

PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco CA 94102-3298



**Pacific Gas & Electric Company
ELC (Corp ID 39)
Status of Advice Letter 6809E
As of January 30, 2023**

Subject: Pacific Gas and Electric Company's End of the Year Advice Letter Filing for the WaterSaver Reporting

Division Assigned: Energy

Date Filed: 12-30-2022

Date to Calendar: 01-09-2023

Authorizing Documents: E-5073

Disposition:	Accepted
Effective Date:	01-24-2023

Resolution Required: No

Resolution Number: None

Commission Meeting Date: None

CPUC Contact Information:

edtariffunit@cpuc.ca.gov

AL Certificate Contact Information:

Stuart Rubio

(415) 973-4587

PGETariffs@pge.com

PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco CA 94102-3298



To: Energy Company Filing Advice Letter

From: Energy Division PAL Coordinator

Subject: Your Advice Letter Filing

The Energy Division of the California Public Utilities Commission has processed your recent Advice Letter (AL) filing and is returning an AL status certificate for your records.

The AL status certificate indicates:

- Advice Letter Number
- Name of Filer
- CPUC Corporate ID number of Filer
- Subject of Filing
- Date Filed
- Disposition of Filing (Accepted, Rejected, Withdrawn, etc.)
- Effective Date of Filing
- Other Miscellaneous Information (e.g., Resolution, if applicable, etc.)

The Energy Division has made no changes to your copy of the Advice Letter Filing; please review your Advice Letter Filing with the information contained in the AL status certificate, and update your Advice Letter and tariff records accordingly.

All inquiries to the California Public Utilities Commission on the status of your Advice Letter Filing will be answered by Energy Division staff based on the information contained in the Energy Division's PAL database from which the AL status certificate is generated. If you have any questions on this matter please contact the:

Energy Division's Tariff Unit by e-mail to
edtariffunit@cpuc.ca.gov



Sidney Bob Dietz II
Director
Regulatory Relations

Pacific Gas and Electric Company
77 Beale St., Mail Code B13U
P.O. Box 770000
San Francisco, CA 94177

Fax: 415-973-3582

December 30, 2022

Advice 6809-E

(Pacific Gas and Electric Company ID U 39 E)

Public Utilities Commission of the State of California

Subject: Pacific Gas and Electric Company's End of the Year Advice Letter Filing for the WatterSaver Reporting

Purpose

Pacific Gas and Electric Company (PG&E) submits this Tier 1 Advice Letter to satisfy the requirements as outlined in Resolution E-5073.

Background

WatterSaver is a thermal storage load shifting program submitted as a response to Assembly Bill (AB) 2868 that was seeking proposals to accelerate widespread deployment of distributed energy storage systems to achieve ratepayer benefits, reduce dependence on petroleum, meet air quality standards, and reduce emissions of greenhouse gases. It officially opened for customer enrollment on March 15, 2022. Pursuant to Resolution E-5073, Pacific Gas and Electric Company (PG&E) submits this letter that includes the Key Performance Indicators identified in Advice Letter 5731-E and cost effectiveness results calculated using the Total Resource Cost test, the Program Administrator Cost test, the Ratepayer Impact Measure test, and the Participant Cost Test using actual program enrollment numbers where applicable.

Proposed Key Performance Indicators

The following table lists the various Key Performance Indicators that were identified in AL 5731-E.

