SolarEdge Monitoring Portal – USER GUIDE

Introduction

SolarEdge's monitoring platform enables monitoring of the technical and financial performance of 1 or more PV sites with SolarEdge equipment. It provides accurate information relating to the present and past performance of each module individually and about the system in its entirety. Enabling users to detect, identify and troubleshoot faults, efficiently manage maintenance operations and analyse site profitability.

Smart algorithms continuously track the power, voltage and current of all modules and inverters, moreover a range of statistical and meteorological indicators to detect performance events that require intervention or maintenance.

These features enable system owners (and installers) to verify site functionality and monitor its performance.

Using the SolarEdge Monitoring Platform

Getting Started

Once the system is commissioned, DS Energy's installation team will have set up your username, password, and monitoring permissions as the system owner. Following this, SolarEdge will send you a registration email with a link to a form, which must be filled.

To activate your account

1. Click the link sent to you in the invitation email message. The registration form is displayed

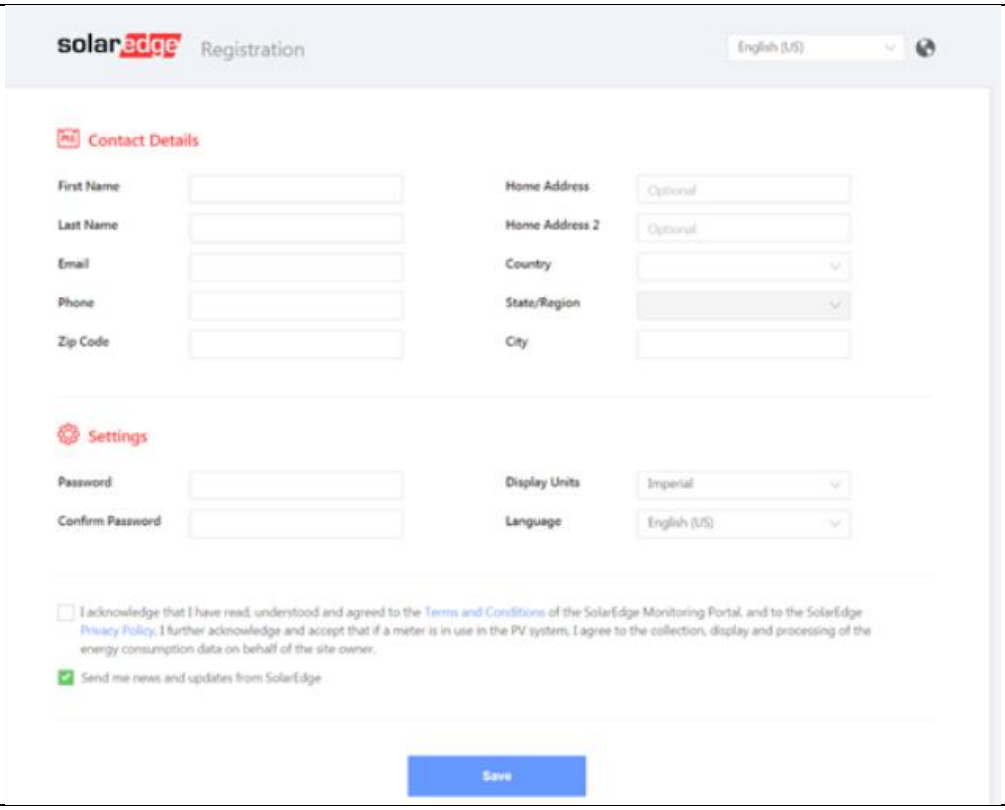


Fig 1: Registration From

2. Enter your details and select the required check boxes
3. Click Save to complete the registration and get access to your solar system
4. When the "Thank You" page appears (Figure 2), click Log In to the Monitoring platform. The Login window is displayed (Figure 3).

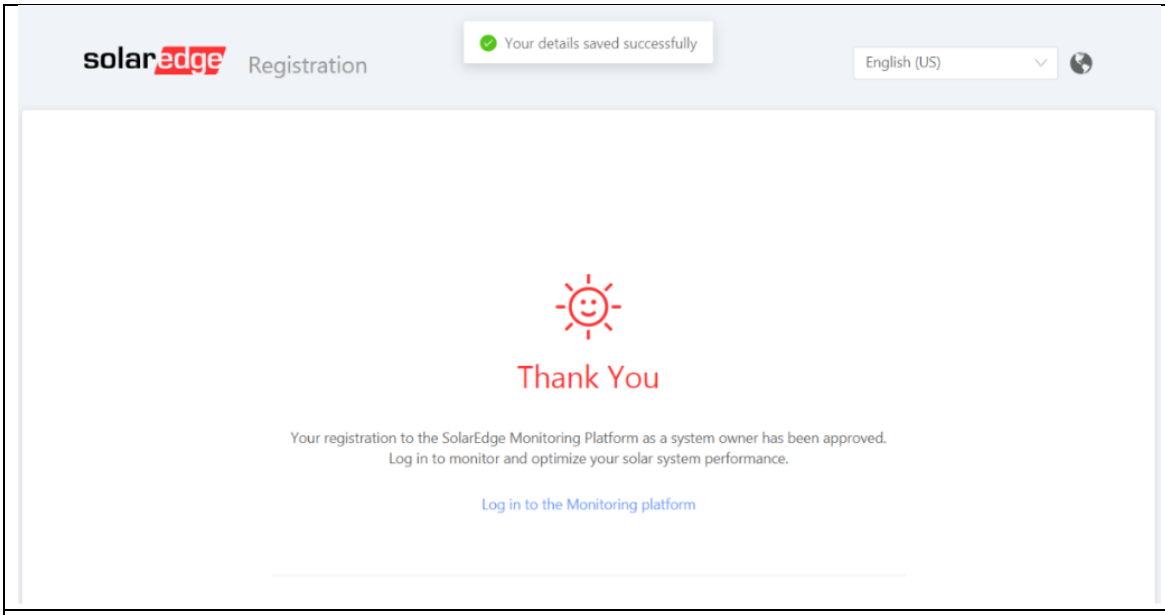


Fig 2: Thank You Page

Fig 3: Login Window

To launch the SolarEdge Monitoring Platform

1. Do one of the following
   - Go to https://monitoring.solaredge.com
   - From the SolarEdge website, click the Monitoring Platform Login link at the top of the screen (Fig 3)
2. Enter your email and password (as filled in the registration form) and click Login.

If more than site is assigned to the system owner, the list of his/hers SolarEdge sites appear on the Site List on the Home Page. If only one site is available, the site's Dashboard is automatically displayed, without going through the Site List.

