

## W1000 v. 2.2.8

### Internet Energy Information System

## User manual



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## Revision history

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1.40	February 9, 2010	Updated to the standard Landis+Gyr template
a	December 20, 2010	Second release
b	December 2012	Next release
c	April 15, 2014	Next release
d	January 15, 2018	Next release

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# 1 About this document

## Purpose

This document provides instructions and information on the usage of Landis+Gyr W1000. Landis+Gyr W1000 is a computer application designed to be used by energy consumers in the industrial and commercial sphere for monitoring and working with consumption charts. This product was created to be used in cooperation with standard office PC applications.

## Target group

This document is intended for the users of W1000 application.

- This product can be used by an authorized user with a valid user name and password.
- Sufficient knowledge of working with PC is required.
- No specific training is needed.



### **IMPORTANT:**

#### **Unauthorized access using Internet**

Internet is an open and easily accessible computer network which enables global access to information. This may also be a way for an unauthorized intrusion into connected information systems. This unauthorized intrusion is called 'hacking' and it is a topic for many public discussions. The Landis+Gyr® W1000 system uses Internet as the main communication network and access to IT systems providing data. Although it is not probable, there is a risk that this system will be target of a similar attack.

#### **Possible consequences of an attack to the system**

In case of such an attack it is possible that the Landis+Gyr® W1000 system is damaged and it will be necessary to renew it.

#### **Security**

The Landis+Gyr® W1000 system is secured by passwords, encryption technologies and optional certificates which authenticate the identity of both sides. Despite the precautions it is impossible to guarantee 100% resistance to all attacks to the system.

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## Reference documents

This document is available in the following languages:


Language	Document number
English	D000038147

The following documents provide more information related to the subject of this document:

- *W1000 Installation and system administration*

### Typographical conventions

The following typographical conventions are used in this document:

Font	Description
Courier	Font for file names, paths and code examples.
<b>Bold</b>	Font style used for menu items and buttons in the user interface and for keyboard keys.
<i>Italics</i>	Font style for references to other documents or other parts of this document. For example, “For more information on tariff mapping, see Chapter 4.1 <i>Tariff mapping.</i> ”
	Symbol for additional information, hints and other important notifications.

### Terms and abbreviations

Descriptions for key terms are available in the chapter 3.1 *Basic terms.*

## 2 Introduction

Landis+Gyr® W1000 is a web application that enables end users in the industrial sphere to acquire and process data in their consumption charts.

This system receives information about consumption charts from the system for collecting energy data EDA (Energy Data Acquisition) and saves it into a separate database on a server. Data is saved in the system in such a way that each authorized user has access only to information authorized for him.

Application is activated by entering the corresponding URL in the web browser.

Data can be displayed in a graph or as a table of values, and it is possible to transfer the data easily into common Microsoft® applications such as Excel or Word.

Graphical presentation can be additionally adjusted by using predefined functions for setting parameters for display, for example measurement period, time base, displayed time interval, and so on.

The environment of the application is user-friendly and operating in it is very intuitive. The application follows the standard Microsoft® methodology and is a highly functional tool for acquiring, processing and analyzing user's consumption charts.



## **2.1 Purpose of the system**

The W1000 system is designed for customers of energy distribution companies who are interested in analyzing and understanding their own consumption charts. The main purpose of the system is to present and analyze data.

## 2.2 Requirements

The following tools are required in order to use Landis+Gyr<sup>®</sup> W1000:

- IBM compatible computer with the recommended configuration: at least Pentium double cores, 2 GB RAM, 20GB hard disk, colour monitor (XVGA), keyboard and mouse.
- Internet connection by using ADSL or via LAN.
- Installed internet browser, for example Microsoft<sup>®</sup> Explorer, Mozilla Firefox, or Google Chrome.
- If you use Internet Explorer, turn off the **Display intranet sites in Compatibility view** setting as follows:  
In the **Tools** menu in the browser's upper part, select **Compatibility View Settings**. Then uncheck the **Display intranet sites in Compatibility View** checkbox.
- A user name and password provided by the administrator or Landis+Gyr<sup>®</sup> W1000 system provider.
- URL address provided by the administrator or Landis+Gyr<sup>®</sup> W1000 system provider.

## 2.3 Used trademarks

All trademarks that appear in this document belong to their registered owners.

## 3 Program control

The W1000 system is created with maximum emphasis on simplicity and intuitive controlling. Functions and techniques well-known from many Microsoft® Windows™ applications and Web applications are also applied in W1000.

It is assumed that W1000 users have basic knowledge of Windows programs.

The program uses separate windows in which information is displayed. The size of these windows can easily be changed. Move the cursor to the edge of a window so that its shape changes to 'Size change'. To change the size of a window, hold down the left mouse button and move the cursor.

Data items are displayed in all windows in a tree structure in which you can choose a concrete data and move it to the work area. The program uses a conception of tabs where information is placed on separate bookmarks. Moving the cursor and clicking on the heading of a tab displays its content.

You can perform operations in the program by clicking the action buttons located usually on a toolbar at the upper part of each screen. You can also perform these operations through the so called context menu which is activated by right-clicking over the relevant item in the tree structure. You can choose an item (display sub menu or start the chosen action) by moving the cursor on the item and clicking the left mouse button.



For further information on Windows environment control, refer to the documentation of the MS Windows system.

---

## 3.1 Basic terms

This chapter describes some of the key terms used in this document. Understanding these terms will make it easier to understand the preparations and data processing in the system.

The Landis+Gyr<sup>®</sup> W1000 system is equipped with a function for data processing. It is possible that in some cases the result of data processing will not exactly correspond with your assumptions or requirements. Knowledge of processes running during data processing will help you to understand how the system works and formulate the task in a way which will fulfil your requirements.

### Data series

Data series is a series of values measured at certain intervals. It can contain readings/values of load curve, calculation readings and billing value readings. In general, the data series can contain any readings taken regularly at certain time intervals. Each measured value in the data series is assigned to certain date and time, and a certain status is assigned to each measured value. The current version of the W1000 system works with three types of data series:

- Load profiles
- Calculations (calculated by the specified formula and relevant values of profiles)
- Billing values

### Load profiles

Load profile is a graph of the variation in the electrical load versus time. A load profile varies according to customer type (typical examples include residential, commercial and industrial), temperature and holiday seasons.

### Calculation

Calculation is a mathematical relationship between one or more load profiles and/or other calculations. Calculation represents a certain formula, which can also contain the so-called data series transformations such as offset (time shift), conversion to a higher period, and conversion to an incremental series and type of quantity.

### Billing values

Billing values are values that occur irregularly in the measuring device at the time of the reading or they are stored in the device at a specified time (usually at the end of the month). We distinguish three different types of billing values:

- Summary

- Maximum
- Generic

Summary billing values contain summary values for the measurement period. Maximum billing values contain the maximum value reached in the measured period. Generic billing values contain any data. A single billing value entry contains a timestamp for the measured value, the measured value and the time of occurrence of the maximum value.

### **Offset**

Offset is a shift in the timeline of a report graph. Offset adjustment will cause the movement of curve on the graph. It is possible to set a different offset for each curve in a graph. Offset can be used for comparing data curves in different time ranges.

### **Integration period**

Integration period is a time difference between two consecutive values in a time sequence. This interval can have values 1,3,5,15,30 or 60 minutes for energy. Integration period can represent an hour for daily course of temperature. Each data series can have only one time base.

### **Range**

Range is a chosen section of a data series. If a data series contains data from 1 January to 31 January, then entering a weekly range will choose the last 7 days, and a monthly range chooses all values from the data series. Defining a range will always choose data from the current time or from a specified time backward.

### **Curve**

Profiles or calculations used in the report are called curves. A set of one or more curves or billing values creates a so-called report. For each curve, it is possible to define corresponding transformations as offset (shift on time axis), conversion to a higher period, and multiplication by a constant.

### **Tariff**

Tariff determines the charging of the energy consumption in various time zones.

## Report

Report is one or more curves specified by a user. Each curve in the report can be defined with their own integration period, offset and constant. You can define one or more power factors for each report. When using billing values in the report, it is possible to set comparison of billing values with corresponding statistics values of assigned profiles. A corresponding tariff can be assigned to the report.

Reports are displayed in the so-called working windows on working desktops. Desktops are defined by a user and the user also defines the content of the desktop i.e. layout of the working windows and their content (report). Reports appear in a specified time range.

## Apparent power

Apparent power is defined as simple product of voltage and current through the circuit. The part of the power, which only flows through the circuit and does not do any useful work is called 'Reactive power'.

## Active power

Active power reflects the energy; the circuit actually converts to other forms. For purely resistive appliances the active power equals apparent power – the whole power is utilized. At circuits that contain capacitive and inductive components also, it is necessary to take into account a reciprocal position of phase current and voltage.

## Power factor

Power factor is a physical quantity which expresses a proportion between active and apparent power in an electric circuit of alternating current. It expresses how big proportion of apparent power is possible to convert into useful energy. Power factor depends on reciprocal current phase shift and voltage; it is calculated as cosine of this shift and thus it is marked. Power factor is dimensionless and its value ranges from zero to one, where unit power factor indicates that the whole power is active (phase shift is zero). Zero power factor indicates that the whole power is reactive, load is purely capacitive and/or purely inductive and the phase shift is  $\pm 90^\circ$ . Low power factor in a circuit means higher energy losses.

## Server

Server is a powerful computer placed at the premises of the system provider. All data series and report definitions are saved on this server. This way they can be easily updated. While using Landis+Gyr® W1000, the connection with the server is established via Internet.

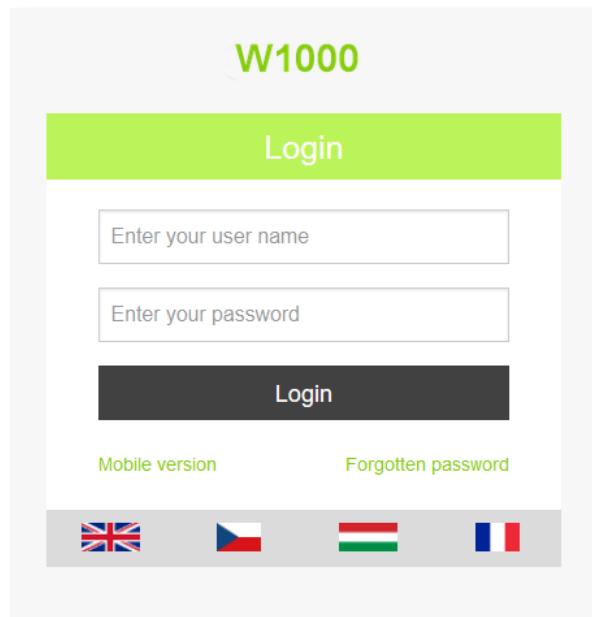
## 3.2 Starting the application

The application (W1000 ASP.NET) is started by entering the corresponding URL into the web browser. The users obtain this URL from their administrator.



### 3.3 Logging in

The user name and password is provided by the administrator.



#### User name

The user name is provided by the administrator or Landis+Gyr® W1000 system provider.

#### Password

Fill in your password. It is provided by the administrator or Landis+Gyr® W1000 system provider and send it to your email.

The password must be entered exactly according to the instructions of the system provider, including capital letters, digits or special symbols.

While entering the password, it is displayed as “●●●●●”.

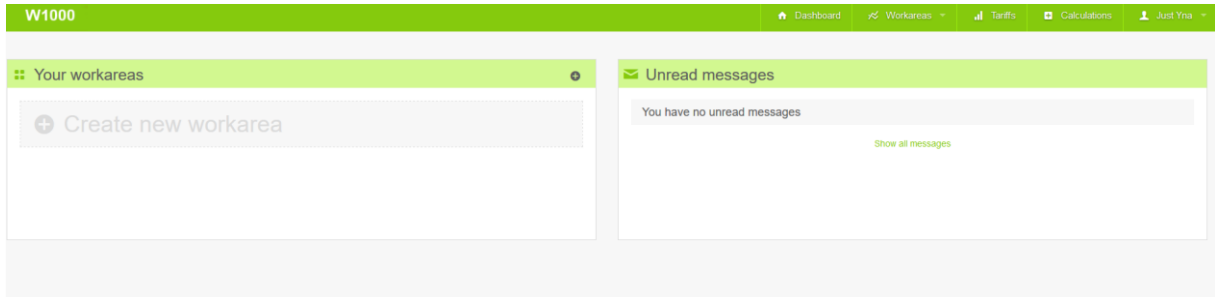
After the first login, you can change your password in user settings, in **Personal information**.

#### Login

Once you have entered the required information, click the **Login** button to log in to the system.

## 4 Dashboard

After successful login to the application, the user will see his **Dashboard page**. The page is divided into two windows: **Your workareas** and **Messages**. On the left side, we can see window **Your workareas** where are displayed all available workareas, created by the user. On the right side of the page, there is a **Messages** window that includes **messages** from the administrator (for example planned outage).



In the upper part of the window is located a menu bar with the following elements: **Dashboard**, **Workareas**, **Tariffs**, **Calculations** and **User**. Each item is described in the following chapters of the user manual.

When moving mouse over the user name then appears the following items:

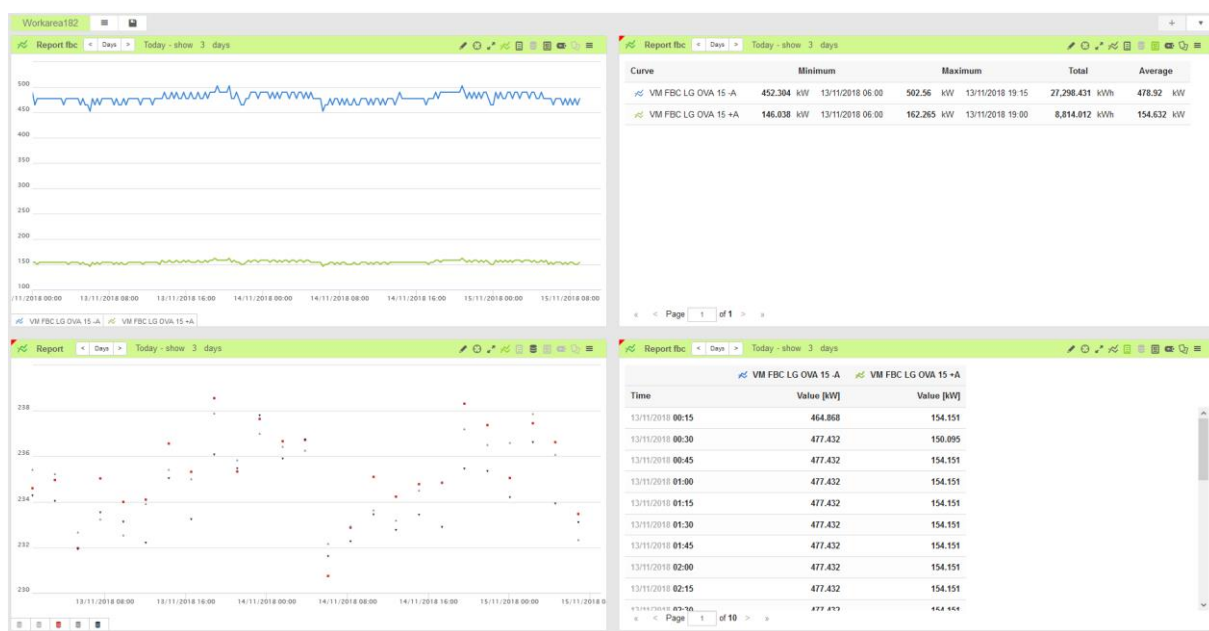
- User settings (described in chapter [8](#))
- Help – after clicking on this link you will be redirected to the page with User manuals to download
- Logout

## 5 Workareas

Workarea is designed for creating reports with measured data or calculations. In a report, measured or calculated data can be displayed as a graph or a table. Each report has to have a defined time range in which data will be displayed. Definition of each report is stored in a database and it is available for the user after login, after saving the report. The user can perform various operations on reports that are explained in this chapter.

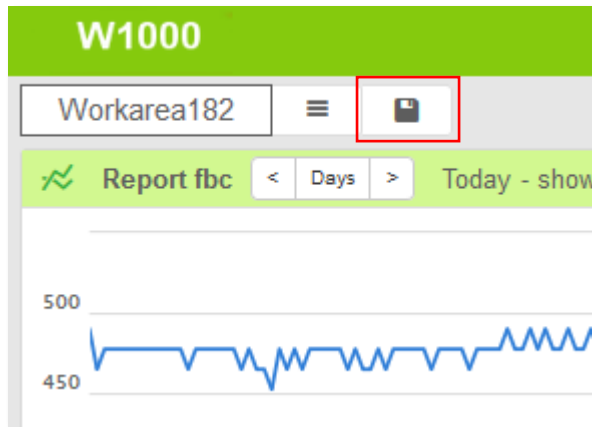
### Workarea

- You can display maximally 4 reports on one workarea.
- Workarea are created by the user. Individual workareas can be saved so that they are loaded again at the next login.



### Report

- A report is one or more data series specified by the user. Each data series can be defined by its own range and an integration period. Data series saved on a server are transferred into your PC via Internet. They are then displayed in a graph or a table. This graph is a basic element of the report.
- The definition of each report can be saved together with chosen data series and other parameters. Such a report is available to the user at any time he logs in to the system.
- You can save all opened report at once using button **Saved** located next to the workarea name. This button appears if at least one report is changed.



- To the report can be entered data from gas, heat, water, electricity meter or money.  
When is electricity report's medium, first value of time range is at 0:15, last value is at closest period to current time.  
When is gas report's medium, first value of time range is at 6:15, last value is at closest period to current time.

### Data source

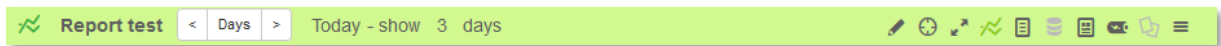
Data source contains all the data inputs you are authorized to access. They can include the following:

- Reports
- Meters
- Calculation
- Tariffs
- System tariffs

### Data display

Data are displayed in a graphical form on the data display.

## 5.1 Toolbar

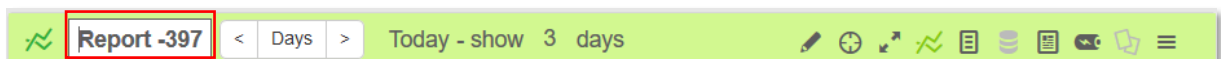


Toolbar of the Report contains: report name, navigator for specifying the time range and following functional icons:

Icon	Description
	- using this icon, the user can enter a note for the report
	- using this icon, the user can switch units from energy to power (e.g. kW to kWh)
	- using this icon, the user can switch the report to the full screen mode
	- using this icon, the user can switch the report to the chart
	- using this icon, the user can switch the report to the Load profiles table
	- using this icon, the user can switch the report to the Billing values table
	- using this icon, the user can switch the report to the Statistic table
	- using this icon, the user can define Power factor for the report
	- using this icon, the user can copy the report
	- using this icon, the user can display other available operations for the report

### Change name of report

Click in the field with the report name in the upper left corner of report window and write a new name. Next click **Enter** button. The report name is already saved.



Be aware that the report name must be unique. In case of setting invalid name, the field with the name change color to red and when moving mouse over this field, a tooltip appears with information that this name is already used.



#### 5.1.1 Specifying of time range

It is possible to specify a time range for the report with a navigator. You can choose for easy specification: Days, Week, Month or Custom and check it with a green symbol.

Curve	Minimum	Maximum	Total	Average
VM FBC LG OVA	527.688 kW 28/6/2017 06:30	577.944 kW 28/6/2017 22:15	31,020.516 kWh	549.036 kW
VM FBC LG OVA	170.378 kW 28/6/2017 06:30	186.604 kW 28/6/2017 21:15	10,015.785 kWh	177.271 kW
VM FBC LG OVA 15 VM FBC LG OVA 15 +R	132 kVar 28/6/2017 08:30	148 kVar 28/6/2017 22:45	7,902 kVarh	139.858 kVar

### 5.1.2 Note


To write some notes click on the pencil icon. Under the report table/chart appears a field for entering a note. To hide the note field, click again on the pencil icon.

Curve	Minimum	Maximum	Total	Average
VM FBC LG OVA 15 VM FBC LG OVA 15 -A	131.922 kWh 28/6/2017 06:30	144.486 kWh 28/6/2017 22:15	31,020.516 kWh	137.259 kWh
VM FBC LG OVA 15 VM FBC LG OVA 15 +A	42.594 kWh 28/6/2017 06:30	46.651 kWh 28/6/2017 21:15	10,015.785 kWh	44.318 kWh
VM FBC LG OVA 15 VM FBC LG OVA 15 +R	33 kVarh 28/6/2017 08:30	37 kVarh 28/6/2017 22:45	7,902 kVarh	34.965 kVarh

Note: FBC LG OVA report

### 5.1.3 Switching units power <-> energy

For the report, it is possible to switch units from energy to power or power to energy by clicking on

the icon . For example, kW can be switched to kWh.


Before switching:

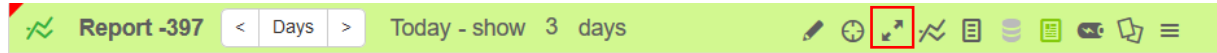
Curve	Minimum	Maximum	Total	Average
VM FBC LG OVA 15 VM FBC LG OVA 15 -A	131.922 kWh 28/6/2017 06:30	144.486 kWh 28/6/2017 22:15	31,020.516 kWh	137.259 kWh
VM FBC LG OVA 15 VM FBC LG OVA 15 +A	42.594 kWh 28/6/2017 06:30	46.651 kWh 28/6/2017 21:15	10,015.785 kWh	44.318 kWh
VM FBC LG OVA 15 VM FBC LG OVA 15 +R	33 kVarh 28/6/2017 08:30	37 kVarh 28/6/2017 22:45	7,902 kVarh	34.965 kVarh

After switching

Curve	Minimum	Maximum	Total	Average
VM FBC LG OVA 15 VM FBC LG OVA 15 -A	527.688 kW 28/6/2017 06:30	577.944 kW 28/6/2017 22:15	31,020.516 kWh	549.036 kW
VM FBC LG OVA 15 VM FBC LG OVA 15 +A	170.378 kW 28/6/2017 06:30	186.604 kW 28/6/2017 21:15	10,015.785 kWh	177.271 kW
VM FBC LG OVA 15 VM FBC LG OVA 15 +R	132 kVar 28/6/2017 08:30	148 kVar 28/6/2017 22:45	7,902 kVarh	139.858 kVar

### 5.1.4 Full screen of report

Each report can be switched to the full screen mode by entering the right icon . This is for better clarity in report with more curves or visualization on a tablets or self-phones.



The report can be easily switched back to the normal mode by clicking again the same icon.

### 5.1.5 Power Factor

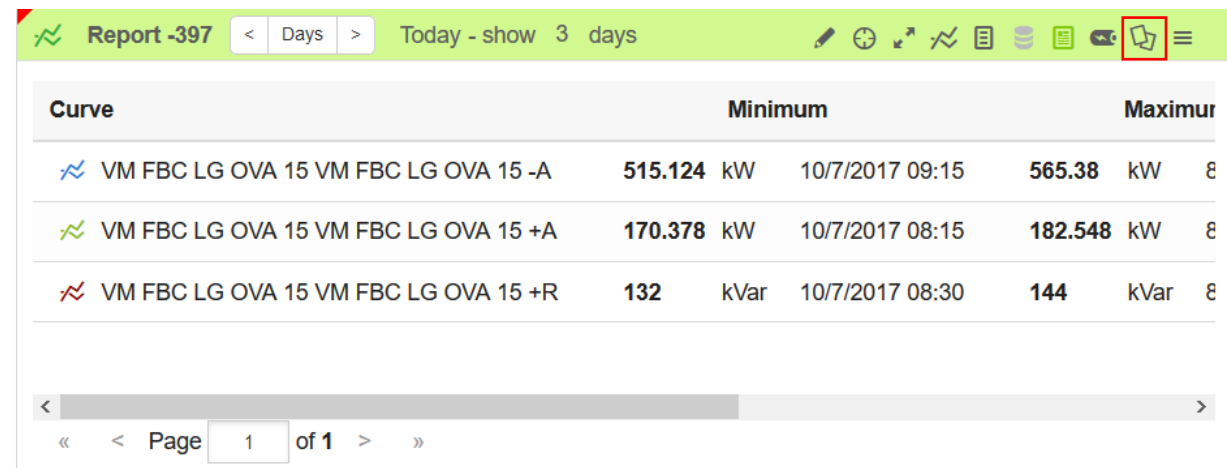
For the report, the user can calculate a power factor. Power Factor can be calculated only if to the report are added at least one active and one reactive component. The user can add power factor to the report by clicking the power factor icon:



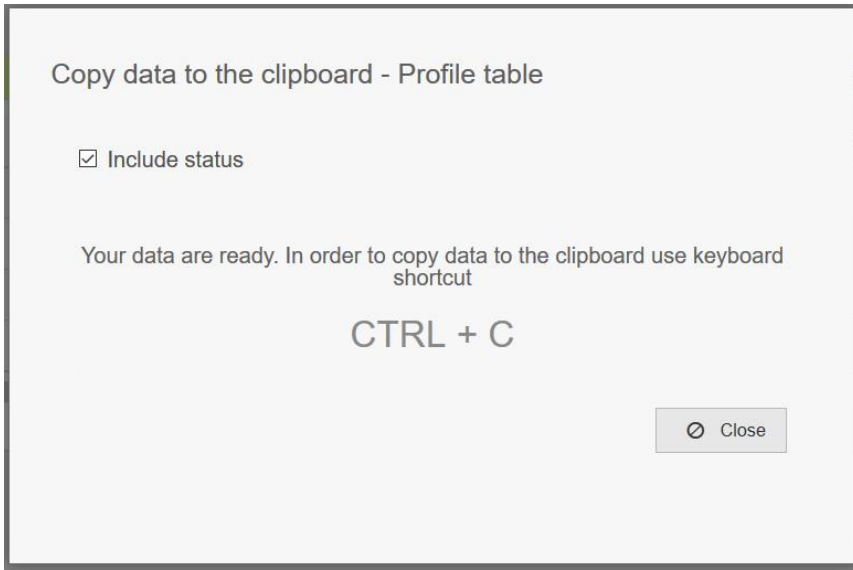
For more information regarding Power Factor go to the chapter [5.3.12](#).

