

SiteSage *for Homes* User Manual

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1. Introduction

SiteSage™ by Powerhouse Dynamics is an exciting way to monitor and control the electricity usage in your home, and determine ways you can reduce energy use, save money and reduce your carbon footprint. By showing you exactly where your electricity is going, you can more easily pinpoint wasteful usage – including such things as leaking electricity, or “Phantom Power” - and control it. You may also be able to identify appliances that are not operating correctly or efficiently. It can also help you save money by providing tips and suggestions for more efficient operation of appliances and devices, as well as opportunities for making cost effective appliance upgrades. SiteSage will also help keep your family safer by alerting you when significant events occur to electrical devices in your house – such as a circuit overload. With SiteSage’s *Smart Thermostat* you can also control your heating and cooling system from anywhere on your mobile devices. If you are generating your own power – through a Solar PV system or wind turbine – SiteSage will keep you up-to-date on the amount of electricity you are producing, the savings you are realizing in dollars and carbon output, and any problems or issues with the system.

Key features:

- Real-time web portal plus iPhone® and Android® applications
- Whole house and circuit level monitoring of energy use, costs, and carbon footprint
- Monitoring of energy-producing systems such as Solar PV
- Easy to read graphs—down to the minute—making it easy to see what causes spikes in energy use and when and where energy is being used
- Personalized energy saving recommendations and tips
- Remote control of Smart Thermostats
- Ongoing e-mail and text alerts about unusual usage, overloaded circuits, electric bills projected and to-date, appliances left on, appliance problems, and more
- Ongoing energy “Report Card” — on-line and via e-mail - showing your progress in curtailing energy costs as well as opportunities for savings
- Option for integrating temperature and other sensors as well as water meter data

Energy Terms and Concepts

This manual is not the place for a tutorial on energy terms, but there are a few terms that may help you to make the most of your SiteSage experience. SiteSage reports both the *Power* that is being used in your home and on each circuit, measured in *Watts*, and the *Energy* consumed, measured in *Watt Hours* (1 Watt used for an hour) or *Kilowatt Hours* (kWh, which is the basis upon which your utility bills you). *Watts* are computed as *Voltage* (V – a unit of electrical force) x *Current* (measured as *Amps*, or A, and a measure of flow). Luckily, SiteSage computes it all for you!

In your home, *voltage* is generally a constant. In North America, we use 120 Volts for most household items, with 240 Volts for larger items, such as central air conditioners. (Some appliances, such as electric ranges, actually have components that use 120 Volts and others that use 240 Volts, described further In the Installation Guide). To measure things properly, SiteSage needs to know voltage of devices attached to each circuit, and this is one of the pieces of information your installer is asked to record. The circuit breakers in your home will also have varying *current* ratings. Some circuits are rated at 15 Amps while others are 20 Amps or 30 Amps or higher depending on what is attached to them. 240-Volt circuits should have larger breakers, generally 40 Amps or higher. Circuit breakers are designed to trip when current exceeds the amp ratings, so that the circuits are not overloaded, which could be a safety hazard. One of the nice features of the SiteSage is that it can actually alert you in advance of a circuit nearing capacity so that you can act before the circuit breaker trips.

How SiteSage Works

SiteSage combines sensors, controls, and sophisticated analytics to help you better manage energy in your home.

The SiteSage *Energy Monitor* uses sensors to detect the amount of electricity moving through each circuit in your electrical panel(s). This information is sent wirelessly to the SiteSage *Gateway* that connects to the broadband router in your home and sends the data to the SiteSage servers, where it is analyzed and displayed on the SiteSage *Portal*. You can also install wireless thermostats that connect to the Gateway, allowing you to control your heating and cooling system through the Portal and the SiteSage Mobile Apps. SiteSage has also been integrated with some popular Home Control systems, and some of the information can be displayed on the in-home display units for those systems. Please consult your Authorized SiteSage Partner.



The **SiteSage Portal** displays current and historical energy usage and allows you to track which parts of your home are using the most power. It allows you to set up Alerts related to your energy budget, safety issues (such as overloaded circuits), savings opportunities, appliance performance and comfort, and subscribe to several reports. It provides recommendations on ways to reduce energy costs based on your actual usage profile. If you have integrated the smart thermostats, it also provides a uniquely intuitive way to manage thermostat settings – even while you are away.

All of these functions are described further in the ensuing sections.

2. The SiteSage Portal

Logging On

Now that you've completed the setup process, you can log in securely to your SiteSage Portal using the SiteSage username and password you created in the installation process. After you finish registration, you are automatically taken to:

<https://www.SiteSage.net>

Bookmark this address so it will be easy to come back at any time.

Log in to your SiteSage Portal

Username:

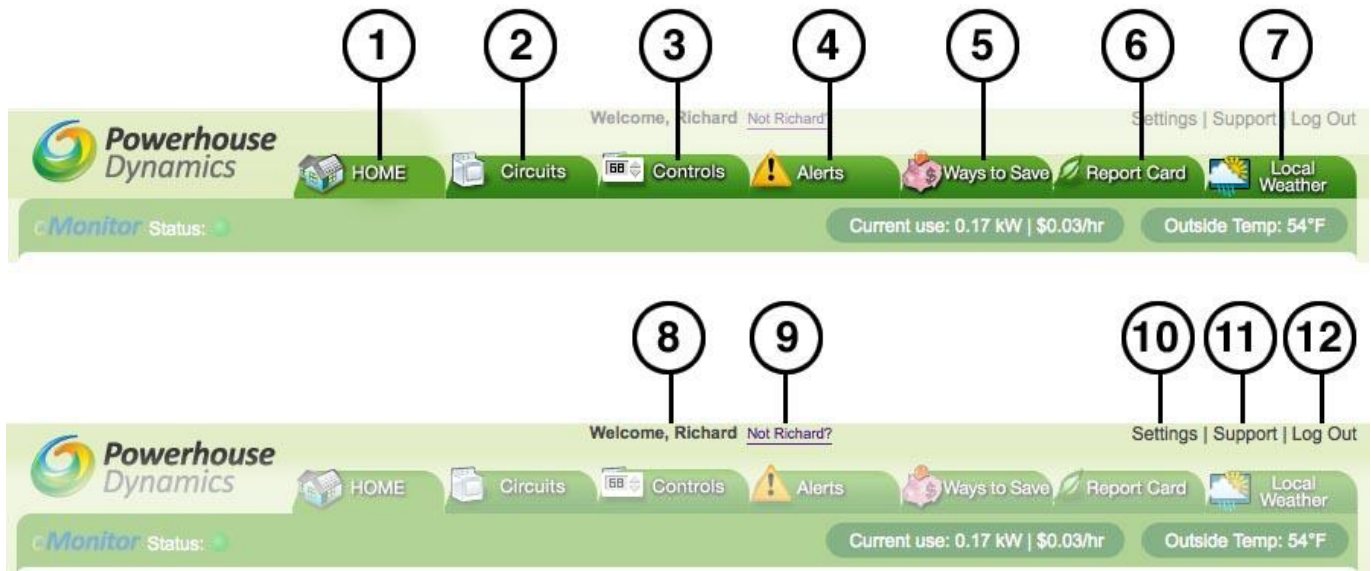
Password:

Once you have logged in, if you have registered SiteSage at more than one location, you will see links to access your different locations. You can also switch between locations once you have logged in.

Note: For security reasons, the system will automatically log you off if you take no action for an extended period of time. If you are still using the system, you will see an advance notice so that you can avoid the Log Out. If you are logged out, you will be returned to the Log In screen where you can log right back in. You can disable this automated log out on the Settings/Your Information Tab.

Navigating

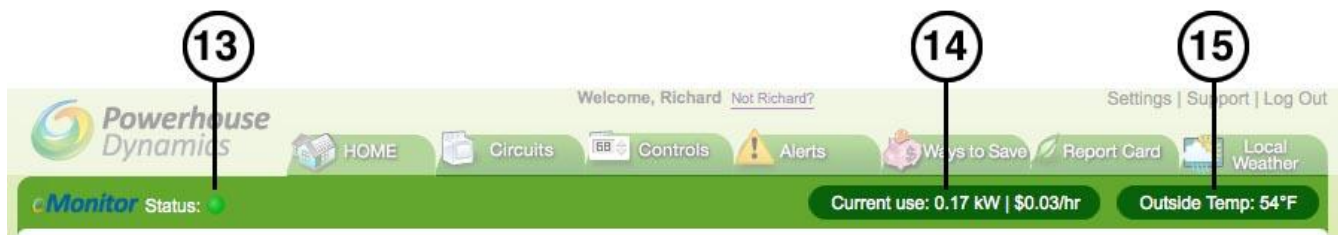
The SiteSage Portal is an easy-to-use Web application that uses a simple "tab" structure for navigation. There are up to seven Navigation tabs: Home (1); Circuits (2); Controls (3) (if you have installed a smart thermostat) Alerts (4); Ways to Save (5); Report Card (6); and Local Weather (7). The welcome (8) and confirmation (9) links assure you're logged in to your own account. Also at the very top right are links to: (10) a group of Settings sub-tabs that allow you to modify the settings established during registration; the Support Site (11); and Log-Out (12).



The Tabs:

1. **Home** – Provides a summary of key elements of your energy usage.
2. **Circuits** - Provides more details on each of your circuits, including minute-by-minute usage, costs and tips.
3. **Controls** – If you have a smart thermostat or other Controls, this tab will allow you to change current settings
4. **Alerts** – Allows you to set up Cost, Safety, Usage, Performance and Comfort Alerts
5. **Ways to Save** – Provides in-depth savings suggestions and information based on the appliances on each circuit and your actual usage.
6. **Report Card** – Provides a summary of your trends; (is your usage going up or down?), as well as some of the results of the SiteSage analysis of your usage.
7. **Local Weather** – Provides weather information for your area. (If you have a RainWise weather station, its data can be integrated with SiteSage).

Immediately below the Tabs you will find an **Information Bar**.



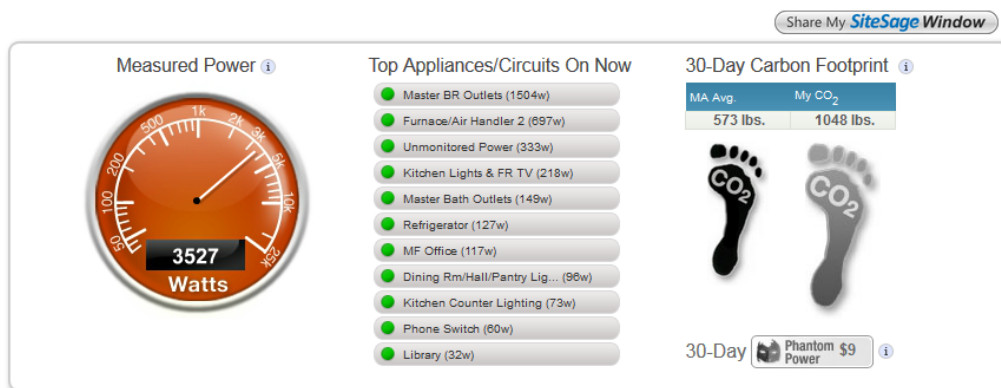
This will provide you with: the status **(13)** of your SiteSage system (green if all is well, yellow if data isn't coming in as it should, red if no data is coming in); a quick snapshot of current usage levels and how that translates into cost per hour given your current electric rate **(14)** and estimated “burn rate” or cost per hour; and current outside temperature for your zip code **(15)**. You will find new data added to the Information Bar over time.

HOME Tab

The **Home tab** is divided into three sections.

Top Section

The top panel shows current power consumption with a live analog-style gauge. To the right is a list of the top 10 circuits that are currently active and how much they are using. These areas are updated every minute.



Clicking on any of the active **Appliances/Circuits** will take you directly to that Circuit’s details page (which can also be accessed from the Circuits tab, which is described on page 13.)

Sharing in Social Networking Environments



Just above the top panel on the right is a “Share” button for sharing a special summary page with friends and family.

You may select what elements to display on your “Share” page. At the bottom of the pop-up box is a URL which you can copy to use in your posts. The first time you use this function, the button at bottom right is labelled Share. Copy the URL and paste it into a social networking page or a document to save it. Click **Share** to make your page available with the elements you have selected.

If you decide to change what is shown, check or uncheck boxes and click **Update**. If you decide not to share your information, click **Unshare**.

Monitoring Renewable Energy

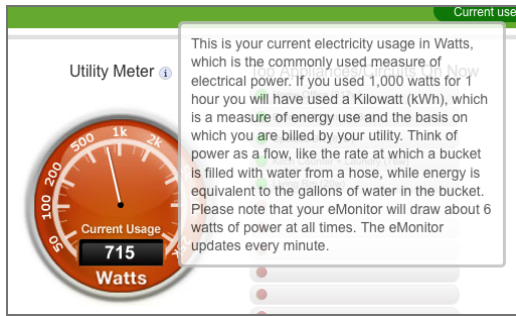
If you are monitoring solar or wind power, SiteSage will automatically show how much power you are pulling from the utility grid (shown as your Utility Meter) and how much your renewable energy system is producing (the blue gauge to the right). The sum of those two represent how much power you are using, shown in the gray box below the gauges. A small icon to the right or left of the Production gauge indicates what type of renewable energy system you have. Clicking on that icon will take you to the detail for that circuit. (If you have more than one inverter, you will first be taken to a summary of each inverter). The gauge below shows power production of 2,809 watts from solar.



When you are drawing energy from the grid, the Utility Meter will be orange and show as a positive number. If you are producing more energy than you are using, the Utility Meter will turn green and “spin backwards”, representing “Net Metering”. In the illustration below, the blue gauge shows power production of 3,086 watts, but with power use at only 1,254 watts, 1,832 watts can be sent back to the grid, (-1,832 watts on the utility meter). Please note that Net Metering rules with respect to utility payments vary from state to state.



At the right of the top section is a graphical representation of your “Carbon Footprint” – how much carbon dioxide your electricity usage releases into the atmosphere, and how your Footprint compares to the average household in your state. This is a great way to get a sense of how well you are doing in controlling CO₂ emissions. If your usage is lower than or comparable to the average, your Footprint will be green; if your usage is above the average, it will show as grey.

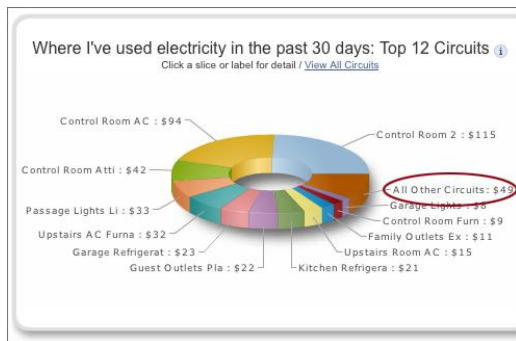


Throughout the SiteSage web portal you will see “i” (information) icons.

Hover your cursor over these icons to see a pop-up window with more information about that area of the screen.

Note the **Phantom Power** link below the carbon footprint. For more information on Phantom Power see Page 12, immediately after the description of the Home Page.