User Settings

To set user preferences

1. Click the dropdown arrow next to your username and select User Settings. The User Settings window is displayed.

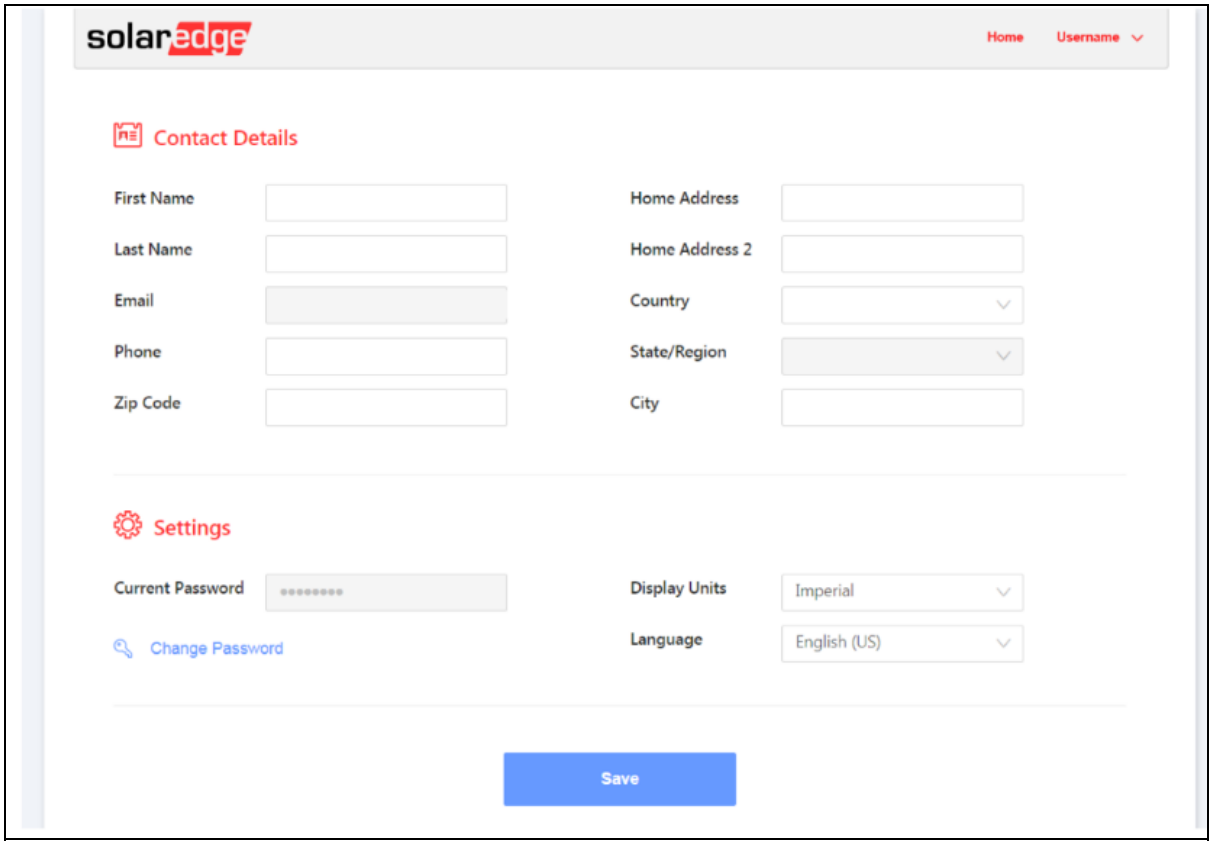


Fig 4: User Settings Window

2. Set the following:

- First Name - Last Name - Email - Phone number - Zip Code	- Address - Change password (if needed) - System Units (metric or imperial) - Language (when you change it, localised data changed automatically, incl currency, numbers

3. Click Save

Home Page

The home page lists all the installed sites you have permission to view. It provides an overall view of the various sites managed by the monitoring platform.

If you only have access to one site, the site's Dashboard is automatically displayed, without going through the home page. If you require access to additional sites, contact your installer.

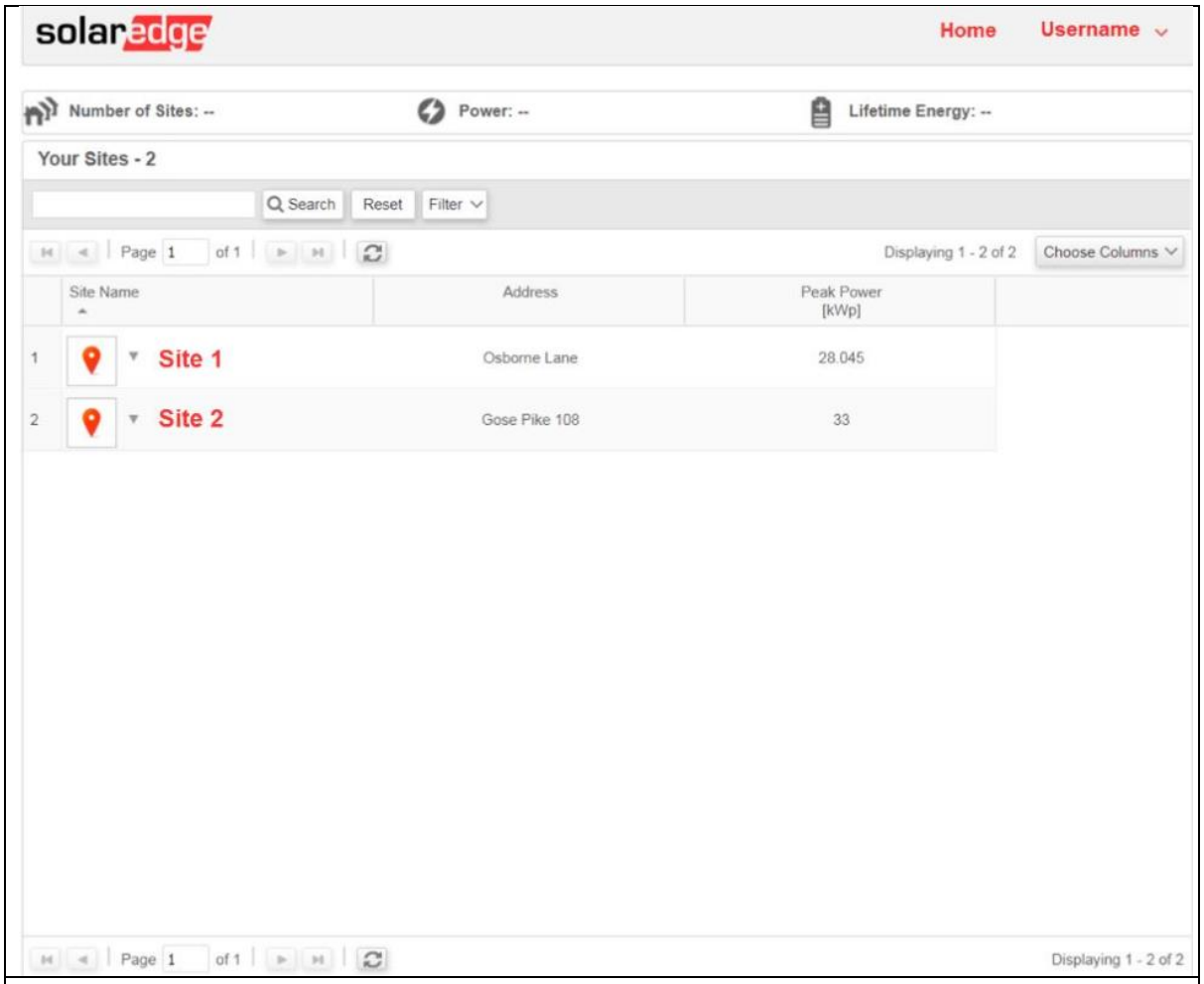


Fig 5: Home Page

To use the home page:

1. Click Home at the top right toolbar. The site list is displayed containing the following information about each site:

Column	Description
Site Name	A link to more information about a site. Click the site name to display the **site dashboard**
Address	Information on a site's physical location
Peak Power	Specifies the total DC power ratings of all the modules

2. Do the following as required:

- To control which columns appear, click Choose Columns to open a dropdown list, and check the boxes for the columns you wish to display.

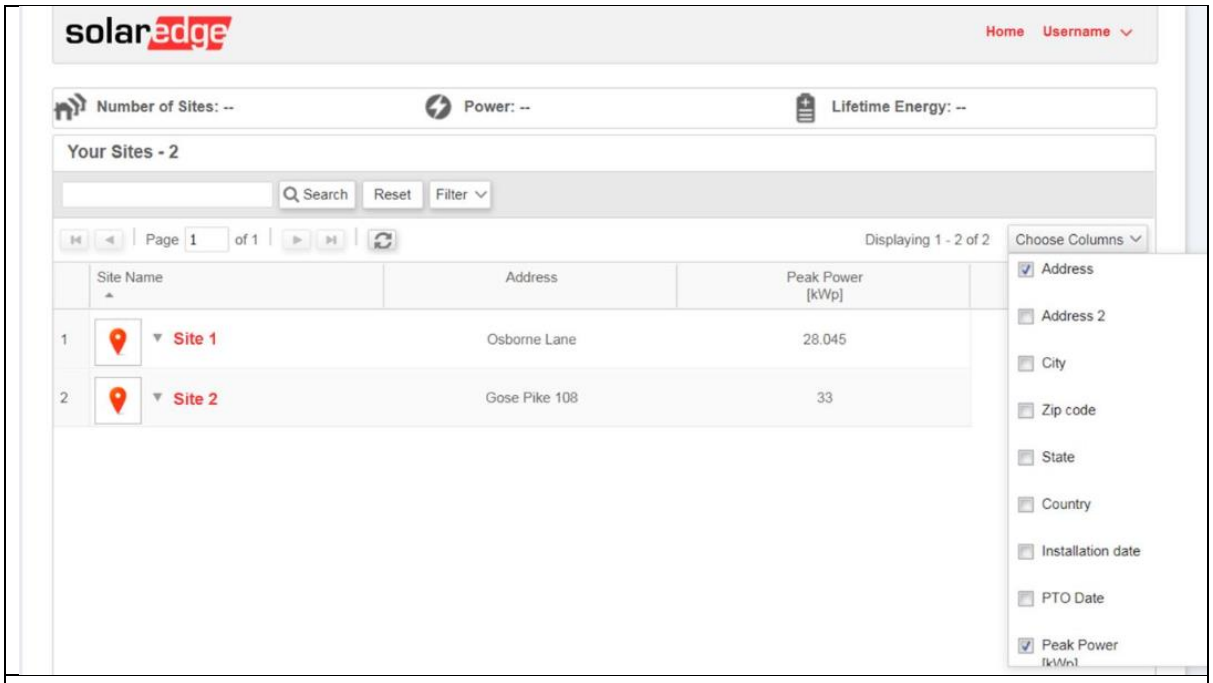


Fig 6: Displaying Columns

- To sort the site list by the values in any column, click on the column's title. This toggles the order from ascending to descending and vice versa. Alternatively, click the column's dropdown arrow and select either Sort Ascending or Sort Descending.
- Use the navigation bar above the list to navigate through the pages and refresh the site information.
- Search for a specific site using the search box. The search text is remembered even if the browser is closed and reopened.

Site Dashboard

The Dashboard provides a high-level view of the information collected by the monitoring platform.

To access a site's dashboard, simply click on the site name in the home page site list. If you only have access to one site, the site's Dashboard is automatically displayed.

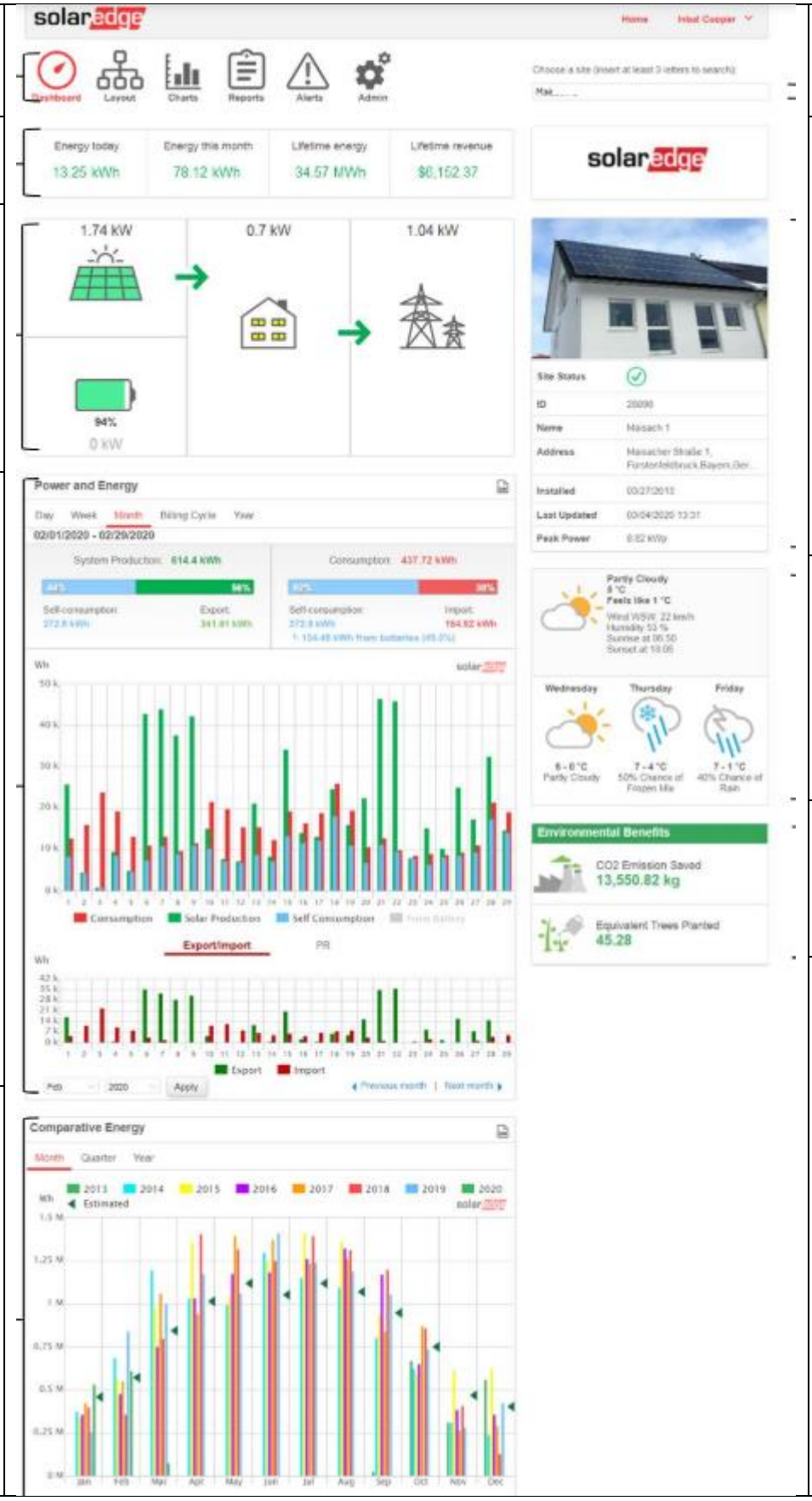
Navigation bar		Site Selection Menu
Site overview		Site Details
Power Flow		
Power and energy		Weather data
		Environm-ental Benefits
Comparative Energy		