### 5.1.6 Copying report

It is possible to copy data from profile table, billing values table or statistic. To do this open the required display option and click the Copy icon located in the toolbar:

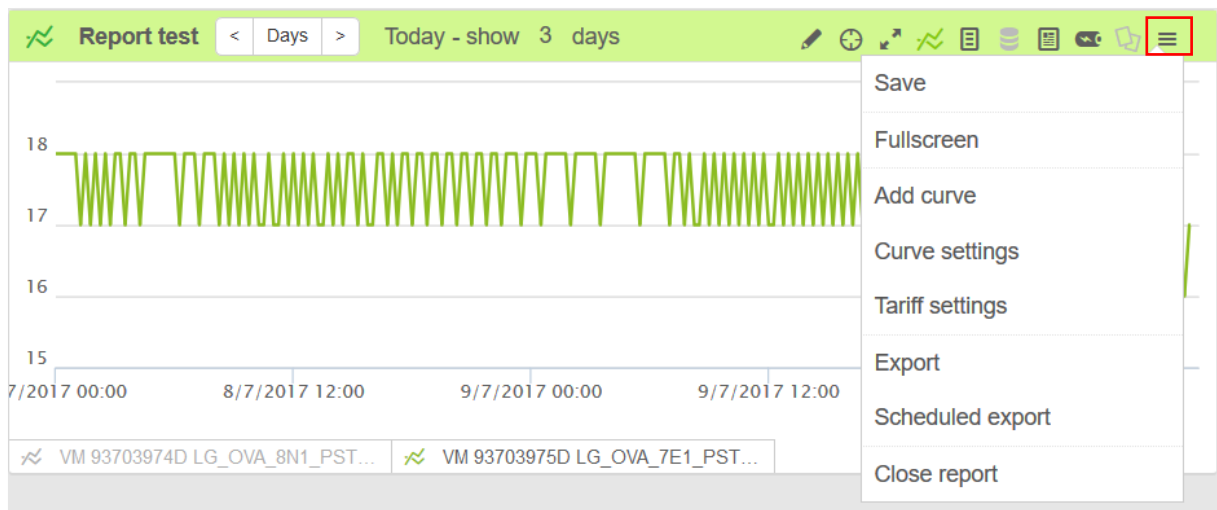


After that data are ready for copying so use the keyboard shortcut **CTRL+C** to copy them to the clipboard. For Load Profiles, data can be copied with or without statuses. To copy data with statuses, check the checkbox **Include status**.



### 5.1.7 Other operations

The last icon in the toolbar hides all other operation available for the report. After clicking on it the user will see menu with those operations.





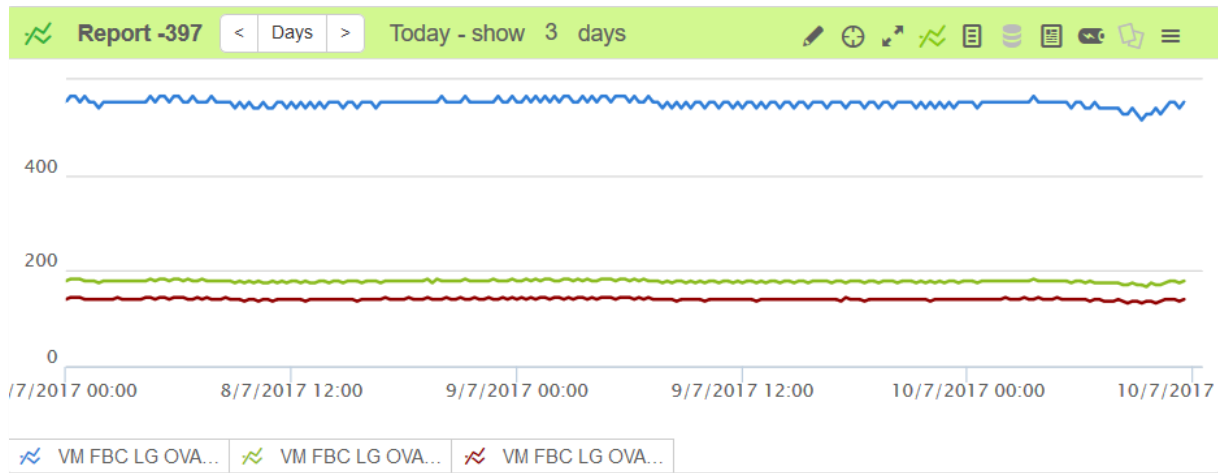
## 5.2 Available report display options

Report can be displayed in four different formats:

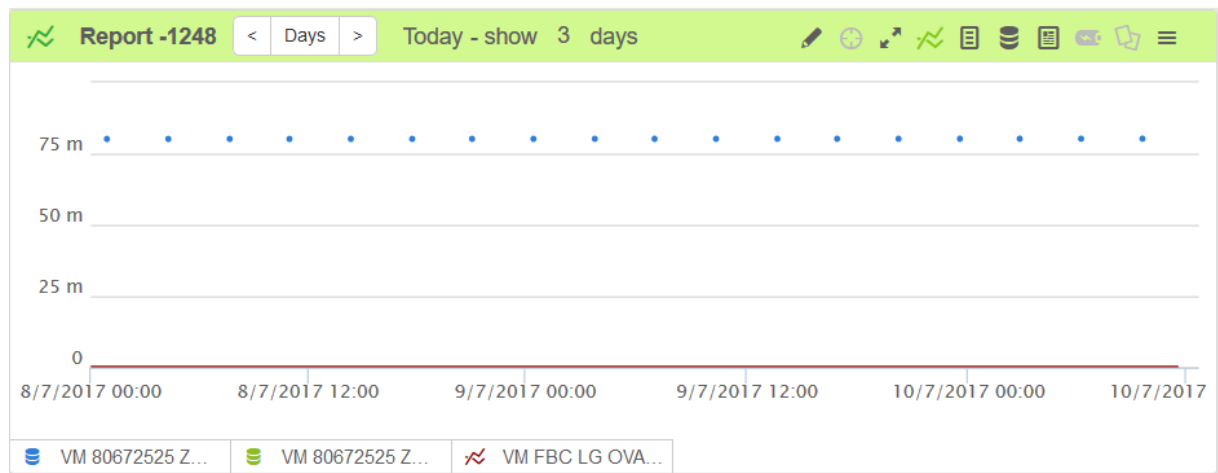
- Chart – the same for Load profiles and Billing values
- Profile Table – available only if Load profiles/Calculations are added to the report
- Billing Table – available only if Billing values are added to the report
- Statistic – available only if Load Profiles/Calculations are added to the report

### 5.2.1 Chart

Each report can be displayed as a chart (graph). The following figure shows an example graph.

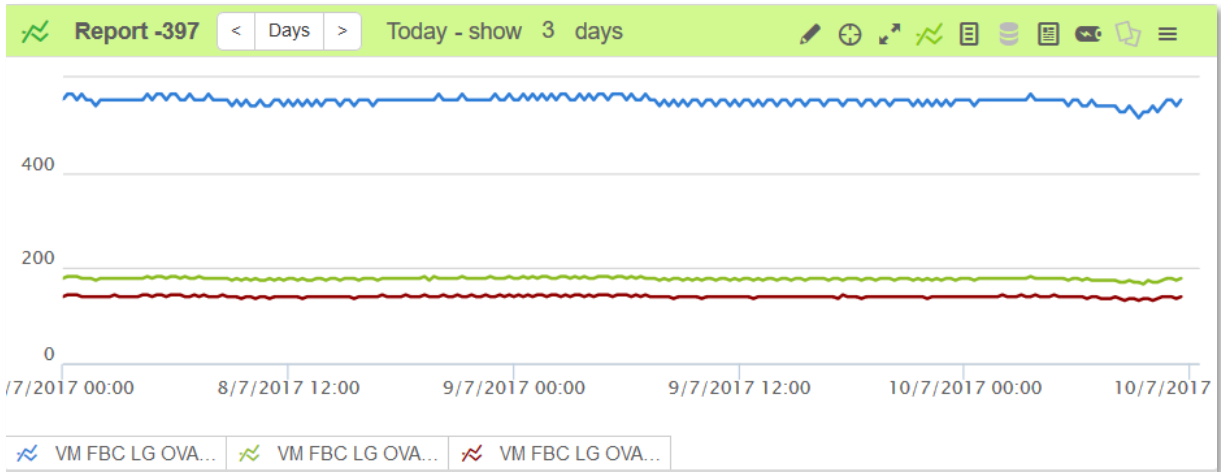


A graph can display profiles, billing values and/or calculations.

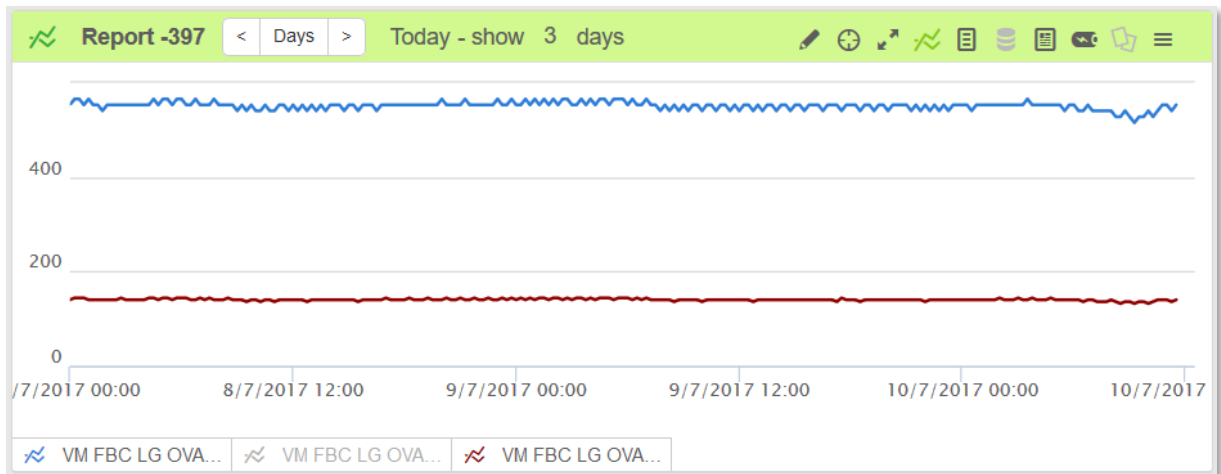


Data on the chart can be easily turned on/off by clicking on its icon on the legend located in the lower left corner of the report.

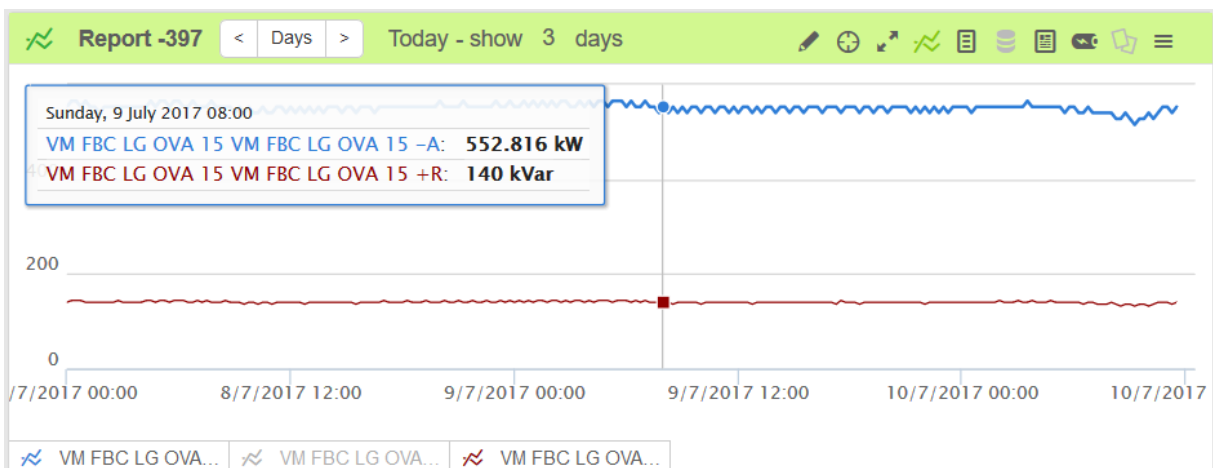
Before:



After:



If the user is moving the cursor over the chart, then for all available curves are shown the specific values.



### 5.2.2 Profile Table

The profile table displays data for all curves in the report (profiles or calculations). The table shows the following data for each curve:

- name of the curves
- timestamp
- measured or calculated value (with unit)

Time	Value [kW]	Value [kW]	Value [kVar]
9/7/2017 00:15	552.816	178.491	144
9/7/2017 00:30	565.38	182.548	140
9/7/2017 00:45	552.816	178.491	144
9/7/2017 01:00	565.38	182.548	140
9/7/2017 01:15	552.816	178.491	144
9/7/2017 01:30	565.38	182.548	144
9/7/2017 01:45	552.816	182.548	140
9/7/2017 02:00	565.38	178.491	144
9/7/2017 02:15	552.816	178.491	144
9/7/2017 02:30	565.38	182.548	140
9/7/2017 02:45	565.38	182.548	144
9/7/2017 03:00	552.816	178.491	140

### 5.2.3 Billing values table

Reports with assigned billing values can also be displayed as a billing values table. In the billing values table are shown

- name of a virtual meter
- timestamp
- measured value (with unit)

Time	Value [kWh]
10/7/2017 03:00	80,257,788.8
10/7/2017 06:21	80,263,586.5
10/7/2017 09:40	80,269,220.6
10/7/2017 13:00	80,274,914.1
10/7/2017 16:20	80,280,696.1
10/7/2017 19:40	80,286,583.6
10/7/2017 23:00	80,292,469.8
11/7/2017 02:20	80,298,260.7
11/7/2017 05:40	80,304,091.7
11/7/2017 09:00	80,309,747.7

## 5.2.4 Statistics

The statistic window shows the following data for each curve of the report:

- Curve
- Minimum
- Maximum
- Total
- Average

### Curve

The curve shows the name of curve with color representation.

### Minimum

The minimum value shows the minimum reading value with a date range in a report and specific time, when minimum was there.

### Maximum

The maximum value shows the maximum reading value with a date range in a report and specific time, when maximum was there.

### Total

The total value shows completely reading value with a date range in a report.

### Average

The average value shows average reading value with a date range in a report.

Curve	Minimum		Maximum		Total	Average
VM FBC LG OVA 15 VM FBC LG OVA 15 -A	515.124 kW	10/7/2017 09:15	577.944 kW	10/7/2017 20:45	31,956.534 kWh	550.975 kW
VM FBC LG OVA 15 VM FBC LG OVA 15 +A	166.321 kW	10/7/2017 09:30	186.604 kW	10/7/2017 20:45	10,318.003 kWh	177.897 kW
VM FBC LG OVA 15 VM FBC LG OVA 15 +R	132 kVar	10/7/2017 08:30	148 kVar	10/7/2017 20:45	8,139 kVarh	140.328 kVar
calc sum	3,128.263 kW	10/7/2017 10:00	3,370.332 kW	10/7/2017 21:00	189,446.147 kWh	3,266.313 kW

## 5.3 Operations available for a report

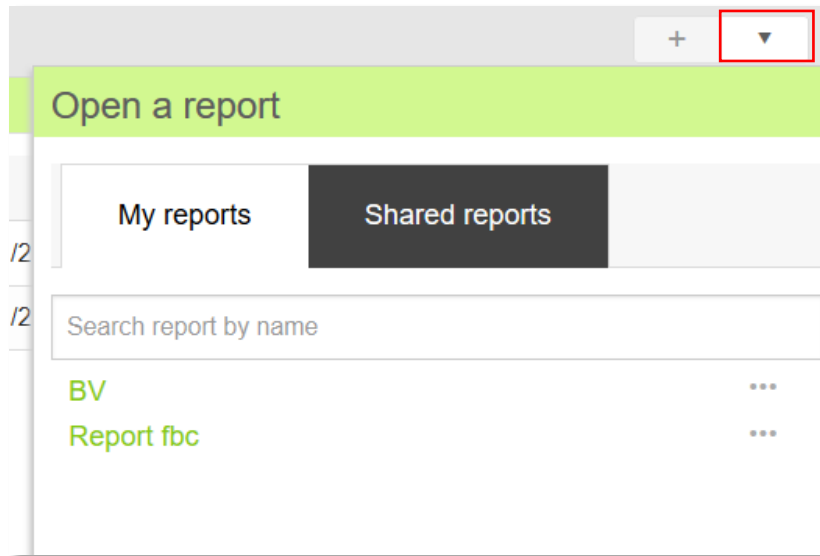
The following table lists all the operations that are available for the report.

Operation with a report	Description of the operation	How to start
Renaming	Changes the report name	Toolbar
Searching	Search a report by name	Context menu
Deleting	Delete a report	Context menu
Set	Displays the dialog for report settings	Context menu
Adding a profile curve in the report	Adds a new curve into an existing report in an existing window.	Context menu
Adding a calculation curve into a report	Adds a new curve into an existing report in an existing window.	Context menu
Adding a billing value curve into a report.	Adds a new curve into an existing report in an existing window.	Context menu
Export	Exports the report	Context menu
Saving	Saves the changes in a report	Context menu
Matching a tariff	Matches a chosen tariff with a report	Context menu
Closing a report	Close a report	Context menu
Fullscreen of a report	Fullscreen of a report	Toolbar
Power factor	Calculate power factor for the report, more than one	Toolbar
Sharing	Share report with another user(s)	Context menu

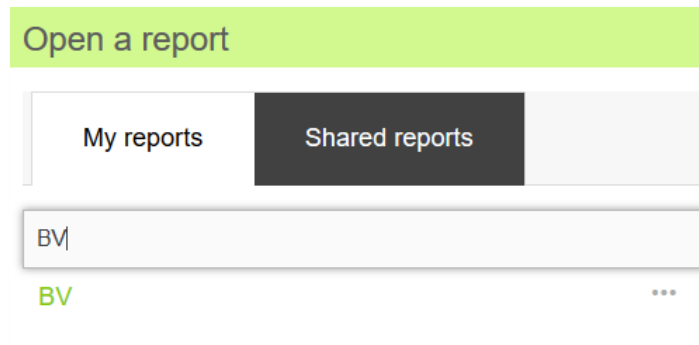
### 5.3.1 Opening a report

If you need to open your finished report, follow next steps:

1. Click an arrow on the upper right corner of your workarea. You can see all your reports and you can choose which report you need to open.



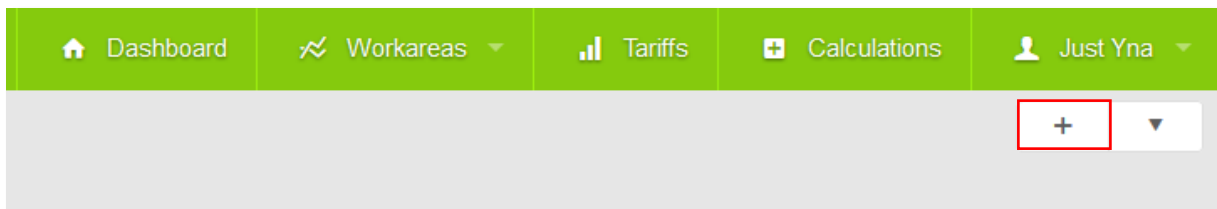
2. You can search a report by name, just fill a specified text in the search field.



3. Click on the name of the required report.
4. The report will be displayed as a graph on a desktop.
5. You can open another report or close the window **Open a report**


### 5.3.2 Creating a new report

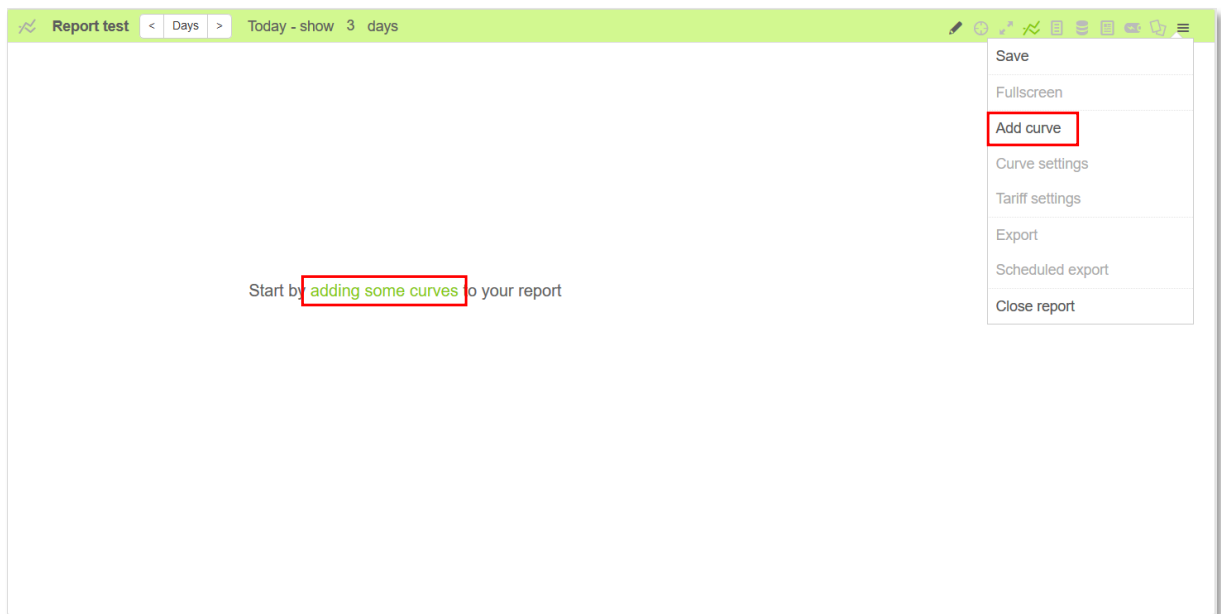
For creating a new report click on **New report** button  , in the upper right corner of your workarea. You will see an empty report, where you can add a curve (load profile, billing, calculation or shared calculation), see the next chapter.



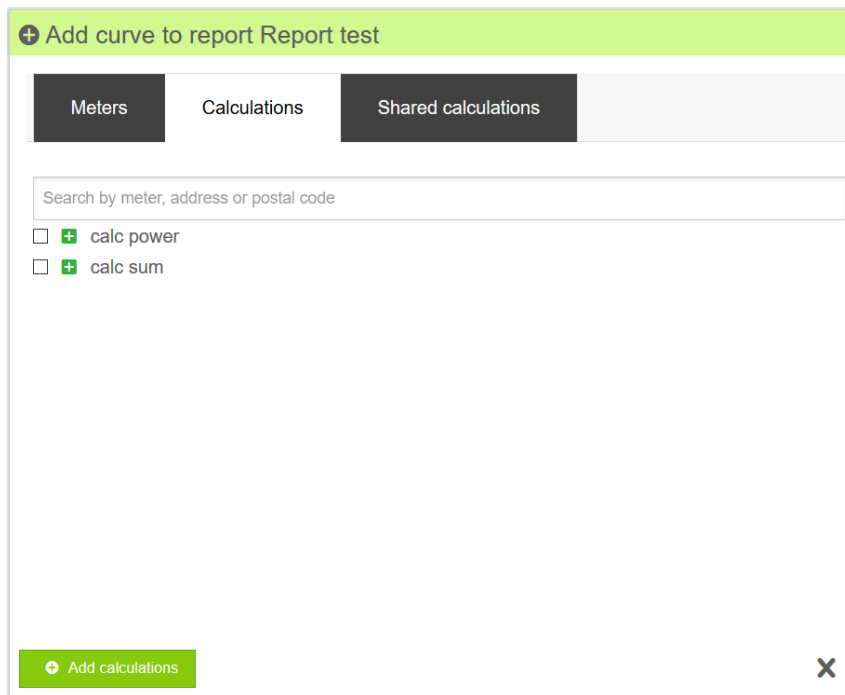
### 5.3.3 Adding a calculation to a report

The user can add to the report: calculations or shared calculations. If the owner of the shared calculation deletes it, then the shared calculation will disappear from the report.

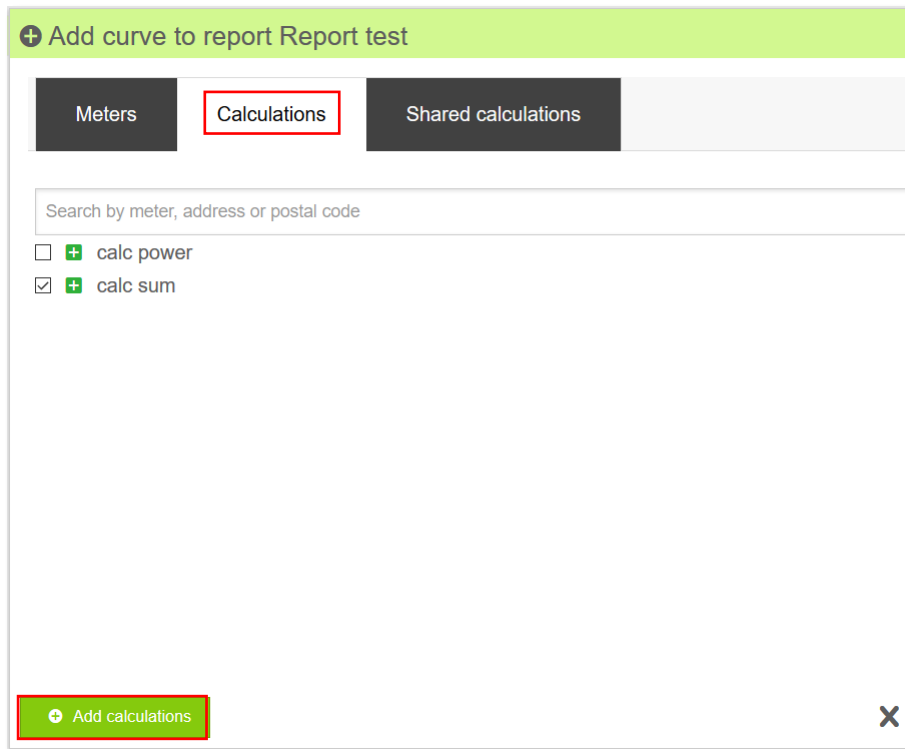
1. In a report window click link **adding some curves** or in the report toolbar, click on the menu icon  and choose **Add curve**



2. Select bookmark **Calculations** or **Shared calculations** and check or find calculation, which you want to add to the report



3. You see list of calculation and you can choose one or more. To search the specific calculation, you can use the quick search field located under the list of calculation
4. Choose and click **Add calculations** button.