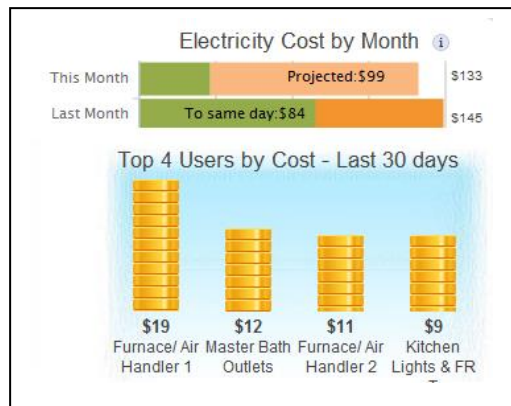
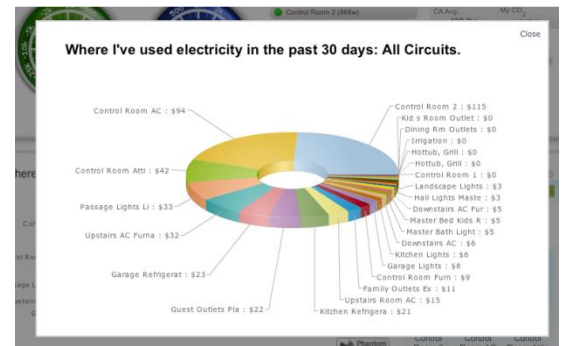
Middle Section



The middle section of the page provides monthly cost information. The pie graph on the left side (which we affectionately call the *Donut*) illustrates your last 30 day usage for the 12 circuits that used the most energy, along with a 30-day estimated cost for each circuit. This allows you to easily identify which circuits are using the most power and may be targets for action to reduce energy use. If you hover your cursor over any **slice** of the pie, or its label, it will show you that circuit’s percent of your 30 day usage.

Clicking on **View All Circuits** will bring up a larger Donut that shows all circuits (right).

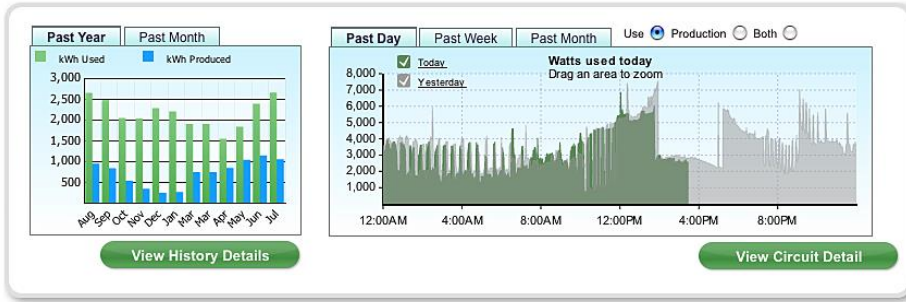
Clicking a slice on either Donut takes you directly to that Circuit’s details page.



The top right of the middle section shows **Electricity Cost by Month**, a month-to-date comparison of your costs this month vs. last month, including a projection for the remainder of this month. As noted in the information box, this will NOT compare exactly with your utility bill, which is not based on a calendar basis.

Beneath this, the **Top 4 Users, Last 30 days** quickly shows you your biggest electricity hogs – ideal targets for potential reduction.

Bottom Section

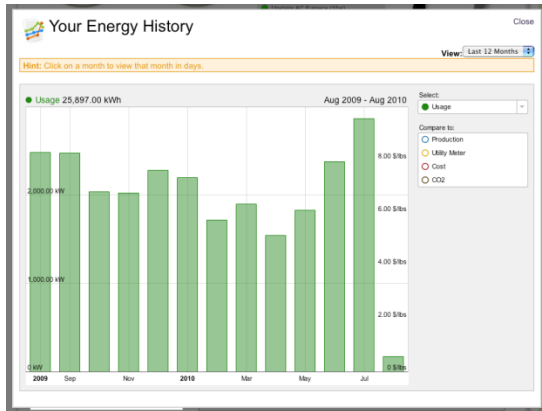
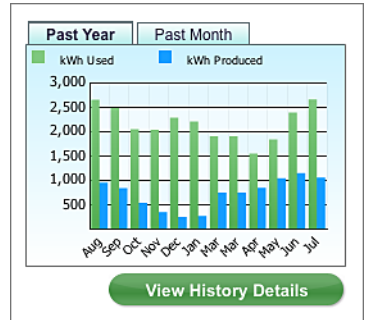


The graphs in the bottom section help you analyze your power usage over different periods of time. They display usage in increments from one minute to one month.

The **bar graph** on the left shows your usage, in kilowatt-hours, by month for the past year, and by day for the past month. The graph also shows electricity production if you have renewable energy.

Usage is shown with green bars. If you have renewable energy production, it is shown with blue bars. Click on any bar for more information.

Clicking on the **View History Details** button will bring up a detailed history view that lets you look at any time period.



Select:

- Usage
- Production
- Utility Meter
- Cost
- CO2

Select:

- Production
- Usage
- Utility Meter
- Cost
- CO2

Compare to:

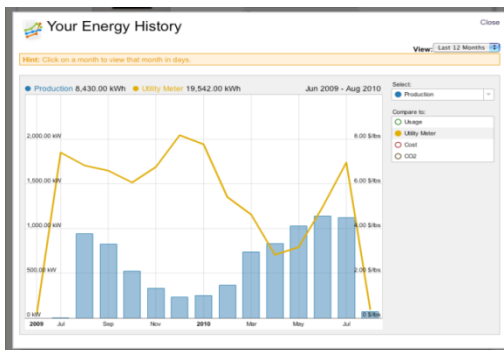
- Usage
- Utility Meter
- Cost
- CO2

The default “base” graph is **Usage**. You can choose a different base graph by clicking the **Select** dropdown menu and choosing a different parameter.

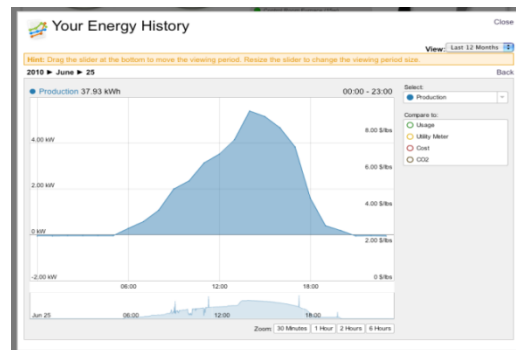
Then, by clicking the colored circles in the box below the dropdown, you can compare production, cost, or CO₂, and overlay any of these variables on the base graph. When you click a circle, it changes to a filled circle. Clicking a choice with a filled circle will unselect it, and that parameter will no longer be displayed on the graph. When you change your base parameter, the “Compare to” choices change.

Renewable Energy Production

If you have renewable energy production, you can also look at a production view, showing you your production by month, day or hour.



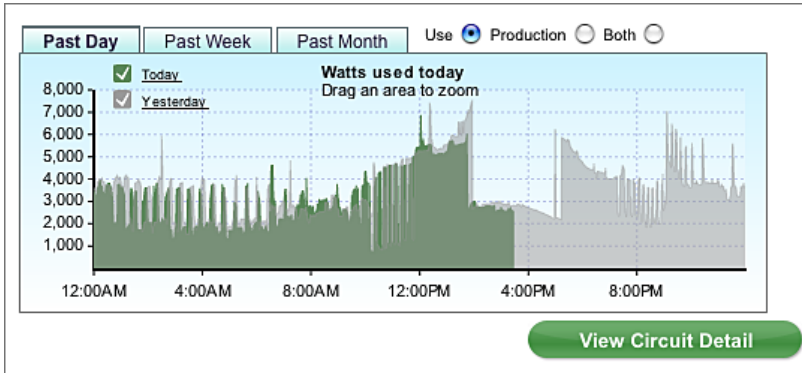
You can compare production to other parameters, such as energy being taken from the utility grid. The graph above shows that during April and May, solar production was greater than the amount used from the grid.



The graphs will default to a monthly view. You can drill down to a daily view by clicking on the bar for that month. You can then drill down to an hourly view by clicking on a day. Adjust the granularity by clicking the tabs at the bottom of the graph, as in this hourly view.

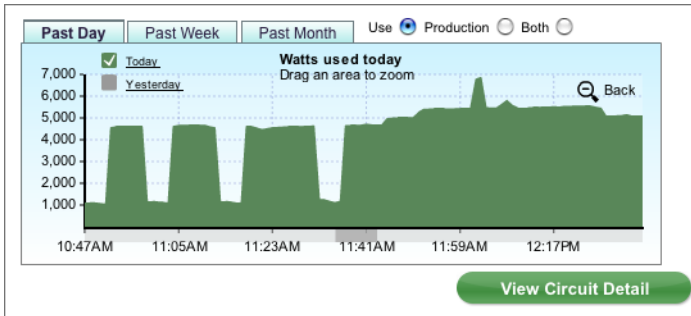
Return to a monthly or yearly view by clicking **Back** (above right of the Select dropdown menu). Close the history detail window by clicking on the **Close** link at the upper right of the window. We're now back at the home page.

The graph on the *right* side of the bottom panel shows your usage for the past day, week or month, selected using the tabs at the top. Along the bottom of the graph a time period will be displayed (hours, for instance, when you've selected "Past Day" as the time period) and the vertical axis will show power usage. In the daily view, two areas are shown. Green indicates the current day and gray represents the previous day. In the daily view, you are looking at minute-by-minute usage measured in watts. In all other views you are looking at watt-hours.



Along the bottom of the graph a time period will be displayed (hours, for instance, when you've selected "Past Day" as the time period) and the vertical axis will show power usage. In the daily view, two areas are shown. Green indicates the current day and gray represents the previous day. In the daily view, you are looking at minute-by-minute usage measured in watts. In all other views you are looking at watt-hours.

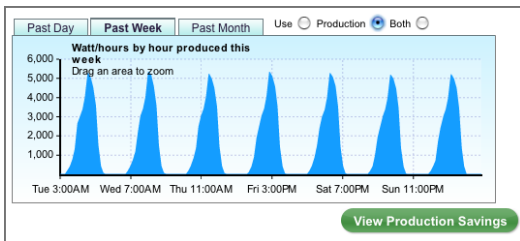
Zooming In



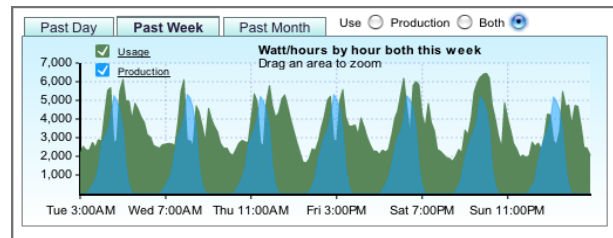
For an even closer analysis you can drag over a section of the graph with your mouse to "zoom in" on that area. This is a feature of all line graphs in the Portal. You may notice when you zoom in that the vertical axis values change. They automatically adjust to cover the range of values that are displayed.

Note that you will automatically get back to the "un-zoomed" graph every minute when the information is updated, or you can click the **Back** button on the right

hand side. Also note that the above graph also has Production and Both tabs. These tabs will only show if you have renewable energy production.



This graph shows renewable energy production for the past week.



Selecting the button for **Both** shows usage and production together

"View" Buttons

- [View Circuit Detail](#)
- [View Production Savings](#)

When you are looking at power *usage*, you will see a button labelled "View Circuit Detail." If you looking at power *production*, you will see **View Production Savings**.

If you select "Both", no View button is shown.

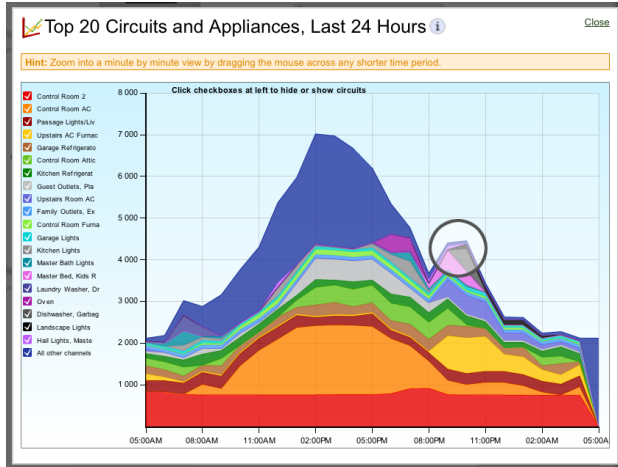
Clicking **View Production Savings** shows your savings for the selected period (in this case, past 7 days). Savings are shown in kilowatt hours

Production Savings	
Past 7 days	
kWh Produced	250
Dollars Saved	\$42
Ibs CO2 Saved	182
kWh Exported To Grid	0
Dollars Exported To Grid	\$0

produced, dollars and CO₂ saved, and power and dollars exported to the grid. Please note that dollar value is estimated from your electric rate, and may not match your actual savings.

View Circuit Detail

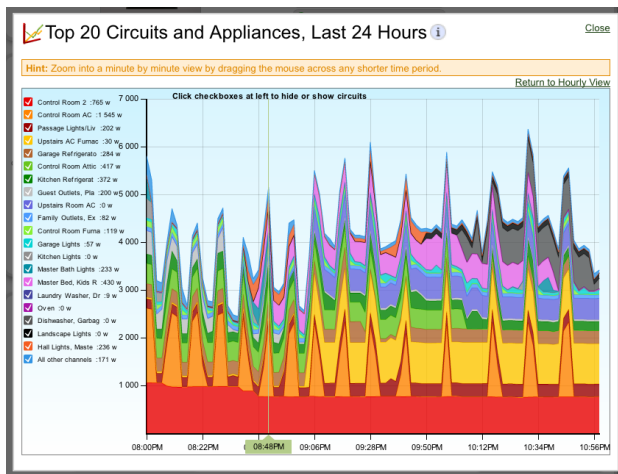
The “View Circuit Detail” button will pop-up a graph showing the hourly power usage of the 20 highest power using circuits over the last 24 hours. This is one of the most powerful views of your power usage.



This colorful chart shows total usage (the height of the graph at a particular time) of the circuits, with a different color for each circuit. Using this graph you can see which circuits are driving usage during any period of time, and what is causing spikes in electricity use. In this example, the small spike at 10PM (circled) appears to be caused by the Dishwasher and Garbage Disposal. It is useful to zoom in by dragging the mouse across the graph to see an even shorter time period (below). In the zoomed view, you will see details of power usage averaged over every two minutes, for a very granular view.

The width of the stripe indicates the amount of power used. Thinner stripes show less usage, thicker stripes show more.

The left menu of the graph lists your top power consuming 20 circuits. You can toggle each on or off by checking the box to the left of the name.



In the zoomed view, we can see there is not one large spike for an hour, but continuous usage of several circuits, pushed into spikes by one circuit (orange). Note that the information in this graph is stacked, and a noticeable pattern, like a refrigerator cycle might, might shape the overall graph.