Table 1. Key Performance Indicators for WatterSaver

WatterSaver Key Performance Indicators		Notes
Enrolled Thermal Energy Storage Peak Demand Capacity (kW)	7	Total kW capacity for currently enrolled devices
Enrolled Thermal Energy Storage Energy Capacity (kWh)	23	Total kWh daily load shift capacity for currently enrolled devices
Targeted Customer Segment Enrollments (#/Segment)		
Residential	54	Currently enrolled load shifting devices
Commercial	0	
Program Cost per kW and per kWh		
Program \$/Gross kW shifted	\$141.72	Total program costs for 2020 through 2022 relative to total kW saved over 4-year EUL for currently enrolled HPWH devices
Program \$/Gross kWh shifted	\$41.60	Total program costs for 2020 through 2022 relative to total kWh load shift over 4-year EUL for currently enrolled HPWH devices
# of Controlled Residential and Commercial HPWHs	54	
Costs (control, API, TMV)/Gross kW	\$158.62	Total Equipment and API costs incurred for 54 enrolled HPWH devices relative to total kW saved over 4-year EUL for currently enrolled HPWH devices
Costs (control, API, TMV)/Gross kWh	\$0.13	Total Equipment and API costs incurred for 54 enrolled HPWH devices relative to total kWh load shift over 4-year EUL for currently enrolled HPWH devices
# of Controlled Residential and Commercial ERWHs	0	ERWH control will begin in 2023
Costs (control, API, TMV)/Gross kW	n/a	
Costs (control, API, TMV)/Gross kWh	n/a	
Customer TOU Cost Savings		
Gross	\$375.84	Total estimated TOU annual bill savings based on preliminary savings analysis for currently enrolled HPWH devices, assuming TOU-C
Average per customer	\$6.96	Estimated average TOU annual bill savings based on preliminary savings analysis for currently enrolled HPWH devices, assuming TOU-C

GHG Reduction		
Gross	3.92	Total estimated MT CO ₂ e savings over 4-year EUL for currently enrolled HPWH devices
Average per customer	0.07	Estimated average MT CO ₂ e savings over 4-year EUL for currently enrolled HPWH devices
Air quality improvement	n/a	Will be quantified pending any propane to HPWH interventions
Petroleum reliance reduction (removal of propane water heaters)	n/a	Will be quantified pending any propane to HPWH interventions
Average Customer Satisfaction (1, satisfied - 5, dissatisfied)	n/a	Will be quantified in 2023

Cost Effectiveness Calculations

Calculation Components

- These calculations were performed using 54 as the total number of participating HPWH devices currently enrolled and participating in the program.
- The EUL used in these calculations is 4 years since customer participation started in 2022 and continues to the end of 2025.

Table 2. Cost Effectiveness Tests for WatterSaver

Cost-Effectiveness Test Type	Subtype	Ratio	Note
TRC	Full Program Costs 2020-22	0.005	Includes benefits from all participating HPWH devices relative to all program costs incurred during 2020-2022 including current and projected incentives.
TRC	2022 Program Costs Only	0.012	Includes benefits from all participating HPWH devices relative to all program costs incurred during 2022 only including current and projected incentives.
TRC	Incentives Only	3.121	Includes benefits from all participating HPWH devices relative to current and projected incentives.
PAC	Full Program Costs 2020-22	0.004	Includes benefits from all participating HPWH devices relative to all program costs incurred during 2020-2022 including current/project incentives.

PAC	2022 Program Costs Only	0.012	Includes benefits from all participating HPWH devices relative to all program costs incurred during 2022 only including current/projected incentives.
PAC	Incentives Only	0.352	Includes benefits from all participating HPWH devices relative to current and projected incentives.
PCT	Energy Benefits and Costs, including non-energy participant cost	10.49	Includes estimated 4-year utility bill savings for 54 currently enrolled HPWH devices and projected 4-year earned incentives for 54 currently enrolled HPWH devices, relative to any utility bill increases and a conjectural participant non-energy cost estimated to be equal to 10% of earned incentives.
RIM	Full Program Costs 2020-22	0.014	Includes all programs costs incurred 2020-2022, as well as associated Ratepayer impact Benefits and Costs
RIM	2022 Program Costs Only	0.03	Includes all programs costs incurred in 2022, as well as associated Ratepayer impact Benefits and Costs
RIM	ACC and Retail Rate Impacts Only	1.629	Includes ACC and Retail Rate Impacts only