5. Calculation is added to the report.

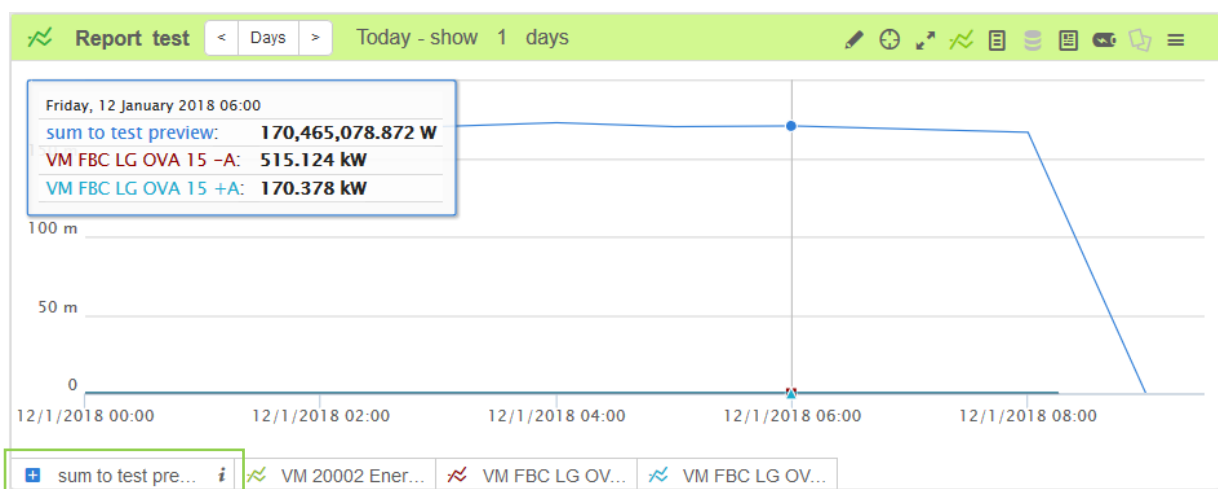


Shared calculation can be added to the report in the same way.

### 5.3.4 Preview of the calculation expression in the report

After adding any calculation to the report, the user can view its expression. When calculation is adding to the report, in the legend appears its icon. To open the preview of the calculation, click on

the symbol  in the legend:



A popup window appears with the calculation expression:



Preview - sum to test preview

Period: 60 min  
 Calculation since: 30/6/2017  
 Status:   
 Calculation expression: LP1 + LP2 + LP3 + LP4 + LP5 + LP6 + LP7 + LP8 + LP9 + LP10 + LP11 + LP12 + LP13 + LP14 + LP15 + LP16 + LP17 + LP18 + LP19 + LP20 + LP21 + LP22 + LP23 + LP24 + LP25 + LP26 + LP27 + LP28 + LP29 + LP30 + LP31 + LP32 + LP33 + LP34 + LP35 + LP36

Alias	Name	Computation type	Constant
LP1	VM 182D DLMS +A	Sum	1
LP2	VM 182D DLMS IMPORT TEST +A	Sum	1
LP3	VM 20002 Enerlux Cumulativ +A	Sum	1
LP4	VM 51015101 SL_LG_OVA_8N1_GPRS_Tallin A-	Sum	1
LP5	VM 51015101 SL_LG_OVA_8N1_GPRS_Tallin A+	Sum	1
LP6	Metcom +A	Sum	1
LP7	VM 77062634D +A	Sum	1
LP8	VM 634D Demand - Delivery	Sum	1

In profile table and statistic window it is also possible to open the preview of the calculation expression by clicking on the icon for the required calculation:

Profile table

Report test < Days > Today - show 1 days

sum t... VM 200... VM FBC... VM FBC...


Time	Value [W]	Value [kW]	Value [kW]	Value [kW]
12/1/2018 00:15		0	527.688	170.378
12/1/2018 00:30		0	540.252	170.378

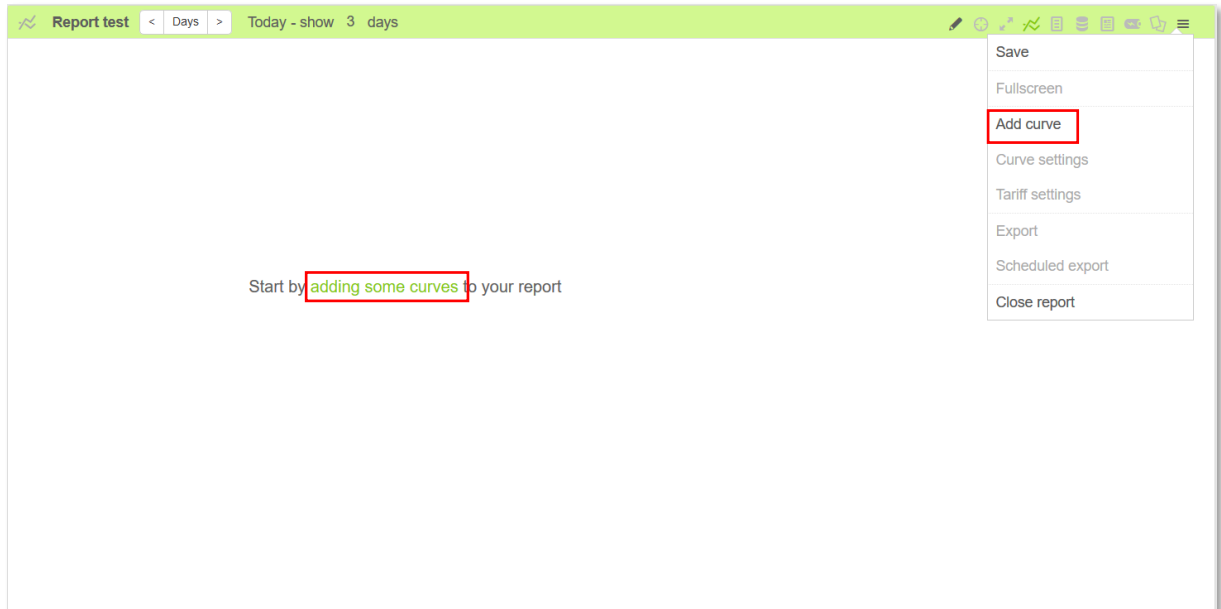
Statistic



Report test < Days > Today - show 1 days


Curve	Minimum	Maximum
sum to test preview	0 W 12/1/2018 09:00	172,517,884.104 W 12/1/2018 02:00
VM 20002 Enerlux Cumulativ +A	0 kW 12/1/2018 00:15	0 kW 12/1/2018 00:15
VM FBC LG OVA 15 -A	515.124 kW 12/1/2018 05:30	540.252 kW 12/1/2018 00:30

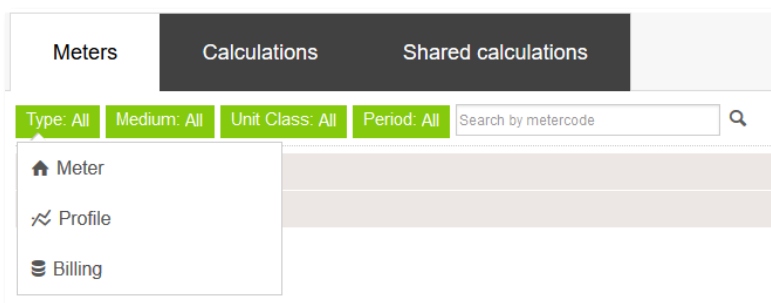
### 5.3.5 Adding a curve to a report

1. In a report window click link **adding some curves** or in the report toolbar, click on the menu icon  and choose **Add curve**



2. Open bookmark **Meters**
3. You see list of curves and you can choose a specific profile  or billing values , that you want to add. You can also search for the required virtual meter using the quick search

field  . It is also possible to search by using specific filter: Type, Medium, Unit Class and Period. To set the filter click on it and choose the required option.



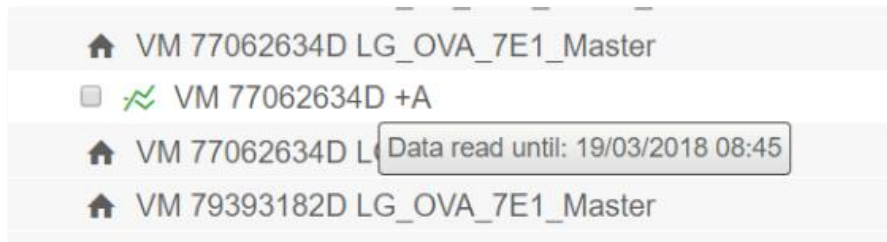
Next click on the loop next to the search field. To remove set filters, click on the X located next to the search filed.

**Example:**

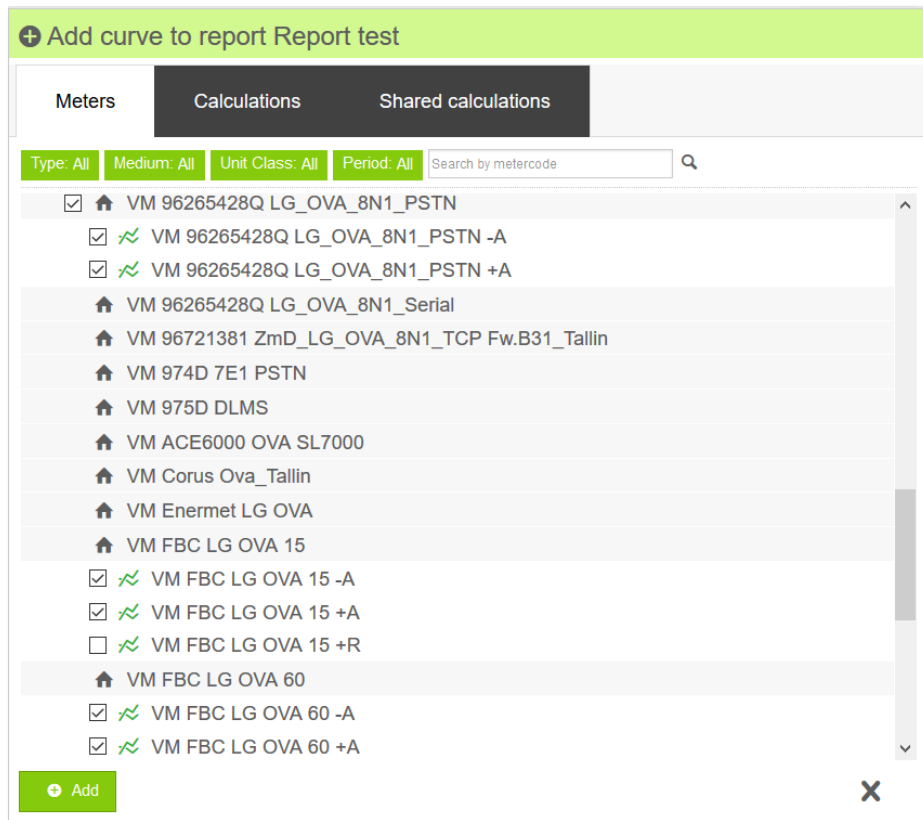
To search for a specific Virtual meter, you can set: as Type – Profile, as Medium – Electricity, Unit Class – Active Power and as Period – 15 min



For each profile/billing you can check the date of last reading. When moving mouse over any profile or billing a tooltip appears:



4. Choose curve(s) and click **Add** button. You can add more than one curve at once.

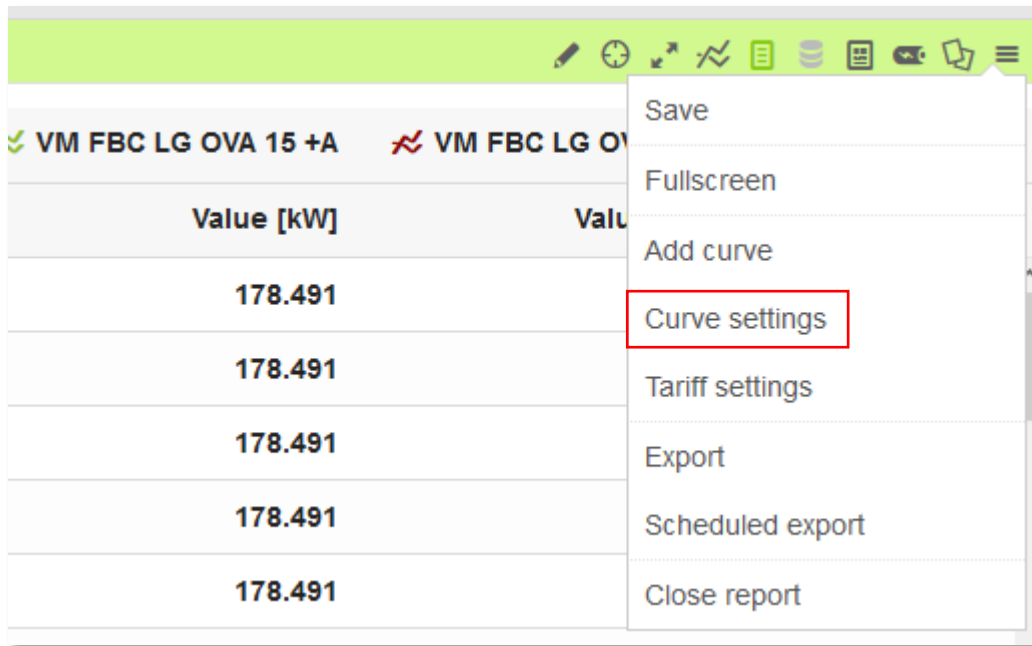


5. The curve(s) is/are added to the report.

### 5.3.6 Modifying the settings of a curve

Each curve from the report can have modified the settings. It can be done in the Curve settings window.

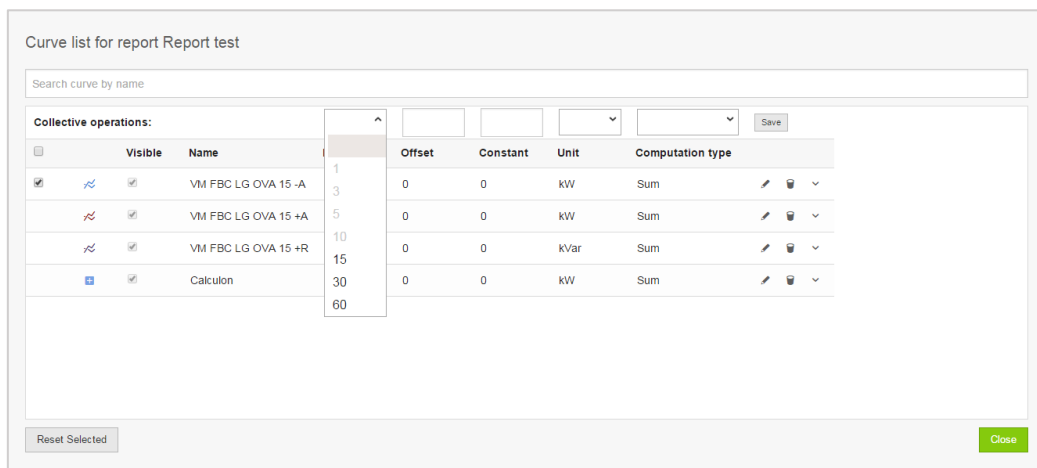
1. To open the curve settings window, click on the menu icon in a report toolbar and choose Curve settings in the menu that appears



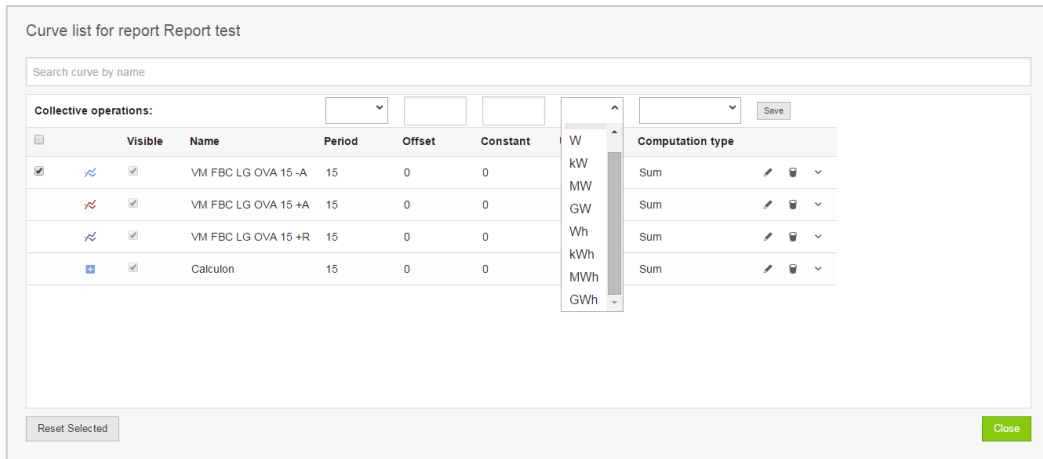
2. In the popup window is shown a table with a list of curves included in the report.

For each curve, it is possible to change the values of the following parameters:

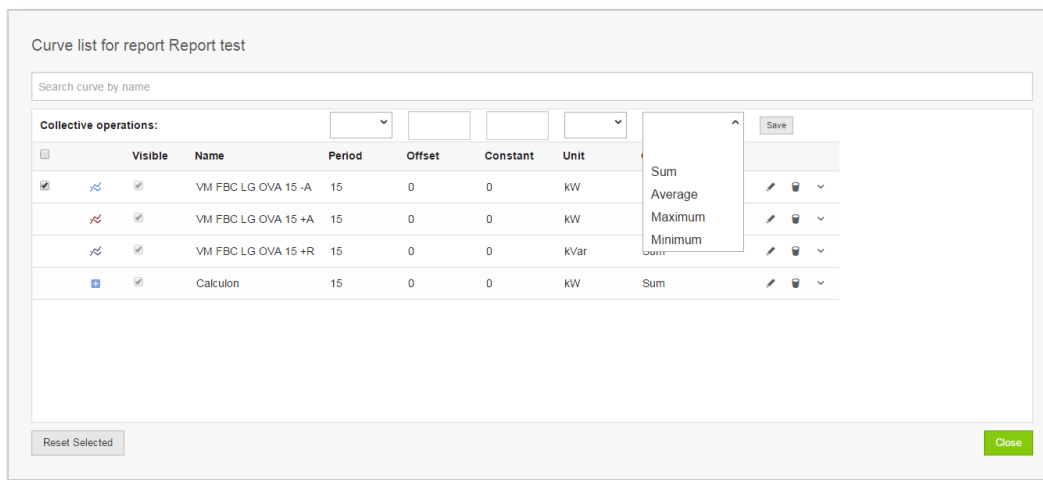
- Color of a curve
- Visibility of a curve in the report
- Name of a curve
- Period, the following periods can be set:



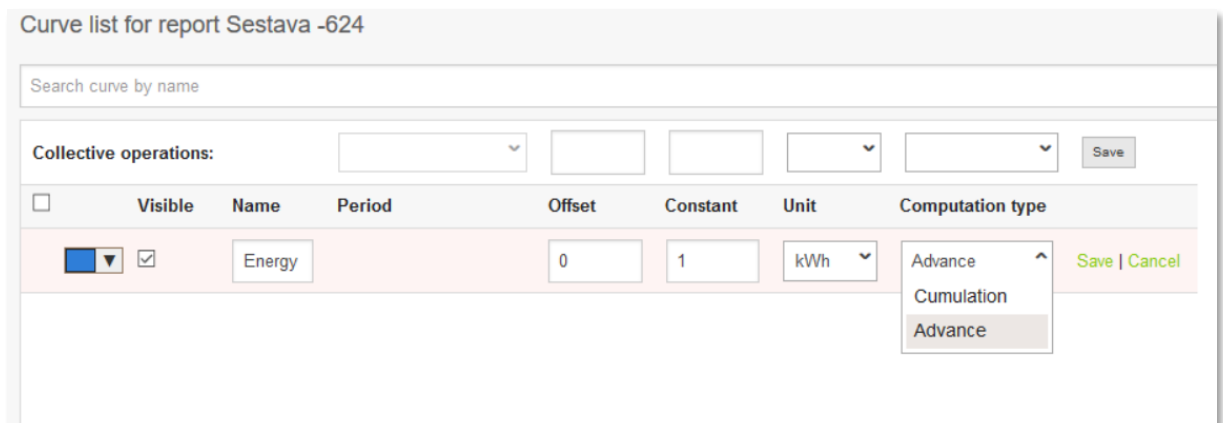
- Offset
- Constant
- Unit, the following units can be set:




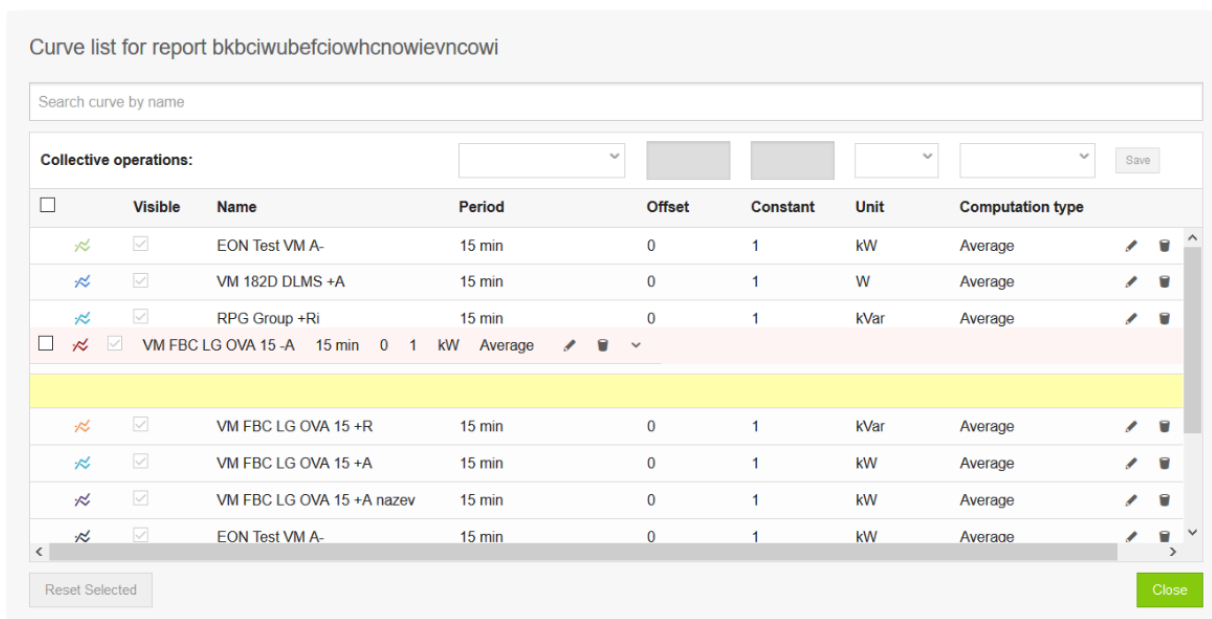
- Computation Type for Load Profiles, the following computations can be set:



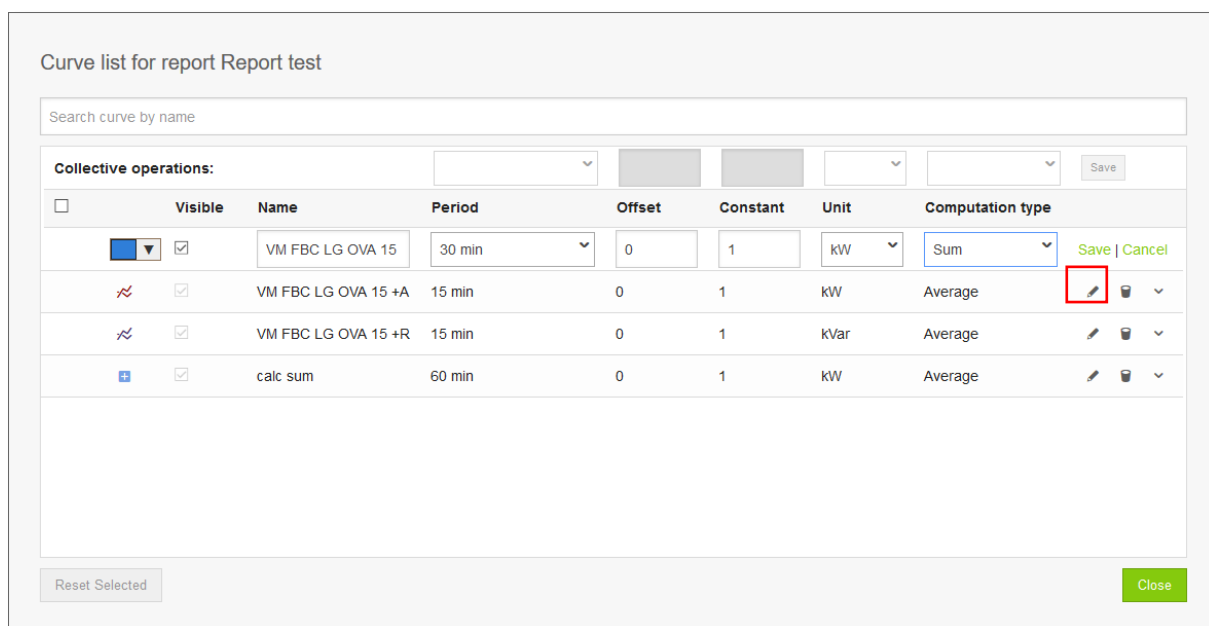
- Computation Type for billing values, the following computation can be set:



- Delete of a curve, by clicking on the icon  on the right side of the required curve
- Change of a curve's place in the table. To do this drag the curve you want to move and drop it in the right place of the curve settings table



To edit settings for one curve, click on the pencil icon located next to the desired curve. After that curve settings can be changed.



To save changes made for the curve, click on **Save**.

There is also possibility to set changes for more than one curve at once. The user has to only check the checkbox in the first column, for the required curves or to check all curves, check the checkbox located in the upper left corner. Next, in the row with Collective operations, set the parameters for an offset, a constant, a period or a computation type and click the **Save** button.

Curve list for report Report test

Search curve by name

Collective operations: 60 min [ ] [ ] [ ] [ ] Save

<input checked="" type="checkbox"/>	Visible	Name	Period	Offset	Constant	Unit	Computation type	
<input checked="" type="checkbox"/>		VM FBC LG OVA 15 -A	30 min	0	1	kW	Sum	
<input checked="" type="checkbox"/>		VM FBC LG OVA 15 +A	15 min	0	1	kW	Average	
<input checked="" type="checkbox"/>		VM FBC LG OVA 15 +R	15 min	0	1	kVar	Average	
<input checked="" type="checkbox"/>		calc sum	60 min	0	1	kW	Average	

Reset Selected Close

To check the original values of the curve, click an arrow at the end of the line. Then you will see original values.