In this view, we’re doing a little detective work. We can simplify the graph by turning off the minor users (narrow stripes) and leaving just a few circuits showing. We can now see that the Dishwasher ran from about 10PM to 11PM. Upstairs Room AC and Upstairs AC Furn were on continuously, along with the

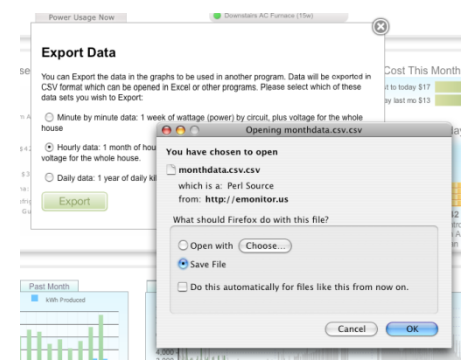
Control Room. Now we can see that spikes were caused by the Control Room AC (air conditioning) cycling on and off. Because the overall view only shows hour by hour, we didn’t see detail like this until we zoom in.

At a zoomed view you can see details such as a refrigerator turning on and off. You can also isolate circuits which are always drawing power, as shown by continuous horizontal stripes.

Exporting data

Export Data

Return to the Home page by clicking the **Close** link. At the bottom left of this page is an “Export Data” feature that allows you to export the accumulated SiteSage data as a standard CSV (comma separated values) file, which can be opened and analyzed in a third party program such as Microsoft Excel.



Click Export Data. Choose your data sets (1 week of minute-by-minute data, 1 month of hourly data or 1 year of daily data) and click "Export." Save the file to your computer.

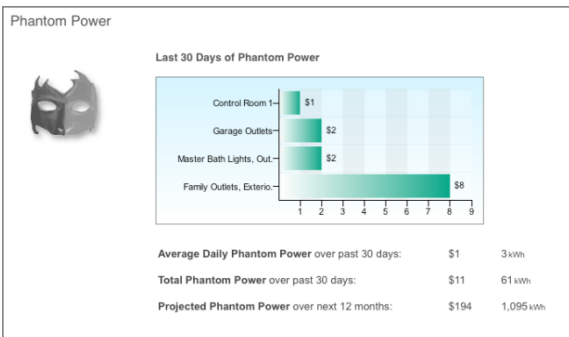
Phantom Power



SiteSage identifies where you are "leaking" electricity in your home. This effect is generally known as Phantom (also called vampire) Power. Reducing these power loads could be a step towards electricity savings in your home!

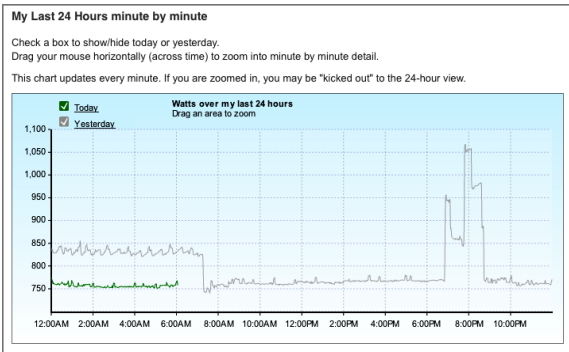
So what is Phantom Power?

Phantom Power is the electricity you are using when you don't know about it. Technically, Phantom Power is the power used when a device is ostensibly turned off. For example, electronics often draw power on standby. The clock on the electric range and the cordless telephone base are examples of Phantom Power. Bigger Phantom Power users are TVs and all related electronics, which continue to draw power after they are turned off so that they can start up more quickly. Other sources are the computer you leave in sleep mode and the cell phone charger you leave plugged in.



On the **Phantom Power** page you will see an overview of the likely locations of Phantom Power in your home. Take note of how much you potentially can save by reducing this consumption. To see immediate details on one of the circuits, click one of the Phantom Power graph bars to go to that **Circuit's Detail** page.

At left is a circuit showing constant low power use; it never falls to zero. You may be able to save by using power strips to turn these appliances off, instead of the power button on the appliance itself.



Welcome, Martin Not Martin? Settings | Support | Log Out

HOME Circuits Controls Alerts Ways to Save Report Card Local Weather

Monitor Status: Current use: 0.42 kW | \$0.06/hr Outside Temp: 45°F

Refrigerator Circuit View Savings View

Consuming 6% of breaker capacity

Carbon, lb per month: 44
 Carbon, lb per year: 529
 Acres of northern forest needed to absorb 1 year's carbon: 1.17

Projected Costs vs Previous Period

By day	By week	By month
This Week	To date: \$2	\$2
Last Week	To same day: \$1	\$2

Minute by Minute View by Day

Watts over my last 24 hours
 Drag an area to zoom

12:00AM 3:00AM 6:00AM 9:00AM 12:00PM 3:00PM 6:00PM 9:00PM

Check a box to show/hide today or yesterday. Drag your mouse horizontally (across time) to zoom into minute by minute detail. This chart updates every minute. If you are zoomed in, you may be "kicked out" to the 24-hour view.

Circuits Tab

The **Circuits Tab** (right) displays detailed information about each circuit, with a menu on the left to navigate to any circuit.

The left menu is grouped in logical categories of appliances (blue bars). Clicking on the category takes you to a page that summarizes the group itself. Clicking on the + sign on the left hand side of the category "opens" it and lists the circuits

under that category. You may have more than one category open at a time.

The Circuits page shows a usage gauge and carbon information at the top, in this case for the specific appliance or circuit. Current flowing through that circuit as a percent of capacity is shown below the gauge.

For appliances that are “load”-based, such as dishwashers, washing machines and dryers, you will also see an analysis of energy use per load.

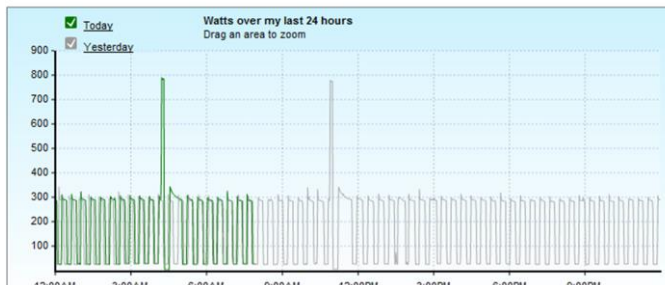
Below that is a minute-by-minute line graph for the past couple of day, with tabs for weekly and monthly views, similar to what appears on the Home page for at the house level. A complete history similar to the history chart available at the whole house level is available for each circuit.

My Last 24 Hours minute by minute

Check a box to show/hide today or yesterday.

Drag your mouse horizontally (across time) to zoom into minute by minute detail.

This chart updates every minute. If you are zoomed in, you may be “kicked out” to the 24-hour view.



The minute by minute graph compares today’s usage to the previous day and can be used to spot trends and perhaps problems. In the above example, and again at left, you see a typical refrigerator cycle, where the refrigerator motor (compressor) cycles on and off on a fairly regular basis. Occasionally you will see a huge spike, which is the defrost cycle kicking in. For a refrigerator, this is normal – and you can even set an Alert to see if it is working properly. For another appliance, such as a central air conditioner, this might be the sign of a problem.

Controls Tab

If you have installed a SiteSage Smart Thermostat as part of the system, you will see a **Controls** tab. This tab lets you see and adjust *current* temperature settings. (Go to Settings/Smart Controls to change overall settings)

The page looks very much like the Circuits page, with a left navigation bar that lets you navigate between thermostats.

Initial configuration of the Smart Thermostat is discussed in Appendix E. This page will look very much like the set-up wizard described there, but shows only today’s settings. To change the current temperature setting, grab the top of the bar representing the time period with your mouse and pull up to increase temperature, and down to decrease. Do the same thing but horizontally to change the times for any time period. Any changes you make will affect those time periods for today only; the standard settings will kick back in when you hit the next time period. The EXCEPTION to this is the **Hold** button on the upper portion of the page; once pressed this will maintain the current setting indefinitely until you hit REL. The actual temperature *reading* (and thermostat mode) will appear inside the

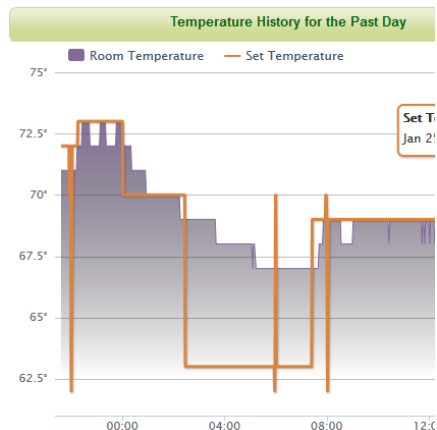
thermostat image. *If there is no temperature reading showing*, it means the thermostat has lost its connection. To reconnect, go to the **Settings/Smart Controls** tab and press **Find Controls**. If that still does not work, you can slip the top cover off the thermostat itself and, using a sharp point, press the Reset function. The Thermostat should connect automatically, but if it doesn’t, hit Reset again and press Find Controls again while the yellow light is flashing on the left side of the Thermostat, indicating it is in provisioning mode.

If you have created a special setting for Vacations and access the page during a Vacation, you will be able to override the Vacation setting.

The Controls Tab lets you quickly adjust today’s settings

Note: You can adjust the current temperature setting on the Thermostat itself, as well as use its **Hold** function; both will update the temperature setting on SiteSage. However, the general settings function on the Thermostat is disabled once you connect it to SiteSage in order to avoid conflicts. You *must* use SiteSage to establish your standard settings; it will override any settings you set locally. (The Thermostat may say Temp when it is being overridden by SiteSage and have some extraneous information that clutters up the screen; to get rid of that, turn the Thermostat OFF and hold the Program button for about 12 seconds. This puts the Thermostat in “simple mode”; you may need to do this to see the up and down arrows. The same procedure puts you back in full program mode, but you really do not need that. The low battery indicator on the Thermostat will not go away, since no batteries are being used).

At the bottom of this page you will see a graph of actual temperature readings vs. settings. This is very useful information for understanding if your HVAC system is working efficiently. If the temperature overshoots the settings on a regular basis, you should have the system checked out. If it never reaches the settings in some time periods, or takes a very long time to do so, you may be able to change your settings and lower your costs without sacrificing comfort.

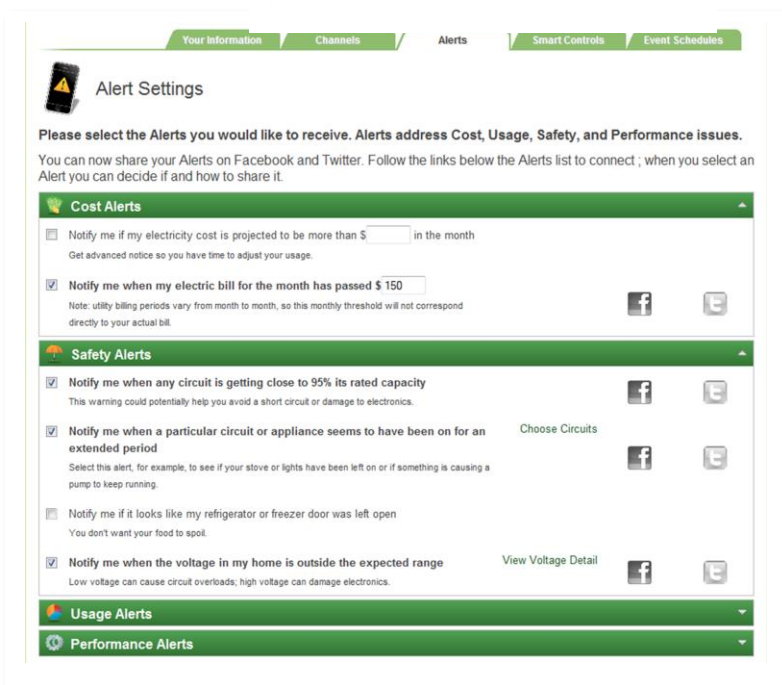


Alerts Tab

Alerts represent a critically important part of the SiteSage value proposition, since they can provide warning about a wide range of potential issues.

You can select from a range of Cost, Safety, Usage, Performance and Comfort Alerts. With many of the Alerts, you also select the specific circuits you would like to receive the Alerts for. You can also decide whether to receive the Alerts by text, e-mail or both; these options appear at the bottom of the page, along with the option to send a copy of Alerts to your Authorized SiteSage Channel Partner (who can track your alerts and see if there are patterns that indicate the need for follow-up).

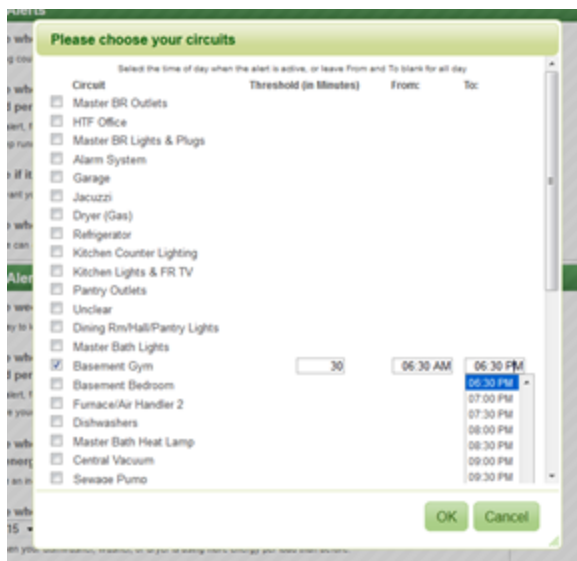
You can come back and change Alerts at any time. **NOTE: any time you add or change Alerts, please make sure to press the Save Settings button at the**



bottom of the page.

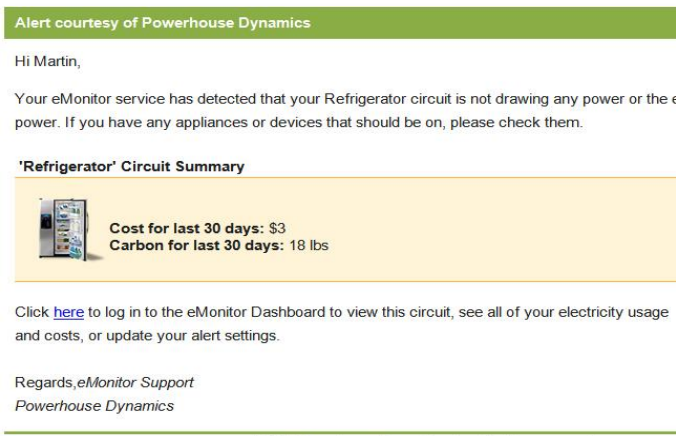
Setting Alerts is pretty straightforward; just select the ones you would like to receive, and fill in the requested information. We will show 1 example.

As a simple example of an Alert; say you want to be warned if you left lights on in a basement gym that nobody ever uses between 6:30 am and 6:30 pm. Check the Alert: “Notify me if it looks like a particular circuit or appliance seems to have been left on for an extended period.” It will pop up a list of circuits. Check *Basement Gym*. Set the threshold for what you consider an extended period; in this case we chose 30 minutes. Set the times you want the Alert to run, using the pull down



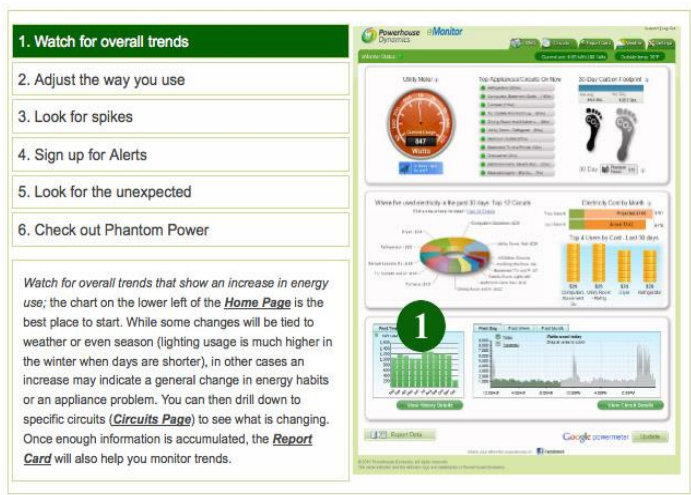
lists. If you leave the “From/To” fields blank, the system will check for this situation all day.

