

| Program Manual

SCE SmartShift Rewards

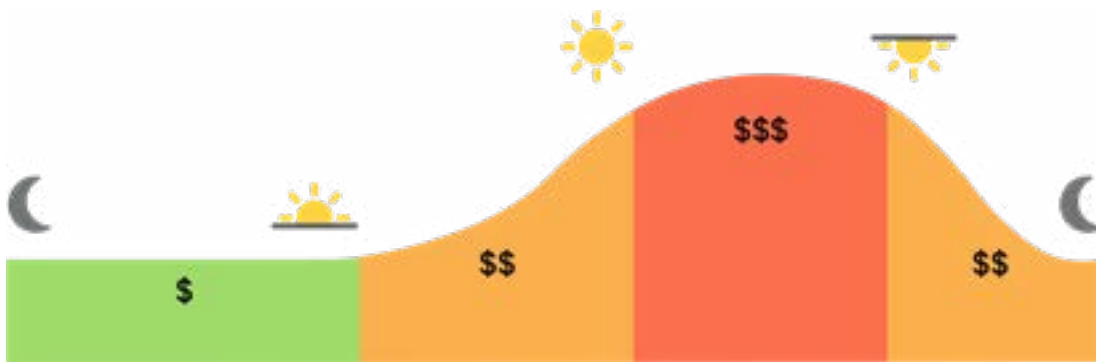
Earn rewards and avoid paying the highest price to heat your water.

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What Is SmartShift Rewards?

SmartShift Rewards is a daily load shifting program from Southern California Edison (SCE) that rewards customers who have eligible water heaters and who shift their energy usage to heat water when rates are lower. Load shifting is when you change the timing of your electrical use. This relieves pressure on the electrical grid by using energy when there is lower demand, and when customers can take advantage of lower prices during off-peak and super-off-peak periods through a “Time-Of-Use” (TOU) rate plan. SmartShift Rewards 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 SmartShift Rewards

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

- You avoid paying the highest electricity price to heat their water, taking advantage of a [SCE Time-Of-Use rate plan](#), and SmartShift Rewards keeps your water hot for when you need it.
- In addition to avoiding the highest rates, SmartShift provides a one-time \$50 Enrollment Reward, and an additional reward for every month you successfully participate: \$5 per month for general market customers, and \$10 per month for [equity eligible customers](#)!
- By shifting your electricity usage, you’re balancing demand on the grid, helping to improve grid reliability and reducing 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!



Customers avoid paying the highest electricity price to heat their water



SmartShift provides a one-time \$50 enrollment award



Help reduce greenhouse gas (GHG) emissions, improve grid reliability, and keep electricity cleaner for everyone

Earning and Receiving Rewards

SmartShift Rewards pays Participation Rewards every six months for the previous six-month period (December-May, June-November) in the form of an electronic card. Successful participants will receive an email with a link to claim their gift card, and gift cards must be accepted within 30 days of receipt. But once you've downloaded your gift card, it does not expire. With Participation Rewards and your \$50 Enrollment Reward, it's easy to earn in SmartShift Rewards!

Post-Enrollment Orientation Period

Once you are enrolled, SmartShift Rewards will conduct a four-week orientation period for new participants. During the orientation period, SmartShift 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, SmartShift Rewards will send helpful information about the program during the orientation period. These brief, weekly messages will include key reminders about operating electric resistance and heat pump water heaters, how Time-of-Use rate plans work, and how SmartShift load shift events work with your water heater.

Load Shifting Begins

Based on your water heater usage data, SmartShift 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 SmartShift for at least 14 days of the month.
 - If you do not participate enough to earn a participation reward for a given month, you will receive an email notification of this.

Customer Type	Month						Participation Payment Every 6 Months*	Enrollment Reward**
	1	2	3	4	5	6		
Standard	\$5	\$5	\$5	\$5	\$5	\$5	\$30	\$50
Equity Eligible	\$10	\$10	\$10	\$10	\$10	\$10	\$60	

* Paid in 6-month batches in July and January

** One-time enrollment reward will be paid after your orientation period

Standard and Equity Eligible Rewards

Customers who meet all Standard criteria and additional income and/or locational criteria, listed below, will qualify for Equity customer status.

