

Program Manual

WatterSaver

Your water heater.
Working for you.

With WatterSaver, you'll pay lower rates for hot water and earn rewards.

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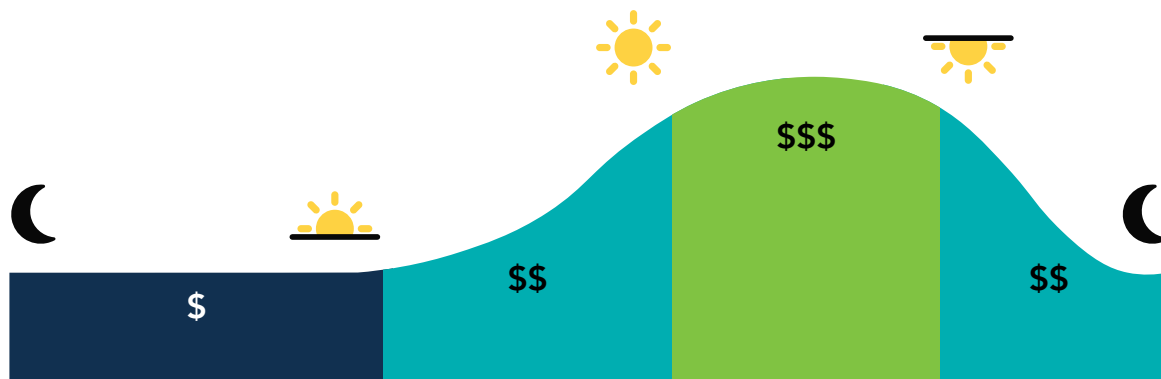
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What Is WatterSaver?

WatterSaver is a daily load shifting program from Pacific Gas & Electric (PG&E) that rewards customers with eligible water heaters for shifting their energy usage to heat water when rates are lower. Load shifting is when you adjust your energy use to times when there is lower demand for electricity. WatterSaver automatically adjusts when your water heater heats water based on your electricity rate plan and your household's hot water usage. You do not need to be enrolled in a Time-of-Use (TOU) rate plan to participate. WatterSaver turns your water heater into a smart device by activating it at times of the day when electricity prices are lower, while keeping water hot for when you're ready to use it.



Benefits of WatterSaver

WatterSaver offers a number of benefits to customers, utilities, and the environment:

- You avoid paying the highest electricity price to heat your water, and WatterSaver keeps your water hot for when you need it.
- WatterSaver provides a one-time \$50 Enrollment Reward, and an additional \$5 per month reward for every month you successfully participate which is sent out quarterly.
- By shifting your electricity usage, you're balancing demand on the grid, which helps to avoid power outages. It also reduces the need for utilities to use peaker plants or to purchase energy from other, less environmentally-friendly sources. That helps keep electricity cleaner and safer for everyone!



You avoid paying the highest electricity rates to heat your water



WatterSaver provides a one-time \$50 enrollment award, and additional rewards for every month of participation



Help avoid power outages, and support clean, safe electricity for everyone

Earning and Receiving Rewards

WatterSaver pays Participation Rewards every three months for the previous three-month period (January – March, April – June, July – September, October – December) in the form of an electronic gift card. Successful participants will receive an email with a link to claim their incentive and they can choose to receive their incentive via email or SMS. The reward does not expire and you have a choice of 300+ incentive vendors to choose from. You may also choose a donation or multiple vendors if you are interested in several vendors. With Participation Rewards and your \$50 Enrollment Reward, it's easy to earn in WatterSaver!

Post-Enrollment Orientation Period

Once you are enrolled, WatterSaver will conduct a four-week orientation period for new participants. During the orientation period, WatterSaver will connect to your device and begin to get to know your water heater usage and preferences. By understanding how you use your water heater, the program can confirm your optimal settings and what times and types of signals to send to your water heater. This will help to provide you the lowest energy rates based on your usage, while ensuring you have hot water whenever you need it!

In addition to getting to know your water heater usage to optimize program settings, WatterSaver will send helpful information about the program during the orientation period. These brief messages will include key reminders about operating electric resistance and heat pump water heaters, how Time-of-Use rate plans work, and how WatterSaver load shift events work with your water heater.

