



SolarEdge Monitoring Portal User Guide

Version 1.0



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About This Guide

This user guide is intended for Photovoltaic (PV) system owners who are authorized to use SolarEdge Monitoring Portal.

This guide assumes that the SolarEdge system has already been setup for use in the Monitoring Portal by SolarEdge personnel or a system administrator.

The guide includes the following chapters:

Chapter 1, Introducing SolarEdge Monitoring Portal, page 6, introduces SolarEdge Power Harvesting solution and Monitoring Portal.

Chapter 2, Using SolarEdge Monitoring Portal, page 7, describes the various aspects of the portal's user interface and describes how to use it to monitor system performance and troubleshoot faults.

Chapter 3, Site List, page 13, describes the *Site List* window, which lists the sites in which a SolarEdge installation is physically located.

Chapter 4, Dashboard, page 15, describes the *Dashboard* window, which provides an at-a-glance view of the key information collected by SolarEdge Monitoring for a specific site.

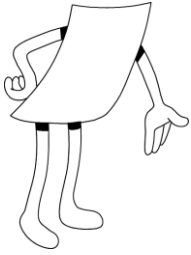
Chapter 5, Layout, page 18, describes the *Layout* window, which shows a schematic layout of the system, and displays near-realtime performance data for these components.



Support and Contact Information

SolarEdge Global Support Centers:

USA	+1 877 360-5292	support@solaredge.us
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UK	+44-20-3286-1183	support@solaredge.com
AUSTRALIA	+61-2-8005-7343	support@solaredge.com
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Chapter 1 - Introducing the SolarEdge Monitoring Portal

What is the SolarEdge Monitoring Portal?

The SolarEdge Monitoring Portal enables you to monitor the technical and financial performance of one or more SolarEdge Photovoltaic sites. It provides accurate information about present and past performance of each module individually and about the system as a whole, enabling you to detect, pinpoint and troubleshoot faults, efficiently manage maintenance operations and analyze site profitability.

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

The SolarEdge Monitoring Portal provides near real-time, historical, aggregated and comparative analysis, diagnostics and alerts. It automatically detects problems and issues status reports, and guides you through a root-cause fault analysis. All the data is logged and can be securely reviewed and analyzed at any time from any location.

These features enable installers, integrators, maintainers and owners to improve the site performance and reduce maintenance costs by increasing system uptime and resolving faults faster.



Chapter 2 - Using The SolarEdge Monitoring Portal

Getting Started

Reporting Installation Data

In order to use the SolarEdge Monitoring Portal it is necessary to register your system. This is done either using the [iPhone Site Mapper](#) App or via the [Register](#) section of the SolarEdge web site. Registration may be done by either the installer or the home owner.

Installation Data consists of *site details*, including name, location, feed-in tariff data; *personal details*, including user name, password and company; and *system details*, consisting of inverters and strings configuration and physical mapping. System details are particularly important in order to enable the SolarEdge Monitoring Portal to show the strings and physical location of modules, thus assisting in monitoring and troubleshooting.

Physical mapping is most easily done using the *iPhone Site Mapper* app available through the SolarEdge website. Alternatively, you may use the [Physical layout template](#) available for downloading and printing through the SolarEdge website and use it together with the detachable barcode stickers on the back of each optimizer to create a physical mapping.

You may refer to the *Step 4, Reporting Installation Data* section in the *SolarEdge Installation Guide* for more information about how to report the physical and logical mapping of the installed modules.

Once registered, you will receive by email a user name and password to enter the Monitoring Portal.

The SolarEdge Monitoring Portal supports tiered access levels, allowing installers to monitor all of their systems, while home owners may monitor only their own system, and may have different access level.

New Monitoring Site Registration

Congratulations on purchasing a SolarEdge distributed power harvesting system!
Please fill in the following form to set up your new site at the SolarEdge Monitoring Portal.
For assistance contact support@solaredge.com or refer to the installation guide provided with your system.

1. Personal & Site Details

Site Information

Site Name*

Country*

State

City* Required for displaying the local weather forecast

Address*

Zip Code*

PV Tariff per kWh* Required for displaying the site's revenues

Currency*

Installation Date*

Notes

Registrant

I am a*

2. System Details

Inverters

Inverter Serial Number* Type* +

Modules

Module Manufacturer* Module Model* +

3. Provide Physical Mapping

Use the simple [iPhone Site Mapper app](#) to create a physical mapping of your site.

Alternatively, please fill in this [physical mapping form](#) with the detachable 2D barcode stickers on the optimizers. Once complete, please scan the form and attach it below. If you're using more than one module model, mark it with its corresponding number from Step 2 above. For reference, [view this example](#).