- **Income Eligible**
 - Customers whose annual gross household income is less than or equal to 250 percent of the Federal Poverty Level qualify for Equity status based on household income.
- OR**
- **Disadvantaged Communities (DACs) and Public Housing**
 - Home address must be identified as qualifying in one of these databases: [Affordable Housing Map and Benefits Calculator](#) or [SB 535 Disadvantaged Communities](#).

The SmartShift Rewards team can help you track your usage and rewards activity in the app!

Successful Participation In Load Shifting Events

Once you're enrolled and connected, SmartShift Rewards will automatically signal your water heater to heat water when electricity prices are lower. For example, electricity prices are lower before 4 p.m. for the TOU-D rate, so the water heater will heat up the water before 4 p.m. so that it doesn't have to use as much electricity between 4 p.m. and 9 p.m. For example, customers on the TOU-D-4-9 rate, which has a 4 p.m. to 9 p.m. on-peak period, will have their water heaters increase their temperature before 4 p.m. when electricity prices are lower.

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, you will only earn a participation reward for a given month if you allow your water heater to receive signals from SmartShift Rewards for at least 14 days in that month.

Opting In and Out of Load Shifting Events

You can opt out by:

- 1 Changing the settings on your water heater during an event.
- 2 Reaching out to the SmartShift team at support@smartshiftrewards.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@smartshiftrewards.com to request a long-term opt out. Keep in mind that opting out of many events may make you ineligible for monthly Participation Rewards.

From time to time, SmartShift Rewards randomly opts some participating water heaters out of load shifting events to collect data on normal water heater performance and help the program understand how much energy customers save by participating. If SmartShift Rewards selects your water heater to opt out of an event, it won't 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. If you do, the Program will move your water heater to a non-load-shifting schedule for these months. You won't be eligible for rewards during these months, but will not be removed from the program.

What To Expect From Your Water Heater

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

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

As a result, heat pump water heaters are significantly more energy-efficient than traditional electric 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 are:

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. But 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 of the water heater but do so in small increments (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 temperature.

Like an air conditioner or heat pump used for heating and cooling, 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.

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, SmartShift Rewards 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 SmartShift Rewards 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 an electric resistance water heater to make sure you don't run out of hot water. For example, a common electric water heater size for households 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, rather than change the temperature setpoint on your water heater, first change your water heater's mode to more hot water. If your water heater 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, 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 (TMVs) inside. This device allows allow you to set your water heater at a higher-than-normal temperature (such as 140F instead of the common 120F), 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 SmartShift Rewards 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.

Troubleshooting

The SmartShift Rewards team is available to support customers on program participation, opt out events, and device communication issues that are affecting load shifting commands. Customers may contact SmartShift Rewards at **1-888-446-3311** or support@smartshiftrewards.com for support. A few common troubleshooting items are outlined here.

Device Communication Issues

If the program is unable to communicate with your device to send commands to it, please ensure you have Wi-Fi or cellular connection. If you do, and your device still isn't connecting to SmartShift Rewards, it may be missing necessary communications equipment. SmartShift Rewards 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 SmartShift Rewards team for support.

Water Heater Features	Description	Enabling Equipment Needed
Integrated 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
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 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)
Integrated CTA-2045 port	Many HPWHs and some ERWHs come with a pre-installed CTA-2045 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)
No integrated connectivity and no adapter available	Most ERWHs currently for sale and the vast majority of the installed ERWHs have neither integrated Wi-Fi nor a pre-installed CTA-2045 port.	Contractor installed direct-load controller (cellular or Wi-Fi), spliced into unit wiring

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 commands from SmartShift Rewards, any action you take to change the water heater’s temperature or schedule will override a command from SmartShift.

