



# Incentive Layering Workshop

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June 30, 2020

Rory Cox, Analyst, CPUC



# Agenda

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9 to 9:30 AM - **Introduction**

**Panelist:**

Rory Cox, California Public Utilities Commission

9:30 to 10:10 AM - **Current landscape of incentives and evaluation methods**

**Panelists:**

Carmen Best, Recurve

Katie Wu, Gridworks

Ralph DiNola, New Building Institute

10:10 to 10:50 – **Non-IOU Program Administrator Perspective**

**Panelists:**

Beckie Menten, East Bay Community Energy

Jennifer West, Bay Area Regional Energy Network

Scott Blunk, Sacramento Municipal Utilities District

10:50 to 11:00 - **Break**

11:00 to 11:40 - **IOU Panel**

What do IOUs propose for managing different incentive programs? IOUs to present a single proposal.

**Panelists:**

Michelle Thomas, SCE

Jose Buendia, SCE

Meghan Dewey, PG&E

11:40 to 12:20 – **Questions and Comments**

12:20 to 12:30 – **Next steps**



# From D.20-03-027

“Finally, we direct Energy Division staff to conduct a workshop, after the adoption of this decision, to focus on stakeholder concern for ‘fund-stacking.’ From this workshop, Energy Division staff will produce a staff proposal with a framework for how to address funding when combining incentives from separate program budgets.”