(Please scan your physical map and upload it here)



IMPORTANT NOTE:

It is not mandatory to report the physical and logical mapping of the installed modules by mail, email or fax to SolarEdge.

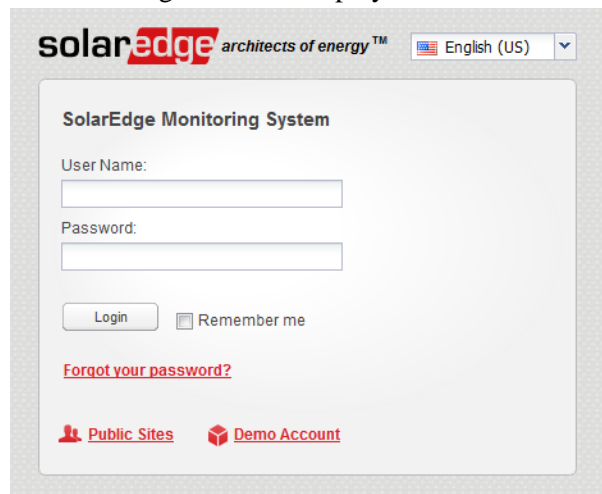
Even if you do not report those, the SolarEdge Monitoring Portal will still show the logical layout indicating which modules are connected to which Inverters. However, it will not show strings or the physical location of modules.

► **To launch the SolarEdge Monitoring Portal:**

- 1 Go to www.monitoring.solaredge.com.

Alternatively, you can log in to the monitoring portal by browsing to the SolarEdge website and clicking the **Monitoring Login** link at the top of the screen.

The following should be displayed:



The screenshot shows the SolarEdge Monitoring System login interface. At the top left is the SolarEdge logo with the tagline "architects of energy™". To the right of the logo is a language dropdown menu set to "English (US)". Below the logo is the title "SolarEdge Monitoring System". The login form contains two input fields: "User Name:" and "Password:". Below these fields are a "Login" button and a "Remember me" checkbox. A red link "Forgot your password?" is positioned below the "Remember me" checkbox. At the bottom of the form are two red links: "Public Sites" (with a person icon) and "Demo Account" (with a cube icon).

The user name and password should be provided to you by your solar system provider or by SolarEdge.

Your monitoring account determines your permissions within the SolarEdge Monitoring Portal as well as local settings such as language, units, and currency. User preference settings may be set via the *User Settings* screen as described on page 12.

- 2 Enter your user name and password and click **Login**. If more than one site is assigned to you, then the list of your SolarEdge sites will display, as shown on the *Site List* (see page 13).

If a user is only assigned one site the Dashboard will be automatically displayed, without going through the Site List.

Common Window Features

The SolarEdge Monitoring Portal provides a variety of site-specific performance charts and layout views, reports, alerts and query options. This section describes the features that are shared by all SolarEdge Monitoring windows.

The toolbar at the top of the window provides access to these main windows, as follows:

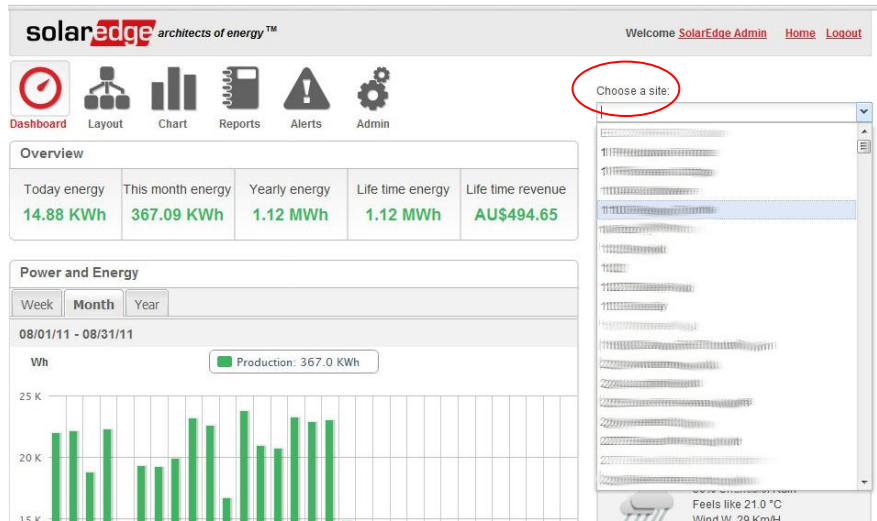
Dashboard, page 15, provides a high-level, at-a-glance view of the information collected by the SolarEdge Monitoring Portal for a specific site.

Layout, page 28, shows a schematic layout that represents inverters, clusters, strings and the modules in each string. The physical layout can also be accessed through this window.