An e-mail Alert from might look like this:



New Alerts are added on a regular basis, so you should check back periodically to see if there are additional Alerts you would like to set. Some Alerts are described further in Appendix D, but since they may change more frequently than the User Manual is updated, you may not find all Alerts listed.

Ways to Save Tab



The *Ways to Save* Tab provides in-depth guidance on how to use SiteSage’s detailed information to save energy. The first page offers some high level suggestions for how to use SiteSage to identify Ways to Save. Use the menu at left for more specific savings opportunities for the appliances and other equipment in your home.

Using the blue menu on the left

The buttons in the left menu of the Ways to Save tab look just like those in the Circuits tab – and they are! They interact with the Circuits menu, depending on



whether you have chosen Savings View or Circuit View for any circuit. You can jump back and forth between Circuit View and Savings View.

Savings View

The Savings View shows you detailed information on Ways to Save, tailored specifically to the major appliance on the circuit. When you choose a circuit from the Ways to Save tab, you see the Savings View of that circuit.

Here's the Savings View for a refrigerator. It shows detailed suggestions for temperature settings, checking the doors, the moisture control switch, the impact on energy use of dust in the coils, and the importance of breathing room for the back and top of your refrigerator, as well as information about deciding when it's time to replace the refrigerator. For some appliances, including refrigerators, there are additional analyses you can perform, for example, the impact of size and style on energy use.

Refrigerator (Primary) Circuit View Savings View

How to Save

Refrigerators are among the largest electricity users in the home. There are a few things you can do to minimize the energy use of your refrigerator, and the eMonitor will show you any impacts:

Temperature Settings Keep the fresh food and freezer temperature levels at about the mid-point of range on your unit; generally that will be sufficient to preserve your food, and will use less energy than cooler temperature settings.

- Doors
- Moisture control switch
- Dust
- Breathing room

[Impact of Style](#)

The best way to leverage the eMonitor to save money on your Refrigerator is to set all **Refrigerator Alerts**. These can notify you of problems with your defrost coil, refrigerator or freezer doors being left open, or sudden or gradual increases in energy use, which is likely the result of a problem. Not only are there potential energy savings, but you might avoid a more serious problem if you catch it early.

Time to Replace?

If you have an older refrigerator, buying a new one could provide significant savings. Refrigerators tend to last 12-20 years. One way to tell if your refrigerator is beginning to show the signs of age is to track energy usage over time. (Better still, set an eMonitor **Alert**). If it is gradually increasing, that may be the sign of reduced insulation or some other problem with an older unit.

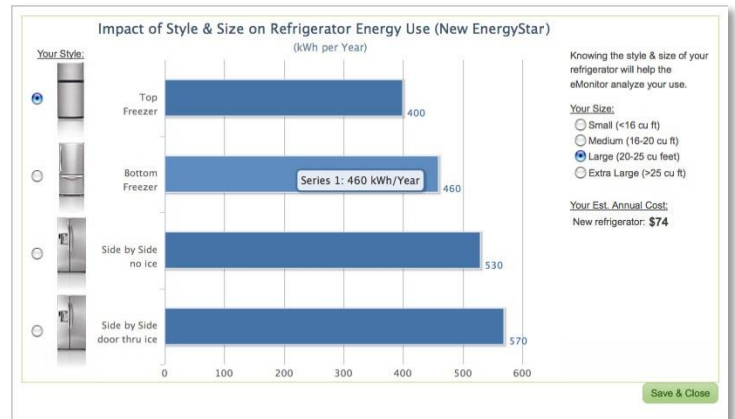
Newer refrigerators use much less energy than older ones and replacing them can be cost-effective based on energy savings alone.

If you **replace** a refrigerator from the mid 1980's, your **annual savings** could be around **\$194**, which would pay for a new refrigerator in just a few years. Even a 10 year old refrigerator uses much more energy than a new one. If your refrigerator uses more than 55 kilowatt hours a month a replacement should provide meaningful savings; check back here, the eMonitor will let you know and estimate your potential savings.

Avg. Energy Use of 18 cu. ft. Refrigerator (kWh per Year)

Year/Model	Avg. Energy Use (kWh per Year)
1986	~1400
2000	~400
EnergyStar	~300

the moisture control switch, the impact on energy use of dust in the coils, and the importance of breathing room for the back and top of your refrigerator, as well as information about deciding when it's time to replace the refrigerator. For some appliances, including refrigerators, there are additional analyses you can perform, for example, the impact of size and style on energy use.



Clicking the "Impact of Style" link below the refrigerator image displays a chart of energy usage of different styles of refrigerator. Choose your size and style, and the SiteSage will provide an estimated yearly cost and possibly savings.

The Savings View for a gas furnace, as another example, offers savings suggestions along with choices for receiving alerts when it's time to change the air filter for your furnace.

Furnace - Gas Circuit View Savings View

How to Save

Hey, how come a gas furnace uses electricity? Gas furnaces generally have a blower motor that operates whenever the system is on. The electricity use will vary based on a number of factors. Changing filters regularly will not only result in lower gas usage, but will also lower your electricity usage. Your system may also have a central humidifier. These can draw a fair amount of energy. Depending upon how dry your home gets, you may be able to turn this off and use room humidifiers as necessary, or at least adjust the humidifier setting. The eMonitor will let you monitor the impact of adjusting the humidifier.

Would you like the eMonitor to remind you when it is time to change the filter?

- Yes, please send me a reminder at the start of the heating season
- Yes, please send me a reminder at the start of the heating season and again mid-way through the season
- No, thank you

Save

In addition to suggestions, the Savings View will call attention to Phantom Power on a circuit. Below, Phantom Power was measured at 4kWh, or about \$1 per month. Simply turning off an appliance in the living room when not in use can result in savings.

Outlets/Lighting Circuit View Savings View

How to Save

The eMonitor has detected "Phantom Power" (4 kWh, **\$1 per month**) on this circuit - which is the energy industry term for "leaking" electricity caused by electronic equipment that continue to use power in sleep mode or even off. Clocks will draw power all the time, of course, but the usage is pretty small. If you have any chargers on this circuit, make sure they are unplugged when not connected. The same should hold for any small electronic devices you do not need on all the time.

Report Card Tab

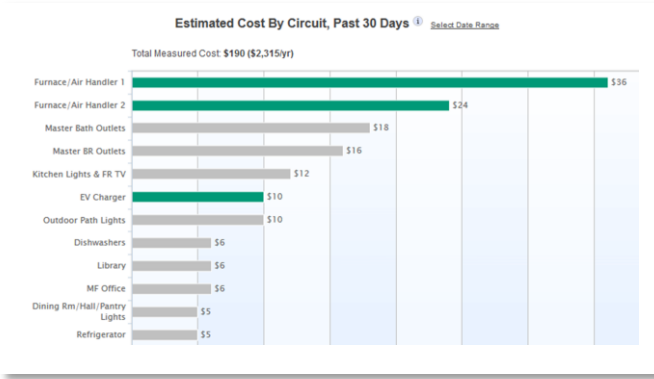
My Energy Report Card

	Past 30 Days	Past 90 Days	Same 30 Days Last Year
Electricity:	Daily Usage Cost	\$6	\$7
	Average Daily Usage	37 kWh	43 kWh
CO2:	Average Daily Emissions	35 lbs	40 lbs
			51 lbs

The "Report Card" is designed to show you, at a glance, how you are doing in your energy conservation efforts. (Please note that this Tab will not provide all of the functionality described below until SiteSage has been operational for at least 60 days).

Near the top of the page is a one to five "Green Leaf" score, showing how your past month's daily usage compares to your daily average for the previous year.

The more you lower your energy use the more green leaves you get! For an explanation, hover your cursor over the leaves.



The Report Card bar graph presents your circuits in order of cost over the past 30 days. Click a bar to go to that circuit's detail page. Each bar is color coded based on that circuit's trend, up or down. Hovering the cursor over a bar pops up details about that circuit's costs and trends.

The "Did you Know?" section at the bottom of the Report Card presents some of the relevant analyses from Ways to Save and other elements of your energy use that might help you identify problems and savings opportunities. For example, one finding might be that the energy use of your refrigerator is high enough

that there is a reasonable payback on energy costs alone by replacing it with a new, energy efficient model. Please look at this section of a regular basis, since new findings might occur at any time.

NOTE: Unless you opt out on the Alerts settings page, you will be sent an e-mail version of this Report Card on a monthly basis.

Did you know?

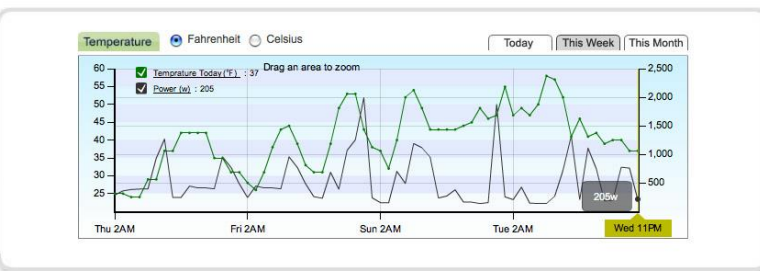
- Your Utility Room - Refrigerator, Laundry Lights used 55% more energy than your Refrigerator over the past 30 days; you have both listed as being Refrigerator (Primary). This could be because these are different models or you have different settings, but we thought you should know.
Utility Room - Refrigerator, Laundry Lights \$31.48
Refrigerator \$20.35
- Your Utility Room - Refrigerator, Laundry Lights is averaging 193 kWh per month. If you replaced it with a typical new EnergyStar® model the same style and size as you currently own, you should be able to save around \$303 per year.
- Your Refrigerator is averaging 125 kWh per month. If you replaced it with a typical new EnergyStar® model the same style and size as you currently own, you should be able to save around \$179 per year.
- Phantom Power - Typically electronics that continue to use power even when off - cost you \$16 over the past 30 days. Try pulling the plug when not in use or using a power strip you can turn off.

Local Weather Tab

This tab shows you your local weather conditions and forecast based on your zip code. It graphs temperature along with your overall electrical use, in both Fahrenheit and Celsius, for today, this week and this month.

If you have a RainWise® weather station capable of sending live data to the web dynamically, that station can be integrated with SiteSage to show your own real-time weather data in detail, instead of general localized weather data.

If you are interested in integrating weather with SiteSage, a link is provided for further information on the RainWise weather station.



Settings Link

The **Settings** Link on the upper right of the page lets you change any of the settings you established during the Registration and Configuration process. This section is divided via sub-tabs that conform to the Steps in the registration process with almost identical screens, other than Registration Steps 1 and 2 being combined here into the *Your Information* sub-tab. There is also a sub-tab that lets you set up or modify the settings of Smart Thermostats you have purchased. A Schedule Events sub-tab appears if you have a Smart Control.

Your Information Sub-Tab

Use the portion of the sub-tab at left to change your contact and location information, and the portion shown at right (which will actual appear lower down on the same page) to modify your utility rate information. SiteSage gets your electricity rate from a database of average utility rates. You can also calculate your rate from your electric bill by

entering the total bill and the kilowatt hours used, or use an an alternative you think better represents your rate. In this section

you can also indicate whether you get billed a Demand charge that charges for the maximum power used for a 15 or 30 minute period for the month. Demand charges are standard for commercial customers, and rare for residential users, but some utilities

do charge residential customers this way. Demad charges are not automatically available at this time, so they must be entered manually. Finally, on this page you can update general

information about your home that may have been pulled from a public records database.

Contact Information

User Name: Disable automatic logout
[Change my password](#)

First Name:
 Last Name:
 Email Address:
 Telephone:

Address:
 Address2:
 City:
 Country:
 State:
 Zip/Postal Code:

Location Being Monitored

Location Name:
 Address:

Utility Rate and Home Information

Utility
 Based on your zip code, there is only one electric utility serving your area. If that is not correct, please select one from the state list.
 Select Utility from 02458 area Massachusetts: NSTAR Electric Company

Utility Rate
 Use Utility rate average
 The average residential rate for your electric utility is shown below. If you think this does not accurately reflect yours, you can estimate your rate from your latest bill or enter it directly.
 Estimate electricity rate from my latest bill.
 Bill Total / kWh Used
 \$ / Calculate
 Enter electricity rate directly.
 Basic Electricity Rate: \$ 0.1522 /kWh

Channels Sub-Tab

Use this sub-tab to change any of your circuit/channel configuration information. This section looks exactly as it does in the Registration process, except for providing a drop down menu to switch between multiple SiteSage Energy Monitor units, if you have configured more than one.

Note that when you scroll down the page, the column headings remain visible for reference. Clicking on any row will bring up a data entry box that will let you modify that row.

eMonitor Channel Configuration: Main panel + sub-panel [Rename](#) Serial Number: EM1R1 010003 3CE3

I cannot connect sensors to my Main Breakers; please compute Main power by adding all circuits.
 Click on any row to edit.

In Use?	Breaker Number	Double Breaker?	Breaker Size (A)	Circuit Label	Appliance Type	CT Sensor Type			Two CTs?	Ch#
						20A	60A	150A		
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	150	Main Power	Mains	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		1
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	150	Main Power	Mains	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		2
<input checked="" type="checkbox"/>	15			Master BR Outlets	Outlets	<input checked="" type="checkbox"/>				3
<input checked="" type="checkbox"/>	15			HTF Office	Computer & Office Equipment	<input checked="" type="checkbox"/>				4
<input checked="" type="checkbox"/>	15			Master BR Lights &	Outlets/Lighting	<input checked="" type="checkbox"/>				5
<input checked="" type="checkbox"/>	20			Alarm System	Security System/Camera	<input checked="" type="checkbox"/>				6
<input checked="" type="checkbox"/>	15			Garage	Garage Door Opener	<input checked="" type="checkbox"/>				7
<input checked="" type="checkbox"/>	20			Jacuzzi	Hot Tub/Jacuzzi	<input checked="" type="checkbox"/>				8
<input checked="" type="checkbox"/>	20			Dryer (Gas)	Dryer - Gas	<input checked="" type="checkbox"/>				9
<input checked="" type="checkbox"/>	20			Refrigerator	Refrigerator (Primary)	<input checked="" type="checkbox"/>				10
<input checked="" type="checkbox"/>	15			Kitchen Counter	Lighting	<input checked="" type="checkbox"/>				11
<input checked="" type="checkbox"/>	15			Kitchen Lights & FR TV	Outlets/Lighting	<input checked="" type="checkbox"/>				12


If you find a Circuit Label is getting cut off when it's displayed in a graph, you may edit it at any time to make it shorter. You may also change the Appliance you have selected as representative of a circuit. This may change the tips and Alerts you receive, but energy use history will not be affected.

eMonitor Channel #7

In Use? (optional)
 Breaker Number(s):
 Double Breaker?
 Breaker Size (A):
 Circuit Label:
 Appliance Type:
 Details:
 CT/Sensor Type: 20A 60A 150A
 Two CTs?