Curve list for report Report test

Search curve by name

Collective operations: [ ] [ ] [ ] [ ] Save

<input type="checkbox"/>	Visible	Name	Period	Offset	Constant	Unit	Computation type	
<input type="checkbox"/>		VM FBC LG OVA 15 -A	60 min	0	1	kW	Sum	
		<b>Source value:</b> VM FBC LG OVA 15 -A	15 min	0	1	kW	Average	
<input type="checkbox"/>		VM FBC LG OVA 15 +A	60 min	0	1	kW	Average	
<input type="checkbox"/>		VM FBC LG OVA 15 +R	60 min	0	1	kVar	Average	
<input type="checkbox"/>		calc sum	60 min	0	1	kW	Average	

Reset Selected Close

To reset settings of curve(s), select the required curve(s) and click **Reset Selected** button in the lower left corner. The settings for the selected curves will be restored to their original state.

Before:



Curve list for report Report test

Search curve by name

Collective operations: [dropdown] [dropdown] [dropdown] [dropdown] [Save]

<input type="checkbox"/>	Visible	Name	Period	Offset	Constant	Unit	Computation type	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	VM FBC LG OVA 15 -A	60 min	0	1	kW	Sum	
<b>Source value:</b>		VM FBC LG OVA 15 -A	15 min	0	1	kW	Average	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	VM FBC LG OVA 15 +A	60 min	0	1	kW	Average	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	VM FBC LG OVA 15 +R	60 min	0	1	kVar	Average	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	calc sum	60 min	0	1	kW	Average	

Reset Selected Close

After:

Curve list for report Report test

Search curve by name

ive operations: [dropdown] [dropdown] [dropdown] [dropdown] [Save]

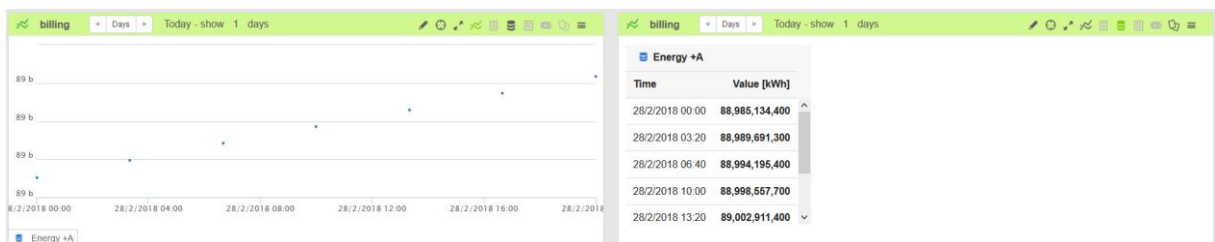
<input type="checkbox"/>	Visible	Name	Period	Offset	Constant	Unit	Computation type	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	VM FBC LG OVA 15 -A	15 min	0	1	kW	Average	
<b>Source value:</b>		VM FBC LG OVA 15 -A	15 min	0	1	kW	Average	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	VM FBC LG OVA 15 +A	15 min	0	1	kW	Average	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	VM FBC LG OVA 15 +R	15 min	0	1	kVar	Average	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	calc sum	60 min	0	1	kW	Average	

Reset Selected Close

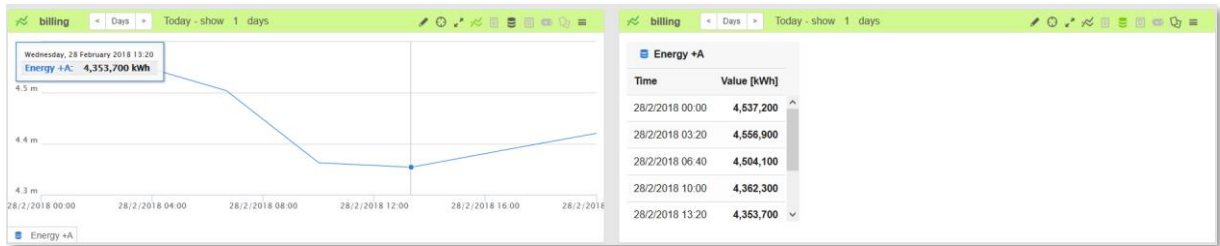
### 5.3.7 Calculation for billing values

As it was mentioned in the above subchapter, for the billing values it is possible to set two different computation types. The billing values chart is changing according to set computation type.

If Computation type is set to Cumulation, the user will see the classic view of billing values:



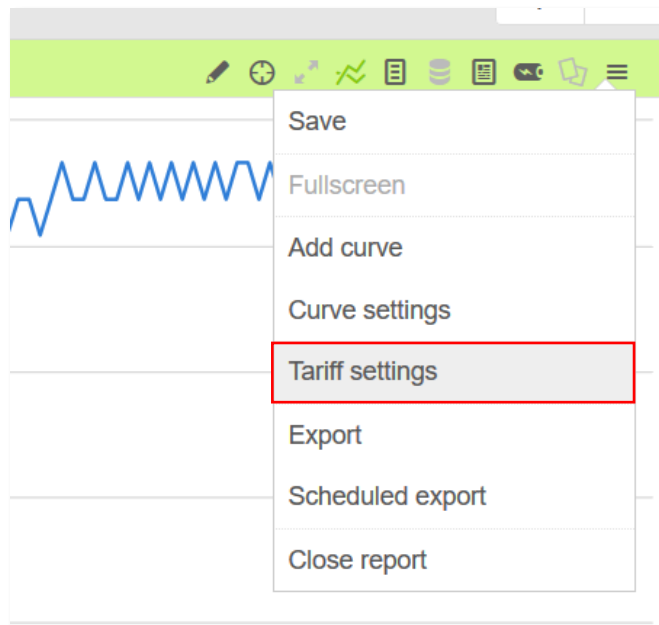
If Computation type is set to **Advance**, the graph for the billing values looks like a profile curves and data are calculated as a difference between billing values. It is the difference with the previous value (if exists, even it is out of set time range), if the value does not exist, then there is set "0".



### 5.3.8 Matching tariff in a report

The user can add to the report a tariff. It can be his own tariff or also it can be a tariff shared to the user by another user. To add a tariff to the report, match the following steps:

1. Open the menu with another option for the report and choose **Tariff settings**



2. Choose a tariff, which you want to add into a report and click **Save**

Tariff settings for report Report test

Search tariff

No tariff  
 iveta 9/1   
 Test System tariff   
 test t Shared tariff

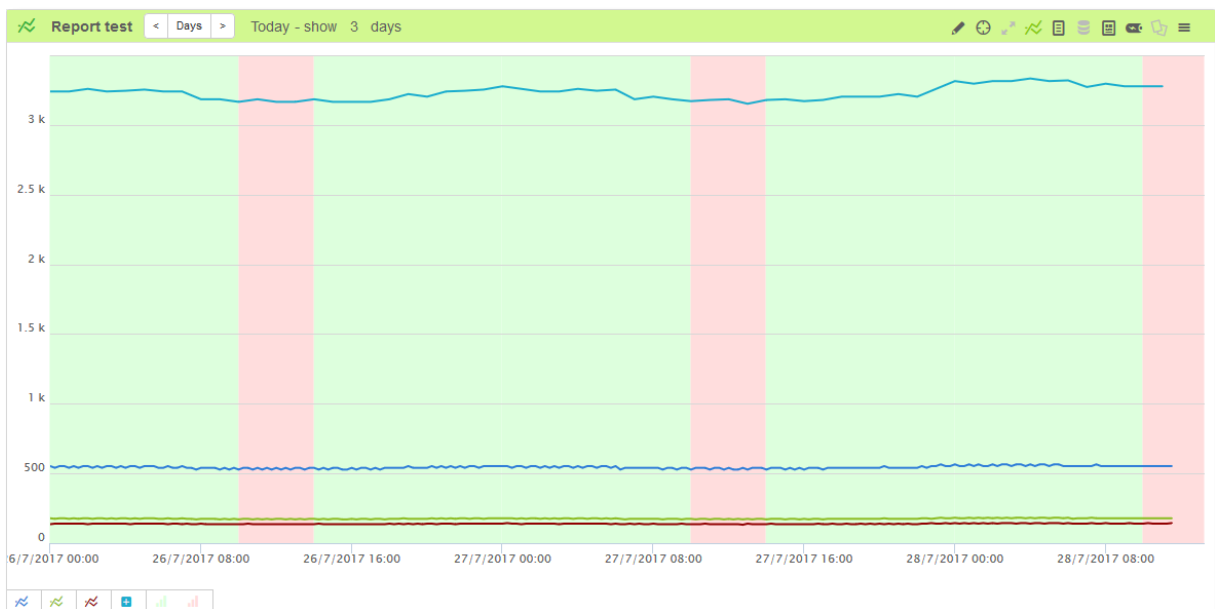
3. The tariff is successfully added to the report.

### 5.3.9 Using a tariff in a report

After adding a tariff to the report, the user can see it in a chart, in a profile table, and in a statistic table.

#### Chart

The graphical representation of measured values uses a color differentiation for parts that correspond with relevant tariff rates.



#### Profile table

The tabular array of measured values uses a color differentiation for individual lines according to tariffs matched with the report.

Time	Tariff	Value [kW]	Value [kVar]	Value [kVar]	Value [kW]
26/7/2017 00:15	NT	540.252	174.434	140	
26/7/2017 00:30	NT	552.816	178.491	140	
26/7/2017 00:45	NT	552.816	178.491	140	
26/7/2017 01:00	NT	540.252	174.434	140	3,239.987
26/7/2017 01:15	NT	552.816	178.491	140	
26/7/2017 01:30	NT	540.252	174.434	140	
26/7/2017 01:45	NT	552.816	178.491	140	
26/7/2017 02:00	NT	552.816	178.491	136	3,258.608
26/7/2017 02:15	NT	540.252	174.434	140	
26/7/2017 02:30	NT	552.816	178.491	140	
26/7/2017 02:45	NT	540.252	178.491	140	
26/7/2017 03:00	NT	552.816	174.434	140	3,239.987

### Statistics table

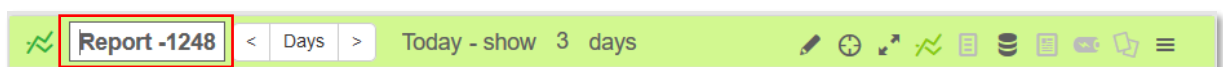
Statistics of a report are calculated for individual tariff rates of a tariff matched with a report. Statistics are calculated for a period of valid tariff rates.

Curve	Tariff	Minimum	Maximum	Total	Average
VM FBC LG OVA 15 -A		527.688 kW 26/7/2017 07:45	565.38 kW 27/7/2017 23:15	32,399.415 kWh	544.528 kW
VM FBC LG OVA 15 -A	NT	527.688 kW 26/7/2017 07:45	565.38 kW 27/7/2017 23:15	27,285.867 kWh	545.717 kW
VM FBC LG OVA 15 -A	ST	527.688 kW 26/7/2017 10:45	552.816 kW 28/7/2017 10:15	5,113.548 kWh	538.268 kW
VM FBC LG OVA 15 +A		170.378 kW 26/7/2017 07:45	182.548 kW 27/7/2017 23:15	10,460.999 kWh	175.815 kW
VM FBC LG OVA 15 +A	NT	170.378 kW 26/7/2017 07:45	182.548 kW 27/7/2017 23:15	8,810.97 kWh	176.219 kW
VM FBC LG OVA 15 +A	ST	170.378 kW 26/7/2017 10:45	178.491 kW 28/7/2017 10:15	1,650.029 kWh	173.687 kW
VM FBC LG OVA 15 +R		132 kVar 27/7/2017 12:45	144 kVar 27/7/2017 00:15	8,253 kVarh	138.706 kVar
VM FBC LG OVA 15 +R	NT	136 kVar 26/7/2017 02:00	144 kVar 27/7/2017 00:15	6,951 kVarh	139.02 kVar
VM FBC LG OVA 15 +R	ST	132 kVar 27/7/2017 12:45	144 kVar 28/7/2017 10:15	1,302 kVarh	137.053 kVar
calc sum		3,151.941 kW 27/7/2017 13:00	3,333.09 kW 28/7/2017 04:00	190,433.04 kWh	3,227.679 kW
calc sum	NT	3,165.505 kW 26/7/2017 10:00	3,333.09 kW 28/7/2017 04:00	161,762.348 kWh	3,235.247 kW
calc sum	ST	3,151.941 kW 27/7/2017 13:00	3,277.228 kW 28/7/2017 11:00	28,670.692 kWh	3,185.632 kW

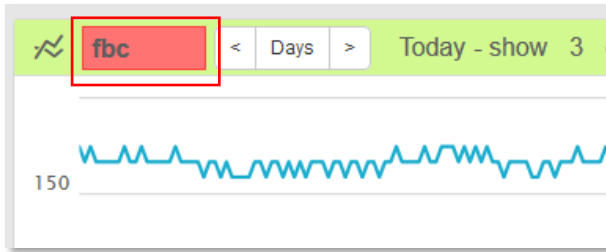
### 5.3.10 Renaming a report

The user can easily rename any required report. To rename the report perform the following steps:

1. Click to the left part of toolbar, where is the report name



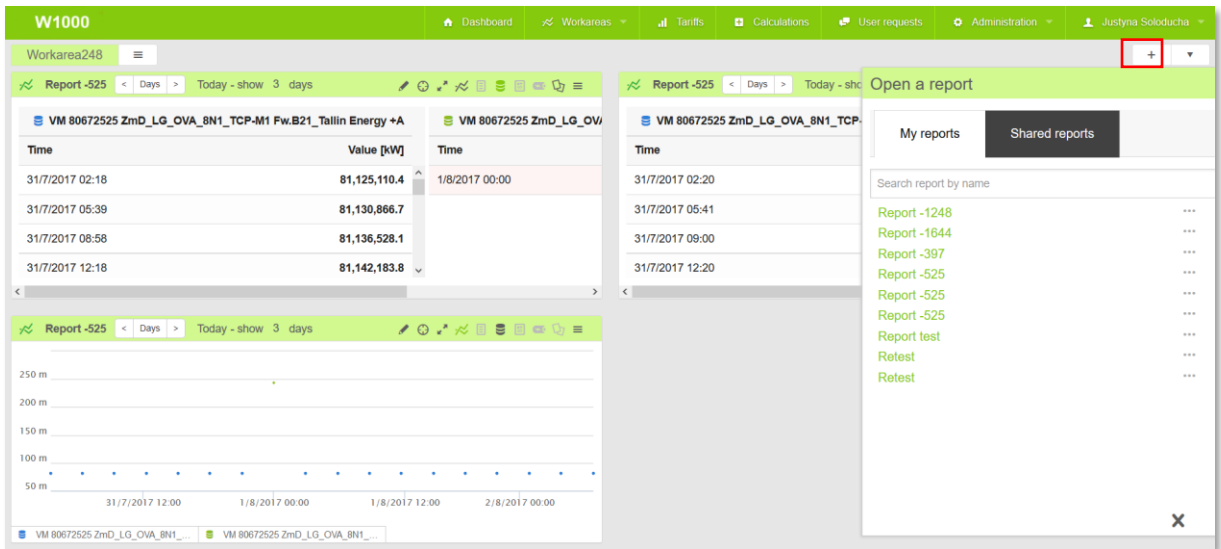
- Write a new name and press Enter. Please be aware that the report name must be unique. Otherwise you will not be able to save the report and the field with the report name will be highlighted in red.



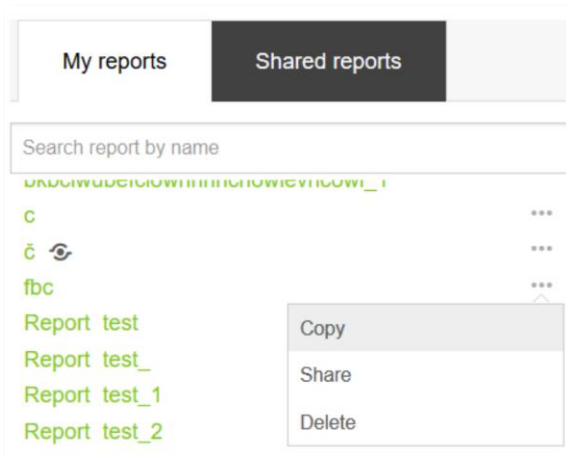
### 5.3.11 Copying a report

Each report can be copied with all set changes (in curve settings).

- To copy the report, open the report list by clicking on the arrow in the upper right corner of the workarea.



- For the required report, click on the three-dot icon



- In the menu that appears, click **Copy**

- In the popup window, enter the name for the copy and click **Create**. Please be aware that the report name must be unique. If you do not change the name, then to the report name will be automatically added a postfix **\_1, \_2** etc

**Copy report fbc?**

Name

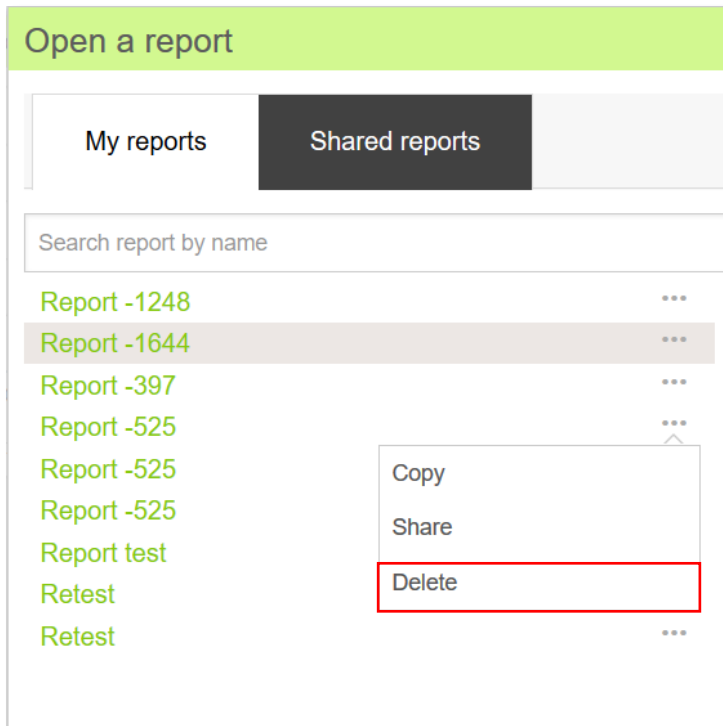
### 5.3.12 Deleting a report

Unused report can be easily removed. To delete the required report, perform the following steps:

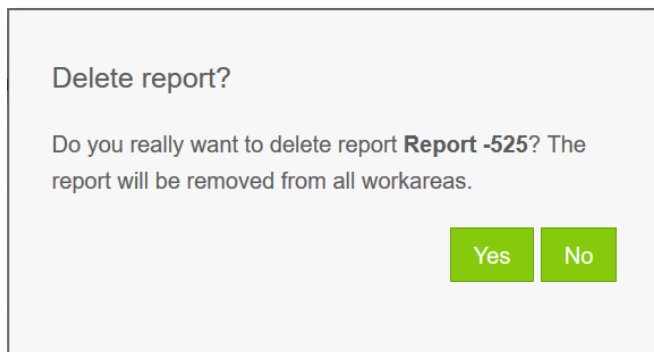
- Click on the arrow on the right part of your workarea.

The screenshot shows the W1000 software interface. At the top, there is a navigation bar with options like Dashboard, Workareas, Tariffs, Calculations, User requests, Administration, and a user profile for Justyna Solodacha. Below this, the main workarea is divided into several panels. On the left, there is a table showing energy data for 'VM 80672525 ZmD\_LG\_OVA\_8N1\_TCP-M1 Fw.B21\_Tallin Energy +A'. The table has columns for 'Time' and 'Value [kW]'. Below the table is a line graph showing energy consumption over time. On the right side, an 'Open a report' popup menu is open, displaying a list of reports under 'My reports' and 'Shared reports'. The 'My reports' section shows a search bar and a list of reports with three-dot icons next to each name, indicating that a menu can be opened for each report.

- Choose a report, which you need to delete
- Click on three-dot icon and next click **Delete** in the menu that appears



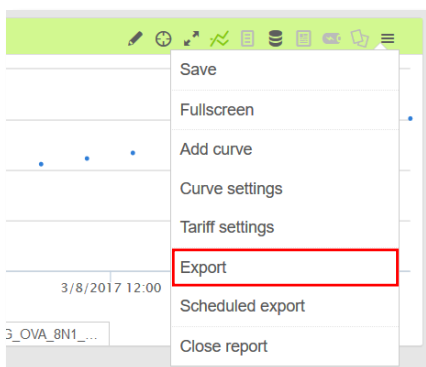
4. In popup window that appears, confirm deletion of the report



5. Your report is deleted.

### 5.3.13 Exporting a report

For each report can be exported: a chart, a profile table, a billing table and a statistic. Export is performed after clicking on the **Export** button in a menu of a report.



In popup window that appears, the user can choose what he wants to export:

**Chart** is exported as PNG picture.

One time export Report -925

**Export**

Chart

Profile table

Billing table

Statistics

**Choose file format**

PNG picture (.png)

### Export profile data

Profile table can be exported in Excel file, Comma separated values or XML file.

1. Check Profile table
2. Choose file format
3. For exporting statuses, check the checkbox **Include status**
4. Press **Export** button

One time export Report -925

**Export**

Chart

Profile table

Billing table

Statistics

**Choose file format**

Excel file (.xlsx)

Comma separated values (.csv)

XML file (.xml)

Include status

### Export Billing data

Billing table can be exported in Excel file or Comma separated values.

1. Check Billing table
2. Choose file format
3. Press **Export** button



One time export Report -925

**Export**

Chart

Profile table

Billing table

Statistics

**Choose file format**

Excel file (.xlsx)

Comma separated values (.csv)

### Export Statistic data

Statistic table can be exported in Excel file or Comma separated values.

1. Check Statistics
2. Choose file format
3. Press **Export** button

One time export Report -925

**Export**

Chart

Profile table

Billing table

Statistics

**Choose file format**

Excel file (.xlsx)

Comma separated values (.csv)

### 5.3.14 Scheduled export

Export of a report can be scheduled. To open the scheduled export, click Scheduled export in the menu of the required report. In the window that appears, a name of your report is already prefilled. The user has to check the checkbox **Enable export**, otherwise the export will not be executed.

To set the scheduled export, perform the following steps:

1. Check the checkbox **Enable export**
2. Check just what you want to export: chart, profile table, billing table, statistics

3. Choose a file format
4. Select when you need to send the export (how often)
5. Click on **Save** for saving a scheduled export or **Send** for sending export (the export will be sent but not saved)

### Scheduled export

Email subject

Enable export

Export  Chart  Profile table  Billing table  Statistics

Choose file format

Excel file (.xlsx)  
 Comma separated values (.csv)  
 XML file (.xml)  
 PNG picture (.png)

Send export

Daily export data for  last days

Weekly export data for last week on  at  :

Monthly export data for  on



This module depend on the license. On customer request L+G can turned on or off the module.

### 5.3.15 Calculating Power Factor

Power factor is available only if active and reactive profiles are added to the report. Otherwise it will not be possible to create power factor.



To add a new power factor, click on the icon in the toolbar.

After that in the report window appears a table for adding a new power factor where the user has to click **Add power factor**:

Report -397 < Days > Today - show 3 days

Active component	Reactive component	cosφ	tanφ	Status
+ Add power factor				






In window that appears choose the required active and reactive component and click **Create**:

### Power Factor

Active component

Reactive component

The newly created power factor appears in the table.

Active component	Reactive component	cos $\phi$	tan $\phi$	Status
 VM FBC LG OVA 15 +A	 VM FBC LG OVA 15 +R	0.785	0.789	W  
 Add power factor				

The user can:

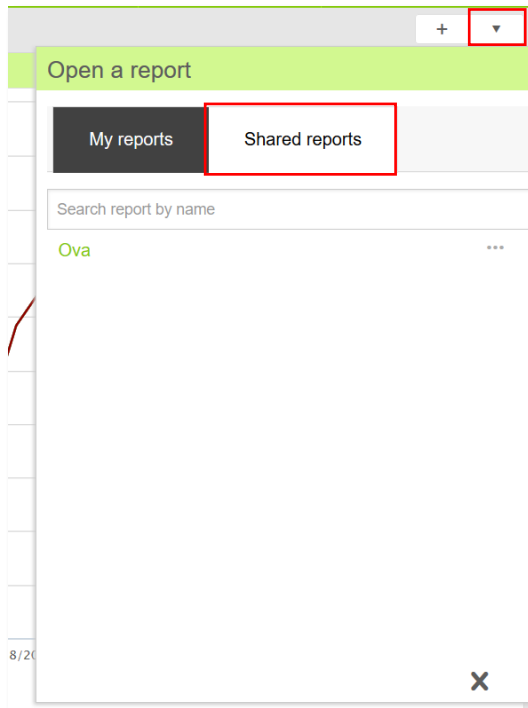
- Add another power factor
- Edit existing power factor, by clicking on the pen icon
- Delete existing power factor, by clicking on the trash icon

### 5.3.16 Sharing a report

The user has ability to share the reports, and the user can also handle reports that are shared to him by another user.

