

Expert Power Pro

Operation Manual

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1 Introduction

Expert Power Pro is used for monitoring the electricity consumption and the electric bills from the electric grid it is connected to.

Safety Instructions

Refer to Satec general safety instructions.

Safety Conventions



Note

Notes contain additional important information.



Tip

Tips contain helpful information.



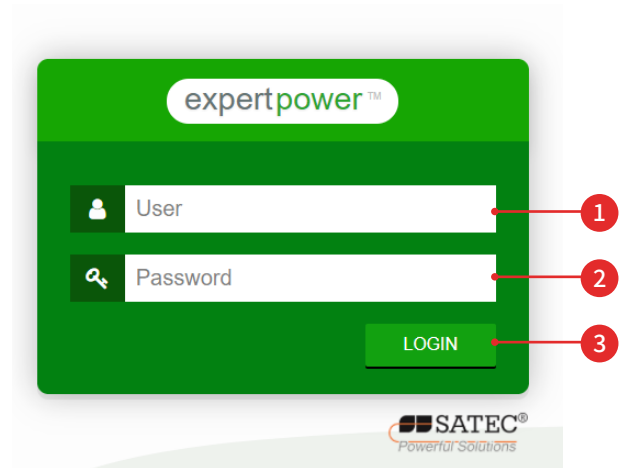
Warning

Warnings contain important hazard information.

2 System Operation

Logging into the System

1. Enter the web address <http://www.expertpowerplus.com> or the local server address in the browser address bar.
2. Type the username (1).
3. Type the password (2).
4. Click **LOGIN** (3).



Tip

For better web performance, use Internet Explorer or Firefox.



Note

The system operates over a network. Make sure there is network connection at all times.

User Interface Overview

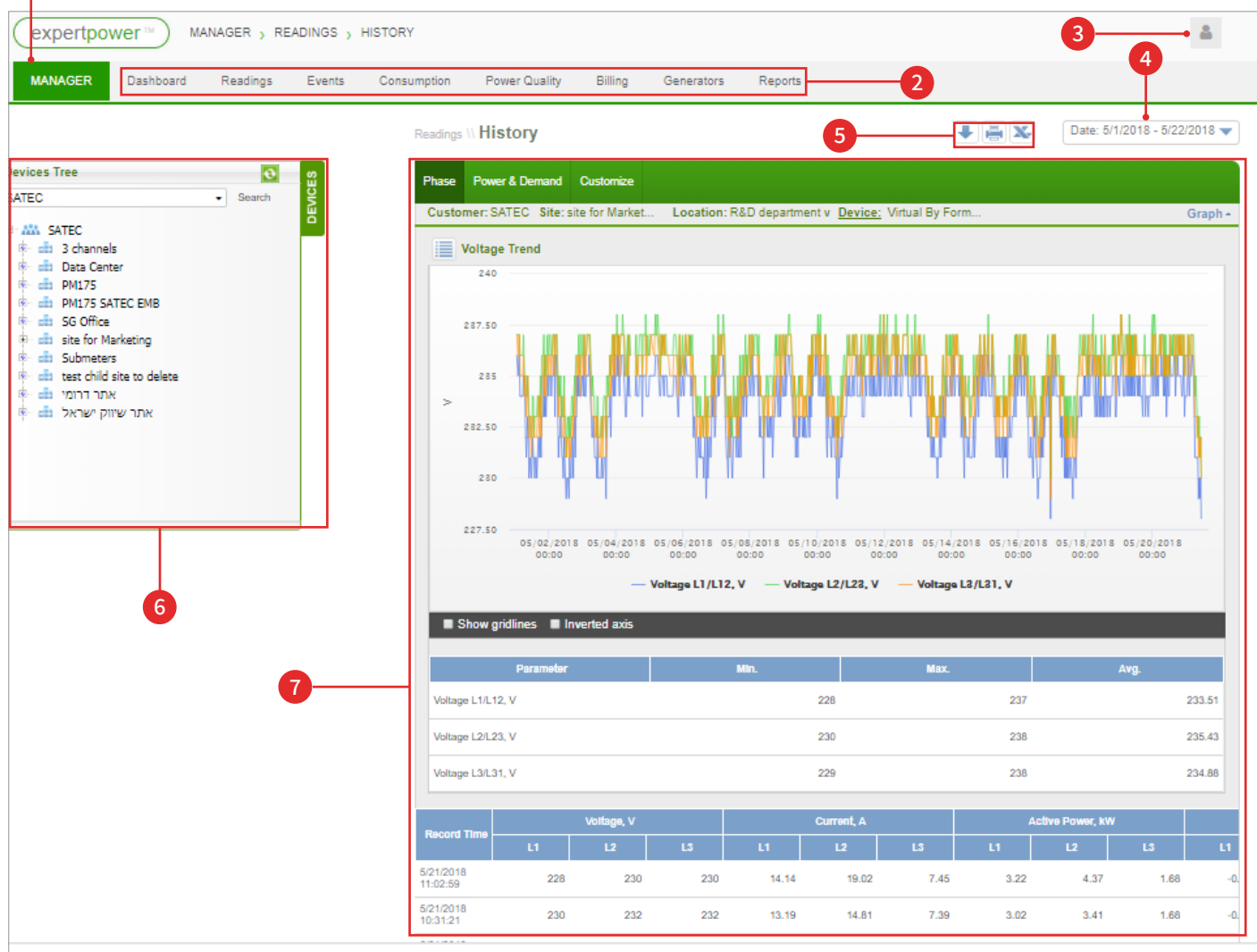
Once logged in, navigation is done using menus. The user interface includes the following elements:



Note

The dashboard user interface includes different elements and is detailed in the [Dashboard User Interface](#) section.

- **Manager level (1)** – the system operates on two user levels:
 - Manager – can view data and generate reports (see [Manager Level Menus on page 8](#)).
 - Administrator – has administrative privileges such as adding and canceling sites and devices (see [Administrator Settings on page 34](#)).
- **Menu bar (2)** – the displayed menus vary according to the user level.
- **Manager level selection button (3)**
- **Date range for data display (4)** – see [Setting Data Range on page 6](#).
- **Toolbar (5)** – enables exporting to PDF and Excel formats and viewing of previously exported files.
- **Device tree panel (6)** – a hierarchical menu that allows a user to choose from which devices data is displayed.
- **Data display area (7)**

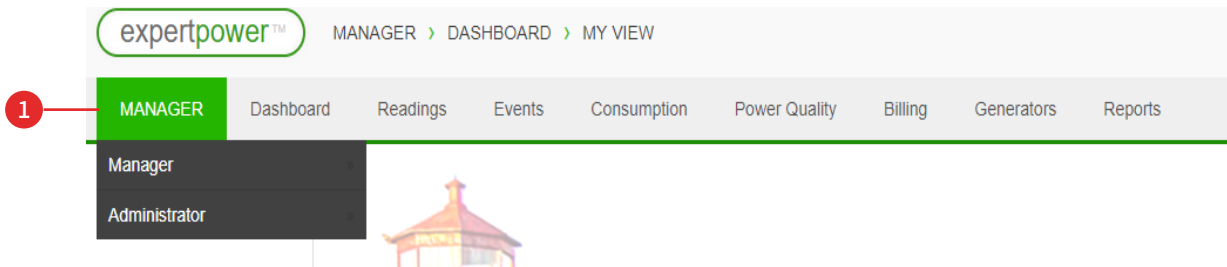


User Level Selection

There are two user levels in the system:

- **Manager** – a user who is granted manager access can see and track information and produce reports (see [Manager Level Menus on page 8](#)).
- **Administrator** – a user who is granted administrator access can define and set meters, users, calculations, and more (see [Administrator Settings on page 34](#)).

In order to select the user type, click on the current manager level and select the desired level (1).

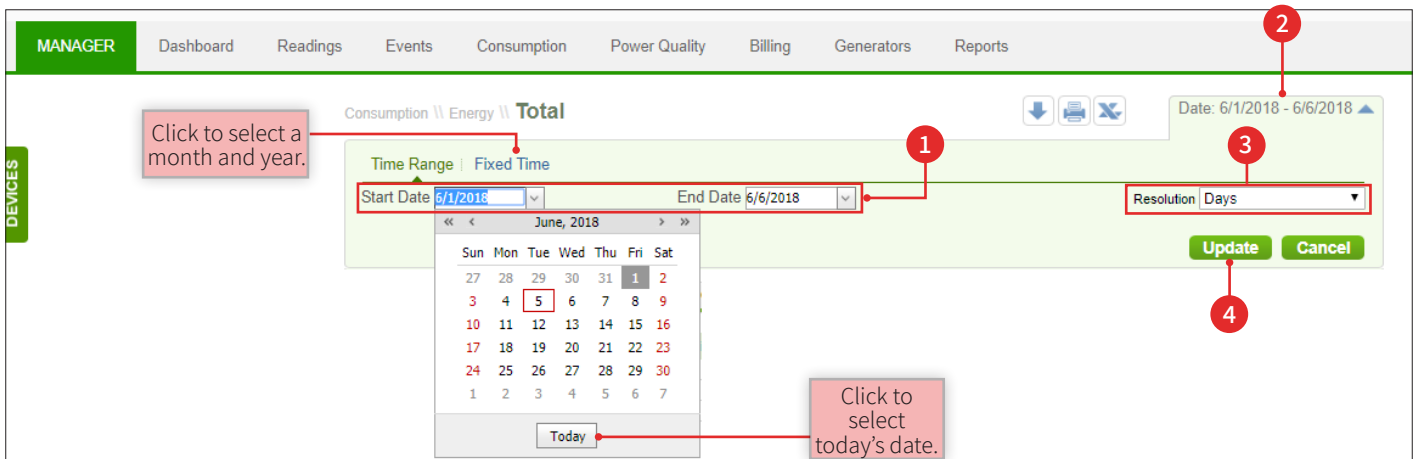


Setting Data Range

Data can be displayed by a specified date range.

To set the date range:

1. Click on the current date range (2). The data range panel opens.
2. Choose the resolution (3).
3. Choose the time range (1).
4. Click **UPDATE** (4) to affirm the selection.



Selecting Devices

The **Device Panel** is a hierarchical menu for selecting one or more measuring devices for which data is displayed.

To select one or more devices:

1. Click **DEVICES** (1) to open the **Device Panel**.

The screenshot shows the top navigation bar with 'expertpower™' logo and a breadcrumb trail: MANAGER > CONSUMPTION > ENERGY >. Below this is a sub-menu with 'MANAGER' (highlighted), 'Dashboard', 'Readings', 'Events', and 'Consumption'. On the right, there's a section titled 'Consumption \ Energy \ Total' with a table showing energy data for 'Customer: SATEC' and 'Site: site for Market...'. The table has columns for 'Energy' and values.

Energy	
kWh Import	160,166
kvarh Import	315
kWh Export	0

2. Indicate the desired device(s) by checking the appropriate boxes.

The 'Devices Tree' interface shows a hierarchical list of devices under the 'SATEC' customer. Annotations point to specific features: 'Choose customer' points to the 'SATEC' dropdown; 'Clear all boxes' points to the 'Clear all' button; 'Search button' points to the 'Search' input field; 'Affirm choice' points to the green checkmark icon; and 'Choose device' points to the checkbox next to 'Communication room-9'. The tree structure includes: SATEC (Customer icon) -> 3 channels (Counter Group icon) -> Data Center (Counter Group icon) -> Main Load (Counter icon) -> Servers Room (Counter icon) -> PM175 (Counter Group icon) -> PM175 SATEC EMB (Counter Group icon) -> Main Load (Counter icon) -> SG Office (Counter Group icon) -> site for Marketing (Counter Group icon) -> Main Load virtual (Counter icon) -> Submeters (Counter Group icon) -> Communication room-9 (Communication Device icon, checked) -> Main air conditioning (Counter icon) -> Main Lightning (Counter icon).

Meaning of icons in the device tree:

Customer



Counter Group



Counter



Communication Device



3 Manager Level Menus

The manager level menus include the following options:

- [Dashboard](#) – display general data and define manager display settings.
- [Readings](#) – display device readings.
- [Events](#) – display system events and alerts.
- [Consumption](#) – display consumption data.
- [Power Quality](#) – display and analyze power quality events.
- [Billing](#) – generate bills and display past bills.
- [Reports](#) – create and generate reports.