The toolbar at the top right of the window provides the following options:

Welcome [SolarEdge Admin](#) [Home](#) [Logout](#)

- “Home” returns to the Site List, as described in *Chapter 3, Site List* on page 13.
- Clicking your user name enables setting user settings, as described in the following *Users Settings* section.
- Below the toolbar is a dropdown menu which allows convenient navigation between the different sites which are associated to your account. This feature is complementary to the Site List (*Chapter 3, page 13*).



User Settings

Click on your username in order to reach the *User Settings* where you can change the settings for the monitoring portal; including localization and security options. In the **Language** field you can select the language which the Monitoring Portal will display in. When you change the language, the localized data changes automatically, including numbers, currency and date formats. You can also change your log-in password.

The screenshot shows the SolarEdge Monitoring Portal interface. At the top left is the SolarEdge logo with the tagline "architects of energy™". At the top right, it says "Welcome SolarEdge Admin" with links for "Home" and "Logout".

There are two main panels:

- User settings:** This panel contains several configuration options:
 - Language: A dropdown menu currently set to "English (US)".
 - Number Format: A text input field containing "123,456,789".
 - Currency Format: A text input field containing "\$123,456.79".
 - Date Format: A text input field containing "08/18/2011".
 - System Units: A dropdown menu currently set to "Metrics".At the bottom of this panel are "Save" and "Cancel" buttons.
- Change Password:** This panel is titled "Change Password" and contains a section for "Password" with three input fields:
 - Old Password: *
 - New Password: *
 - Confirm New Password: *At the bottom of this panel are "Save" and "Cancel" buttons.



Chapter 3 - Site List

The Site List Window

This window (reachable by clicking *Home* in the top right toolbar), lists all SolarEdge installations which you have permission to view. It provides an overall view of the various sites managed by the Monitoring system. Click on a site name to see more information about it.

The screenshot shows the 'Your Sites - 4' window in the SolarEdge Monitoring Portal. The window has a search bar and a 'Reset' button. Below the search bar are navigation controls for the table, including 'Page 1 of 1' and 'Displaying 1 - 4 of 4'. The table has the following data:

Site Name	Address	Country	Peak Power [KWp]
1	[Redacted]	Italy	5
2	[Redacted]	France	2.94
3	[Redacted]	United States	5
4	[Redacted]	Israel	14.9

If you require access to additional sites, contact your installer.

The list in the center of the window contains the following information about each site:

Site Name: Click a site name to see more information about a site. The dashboard is then displayed, as described in *Chapter 4, Dashboard* on page 15.

Address, Country: These columns contain information about a site's physical location.

Peak Power: Specifies the peak power capacity of the site that can be achieved under Standard Test Conditions.

Yesterday's Energy, Today's Energy, and Last Month Performance:

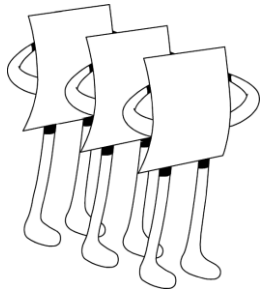
Provide current and historical information about a site's performance.

In order to control which columns appear, hover over the column name, click the arrow, click on columns, and select which ones you would like to appear.

By default, the site list is sorted by site severity and name; hence the sites which require intervention appear at the top of the list.

You can sort the site list by the values in any column by clicking on the column's title. This toggles the order each time you click the column title, from ascending to descending and vice versa.

Above the list is a navigation bar, in which you can navigate through the pages and refresh site information. You can also search for a specific site using the search box; the search text is remembered even if the browser is closed and re-opened.



Chapter 4 - Dashboard

Dashboard

The *Dashboard* provides a high-level, at-a-glance view of the information collected by the SolarEdge Monitoring Portal for a specific site.

The dashboard is divided into several key sections:

- Navigation Bar (Page 10):** Located at the top left, it includes a 'Dashboard' icon and a 'Layout' icon.
- Overview (Page 17):** A summary table showing energy and revenue metrics.