#### 5.3.16.1 Sharing report by another user

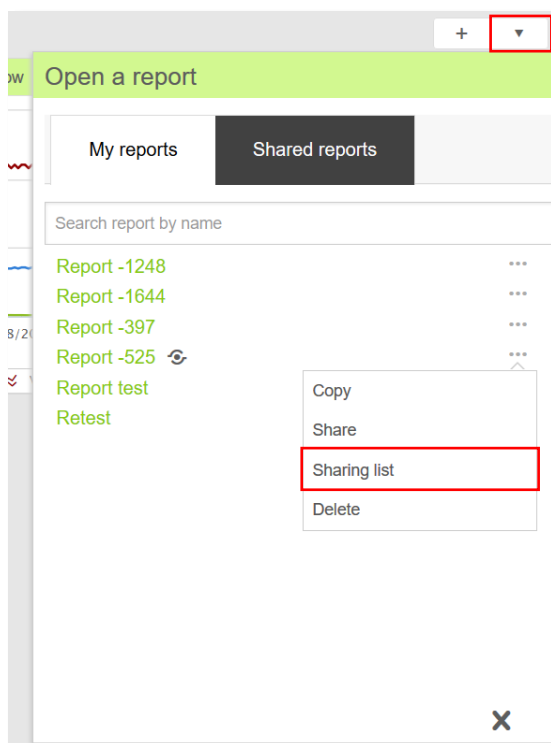
The report will be shared with all set settings and all added curves. All reports shared to the user appear in tab **Shared reports**:



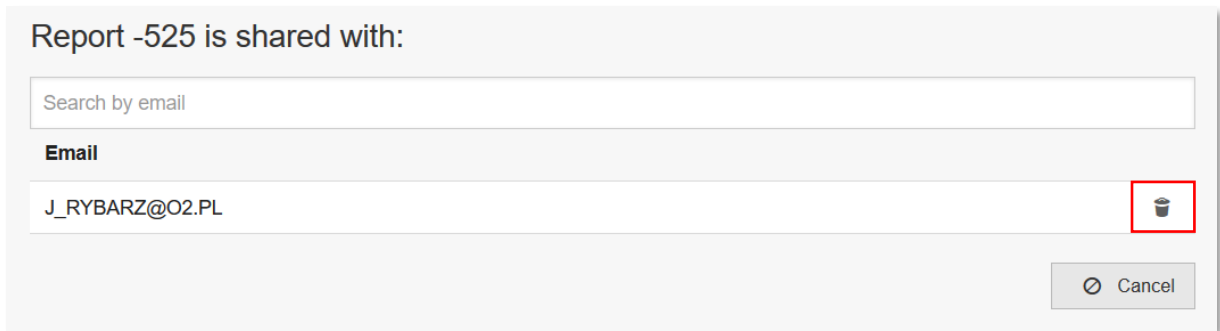
The user can search for the shared reports by entering the name of the report or part of the name in the search field. Shared report can be easily removed by clicking on the three-dot icon next to the report, and clicking **Delete** in the menu that appears.

### 5.3.16.2 Sharing report to another user

Next to the shared report, an icon appears, which allows easier identification of the report. One report can be shared with more than one user. To check which users have shared the report, open the **Sharing list**:

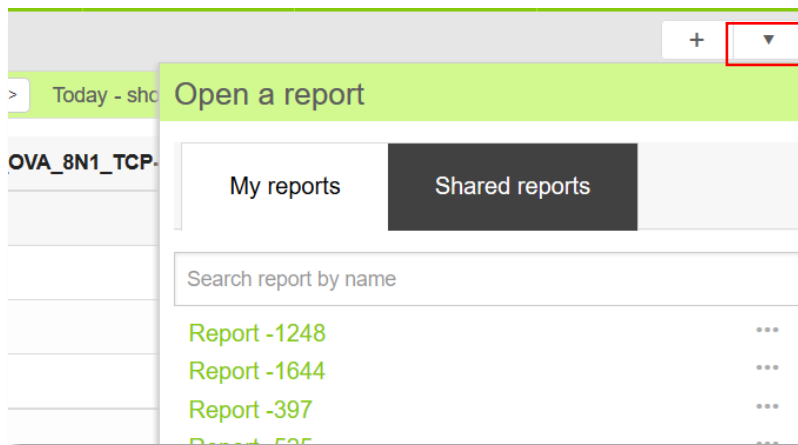


In the popup window, the user can see all users who have access to the report and here it is possible to remove sharing by clicking on the trash icon:

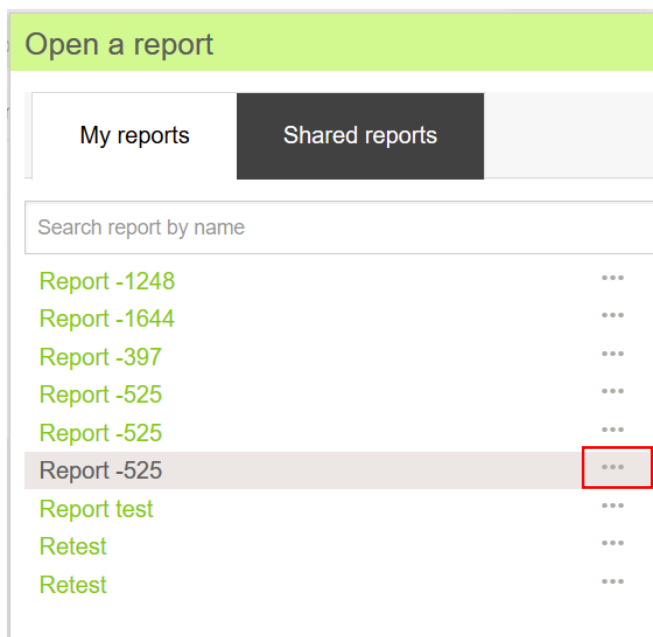


To share the report to another user, perform the following steps:

1. Click on the arrow in the upper right corner of the page, to open the list of reports

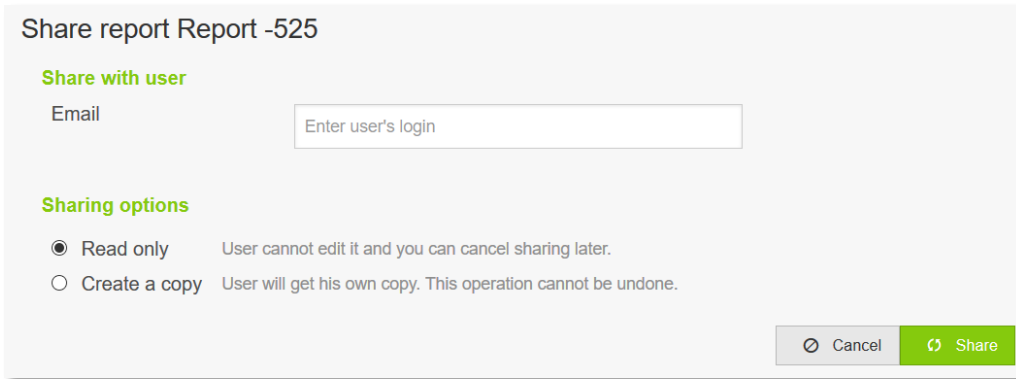


2. For the report you want to share, click on the three-dot icon



3. In the menu choose **Share**
4. In the popup window that appears:
  - Enter the login of the user to whom you want to share the report

- Choose sharing options: **Read only** or **Create and copy**



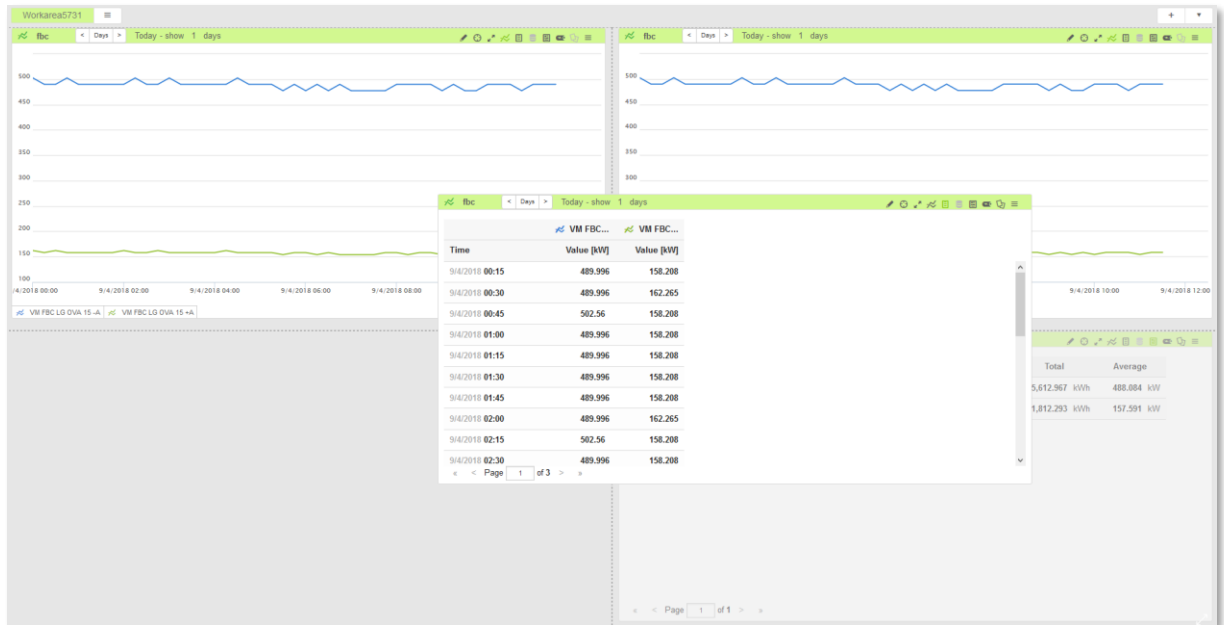
5. Click **Share**

### 5.3.17 Changing the arrangement of the opened reports

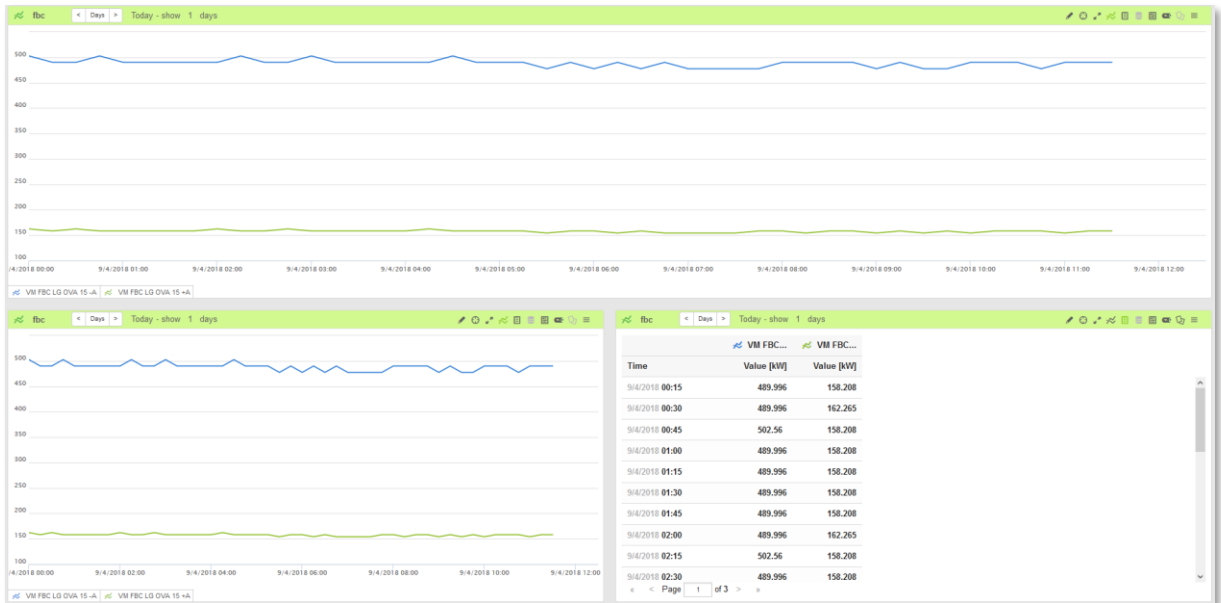
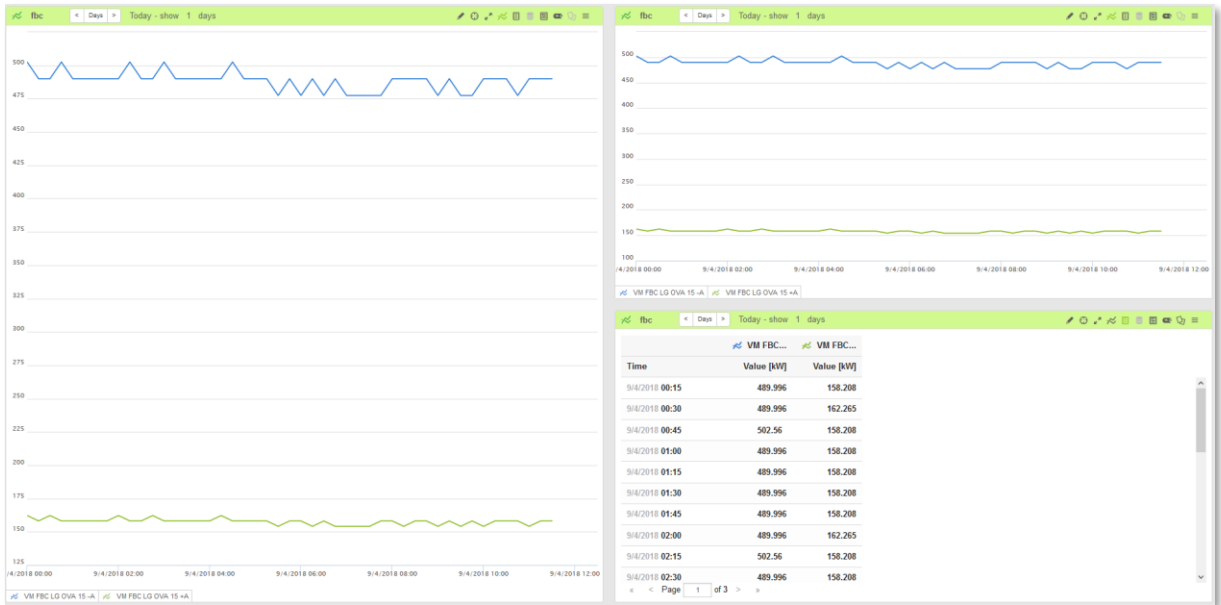
In workarea, the user has possibility to change the arrangement of the opened reports. Also based on the distribution of reports and available empty space in workarea, the size window is automatically changed. Maximally only 4 reports can be opened in the workarea.

There are following possibilities:

1. Four reports opened. The user can change the arrangement of the report by using drag and drop function. Drag the report, move on the required place and then drop.



2. Three or two opened reports. When the report is on the left side of the workarea and under or next to the report is empty space then the report is automatically enlarged.



In case two opened reports, when they are located on the right side of the page then their size is not changed.



3. One opened report. When only one report is opened, then it is in full screen mode.



## 6 Tariffs

Tariff determines the charging of the energy consumption in various time zones. The Tariffs module is designed for user's defining tariffs and daily tariff schedules.

To open the tariffs module, click on **Tariffs** located in the main toolbar:



Tariffs consist of following sections:

- Tariffs
- Shared tariffs
- System tariffs
- Tariff daily schedules

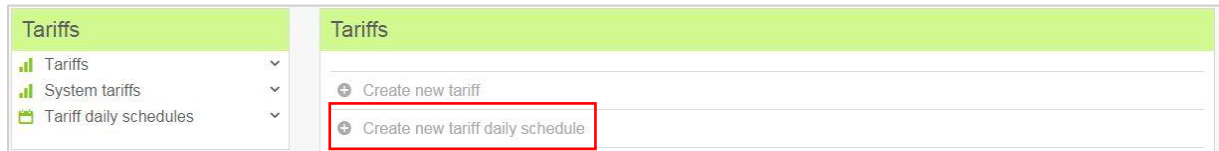
### Operations with tariffs

- Creating tariffs
- Changing tariffs
- Deleting tariffs
- Copying tariffs
- Sharing tariffs

## 6.1 Creating new tariff daily schedules

New daily schedules show decomposition of hours throughout the day. To define new tariff daily schedule, perform the following steps:

1. Click on the **Create new tariff daily schedule** button in the toolbar. This type of tariff deal with daily timetable (of tariff).



2. A window with a new daily tariff schedule opens. In this window fill in the requested information about tariff, like name and note.
3. The schedule is defined by **rules** that include the change of **tariff/charge**. Each new schedule consists of a breakpoint at 00:00; this breakpoint cannot be removed, and its time cannot be changed. It is only possible to change its tariff rate. Operations with breakpoints are available at the **Add rule** tab.

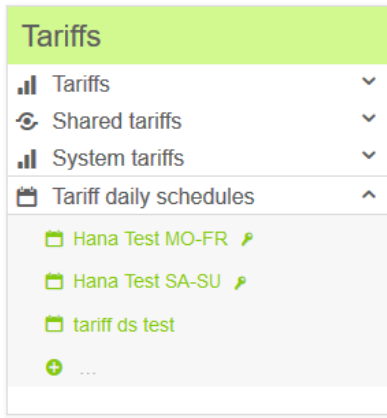
Tariff daily schedule rules		
00:00	NT	
<input type="text" value="09:00"/>	ST	
<input type="text" value="15:00"/>	NT	
<input type="text" value="22:00"/>	VT	
<input type="button" value="+ Add rule..."/>		
		<input type="button" value="Cancel"/> <input type="button" value="Create"/>

4. To add next rule, click on grey icon
  - a. In the new line, select the time of the breakpoint and its tariff rate
  - b. To modify an existing breakpoint just click on the hour or the tariff rate and change what you need
  - c. To remove an existing breakpoint, click on **the trash icon**
5. To create the schedule, click on the **Create** button

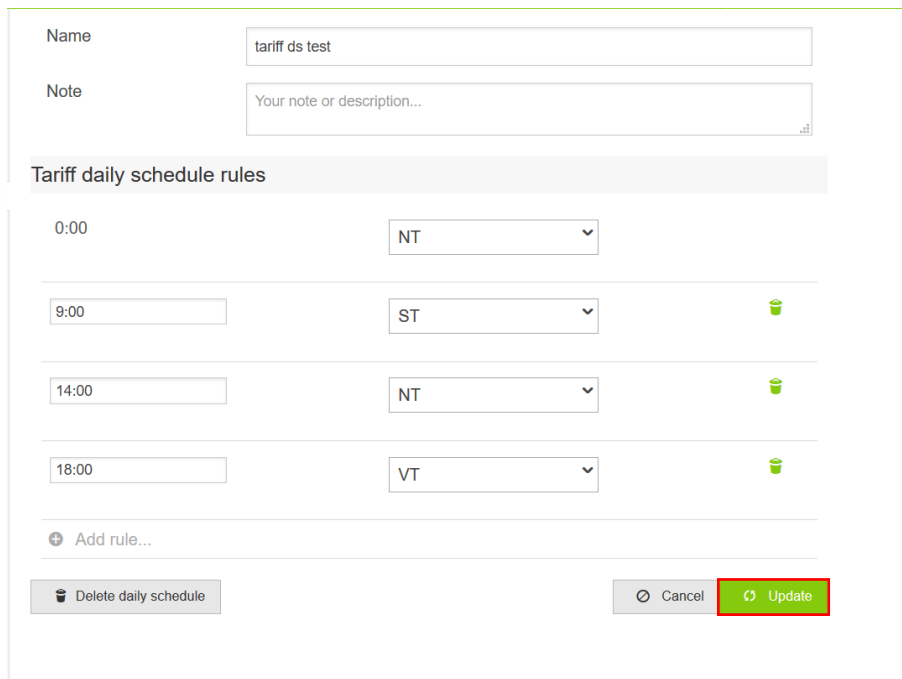
## 6.2 Editing a tariff daily schedule

Tariff daily schedules created by the user can be easily edit. Tariff daily schedules assigned to the user are in read only mode, so they cannot be edited. To edit the schedule, perform the following steps:

1. Click on the required schedule in toolbar for Tariff daily schedules



2. This will open the schedule and it can be edited in the same way as when creating it
3. Click on the **Update** button

A screenshot of a form for editing a tariff daily schedule. The form has a 'Name' field containing 'tariff ds test' and a 'Note' field with the placeholder text 'Your note or description...'. Below these is a section titled 'Tariff daily schedule rules' containing a table of rules. The table has three columns: 'Time', 'Rate', and 'Action'. The first row has '0:00' in the Time column, 'NT' in the Rate column, and no action. The second row has '9:00' in the Time column, 'ST' in the Rate column, and a trash icon in the Action column. The third row has '14:00' in the Time column, 'NT' in the Rate column, and a trash icon in the Action column. The fourth row has '18:00' in the Time column, 'VT' in the Rate column, and a trash icon in the Action column. Below the table is an 'Add rule...' button. At the bottom of the form are three buttons: 'Delete daily schedule', 'Cancel', and 'Update' (which is highlighted with a red border).

### 6.3 Deleting a tariff daily schedule

To delete a tariff daily schedule, perform these steps:

1. Click on the required schedule in toolbar for Tariff daily schedules
2. This will open the schedule and it can be deleted using the button **Delete daily schedule**

Tariff daily schedule rules		
0:00	NT	
9:00	ST	
14:00	NT	
18:00	VT	

[+ Add rule...](#)

[Delete daily schedule](#) [Cancel](#) [Update](#)

3. In the dialog window that appears, confirm the deletion.

**Delete tariff daily schedule?**

Do you really want to delete tariff daily schedule tariff ds test?

[Yes](#) [No](#)

4. If the daily tariff schedule is used in a tariff, the application informs you about this fact and the schedule will not be deleted. Otherwise, the schedule will be deleted.

Tariff daily schedule couldn't be deleted because is being used in a tariff.

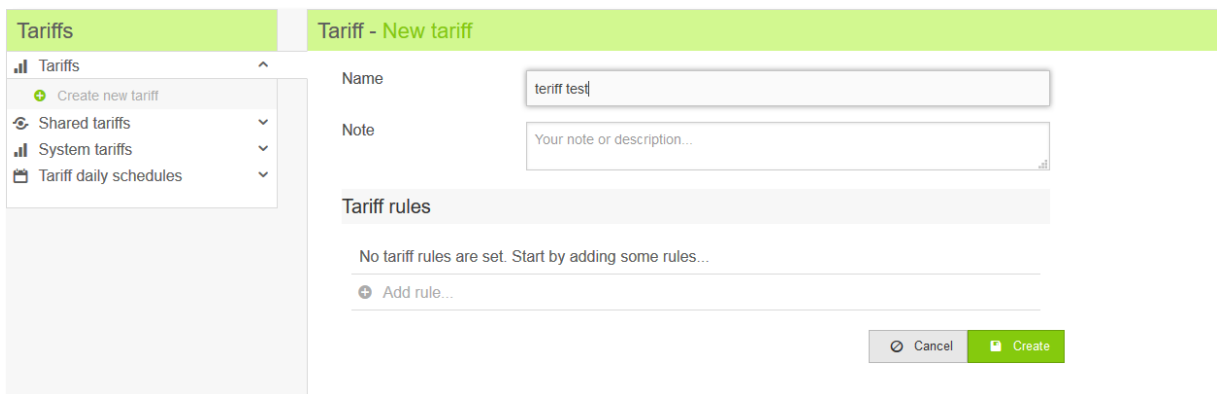
## 6.4 Creating a new tariff

The users define their own tariffs within this module. The standard version of Tariff's module is designed to define daily tariff schedules and tariffs themselves.

1. Click on **Create new tariff** button in the toolbar



2. A window with a new empty tariff opens. Fill in the requested information about the tariff, like name and note.



3. To add rule, click on the icon **Add rule**
4. The tariff definition is created by matching individual daily tariff schedules (from now on simply schedules) with specific days.
5. When adding a **rule**, you can choose days, holidays, whole year, winter or summer time, to start a new rule.

Add rule

Days of week

Monday  Tuesday  Wednesday  Thursday

Friday  Saturday  Sunday

Specific holidays

Floating holidays

**Daylight saving time settings**

Whole year  Winter time  Summer time

6. For each rule, the user should select a pre-arranged schedule

Tariff - New tariff

Name

Note

Tariff rules






Monday Tuesday Wednesday Thursday Friday	Whole year	<input type="text" value="Hana Test MO-FR"/>	<input type="button" value="Delete"/>
--	------------	--	---------------------------------------

7. When the tariff rules are already adjusted, just click **Create**

## 6.5 Editing a tariffs

The user can easily edit his tariff. Bellow can be found steps descriptions:

1. Click on your tariff in toolbar **Tariffs**
2. This will open the tariff and it can be edited in the same way as when creating it. You can add new rule, delete existing one or choose another tariff daily schedule

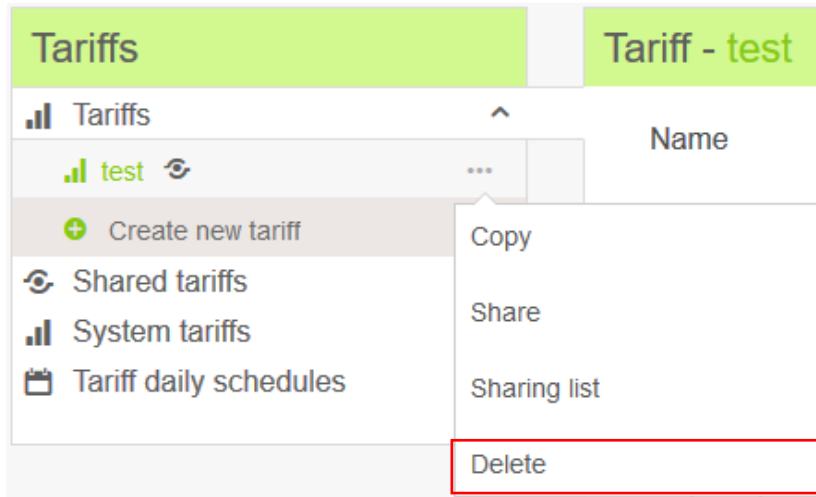
Tariff rules			
Monday Tuesday Wednesday Thursday Friday	Whole year	Work day	
Saturday Sunday	Whole year	weekend tarif	
<a href="#">+ Add rule...</a>			
 Delete tariff		 Cancel	 Update

3. To save changes, click **Update**

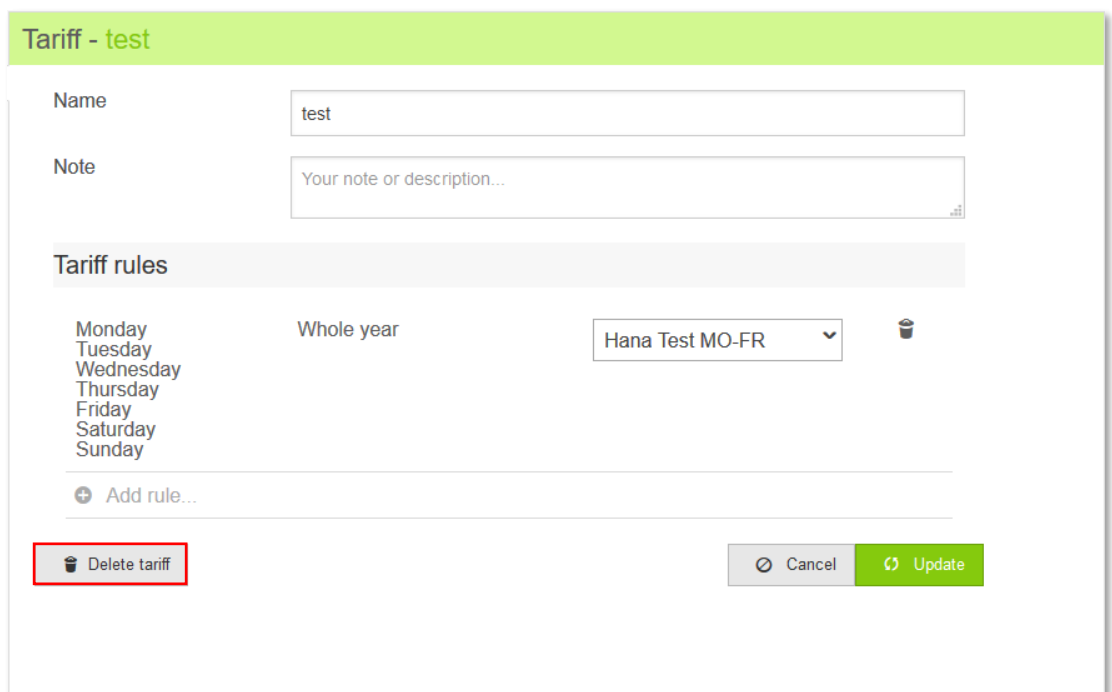
## 6.6 Deleting a tariff

The user can delete any tariff which is not assigned to the report. Those tariffs must be first removed from the report. Also, tariff shared to another user cannot be removed. First the user must remove sharing of this tariff. To delete tariff, perform bellow steps:

1. Expand the tariffs menu
2. Tariff can be deleted in two ways:
  - a. Next to the required tariff, click on the three-dot icon and in the menu, that appears choose **Delete**

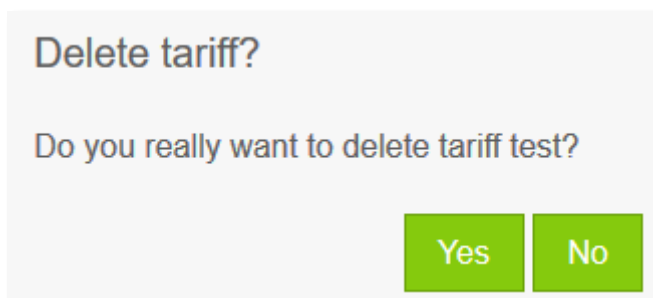


- b. Open the tariff by clicking on it and next click the **Delete tariff** button



3. In the dialog window that appears, confirm the deletion.





4. The tariff is deleted successfully, but there can be two cases when the tariff cannot be deleted:

- the tariff is used in a report

Tariff couldn't be deleted because is being used in a report.