Dashboard

The dashboard is a central display for monitoring the user's measurement devices. Pre-designed templates are provided that can be customized for user preference. The dashboard menu includes the following options:

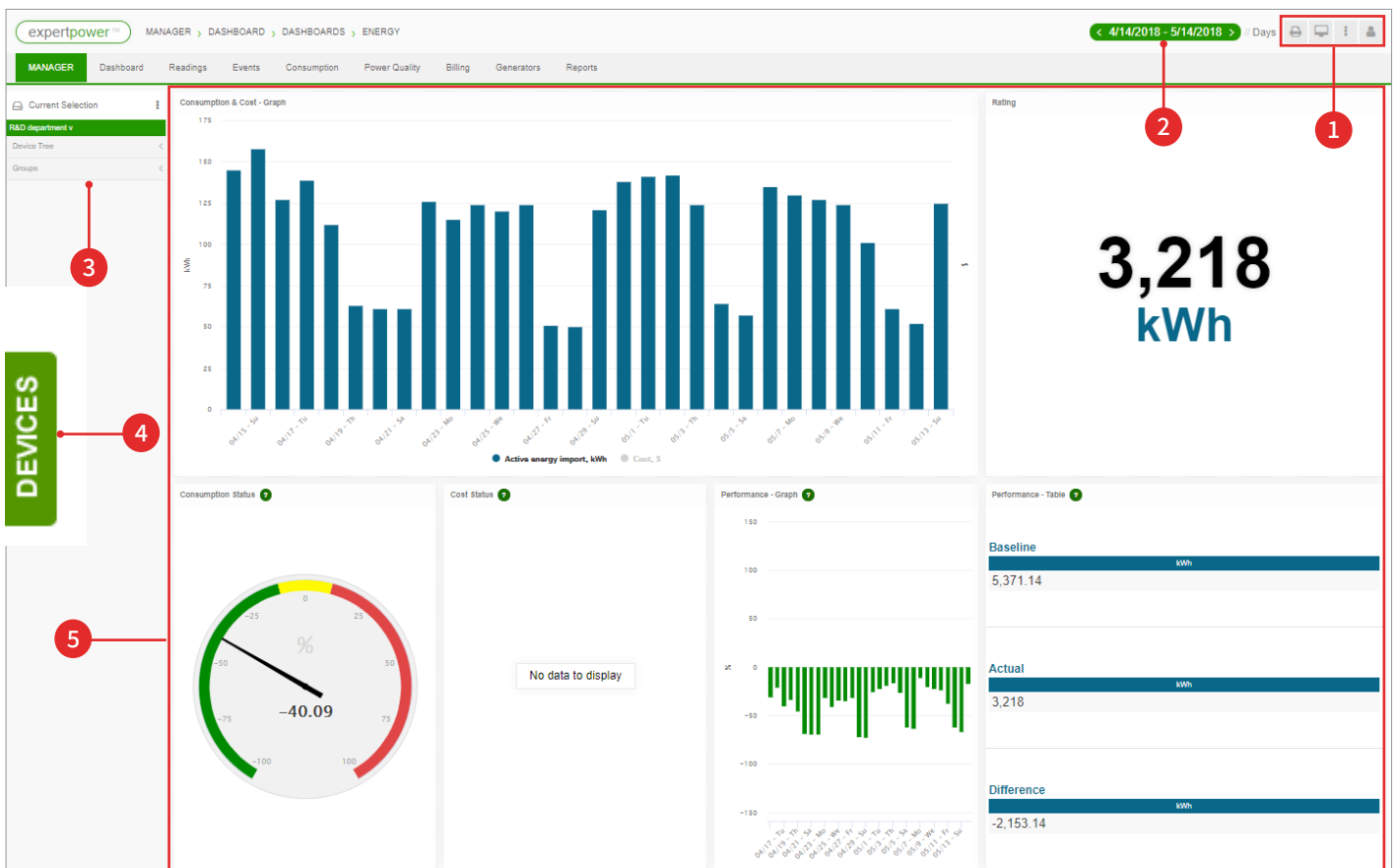
- [My View](#)
- Dashboards
- Analysis
- Geolocation
- My Dashboards

Dashboard User Interface

The dashboard user interface opens to the last group of devices selected. To select another group, expand the group area (3) and click the preferred group.

The areas in the main screen include:

- **Toolbar (1)** – enables printing, choosing view modes, creating dashboards, and switching users.
- **Date range for data display (2)** – see [Setting Display Data in the Dashboard on page 10](#).
- **Device Panel (4)** – a hierarchical menu for selecting one or more measuring devices for which data is displayed.
- **Data display area (5)**



Setting Display Data in the Dashboard

To define the date range in the dashboard menu screens:

1. Click on the current date range (3).
2. Choose from the suggested ranges (2), or click **CUSTOM** (1) to set a customized data range.

The screenshot shows the dashboard interface with a date range selector at the top. A red circle labeled '1' points to the 'Custom...' button. A red circle labeled '2' points to the suggested date range '4/15/2018 - 5/15/2018'. A red circle labeled '3' points to the date range selector. The dashboard displays various metrics including Total Cost, Total Energy, and Energy Avg. Cost.

Min.	Avg.
51	333.15
Diff. %	31.28
Hourly kWh	53
Diff. %	52.18

Time
Wed - 05/2/18 10:45

Cost Summary

Total Cost
0 \$

Total Energy
12,993 kWh

Energy Avg. Cost
0 \$ / kWh

Daily Avg. Cost
0 \$ / Day

Hourly Avg. Cost
0 \$

To set the data resolution

1. Click on the current resolution (1).
2. Choose from the resolution options (2).

The screenshot shows the dashboard interface with a resolution dropdown menu open. A red circle labeled '1' points to the 'Resolution' dropdown. A red circle labeled '2' points to the 'Days' option. The dashboard displays various metrics including Total Cost, Total Energy, and Energy Avg. Cost.

	Max.	Min.	Avg.
Daily kWh	597	51	333.15
Diff. %	31.28	-398.33	-6.7

Value
5.683 kW

Cost Summary

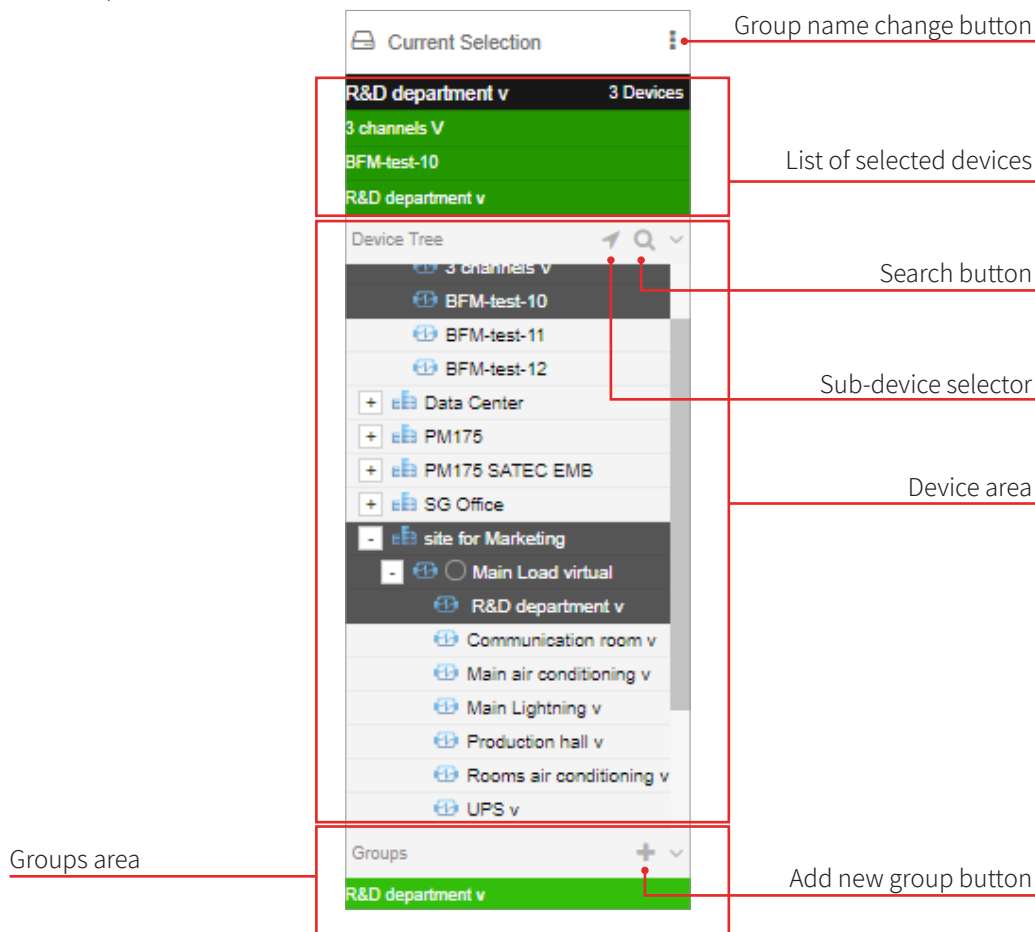
Total Cost
0 \$

Total Energy

Daily Avg. Cost

Device Panel

The device panel in the dashboard menu includes:



Add New Group

To add a new group:

1. Click **+** (4) in the groups panel to add a new group.
2. Expand (2) the device area and select one or more devices (3).

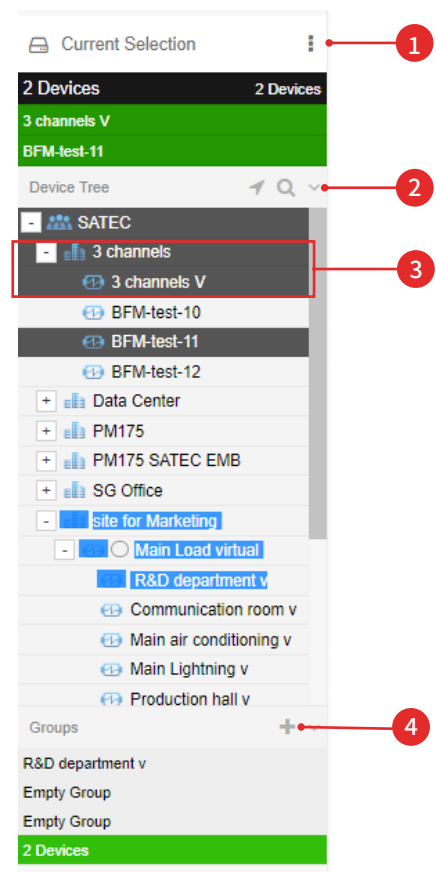
The selected devices appear in the upper area of the panel.

To change the group name, click on the **Group Name Change** button (1).



Tip

Any group or meter selection can be cancelled by clicking **X** displayed above it.

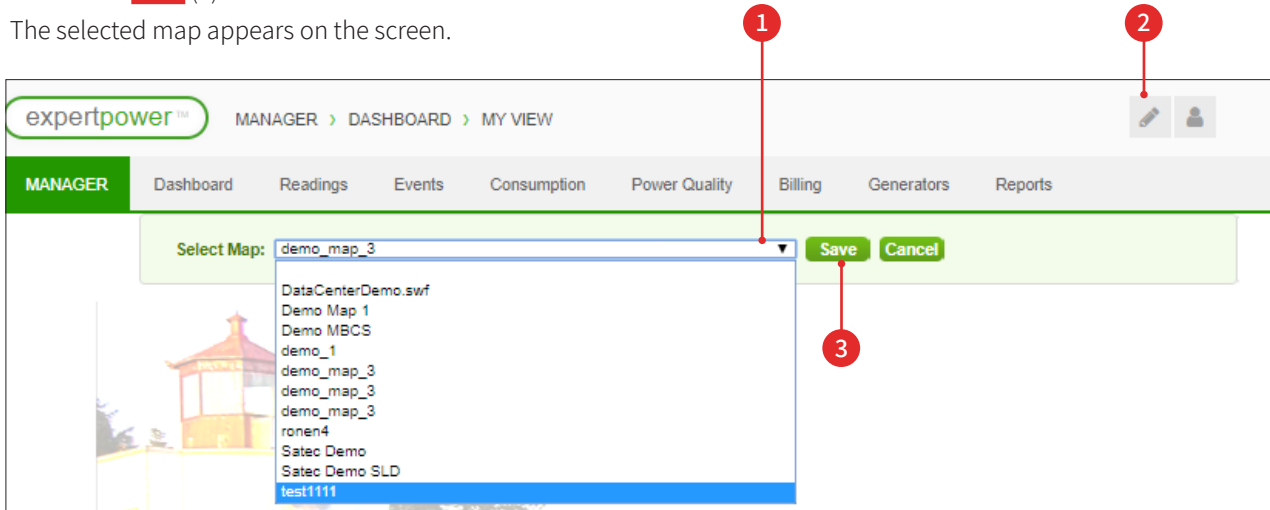


My View

In the My View screen the manager can customize the home screen view.

1. Select **My View** from the Dashboard menu.
2. Click the **Edit** icon (2).
3. Choose a map from the displayed options (1).
4. Click **SAVE** (3).

The selected map appears on the screen.



Readings

The Readings menu enables viewing of a device's meter readings, including:

- [Last Reading](#)
- [History](#)
- [Max Demands](#)
- [Data Logs](#)
- [Live Data](#)

Last Reading

To display the last meter reading:

1. Select **Last Reading** from the Readings menu.
2. Select the relevant device(s) in the device tree (see [Selecting Devices on page 7](#)).

The last meter reading data for the selected device is displayed on the screen.

When selecting multiple devices, the Last Reading screen displays a table that coordinates the data of all selected devices. Each device in the table is a link to the last reading of that device.

To navigate to the [History](#) screen and view previous readings of a device, click **History** (1).

expertpower™ MANAGER > READINGS > LAST READING

MANAGER Dashboard Readings Events Consumption Power Quality Billing Generators Reports

Readings || Last Reading

Header contains details of the device and time of the last reading.

Click to scroll between readings.