Load Shifting Begins

Based on your water heater usage data, WatterSaver prepares the signals it will send to your water heater, and your orientation period is complete! You'll receive your \$50 enrollment bonus, your first load shifting event will soon start, and you're now eligible to earn monthly rewards based on successful participation!

When Will I Receive My Rewards?

Reward Payments

- After your orientation period ends, you will also receive an Enrollment Reward of \$50 paid to you by e-gift card.
- You will only be eligible for a Participation Reward for a given month if you allow your water heater to respond to signals from WatterSaver for at least 14 days of the month and do not opt out more than five days.
 - If you do not participate enough to earn a Participation Reward for a given month, you will receive an email notification.
- If you are having any issues with your e-gift card, please view this [troubleshooting help center](#).

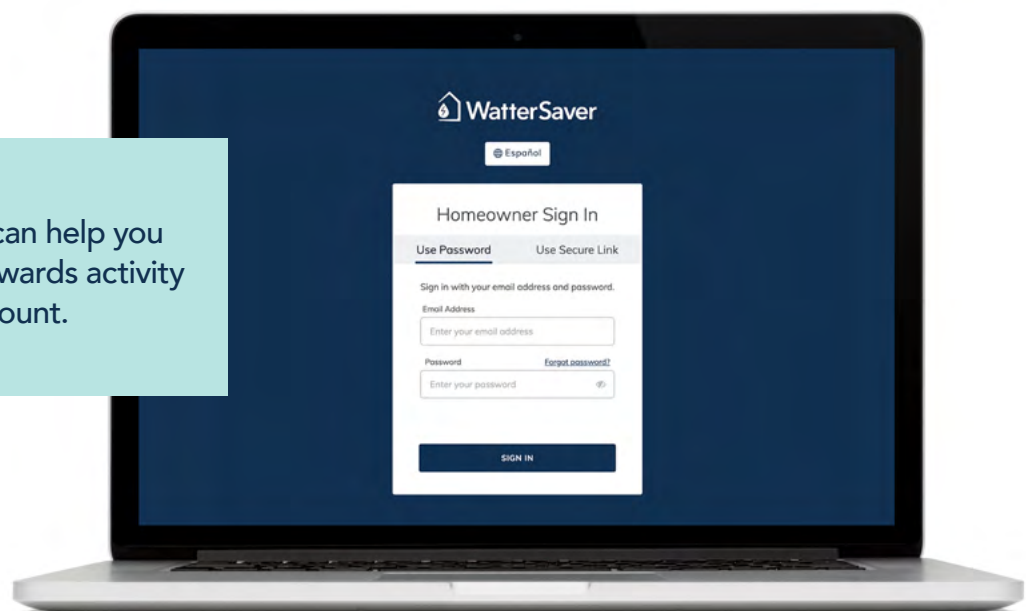
This table explains how WatterSaver Rewards are earned:

| Month | | | Participation Payment Every 3 Months* | Enrollment Reward** |
|-------|-----|-----|---|------------------------|
| 1 | 2 | 3 | | |
| \$5 | \$5 | \$5 | \$15 each quarter, and up to \$60 per year | \$50 |

* Paid in 3-month batches in April, July, October, and January

** One-time Enrollment Reward will be paid after your orientation period

The WatterSaver team can help you track your usage and rewards activity in your WatterSaver account.



Successful Participation In Load Shifting Events

Once you're enrolled and connected, WatterSaver will automatically signal your water heater to heat water when electricity prices are lower. WatterSaver automatically schedules daily load shifting events based on your electricity rate plan and your household's hot water usage profile. The program heats your water during lower-cost or lower-demand periods and reduces heating during higher-cost or higher-demand periods while maintaining hot water availability. These are known as daily load shift events because your electricity demand, or load, is shifted to a different time of day.

You can temporarily suspend or opt out of participation in load shifting events on days when you need more hot water, such as when you have overnight guests in your home or a big event. However, if you regularly opt out of participation, you may forfeit that month's Participation Reward. You will earn a Participation Reward for a given month if you allow your water heater to receive signals from WatterSaver for at least 14 days that month and don't opt out of events more than five days.