- the tariff is shared to another user

Tariff couldn't be deleted because is shared with another user

## 6.7 Sharing a tariff

The user can share his own tariffs to another user. Also, the user can work with tariffs shared to him by other users.

There are two sharing options:

- Read only
- Create a copy

### Read only

Tariffs shared with this option, cannot be change by the user. It can be only viewed and used in the report.

### Create a copy

Tariff shared with this option, appears in the regular Tariffs tab. The user can copy, delete or share this tariff.

### 6.7.1 Sharing tariff to another user

To share the tariff to another user, perform the following steps:

1. Expand the tariffs menu
2. Click on the three-dot icon next to the tariff, the user wants to share



3. In the menu that appears choose **Share**
4. In the dialog window that appears enter the login name of **the user who are to be shared the tariff**, and choose the sharing options: **Read only** or **Create and Copy**

Share tariff test

**Share with user**

Email

**Sharing options**

Read only    User cannot edit it and you can cancel sharing later.

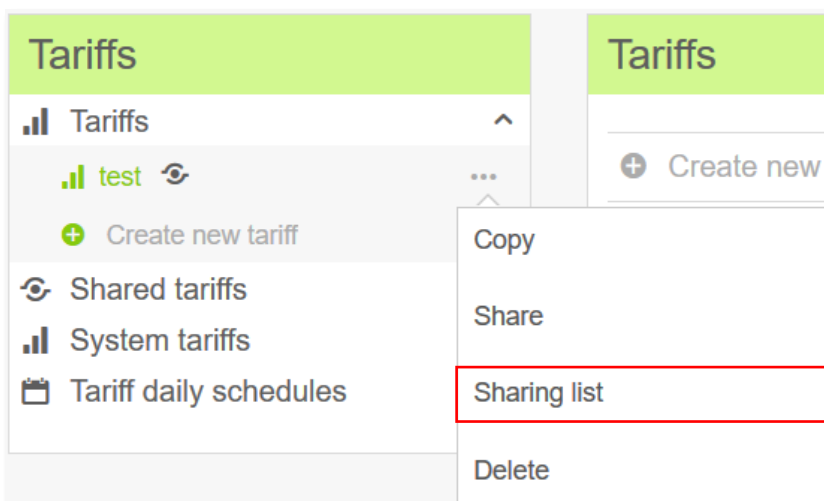
Create a copy    User will get his own copy. This operation cannot be undone.

5. Next click **Share**

Next to the shared tariff will appear an icon, to inform the user that this tariff is shared.



The user can also check to which user the tariff is already shared. After clicking on the three-dot icon, choose **Sharing list** in the menu that appears:



In the dialog window, the user can see the list of users that already have shared the specific tariff. Also, in this window it is possible to remove sharing for the individual user by clicking on the trash

icon:

test is shared with:

Search by email

**Email**

J\_RYBARZ@O2.PL

Cancel

### 6.7.2 Sharing tariff by another user

The tariff will be shared with all set rules, and daily tariff schedules used in this tariff will be also shared. All tariffs shared to the user appear in tab **Shared tariffs**:

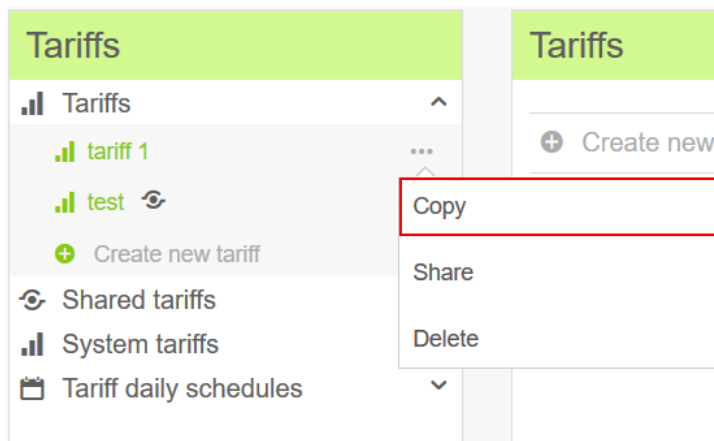


Shared tariff can be easily removed by clicking on the three-dot icon next to the tariff, and clicking **Delete** in the menu that appears.

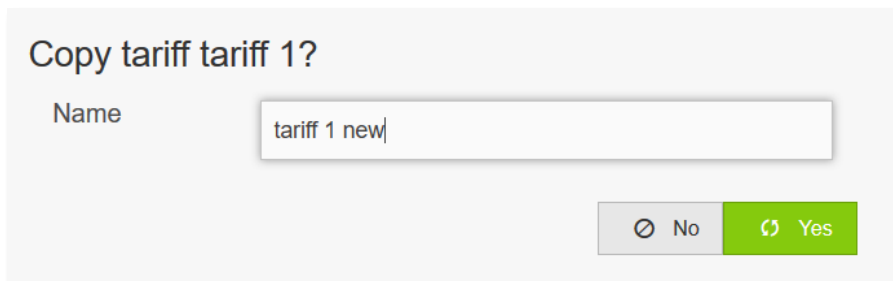
## 6.8 Copying a tariff

Each tariff can be copied as many time as it is needed. To copy the tariff, perform the following steps:

1. Extract the Tariffs tab
2. Click on the three-dot icon next to the required tariff
3. In the menu that appears click **Copy**



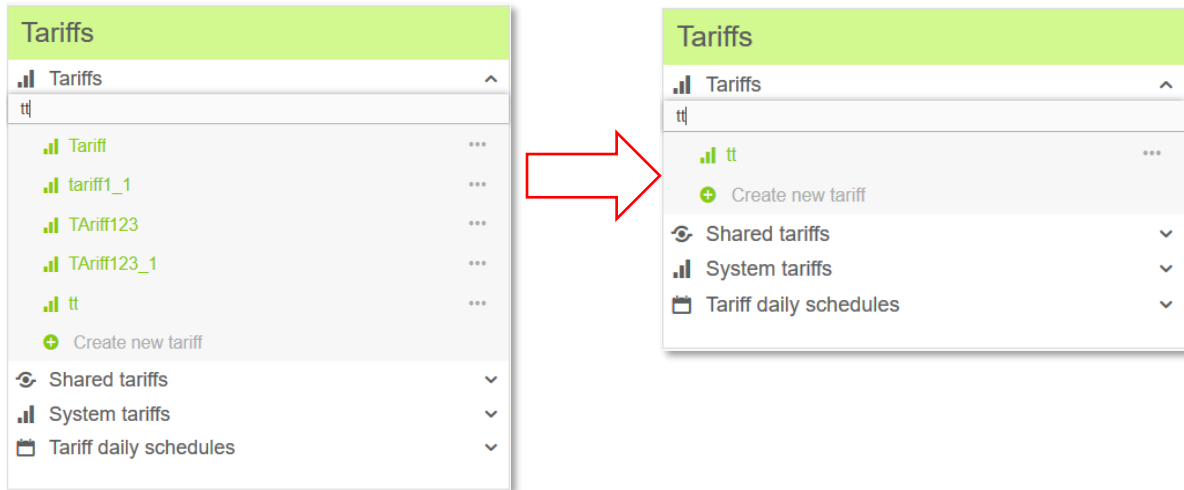
4. In the dialog window enter the name for the new, copied tariff and click **Yes** to confirm copying. Please be aware that the tariff name must be unique. If you do not change the name, then to the tariff name will be automatically added a postfix `_1`, `_2` etc

A screenshot of a dialog window titled 'Copy tariff tariff 1?'. The dialog has a 'Name' label and a text input field containing 'tariff 1 new'. At the bottom right, there are two buttons: 'No' (with a grey background and a circle icon) and 'Yes' (with a green background and a checkmark icon).

## 6.9 Searching

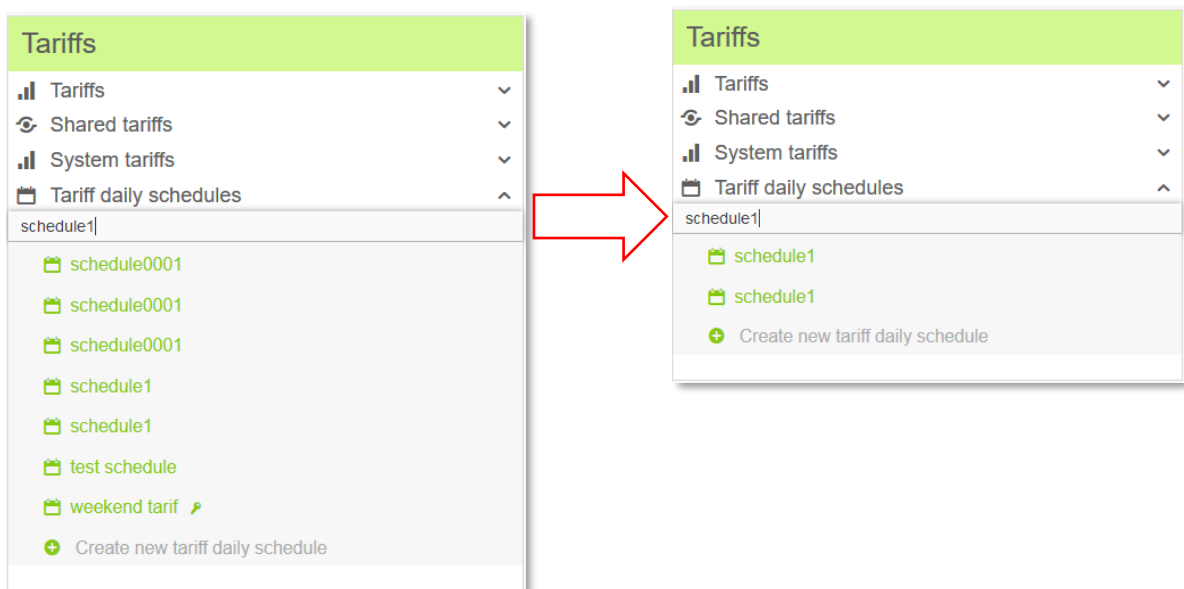
In Tariffs module, the user can search for tariffs, shared tariffs and tariff daily schedules.

To search tariff, enter the name of the tariff in the search filed under the Tariffs section and click Enter.



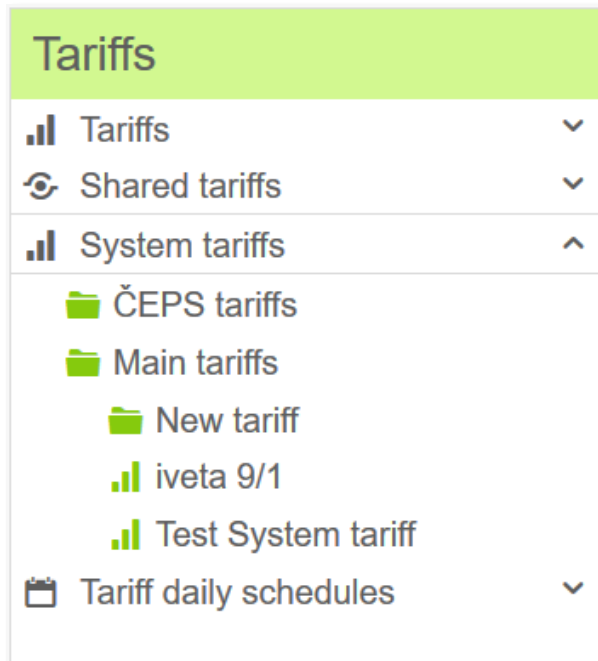
To search shared tariff, enter the name of the tariff in the search filed under the Shared Tariffs section and click Enter.

To search tariff daily schedule, enter the name of the tariff daily schedule in the search filed under the Tariff Daily Schedule section and click Enter.



## 6.10 System tariffs

System tariffs are produced in the administrator mode of the application. The administrator defines the so-called system tariffs with this module; these are tariffs which are shared with other users. System tariffs are only in **Read only** mode. System tariffs can be found after extracting the tab **System tariffs**:



## 7 Calculations

Calculation in the W1000 system is a definition of a certain formula over chosen profiles, or rather profiles and other calculations.

Creating new calculations and changing the current calculations is possible in the calculation module. Displaying the results of the calculation is possible in the Report module. To open the Calculations module, click on **Calculations** located in the main toolbar:



### Operations with calculation

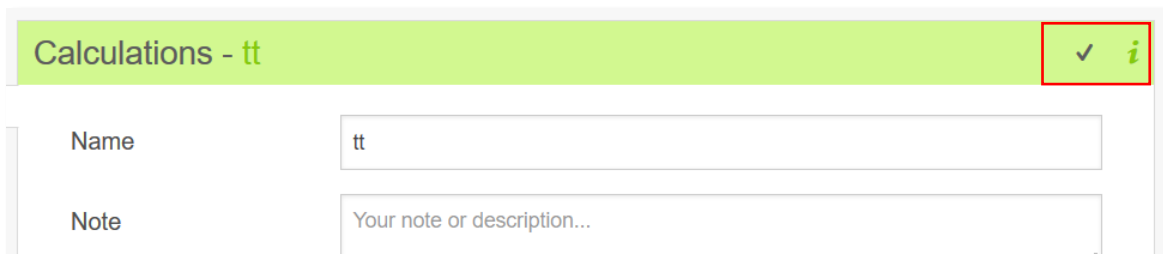
- Creating a new calculation
- Editing an existing calculation
- Copying a calculation
- Cancelling a calculation
- Deleting calculation
- Sharing calculation

### Calculations consists of following sections:

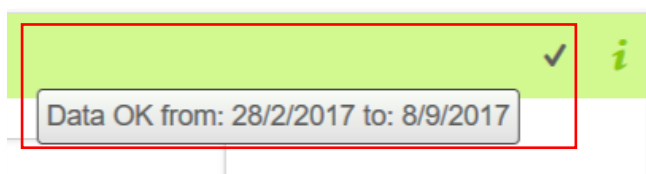
- My calculations
- Shared Calculations

### Information about calculation

In the upper right corner of each calculation can be found two icons.

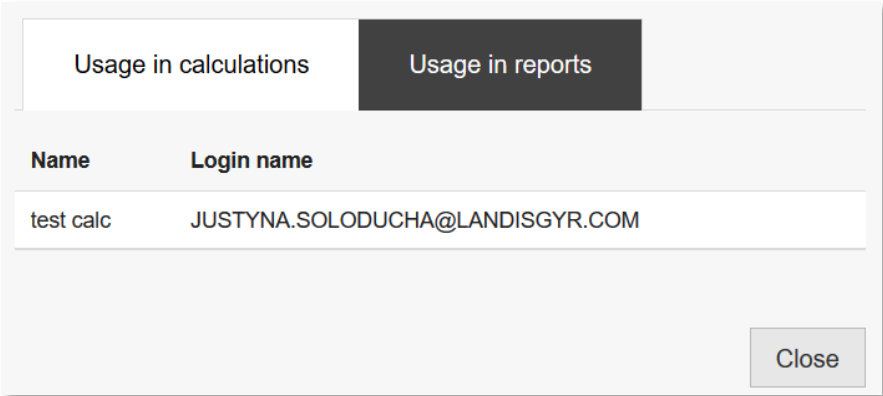


After moving mouse over the first one the user will see the time range when data are calculated successfully.





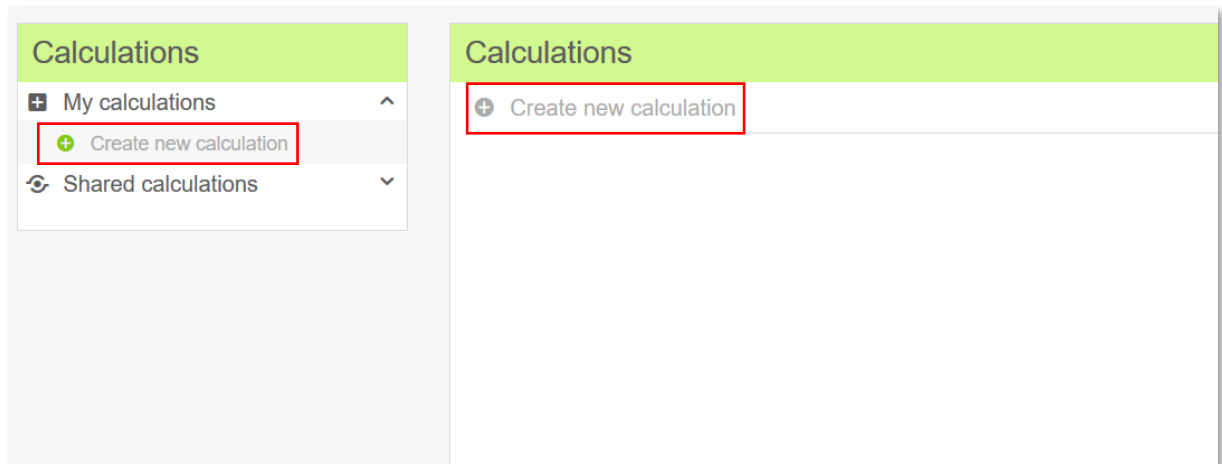
After clicking on the second icon, a popup window appears where the user can check whether the calculation is used in another calculation or report. The user can check a name of the calculation/report and login name of the user which uses the given calculation.



## 7.1 Creating a new calculation

The user can create as many calculations as he need. To create new calculation, the has to have at least one meter with load profiles. Billing values cannot be used in calculation. To create new calculation, perform the following steps:

1. Click on the **Create new calculation** button under the My calculations tab or click Create new calculations on the main page of calculation module



2. Window with an empty calculation opens

Calculations - New calculation

Name:

Note:

Period:

Medium:

Unit:

Calculation since:

Calculation expression:

Alias      Name      Computation type      Constant

+   -   \*   /   (   )   sin(x)   cos(x)   cosφ(x,y)   S(x,y)   power(x,y)   sqrt(x)   abs(x)   tan(x)   π   SUM

+ Add operand...

Cancel   Create

3. Fill in the requested information about calculation: name(mandatory) and note (optionally)
4. Select the calculation period from the **Period** drop-down list. It is possible to select a period which is equal to or greater than the least common multiple of periods of used profiles (or rather calculations).

5. Choose the medium type and the unit (unit is used for defining the unit of measurement for the calculation), in which a calculation should be calculated
6. Set the date since when the calculation should start

### Calculations - New calculation

Name	<input type="text" value="Test"/>
Note	<input style="height: 30px;" type="text" value="Test"/>
Period	<input type="text" value="15"/>
Medium	<input type="text" value="Electricity"/>
Unit	<input type="text" value="kWh"/>
Calculation since	<input type="text" value="1.8.2015"/>

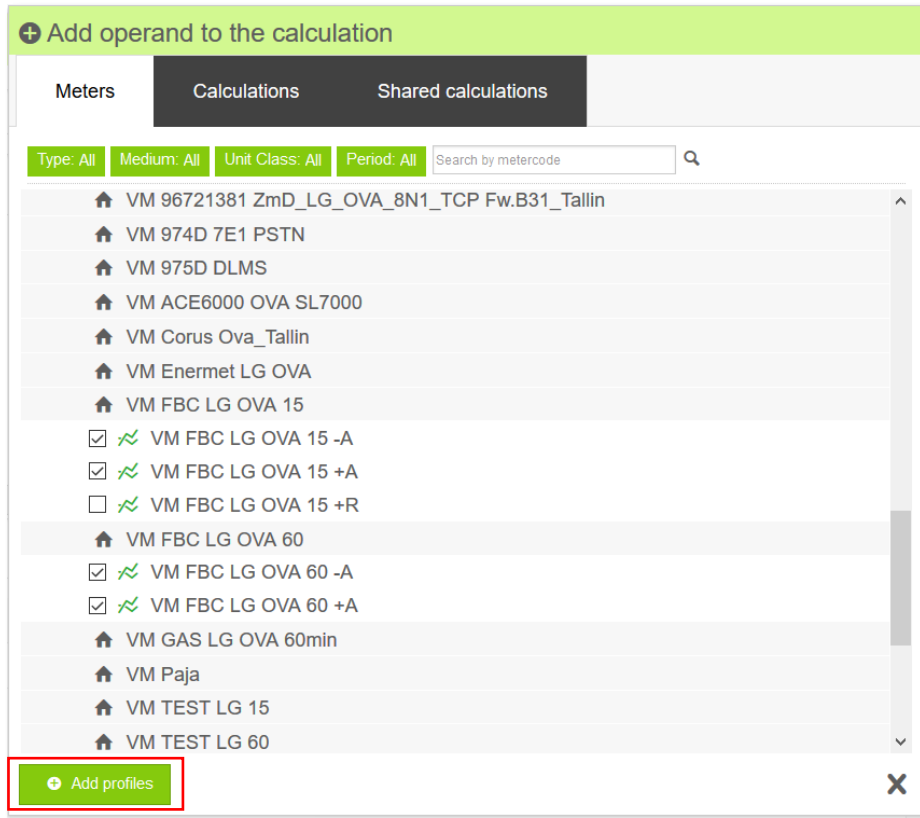
7. Before entering calculation expression, the user has to first add operand(s):

Calculation expression

+ - \* / ( )
sin(x) cos(x) cosφ(x,y) S(x,y) power(x,y) sqrt(x) abs(x) tan(x)
π SUM

Alias	Name	Computation type	Constant
+	Add operand...		

8. Choose the required operand from Meters, Calculations or Shared calculations tab and click **Add profiles/calculations** button



- Added operands are displayed in the table under the Calculation expression field. For simplification, each profile (or calculation) receives a green alias starting with “LP” (or “LC”) and supplemented by a numerical code. This alias is used to identify curves in the formula. In this table the user can modify the parameters for the operands or he can remove any of them (if not used in calculation expression).

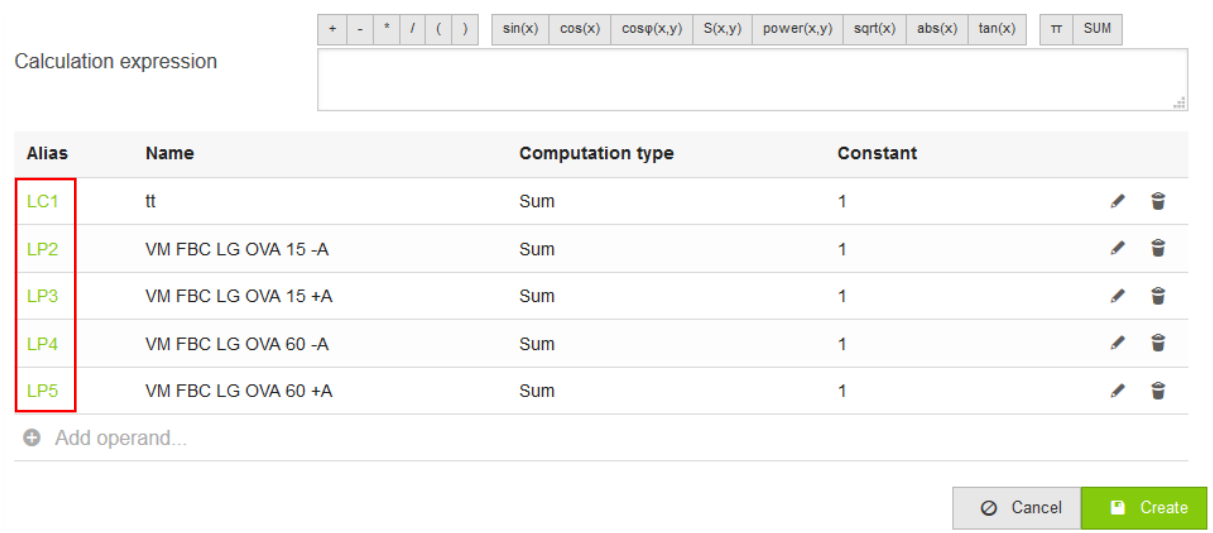
Alias	Name	Computation type	Constant	
LC1	tt	Sum	1	
LP2	VM FBC LG OVA 15 -A	Sum	1	
LP3	VM FBC LG OVA 15 +A	Sum	1	
LP4	VM FBC LG OVA 60 -A	Sum	1	
LP5	VM FBC LG OVA 60 +A	Sum	1	
+ Add operand...				
			Cancel	Create

- The basic element of the calculation is its formula. Enter the formula in the **Calculation expression** field.