Customer: SATEC Site: site for Market... Location: R&D department v Device: Virtual By Form... 5/17/2018 17:12

Phase Basic Measurements					History
Phase	L1	L2	L3	Unit	
Voltage (Primary)	230	232	231	V	
Current (Primary)	11.16	13.58	6.12	A	
Active Power	2.54	3.12	1.39	kW	
Reactive Power	-0.337	-0.433	-0.241	kvar	
Apparent Power	2.57	3.15	1.41	kVA	
PF	0.991	0.991	0.985	PF	

Total			History
Name	Value	Unit	
Active Power	7.06	kW	
Reactive Power	-1.01	kvar	
Apparent Power	7.13	kVA	
PF	0.99	PF	

Total Demands			History
Name	Value	Unit	
Power Demand	7.15	kW	
kVA Demand	7.25	kVA	

History

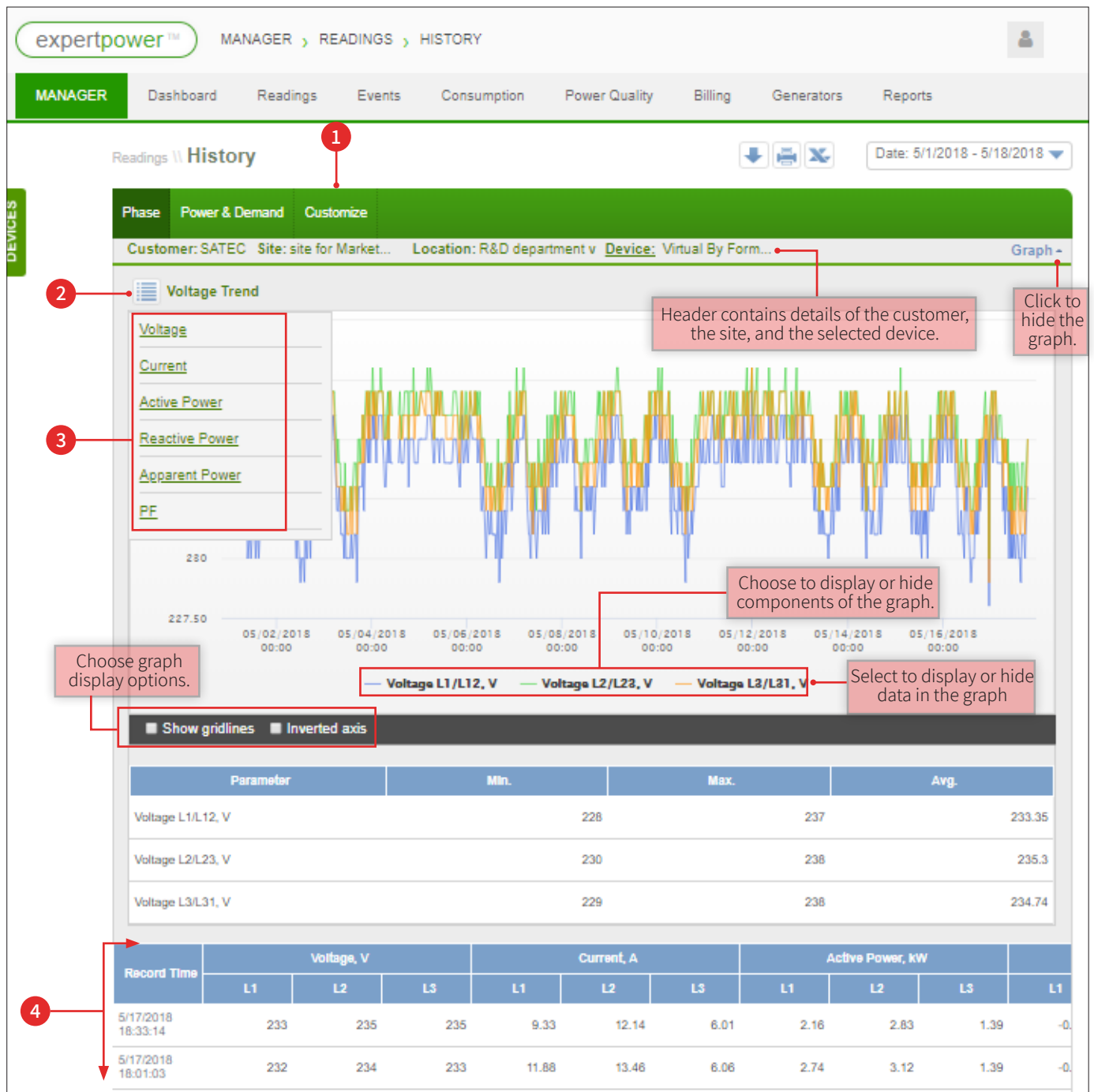
To display a history of device readings:

1. Select **History** from the Readings menu.
2. Select the relevant device(s) in the device tree (see [Selecting Devices on page 7](#)).
3. Set the desired date range (see [Setting Data Range on page 6](#)).

The data history is displayed as a graph and a table (4).

To display a graph of a different type, click the **Graph Options** button (2) and choose the desired graph type from the displayed options (3).

4. Select the **Customize** tab (1) to set parameters for viewing the history screen.

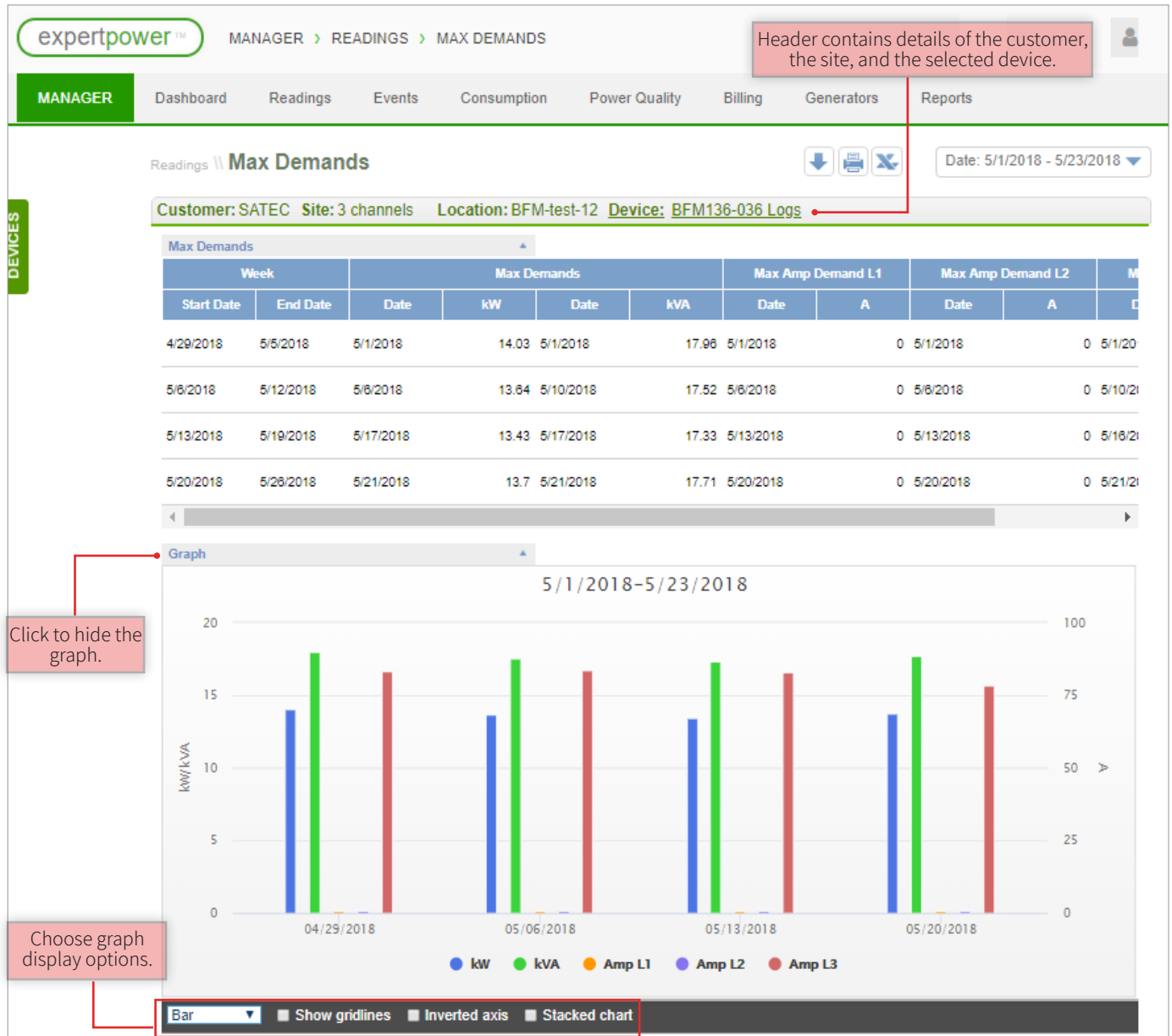


Max Demands

To view peak data for a device or multiple devices:

1. Select **Max Demands** from the Readings menu.
2. Select the relevant device(s) in the device tree (see [Selecting Devices on page 7](#)).
3. Set the desired date range (see [Setting Data Range on page 6](#)).

Peak data for the selected device(s) is displayed on the screen.

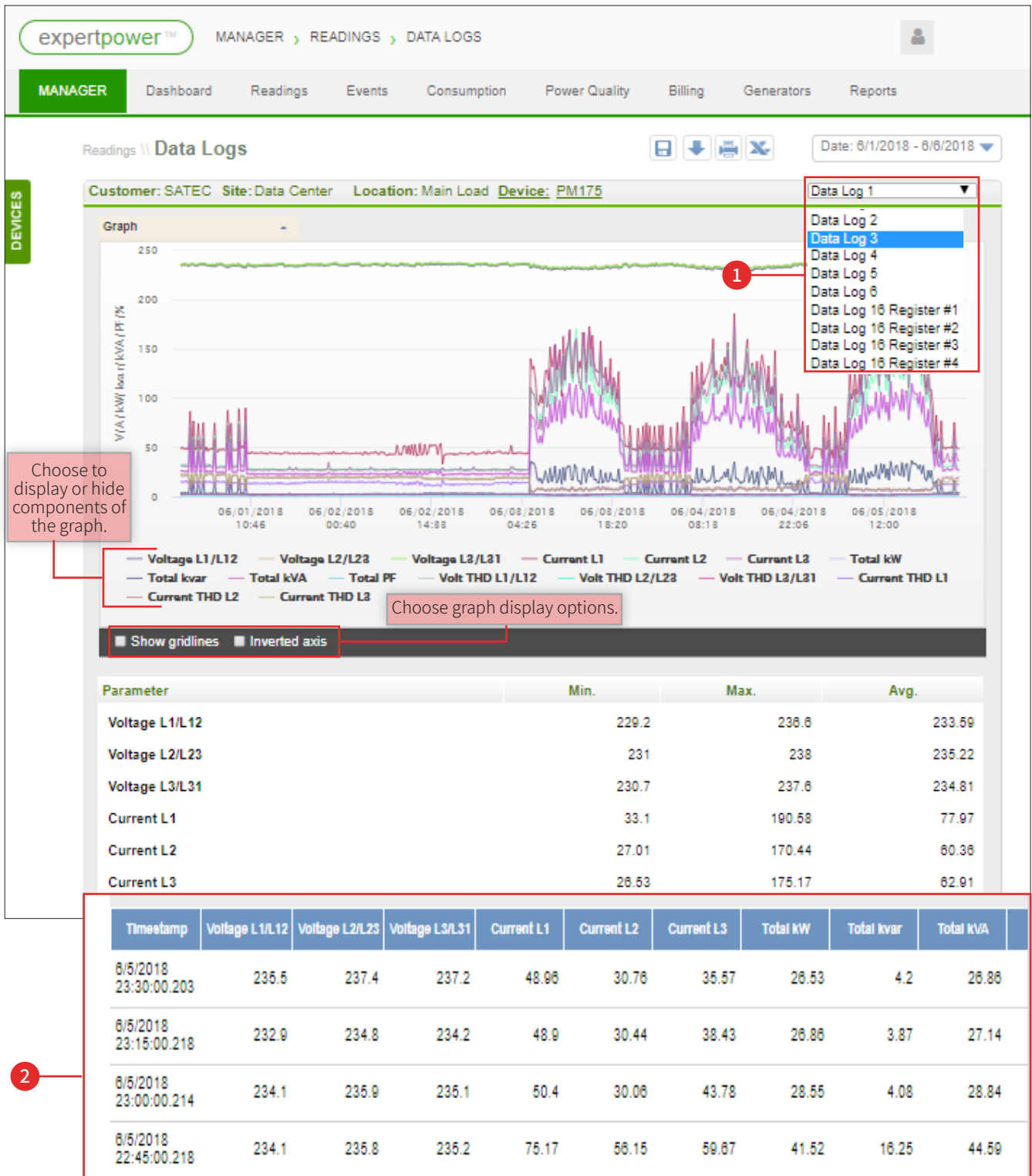


Data Logs

To display data that is stored in user device(s):

1. Select **Data Logs** from the Readings menu.
2. Select the relevant device(s) in the device tree (see [Selecting Devices on page 7](#)).
3. Set the desired date range (see [Setting Data Range on page 6](#)).
4. Choose a data log entry from the options in the drop-down menu (1).

The data stored on the memory of the selected device(s) appears in the form of graph, along with more detailed information at the bottom of the screen (2).