Fig 7: Site Dashboard

How to read the site dashboard

Site overview

The site overview area shows accumulated energy and revenue for the site. Each box specifies a value and its measurement unit.

The revenue is calculated by multiplying the site-specific feed-in tariff per kWh by the actual energy produced. The revenue is displayed in the currency predefined by the user.

Energy today	Energy this month	Lifetime energy	Lifetime revenue
13.25 kWh	78.12 kWh	34.57 MWh	$6,152.37

Fig 8: Site Overview

Power Flow Diagram

The Power Flow Diagram shows real-time system behavior – from solar production to site consumption, and grid import or export. For systems equipped with Storage, the battery charge/discharge status and state of energy will also be shown.

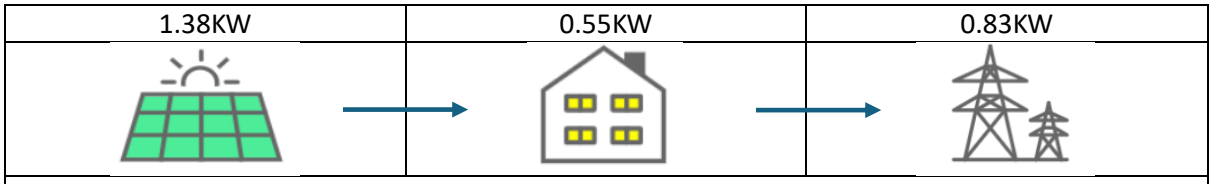


Fig 9: Power Flow Diagram

Power and Energy

If a consumption meter is installed, a consumption bar is displayed. The consumption reading represents your solar consumption

- System production – the bar represents the solar energy produced in terms of self-consumption and export. The self-consumption percentage represents the amount of solar energy that is used to power site loads, while the export percentage represents the amount of solar energy that was exported to the grid.
- Consumption – the bar represents the total energy consumed in terms of self-consumption and imports. The self-consumption percentage represents the amount of energy consumed from solar energy, while the import percentage represents the amount of energy consumed from the grid

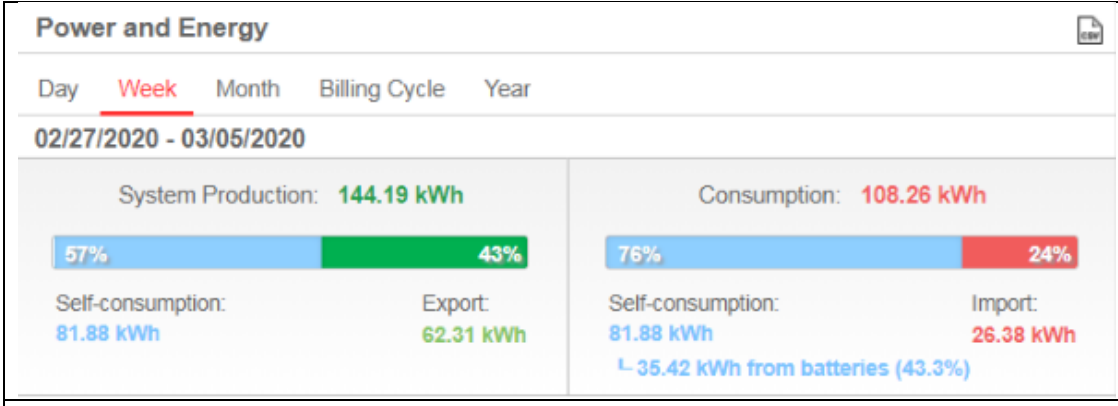


Fig 10: Consumption Bar

The power and energy chart are found directly below the consumption bar (when it appears). The chart shows the power production of this site over a specified period. The default period is the billing cycle.

The X-axis represents time, and the Y-axis represents the power produced in kW (when in Day or Week view), or the energy produced in kWh (when in Month, Billing Cycle, or Year view). Use the tabs above the graph to select the desired view.

Power level is a function of variable factors, such as the irradiance level and ambient temperature. Therefore, the power curve typically rises and falls each day.

If there is a data connection between a production meter and your SolarEdge system, then the production data displayed here is taken from the meter's readings. If not, the data is taken from your site inverter or module production readings.