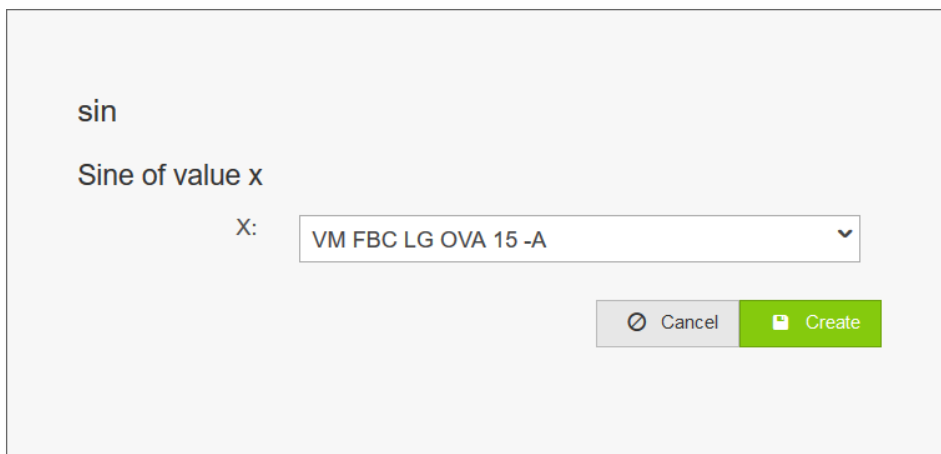
- a) The toolbar in the **Calculation expression** tab includes all the available operations that can be used in the formula. Click an item in the toolbar to add it to the formula.



- b) To add operand into the formula, click on its green alias.



- c) When clicking on one of the following operations: sin, cos, cosφ, S, power, sqrt, abs or tan, a pop-up window appears, and you need to select the operand you want to use for the selected operation.



d) It is also possible to enter the formula manually without using the toolbar.

Calculation expression:

Alias	Name	Computation type	Constant
LC1	tt	Sum	1
LP2	VM FBC LG OVA 15 -A	Sum	1
LP3	VM FBC LG OVA 15 +A	Sum	1
LP4	VM FBC LG OVA 60 -A	Sum	1
LP5	VM FBC LG OVA 60 +A	Sum	1

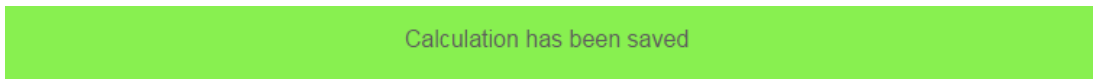
+ Add operand... Cancel Create

e) If you enter an incorrect formula, you will see this notice “**Expression is not valid**” after you click on button **Create**.

Calculation expression:

Expression is not valid

f) If you enter a correct formula, you will see the below information after creating Calculation.



11. To set the parameters of individual operand, click the edit button.

Alias	Name	Computation type	Constant
LC1	tt	Sum	1
LP2	VM FBC LG OVA 15 -A	Sum	1
LP3	VM FBC LG OVA 15 +A	Sum	1
LP4	VM FBC LG OVA 60 -A	Sum	1
LP5	VM FBC LG OVA 60 +A	Sum	1

+ Add operand...

a) The following parameters can be changed:

- **Computation type**, choose the required from drop down list
- **Constant**

Alias	Name	Computation type	Constant	
LP1	VM 182 DLMS OVA +A	Average	1	Save   Cancel









b) To save the changes, click **Save**.

Alias	Name	Computation type	Constant	
LP1	VM 182 DLMS OVA +A	Average	1	Save Cancel

c) To cancel changes, click **Cancel**.

Alias	Name	Computation type	Constant	
LP1	VM 182 DLMS OVA +A	Average	1	Save Cancel

d) To remove an operand, click on the trash icon next to the required operand.

Alias	Name	Computation type	Constant	
LP1	VM 182 DLMS OVA +A	Sum	1	 
LP2	VM 182 DLMS OVA A+ test	Sum	1	 
LP3	VM 182D DLMS +A	Sum	1	 
LP4	VM 51015100SL Temperature LP1	Sum	1	 

e) In the dialog window that appears confirm the deletion.

**Delete operand?**

Do you really want to delete operand VM 182 DLMS OVA +A?

f) If the operand is used in the formula, you will be informed about this and the curve will not be removed.



12. To save the calculation click on the **Create** button.

Alias	Name	Computation type	Constant		
LC1	tt	Sum	1		
LP2	VM FBC LG OVA 15 -A	Sum	1		
LP3	VM FBC LG OVA 15 +A	Sum	1		
LP4	VM FBC LG OVA 60 -A	Sum	1		
LP5	VM FBC LG OVA 60 +A	Sum	1		
+ Add operand...					

New created calculation appears in the menu under **My calculations**.



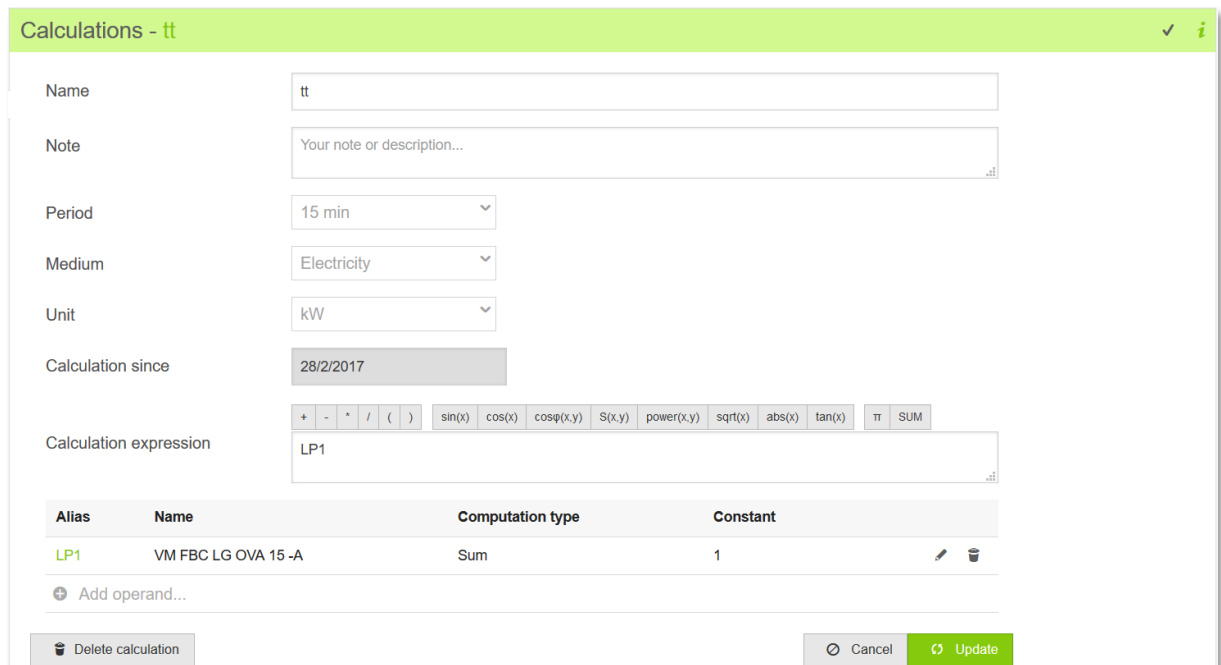
## 7.2 Editing an existing calculation

The user can easily edit any of his calculation. It is possible to change its formula or change the parameters for the operands used in this calculation.

1. To edit an existing calculation, click on the required calculation in menu **My calculations**.



2. The calculation opens and can be edited in the same way as when creating a new calculation. For instructions see subchapter [7.1](#).

A screenshot of a software interface titled "Calculations - tt". It has a green header bar with a checkmark and an information icon. The form contains several fields: "Name" (tt), "Note" (Your note or description...), "Period" (15 min), "Medium" (Electricity), "Unit" (kW), and "Calculation since" (28/2/2017). Below these is a "Calculation expression" field containing "LP1" and a toolbar with mathematical functions like sin(x), cos(x), cosp(x,y), S(x,y), power(x,y), sqrt(x), abs(x), tan(x), pi, and SUM. At the bottom, there is a table with columns "Alias", "Name", "Computation type", and "Constant".

Alias	Name	Computation type	Constant
LP1	VM FBC LG OVA 15 -A	Sum	1

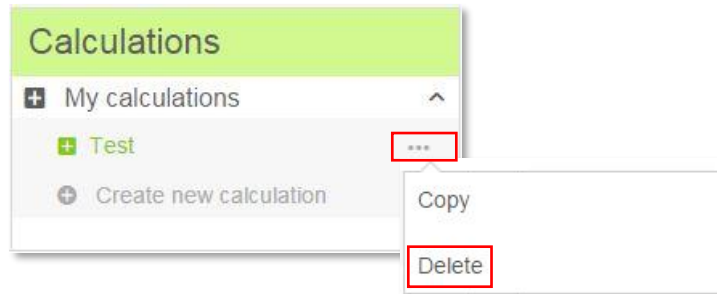
Below the table is an "Add operand..." button. At the bottom of the form are three buttons: "Delete calculation", "Cancel", and "Update".

3. After making changes, click the **Update** button to confirm.

### 7.3 Deleting a calculation

The user can delete any of his calculation. Removed calculation will also be removed from the report in which it is used.

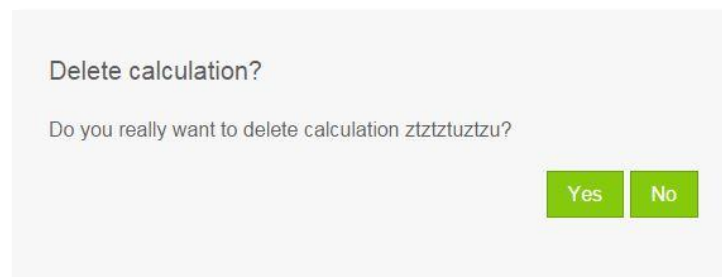
1. To delete a calculation, click on the three-dot icon located next to the required calculation in menu My Calculations. Then click **Delete** in the menu that appears.



2. Alternatively open the required calculation and click on the **Delete calculation** button located in the lower left corner of the calculation.

Alias	Name	Computation type	Constant	
LP1	VM 182 DLMS OVA +A	Sum	1	
LP2	VM 182 DLMS OVA A+ test	Sum	1	
LP3	VM 182D DLMS +A	Sum	1	
LP4	VM 51015100SL Temperature LP1	Sum	1	
+ Add operand...				
Delete calculation			Cancel  Update	

3. In the dialog that appears, click on **Yes** to confirm the deletion.



4. If the calculation is deleted correctly, you will see short message about deleting.

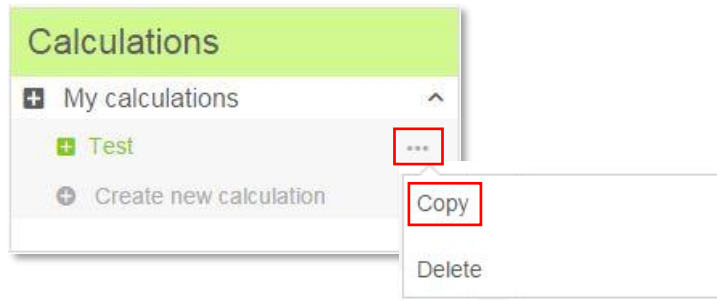
Calculation has been deleted successfully

5. If the calculation is used in another calculation or report, the application informs you about this and the calculation will not be deleted. Otherwise, the calculation will be deleted.

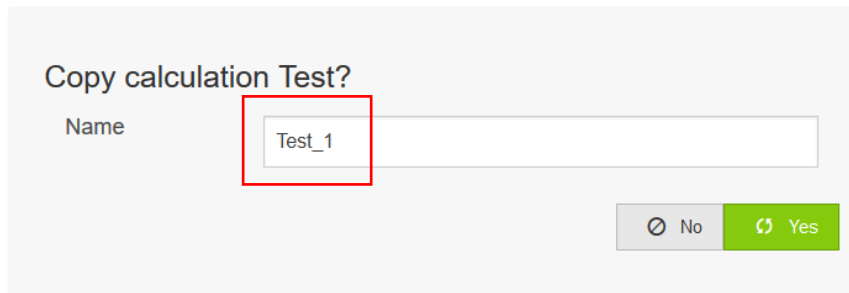
Calculation couldn't be removed because is being used in another calculation or a report

## 7.4 Copying calculations

- To copy a calculation, click the three-dot icon next to the required calculation in menu My Calculation. Next click **Copy** in the menu that appears.

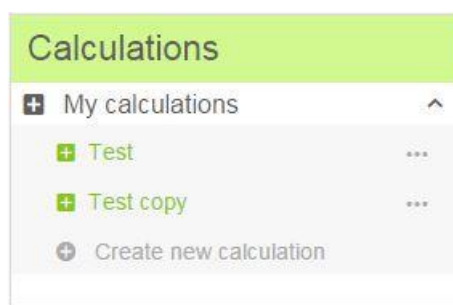
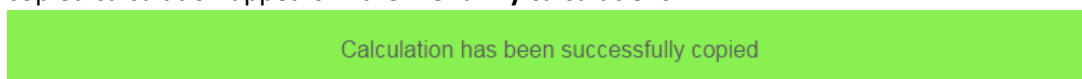


- In the popup window that appears, enter the name for the copied calculation. Please be aware that the calculation name must be unique. If you do not change the name, then to the calculation name will be automatically added a postfix `_1`, `_2` etc.



The copied calculation is calculated for the same interval of time as the original calculation.

- To confirm the copy, click **Yes**.
- If the calculation is copied correctly, you will see short message about copying and the copied calculation appears in the menu **My calculations**.



## 7.5 Sharing a calculation

The user can share his own calculations to another user. Also, the user can work with calculations shared to him by other users.

There are two sharing options:

- Read only
- Create a copy

### Read only

Calculations shared with this option, cannot be change by the user. It can be only viewed and used in the report.

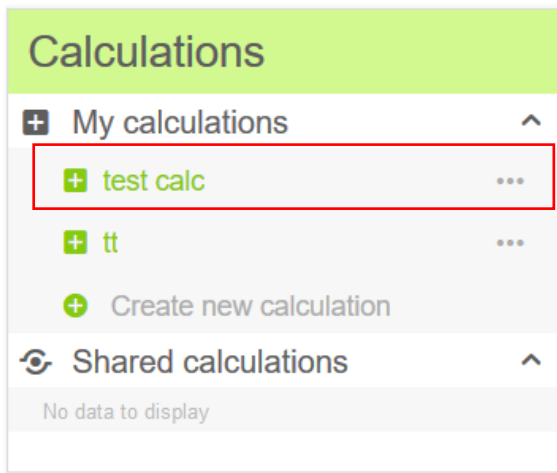
### Create a copy

Calculations shared with this option, appear in the regular Calculation tab. The user can copy, delete or share those calculations.

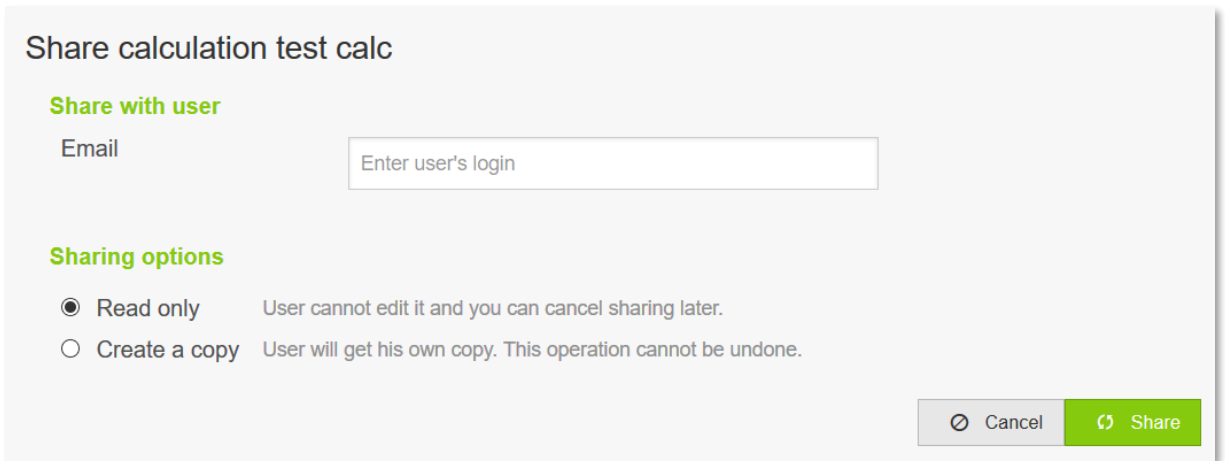
### 7.5.1 Sharing calculation to another user

To share calculation to another user, perform the following steps:

1. Expand the **My Calculations** menu
2. Click on the three-dot icon next to the calculation, you want to share



3. In the menu that appears choose **Share**
4. In the dialog window that appears enter the login of the user who you want to share the calculation with, and choose the sharing options: **Read only** or **Create and Copy**

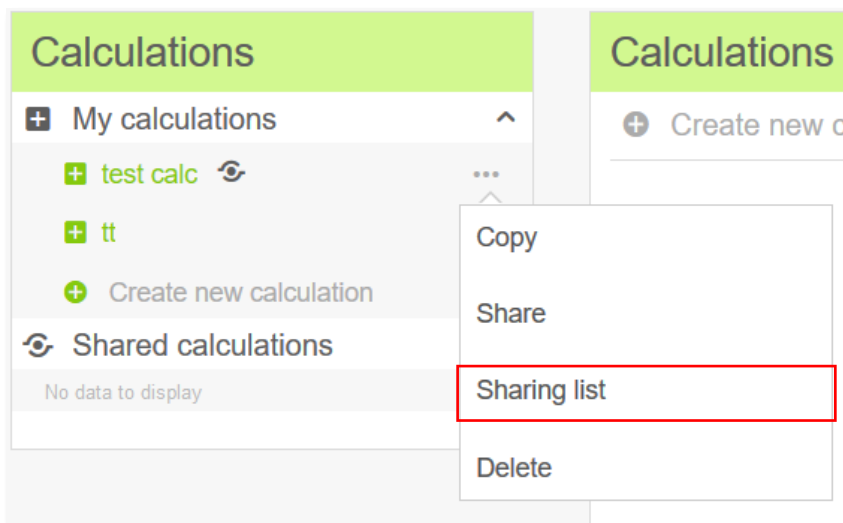


5. Next click **Share**

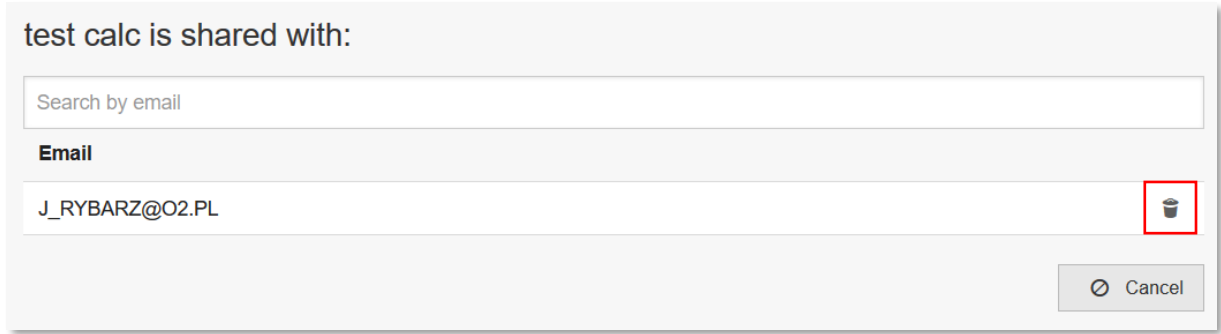
Next to the shared calculation will appear an icon, to inform the user that this calculation is shared.



The user can also check to which user the calculation is already shared. After clicking on the three-dot icon, choose **Sharing list** in the menu that appears:

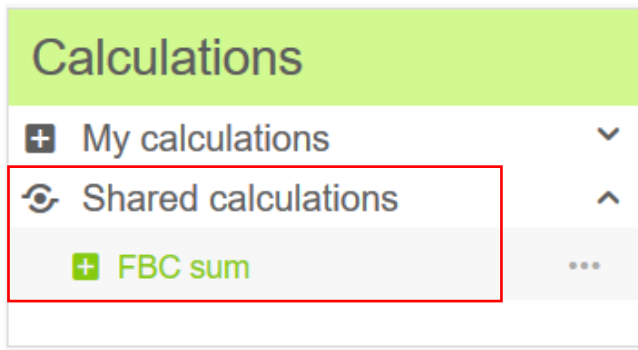


In the dialog window, the user can see the list of users that already have shared the specific calculation. Also, in this window it is possible to remove sharing for the individual user by clicking on the trash icon:

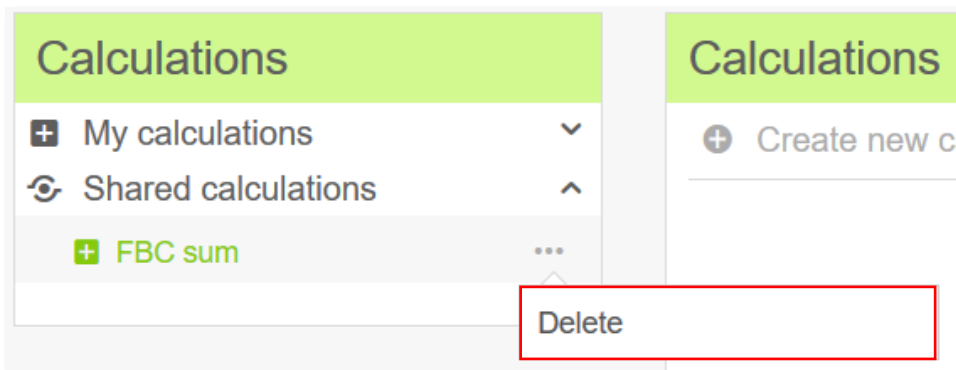


### 7.5.2 Sharing calculation by another user

The calculation will be shared with all settings. All calculation shared to the user appear in tab **Shared calculations**:



Shared calculation can be easily removed by clicking on the three-dot icon next to the calculation and clicking **Delete** in the menu that appears.



## 7.6 Using a calculation in another calculation

It is possible to add a calculation to another calculation. To add a calculation to another, perform the following steps:

1. Create a new calculation or open an existing one, to which you would like to add another calculation.

The screenshot shows a configuration window for a calculation named 'test calc'. The fields are as follows:

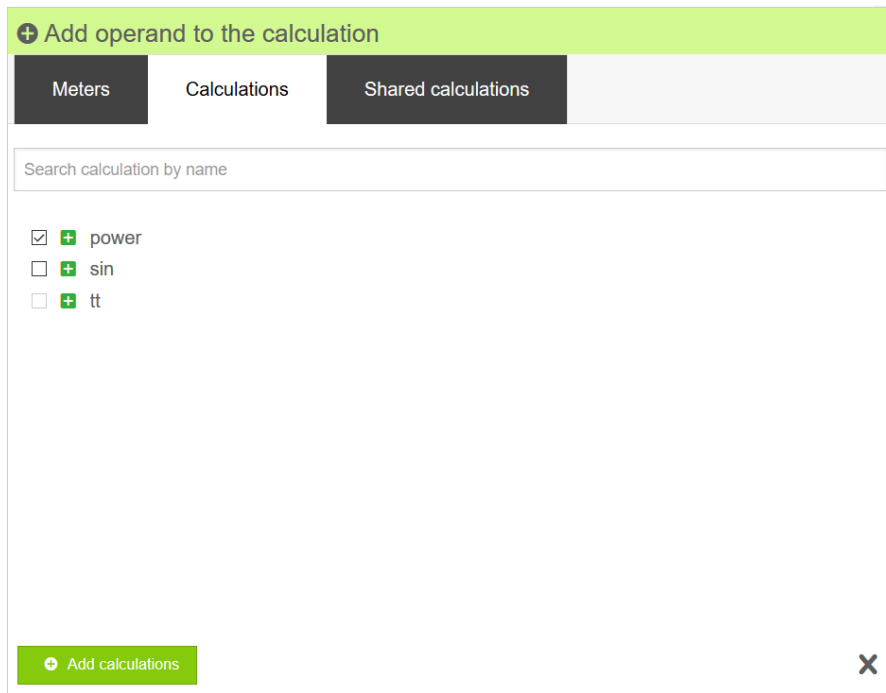
- Name: test calc
- Note: Your note or description...
- Period: 15 min
- Medium: Electricity
- Unit: kW
- Calculation since: 28/2/2017
- Calculation expression: LC1+LP2

A toolbar contains mathematical operators: +, -, \*, /, (, ), sin(x), cos(x), cosφ(x,y), S(x,y), power(x,y), sqrt(x), abs(x), tan(x), π, and SUM.

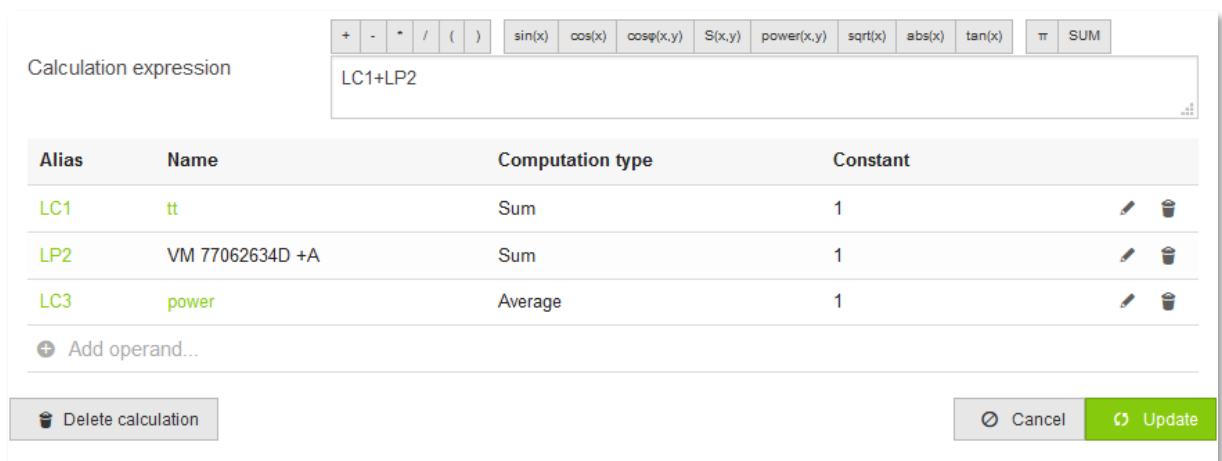
Alias	Name	Computation type	Constant	
LC1	tt	Sum	1	
LP2	VM 77062634D +A	Sum	1	

Below the table is a button labeled '+ Add operand...'. At the bottom of the window are three buttons: 'Delete calculation', 'Cancel', and 'Update'.