- All 54 HPWH devices are from the one HPWH manufacturer who is currently offering integrated Wi-Fi connectivity. Other HPWH manufacturers that are bringing new Wi-Fi integrations to the market will increase the number of participants in 2023. An increased number of CTA-2045 connected devices as well as ERWH devices are expected to be enrolled in 2023.
- A very small sample size and window of analysis for the 54 devices were completed in November 2022 to inform values used in this Advice Letter.
- The values in this AL are illustrative only as the data is limited due to limited initial enrollment and relatively short duration. We are anticipating more insightful data in 2023 as sample size will increase and baseline sampling will be ongoing.
- The 4-year EUL is less than twice what a normally operating HPWH might experience. Using longer EULs closer to 10-15 years will result in increased benefits.
- Program activities began in early 2020, and a significant portion of the budget spent was on program development, research activities, and market support. Because enrollment only opened in March 2022, comparing all program costs incurred to date relative to benefits from the currently enrolled 54 HPWH devices yields a heavily skewed ratio that is not representative of the program's value.
- When omitting full program costs incurred to date and using incentive and measure costs only, we expect TRC to be >1.0 and PAC to increase as more ERWH are

added to the program. PAC ratio for the Incentive Only subtype shows that incentives may need to be evaluated over time. However, as this program is not yet a year old, we need to balance the goal of having higher ratios with having incentives attractive enough to encourage participants to enroll in a new and unfamiliar type of program. We need 2023 data from a larger sample size and longer timeline of analysis to perform a more informed analysis on customer incentives relative to ACC benefits.

- The PCT shows the program to be highly cost effective from the participant perspective, as the customer does not incur financial or measure costs to participate in the program
- The RIM ratio shows that larger program costs heavily influence the RIM results. When omitting program costs, the RIM is >1.0 , which is evaluating grid and utility benefits relative to grid and utility costs.

Program Incentive Structure

WatterSaver will create a different incentive strategy for multifamily (MF) sites given the various scenarios that could exist:

- 1) Property owner-paid utility bill, ERWH
- 2) Property owner-paid utility bill, HPWH
- 3) Tenant-paid utility bill, ERWH
- 4) Tenant-paid utility bill, HPWH

These adjustments will be made relative to the standard single-family incentive due to the added complexity of additional parties involved, who pays the bill, who provides the Wi-Fi/cellular network access, etc.

Potential Program Improvements

As more participants enroll in WatterSaver, one consideration is the introduction of a more aggressive controls algorithm that is more well-suited to customers on PG&E's EV2-A or Electric Home rates since the partial peak periods start and end at different times than the peak periods for TOU-C. Also, it is possible that customers who are early adopters, who are more familiar with load shifting, and/or who have their own solar systems will prefer a more aggressive schedule to be able to shift more kW outside of peak or partial periods. Customers on EV2-A/Electric Home or more aggressive early adopter customers could then have their water heaters controlled as a separate cohort, different than the standard controls strategy for customers on TOU-C.

Protests

Anyone wishing to protest this submittal may do so by letter sent electronically via E-mail, no later than January 19, 2023, which is 20 days after the date of this submittal. Protests must be submitted to:

CPUC Energy Division
ED Tariff Unit
E-mail: EDTariffUnit@cpuc.ca.gov

The protest shall also be electronically sent to PG&E via E-mail at the address shown below on the same date it is electronically delivered to the Commission:

Sidney Bob Dietz II
Director, Regulatory Relations
c/o Megan Lawson
E-mail: PGETariffs@pge.com

Any person (including individuals, groups, or organizations) may protest or respond to an advice letter (General Order 96-B, Section 7.4). The protest shall contain the following information: specification of the advice letter protested; grounds for the protest; supporting factual information or legal argument; name and e-mail address of the protestant; and statement that the protest was sent to the utility no later than the day on which the protest was submitted to the reviewing Industry Division (General Order 96-B, Section 3.11).

Effective Date

PG&E requests that this Tier 1 advice submittal become effective on regular notice, January 29, 2023, which is 30 calendar days after the date of submittal.

