

# TECH and SGIP HPWH Load Shifting

September 20, 2023



# Agenda

- 1 TECH & SGIP HPWH Overview

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- 2 HPWH Load Shifting Benefits

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- 3 DR and TOU Requirement Details

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# TECH and SGIP HPWH Overview

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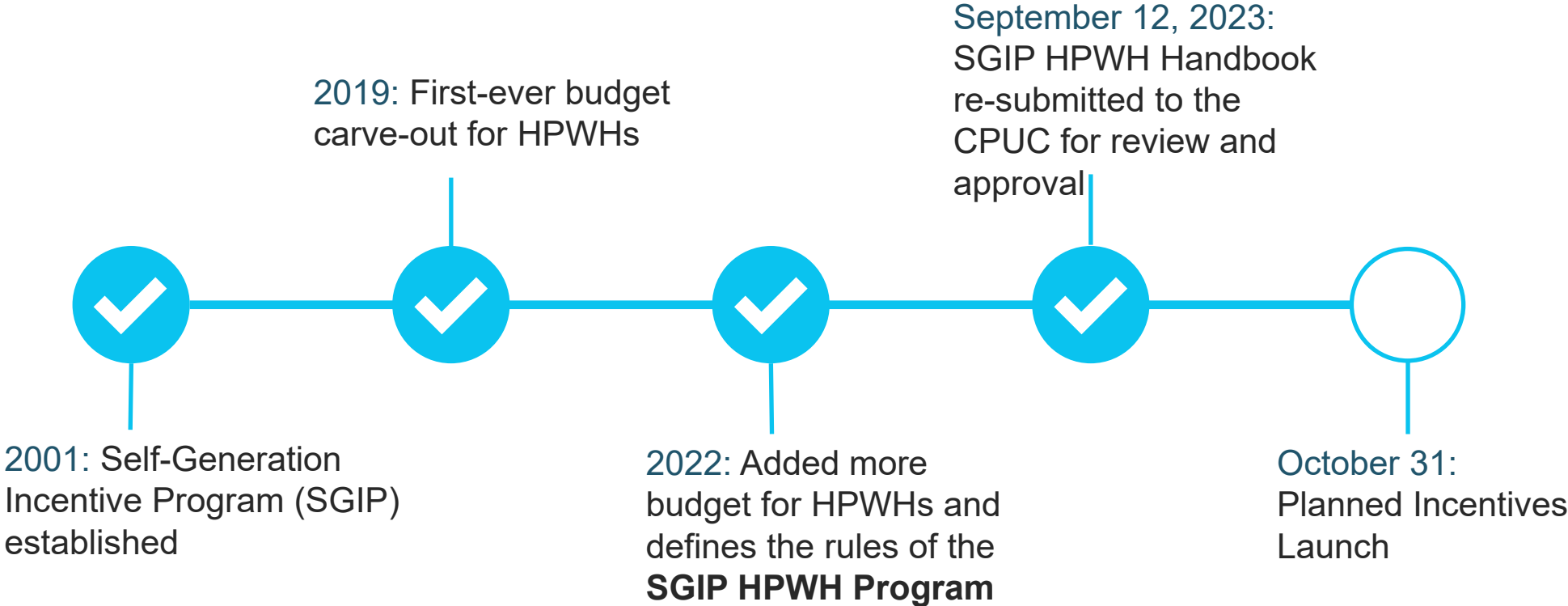


# SGIP HPWH Program Overview

- \$80.2 M in additional incentives funding for Heat Pump Water Heaters (HPWH)
- Incentives active October 31, 2023 – end of 2025
- Incentives paid to contractors, passed through to customers
- Retrofit, not new construction
- Statewide residential and non-residential customers
- New load shifting requirements
  - Customers: enroll in a demand response (DR) program and be on a time-of-use (TOU) rate.
  - Contractors: set up the HPWH to follow a TOU rate.