2. Click **Add operand**
3. In the window that appears open tab Calculations or Share calculations, choose the required calculation(s) and click **Add Calculations**



4. Now the added calculation can be used in the opened calculation.



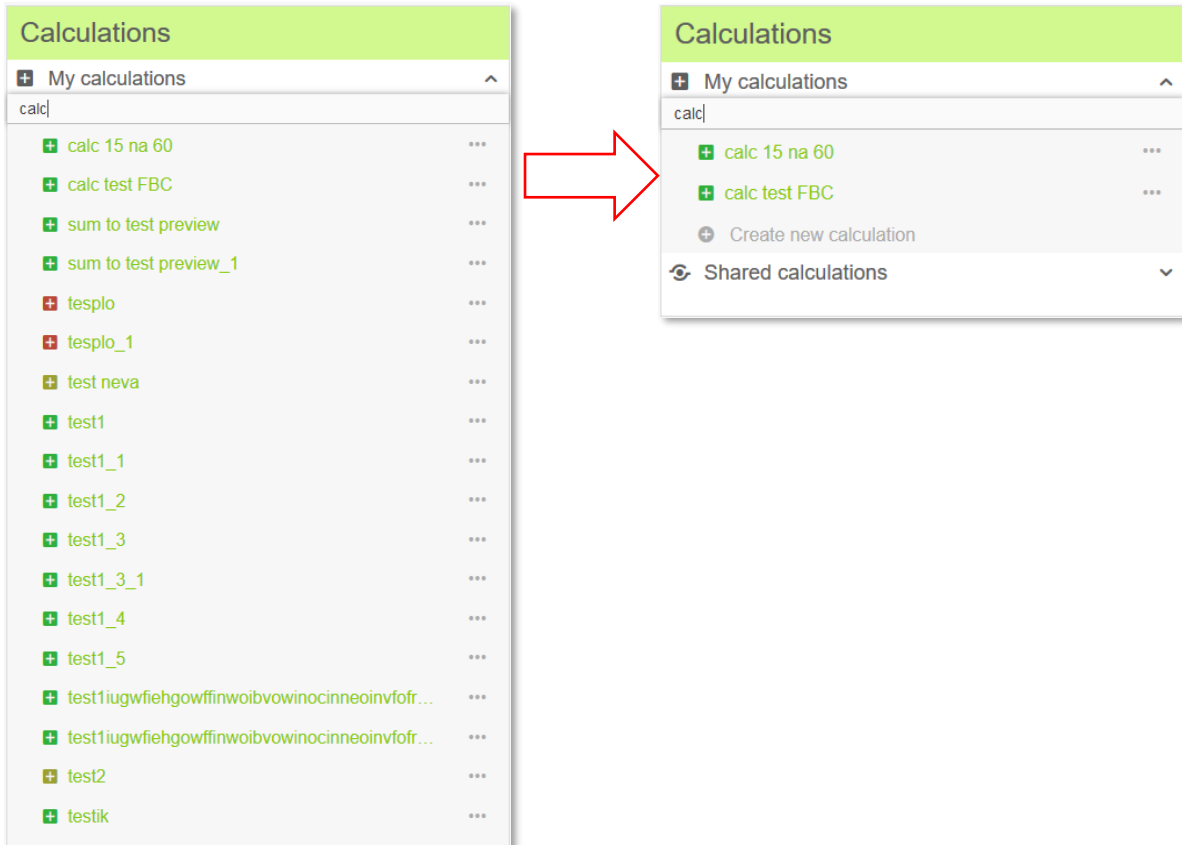
The added calculation appears as a link, after clicking on it the calculation is opened.



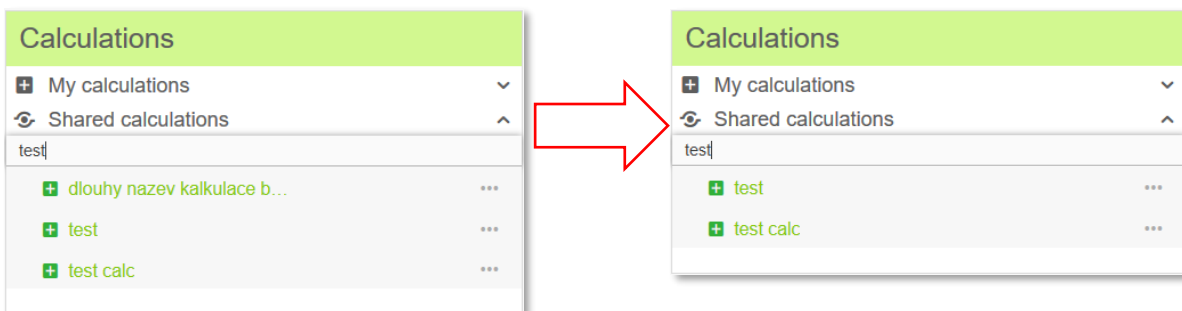
## 7.7 Searching calculation/shared calculation

In Calculation module, the user can search for calculation or for shared calculation.

To search calculation, enter the name of the calculation in the search filed under the My Calculations section and click Enter.



To search shared calculation, enter the name of the calculation in the search filed under the Shared Calculations section and click Enter.



## 8 User settings

The **User Settings** link is used for changing the user profile's default settings. It can be found after clicking on the username in the menu toolbar.

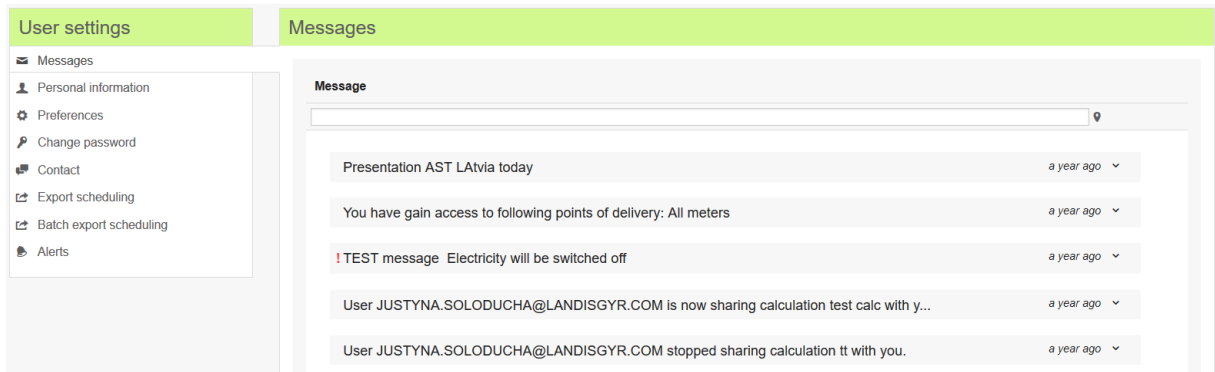


The **User settings** consists of the following sections:

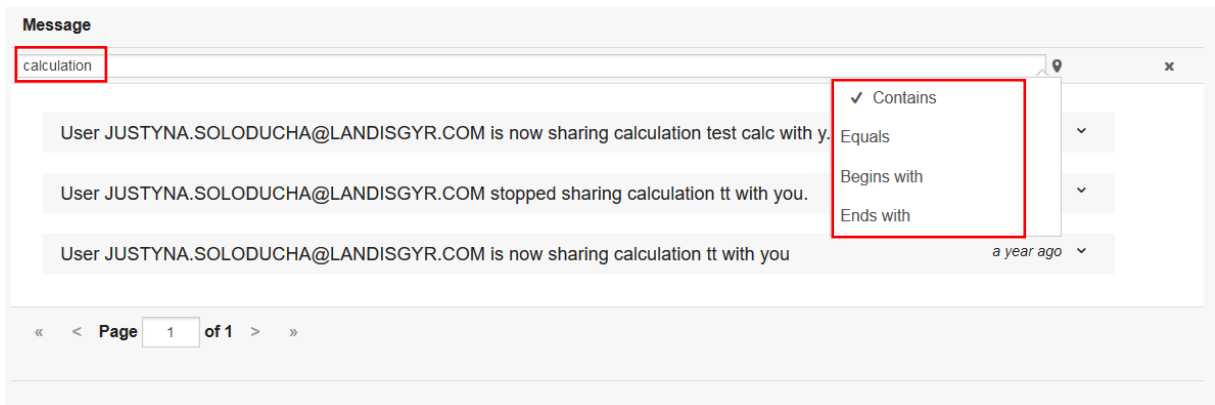
- Messages
- Personal information
- Preferences
- Change password
- Contact
- Export scheduling
- Batch export scheduling
- Alerts

## 8.1 Messages

In section **Messages** can be found all messages regarding a given user. On the Dashboard page, the user can see only unread messages but here he has a list of all messages.

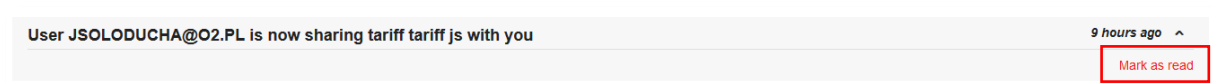


To filter the messages, set the filter settings, enter the part of the message in the field and click Enter.



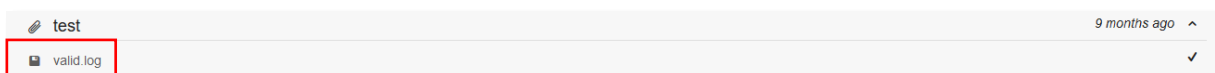
To clear the filter, click on the **X** next to the filter filed.

Unread messages are bolded. If you click on the message, you can mark it as read.



If the message contains an attachment, you can download it. After clicking on the message, you can see the attachment which is available for downloading.

Click on the attachment and open or download it.



## 8.2 Personal information

In **Personal information** can be found information about the user, as email address, First and Last name, and Phone number. All information can be easily changed. In case of changing the email address, the user will be informed about this fact. Also, this operation must be approved by the administrator.

The screenshot displays the 'Personal information' section of a user settings interface. On the left, a sidebar under 'User settings' lists options: Messages, Personal information (selected), Preferences, Change password, Contact, Export scheduling, Batch export scheduling, and Alerts. The main content area is titled 'Personal information' and contains the following fields:

- Email:** J\_RYBARZ@O2.PL
- First name:** Just
- Last name:** Yna
- Phone:** (empty field)

A note on the right side of the form reads: "We will send you email for confirmation. Email address change also has to be approved by administrator." At the bottom right, there are two buttons: a grey 'Cancel' button and a green 'Update' button.

## 8.3 Preferences

In this section can be changed the following settings:

- Default **Language** of W1000,
- **Time Zone**,
- **Shorten curve name**, to adjust the text in columns (in Profile Table)
- **Number of decimal places**, to set the maximum number in decimal places.
- **Fill decimal numbers with zeros** related with **Number of decimal places**.  
Example: Number of decimal places is set to 4. In profile table, there are data with only 2 decimal places: 587,78. So the rest will be completed with two zeros and in profile table we will see: 587,7800.
- **Default electricity time range**, to fill in a number of days that will be used as a default for opening or creating a report with electricity medium.
- **Default gas time range**, to fill in a number of days that will be used as a default for opening or creating a report with gas medium.

All saved changes will take effect on next login.

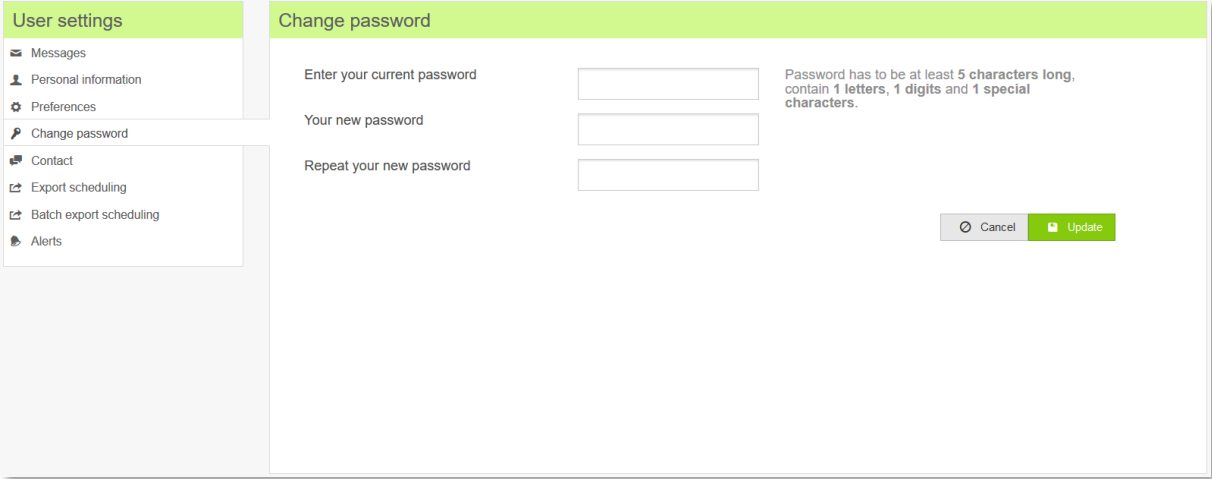
The screenshot shows the 'User settings' sidebar on the left with 'Preferences' selected. The main content area is titled 'Preferences' and contains the following settings:

- Language:** English (dropdown menu)
- Time zone:** (UTC+01:00) Belgrade, Bratislava, Budapest, Lju... (dropdown menu)
- Shorten curve name:** Do not shorten (dropdown menu)
- Number of decimal places:** 3 (input field)
- Fill decimal numbers with zeros?:**
- Default electricity time range:** 3 days. Day starts at 0:00. This is the time range that will be used as a default when you open or create a report with electricity medium
- Default gas time range:** 3 days. Day starts at 6:00. This is the time range that will be used as a default when you open or create a report with gas medium

At the bottom left, there is a warning message: **Changes will take effect on next login**. At the bottom right, there are 'Cancel' and 'Save' buttons.

### 8.4 Change password

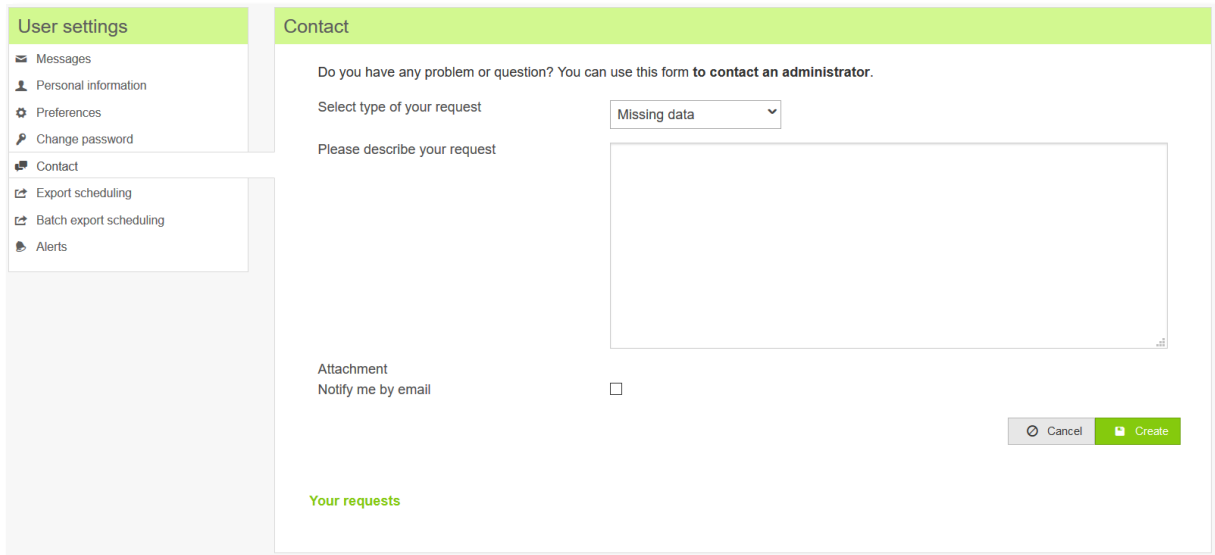
The user can easily change his password. To do this, under the **User Settings** menu, open the **Change password** tab. The new password must be consistent with the password policy.



## 8.5 Contact

If you have any questions or problem regarding missing data, you can write a message to the administrator. Choose the type of the request and describe it.

All created requests can be found in the lower part of the page: **Your requests**. There is an information about creation and closed date. After expanding the request, appears the request description and message from the administrator.



The screenshot shows a web interface with a sidebar on the left and a main content area on the right. The sidebar is titled 'User settings' and contains several menu items: Messages, Personal information, Preferences, Change password, Contact, Export scheduling, Batch export scheduling, and Alerts. The 'Contact' menu item is highlighted. The main content area is titled 'Contact' and contains the following elements:

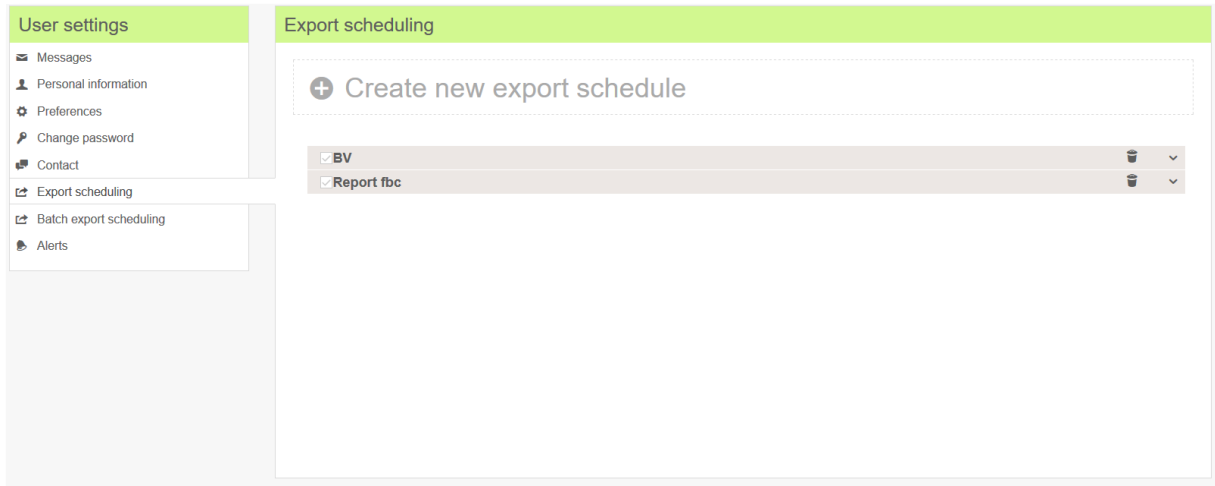
- A heading: "Do you have any problem or question? You can use this form to **contact an administrator**."
- A dropdown menu labeled "Select type of your request" with the value "Missing data" selected.
- A text input field labeled "Please describe your request".
- An "Attachment" section with a checkbox labeled "Notify me by email" which is currently unchecked.
- Two buttons at the bottom right: "Cancel" and "Create".
- A link labeled "Your requests" at the bottom left of the main content area.



This module depends on the license. On customer request, this module can be turned on or off.

## 8.6 Export scheduling

In Export scheduling tab, it is possible to plan export of data. In this field, you can see your existing export scheduling (created here or on the specific report, please see subchapter [5.3.14](#)), or you can create new export scheduling.



To create new export schedule:

1. Click on the grey link **Create new export schedule**.
2. Choose a report, you want to export
3. Enter a subject of email
4. Check the checkbox **Enable export**
5. Check just what you want to export: chart, profile table, billing table, statistics
6. Choose a file format
7. Select when you need to send the export (how often)
8. Click **Create**

Report calc tt ▾

Email subject

Enable export

Export  Chart  Profile table  Billing table  Statistics

**Choose file format**

Excel file (.xlsx)

Comma separated values (.csv)

XML file (.xml)

PNG picture (.png)

**Send export**

Daily export data for  last days

Weekly export data for last week on Monday ▾

Monthly export data for Last month ▾ on 1. ▾

} at  :

Cancel Create



### Send export Daily


In this option data will be send every day. The user only has to choose at what hour and for how many days back the data should be send.

### Send export Weekly

In this option data will be send for the last week. The user only has to choose which day of week and at what time the export should be done.

### Send export Monthly

In this option data will be send for the last or actual month. The user only has to choose which day of month and at what time the export should be done.

To delete any of existing export, the user only has to click on the trash icon  next to the required export.

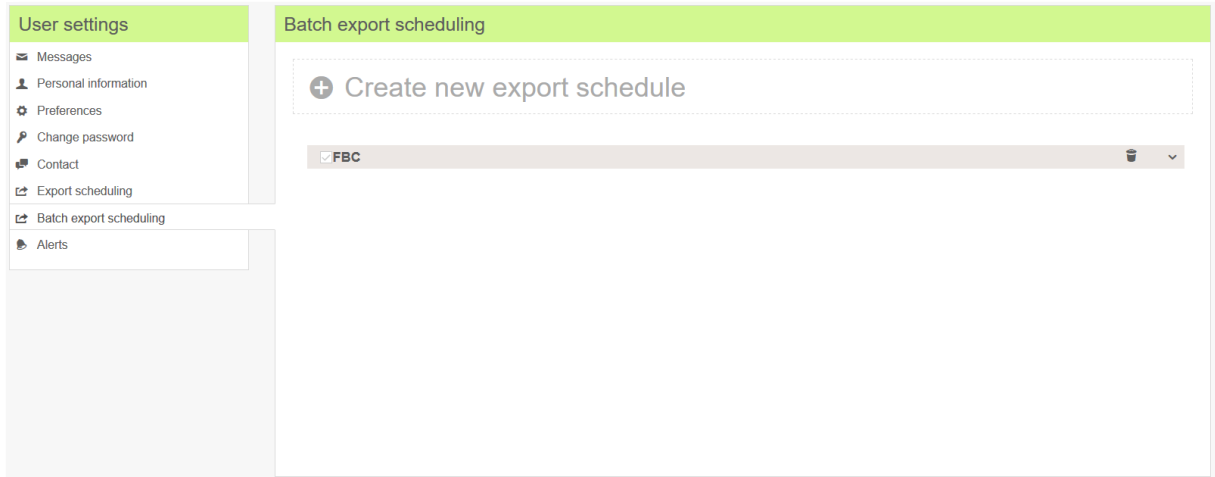


This module depends on the license. On customer request, this module can be turned on or off.

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## 8.7 Batch export scheduling

In Batch export scheduling tab, it is possible to plan export of data in batch. In this field, you can see your existing batch export scheduling or you can create new batch export scheduling. All types of data are exported at once.



To create new batch export schedule:

1. Click on the grey link **Create new export schedule**.
2. Enter a subject of email
3. Check the checkbox **Enable export**
4. Select when you need to send the export (how often)
5. Add meter or meters you want to export
6. Click on **Save** for saving a scheduled export or **Send** for sending export (the export will be send but not saved)

### Send export Daily

In this option data will be send every day. The user only has to choose at what hour and for how many days back the data should be send.

### **Send export Weekly**

In this option data will be send for the last week. The user only has to choose which day of week and at what time the export should be done.

### **Send export Monthly**

In this option data will be send for the last or actual month. The user only has to choose which day of month and at what time the export should be done.

If you want to delete this report, click on delete icon  next to the required export.



This module depends on the license. On customer request, this module can be turned on or off.

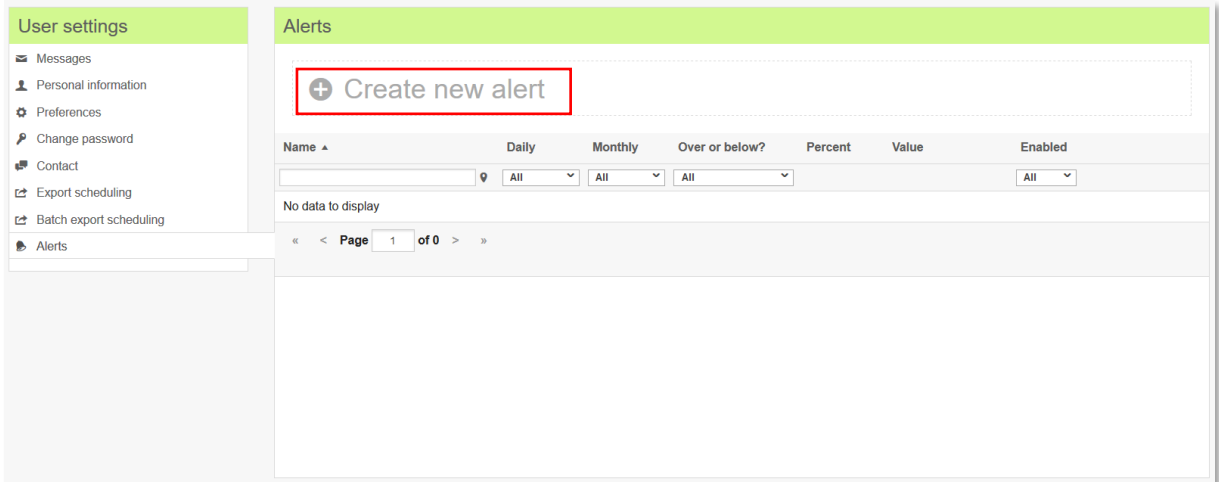
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## 8.8 Alerts

In this section, the user can set some alerts for the required meters. When the data does not match the set values, the user will receive relevant information via email.

The list of the alerts can be filtered.

1. To create alert, click on **Create new alert** button at the top of the page



2. Set the following settings for the alert:

- Alert should be enabled
- Select data source that will be controlled
- Set in which case the alert must be send
- Set how often the data will be checked

3. Click **Create**

Name ▲	Daily	Monthly	Over or bellow?	Percent	Value	Enabled	
	All ▼	All ▼	All ▼			Yes ▼	x
VM FBC LG OVA 15 +A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Over	0	200 kW	<input checked="" type="checkbox"/>	

« < Page 1 of 1 > »

To delete an alert, click the **trash icon**  next to the alert.

To edit the alert, click on **edit icon**  .