Opting In and Out of Load Shifting Events

1 One way is to log into the WatterSaver portal, using the instructions you receive in your Successful Enrollment email, and select "Opt Out" from the banner at the top of the portal.

2 You can also opt out of an event by changing the temperature setpoint on your water heater during an event.

3 You can opt out of an event by reaching out to the WatterSaver team at support@watter-saver.com.

Each time you opt out, you are choosing not to participate in the event taking place that day. To opt out of multiple events over multiple days, you will either need to opt out each day, or contact us at support@watter-saver.com to request a long-term opt out. Keep in mind that opting out of many events may make you ineligible for the monthly Participation Reward.

From time to time, WatterSaver randomly selects water heaters to opt out of load shifting events in order to collect data on how water heaters operate normally. This data is used to establish a baseline that helps the program understand just how much energy customers are saving by participating. If WatterSaver selects your water heater to opt out of an event, this will not count against you earning a Participation Reward amount for that month.



Some customers prefer to opt out of load-shifting during the winter months for different reasons, and if so, the Program will move their water heater to a non-load-shifting schedule during winter months. Customers will not be eligible for rewards during these months, but will not be removed from the program.

What To Expect From Your Heat Pump Water Heater

If you're new to a heat pump water heater (HPWH), it's helpful to know what to expect, how it operates differently from a conventional water heater, and how to best operate and maintain it.

There are a few key differences in how electric heat pump water heaters operate versus conventional gas or electric resistance water heaters (ERWH) with tanks. A heat pump water heater moves heat from one area to another to heat your water (similar to a refrigerator or an air conditioner), rather than generating heat through an electric heating element or a gas burner.

As a result, heat pump water heaters are significantly more energy-efficient than traditional electric resistance or gas tank water heaters, which makes them less expensive to operate as well as better for the environment. Some heat pump water heaters rely exclusively on a heat pump to heat water, while others have both a heat pump and back up electric heating elements.

Some differences you may notice between heat pump water heaters and other tank water heaters:



Heat pump water heaters use a built-in fan when operating. This is a necessary component, and it is normal for the fan to run. During operation a heat pump water heater may make more noise (45-60 decibels, similar to the volume of a normal conversation) than a conventional tank water heater.



It takes longer for a heat pump to heat a tank of water than electric heating elements or a gas burner. If you regularly do not have as much hot water as you would like, you may want to increase the temperature setpoint of the water heater, but do so in small increments of 3-5°F so as to not create a scalding hazard (such as increasing from the standard temperature of 120°F to 125°F). Be aware that after making a temperature setpoint change, it will take some time for the water heater to heat all the water in the tank to that new temperature.



Like an air conditioner, a heat pump water heater may release water through a condensation drain line when it is running. This is part of normal operation and not a water leak. Your plumber/contractor should direct this condensate to the appropriate location during installation.

Getting the Best Performance from Your Heat Pump Water Heater

Following a few important recommendations can help improve the performance and longevity of your heat pump water heater.

- **Clean Air Filters** — Clean the air filter every three months or sooner if the water heater indicates it is needed.
- **Clear Space and Insulation** — Make sure you keep a clear space around your heat pump water heater (do not store items around it), as it needs air exchange to operate properly. This also means that you should not put an insulating blanket around your heat pump water heater.
- **Recirculation Pumps** — If you have a recirculation pump on your plumbing, and also have a thermostatic mixing valve (TMV) on your hot water outlet, make sure that your recirculation pump is installed at the cold water inlet to the water heater. If the recirculation pump is installed next to the TMV, these two devices could interact in a way that makes your water heater operate non-stop!
- **Temperature Setpoint** — If you feel your electric bill amount is higher than it was before installing a new water heater, and you are satisfied with how much hot water the water heater is providing, consider lowering the temperature setpoint on the water heater for cost savings. However, WatterSaver strongly recommends that you **do not** set your water heater temperature lower than 120°F, which is the industry standard temperature for customer safety and energy efficiency for water heaters.
- **Proper Maintenance** — Like any appliance or equipment, your heat pump water heater should be properly maintained to keep it functioning and performing efficiently. The below resources, as well as the equipment user's guide, may be consulted for maintenance information.