Photo: <https://inewssource.org/>



# A Good Problem to Have...

...but a problem nevertheless.

- Building Decarbonization/SB 1477 - \$200 million
- Self Generation Incentive Program - \$44 million
- Low Income/DACA - \$136 million
- Energy Efficiency - \$TBD

Total - \$380 million +

(Numbers are approximations)





# Energy Efficiency-approved Appliances

Approved in Energy Efficiency Workpaper Process for “Fuel Substitution”:

- Residential Heat Pump Water Heater (to replace Natural Gas Water Heater)
- Ductless Mini-split HVAC (to replace window AC and gas wall furnace)
- Heat Pump HVAC (to replace AC and gas furnace)
- Induction Cooktop (to replace gas range)
- Heat Pump Clothes Dryer (to replace natural gas Clothes Dryer)





# Summary of Program Categories and Goals

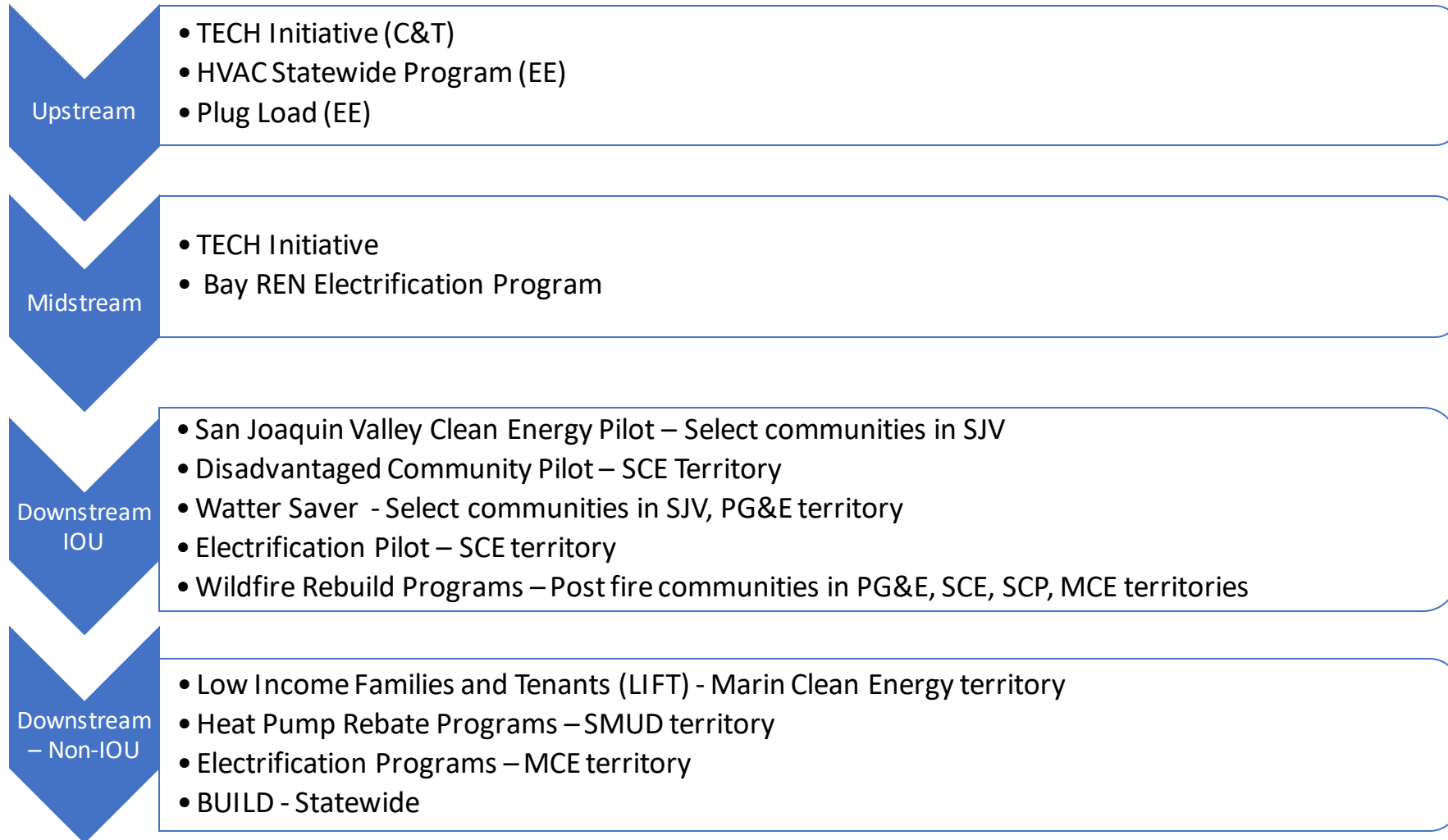
| Program                                  | Goal                                 |
|--|--------------------------------------|
| Energy Efficiency                        | kW savings & GHG reductions          |
| Self Generation Incentive Program (SGIP) | Load Shifting & GHG reductions       |
| Low Income/Disadvantaged Communities     | kW savings & home comfort and safety |
| Cap and Trade (BUILD and TECH)           | GHG reductions                       |