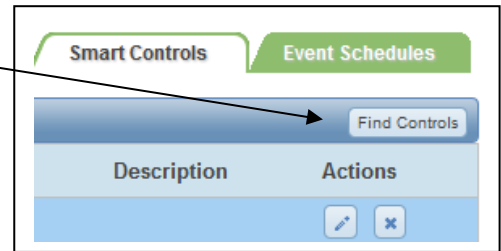
Smart Controls Sub-Tab

If you have a Smart Thermostat, you will set the initial settings through an installation “wizard”, described in Appendix E. You are able to change the settings you have established at any time you like on the Smart Controls sub-tab under the Settings Link. (For changing just today’s settings, go to the Controls Tab).

This page, shown below, works exactly like the Wizard in terms of establishing settings, except that you need to select the Day Type (Workday or Non-Workday) as well as Mode (Heating or Cooling) – and first select the Thermostat in the list above if you have more than 1. The  icon on the right hand side of the page provides you with the ability to Snap the settings back to the efficiency settings, or Clone the settings from another Thermostat. Change temperature settings by grabbing the top of a bar and pulling it up or down; time settings by moving a block left or right.

Please note that the upper section of the page lets you add a more detailed Description of a Smart Thermostat; in this example the First Floor thermostat is described as being Located in the Kitchen). To make any changes to a thermostat click on the Edit Icon under Actions on the right hand side; you can also use this function to delete a Thermostat.

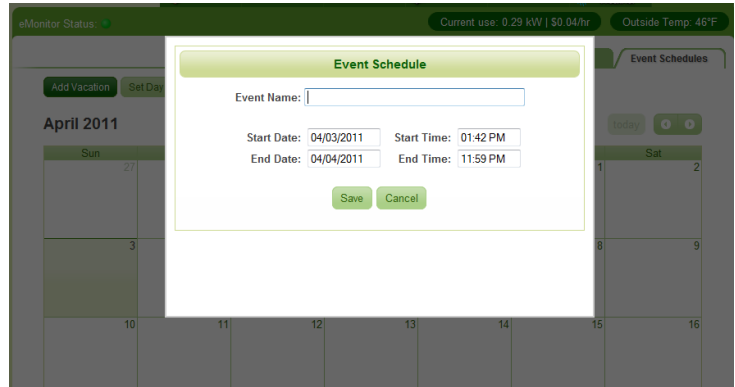
If you have installed a Smart Thermostat and have not yet configured it, you can also do that from this page. Click on the *Find Controls* button in the top right hand corner to find the new Thermostats, and then follow the instructions to launch the set-up Wizard, which is described in detail in Appendix E.



Event Schedules Sub-Tab

SiteSage allows you to establish settings for an Event, and then schedule that event. In the current release, the only type of Event you can schedule is a Vacation. Go to the **Event Schedules** sub-tab and either click on a day or select the Add Vacation button. Pick your dates, give your Vacation a name, and you're all set. All of your thermostats will automatically adjust to the vacation mode when your vacation starts. (Note: make sure the time you set the end of the Event at least 1 hour before your planned arrival time so that your heating or cooling system has time to get back to its regular set point).

You can also adjust your Day Types or Heating/Cooling seasons from this page.



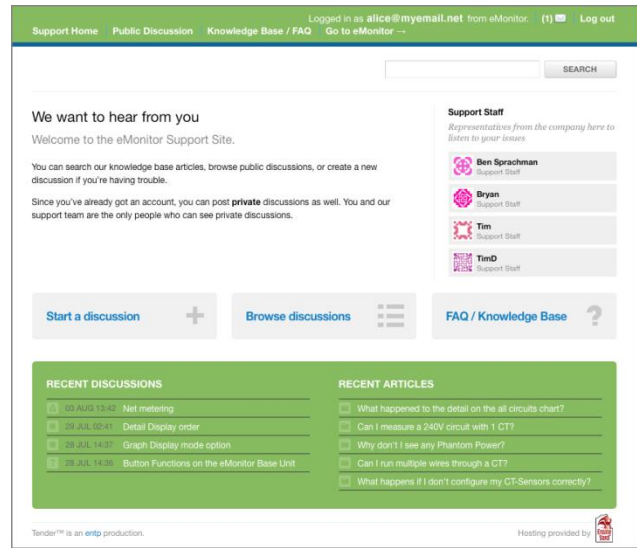
Support Link

NOTE: For support on the installation of SiteSage, please contact the dealer from whom you purchased your SiteSage.

SiteSage Support Page

The support screen provides a way to send an email to SiteSage Support staff on specific issues and to download manuals and Channel Setup Worksheets. On the lower right of the screen is a link to visit the SiteSage Support Website, where you'll find information, FAQs, and a user community.

SiteSage Support Web Site



Clicking Visit the SiteSage Support Site brings you to the home page. FAQs and discussions are available, among other resources.

Appendix A: SiteSage Set-up and Configuration

The first step of the setup procedure is the hardware installation. If that has not been completed, you will need to do so before proceeding. For help with hardware installation, see the Installation Guide included in the box SiteSage was delivered in. **Unless you have experience working with an open electrical circuit panel, we strongly recommend you use an electrician for the installation.**

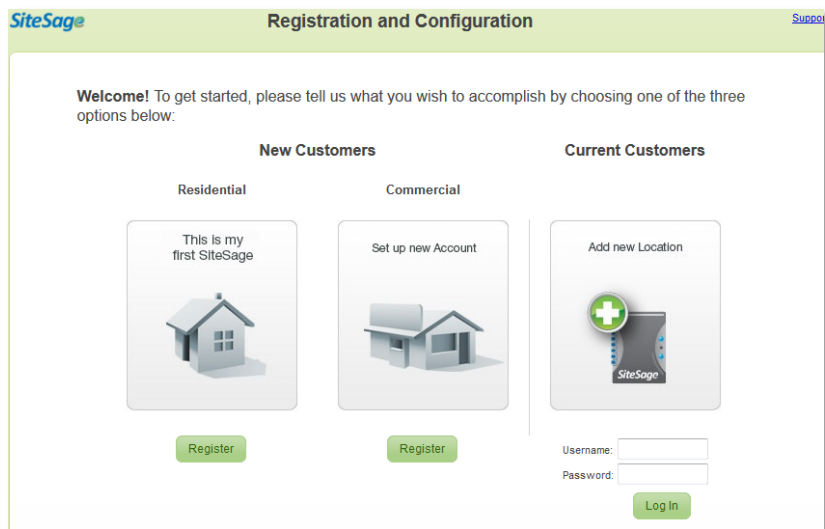
Once the installation is complete and the SiteSage is connected to the Internet, you can begin the registration and configuration process.

Registering and Configuring SiteSage

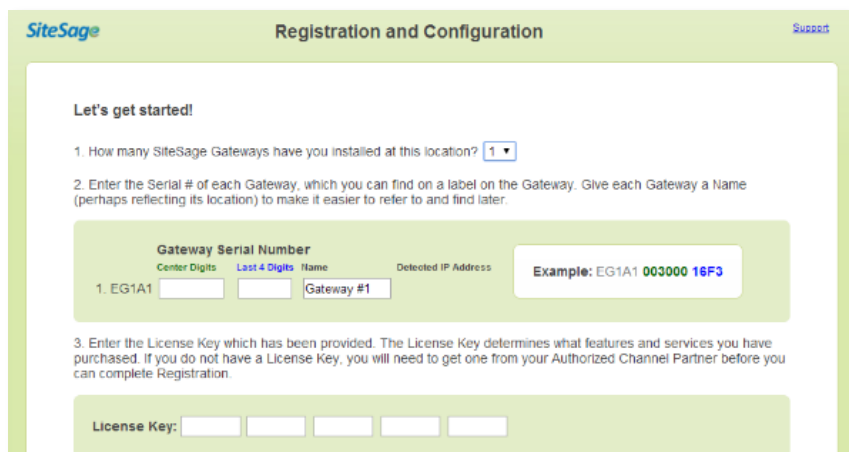
Registration and Configuration is performed online. This can be completed by the homeowner or by the installer, if different, and is also described in the SiteSage Installation Guide. Please note that until Registration and Configuration is complete you cannot access the data, and no data will be stored.

To begin the Registration and Configuration process, go to: <http://Sitesage.net/setup>.

If this is your first SiteSage installation, click **Register**, under Residential. (If you are a Commercial customer you should be working with SiteSage Install Guide). If you already have SiteSage registered at one location and are adding a system at *another* location, such as a vacation home, log in under **All Returning Customers** with the user name and password you have already established. If you are adding another SiteSage Energy Monitor unit to a location that already has a system installed and registered, there is no need to go to Setup. Just log in to SiteSage Portal; the new unit will be found and you will be directed to a Wizard to configure it.



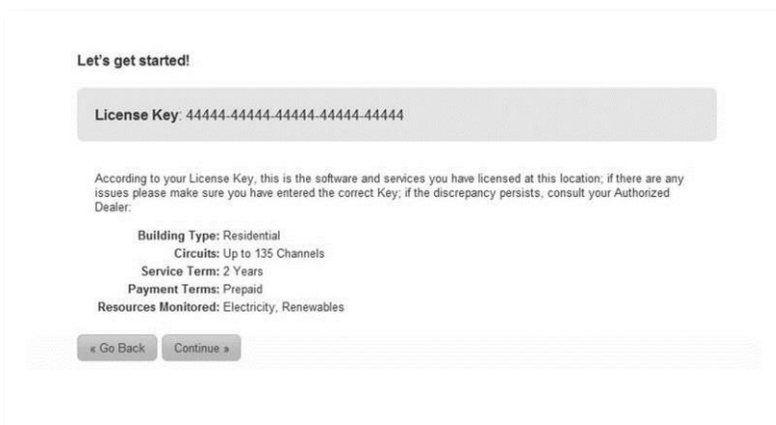
Registration begins with some basic questions about what you have installed. Enter the number of Gateways that you will be configuring in this session. Then, enter the middle 6 and last 4 digits of the Serial # for each Gateway (you can ignore leading zeroes). You can find these numbers on a label on the Gateway. (Once you enter in the Serial #, the



Gateway’s IP address will be returned; you can use this to return to the Embedded Web Server used for network configuration if necessary). Finally, enter the 25 digit License Key you have been provided by your Authorized SiteSage Channel Partner. The License Key identifies what services you have licensed, including whether you are a Residential or Commercial customer, the maximum number of circuits you are monitoring, and whether you are monitoring renewable generation sources or water or gas. *If you have not been provided a License Key*, please contact your Authorized SiteSage Channel Partner. If you purchased the system on-line, or want to complete the registration process immediately, follow the [purchase one here](#) link to a page where you can obtain your SiteSage license. You will not be able to register SiteSage without a valid License Key.

NOTE: If you see a “Not Valid” notice after you press Continue, it means you have entered a non-valid Device ID. Please re-check the numbers you entered and try again. In the unlikely event the number is still not valid, and you’re sure you have entered it correctly, please contact your Authorized SiteSage Channel Partner.

Once you have entered your License Key click **Continue**, and you will be taken to a page that confirms the services that you have licensed. If this is not consistent with your expectations, double check the number you entered and, if it is correct but does not show what you expected, please contact your Authorized SiteSage Channel Partner.



You are now ready to enter information about your home and your home’s circuits. This information helps SiteSage make accurate calculations and recommendations. The process has three steps.

Step 1: Contact and Location Information

Enter your contact and related information. (All fields are required). If you are an existing user registering a unit at a new location, your name and other basic information will already be filled out. For **Location Description**, choose a name that describes the location of this installation, for instance “Home” or “Vacation Condo”.

Step 1 of 3: Contact and Location Information

If you click **Continue** with incomplete information you will be notified in red text of the fields you left out or entered in an incorrect format. Remember to check the “I have read & agree to the license agreement” checkbox on the bottom of the page (which you will not see if you purchased your License Key during registration since you have already agreed to the license).

Step 2: Utility Rates and Home Information

Next, confirm your electric utility company and your electric rate (measured in cents per kilowatt hour, or kWh). SiteSage has a database that identifies your utility based on zip code, but homes in some zip codes are served by more than one utility, so you may need to choose one from the list. If SiteSage cannot locate your utility, use the state list to select it.

The SiteSage database also maintains the average residential rate for every utility. You can accept that rate or, if you feel it does not accurately reflect your charges, either calculate it from your most recent bill or enter a rate directly that you feel best captures yours.

There is also a section where you can enter a Demand Rate. Demand Rates, which are based on the peak energy usage during a month, are very common for commercial utility customers and very rare for residential customers, but several utilities have such rates for consumers. The system will default to no Demand Rate, but if you have one please enter it here.

Finally, the system will pull some key publicly available information on your home if available – specifically year built and square footage – from the web site Zillow. That information is extremely valuable for analyzing your home’s energy usage, so please verify that the information is correct, change it if it is not, or enter it if it is missing.

The screenshot shows a web form titled "Step 2 of 3: Utility Rate and Home Information". It is divided into four main sections: "Utility", "Utility Rate", "Demand Charge", and "Home Information".

- Utility:** A dropdown menu for "Select Utility from" is set to "02458 area" and "Massachusetts: NSTAR Electric Company".
- Utility Rate:** Three radio button options are present: "Use Utility rate average" (selected), "Estimate electricity rate from my latest bill.", and "Enter electricity rate directly.". Below the first option is a "Calculate" button. Below the second option is a "Basic Electricity Rate: \$ 0.152200 /kWh".
- Demand Charge:** A question "Are you billed a Demand Charge?" has "No" selected. Below it, "What is the Demand meter interval?" has "15 minutes" selected. "What is your Demand rate?" has three radio button options: "Single Rate: \$ [input] /kW" (selected), "Tiered Rate: \$ [input] /kW up to [input] /kW", and "\$ [input] /kW if above".
- Home Information:** A note states: "We found the following info on your home in Public Records; it helps us analyze your use. Please update if you do not believe the information is accurate." Below this, "Year Built: 2008" and "Home Size (sq. ft.): 2450" are shown with a Zillow logo.

At the bottom of the form are two buttons: "« Go Back" and "Continue »".

A Note on Utility Rates: SiteSage database reports average residential rates for each utility. This works extremely well in getting a sense of the costs of different appliances in your home. However, the cost estimates generated by SiteSage cannot take into account all the complex formulas or special rate programs your utility uses unless there is an arrangement with the utility. In addition, SiteSage’s measuring period will not be the same as the billing period reflected on your utility bill, so trying to compare them is not recommended.

Step 3: Channel Configuration

In the next step you need to configure your system so that it knows what is being monitored on each SiteSage Monitor **Channel**. This is where SiteSage gets its information about your home’s circuits. The time you take here will give you almost immediate payback in accurate, up-to-the-minute information on your usage, and useful suggestions for saving power. Enter information from your completed Channel Setup Worksheet, an example of which was shown earlier.

