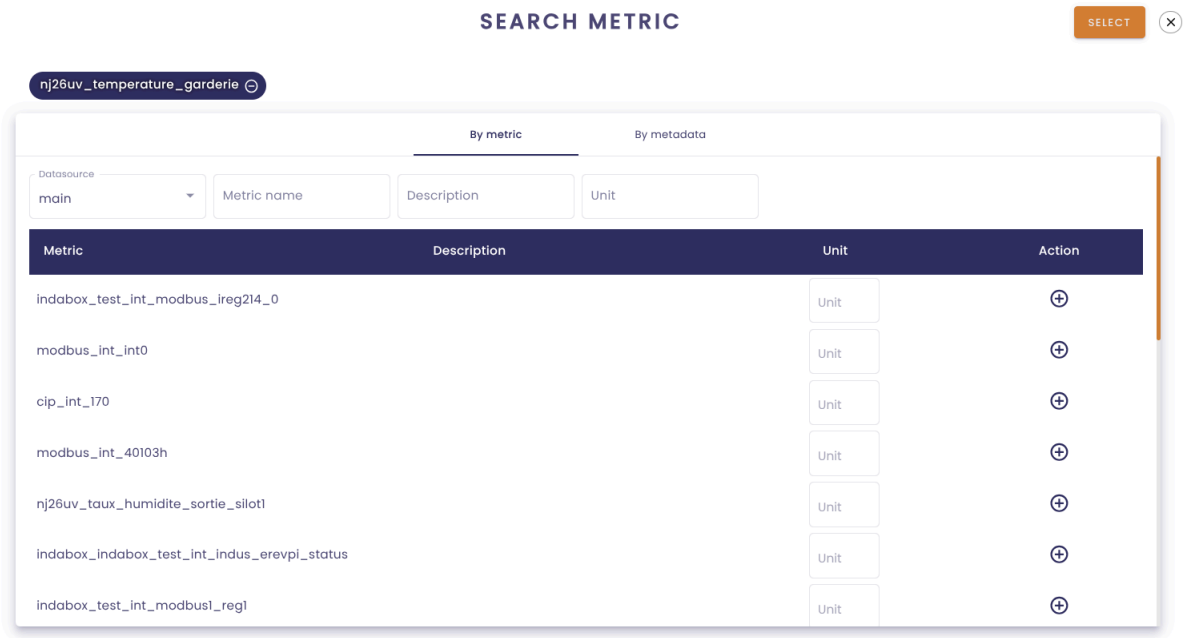


On this screen, you can view the values of the tags that populate your repositories.

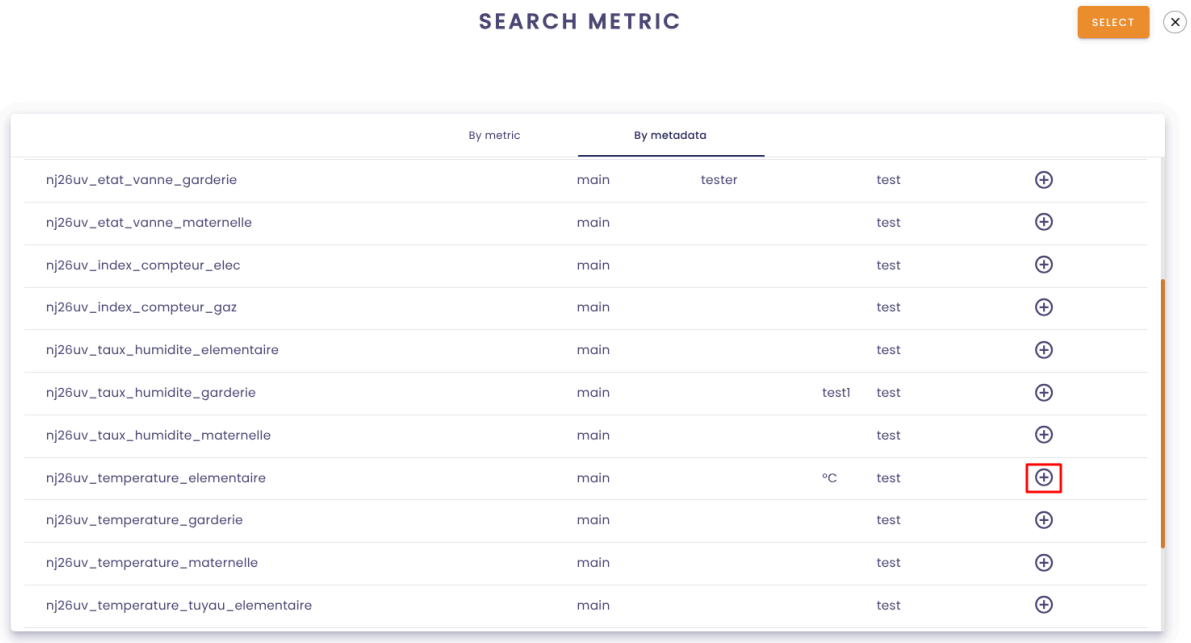
To search for a metric, click on the search button :