# Program Background & Status



Public Utilities Code Section 379.6(e)(1) defines eligibility for SGIP and limits incentives technology that ***"shifts onsite energy use to off-peak time periods or reduce demand from the grid by offsetting some or all of the customer's onsite energy load, including, but not limited to, peak electric load."***

# Implementation Through TECH Clean California

- Fully branded as TECH Clean California
- Communicated as TECH Clean California incentives with new requirements
- Leveraging TECH’s infrastructure, market relationships, and name recognition
- Simplifies experience for both contractors and customers due to familiarity with name & process

	TECH Clean California (HP HVAC & HPWH)	
	TECH HPWH	SGIP HPWH
<b>Incentive recipient</b>	Contractors	
<b>Installation type</b>	Retrofit only	
<b>Building sector</b>	Residential	Residential & Commercial
<b>Eligibility</b>	Statewide	IOU customers
<b>Customer requirements</b>		DR & TOU enrollment
<b>Installation requirements</b>		Load shifting

# Incentives

Category	Customer Class	HPWH Incentive	Low-GWP Kicker Incentive	≥ 55 Gallon Capacity Incentive	Electrical Panel Upgrade Incentive	Max Incentive
Residential Unitary	General Market	\$3,100	\$1,500	\$700	\$2,000	<b>\$7,300</b>
Residential Unitary	Equity	\$4,185	\$1,500	\$700	\$4,000*	<b>\$10,385</b>
Residential Central	General Market Multifamily Central	\$900/kWh	\$200/kWh	N/A	N/A	<b>\$300,000</b> per project
Residential Central	Equity Multifamily Central	\$1,000/kWh	\$200/kWh	N/A	N/A	<b>\$300,000</b> per project
Commercial Unitary	Large Commercial	\$700/kWh	\$200/kWh	N/A	N/A	<b>\$50,000</b>
Commercial Unitary	Small Business	\$3,100	\$1,500	N/A	N/A	<b>N/A</b>

\*For Equity customers, the \$4,000 incentive may cover a variety of other “pre-electrification” costs associated with a HPWH installation

# HPWH Load Shifting Benefits





# Demand Response and Load Shifting: What and Why?

- **Demand response:** a temporary change in energy usage.
  - Relevant program requirement: customer DR enrollment
- **Load shifting:** a type of demand response - specifically, moving electricity consumption from one time of the day to another.
  - Relevant program requirement: HPWH following a TOU rate, with customers on a TOU rate.
- Both help optimize the timing of electricity usage for customers (\$) and the grid.
- To achieve California's renewable energy goals, it's critical that electricity consumption (or "load" or "demand") can better match electricity supply, especially during mid-day solar availability.





## HPWHs are load-shifting superstars

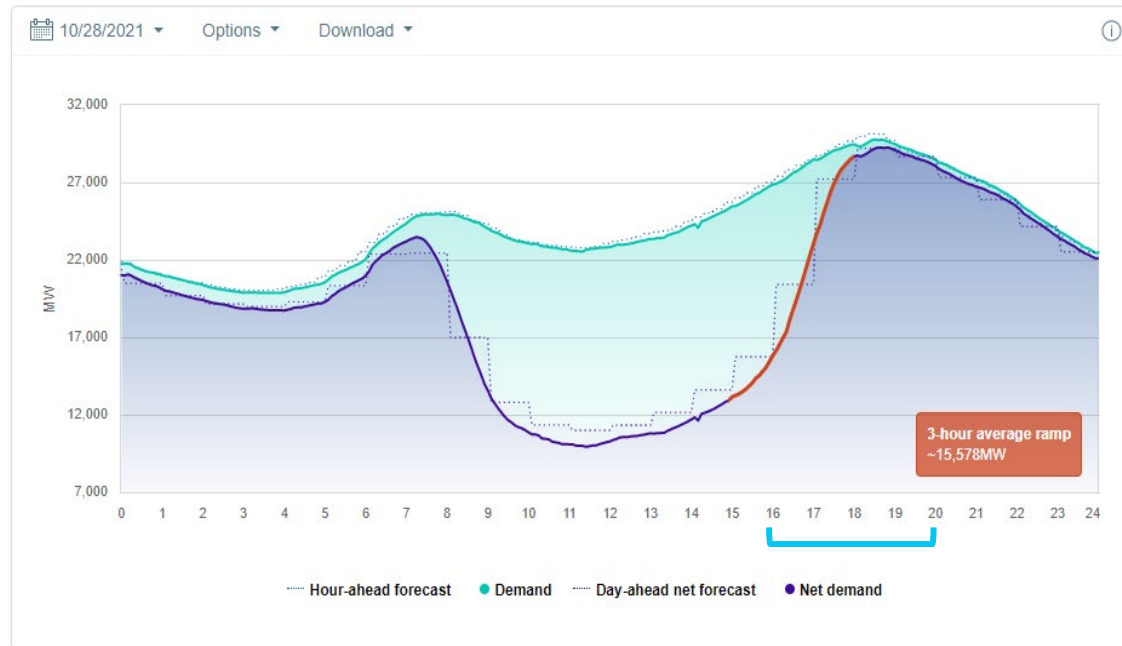
HPWHs, especially ones with thermostatic mixing valves, can store thermal energy by pre-heating water during the middle of the day when solar is plentiful and electricity prices are lower. Then, the HPWH can reduce its operation during the evening hours when electricity prices are higher while still providing hot water.