To start this process, you will see a list of SiteSage Monitors that your Gateways have identified. To make sure you are only monitoring the systems that you are expecting, please enter the missing 6 digits of the SiteSage Monitor serial numbers. This number appears on the back of the SiteSage Monitor ePod, and should have been entered onto the Channel Setup Worksheet. This page will indicate whether the unit was intended for a Main Panel or a sub-panel; please adjust that if you installed them differently, and provide a descriptive name for each unit, such as Main Panel, 2nd floor sub-panel, etc. (This should also appear on the Setup Worksheet, and you can change it at any time).

If a monitoring unit you expected to see has not been listed, it is possible that the Gateway has been located too far from that electric panel. Try moving the Gateway and see if it locates the unit. If you have multiple SiteSage monitoring units located far apart (say on different floors), it is conceivable that you might need to add another Gateway. You can complete the Configuration for any monitoring units that have been found now. (If you add a Gateway later you will not need to come back to Registration. You will be able to go to the Channels Configuration tab in Settings on the SiteSage Portal and click on *Manage Gateways*, and then *Add a Gateway*. You enter the Gateway serial number, much as you did earlier. If it finds a new SiteSage Monitor ePod you will then be able to configure that as well).

If you (or the installer) checked the Computed Mains box on one of your Worksheets because you were unable to install sensors on the Mains, please check the box on this page. This will tell SiteSage to add up the branch circuits to estimate the total.

When you hit Continue you will be taken to a page that looks very much like the Channel Setup Worksheet. Use the Worksheet as your source for filling out circuit labels and other settings. Make sure you enter the number of the breaker that is powering SiteSage ePod, since you will need to know that if there is every a need to power cycle the unit.

Step 4 of 4: SiteSage Configuration: location_88083657

There is 1 Energy Monitor detected at this location, please complete the missing Serial # characters for the Energy Monitor you would like to configure

MAC Address	Channels	Energy Monitor Serial #	Panel Type	Name The Electric Panel (e.g., Main Panel)
3C:09:CD:05:01:AD	15	EM2A1 <input type="text"/> 01AD	<input checked="" type="radio"/> Main <input type="radio"/> Sub Panel	Main panel

I cannot connect sensors to my Main Breakers; please compute Main power by adding all circuits.

If this does not match your expectations, please double check that everything has been connected properly.

The first 2 Channels for a Main Panel should be used for the Mains. Click on the row for Channel 1 and it will bring up a data entry form where you can quickly enter the necessary information for that Channel. Set the Channel to **In Use** as you start to fill in information on the form.

Registration and Configuration

Step 3 of 3: Channel Configuration: Main panel Serial Number: EMR1 22222 2222

I cannot connect sensors to my Main Breakers; please compute Main power by adding all circuits.

Click on any row to edit and complete.

In Use?	Breaker Number	Double Breaker?	Breaker Size (A)	Circuit Label	Appliance Type	CT Sensor Type			Two CTs?	Chf
						20A	50A	150A		
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	150	Main Power	Mains			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	150	Main Power	Mains			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2
<input type="checkbox"/>										3
<input type="checkbox"/>										4
<input type="checkbox"/>										5
<input type="checkbox"/>										6
<input type="checkbox"/>										7
<input type="checkbox"/>										8
<input type="checkbox"/>										9
<input type="checkbox"/>										10
<input type="checkbox"/>										11
<input type="checkbox"/>										12

For all Channels except

Mains enter the **Breaker Number**, which will appear on the Worksheet, and select the **Breaker Size** in amps from a pull down list. Next indicate if it is a **Double Breaker**, which will be the case for Mains. Enter the **Circuit Label** Mains for the Mains. Clicking **Next Channel** when you are done will bring up the data entry form for the next Channel.

Energy Monitor Channels #1, 2: Mains

In Use?

Breaker Number(s): (optional)

Double Breaker?

Breaker Size (A):

Circuit Label:

Appliance Type:

(hint: start typing the name)

Details: Notes: (optional)

CT/Sensor Type: 20A 50A 150A

2 CTs (unbalanced load)?

The Worksheet example below shows that Channel 4 is monitoring one wire of a double breaker, breakers 5 and 7, *Central Air Conditioning*, and Channels 5 and 6 are monitoring both wires of double breaker 9 and 11, an *Electric Dryer*.

13	50	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PV SYSTEM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3
57	40	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	CENTRAL A/C	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4
9	30	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DRYER	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5
11	30	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DRYER	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6

You need to enter some additional information that is **not** on the Worksheet about appliances. Most importantly, you will be asked to enter the

major **Appliance Type** on each circuit. In the above examples, the choice is very straightforward. In other cases, for example if the label says “Kitchen Appliances”, you might need to make a judgement call about the primary appliance. For circuits that serve outlets and lights, there is a choice for that. (You can type in the Appliance Type box, but it will only recognize items included in the pull down list. The same is true for other fields). **This field is extremely important to complete accurately**, since most analyses are driven by Appliance Type.

You can then enter some optional **Details** about an appliance, which may include make, model, and year installed, or just text. This information will appear on the Circuits page view, and may help SiteSage analyze the usage of that appliance.

Based on the Breaker Size and the Appliance Type you select, the system will automatically make an assumption about the CT/Sensor configuration. **Change this if does not match the Worksheet.**

You can find a description of each field by holding your mouse over the heading on any column on the page. There is also an explanation in Exhibit B.

Step 3 of 3: Channel Configuration: Main panel [Rename](#) Serial Number: EM1R1 333333 3333

I cannot connect sensors to my Main Breakers; please compute Main power by adding all circuits.

Click on any row to edit and complete.

In Use?	Breaker Number	Double Breaker?	Breaker Size (A)	Circuit Label	Appliance Type	CT Sensor Type				Two CTs?	Ch#
						20A	50A	150A	Other		
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	100	Mains	Mains		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	1L
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	100	Mains	Mains		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	2R
<input checked="" type="checkbox"/>	5A; 5B		50	PV System	Solar Panels	<input checked="" type="checkbox"/>					3L
<input checked="" type="checkbox"/>	3A; B		40	Central A/C	Air Conditioning - Central	<input checked="" type="checkbox"/>					4R
<input checked="" type="checkbox"/>	7A	<input checked="" type="checkbox"/>	30	Dryer	Dryer - Electric	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	5L
<input checked="" type="checkbox"/>	7A	<input checked="" type="checkbox"/>	30	Dryer	Dryer - Electric	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	6R
<input checked="" type="checkbox"/>	9A; B		40	Hot Water Heater	Water Heater - Electric	<input checked="" type="checkbox"/>					7L
<input checked="" type="checkbox"/>	11A		20	Refrigerator	Refrigerator (Primary)	<input checked="" type="checkbox"/>					8R
<input checked="" type="checkbox"/>	13A		15	Kitchen Lights	Lighting	<input checked="" type="checkbox"/>					9L

Continue until you have entered all of the information on the Worksheet. (If you hit **Save**, the data will be saved and the data entry box will close; you will need to click on another row to begin entering data again). Note that you can edit any Channel data already entered by clicking on the associated row.

An example of a partially completed page that matches the sample Worksheet is provided above.

NOTE: If there were empty circuit breakers slots in your circuit panel and you skipped a Channel during the installation, please make sure you do not enter any information for the skipped Channel, and make sure the **In Use** box is not checked.

To further illustrate how to fill out this page, we'll show the Worksheet and the Channel Configuration Screen together for reference.

The worksheet shows 50 Amps for the breaker attached to Channel 3, so choose **50** in the **Breaker Size** (from the dropdown list). This is a double circuit, so check the **Double Breaker** checkbox. The Label is “PV System”. Enter your version of that label in **Circuit Label**. Keep the name descriptive yet short, so it will be visible and understandable on the Portal graphs.

Handwritten input examples:

- Channel 3: Breaker Size 50, Double Breaker checked, Label PV SYSTEM, Appliance Type Solar Panels, Ch# 3L
- Channel 4: Breaker Size 40, Double Breaker checked, Label CENTRAL A/C, Appliance Type Air Conditioning - Central, Ch# 4R

<input checked="" type="checkbox"/>	5A; 5B		50	PV System	Solar Panels	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	3L
<input checked="" type="checkbox"/>	3A; B		40	Central A/C	Air Conditioning - Central	<input checked="" type="checkbox"/>					4R

Choose the most appropriate appliance from the **Appliance Type** dropdown – in this case Solar Panels under Energy

Channel Configuration Details:

Appliance Type: Solar Panels

Details: Notes:

CT/Sensor Type: 20A 50A 150A

Two CTs?

Navigation:

Appliance Type Dropdown:

- Energy: Production
- Food Prep & Storage
- Safety & Medical
- Pool & Spa
- Water & Irrigation
- Misc
- Lights & Plugs
- Laundry & Hot Water
- Heating & Cooling
- Entertain. & Office

Channel List:

- 1 L
- 7 L
- 8 R
- 9 L
- 10 R
- 11 L

Production. **NOTE:** you will not see this option if you have not purchased Renewables monitoring as part of your License.

Optionally, you can add **Details** about your appliance; this could include make, model number, size, year installed, or whatever you think might be helpful. (Again, this is optional, but could help SiteSage with analysis. In the case of PV systems, you can select manufacturer and model numbers from a list when setting up Alerts).

If you selected Solar Panels as the Appliance in the above example, the system should automatically mark the **CT Sensor Type** as being "Black (50A)". This automatic check will happen whenever you set the breaker size and select an appliance. **Please note what your installer put on the form; if it is different, please enter whatever your installer checked.**

1,3	50	<input checked="" type="checkbox"/>	PV SYSTEM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3
5,7	40	<input checked="" type="checkbox"/>	CENTRAL A/C	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4
9	30	<input checked="" type="checkbox"/>	DRYER	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5
11	30	<input checked="" type="checkbox"/>	DRYER	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	6
2,4	40	<input checked="" type="checkbox"/>	HOT WATER HEATER	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7
6	20	<input type="checkbox"/>	REFRIGERATOR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8

Setting up Channel 4 in our example is very similar, in that it is also a double breaker with a single 50A CT attached.

Continue through all the Channels on your Worksheet.

Channel	Breaker	Appliance	CT Sensor	Channel
7A	✓	30 Dryer	Dryer - Electric	5L
7A	✓	30 Dryer	Dryer - Electric	6F
9A, B		40 Hot Water Heater	Water Heater - Electric	7L
11A		20 Refrigerator	Refrigerator (Primary)	8F
13A		15 Kitchen Lights	Lighting	9L

If you are configuring Channels for more than one monitoring unit, when you complete this page for the first unit and hit **Continue** you will get a new empty form to complete for the next one. If for some reason you cannot finish channel

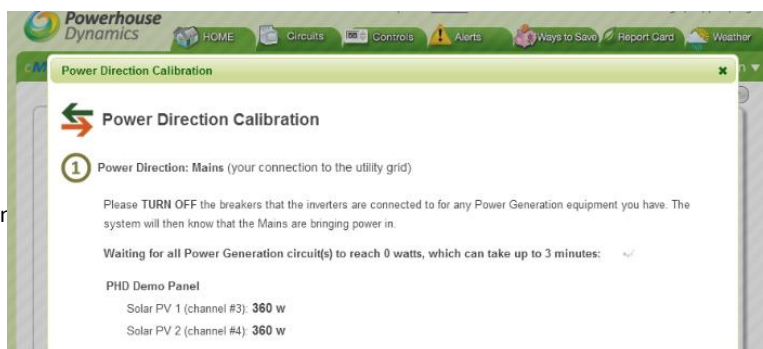
configuration in one session, you will be able to complete registration as soon as you have configured one unit, and then later log onto SiteSage Portal (Settings – Channels) to configure additional SiteSage monitoring units.

Once you have filled out the configuration for each SiteSage that has been installed,

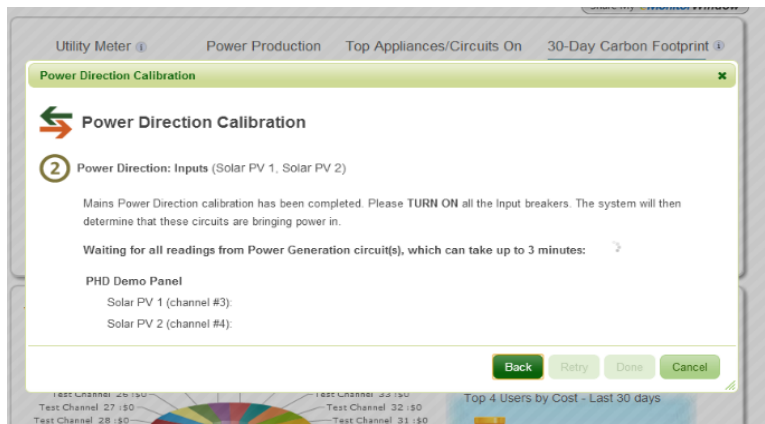
click **Finish**, and you're ready to start saving energy! Unless.....

If you have a Software License that provides support for renewable energy and have indicated that you have a power source, such as PV or Wind, you will be prompted to do one last step, which involves verifying the direction of all power inputs, including the Mains. (If your production is greater than your usage, you can actually be shipping power back into the utility grid - or net metering).

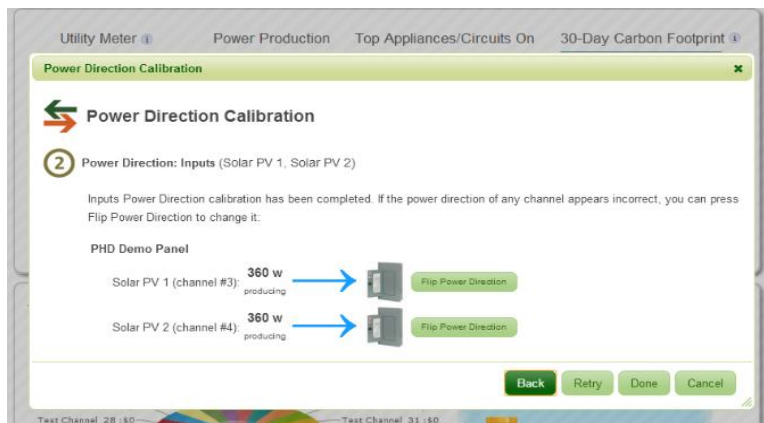
There is a 2-step process to Power Direction Calibration. First, turn off the breaker your Power Inputs are coming into (typically one or more inverters). In that way, SiteSage can be confident that Main power is incoming.



Once the system verifies the direction of the Mains you will be prompted to turn your Power Input breakers back on so that their direction can be calibrated.



The system will then confirm when calibration has been completed. If for any reason the system has not determined the correct power direction – for example you are calibrating PV at night when it is not generating any power, press the “Flip” button and it will adjust. And, now you really have completed configuration!



Appendix B: Frequently Asked Questions

How do I view my home's and each circuit's current electricity use?

Real-time electric power use for the whole house is displayed on the HOME tab on the "utility meter" or "speedometer" gauge. It is also always displayed with the actual cost of that power on the top green bar just below the HOME tab.

Up to the minute electric power consumption information for individual circuits in the house is available in the *Circuits On* section of the Home Page and by selecting the Circuits tab and then selecting the circuit of interest.

How do I view my home's historical electricity use?