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.)	This may be the result of a “Shed” command, which instructs your water heater to limit the electricity used for heating. Contact SmartShift Rewards during business hours and we will see if we can change your water heater’s settings or 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)	If you would like more hot water, we recommend you try changing your water heater’s operating mode to one that provides more hot water. 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.)	This may be the result of your water heater receiving an “Advanced Load Up” command. Contact SmartShift Rewards during business hours and we will see if we can change your water heater’s settings or 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)	If you would like less hot water, we recommend you try changing your water heater’s operating mode. 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 hot, or you cannot change the operating mode, we recommend you change the temperature setpoint.

SmartShift Eligibility

You're eligible for SmartShift Rewards if you're an SCE or [Community Choice Aggregator \(CCA\)](#) customer in SCE area, and:

- Are currently on or agree to switch to an SCE Time-Of-Use (TOU) rate plan.
- Have at least one qualifying electric resistance tank water heater or heat pump water heater, with ability to connect to either Wi-Fi or cellular service. For heat pump water heaters (HPWH), a Thermostatic Mixing Valve (TMV) is required. **Tankless, natural gas, and propane water heaters are not eligible to participate in SmartShift Rewards.**

Enrollment in SmartShift Rewards

The smartshiftrwards.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 shows you how to find:

- Your SCE 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 Thermostatic Mixing Valve (for heat pump water heaters)
- Directions on creating an account in your water heater manufacturer smartphone app, which you'll need

2. SmartShift Confirms Your Eligibility

The SmartShift 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). Finally, for heat pump water heaters, the program confirms the presence of a Thermostatic Mixing Valve, which is required.

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

3. Post-Enrollment Orientation Period

After you're enrolled and connected, SmartShift has a 4-week orientation program for new participants. During orientation, SmartShift Rewards gets to know your water usage and preference to optimize your settings, and provides information about how the program works.

4. Load Shifting Begins

Based on your hot water usage data, SmartShift prepares the commands 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!

Glossary of Terms

ANSI/CTA-2045

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

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.

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 WiFi or a 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 SmartShift Rewards pays to a customer when the customer is admitted into the program and completes the orientation period.

Equity Eligible Customers

A status given to certain SmartShift Rewards customers based on their participation in income-qualified programs or utility rates, or their location within a Disadvantaged Community (as defined by the California Environmental Protection Agency’s Office of Environmental Health Hazard Assessment) or their location at a public housing or deed-restricted affordable housing property. Equity customers receive a higher Participation Reward based on this status.

Event

A period of load shifting activity, during which a demand response program sends commands to a device. Also referred to as “calling an event.” SmartShift Rewards 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. SmartShift Rewards schedules send daily load shifting commands to water heaters.

Load Up

A command sent by a demand response program to a device to increase energy usage. Load Up commands are sent during the off-peak time immediately before sending a Shed command during on-peak time. SmartShift Rewards uses two versions of a Load Up command: 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 commands 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 SmartShift Rewards pays to a customer each January and July for the customer’s participation in the program over the previous six months. For every month the customer allows their water heater to receive and respond to SmartShift Rewards commands for 14 more days, the customer earns a Participation Incentive amount for that month.

Peak

A period of high demand on the electric grid when the price of electricity increases for customers. For many Southern California Edison customers this is 4:00pm to 9:00pm, but it may vary based on the customer’s Time-Of-Use rate plan.

Shed

A command sent by a demand response program to a device to cease or decrease energy usage. Shed commands 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. Also referred to as a TMV. Heat pump water heaters must be equipped with a TMV in order to participate in SmartShift Rewards.

Time-Of-Use (TOU) rate plan

A billing rate offered by Southern California Edison that reduces the customer’s cost of electricity during off-peak times and increases it during on-peak times. SmartShift Rewards requires that customers be enrolled in a TOU rate in order to participate.

UCM (Universal Communications Module)

A control device that uses ANSI/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.



Support

Billing Issues

Please contact SCE for any billing concerns or issues you may have, at 1-800-655-4555 or their TTY at 1-800-352-8580.

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) 446-3311

Email: support@smartshiftrewards.com

You may also receive emails from smartshiftrewards@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!



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