Live Data

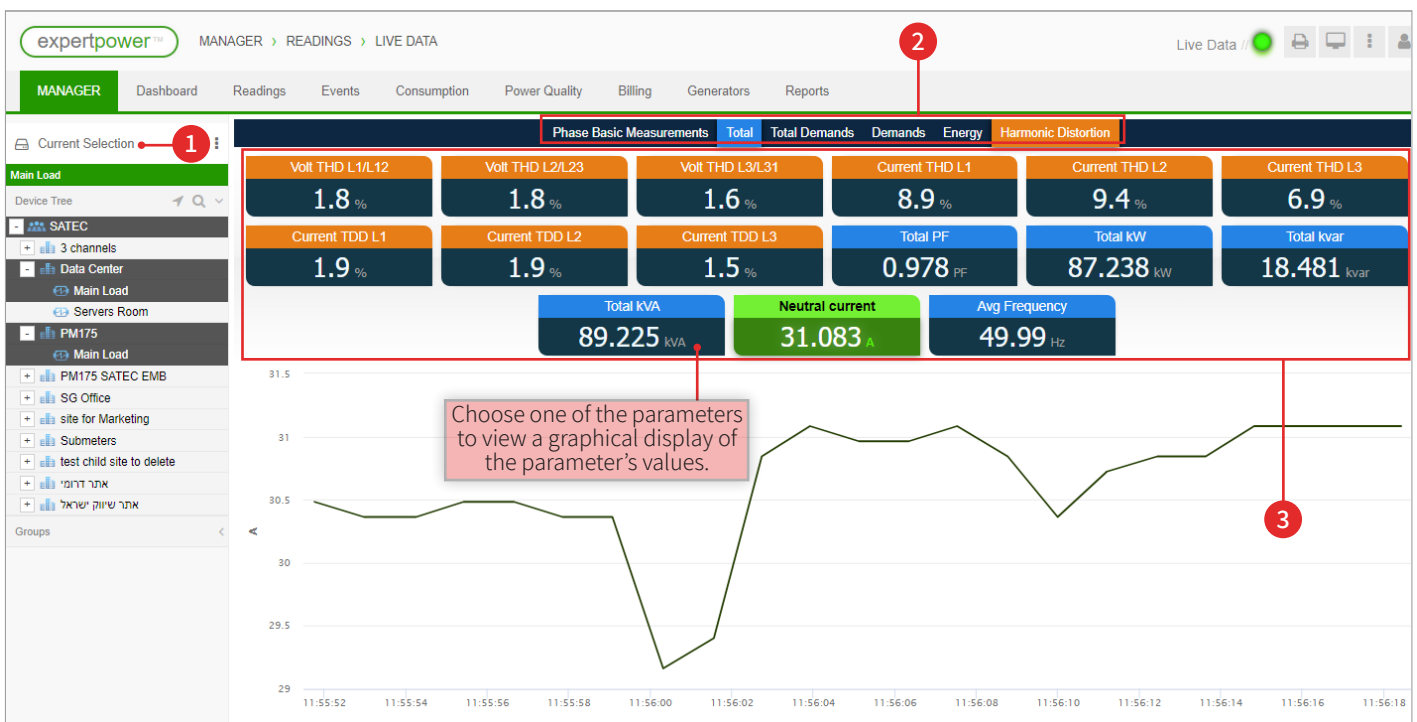
The real-time data feed provides current meter readings in the following categories:

- Phase Basic Measurements
- Total
- Total Demands
- Demands
- Energy
- Harmonic Distortion

To display meter readings in real time:

1. Select **Live Data** from the Readings menu.
2. Select the relevant device(s) in the device tree (see [Selecting Devices on page 7](#)). The current device is displayed (1).
3. Choose one or more of the various meter categories to simultaneously display current readings (2).

The selected device data is displayed according to the selected parameters on the screen (3).



Events

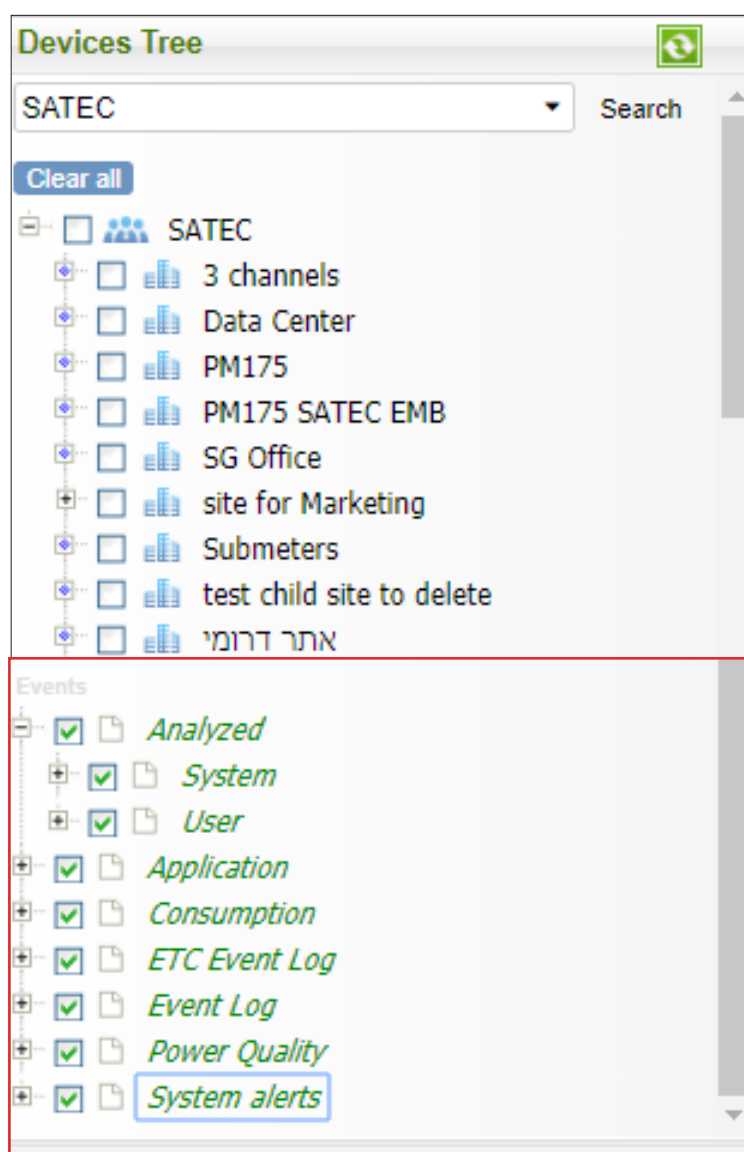
The Events menu enables viewing of all system events, and includes:

- [Event View](#)
- [Event Log](#)
- [Event Summary](#)
- Notifications



Note

The device tree in the Event screens and Alert screens include an option to filter by events (1).



Event View





The Event View screen displays the events which have accumulated in the system in chronological order. The types of events displayed on this screen are set in the Administrator page (see [Event View Definition on page 39](#)).

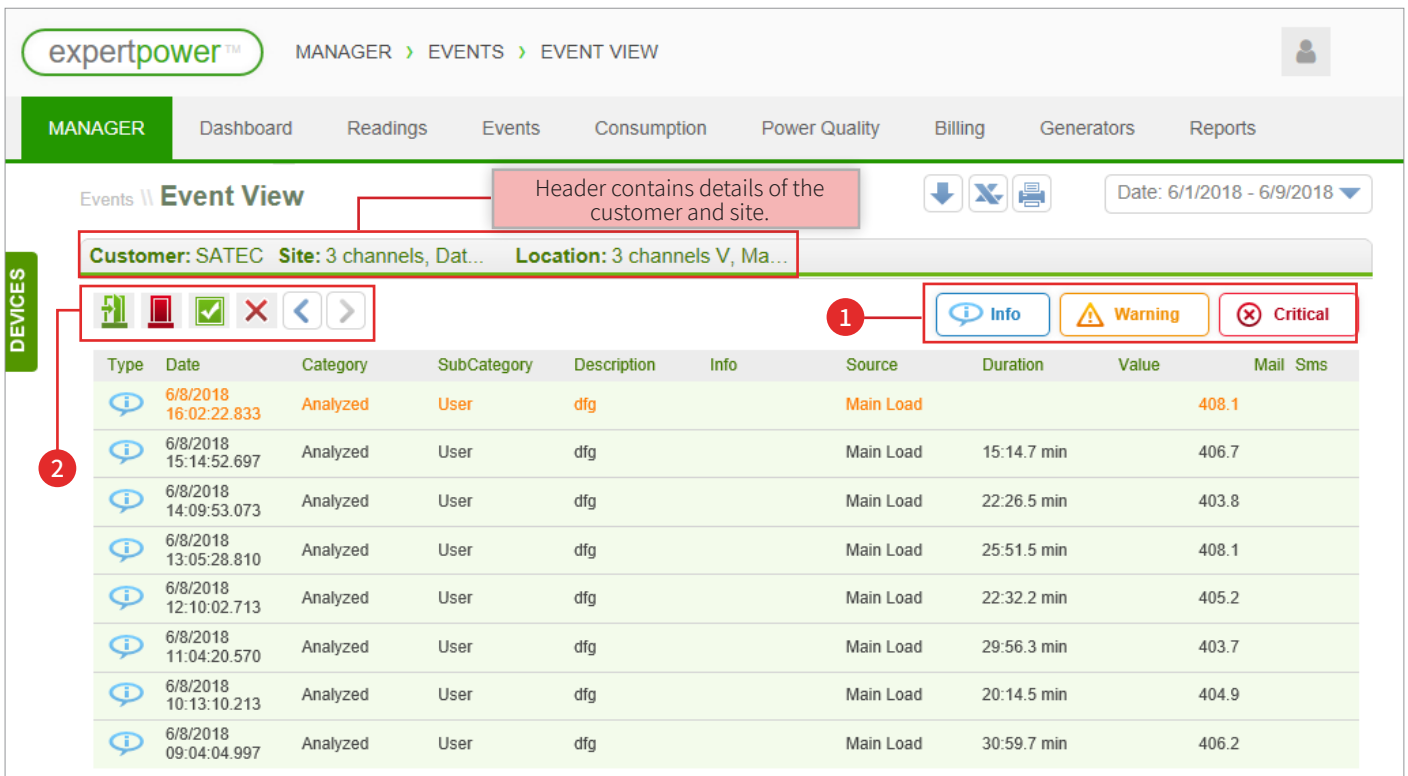
To display events:

1. Choose **Event View** from the Events menu.
2. Select the relevant device(s) in the device tree (see [Selecting Devices on page 7](#)).
3. Set the desired date range (see [Setting Data Range on page 6](#)).

The events displayed on the screen are ranked by importance: critical, warning, and info. Clicking the status buttons (1) shows or hides events of different status levels. Active events appear in orange and inactive events appear in black.

Clicking one of the icons (2) shows or hides events according to the following categories:

-  **Open Events** – events that have not yet met their closing conditions.
-  **Closed Events** – events that are not active.
-  **Checked Events** – events closed by the manager (even though the closing conditions had not yet taken place).
-  **Unchecked Events** – events that were not approved by the manager.



expertpower™ MANAGER > EVENTS > EVENT VIEW

MANAGER Dashboard Readings Events Consumption Power Quality Billing Generators Reports









Events **Event View** Header contains details of the customer and site. Date: 6/1/2018 - 6/9/2018

Customer: SATEC Site: 3 channels, Dat... Location: 3 channels V, Ma...

DEVICES

1 Info Warning Critical

2

Type	Date	Category	SubCategory	Description	Info	Source	Duration	Value	Mail	Sms
	6/8/2018 16:02:22.833	Analyzed	User	dfg		Main Load		408.1		
	6/8/2018 15:14:52.697	Analyzed	User	dfg		Main Load	15:14.7 min	406.7		
	6/8/2018 14:09:53.073	Analyzed	User	dfg		Main Load	22:26.5 min	403.8		
	6/8/2018 13:05:28.810	Analyzed	User	dfg		Main Load	25:51.5 min	408.1		
	6/8/2018 12:10:02.713	Analyzed	User	dfg		Main Load	22:32.2 min	405.2		
	6/8/2018 11:04:20.570	Analyzed	User	dfg		Main Load	29:56.3 min	403.7		
	6/8/2018 10:13:10.213	Analyzed	User	dfg		Main Load	20:14.5 min	404.9		
	6/8/2018 09:04:04.997	Analyzed	User	dfg		Main Load	30:59.7 min	406.2		

Event Log

The Event Log screen displays the events stored in the device event history.

To display the events:

1. Select **Event Log** from the Events menu.
2. Select the relevant device(s) in the device tree (see [Selecting Devices on page 7](#)).
3. Set the desired date range (see [Setting Data Range](#)).
4. Choose types of events to display (1).
5. Click **SUBMIT** (2).

expertpower™ MANAGER > EVENTS > EVENT LOG

MANAGER Dashboard Readings Events Consumption Power Quality Billing Generators Reports

Events // Event Log Header contains details of the customer, the site, and the selected device. Date: 5/1/2018 - 5/24/2018

Customer: SATEC Site: test child site... Location: UPS Device: BFM136-036 Logs

Select Event Types

- ☒ Setpoint Event
- ☒ Self-check
- ☒ External Event
- ☒ Setpoint activity
- ☒ Self-update
- ☒ Corrupted
- ☒ Comm. activity
- ☒ Run-time Error
- ☒ Front panel activity
- ☒ Hardware Event

Submit

Drag a column header here to group by that column

No	Date / Time	Description	Details	Value
317254719	5/23/2018 00:29:59.947	Comm. activity: DATA KEEPING	CLR TOU DEMD	
317254713	5/23/2018 00:29:41.030	Comm. activity: DATA KEEPING	CLR DEMANDS VOLT/AMPERE	
317254704	5/23/2018 00:29:34.547	Comm. activity: DATA KEEPING	CLR DEMANDS POWER	
317062192	5/22/2018 00:39:07.166	Comm. activity: DATA KEEPING	CLR TOU DEMD	
317062189	5/22/2018 00:39:06.510	Comm. activity: DATA KEEPING	CLR DEMANDS VOLT/AMPERE	
317062188	5/22/2018 00:39:06.464	Comm. activity: DATA KEEPING	CLR DEMANDS POWER	
316879016	5/21/2018 00:32:32.412	Comm. activity: DATA KEEPING	CLR TOU DEMD	

Event Summary

The Event Summary screen displays a list of the active events categorized by type of event.