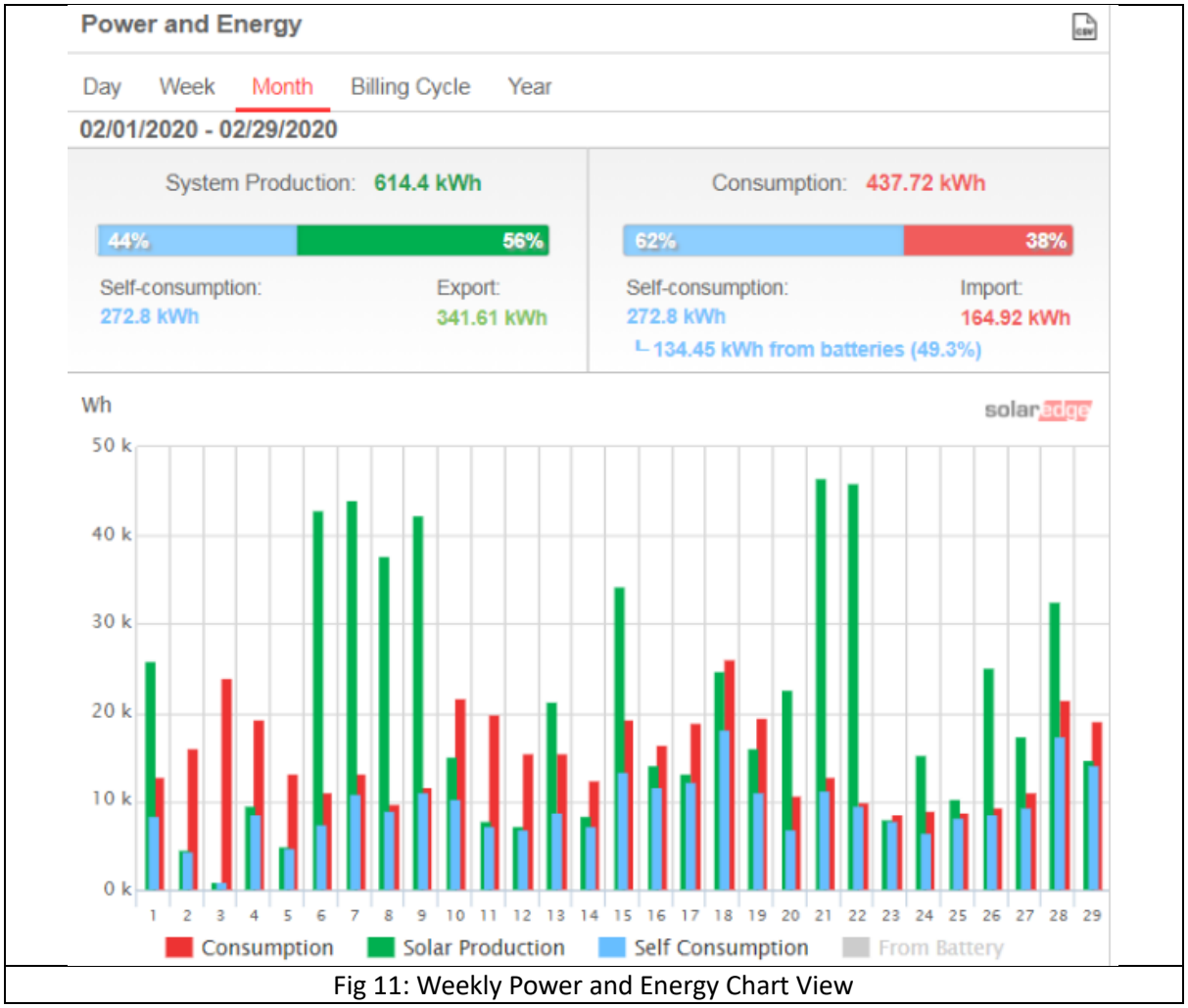


Fig 11: Weekly Power and Energy Chart View

How to read the power and energy chart

The solar production shown in green represents the power or energy produced by the sun. The consumption, marked in red, displays the site's load consumption. In blue, the self-consumption is shown.

Comparative energy

The comparative energy chart compares the energy produced at the site during corresponding periods in previous years. You can select to compare months or quarters of different years, or even entire years' output.

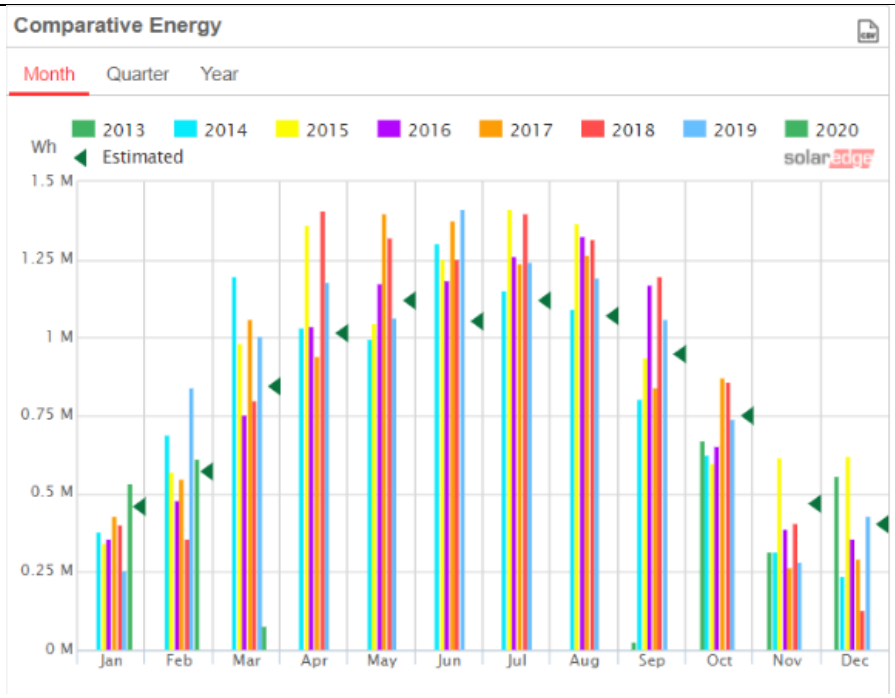


Fig 12: Comparative Energy Chart

Site Details

The site details box displays general information about the site – status, ID, name, location, date installed, date the information was last updated, and the site's peak power (Fig 13)

If an EV charger or smart energy products are connected at site, then a symbol for each one also will be displayed.

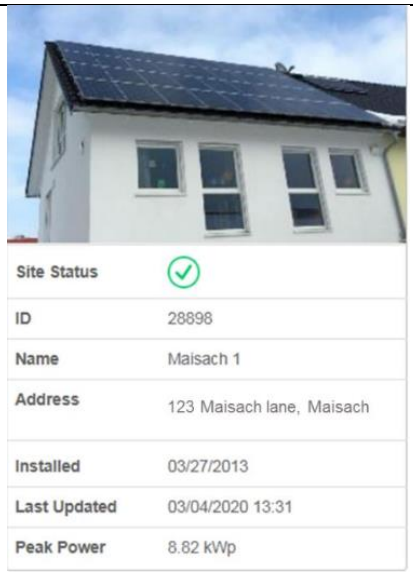


Fig 13: Site Details

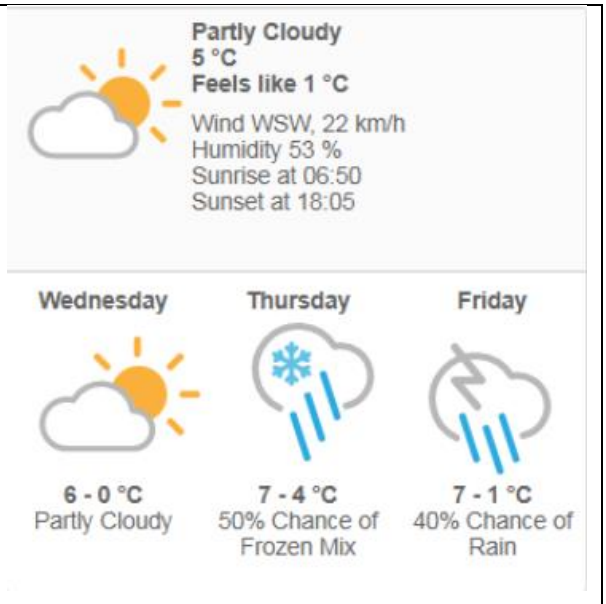


Fig 14: Site Details

Weather

The Weather (Fig 14) area shows the current weather conditions together with other details such as the forecast for the next few days. This information may benefit when estimating future power production levels.