Metric	Value
Today energy	0 Wh
This month kWh	27.88 KWh
Yearly energy	2.66 MWh
Life time energy	2.88 MWh
Life time revenue	€1,668.86
- Power and Energy (Page 16):** A bar chart showing production over time. The current production is 28.0 KWh. The chart shows production for the first two days of the month.
- Site Selection Menu:** A dropdown menu at the top right for selecting a site.
- Site Summary (Page 15):** A box containing site details:
 - Name:
 - Address:
 - Country: France
 - Installed: 20/08/2010
 - Last updated: 03/10/2011 07:30
 - Peak power: 2.94 KWip
- Weather (Page 18):** A section showing current weather conditions and a 3-day forecast.
 - Current: Temperature 10 °C, Foggy, Feels like 10.0 °C, Wind NNE, 3 Km/H, Humidity 93 %, Sunrise at 07:43, Sunset at 19:19.
 - Monday: 23-10 °C, Sunny
 - Tuesday: 22-10 °C, Sunny
 - Wednesday: 18-10 °C, Mostly Cloudy
- Site Image:** A photograph of the solar panels installed on the roof.
- Comparative Energy (Page 17):** A bar chart comparing energy production between 2010 and 2011 by month. The 2011 production is consistently higher than the 2010 production.
- Environmental Benefits (Page 18):** A section highlighting the positive impact of solar energy:
 - CO2 Emission Saved: 201.41 kg
 - Equivalent Trees Planted: 4.68
 - Light Bulbs Powered: 8,719.21 For a day

General Site Information

In the site summary box you can see general information about the site; name, location, date installed, date the information was last updated, and its peak power.

Site summary

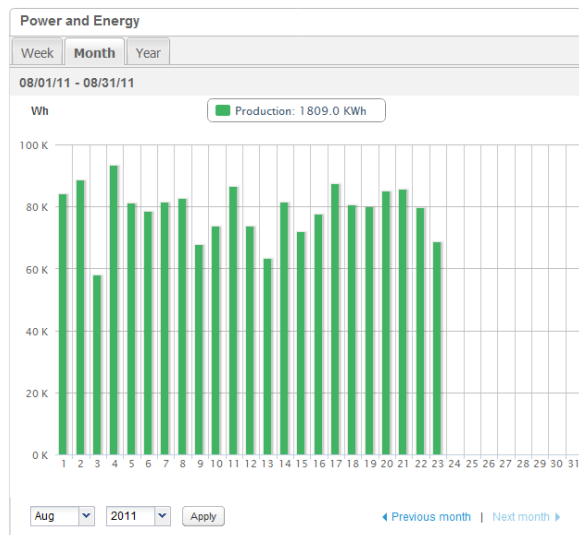
Site status:

Name:	
Address:	
Country:	Canada
Installed:	05/27/2011
Last updated:	08/23/2011 05:33
Peak power:	12,250 KWp

Power and Energy

The **Power and Energy** chart shows the power production of this site over a specified time period. The default time period is the past month.

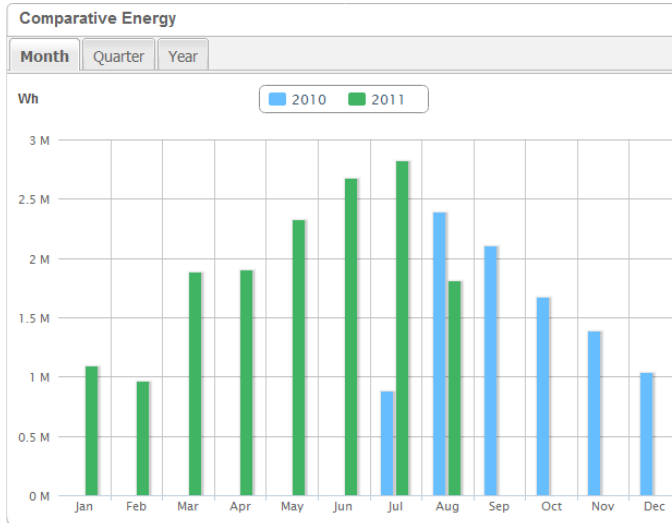
The X axis represents time and the Y axis represents the power produced in kW when in Week view, or the energy produced in kWh when in Month or Year view. Use the tabs above the graph to select the desired view.



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.

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.



Overview

The **Overview** area shows accumulated energy and revenue for this site. Each box specifies a different value and its unit of measurement, such as the amount of energy produced today, this month, this year, or lifetime energy.

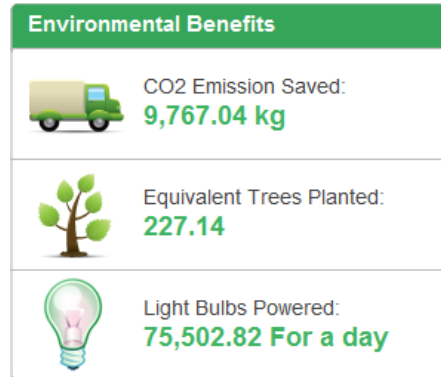
The revenue is calculated by multiplying the site-specific feed-in tariff per kWh by the actual energy produced. The revenue is displayed in the currency predefined by the user.

Overview				
Today energy	This month energy	Yearly energy	Life time energy	Life time revenue
68.53 KWh	1.81 MWh	15.5 MWh	24.9 MWh	₹50,828.51

Environmental Benefits

This is the *feel-good* area!

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.