To display the event summary:

- 1. Choose **Event Summary** from the Events menu.
- 2. Click on the blue triangle (1) to display the device(s) for which event(s) were recorded.

expertpower™

MANAGER > EVENTS > EVENT SUMMARY

MANAGER

Dashboard

Readings

Events

Consumption

Power Quality

Billing

Generators

Reports

Events \ Event Summary

Disconnected Devices

Disconnected Comm. Devices

Problematic devices requests

Problematic Total Energy

+ SATEC - 16

Problematic TOU Energy

Daily consumption difference between General and TOU Tariffs

- SATEC - 2

Device ID	Device name	Start Date
105935	Reception area virtual	2018-05-22 00:00:00
105990	Servers Room	2018-05-22 00:00:00

TOU Differences

Notifications

The Notifications screen displays events for which a notification has been defined and has been triggered. To display these events:

1. Select **Notifications** from the Events menu.
2. Select the relevant device(s) in the device tree (see [Selecting Devices on page 7](#)).

A list of events with active notifications is displayed on the screen.

expertpower™ MANAGER > EVENTS > NOTIFICATIONS

MANAGER Dashboard Readings Events Consumption Power Quality Billing Generators Reports

Events \ Notifications Header contains customer name and name of objects. Date: 5/9/2018 - 5/17/2018

Customer: SATEC Objects Main Load

Event Number	Date	SubCategory	Description	Source Name	Notifications
689702018	5/16/2018 11:08:49.453	User	מתח עלה מעל 220 וולט	Main Load	Details
689702018	5/16/2018 10:30:14.947	User	מתח ירד מתחת ל-220 וולט	Main Load	Details
689393811	5/16/2018 00:25:15.337	User	מתח עלה מעל 220 וולט	Main Load	Details
689393811	5/15/2018 23:30:11.557	User	מתח ירד מתחת ל-220 וולט	Main Load	Details
689017508	5/15/2018 08:30:58.637	User	מתח עלה מעל 220 וולט	Main Load	Details
689017508	5/15/2018 08:01:53.873	User	מתח ירד מתחת ל-220 וולט	Main Load	Details
685873236	5/10/2018 18:04:52.613	User	מתח עלה מעל 220 וולט	Main Load	Details
685873236	5/10/2018 17:34:54.637	User	מתח ירד מתחת ל-220 וולט	Main Load	Details
685799830	5/10/2018 16:33:40.957	User	מתח עלה מעל 220 וולט	Main Load	Details
685799830	5/10/2018 16:08:46.690	User	מתח ירד מתחת ל-220 וולט	Main Load	Details
685703994	5/10/2018 14:37:21.440	User	מתח עלה מעל 220 וולט	Main Load	Details

Click **Details** to display details about the notification.

Notifications

Event Number: 689017508
Start Of Event

User Name	Full Name	SMS Status	SMS Time	Email Status	Email Time
slava	Rostyslav			Not On Schedule	

Consumption

The consumption screens display consumption data of the selected device(s) over a defined period, and include the following areas (depending on the user):

- Energy
- Water
- Air Conditioning Usage
- Gas
- Fuel

Each sub-menu includes the following options:

- **Total** – summation of consumption data by time periods.
- **TOU** – consumption data is summed by time of use (TOU) per rate, load, and time.
- **Total distribution** – device consumption arranged by energy source. Enables monitoring of the energy balance by examining the difference between the sum of the meters and the measurement of the main meter which is above them.
- **TOU distribution** – device consumption arranged by source of voltage and time of use (TOU).

Energy Consumption Data

The Total Energy screen displays energy consumption data of the selected device(s) in tabular and graphical formats.

1. Select **Energy > Total** from the Consumption menu.
2. Select the relevant device(s) in the device tree (see [Selecting Devices on page 7](#)).
3. Set the desired date range (see [Setting Data Range on page 6](#)).

A summary of the data is displayed at the top of the screen (1), and detailed data is shown below (2).

expertpower™ MANAGER > CONSUMPTION > ENERGY > TOTAL

MANAGER Dashboard Readings Events Consumption Power Quality Billing Generators Reports

Consumption \ Energy \ **Total** Date: 5/1/2018 - 5/10/2018

Customer: SATEC Site: site for Market... Location: R&D department v Device: Virtual By Form...

Energy	Previous	Present	Usage	Cost (\$)
kWh Import	160,166	161,210	1,044	
kvarh Import	315	315	0	
kWh Export	0	0	0	

Power Factor 1

Cost is calculated based on the default device setting (see [Setting Default Price on page 37](#)).

Date	Weekday	kWh Import	kvarh Import	kWh Export	Cost (\$)	kW Max DMD Import	Power Factor
5/1/2018	Tuesday	141	0	0			1
5/2/2018	Wednesday	142	0	0	9.48		1
5/3/2018	Thursday	124	0	0	10.08		1
5/4/2018	Friday	64	0	0	8.22		1
5/5/2018	Saturday	57	0	0	6.01		1
5/6/2018	Sunday	135	0	0	2.5		1
5/7/2018	Monday	130	0	0	11.55		1
5/8/2018	Tuesday	127	0	0	10.3		1
5/9/2018	Wednesday	124	0	0	9.25		1

Graph

150
125
100
75
50
25
0

05/01 05/02 05/03 05/04 05/05 05/06 05/07 05/08

● kWh Import ● kvarh Import ● kWh Export

Bar Show gridlines Inverted axis Stacked chart

Header contains details of the customer, the site, and the selected device.

Select graph display options.

Choose to display or hide components of the graph.



Tip

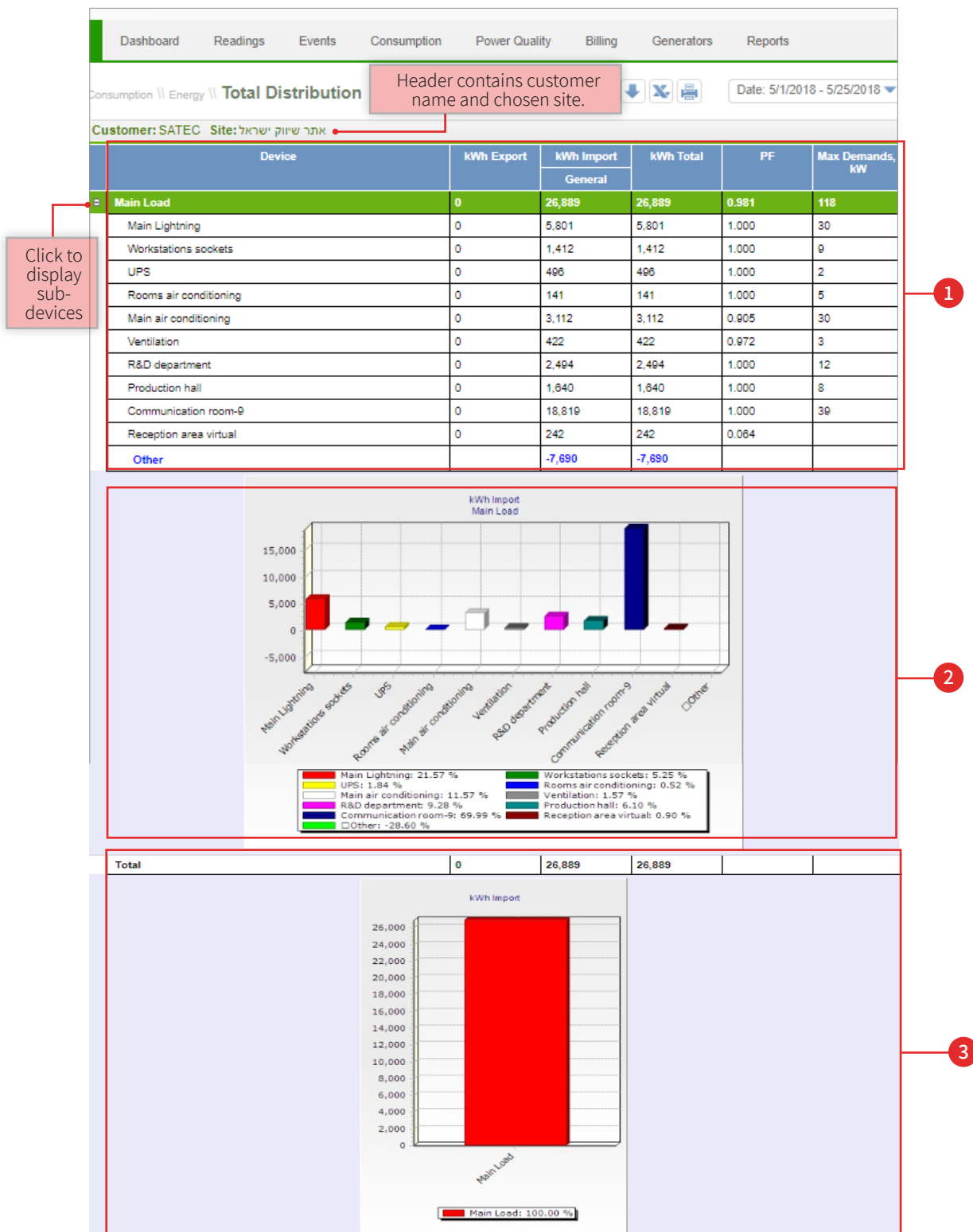
The structure of this screen is identical to the other consumption sub-menus (Total, TOU, Total Distribution, and TOU Distribution).

Energy Consumption Distribution Data

The Total Distribution screen shows the flow of energy at different levels, and flags a loss of energy. To view consumption distribution data:

1. Select **Energy > Total Distribution** from the Consumption menu.
2. Select the relevant device(s) in the device tree (see [Selecting Devices on page 7](#)).
3. Set the desired date range (see [Setting Data Range on page 6](#)).

The table (1) lists a summary of the energy distribution data. Below the table this data appears in graph form (2), and below the graph a summary of the data is displayed (3).



Power Quality

The Power Quality screens display events affecting power quality and enable monitoring and analysis of these events. Power quality screens include:

- EN50160-2007 Standard
- EN50160-2010 Standard
- Power Quality Events
- Waveforms
- Faults

Billing

The Billing screens provide a means for viewing accounts and producing bills, and include:

- [Billing Data](#)
- [Billing Comparison](#)
- [Total Cost Distribution](#)
- [TOU Cost Distribution](#)

Billing Data

The Billing Data screen displays account details generated for the selected device. To generate an account breakdown:

1. Select **Billing Data** from the Billing menu.
2. Select the relevant device(s) in the device tree (see [Selecting Devices on page 7](#)).
3. Set the desired date range (see [Setting Data Range on page 27](#)).

The screenshot shows the 'Billing Data' screen in the expertpower system. The header contains details of the customer, the site, and the selected device. The left sidebar shows the 'DEVICES' menu. The main content area includes 'Display Options' and 'Settings' sections. Below these is a summary of billing information, followed by a table of 'Energy Measurements' and a 'Usage' graph.

Header: expertpower™ MANAGER > BILLING > BILLING DATA

Navigation: MANAGER | Dashboard | Readings | Events | Consumption | Power Quality | Billing | Generators | Reports

Billing Data Header: Header contains details of the customer, the site, and the selected device. Date: 5/1/2018 - 5/25/2018

Customer Information: Customer: SATEC Site: site for Market... Location: R&D department v Device: Virtual By Form... Electricity

Display Options: Bill (Show readings table, Split on 1st of month), Graphs (Total Usage, Total Cost).

Settings: Additional Text For Invoice, Company, Payment Program, From end of last bill.

Billing Summary:

- Can be invoiced: ✗ No user defined for device
- Bill period: 05/01/2018 - 05/25/2018
- Metering period: 05/01/2018 - 05/24/2018
- Billing month: May 2018
- Meter No.: C-106122
- Name for Bill: R&D department v
- Number of days in bill period: 24
- Number of days in metering period: 23
- Method of Charge: Billing--TOU Low Voltage, PF,MAX DEMAND & Fixed Charge TOU Low Voltage \$
- Device name: R&D department v

Energy Measurements Table:

Description	Season	Tariff	Previous Reading		Present Reading		Usage (kWh)	Billing	
			Previous Date	Previous Reading	Present Date	Present Reading		Cost per kWh (cents)	Total Price (\$)
TOU Energy	Fall/Spring	Peak	05/01/2018	63,324.0	05/24/2018	65,088.0	1,764	12.07	212.95
TOU Energy	Fall/Spring	High	05/01/2018	21,904.0	05/24/2018	22,161.0	257	10.02	25.74
TOU Energy	Fall/Spring	Low	05/01/2018	74,937.0	05/24/2018	75,485.0	548	8.20	44.94
Subtotal			05/01/2018		05/24/2018		2,569		283.62
0.92 נדרש סך									
Fixed Charge	General		05/01/2018		05/25/2018				47.45
Total Charge			05/01/2018		05/25/2018				331.08

Usage Graph: Usage (kWh) vs Month (5/17 to 5/18).



Tip

The display options and settings can be set when creating or editing the billing program (see [Billing Administration on page 27](#)).








Invoices History

The Billing menu enables viewing of bills that were previously generated.