Image: <https://raywilliams.ca/>



# Statewide Supply Chain Breakdown



(Not a comprehensive list)



# Topic 1 – Incentive Layering

- a. When is it appropriate to use multiple incentives for the same appliance?  
When isn't it?
- b. Should there be a minimum or maximum incentive cost for the customer? If so, how should it be determined?
- c. How should program administrators in overlapping service territories address incentive layering?



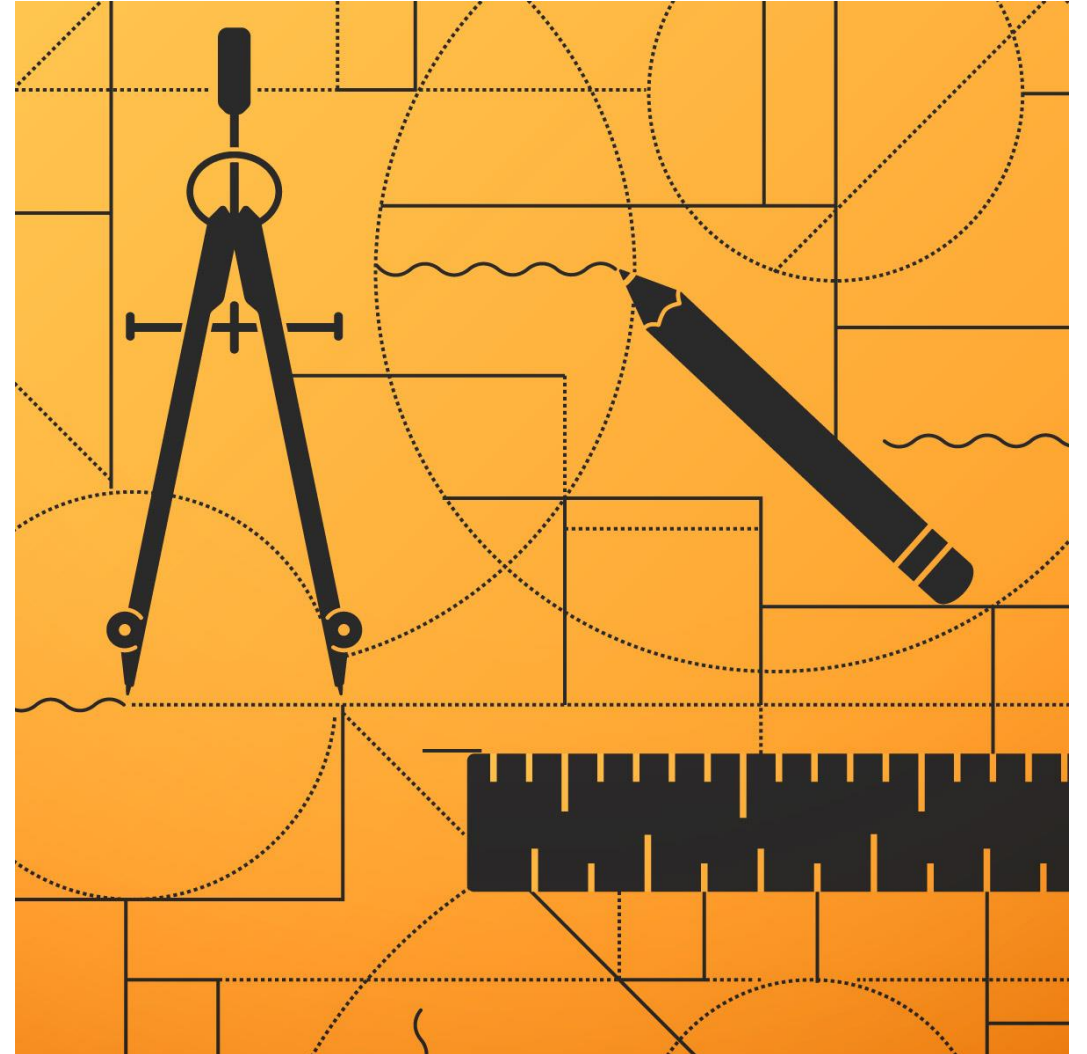
Image: HR Daily Adviser





# Topic 2 – Evaluation and Attribution

- a. Do the CPUC's current evaluation metrics create a disincentive to take advantage of multiple incentives?
- b. How best to ascribe energy savings, GHG emissions, or other metrics when one appliance gets multiple incentives?





# Topic 3 – Shared Resources and Standards

- a. What types of shared tools, technology, and/or program rules are required to make for a seamless customer or contractor experience?
- b. What existing resources could be used to streamline incentive layering?
- c. Should there be shared technical standards and specifications across all ratepayer funded programs in CA?





# Questions?

Rory Cox

415-703-1093

[rory.cox@cpuc.ca.gov](mailto:rory.cox@cpuc.ca.gov)