Even though WatterSaver helps you save by sending signals to your water heater, you are always in control of what your water heater is doing. Since different types of electric water heaters operate differently, keep in mind the following to get the most out of your water heater:

1

It is important that your heat pump water heater is sized properly to meet your home's hot water needs. A heat pump water heater should have a larger storage capacity (in gallons) than a conventional storage water heater to make sure you don't run out of hot water. For example, a common electric resistance or gas water heater size for households of 4 people is a 50-gallon tank, but a heat pump water heater for the same household may need to be a 65-gallon tank. More information about how to right-size a heat pump water heater is available from [Hot Water Solutions NW](#).

2

Your heat pump water heater's performance may be negatively affected if you also have a hot water recirculation pump. If you have both of these devices at your home, we recommend you contact a licensed plumber who can make sure these devices are both operating properly.

For Both Electric Resistance and Heat Pump Water Heaters

- **Settings and Modes** — Your water heater may come equipped with different settings or modes, where you can choose more savings, more hot water, or a balance of the two. If you feel you aren't getting enough hot water and your water heater is in heat pump only mode, rather than change the temperature setpoint on your water heater, first change your water heater's mode to a more balanced mode. If it is already in a balanced mode or if it still doesn't provide enough hot water after you change its mode, then it is a good idea to increase its temperature setpoint. On the other hand, if you have enough hot water but would like to reduce your electricity bill, change your water heater's mode to more savings.
- **Location** — Your water heater's ability to provide hot water may change based on its location (living space, basement, garage, outside, etc.) and the season (easier to provide hot water in summer than in winter). If you do not have enough hot water, please see the tip above for steps you can take to adjust this.
- **Thermostatic Mixing Valves** — Many new water heaters are built with Thermostatic Mixing Valves inside. This device allows you to set your water heater at a higher-than-normal temperature (such as 130°F instead of the common 120°F), and then mixes it with cold water so the water is delivered to your tap at a safe temperature.

If your water heater does not have a TMV inside, it is possible to add one onto the hot and cold water pipes outside of your water heater, but you will want a licensed plumber to do this for you. One benefit of having a TMV is it allows your water heater to provide you with hot water for a longer period of time. Another benefit is that WaterSaver can signal the water heater to "load up" to a higher-than-normal temperature when electricity is less expensive, and then avoid heating water when electricity is more expensive in the afternoon and early evening.



WatterSaver Eligibility

WatterSaver is available to any PG&E customer or Community Choice Aggregator (CCA) customer in PG&E territory with a qualifying electric water heater and who:

- Has an active electric account within PG&E service territory.
- Has at least one qualifying electric resistance or heat pump water heater capable of communication (Wi-Fi or cellular).

Enrollment in WatterSaver

The watter-saver.com website provides you with step-by-step instructions on how to enroll to make it easy to submit your application.

1. Submit Your Application

The site's FAQs show you how to find:

- Your PG&E Service Account Number and current Rate Plan
- The brand, model number, and serial number listed on your water heater's nameplate
- Whether you have a TMV (for heat pump water heaters)
- Directions on creating an account in your water heater manufacturer smartphone app, which you'll need

2. WatterSaver Confirms Your Eligibility

The WatterSaver team reviews your application and confirms the eligibility of your water heater, including whether it has the necessary communications controls. (If needed, the program can send you equipment at no cost and arrange for free installation on your water heater).

- Once we've confirmed your eligibility, we can approve your application and help you connect your device to WatterSaver.

3. Post-Enrollment Orientation Period

After you're enrolled and connected, WatterSaver has a 4-week orientation program for new participants. During orientation, WatterSaver studies your water usage and preferences in order to optimize your load shifting schedule, and provides information about how the program works.

4. Load Shifting Begins

Based on your hot water usage data, WatterSaver prepares the signals it will send to your water heater, and your orientation period is complete! You'll receive your \$50 enrollment bonus, your first load shifting event will soon start, and you're now eligible to earn monthly rewards based on successful participation!

Troubleshooting

The WatterSaver team is available to support customers on program participation, opt-out events, and device communication issues that are affecting load shifting signals. Customers may contact WatterSaver at **1 (888) 707-9930** or support@watter-saver.com for support. A few common troubleshooting items are outlined here.