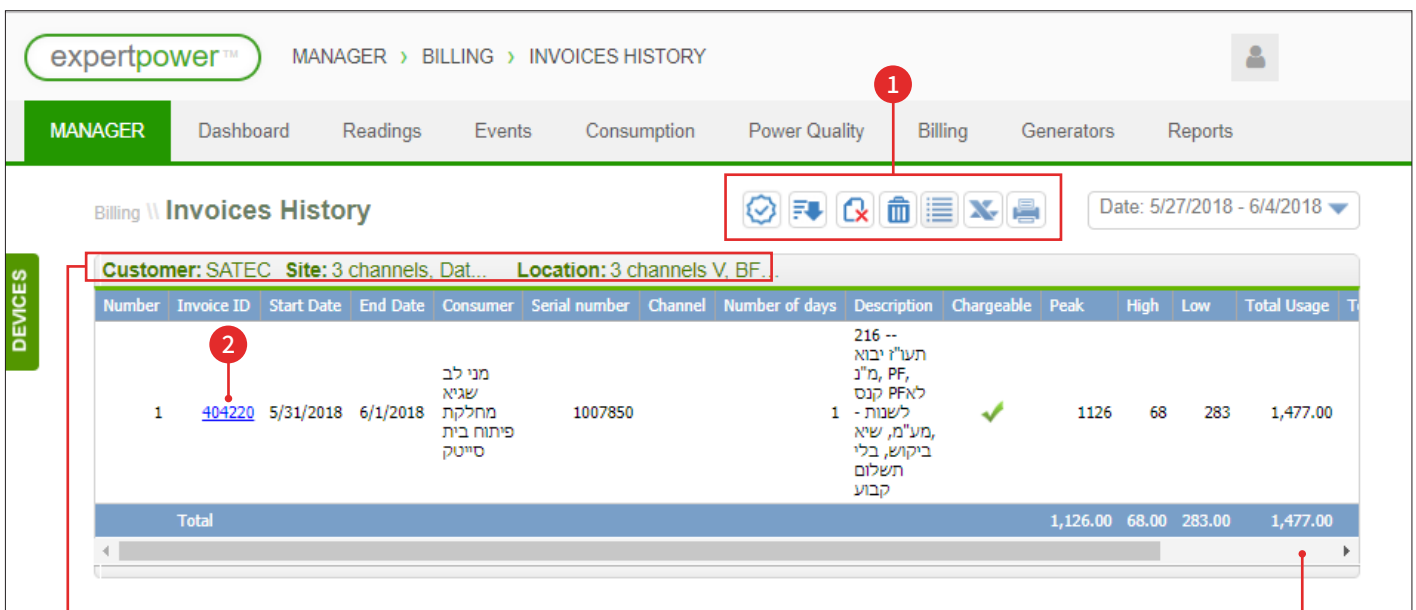
To view invoice history:

1. Select **Invoices History** from the Billing menu.
2. Select the relevant device(s) in the device tree (see [Selecting Devices on page 7](#)).
3. Set the desired date range (see [Setting Data Range on page 6](#)).

The buttons (1) on the screen enable the following actions:

-  **Approval** – approve invoices (see [Invoice Approval on page 29](#)).
-  **Latest exports** – view all invoices that were recently generated by the manager.
-  **Delete invoices** – delete selected invoices.
-  **Delete all** – delete invoices based on a selected date range.
-  **Concatenate invoices** – create a PDF which contains all the displayed invoices.
-  **Export to Excel** – generate an Excel spreadsheet of the invoice history file.
-  **Export to PDF** – generate a PDF of the invoice history file.

The serial number of each invoice (2) serves as a link to display that invoice.



expertpower™ MANAGER > BILLING > INVOICES HISTORY

MANAGER Dashboard Readings Events Consumption Power Quality Billing Generators Reports

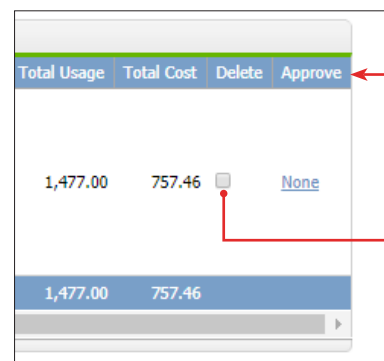
Billing \ Invoices History

Date: 5/27/2018 - 6/4/2018

Customer: SATEC Site: 3 channels. Dat... Location: 3 channels V, BF.

Number	Invoice ID	Start Date	End Date	Consumer	Serial number	Channel	Number of days	Description	Chargeable	Peak	High	Low	Total Usage	Total	
1	404220	5/31/2018	6/1/2018	מני לב שגיא מחלקת פיתוח בית סייטק	1007850		1	216 -- תע"ז יבוא מ"נ, PF, לפא קנס לשנות - מ"מ, שא ביקוש, בלי תשלום קבוע	✓	1126	68	283	1,477.00		
Total											1,126.00	68.00	283.00	1,477.00	

Header contains details of the customer and the site.



Total Usage	Total Cost	Delete	Approve
1,477.00	757.46	<input type="checkbox"/>	None
1,477.00	757.46		

Scroll right to reveal additional columns.

Check to delete the invoice.

Invoice Approval

Invoice approval is done in two stages: review and approval. Upon completion of both steps, the invoice may be e-mailed. To approve invoices:

1. Display an invoice by performing steps 1-3 in the section [Invoices History](#) on page 28.
2. Click on the invoice status (1) in the Approve column (2).
3. Choose either **Check** or **Deny** (3) and click **OK** (4).
4. Invoice status (1) changes to checked, and the approval window fields change (5).
5. Choose **Approve**, **Deny**, or **Approve and Send** from the drop down menu (5). Selecting **Approve and Send** approves the invoice and sends it in an e-mail.
6. Click **OK** (6).

expertpower™ MANAGER > BILLING > INVOICES HISTORY

Click to approve all displayed invoices.

Billing \ Invoices History Date: 5/27/2018 - 6/4/2018

Customer: SATEC Site: 3 channels, Dat... Location: 3 channels V, BF...

Number	Invoice ID	Start Date	End Date	Consumer	Serial number	Channel	Number of days	Description	Chargeable	Peak	High	Low	Total Usage	Total Cost	Delete	Approve	
1	404220	5/31/2018	6/1/2018	מני לב שגיא מחלקת פיתוח בית סייטק	1007850			216 -- תע"ז יבוא מ"מ, PF, למ"מ PFN לשנות - מ"מ, שיא ביקוש, בלי תשלום קבוע	✓	1,477.00	757.46		None				
Total														1,477.00	757.46		

Approve Invoice

Select **Check** Comment

OK

User Name	Full Name	Date	Last Action	Comment
-----------	-----------	------	-------------	---------

Approve Invoice

Select **Approve** Comment

OK

User Name	Full Name	Date	Last Action	Comment
ranits		06/03/2018 16:54:55	Checked	

Billing Comparison

The Billing Comparison Utility screen enables (for auditing purposes) the comparison between the charge received from the electric company and the charge generated by the system.

To compare charges:

1. Select **Billing Comparison** from the Billing menu.
2. Select the relevant device(s) in the device tree (see [Selecting Devices on page 7](#)).
3. Set the desired date range (see [Setting Data Range on page 6](#)).

The billing data shown for comparison are:

- **Energy Measurements (1)** – consumption data measured in the system.
 - **Billing (2)** – cost measured in the system.
 - **Electric company account details (3)** – consumption and cost data as measured by the electric company.
4. Enter the invoice data of the electric company (3).
 5. Click **CALCULATE** (4).

Results of the comparison appear in the Differences column (5).

expertpower™ MANAGER > BILLING > BILLING COMPARISON

MANAGER Dashboard Readings Events Consumption Power Quality Billing Generators Reports

Billing \ \ Billing Comparison Utility Header contains details of the customer, the site, and the selected device. Date: 5/1/2018 - 5/26/2018

Customer: SATEC Site: test child sit... Location: UPS Device: BFM136-03... Electricity

☐ Split on 1st of month ☒ Merge On Price Change **4** Calculate

Description	1 Energy Measurements						2 Billing		3 Utility		
	Usage code	Season	Tariff	Previous Date	Present Date	Usage (kWh / kW)	Cost per kWh (agorot)	Total cost (NIS)	Usage (kWh / kW)	Cost per kWh (agorot)	Total cost (NIS)
TOU Energy	777	Fall/Spring	Peak	5/1/2018	5/25/2018	255	46.96	119.75	46.96		
TOU Energy	778	Fall/Spring	High	5/1/2018	5/25/2018	73	39.12	28.56	39.12		
TOU Energy	779	Fall/Spring	Low	5/1/2018	5/25/2018	185	32.52	60.16	32.52		
Subtotal				5/1/2018	5/25/2018	513		208.47			
kW Max DMD		General	General	5/1/2018	5/26/2018	1.564					
PF		General	General	5/1/2018	5/26/2018	1					
סך נדרש 0.92											
VAT				5/1/2018	5/25/2018		17.00%	35.44		17.00%	
Total Charge				5/1/2018	5/26/2018			243.91			

5 Scroll right to reveal additional columns

Total cost (NIS)	Difference			
	Usage (kWh / kW)	Total Cost	Pricing (NIS)	Total (NIS)

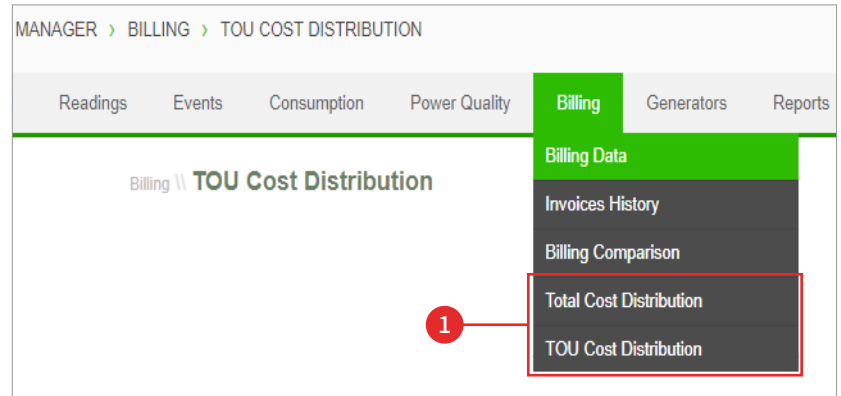
Cost Distribution

There are two types of energy cost distributions:

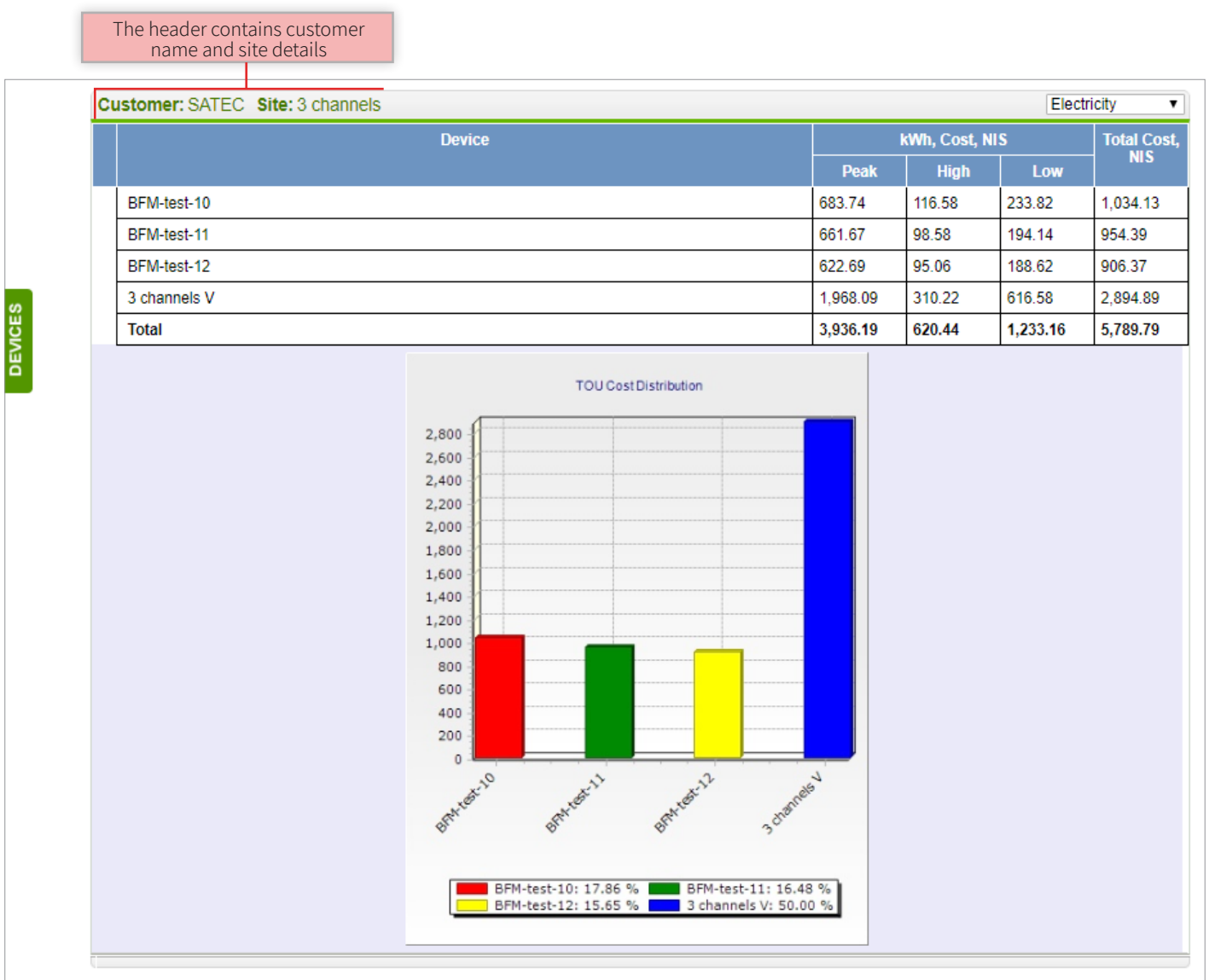
- **Total Cost Distribution** – cost comparison by period for multiple meters.
- **TOU Cost Distribution** – cost comparison by peak, high, and low levels.

To view billing information by cost distribution:

1. Choose the desired distribution type from the Billing menu (1).
2. Select the relevant device(s) in the device tree (see [Selecting Devices on page 7](#)).
3. Set the desired date range (see [Setting Data Range on page 6](#)).