Notice

In accordance with General Order 96-B, Section IV, a copy of this advice letter is being sent electronically to parties shown on the attached list and the parties on the service list for A.18-03-001, A18-02-016, A.18-03-002. Address changes to the General Order 96-B service list should be directed to PG&E at email address PGETariffs@pge.com. For changes to any other service list, please contact the Commission's Process Office at (415) 703-2021 or at Process_Office@cpuc.ca.gov. Send all electronic approvals to PGETariffs@pge.com. Advice letter submittals can also be accessed electronically at: <http://www.pge.com/tariffs/>.

 /S/
Sidney Bob Dietz II
Director, Regulatory Relations

cc: Service List A.18-03-001, A18-02-016, A.18-03-002.



ADVICE LETTER SUMMARY

ENERGY UTILITY



MUST BE COMPLETED BY UTILITY (Attach additional pages as needed)

Company name/CPUC Utility No.: Pacific Gas and Electric Company (U 39 E)

Utility type:

- ELC GAS WATER
 PLC HEAT

Contact Person: Stuart Rubio

Phone #: (415) 973-4587

E-mail: PGETariffs@pge.com

E-mail Disposition Notice to: SHR8@pge.com

EXPLANATION OF UTILITY TYPE

ELC = Electric GAS = Gas WATER = Water
 PLC = Pipeline HEAT = Heat

(Date Submitted / Received Stamp by CPUC)

Advice Letter (AL) #: 6809-E

Tier Designation: 1

Subject of AL: Pacific Gas and Electric Company's End of the Year Advice Letter Filing for the WatterSaver Reporting

Keywords (choose from CPUC listing): Compliance

AL Type: Monthly Quarterly Annual One-Time Other:

If AL submitted in compliance with a Commission order, indicate relevant Decision/Resolution #: Res. E-5073

Does AL replace a withdrawn or rejected AL? If so, identify the prior AL: No

Summarize differences between the AL and the prior withdrawn or rejected AL: N/A

Confidential treatment requested? Yes No

If yes, specification of confidential information:

Confidential information will be made available to appropriate parties who execute a nondisclosure agreement. Name and contact information to request nondisclosure agreement/ access to confidential information:

Resolution required? Yes No

Requested effective date: 1/29/23

No. of tariff sheets: 0

Estimated system annual revenue effect (%): N/A

Estimated system average rate effect (%): N/A

When rates are affected by AL, include attachment in AL showing average rate effects on customer classes (residential, small commercial, large C/I, agricultural, lighting).

Tariff schedules affected: N/A

Service affected and changes proposed¹: N/A

Pending advice letters that revise the same tariff sheets: N/A

¹Discuss in AL if more space is needed.

Protests and correspondence regarding this AL are to be sent via email and are due no later than 20 days after the date of this submittal, unless otherwise authorized by the Commission, and shall be sent to:

California Public Utilities Commission
Energy Division Tariff Unit Email:
EDTariffUnit@cpuc.ca.gov

Contact Name: Sidnev Bob Dietz II. c/o Megan Lawson
Title: Director, Regulatory Relations
Utility/Entity Name: Pacific Gas and Electric Company

Telephone (xxx) xxx-xxxx: (415)973-2093
Facsimile (xxx) xxx-xxxx:
Email: PGETariffs@pge.com

Contact Name:
Title:
Utility/Entity Name:

Telephone (xxx) xxx-xxxx:
Facsimile (xxx) xxx-xxxx:
Email:

CPUC
Energy Division Tariff Unit
505 Van Ness Avenue
San Francisco, CA 94102

Clear Form

Appendix A

WatterSaver 2022 Annual Report

WatterSaver 2022 Annual Report

WatterSaver has experienced much activity since the beginning of 2022 that includes pre-launch activity, launch, participant enrollment, training, marketing, and collaboration with the different manufacturers of heat pump water heaters and communication devices.