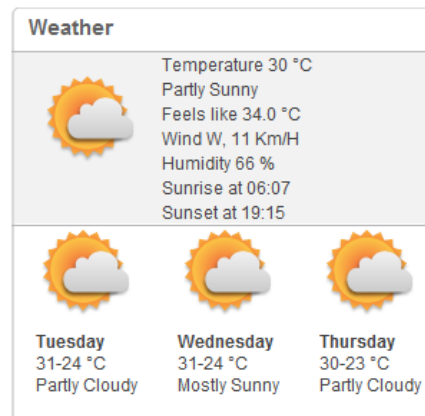
This represents the positive impact on the environment when using the SolarEdge system!

**NOTE:**

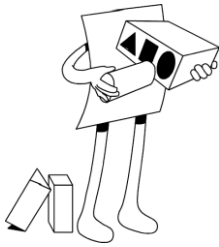
The *Light Bulbs Powered* calculation is based on a 60W light bulb operating 5.5 hrs/day. The *Equivalent Trees Planted* and *CO₂ Emission Saved* calculations are based on conversion factors from lifetime energy figures. The factors are taken from the US [EPA site](#).

Weather

The **Weather** area shows the current weather conditions together with other details as well as the forecast for the next few days. This information may be helpful when estimating future power production levels.

**NOTE:**

Weather data is gathered from the WeatherBug™ service. The weather is taken from a weather station near the installation site so might not reflect actual weather on the site itself.



Chapter 5 - Layout

Overview

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

The Layout window enables you to:

- View the latest performance of specific components.
- Find underperforming components, such as modules, by comparing their performance to that of other components of the same type.
- Pinpoint the location of alerted components.
- See how components are connected to each other.



The Layout window offer both *Logical Layout* and *Physical Layout* views, described in the sections below:

- **Using the Schematic (page 20):** An explanation of the tools available when using the Layout Schematic.
- **Logical Layout (page 28):** Shows a schematic logical view of the components in the fields, meaning inverters, clusters, strings, modules and their electrical connectivity.
- **Physical Layout (page 29):** Shows a bird's eye view of the actual placement of each component in the field, including inverters, clusters, strings and modules.

Each component shown in the Layout Diagram also displays the following information:

Amount of Energy: Indicates the amount of energy produced by this component and its underlying components in the period chosen in the drop down menu above the diagram.



Color Code: as detailed on page 26 below.

Plus  or Minus  Icon: Indicates that the component can be expanded or collapsed to open or close its underlying hierarchy.

Toolbar

The schematic site map may be quite large and therefore you can use the following tools to adjust the display or to display the information of interest:



Zoom In/Out Slider: Makes the diagram smaller or larger, when zooming in you can see more details about specific component. You can use the slider to zoom in or out or click on the  and  icons on either side of the slider.

**TIP:**

You can also zoom in and out of the diagram using the mouse wheel.



Fit Content: Resizes the display of the diagram to fit in the window.



Show/Hide Navigator: Shows or hides the *Navigator* tool, as described in the *Navigator* section on page 23.



Expand/Collapse: Expands or collapses the selected components in the Logical Layout Diagram, thus hiding or showing its underlying component hierarchy.

**TIP:**

Large-scale sites installations may contain thousands of modules. To enable simple site navigation, the SolarEdge Monitoring Portal enables the user to expand or collapse each hierarchical group of elements, one at a time. For example, expanding the inverter level shows all its connected strings. Expanding a selected string shows its modules.



Portrait/Landscape: Displays the Layout Diagram in either a portrait or landscape orientation.



Physical / Logical Layout: Displays the Physical or Logical Layout Schematic for the entire site. Selected components remain selected when moving between the different layouts.

For more details refer to *Logical Layout* (page 28) or *Physical Layout* (page 29).



Refresh: To refresh the Layout Schematic and Component Detail table, click this icon.

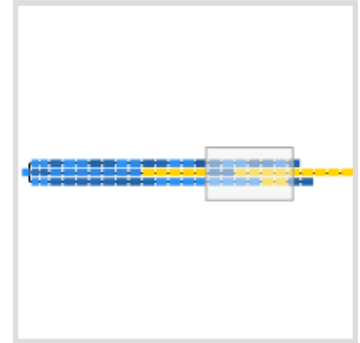


Full Screen: Displays the diagram in full screen mode.

Timeframe Selector: Using the drop-down menu, select a timeframe in which to display the energy production according to the color code (see *Color Coding* page 26)

Navigator

The **Navigator** tool at the top right-hand side of the window enables you to draw and drag a small box that indicates the area to be displayed in the diagram. Alerted components are color-coded to indicate the severity of the alerts.