# Barriers and Opportunities for Layering Incentives for Building Decarbonization

CPUC Workshop on Incentive Layering for Building Decarbonization

June 30, 2020

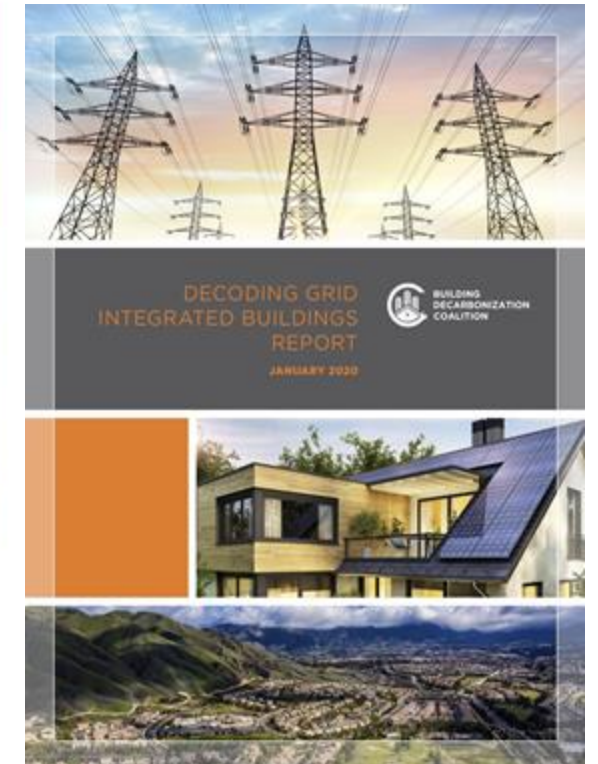
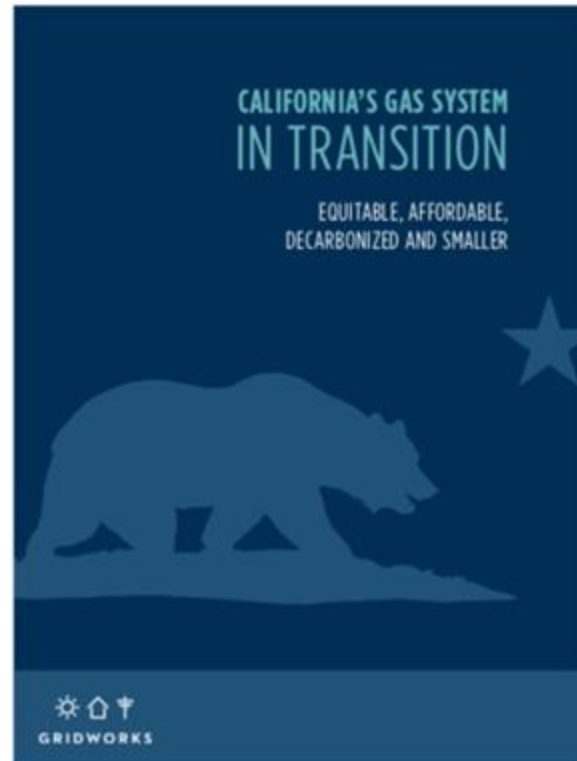
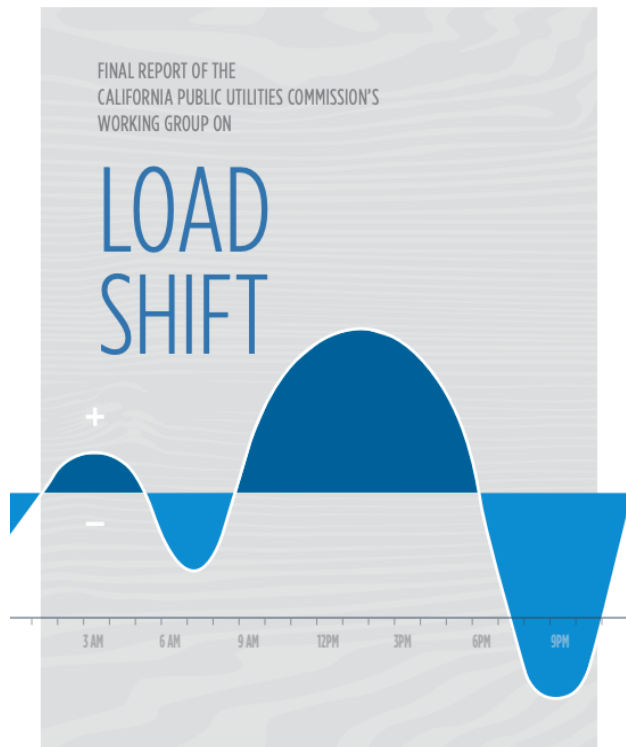
Presented by Katie Wu