The following billing data is displayed:

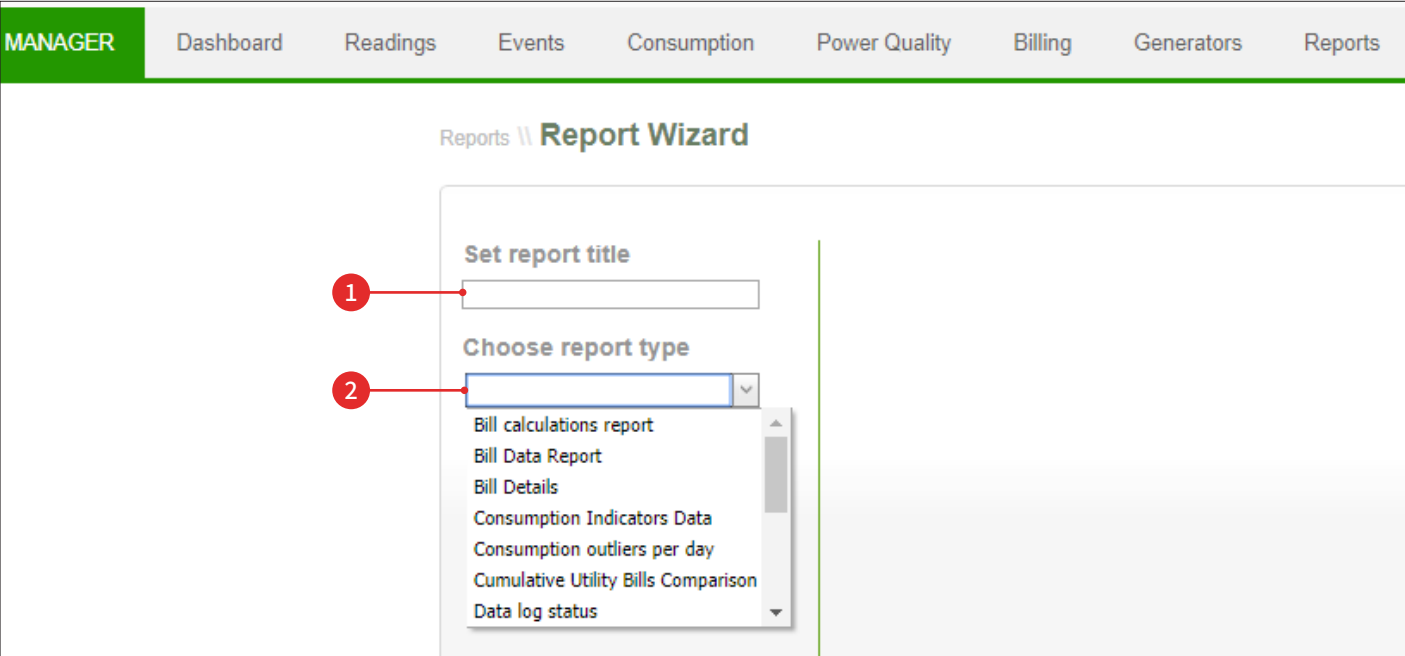


Reports

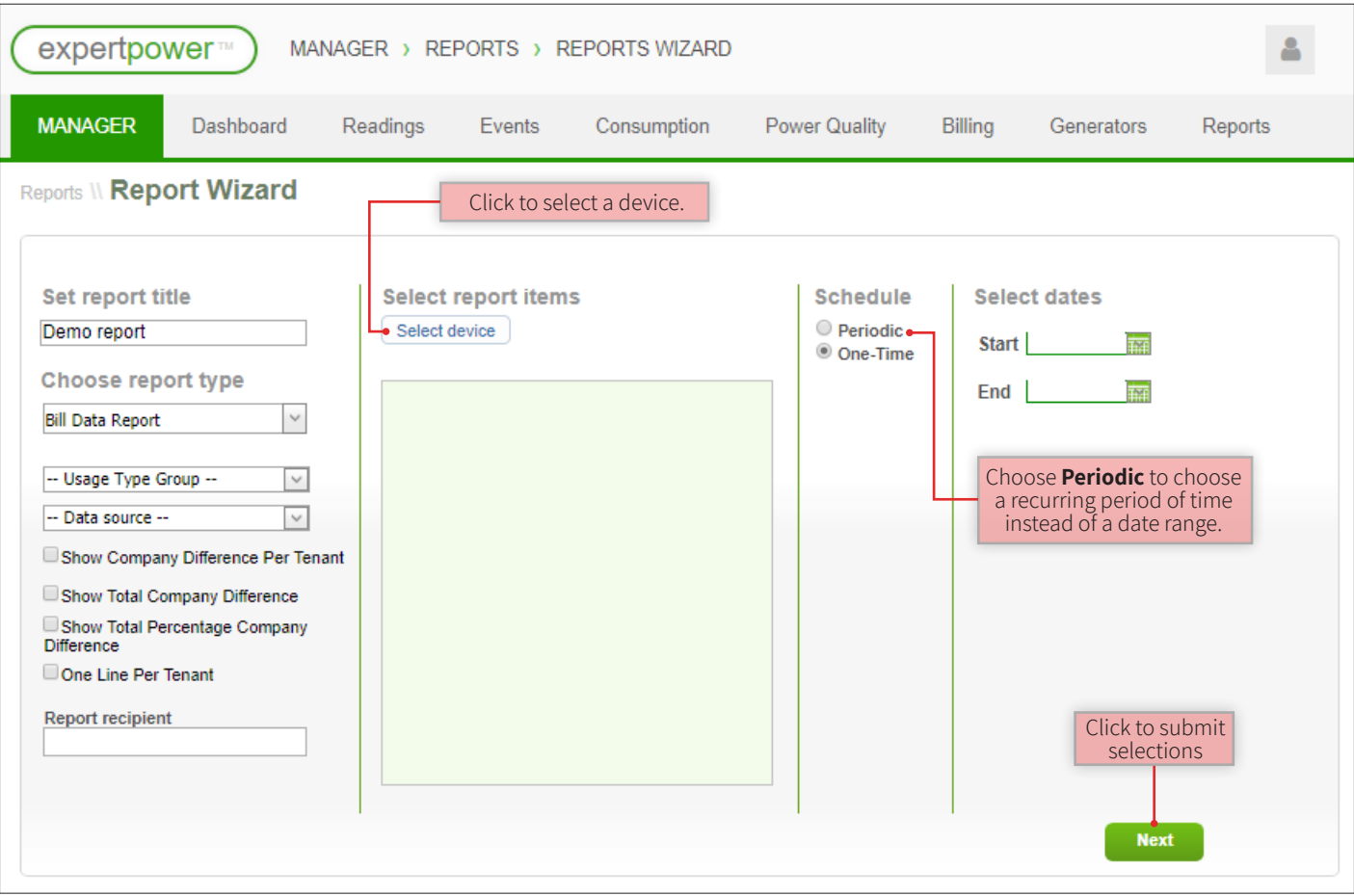
The report generation wizard enables defining a report type and selecting which parameters to display. Each generated report is noted in the list of reports and can be edited at any time.

To produce a new report:

- 1. Select **Reports Wizard** from the Reports menu.
- 2. Enter a report title (1).
- 3. Choose report type from the list (2).



The following screen opens to define report settings.



To select a report from a list of reports:

1. Select **Reports List** from the Reports menu.
2. Choose the desired action from the drop-down menu (1).
 - **Update** – change the report definitions.
 - **Save As** – save a copy of the report with a different name.
 - **Delete** – erase the report from the list of reports.
 - **Share** – share a copy of the report with someone else.
 - **Generate** – create a report.
 - **Export to PDF**
 - **Export to Excel**
 - **Results** – display the periodic reports generated (this option exists only in periodic reports).

MANAGER > REPORTS > REPORTS LIST

MANAGER
Dashboard
Readings
Events
Consumption
Power Quality
Billing
Generators
Reports

Reports \ Reports List

Click to filter the report list by customer, by type, or by title of report.
+ Filter List

User: ranits

Number	Name	Type	Last Updated	Periodic	Completed	Action
8378	demo report7	Bill Data Report	5/27/2018 6:59:12 PM	X	✓	Generate ▾ ▶
8377	demo report2	Bill Data Report	5/27/2018 3:13:42 PM	X	✓	Generate ▾ ▶
8371	demo report	Bill calculations report	5/27/2018 1:20:13 PM	X	✓	Generate ▾ ▶

First
Previous
1
Next
Last

1
Generate ▾
Update
Save As
Delete
Share
Generate
Export To PDF
Export to Excel

4 Administrator Settings

The following system options are set at the administrator level:

- [Company Settings](#)
- [Billing Administration](#)
- [Link a Billing Program to a Device](#)
- [Site Setup](#)
- [Event View Definition](#)
- [Analyzed Events](#)
- [Notification Settings](#)
- [Add Meter](#)

Company Settings

To define a new company:

1. Select **System Setup** from the Maintenance menu.
2. Select the relevant device(s) in the device tree (see [Selecting Devices on page 7](#)).
3. Select the **Companies** tab (4).
4. Click **+ Add New Definition** (2).
5. Enter information for the new company, including the payment program and start date (1).
6. Click **Add** (3).

ADMINISTRATOR Maintenance Data Entry Permissions Events Billing License Mngmt.

Maintenance \ System Setup \ Customers List \ **Customer Companies**

Company: ANDE Start Date: Payment Program: None Set for all devices: ☐ Add Cancel

Details Comm. Sites **Companies** Status Configuration Users Consumption Baseline Forecasting Email

Customer: SATEC Electricity

Company	Start Date	Action
Israel Electric Company V2	2/1/2010 12:00:00 AM	Programs Default price lists Delete

Link a Billing Program to a Device

1. Select **System Setup** from the Maintenance menu.
2. Select the relevant device(s) in the device tree (see [Selecting Devices on page 7](#)).
3. Select the **Companies** tab (1).
4. If a company is not defined, define a new company (see [Company Settings on page 35](#)).
5. From the drop down list (2), select **Programs** (3) to choose a program (see [Choose Billing Program below](#)).
6. From the drop down list (2), select **Default price lists** (4) to choose a default price (see [Setting Default Price on page 37](#)).

expertpower™ ADMINISTRATOR > MAINTENANCE > SYSTEM SETUP

ADMINISTRATOR Maintenance Data Entry Permissions Events Billing License Mngmt.

Maintenance \ System Setup \ Customers List \ Comm. Devices List \ Devices List **Device Companies** + Add New Definition

Device details **Companies** Virtual Price Lists Consumption Indicators More Options

Customer: SATEC Comm Device: PM175 SATEC Device: Main Load virtual Electricity

Company	Start Date	Periodic Reports	Action
Demo company	1/1/2015 12:00:00 AM		Select... Delete

Select...
 Select...
 Programs
 Calculations
 Thresholds
 Current Thresholds
 Factors
 Current Factors
 Customized Report Prices
 Device Company Factors
 Default price lists

Choose Billing Program

1. Click **Update** (2) to change a program selection or edit the start date.
2. Click **Add** (1).

expertpower™ ADMINISTRATOR > MAINTENANCE > SYSTEM SETUP

ADMINISTRATOR Maintenance Data Entry Permissions Events Billing License Mngmt.

Maintenance \ System Setup \ Customers List \ **Customer Companies** + Add New Definition

Details Comm. Sites **Companies** Status Configuration Users Consumption Baseline Forecasting Email

Customer: SATEC Electricity

Company	Start Date	Action
Israel Electric Company V2	2/1/2010 12:00:00 AM	Programs Default price lists Delete

Click for drop-down program menu

Payment Program 8- IEC V2 Total energy general tariff Start Date

+ Add New Definition
 Add Cancel

Program	Start Date	Action
216 -- לא לשנות - מע"מ, שיא ביקוש, בלי תשלום קבוע PF קנס, תע"ד יבוא מ"ג --	2/1/2010 12:00:00 AM	Delete Update

Setting Default Price

When choosing default price lists (see [Link a Billing Program to a Device on page 36](#)), the default price list window opens.

1. Choose usage type (1).
2. Choose from the prices that appear in the drop-down menu (2).
3. Click **SAVE** (3).

The screenshot shows the 'expertpower™' ADMINISTRATOR interface. The breadcrumb trail is 'ADMINISTRATOR > MAINTENANCE > SYSTEM SETUP'. The main menu includes 'ADMINISTRATOR', 'Maintenance', 'Data Entry', 'Permissions', 'Events', 'Billing', and 'License Mngmt.'. The sub-menu is 'Maintenance \ System Setup \ Customers List \ Customer Companies'. The 'Customer Companies' tab is active, showing 'Customer: SATEC' and 'Electricity' as the selected resource. The 'Default price lists' window is open, displaying a table with columns 'Season', 'Tariff', and 'Price List'. The 'Usage Type' is set to 'Active energy import'. The 'Use for baseline' options are 'Total' and 'TOU' (selected). The 'By Selection' radio button is selected. The table lists various seasons and tariffs, all with 'NONE' in the 'Price List' column. The 'Save' button is highlighted with a red circle and arrow.

Season	Tariff	Price List
General	General	NONE
Summer	Peak	NONE
Summer	High	NONE
Summer	Low	NONE
Winter	Peak	NONE
Winter	High	NONE
Fall/Spring	High	NONE
Fall/Spring	Low	NONE

Site Setup

A site is a set of meters which appear together in the device tree and which are often chosen simultaneously.

To define a site:

1. Select **System Setup** from the Maintenance menu.
2. Choose the desired customer from the list of customers.
3. Select the **Sites** tab (1).
4. Click **+ Add Site** (2).