The first quarter's pre-launch activities included the following:

- In-depth review to satisfy the requirements of the Americans with Disability Act (ADA)
- Implementation of web-based application that participants use to view their water heater operation
- Translation of website, enrollment questionnaire, and app into Spanish
- Began engagement with different heat pump water heater manufacturers to determine when their Wi-Fi connected models would be ready and how they would integrate with WatterSaver
- Testing of participant messaging
- Development of marketing collateral, press releases, and online announcements

Once the website fulfilled the third party reviewer's ADA requirements, the WatterSaver Program launched March 15th which initiated a number of other activities:

- Outreach to and training for CCAs, BayREN, and other program implementers to discuss how they could leverage WatterSaver to enhance their existing HPWH programs
- Development of a Partners Toolkit
- Coordination with TECH Initiative's contractor incentive pilot
- Engagement with customers with enrollment or HPWH operation issues
- Testing of cellular communication devices for HPWHs without built-in Wi-Fi functionality
- Testing of ERWH control devices
- Training of subcontractors on control device installation

Since the initial launch period, the following ongoing tasks have been occurring as the program continues and evolves:

- Coordination with San Joaquin Valley Electrification Pilot to enroll treated customers with HPWHs into WatterSaver
- Engagement with multiple HPWH manufacturers to understand and implement necessary steps to be able to control certain models of their HPWHs
- Testing of various equipment
- Development of different incentive strategy for multifamily sites

- Coordination with Energy Savings Assistance (ESA) team for recruitment
- Improvements to enrollment questionnaire, website, incentive processing process
- Development of rate specific load shifting strategies

One of WatterSaver's most useful achievements for 2022 has been to engage with different water heater manufacturers to encourage them to expedite their solutions for making their devices "connected." Aside from one manufacturer who already had a HPWH product with integrated Wi-Fi controllability, none of the other HPWH manufacturers had an offering that would allow control from a third party. Since WatterSaver's launch in March, a manufacturer has expedited the launch of an app that can communicate with their heat pump water heater's add-on module that provides water heater Wi-Fi connectivity, allowing for WatterSaver integration. Another manufacturer is looking to add connectivity options to its product line in 2023. In addition, for HPWHs without the possibility of Wi-Fi connectivity, WatterSaver is testing the CTA-2045 communication functionality to resolve control issues that had not previously been tested on these appliances. WatterSaver is an effective pre-cursor for the communication capabilities of SGIP's new HPWH requirements. This up-front work will result in more HPWHs that will be eligible for the incentive and can be successfully controlled for load shifting when SGIP's HPWH program launches.

**PG&E Gas and Electric
Advice Submittal List
General Order 96-B, Section IV**

AT&T
Albion Power Company

Alta Power Group, LLC
Anderson & Poole

Atlas ReFuel
BART

Barkovich & Yap, Inc.
Braun Blaising Smith Wynne, P.C.
California Cotton Ginners & Growers Assn
California Energy Commission

California Hub for Energy Efficiency
Financing

California Alternative Energy and
Advanced Transportation Financing
Authority
California Public Utilities Commission
Calpine

Cameron-Daniel, P.C.
Casner, Steve
Center for Biological Diversity

Chevron Pipeline and Power
City of Palo Alto

City of San Jose
Clean Power Research
Coast Economic Consulting
Commercial Energy
Crossborder Energy
Crown Road Energy, LLC
Davis Wright Tremaine LLP
Day Carter Murphy

Dept of General Services
Don Pickett & Associates, Inc.
Douglass & Liddell
Dish Wireless L.L.C.

East Bay Community Energy Ellison
Schneider & Harris LLP
Engineers and Scientists of California

GenOn Energy, Inc.
Goodin, MacBride, Squeri, Schlotz &
Ritchie
Green Power Institute
Hanna & Morton
ICF

iCommLaw
International Power Technology
Intertie

Intestate Gas Services, Inc.

Johnston, Kevin
Kelly Group
Ken Bohn Consulting
Keyes & Fox LLP
Leviton Manufacturing Co., Inc.

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Waste Management Task Force
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Modesto Irrigation District
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NRG Solar

OnGrid Solar
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Peninsula Clean Energy

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Resource Innovations

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