Environmental Benefits

The environmental benefits area shows the accumulated impact that non-renewable energy producing methods would have had on the environment had they have been used to produce the amount of energy generated by this site.

Fig 15: Environmental Benefits

Layout

Overview

The layout window shows a schematic outline that represents inverters, their strings and the modules in each string. Near-real-time performance data is displayed for these components.

To view the layout, select a site and click the 

icon in the top-left corner of the screen.

Use the layout to:

- View the latest performance of specific components
- Compare and analyse the performance of various components, such as modules
- Identify the location of alerted components
- See how components are connected to each other

The layout offers both physical and logical layout views as follows:

- Physical layout: shows a bird's eye view of the actual placement of each component in the site, including inverters, clusters, strings and modules
- Logical layout: shows a schematic logical view of the components in the site, meaning inverters, clusters, strings, modules and their electrical connectivity.

Physical Layout

The physical layout schematic shows a layout of the components in the field: inverters, clusters, strings, modules and their physical arrangement at site. This layout provides a virtual bird's eye view of the system's components and their location, which functions as a usable tool for troubleshooting maintenance problems.

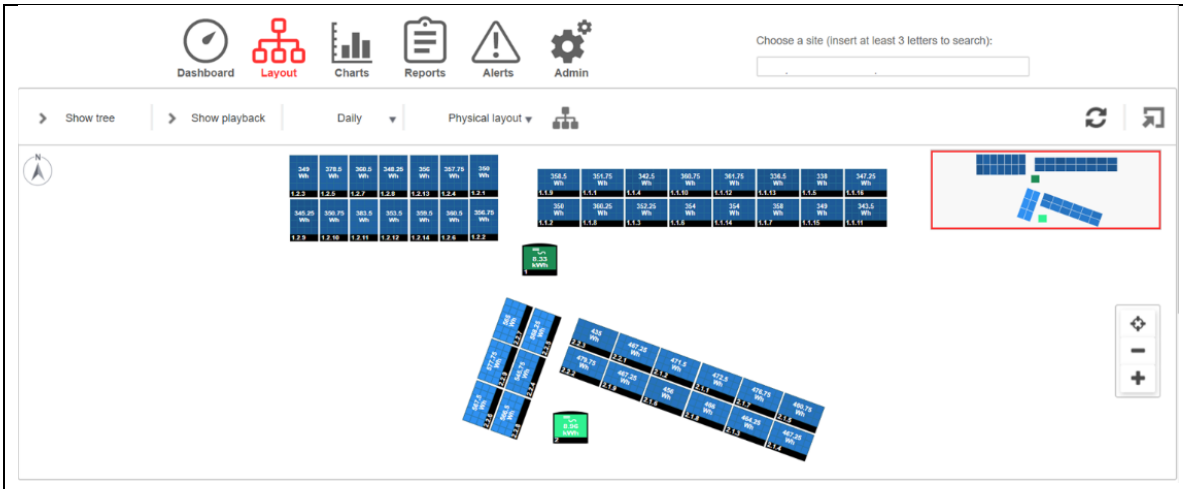


Fig 16: Physical Layout

When in the physical layout window, click the Physical layout button in the toolbar and select logical layout to display the logical layout schematic. If a physical layout was not created for the site, the logical layout will be the default view.

Elements in the Physical Layout Schematic

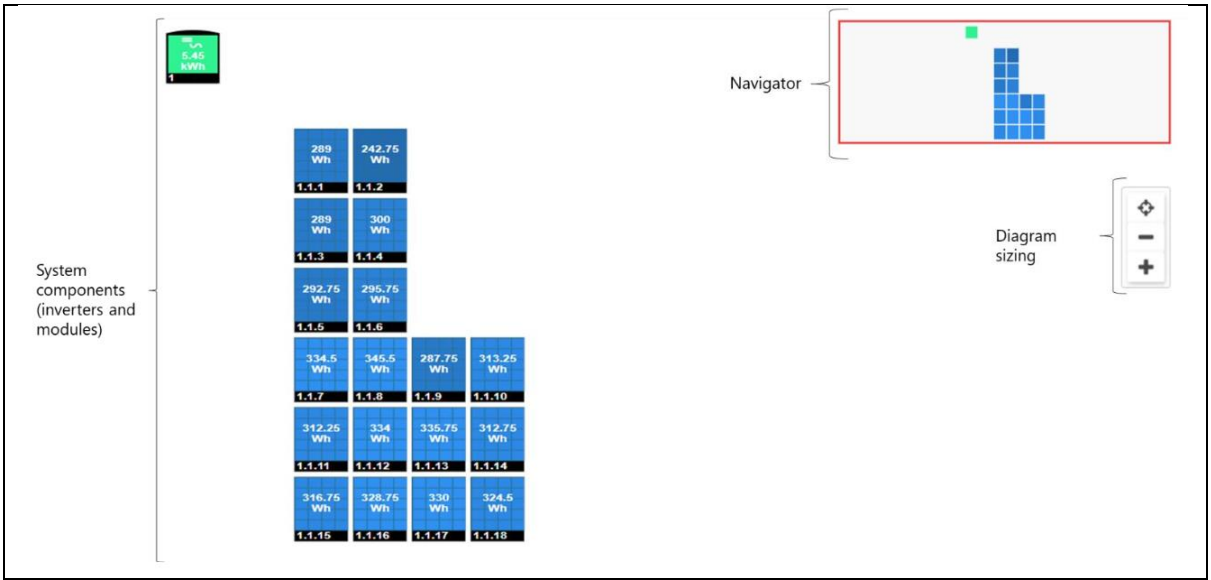


Fig 17: Elements in the Diagram (sample)

For each system component in the layout diagram (inverters and modules), the following information is displayed:

- The amount of energy indicates the energy produced by this component and its underlying components in the period chosen above the diagram
- Color Code: In the layout schematic, all the elements of the diagram are colour-coded according to the amount of energy they have produced in the timeframe specified by the buttons in the toolbar.
    - The color coding is comparative, i.e. a module that has produced the most energy over the selected timeframe is displayed in light blue, while a module that has produced less energy is darker.

- The color coding is also normalised, so the modules' color is relative to their full capacity. E.g. a 300W module is the same color as a 400W module, when both produce the same percentage of their full capacity. Normalisation is also in accordance with the number of optimisers connected to each string.