The screenshot shows the 'ADMINISTRATOR' menu at the top with options: Maintenance, Data Entry, Permissions, Events, Billing, License Mngmt. The 'Maintenance' menu is expanded, showing 'System Setup' and 'Customers List'. The 'System Setup' menu is further expanded, showing 'Customers List' and 'Sites List'. The 'Sites List' page is displayed, showing a list of sites for the customer 'SATEC'. The list includes columns for 'Details', 'Comm.', 'Sites', 'Companies', 'Status', 'Configuration', 'Users', 'Consumption', 'Baseline', 'Forecasting', and 'Email'. The 'Sites' column is highlighted with a red circle 1. The '+ Add Site' button is highlighted with a red circle 2.

Details	Comm.	Sites	Companies	Status	Configuration	Users	Consumption	Baseline	Forecasting	Email
Customer: SATEC										
X	101417	3 channels								
X	100537	Data Center								
X	101025	PM175								
X	100174	PM175 SATEC EMB								
X	101848	SG Office								

5. Define a name for the site (3).
6. Select device(s) to add to the site and click **MOVE SELECTED** (4).
7. Click **SUBMIT** (5).

The screenshot shows the 'Site Details' page for a new site. The page has two tabs: 'Site Details' and 'Configuration'. The 'Site Details' tab is active. The page includes a 'Name' field (3) and a 'Parent Site' dropdown. Below these are two sections: 'Select devices to add' and 'Devices in site'. The 'Select devices to add' section lists devices: 'R&D department v', '3 channels V', 'BFM-test-10', 'BFM-test-11', 'BFM-test-12', and 'Communication room v'. The 'Devices in site' section has buttons for 'Move Selected', 'Move All', 'Remove Selected', and 'Remove All'. A red box highlights the 'Move Selected' button with a red circle 4. A red box highlights the 'Remove Selected' button with a red circle 5. A red box highlights the 'Submit' button with a red circle 5. A red box highlights the 'Name' field with a red circle 3. A red box highlights the 'Parent Site' dropdown with a red circle 3. A red box highlights the 'Move Selected' button with a red circle 4. A red box highlights the 'Remove Selected' button with a red circle 5. A red box highlights the 'Submit' button with a red circle 5. A red box highlights the 'Name' field with a red circle 3. A red box highlights the 'Parent Site' dropdown with a red circle 3. A red box highlights the 'Move Selected' button with a red circle 4. A red box highlights the 'Remove Selected' button with a red circle 5. A red box highlights the 'Submit' button with a red circle 5. A red box highlights the 'Name' field with a red circle 3. A red box highlights the 'Parent Site' dropdown with a red circle 3. A red box highlights the 'Move Selected' button with a red circle 4. A red box highlights the 'Remove Selected' button with a red circle 5. A red box highlights the 'Submit' button with a red circle 5.

Optional: select to define the new site as a sub-site of an existing site.

To remove a device from the site, select it and click **REMOVE SELECTED**

Event View Definition

Defining event views enables the selection of events displayed in the Event View screen (see [Event View on page 19](#)). The customer has the option to add, edit, and download various events.

1. Select **View Definition** from the View menu.
2. Select the desired customer or site from the device tree (see [Selecting Devices on page 7](#)).
 - When selecting a site, events belonging to associated devices are displayed.
 - When selecting a device, events and communication converters are displayed.
3. Choose the desired category from the drop down menu (1).
4. Choose the desired event type (2).
5. Choose the warning level (3).



Tip

The warning level affects alarm scheduling (see [Set Alarm Scheduling on page 42](#)).

6. Click **Add** (4).

The selected event now appears in the list of existing events.

Analyzed Events

Analyzed events are events which are analyzed based on criteria defined by a user.

To define an analyzed event:

1. Select **Analyzed Events** from the Events menu.
2. Click **NEW** (1).

ADMINISTRATOR Maintenance Data Entry Permissions Events Billing License Mngmt.

Events \ Analyzed Events

Customer: SATEC

SATEC (1) New

consumption event test

3. Define event details (2).
4. Choose an event source from the drop-down menu (5).



Tip

Data sources for energy and demand data require defining a formula. To define a formula, select **Energy & Demand** (4) and click **CHOOSE FORMULA**, which replaces the **CONDITIONS** button (7).

5. Select the desired sites or devices (6).
6. Click **CONDITIONS** (7) to set conditions for the event (see [Defining Criteria for Analyzed Event on page 41](#)).
7. Click **SAVE** (3).

Analyzed events are added to the list of events, and notifications may be set for them (see [Notification Settings on page 42](#)).

expertpower™ MANAGER > DASHBOARD

MANAGER Dashboard Readings Events Consumption Power Quality Billing Generators Reports

Events \ Analyzed Events

Customer: SATEC Event Name:

Clear Back Save (3)

Event Name
Event Name
Field Required

Start Message
Start Message
Field Required

End Message
End Message
Field Required

Open Action Close Action
None None

Description in map (Up to 15 characters)
Description in map

Warning Level
Info Warning Critical

Description

Select Event Source

Basic measurements
Basic measurements
ETC Event Log
Event Log
Generator Controller
Energy & Demand (4)
Digital Inputs

PM175 SATEC
PM175 SATEC EMB
SATEC PM135
SATEC SG
SG Office
site for Marketing (6)
Submeters
test child site to delete
אתר דרומי
אתר שיווק ישראל

Conditions (7)

The selected warning level is marked in blue.

Defining Criteria for Analyzed Event

An analyzed event is opened and closed based on pre-defined conditions. To set these conditions:

1. Click **CONDITIONS** (see [Analyzed Events on page 40](#)).
2. Click **ADD** (3) to begin a new event definition.
3. Choose a triggering parameter from the drop-down menu (1).
4. Set threshold triggers (5) for the open and close actions.
5. Click **SAVE** (4).
6. Click **DEFINE TIME CRITERIA** (2).

MANAGER Dashboard Readings Events Consumption Power Quality Billing Generators Reports

Events \ Analyzed Events

Customer: SATEC Event Name:

Define Event Criteria

Voltage L1/L12 Starting Threshold >= Ending Threshold >=

Starting Threshold is required Ending Threshold is required

Define Time Criteria Remove Add Back Save

The Define Time Criteria window opens.

7. Click **ADD** (6).
8. Choose the time frame (9) from the drop down menu.
9. Define beginning and ending parameters for the time frame (8).
10. Click **SAVE** (7).

The analyzed event is added to the list of existing events.

Events \ Analyzed Events

Customer: SATEC Event Name:

Define Time Criteria

Day of week Day of week Year Month Day of month Hour Minute

>= Sunday >= Sunday

Define Event Criteria Remove Add Save

Notification Settings

Notifications can be set, per device, for events in the system.

1. Select **Notifications** from the Events menu.
2. Select the desired site or device in the device tree (see [Selecting Devices on page 7](#)).
3. Optional: select an open action (1) to trigger the opening of the event. Select a close action (2) to trigger the closing of the event.
4. Click **SAVE** (3).

Events \ Notifications

Customer: SATEC Site: Data Center Location: Main Load

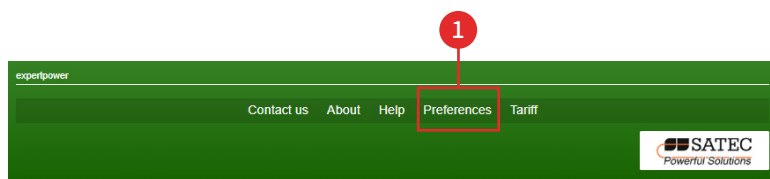
Event Type	Open Action	Close Action
Analyzed \ System		
⚠ Analog Input Source Burnt Out	None	None
🔍 Daily Energy Zero	None e-mail SMS e-mail & SMS	None
🔍 Low weekly Power Factor (< 0.92)		
🔍 Technician working on Generator		
Analyzed \ User		
⚠ High Power out of working hours	None	None
Application \ Communication		
🔍 ETC stopped connecting XPW. Switching to polling	None	None

Save

Set Alarm Scheduling

To schedule an alarm:

1. Select **Preferences** (1) at the bottom of any of the system screens.
2. Schedule e-mail and SMS messages for each alert level.
3. Click **SUBMIT** (2).



Notifications

eMail SMS

Click to schedule SMS notifications.

Warning Level	None	Immediate	Send Every
Informative	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> 1 Minutes
Warning	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> 1 Minutes
Critical	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> 1 Minutes

Submit

Add Meter

To add a new meter:

1. Select **System Setup** from the Maintenance menu.
2. Select the desired customer from the list of customers.
3. Select the **Comm.** tab (1).
4. Click **+ Add Communication Device** (2).

expertpower™ ADMINISTRATOR > MAINTENANCE > SYSTEM SETUP

ADMINISTRATOR Maintenance Data Entry Permissions Events Billing License Mngmt.

Maintenance \ System Setup \ Customers List \ **Comm. Devices List** [+ Add Communication Device](#)

DEVICES

Details	Comm.	Sites	Companies	Status	Configuration	Users	Consumption	Baseline	Forecasting	Email
Customer: SATEC										
ID	Communication Device	MAC	IP address	Port	Connection status	Last date polled	Suspended	Not displayed in site		
100107	BFM136 SATEC	0005F0005872	82.166.91.134	502	Connected	5/31/2018 11:37:48 AM	<input type="checkbox"/>	<input type="checkbox"/>		
100136	PM175 SATEC	0005F0005039	82.166.91.134	504	Connected	5/31/2018 11:37:17 AM	<input type="checkbox"/>	<input type="checkbox"/>		
103137	SATEC SG	0005F000D9E6X		502	No Connection	3/29/2018 11:18:12 AM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
103138	SATEC PM135	0005F000A58FX		502	No Connection	3/29/2018 11:18:50 AM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

The New Comm. Device screen appears. In this screen, enter the following data:

- **ID Name** – a unique name that will aid in identifying the device.
- **Communication device type** – device type is in accordance with the relevant device.
- **Time Zone**
- **Password**
- **MAC** – MAC address appears on the device.

5. Click **SAVE** (3).

Details

New Comm. Device

* ID: Name

Communication device type

☐ Suspended
☐ Hidden
[+ More Properties](#)

Time zone

Password
[Show password](#)

MAC

Serial number

MAC address is printed on the device.

Entering a serial number is optional.

Save

Add a Device

To add a new device:

1. Select **System Setup** from the Maintenance menu.
2. Select the desired customer from the list of customers.
3. Select the **Comm. Devices** tab.
4. Select the desired link in the list of communication devices.
5. Select the **Devices** tab (1).
6. Click **+ Add Device** (2).

ID	Number	Device name	Type	Serial number	Channel	Last Polled	Availability	Reset Availability	Hidden	Suspended
102028	1	Main Lightning	BFM136-036 Logs	1002082	1	5/31/2018 1:34:10 PM	0	Reset Availability	<input type="checkbox"/>	<input type="checkbox"/>
103444	2	Workstations sockets	BFM136-036 Logs	1002082	2	5/31/2018 1:34:15 PM	0	Reset Availability	<input type="checkbox"/>	<input type="checkbox"/>

7. Set the device parameters.
8. Enter the serial line address number (3).
9. Click **SAVE** (4).

Entering a serial number is optional.

The device now appears both in the communication device lists and in the device tree.

Adding a Calculated Meter

A calculated (virtual) meter applies a formula to multiple devices for billing purposes and for viewing data.

To add a calculated meter

1. Go through steps 1-6 of adding a device (see [Add a Device on page 44](#)).
2. Enter a name for the calculated device (1).
3. Select **Virtual By Formula** from the Device Type drop-down menu (2).
4. Click **SUBMIT** (3).

The screenshot shows the 'New Device' form. Annotation 1 points to the 'Device name' text input field. Annotation 2 points to the 'Device Type' dropdown menu, which is currently set to 'Virtual By Formula (65)'. Annotation 3 points to the green 'Submit' button at the bottom right of the form.

Setting a Virtual Device

1. Click on the virtual device in device list (see [Add a Device on page 44](#)).
2. Select the **Virtual** tab (1).
3. Choose device type (2).
4. Click **+ CREATE NEW VERSION** (3).
5. Set a date and name, and click **OK** (4).

The screenshot shows the 'Virtual Device' configuration page. Annotation 1 points to the 'Virtual' tab in the top navigation bar. Annotation 2 points to the 'Energy' checkbox under the 'Required Processing' section. Annotation 3 points to the '+ Create new version' button. Annotation 4 points to the 'OK' button in the 'Version' dialog box, which is open over the 'Required Processing' section. The dialog box contains fields for 'From Date', 'Name', and a 'Copy Previous Version' checkbox.

Setting a Formula

1. Click **+ Add** (1) in the Virtual tab (see [Setting a Virtual Device on page 45](#)).

expertpower™ ADMINISTRATOR > MAINTENANCE > SYSTEM SETUP

ADMINISTRATOR Maintenance Data Entry Permissions Events Billing License Mngmt.

Maintenance \ System Setup \ Customers List \ Comm. Devices List \ Devices List \ **Virtual Device**

DEVICES

Device details Companies **Virtual** Price Lists Consumption Indicators More Options

Customer: SATEC Comm Device: BFM136 SATEC Device: test Current Version: 1.1.0

Required Processing ([Virtual devices schedule](#))

Type	Special Processing	Recalculate	Process Max Demands	Insert partial data
<input checked="" type="checkbox"/> Energy				<input checked="" type="checkbox"/>
<input type="checkbox"/> Basic measurements				
<input type="checkbox"/> Demands				

1.1.0 11/4/2015

Basic Formula [Special Formula](#)

The Basic Formula window opens.

2. Choose the formula from the drop down menu (2) and click **SAVE** (3).

Basic Formula

☒ Devices ☐ Sites

3 channels V

Factor

To add another device, repeat step 1 and select another device in the Basic Formula window.



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All Information and specification in this manual are subject to changes without notice.