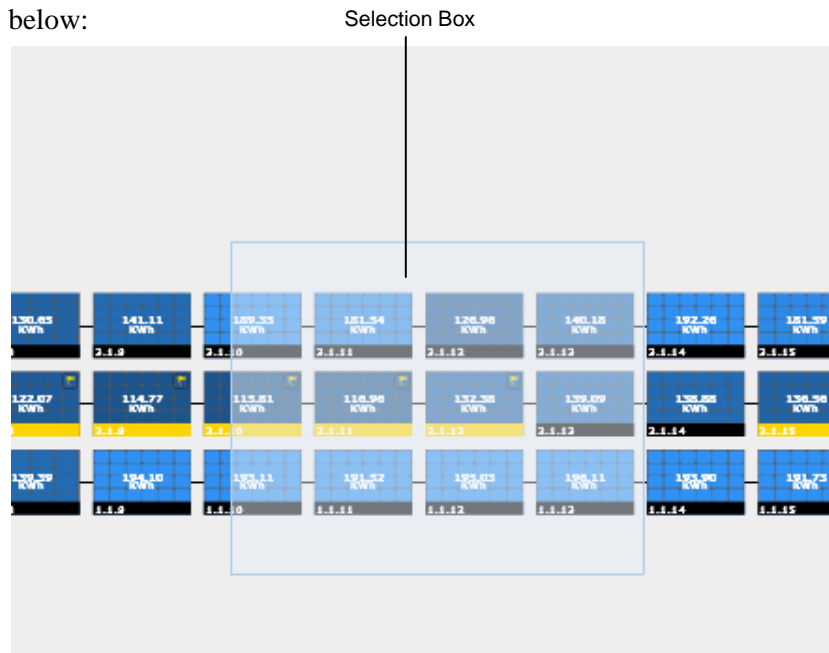
Component Details

The **Component Details** area shows up-to-date details and performance data, such as the last power output measured, of selected components.

► To view component details:

- 1 Click one or more components of the same type in the diagram (for example only modules or only strings). You can use **Ctrl – Click** to perform multiple selections. Modules from different strings can be selected, as well as strings from different inverters.

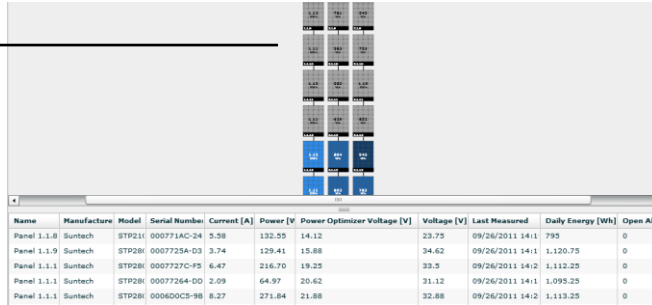
Alternatively, you can use the mouse to draw and drag a selection box around the components whose details you want to display, as shown below:



- 2** The latest information about selected components is automatically shown in the component details table at the bottom of the screen.

Selected components appear in grey

Information about selected components is displayed here






Name	Manufacture	Model	Serial Number	Current [A]	Power [W]	Power Optimizer Voltage [V]	Voltage [V]	Last Measured	Daily Energy [Wh]	Open Alerts
Panel 1.1.8	Suntech	STP21	000771AC-24	5.58	132.05	14.12	23.75	09/26/2011 14:11	795	0
Panel 1.1.9	Suntech	STP28	0007725A-03	3.74	129.41	15.88	34.62	09/26/2011 14:11	1,120.75	0
Panel 1.1.11	Suntech	STP28	0007727C-F5	6.47	216.70	19.25	33.5	09/26/2011 14:12	1,112.25	0
Panel 1.1.11	Suntech	STP28	00077264-DD	2.09	64.97	20.62	31.12	09/26/2011 14:11	1,095.25	0
Panel 1.1.11	Suntech	STP28	000600C5-98	8.27	271.84	21.88	32.88	09/26/2011 14:12	1,113.25	0

This area is particularly useful for near-realtime comparison of component performance in order to troubleshoot faults and find underperforming components. For example, to see which strings are the weakest in terms of energy production and to locate the individual underperforming modules in those strings.



TIP:

Comparing component performance is most valuable when the measurements are made at the same time. Comparing the performance of several components with measurements taken at different times may not be valid, because irradiance or temperature levels may have changed during that time.

Click the arrow  in the title bar of a column to sort its rows according to the values in that column.  sorts the rows in descending order and  sorts in ascending order.

You can also change the order of the columns by moving a column, or several columns, just by dragging the title to the place you want it to be.

The following describes the columns of information that appear in this area when you select a module:

- **Name, Manufacturer, and Model:** Identifying information assigned to this module.
- **Serial Number:** A unique identifier of this module's power optimizer.