Diagram Sizing

The layout diagram can be fitted to your viewing needs:

- Zoom in/out: Make the diagram smaller or larger. Click the + button to zoom in or the – button to zoom out. When using a mouse, you can also use the wheeling scroll to zoom in our out.
- Fit to screen: Resizes the display of the diagram to fit in the screen

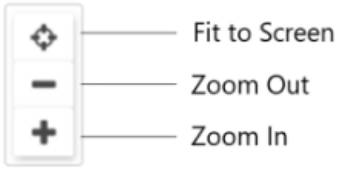


Fig 18: Diagram Sizing Options

Fig 19: Navigator Tool

Navigator Tool

The Navigator tool at the top right-hand side of the window indicates the area displayed in the diagram using a red frame. When zooming in on the layout, the red frame can be dragged to display other areas in the layout.

Logical Layout

This shows a schematic logical layout of the components in the site: inverters, strings, modules and their electrical connectivity. This layout displays a logical view of the installation site, showing which modules are connected in each string, which strings are connected to each inverter etc.

The following diagram displays the Logical Layout of the installation whose Physical Layout was shown above:

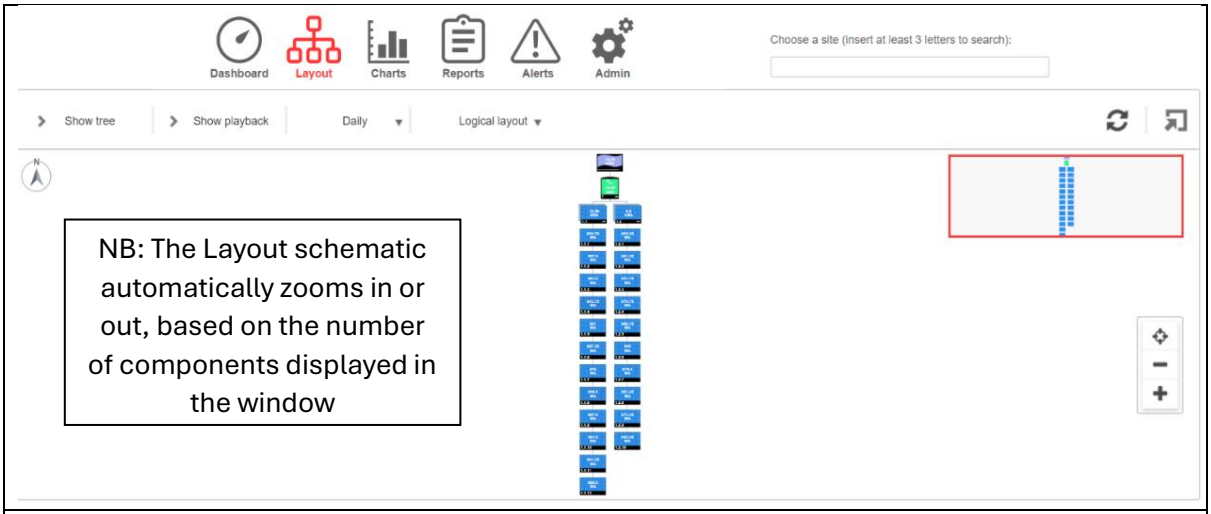
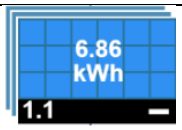
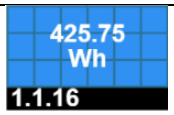


Fig 20: Logical Layout

When in the Logical Layout window, click the Logical layout button in the toolbar and select Physical Layout to display the Physical Layout diagram.

Both windows show the inverter with its associated strings and modules.

Component Types

Component	Description
	Site: Represents the site level. Displays the energy produced by the site for the selected period
	Inverter: Represents an installed inverter. Displays the energy sum produced by the strings or modules connected to it.
	String: Represents strings of modules. Displays the energy sum produced by the modules comprising the string.
	Module: Represents a single module. Displays the energy produced by the module

Component Options

For components in the layout diagram, the following options can be selected by right clicking the component:

- Info: Provides a window with details table for the selected component.
- Alerts: Redirect you to the alerts tab and displays all alerts related to the selected component.
- Choose Charts: Select a chart type to display for this component. This action will redirect you to the Charts tab
- Collapse/Expand: Expand or collapse the selected components in the diagram, thus hiding or showing its underlying component hierarchy.

  Given that this site specifically is a large-scale site installation containing thousands of modules, SolarEdge's monitoring platform enables the user to expand or collapse each hierarchical group of elements, one at a time.

  Eg. expanding the inverter level shows all its connected modules.
- View Device Screen (only for inverters): View the inverter LCD Display in real-time. For SetApp enabled inverters, the LCD display present the current inverter status.

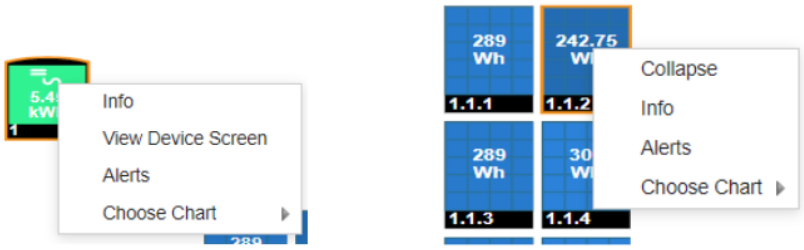


Fig 21: Component Options

Component Details

For each component or multiple components in the layout (e.g. inverters and modules), you can display its up-to-date details and performance data, such as the last power output measured.

To view component details

1. Select one or more components of the same type in the diagram (e.g. only modules or only inverters). You can use CTRL + Click to perform multiple selections. Modules from different strings can be selected, as well as strings from different inverters. Alternatively, you can use the mouse to draw and drag a selection box around the components whose details you want to display.
2. Right-click the selected components and select Info, or click ℹ on the toolbar
3. Use the table information for near-real-time comparison of component performance, in order to troubleshoot faults and find their root cause, for example, checking which strings are producing less energy and locating the individual modules in those strings that may cause this situation.

Inverter Details

When the selected component is of inverter type, inverter-related information is displayed in the window, as shown below.