You can view this in a few different ways on the SiteSage Portal. This simplest way is to look on the bottom third of the HOME tab. On the bottom left, you can view your consumption by day or by month and then drill down (View History Details) for much more information. On the bottom right, you can see your minute by minute power for the past day, week, or month.

For more detail on your last day's usage, click on the "View Circuit Details" button on the very bottom right of the HOME tab page. The page this brings you to a graph that shows you the electricity use on each circuit minute by minute. This is a "stacked line" plot, which means the width of each band indicates how much a given color coded circuit is using - notice the color code legend on the left of the plot. You can turn off the display of individual circuits by clicking on their checkbox in the legend. You can also zoom in by clicking on the plot and dragging left or right to define which time span to look at more closely.

How do I analyze how much money my devices cost me?

You can see the top 4 users of electricity in your house on the HOME tab page in the middle right of the page, which shows a stack of gold coins to illustrate how much each device cost for the last 30 days. To see more information, look to the left at the "donut" plot which breaks down your last 30 days of cost for every circuit.

You can also see all your circuit costs compared by clicking on the "Report Card" tab. The bars are color coded, so that if you have used less electricity in the last 30 days than have on average over the year it will be green. If you have used more, it will be red.

To see greater detail for each circuit, go to the Circuits tab, and click on the circuit of interest. You will see more information about usage and costs of that circuit.

How to I create and adjust alerts?

Go to the Alerts tab. On this page you can turn on various simple alerts by just checking on their checkbox or setting some more complex ones by inputting the requested information requested after checking. For more information, see the Alerts section in Chapter 4 and Appendix D.

What if the SiteSage Portal is Showing 0 Power?

Ensure that the SiteSage Gateway is plugged into wall power. If it is connecting to the Internet, the LINK light should flash every minute or so as it connects. The DATA light should flash periodically if it is receiving data from the SiteSage. If the DATA light is not flashing, try flipping off the circuit breaker that powers the SiteSage Energy Monitor, and then flipping it on again.

What if I'm not receiving the Alerts I think I should?

Check your e-mail address and phone number in the Settings/your information tab. Also confirm that the Alerts are enabled and that the condition which sets them off is occurring.

What if SiteSage is not transmitting data?

- First check that your Internet connection is working by logging on to the web from your computer.
- If the Internet is working, make sure that your Gateway is connected. Try connecting to another outlet if the Gateway is connected but the PWR light is not solid green.
- Check the other status lights on the Gateway. Is it connected to at least 1 SiteSage Energy Monitor (DATA light flashing every minute at least)? Is it connected to the Internet (LINK light flashing every minute or less)? If either one of those is *not* flashing, reset the Gateway (use a paper clip in the Reset hole next to the status lights), or try unplugging and re-plugging it.
- If the DATA light still does not begin to flash, go to your electric panel and flip the breaker powering the SiteSage Energy Monitor off and then back on. Check the DATA light on the Gateway.
- If the LINK light still does not begin to flash, repeat the steps for connecting SiteSage to your network found in the Installation Guide.

An Appliance/Circuit is always displaying 0 Watts

Often an electrical panel has incorrect or out-dated labels. It is possible that the circuit breaker is actually inactive. Try turning the breaker off and see if any appliances, lights or receptacles are affected. If it is clear that the circuit is active and you are comfortable around an open electric panel, turn off the power, take the cover off the circuit panel, and make sure all sensors are securely connected to the SiteSage Energy Monitor.

One of my appliances is using a lot less power than I would have expected.

It is possible that your circuit panel had the wrong label, and SiteSage is not monitoring the appliance you think it is. The way to check that is to turn off the breaker which has the associated label, and see if the appliance turns off. If not, you will need to perform a little trial and error to find the correct circuit and channel.

NOTE: before turning the breaker off, be sure to turn off any computers on that circuit to avoid damage to them.

Why is my region's average carbon foot print so different from the average carbon footprint displayed on a friend's unit in another region?

Electric generators in different regions of the country are fueled by different sources. For instance, areas that rely heavily coal burning power plants will show much higher carbon outputs than areas that use a lot of gas or nuclear power.

Why does SiteSage's estimate of monthly electricity consumption not match my utility bill?

SiteSage is trying to provide an estimate of your costs for different appliances, and not trying to replicate your bill; no matter what differences you see there is no suggestion that something is wrong with your meter.

Electric utilities schedule the start and end of their monthly billing cycle on different days each month for different customers. SiteSage's estimate is based on electricity use from the first of the month to the end of the month.

Differences are also possible because SiteSage uses annual average residential rates for each utility. Your rate could differ from the average. Where there are large fixed rates as well as tiered rates, the effective average rate will vary by the amount you use. Averages are fine for comparing relative costs of different appliances, but may not accurately reflect your total costs.

For all of these reasons, you should expect the SiteSage estimate to be different from your actual bill.

Can I connect a smart thermostat to my SiteSage and control it from the SiteSage portal?

Yes. Please see Appendix E.

Is my personal data safe and private?

Yes. Data security and privacy are of utmost concern. Your data is housed on secure servers run by leaders in the data management world using encrypted transmissions generally used for banking and other secure transmissions. Your personal power consumption data will never be released without your explicit consent.

Do you support solar photovoltaic panels or solar thermal water heaters?

Yes. We offer monitoring of solar photovoltaic (PV) systems as part of the electricity monitored in your residence. You can also use the system to monitor solar thermal hot water systems, with the addition of some temperature sensors.

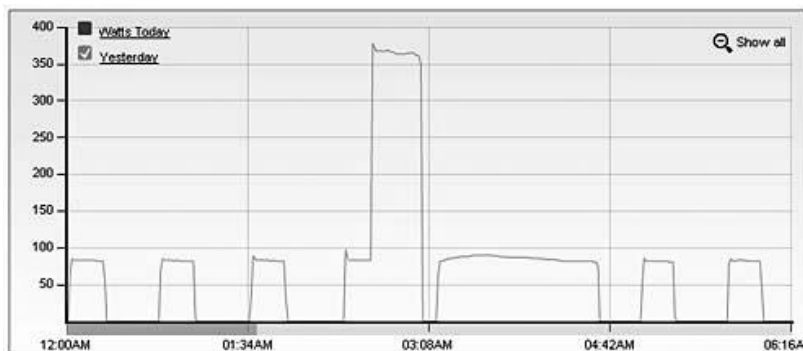
I have an idea for a new way I'd like to view my data or be alerted by SiteSage about my electrical consumption. How can I discuss my ideas?

How can I discuss my ideas?

We would be thrilled to hear about ideas you have to make the SiteSage™ better. Please use the Support section or speak to your Authorized SiteSage Channel Partner.

Why does my refrigerator use so much power in the middle of the night?

First of all, refrigerator motors cycle on and off all day to keep the refrigerator cool. In addition, most modern household refrigerators have an automatic defrost cycle, which removes ice build-up from the cooling coils, using an electric resistance heater to heat up the coils. This occasional process uses a great deal of energy, visible in the plot below with the half hour 370W power draw and then the 90W power draw (from a little after 3:08AM to a bit before 4:42AM) when the compressor is run to cool the system down again.



Why does the power on my circuit change so often and so quickly when I didn't use anything on that circuit?

When an appliance is not being used, there may still be power use on the circuit. Let's say you see 10W of power, which could be the phantom power draw for a few pieces of electronics that continue to draw power when they are off, such as a TV, stereo, cell phone charger, etc. The reason the plot jumps so much is that the scale on it will be very small (say 4W from top to bottom of the plot), so a very small change in the signal creates a large move. The changes may be due to random electrical noise or the resolution limits of SiteSage. This does not indicate significant changes in power consumption on that circuit.

Why does my clothes dryer use power so erratically when it is running?

When you begin to run most dryers, they will use a lot of power consistently for a while, with a couple of jumps in power for changes in cycles, and then turn off.

However, for some newer dryers, the power consumption can be much more erratic. For instance, some recent models reverse tumble rotation direction every few minutes. There will be a momentary reduction in power consumption every time it reverses direction.

Appendix C: Explanation of Fields on Channel Configuration Page

Computed Mains?	On a small subset of electric panels the Main Power wires are not accessible, and you will not be able to attach CTs. If you have this situation, click the Computed Mains checkbox and the system will use the sum of the individual circuits to calculate total power. For this to be reasonably accurate, you will need to ensure that you are monitoring all or virtually all of your circuits.
In Use	This indicates that a sensor is attached to this Channel. Make sure this is not checked if no sensors are attached.
Breaker Number	Breaker number(s) as entered by the installer. Not a required field, but helpful in determining what equipment is on what circuit.
Double Breaker	Check this box if it is a double circuit with 2 breakers locked together
Breaker Size	Your installer will also list each circuit breakers size in amps. Please select the correct amps rating from the drop down list. Setting this for each Channel allows the SiteSage to know what kind of electrical load to expect on a circuit.
Circuit Label	This label lets you understand what circuit is being monitored. It will show as a label in some graphs, so it should be brief but descriptive. You can use the labels your installer copied from the circuit panel, or create your own. You can come back and edit these labels at any time.
Appliance Type	SiteSage needs to know the key energy user (or producer) on each Channel in order to perform the appropriate analyses. This information will not appear on the Channel Setup Worksheet, although it will very often match the Label. Many circuits do not connect to just one appliance, but serve a whole room or part of a room, such as a living room or a kitchen counter. In this case, select "Outlets" or "Outlets/Lighting", or choose the most important appliance on that circuit.
Details (Optional)	Once you click on a Channel and pull up the data entry form, you can optionally enter more information about any of your appliances, both for informational purposes and to help SiteSage analyze the power use for each appliance and match it with expected performance. Some appliance types – such are refrigerators and washing machines – will have fields for Make, Model, and Year Installed. Others will just have a text field. This information is not required, and you can come back and enter it at any time.
CT Sensor Type	The system will automatically assign 20 amp CTs to 120-Volt circuits and 50 amp CTs to 240-Volt circuits. Please double-check against whatever the installer entered and change the radio button selected to match the installer’s check mark, if necessary
2 CTs?	Check this box whenever 2 CTs have been installed for an “unbalanced” 240v circuit, such as an electric stove or dryer. The system will default based on Appliance Type selected, but you can override it to conform to the Setup Worksheet

Appendix D: Sample Alerts

1. Cost Alerts

- **Notify me if my electric bill is projected to be more than X in the month.** This Alert will give you a heads up that your energy use levels are looking like they will exceed your budget for the month, so that you have time to take actions.
- **Notify me when my electric bill has passed X.** This Alert will let you know when you have passed a certain dollar threshold in electricity cost for the month. This would be important if you want to keep to a strict budget. For example, if you want to keep your costs below \$150 for the month, you might want to be notified when you hit \$100, so that you can begin to take actions to stay within budget. PLEASE NOTE that SiteSage is measuring your energy use on a calendar month basis, so these costs will NOT match with your utility bill. To receive this alert you need to check the box and select the threshold; you can change it at any time.

2. Safety Alerts

- **Notify me when any circuit is getting close to capacity.** This Alert will notify you when *any* circuit is nearing its capacity, which is the breaker size in Amps you entered during Channel Configuration. In this way, you will be in a position to turn something off before the circuit breaker trips – or worse.
- **Notify me when an appliance or circuit seems to have been on for an extended period.** This Alert can notify you when something has been left on longer than it should be. A classic candidate for this Alert is an electric oven or range; this could be a very important Alert when you are away from home. The circuit on which you do your ironing may be another example. Or, it could be that Attic light that you keep forgetting to turn off, or the outside lights left on all night. You get to pick the circuits you want monitored and the amount of time that the system should wait before contacting you. For example, if you routinely cook for up to 2 hours, you might want to set the alert threshold to 3 hours. In addition, you can specify times of day you want the circuit checked. For example, if you leave your outside lights on all night, you only want to check for them during daylight hours.
- **Notify me if it looks like my refrigerator or freezer door has been left open** – This happens to all of us; now you can be notified before your food begins to spoil.
- **Notify me when the voltage in my home is outside the expected range** – Voltage spikes can damage electronics; voltage sags may lead to circuit overloads, so it is good to be warned when these events are happening. If they continue, you need to notify your utility.

3. Usage Alerts

- **Notify me weekly of changes in my energy use** – This is a quick and easy way to stay up on your energy use without needing to log in on a daily basis. You might want to share this Alert with other members of your family.
- **Notify me when a particular circuit is drawing power for an extended period.** This is, in effect, the reverse of an earlier Alert; in this case you are notified if you lose power on a particular circuit, or of it starts drawing much less than it used to. There could be a number of things you want to make sure are working at all times; this would certainly include any medical equipment, but might also include your

heating system during the winter, your refrigerator, your hot water system (even when you are away it cycles on and off to keep the water in the tank warm), a well pump, and perhaps a server. As with the previous Alert, you need to select each circuit you want to monitor and the time it needs to be off before you are notified.

- **Notify me when one of the selected appliances uses X% more energy than it did before** – Often, appliances that are experiencing a problem begin to use more energy. Use this Alert to be notified of a potential problem – or just as a warning that your energy use is increasing.
- **Notify me when the use per load one of the selected appliances uses X% more energy than it did before** – For some appliances – specifically dishwashers, clothes washers, and dryers - energy usage is heavily dependent on the number of loads you do. This alert serves the same purpose as the previous one for these appliances.

4. Performance Alerts

- **Notify me when SiteSage is not uploading data.** This Alert is triggered if no data is received from SiteSage for an extended period of time. This may mean that your power has gone out, that your Internet access has been interrupted, or that something is wrong with the system. (If you get this Alert and your power is on and your Internet service is working, check to see that the SiteSage GATeway is still plugged in and that there is power at that outlet, and if it is still connected to your Internet network). This could be a particularly useful Alert to get if you are away from home. PLEASE NOTE that SiteSage can store data for up to 20 days in the event of an Internet outage or other problem. Once the outage is over SiteSage will automatically upload the missing data.
- **Notify me when my solar PV system is producing x% less than it should be.** This Alert will only be available if you indicate that you have a Solar PV system. This is a very important alert that will notify you if the system is either not working or working less effectively than should be expected, given the size of the system and expected performance under different conditions. The system uses current temperature and solar irradiation level or, lacking that data from a home weather monitoring system, an approximation of irradiation levels based on cloud cover from third party sources. The latter will not be as accurate, so we have set the alert to occur only once per day and only if performance seems dramatically different than expected, but you can adjust the level.
- **Let me Know if the Defrost Cycle on my Freezer is not Operating Properly.** SiteSage uses a pattern recognition algorithm to compare the results for a particular type of appliance against what would be expected. Problems with the defrost cycle are easy to spot this way – before a freezer freezes up or the freezer stops working. There is no need to select this Alert for a non frost-free model, but SiteSage will recognize those in any event.

Appendix E: Setting up Smart Thermostats

SiteSage lets you control any number of Smart Thermostats remotely, using a simple, graphical interface that is much more intuitive than the ones you will find on the thermostats themselves. Check with your Authorized SiteSage Channel Partner on obtaining a SiteSage Smart Thermostat.