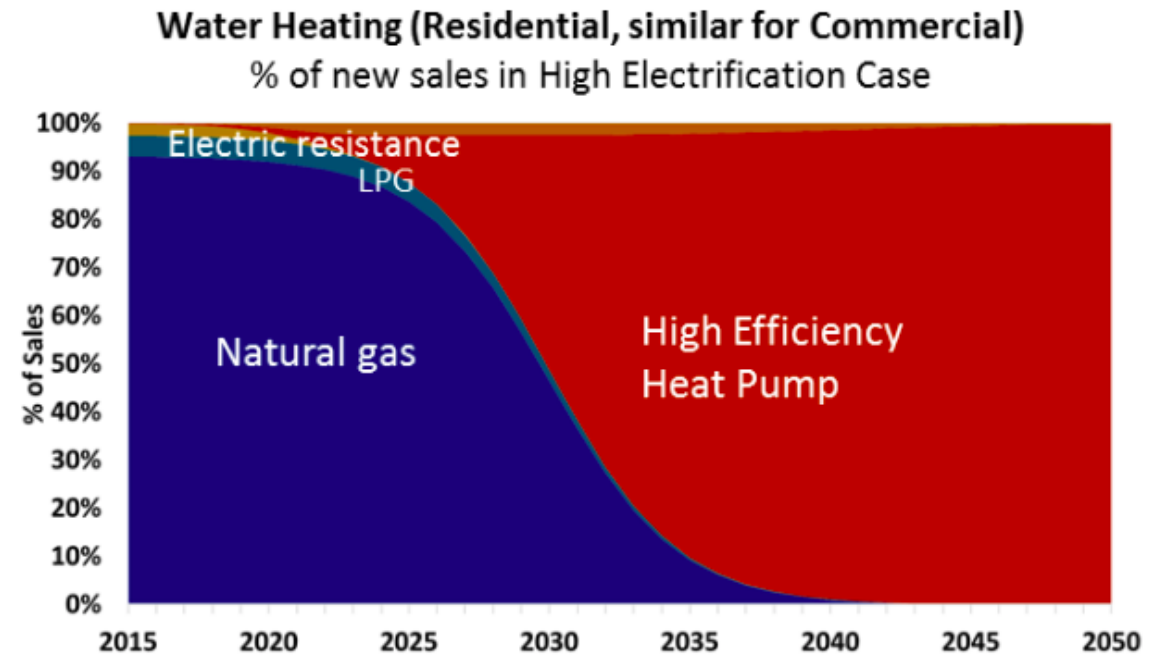
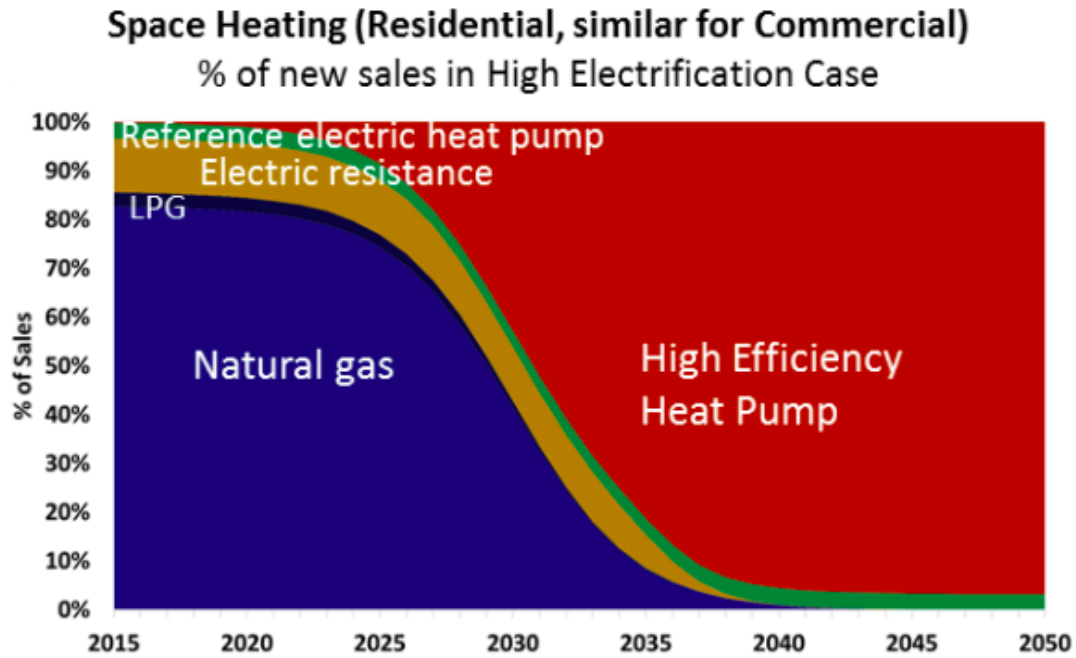
**GRIDWORKS**

# Gridworks Introduction

To convene, educate, and empower stakeholders working to decarbonize electricity grids



# Unprecedented Heat Pump Adoption Rates Needed



Source: E3

# Finding Information and Programmatic Gaps Create Barriers to Entry

- Finding and understanding program information is difficult - Customers will rely on contractors' knowledge and expertise
- Program gaps for retrofits and market rate, multifamily buildings, limiting incentives for support equipment and installation costs



## Program Requirements

To be eligible for SBD, projects must be:

- At a point where the customer can be influenced by the program's offerings and incentives to implement energy efficient design alternatives in place of their current or conceived designs.
- Located in the service territory of a participating Utility and subject to payment of PPC for electric service and/or the gas surcharge for gas service.
- Within the definition of new construction.

Projects may be deemed ineligible for SBD incentives if:

1. The project is determined as a free-rider (see definition above)
2. The project results in negative energy or the Database for Energy Efficiency Resources (DEER) peak demand savings
3. The project received incentives for the same measures from another Utility incentive rebate source
4. The project does not present a Net Potential Benefit to the Rate Payer
5. Redirected by the SBD Representative to other incentive offerings
6. The customer is unable to provide proof of permit closure documentation required by Senate Bill 1414 (applicable for projects including HVAC).