- **Current [A]:** Module output current, measured in Amps.
- **Voltage [V]:** Module output voltage, measured in Volts.
- **Power [W]:** Module output power, measured in Watts.
- **Optimizer Voltage [V]:** **Power optimizer** output voltage, measured in Volts.
- **Temp [C/F]:** Power optimizer temperature in Celsius or Fahrenheit according to your user preference definitions.
- **Last Measured:** Specifies the last time Current, Voltage and Power were measured for this module. Typically, measurements are taken every 10 minutes.

When you select inverters, clusters or strings, the information shown in this window is relevant to that type of component.

Color Coding and Playback

Color Coding

In the layout schematic, all elements of the diagram are color coded according to the amount of energy they have produced in the timeframe specified in the timeframe selector on the toolbar (visible to the right).



The color coding is comparative, meaning a panel which has produced the most energy over the selected time frame is light blue, while a panel which has produced less energy is darker, according to the scale shown in the top right corner of the window:

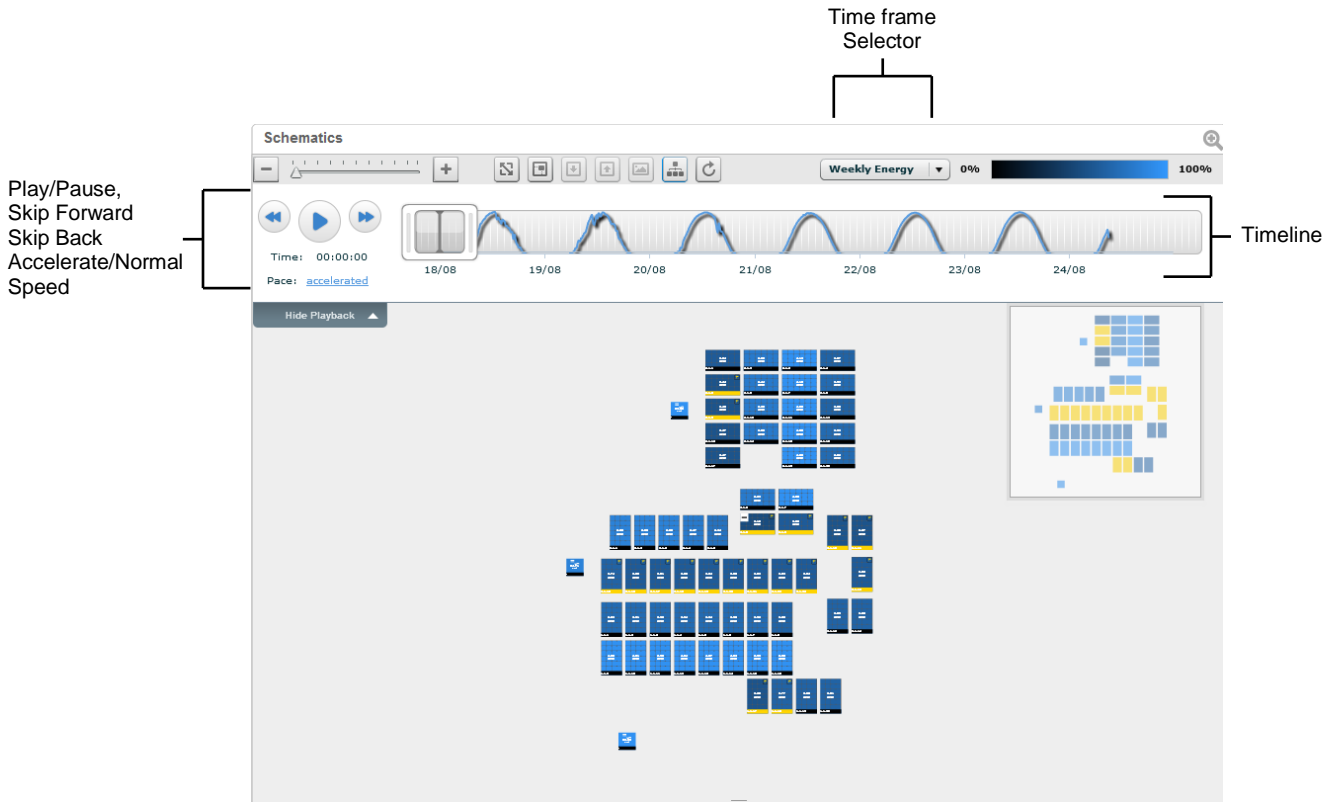



The color coding is normalized, so the modules' color is relative to their full capacity. For example, a module that can produce 100 Watts will be the same color as a module that can produce 200 Watts, assuming they are both producing at the same percentage of their full capacity. Normalization is also in accordance to the number of power optimizers connected to each string.