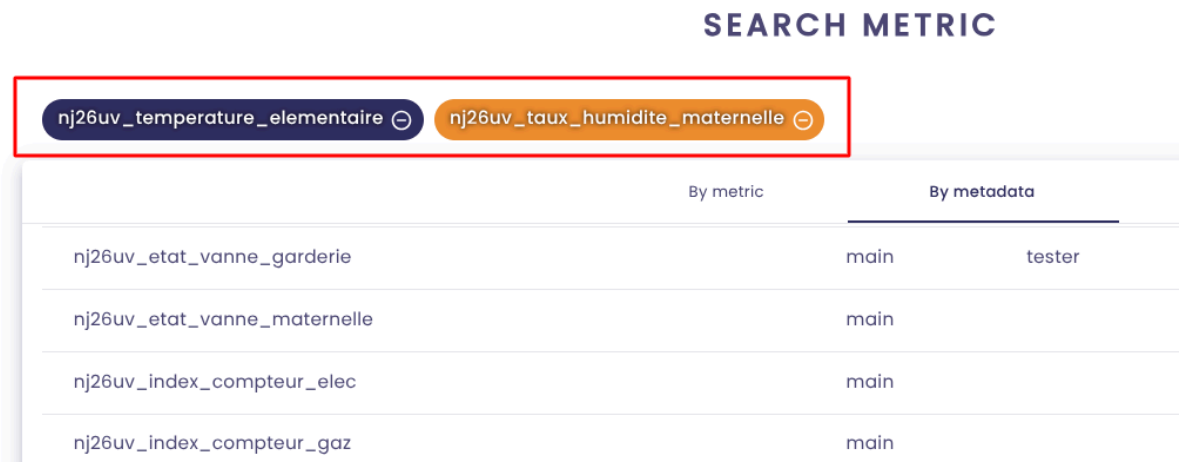
The usual search metric window opens :



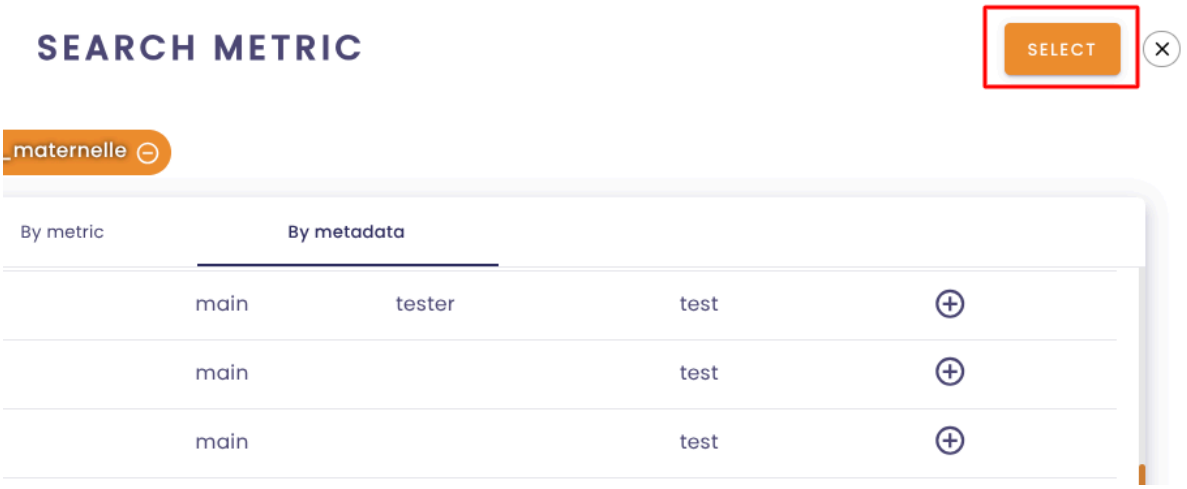
To select the desired metric, click on the "+" button.



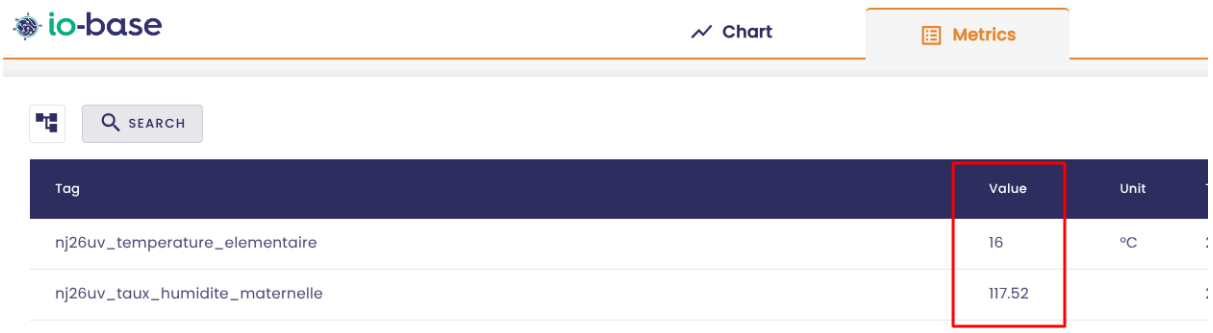
The selected metrics appear at the top of the window :



Click on "**Select**" to confirm the selection :



The selected metrics are displayed, you can view the last value retrieved by a metric :


io-base
Chart
Metrics
SEARCH
Tag
Value
Unit
nj26uv_temperature_elementaire
16
°C
nj26uv_taux_humidite_maternelle
117.52