Device Communication Issues

If the program is unable to send signals to your device, please ensure you have Wi-Fi or cellular connection. If you do, and your device still isn't connecting to WatterSaver, it may be missing necessary communications equipment. WatterSaver can supply you the necessary equipment and the support to install it, at no cost.

This table illustrates the program's four connection options and what enabling equipment is needed. If you need enabling equipment, please contact the WatterSaver team for support.

| Water Heater Connectivity | Description | Enabling Equipment Needed |
|---|---|--|
| Integrated Wi-Fi connectivity and/or communication | When a water heater has integrated Wi-Fi capability and the customer has reliable Wi-Fi, the program can send and receive signals and device data using this Wi-Fi capability and the equipment manufacturer's cloud service. | None |
| Integrated CTA-2045 UCM port | Many HPWHs and some ERWHs come with a pre-installed CTA-2045 UCM port, into which a customer can easily connect a CTA-2045 UCM to allow the program to communicate with the water heater. | CTA-2045 UCM (cellular or Wi-Fi, provided by the program if needed at no cost to the customer) |
| No integrated connectivity, but adapter available | Some HPWH models require the addition of a proprietary adapter to enable Wi-Fi and/or to provide a CTA-2045 Universal Control Module (UCM) port for connectivity and communication. | Manufacturer-specific adapter (in addition to a CTA-2045 UCM depending on the product, and cellular or Wi-Fi connection, provided by the program if needed at no cost to the customer) |

Water Temperature Issues

If you are not satisfied with the temperature of your water heater, either because it is too hot or too cold, you can use the controls on your water heater, or the manufacturer’s app, to change it (controls may vary based on manufacturer and model number). Even if the water heater is receiving signals from WatterSaver, any action you take to change the water heater’s temperature or schedule will override a signal from WatterSaver.

The “industry standard” temperature setting for residential water heaters is 120°F, which is hot enough to prevent harmful bacteria from growing but not hot enough to scald skin; however, depending on your preferences you may wish to set your temperature cooler or hotter than this.

| Temperature Issue | Possible Issue |
|---|---|
| Water is too cold during a load shifting event (typically 2 p.m. to 9 p.m. or 12 p.m. to 12 a.m., depending on your electric rate) | This may be the result of a “Shed” signal, which instructs your water heater to limit the electricity used for heating. Contact WatterSaver during business hours and we will see if we can change your water heater’s schedule to increase its temperature. |
| Water is too cold outside of a load shifting event (typically 9 p.m. to 2 p.m. the next day, or 12 a.m. to 12 p.m., depending on your electric rate) | If you would like hotter water, we recommend you try changing your water heater’s operating mode to one that provides hot water more quickly. These modes will vary by product but may include “hybrid”, “energy saver”, or “more hot water” modes instead of “heat pump only” mode. Instructions to do this can be found in your water heater’s user manual or by reaching out to the product manufacturer. If changing your operating mode still leaves you with water that is too cold, or you cannot change the operating mode, we recommend you change the temperature setpoint. If your water is still too cold, there may be other factors responsible such as a long plumbing line between the water heater and usage areas, or an undersized water heater. |
| Water is too hot during a load shifting event (typically 2 p.m. to 9 p.m. or 12 p.m. to 12 a.m., depending on your electric rate) | This may be the result of your water heater receiving an “Advanced Load Up” signal. Contact WatterSaver during business hours and we will see if we can change your water heater’s schedule to reduce its temperature. |
| Water is too hot outside of a load shifting event (typically 9 p.m. to 2 p.m. the next day, or 12 a.m. to 12 p.m., depending on your electric rate) | If your water is too hot outside of a load shifting event, lower the temperature setpoint on your water heater first, as this directly reduces water temperature. You can also switch to heat pump only mode for improved efficiency. If installed, check that the mixing valve is not set too high as this can affect the temperature of water delivered. If the issue persists, additional troubleshooting or support may be needed. |



Support

Billing Issues

Please contact PG&E for any billing concerns or issues you may have, at **1 (800) 743-0011**. For TTY, Video Relay Service (VRS) and other deaf or hard of hearing calling services contact California Relay Service at 7-1-1

Customer Support

We'd love to hear from you, whether you have questions, would like more information or would like to share your experience with us.