Playback

The SolarEdge Monitoring Portal includes a *Playback* feature which dynamically visualizes the power of a site during a selected time fragment (either a day or a week). To open the playback viewer click on





Clicking  shows the how the modules' energy production changes in time, represented by the color code detailed above. Additionally, the total amount of energy produced at that time is shown on the blue chart on the timeline.

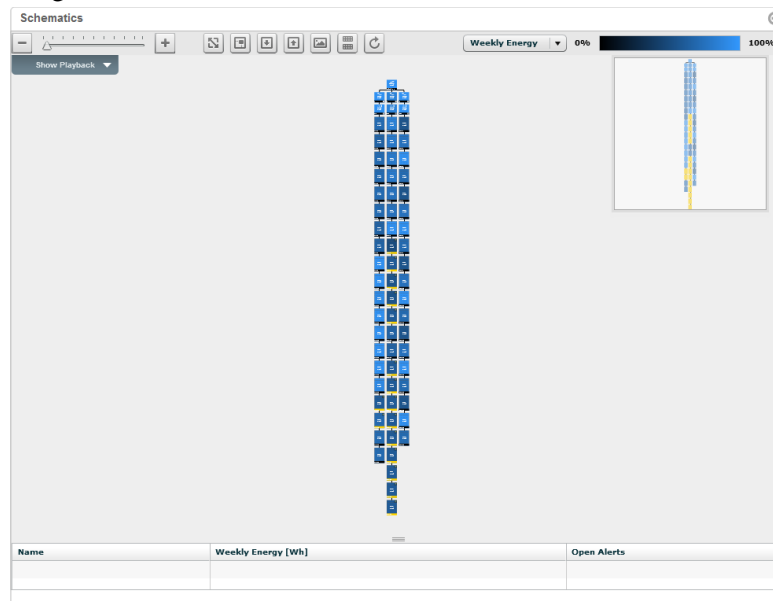
Dragging the slider along the timeline allows focusing on a chosen time fragment.

*The resolution of the playback data is 15 minutes.




Logical Layout

The *Logical Layout* window shows a schematic logical layout of the components in the fields, meaning inverters, clusters, strings and 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.



NOTE:

The Layout Schematic automatically zooms in or out, based on the number of components displayed in the window.

When in the *Logical Layout* window, clicking the  button in the toolbar displays the Physical Layout Diagram.

Physical Layout

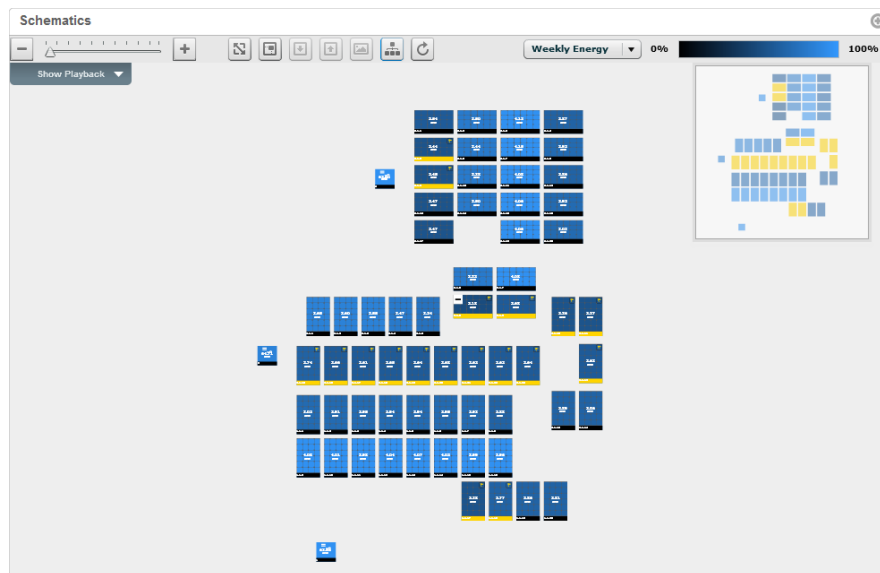
The Physical Layout Schematic shows a schematic physical layout of the components in the field, meaning inverters, clusters, strings, modules and their electrical connectivity. This view enables you to see a virtual **bird's eye view** of the installation site showing the physical arrangement of the system's components.




TIP:

The *Physical Layout* window provides an invaluable tool for troubleshooting maintenance problems.

The following shows the Physical Layout diagram of the installation whose Logical Layout is shown above:



Note that both windows show three inverters with their associated strings and modules.

When in the *Physical Layout* window, clicking the  button in the toolbar displays the Logical Layout Diagram.