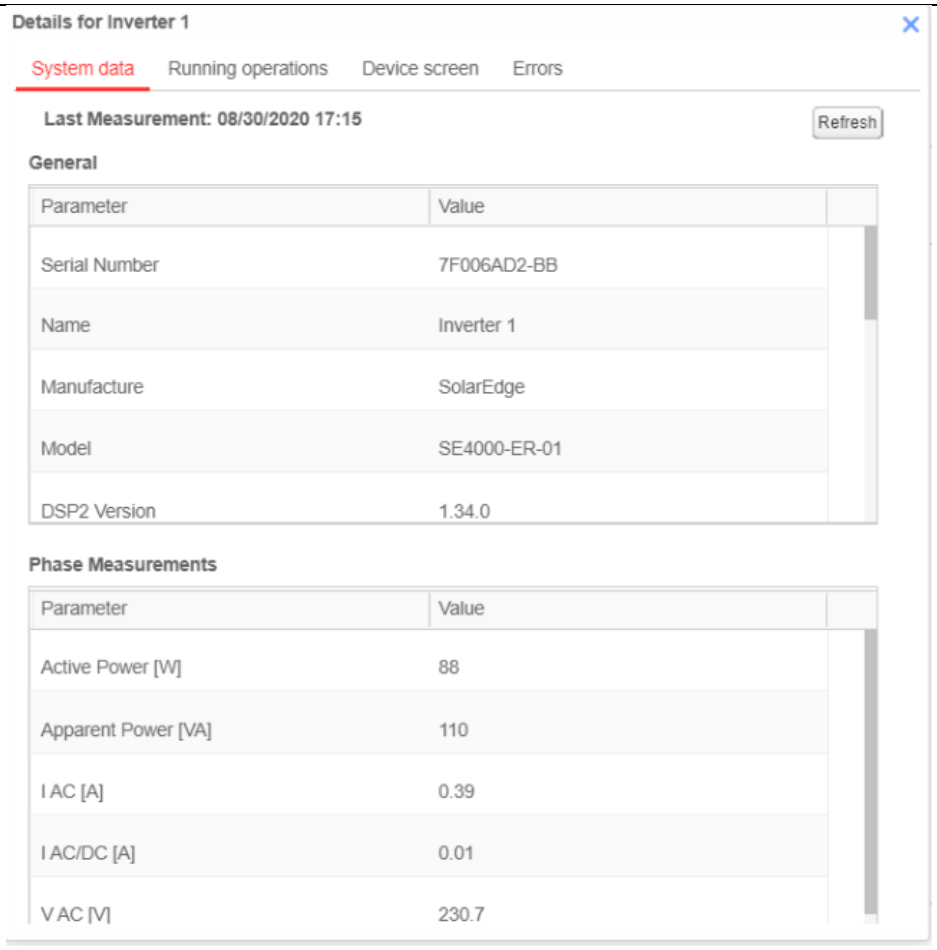


Fig 22: Inverter Details Window

System Data

The Inverter Details tab displays by default the System data tab. This tab displays the most recent readings taken by the inverter, including the date and time they were taken.

The following parameters are measured and shown for the inverter.

Parameter	Description
Serial Number	A unique identifier of this component
Name, Manufacturer and Model	Identifying information assigned to this component
DSP 2 Version, Communication Board (CPU) Version, DSP! Version	The firmware versions currently installed on the inverter
Country Name, Country Code	Inverter country settings
I RCD (mA)	RCD Current, measured in Amps
Inverter Status	Current Production Status of the Inverter
Last Isolation Value [kOhm]	Inverter isolation value, measured in Kilo-Ohms
P AC [W]	Inverter output power/ inverter AC power, measured in Watts
Power Limit [%]	Inverter output power limit, measured in percentage
V DC [V]	Inverter DC Voltage, measured in Volts
Active Power [W]	Inverter Active Power, measured in Watts
Apparent Power [VA]	Inverter Apparent Power, measured in VA
I AC [A]	Inverter output current/inverter input current, measured in Amps
I AC/DC [A]	Inverter out DC current, measured in Amps
V AC	Inverter output voltage/ inverter AC voltage, measured in Volts

Running operations

This tab displays the operations currently being executed remotely on the inverter (e.g. reset, pairing)

Device screen

This tab presents the data currently shown on the LCD Display. For SetApp-enabled inverters, the LCD display presents the current inverter status.

Errors

This tab allows you to view any errors related to the selected inverter.

Module Details

When the selected component is of module type, module-related information is displayed in the window, as shown below

Fig 23: Module Details Window

System Data

The information window includes a single tab – System data. This tab provides the most recent module readings, including the date and time they were taken. The following parameters are measured and shown for the selected module:

Parameter	Description
Serial Number	A unique identifier of this component
Name, Manufacturer and Model	Identifying information assigned to this component
Current [A]	Module output current/inverter input current, measured in Amps
Optimiser Voltage [V]	Power optimiser output voltage, measured in Volts
Power (W)	Module output power/ inverter AC power, measured in Watts
Voltage [V]	Module output voltage/ inverter AC voltage, measured in Volts

Actions in the multiple components details window

When selecting multiple components, the following actions can be performed in the details window:

a. Enlarge — Fit the details window to the entire screen
b. Export to Excel — Save the component details in Excel format
c. Copy to Clipboard — Copy the data as text.

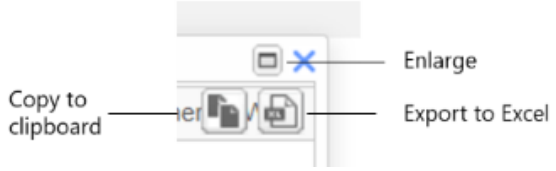


Fig 24: Details Window actions

Toolbar

The toolbar of the layout schematic provides options as described in the table below.

Icon	Description
Show tree	System components tree: Displays all components in the system according to their level. Click on a component to view its location in the layout schematic
Show playback	Show playback: dynamically visualises the power production of a site during a selected time fragment (either day or week)
Daily	Timeframe Selection list: Select a timeframe in which to display the energy production by each component in the layout
Logical layout	Physical/Logical Layout: Displays the Physical or Logical Layout Schematic for the entire site. Selected components remain selected when moving between the different layouts
	Hierarchy: Use the Hierarchy button to display the modules connected to each inverter
	Show/Hide Preview: Shows or hides the Navigator tool,
	Refresh: To refresh the Layout Schematic and Component Detail table, click this icon.

Playback

The Playback dynamically visualizes the power production of a site during a selected time fragment (either a day or a week).

To open the playback viewer, click Show playback on the window's toolbar. The playback viewer is displayed.

Fig 25: Playback Viewer

- Choose Normal or Accelerated for the playback speed
- Click to show how the modules' energy production changes in time, represented by the color code detailed earlier.
- Drag the slider along the timeline to focus on a chosen time fragment

The resolution of the playback data is 15 minutes

Support Contact Information

Please get in touch with DS Energy at the following:

Email: solartech@dsenergy.com.au

Phone: (07) 3051 2061

We will arrange for a customer support engineer to investigate and attempt to repair the fault remotely. If this is not possible, then DS Energy will aid you in filling out the fault information, guide you on how you can upload a fault picture, and ultimately coordinate a site assessment.

If, for any reason, DS Energy is not available in time to assist, please contact SolarEdge directly by scanning the code below

https://www.solaredge.com/service/support

Before contact, make sure to have the following information at hand:

- Model and serial number of the product in question.
- The error indicated on the SetApp mobile application, LCD screen, on the monitoring platform, or as displayed by LEDs, if there is such an indication.
- System configuration information, including the type and number of modules connected and the number and length of strings.
- The communication method to the SolarEdge server, if the site is connected.
- The product's software version as it appears in the ID status screen.