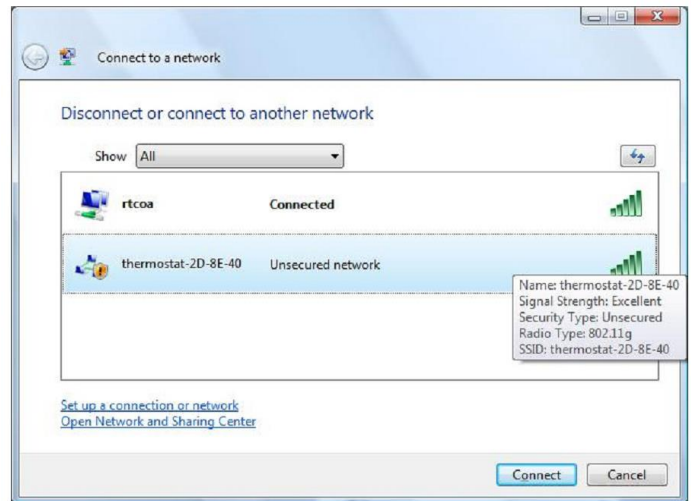
Install your Smart Thermostat using the instructions that came with the thermostat. You will also need to get your Thermostat onto your Wi-Fi network. That is described below, and instructions are also available as a separate document on docs.SiteSage.net. After outlining how to get the thermostat on your Wi-Fi network, we will describe the very simple process for configuring the thermostat settings. Please **do not** try to do that on the thermostat itself; doing it through SiteSage is significantly simpler – and the SiteSage settings will override any settings done on the thermostat.

Getting the Thermostat on the Network

Before starting to connect your thermostat to your Wi-Fi network, follow your thermostat install guide and complete wiring and installation. Once you have finished installing the thermostat and turned power back on, the thermostat will turn on. It is now controlling your HVAC system locally. You are now ready to connect it to your Wi-Fi network. The Yellow LED will be blinking indicating that the thermostat is ready to be configured for your home network.

STEP 1

On your PC, Mac, smart phone, or other device, find the list of available networks. When the thermostat first turns on it will temporarily create its own network. Find the Thermostat’s Wi-Fi network and connect to it. It will appear in the list and will start with the word thermostat, followed by six letters or numbers. If your computer displays an **unsecured network** message, click **“Connect Anyway”** and continue connecting to the thermostat. If the connection was successful **Successfully connected to thermostat-2D-8E-40** will be displayed.



If your computer was unable to connect to the thermostat, try clicking on **“Connect To”** again.

STEP 2

Open your web browser and enter the address **http://192.168.10.1**. The page to the right will load. For the most common setups click **“Scan Wireless Networks”**. This will tell the thermostat to look for your home wireless network.

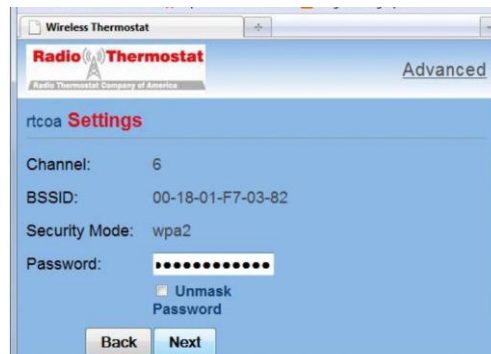


After a few moments you will see a list of available wireless networks displayed in the window. Click on your home network to join. This joins the thermostat to your home network.

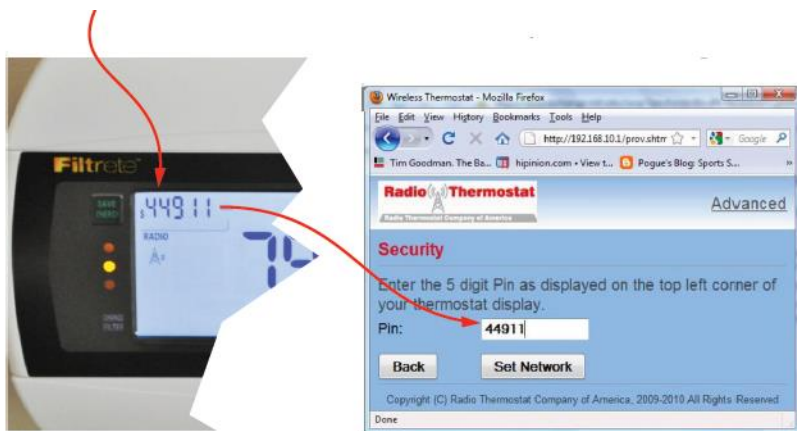
STEP 3

If your wireless network is password protected, use this screen to enter your network's **Password** and press **Next**.

For your protection all data transmitted over Wi-Fi is encrypted with industry proven security methods. This ensures that nobody else can gain access to your thermostat during this configuration process.



Next, find the thermostat's PIN at the top left hand corner of the thermostat. Enter this PIN into the **Pin:** text box. [In this example the PIN is 44911]. After this, click **Set Network** to proceed.



STEP 4

The Wi-Fi thermostat will now attempt to join your home network. If this is successful the green light on the thermostat will start to blink, and the word "link" will appear on the screen of the thermostat. In addition, the last three digits of the thermostat's IP address will be displayed in the top left hand corner of the

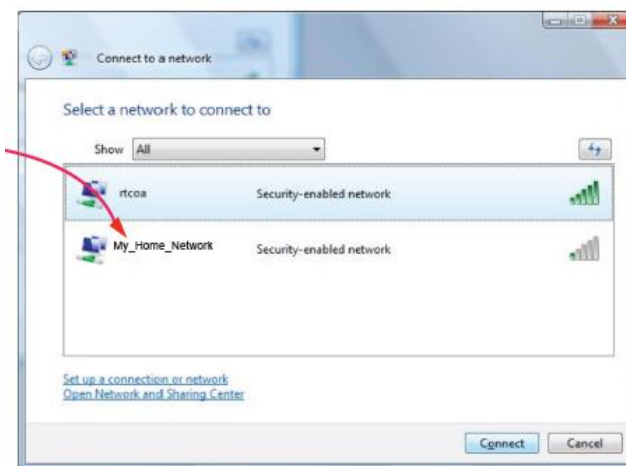
screen. In this case the IP address of the thermostat is 192.168.1.14. You can see the "14" on the screen.

The PROVISIONING DONE screen will display in your browser. It also shows details about the configuration of your Wi-Fi module; something like:

SSID: My_Home_Network
BSSID: 00-18-01-F7-03-82
Security: wpa2
IP: Dynamic

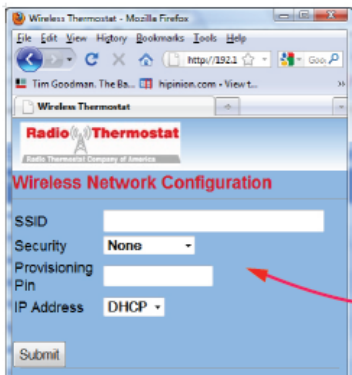


When you verify the green indicator on the thermostat you can close your browser window. If there is an error in the setup process the red light will flash. This may happen because you did not enter the security password correctly or the connection was momentarily lost. After a few minutes the thermostat will return to its Ready to Connect state with the yellow light flashing. Please try again and repeat this guide from STEP 1.



STEP 5

When the Provisioning process is completed successfully, you need to connect your computer back to your home network.



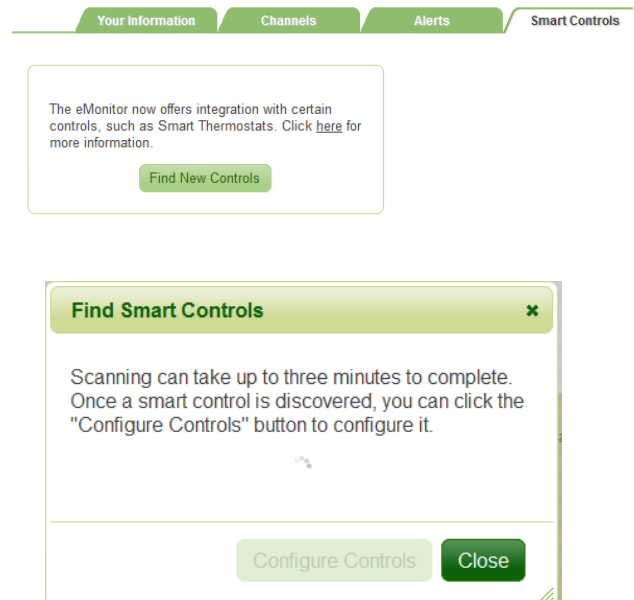
Using the Advanced tab

If you want to set the parameters of your network manually – for example to set a static IP address - use the WI-Fi setup ADVANCED tab. To use this tab, click it and input your parameters. Click **Submit** to return to the previous page.

Configuring your Smart Thermostats

Once you have gotten your first Smart Thermostat(s) onto your home's Wi-Fi network, log into your SiteSage Portal. You should see a pop-up indicating new Smart Thermostats have been found; if not go to **Settings/Smart Controls** and click *Find New Controls*. A dialog will pop-up telling you the system is scanning for smart controls. If it finds a Smart Thermostat it will identify it. You can then hit Configure Controls, which will pop-up a page like the one below, which is the start of a Wizard that will let you quickly configure the Thermostat.

(HINT: SiteSage will keep scanning for thermostats even if you close the dialog and go to another page. If it finds one, the Wizard will pop-up as soon as you go to the Home page).



Select the thermostat(s) you want to configure, give them a name (e.g. First Floor), indicate whether they are used for Heating, Cooling, or Both, and press Continue. If you have selected more than one, the Wizard will take you through each one.

You will first establish the *daily temperature settings* for each Smart Thermostat.

- The *SiteSage Smart Thermostat* lets you create different settings for different Day Types. For convenience we have referred to them as Work Days and Non-Work days, but they in

effect reflect any different type of days. We have defaulted Mondays through Fridays to Work Days and

weekends and holidays to Non-work Days, but you have a chance to select the days that best match your schedule later in this wizard.

- SiteSage uses a unique, graphical interface to make it simple to adjust temperature settings. *Just grab the edge of a colored bar by clicking on it and drag it horizontally to change the Time Period - or vertically to change the temperature.* It's that simple!
- There are 4 Time Periods to choose from. Their default names are Sleep, Wake, Away, and Home, but you can change them to anything you like by placing your mouse over the name on the right hand side of the page, which creates a box you can use to edit the text. Whatever you select will be used from now on but you can change them at any time on the Settings/Smart Controls page.



- The SiteSage settings default to recommended efficiency settings; you do not actually have to do anything and the system will work. However, you can create your own settings with this Wizard, which you can change at any time. You will even be able to “snap” the settings back to the efficiency recommendations if you like.
- The Wizard will walk you through both Heating and Cooling Settings, if you have both, which work exactly the same way, EXCEPT that the efficiency recommendations are vastly different.

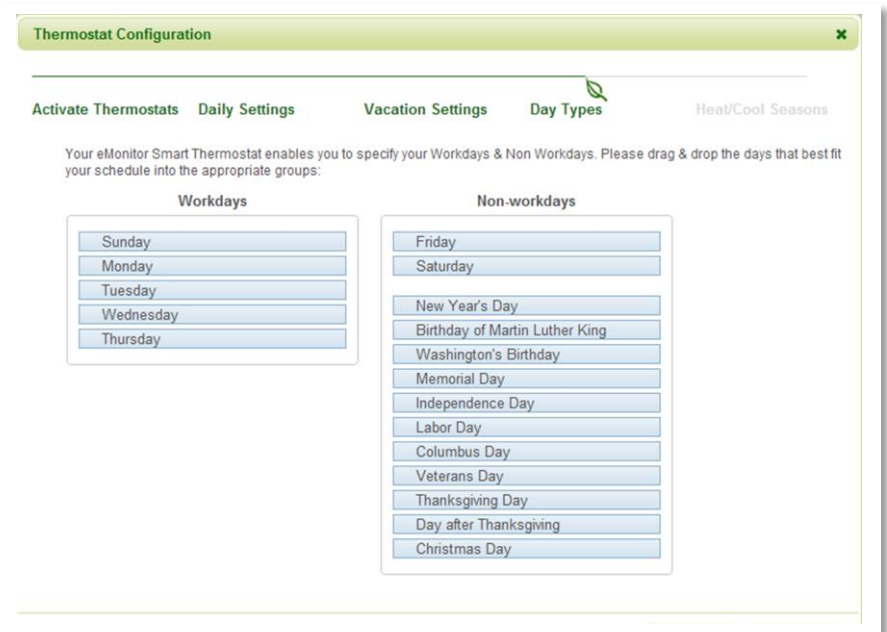
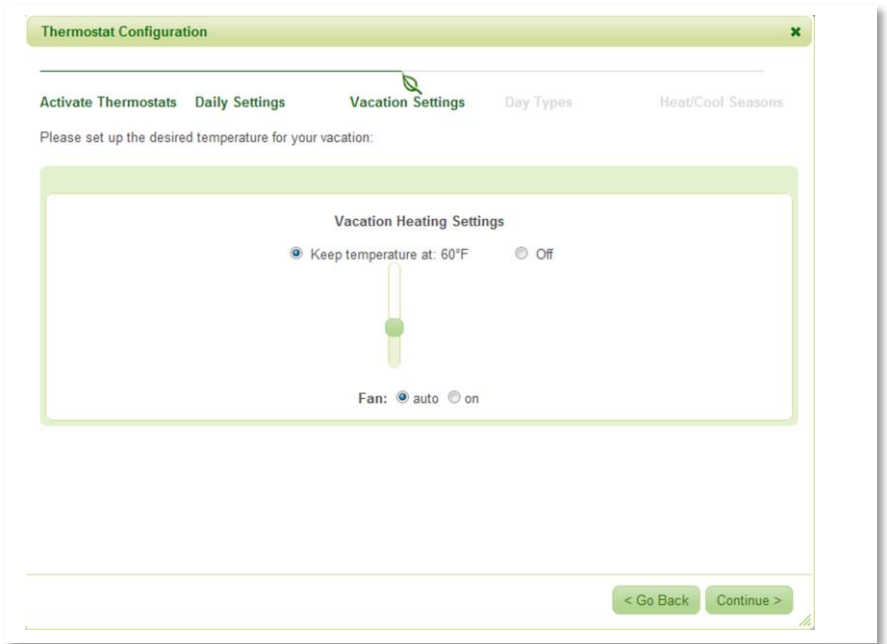
If you have more than 1 thermostat to set and want them set exactly the same, the SiteSage will let you “clone” the previous settings so that you do not have to enter them again.

Once you have created the Heating and/or Cooling settings for Work Days and Non-work Days, you are next asked to establish Vacation Settings. The SiteSage lets you turn the Heat down or the AC up while you are away, schedule a vacation (described earlier in the document), and then forget about it! No more worrying about changing the settings before you leave, or coming home to an overly cold or hot home. Vacation settings automatically apply to all thermostats.

Next, you get a chance to set-up your own Day Types, if the defaults do not match your schedule, by simply dragging and

dropping specific days into the appropriate columns.

Finally, you can either tell the SiteSage that you want to manually change from Heating to Cooling Season, or schedule it to happen on specific dates, or have it switch automatically based on temperature.



Setting up Additional Thermostats

Once you have already set up a Thermostat, if you install another one please go to the **Settings/Smart Control** tab and click Find Controls.