Toll-Free Phone Number: 1 (888) 707-9930

Email: support@watter-saver.com

You may also receive emails from watter-saver@virtualpeaker.io (such as your Enrollment Confirmation email or reward e-gift cards), but please don't reply to that email address as we will not receive them!

Glossary of Terms

CTA-2045

A communications standard used by appliances to communicate with demand response programs.

Demand Response

Activities or programs designed to shift electricity usage from times of high demand (“peak” or “on-peak”) to times of low demand (“off-peak”). This is done to both reduce strain on the electric grid, reduce utility and customer costs for electricity, and take advantage of abundant renewable energy that is generated during off-peak periods. Load shifting is a form of demand response, and WatterSaver is a daily load shifting program that helps balance demand on our power grid.

Direct Load Controller

A control device that is hard-wired into a water heater to allow it to communicate with a demand response program. This device option is used for electric resistance water heaters that cannot communicate using either Wi-Fi or a Universal Control Module (UCM).

Electric Resistance Water Heater (ERWH)

A conventional electric tank water heater that uses heating elements to provide hot water. These products require significantly more electricity to operate than a heat pump water heater.

Enrollment Reward

The one-time incentive WatterSaver pays to a customer when the customer is admitted into the program and completes the orientation period.

Event

A period of load shifting activity, during which a demand response program sends signals to a device. Also referred to as “calling an event.” WatterSaver schedules include one event daily to shift the customer’s water heater operation to an off-peak time so it operates as little as possible during on-peak time.

Heat Pump Water Heater (HPWH)

A sophisticated tank water heater that uses a heat pump, and in some cases electric heating elements, to provide hot water. These products use far less electricity than electric resistance water heaters, and in many cases are built to communicate with demand response programs using Wi-Fi or a (UCM).

Load Shifting

Changing when an appliance or piece of equipment uses energy, to shift that usage (the “load”) from an on-peak time to an off-peak time. WatterSaver schedules send daily load shifting signals to water heaters.

Load Up

A signal sent by a third party to a device to use and store energy. Load Up signals are sent during the off-peak time immediately before sending a Shed signal during on-peak time. WatterSaver uses two versions of a Load Up signal: Basic Load Up and Advanced Load Up. During a Basic Load Up, the water heater heats until it reaches its normal temperature setpoint; 120°F is considered the “industry standard” temperature for water heaters, but your actual tank temperature may vary (i.e., either you or your plumber may have set it to a different temperature). During an Advanced Load Up, the water heater heats above its normal setpoint to as high as 140°F. Advanced Load Up signals are only sent to water heaters that also have a Thermostatic Mixing Valve, which blends the water heater’s hot water with cold water so the water temperature you receive is 120°F.

Participation Reward

The incentive WatterSaver pays to a customer each quarter for the customer’s participation in the program over the previous three months. The customer earns a Participation Reward amount for every month the customer allows their water heater to receive and respond to WatterSaver signals for 14 days or more.

Peak

A period of high demand on the electric grid when the price of electricity increases for customers. For many PG&E customers this is 4 p.m. to 9 p.m., but it may vary based on the customer’s Time-Of-Use rate plan.

Shed

A signal sent by a demand response program to a device to cease or decrease energy usage. Shed signals are sent at the beginning of on-peak time.

Thermostatic Mixing Valve (TMV)

A safety feature, either installed within the a water heater by its manufacturer or outside of the water heater by a plumber, that mixes hot water from the water heater with cold water to provide customers with a safe and consistent water temperature at the faucet.

Time-of-Use (TOU) rate plan

A billing rate offered by PG&E that reduces the customer’s cost of electricity during off-peak times and increases it during on-peak times. Time-of-Use (TOU) rate plans charge different prices depending on the time of day. WatterSaver works with a variety of rate plans and does not require TOU enrollment to participate.

UCM (Universal Communications Module)

A control device that uses CTA-2045 to communicate with demand response programs. Many new water heaters, including most heat pump water heaters, are built with a port (sometimes referred to as an “EcoPort”) so a UCM can be installed.



WaterSaver



Messages paid for by rate payers.

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