# Visual of HPWH Load Shifting

## Load Profile: CA's Net Demand

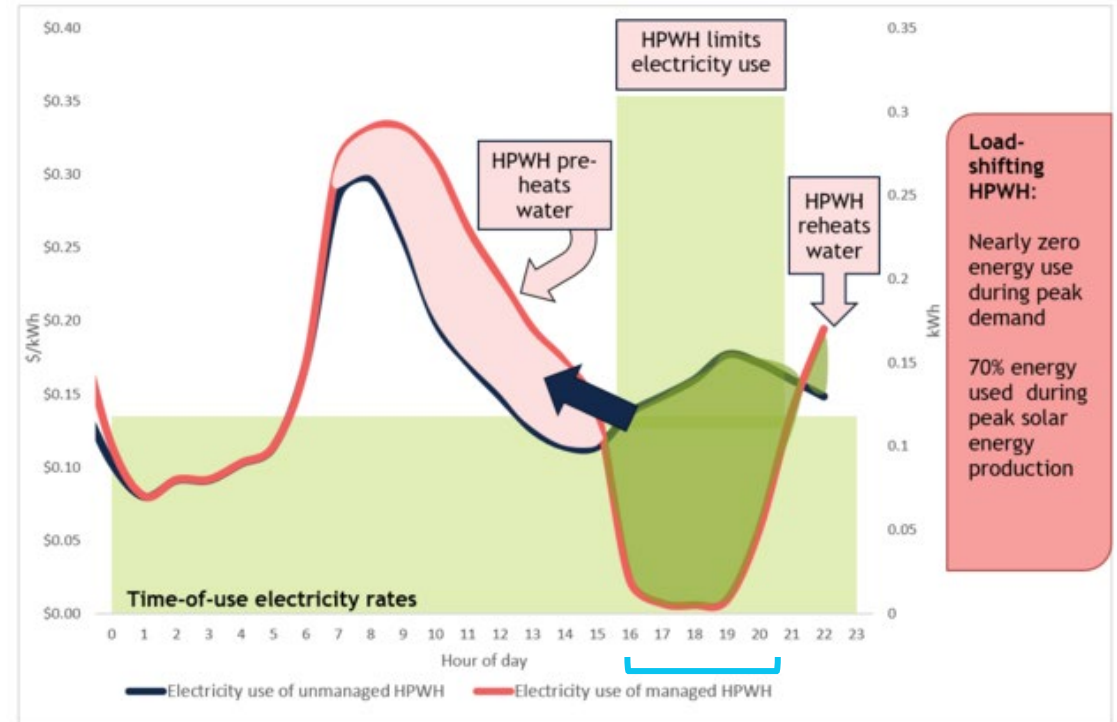
### Net demand trend

System demand minus wind and solar, in 5-minute increments, compared to total system and forecasted demand.



Source: California ISO, <http://www.caiso.com>

## Load Profile: A load-shifting HPWH



Source: NRDC, <https://www.nrdc.org/experts/pierre-delforge/heat-pump-water-heaters-clean-energy-batteries>

# DR and TOU Requirement Details



# Time of Use (TOU) Enrollment Requirement

TOU Rates: Pricing varies based on time of day and season.

Requirements:

- Applies to single residences and small business projects
- Customer agrees to TOU requirement in the Program Terms and Conditions
- Customer agrees to be put on a TOU rate by their utility if not already on one
- Opportunity for customer to specify a rate or agree to standard default



# Demand Response (DR) Requirement

Demand Response: Programs facilitate a temporary change in energy usage.

## Requirements:

- Customer agrees to DR requirement in TECH Program Terms and Conditions
- Customer must enrolled in a qualified DR program for a minimum of 3 years.
- Program will provide contractors with customer handouts that provide explanations and links for enrollment



# Thank You

*For more information or to get involved, contact:*

TECH.info@energy-solution.com

- Interested customers: find a TECH contractor: [www.cleanenergyconnection.org/find-contractor](http://www.cleanenergyconnection.org/find-contractor)
- Interested contractors: sign up to participate: [switchison.org/contractors/tech-clean-california](http://switchison.org/contractors/tech-clean-california)

## SGIP HPWH Program Team:



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