To participate in the Program, the building Owner must adhere to the following requirements:

- He or she cannot be a free-rider
- Must be willing to consider the analysis recommendations
- Attend a meeting with the Design Team to discuss the viability of implementing various energy efficiency strategies
- Sign the Owner Agreement offered by the SBD Representative

# Program Rules Limit Participation and Value Stream

Pre-installation

Lack of uniform qualifying criteria complicates program selection best suited to project needs. Contributing factors include:

- Variety of program administrators with overlapping service areas
- Programs external to the ratepayer-funded programs can offer similar services and products
- Financing options from utilities and banks have different lending terms

Post-installation

Resources that received incentive payments or financing may be prohibited from participating in procurement solicitations. Examples include:

- SGIP and Automated Demand Response
- Incrementality rules within the Distribution Investment Deferral Framework



# Varying Cost Effectiveness Methods Obscure Value

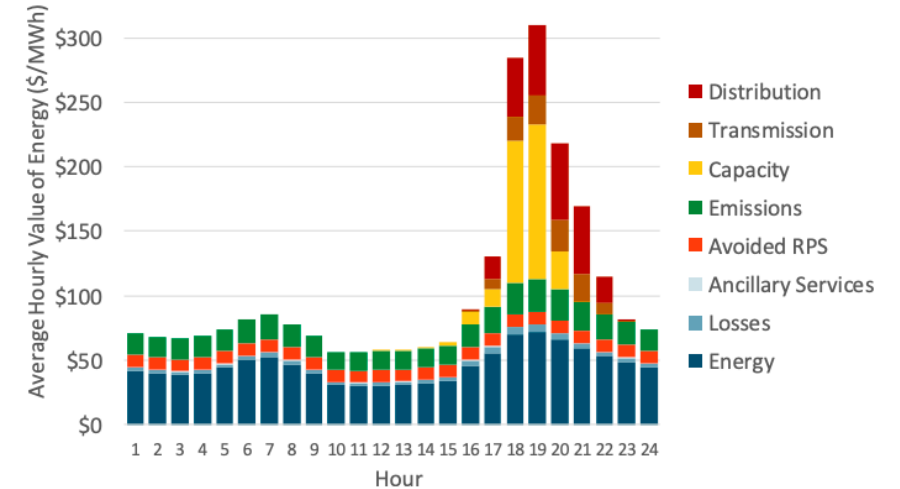
## Standard Practice Manual Tests

|  | TRC     | PAC     | RIM     | Participant | DG SCT  | SCT     | ESACET  | ESA TRC |
|--|---------|---------|---------|-------------|---------|---------|---------|---------|
| Administrative costs                                   | COST    | COST    | COST    |             | COST    | COST    | COST    |         |
| Avoided costs of electricity                           | BENEFIT | BENEFIT | BENEFIT |             | BENEFIT | BENEFIT | BENEFIT | BENEFIT |
| Bill Increases   |         |         |         | COST        |         |         | COST    |         |
| Bill Reductions  |         |         |         | BENEFIT     |         |         | BENEFIT |         |
| CAISO Market Participation Revenue                     | BENEFIT | BENEFIT | BENEFIT |             |         | BENEFIT |         |         |
| Capital costs to utility                               | COST    | COST    | COST    |             | COST    | COST    | COST    | COST    |
| Incentives paid  |         | COST    | COST    | BENEFIT     |         |         |         |         |
| Increased supply costs                                 | COST    | COST    | COST    |             |         | COST    |         |         |
| Market benefits  | BENEFIT | BENEFIT | BENEFIT |             |         | BENEFIT |         |         |
| Non-energy social benefits                             | BENEFIT |         |         |             | BENEFIT | BENEFIT |         |         |
| Non-energy utility benefits                            | BENEFIT | BENEFIT | BENEFIT |             |         |         | BENEFIT |         |
| Non-energy participant benefits                        | BENEFIT | BENEFIT | BENEFIT |             |         |         | BENEFIT |         |
| Participant Equipment and Installation (Measure) Costs | COST    |         |         | COST        | COST    | COST    |         |         |
| Participant Transaction Costs                          | COST    |         |         |             |         | COST    |         |         |
| Participant Value of Service Loss                      | COST    |         |         |             |         | COST    |         |         |
| Revenue gain from increased sales                      |         |         | BENEFIT |             |         |         |         |         |
| Revenue loss from reduced sales                        |         |         | COST    |             |         |         |         |         |
| Tax Credits  | BENEFIT |         |         | BENEFIT     |         | BENEFIT |         |         |
| Capital costs to landlords/3rd parties (copayments)    |         |         |         |             |         |         | COST    |         |
| Reliability Benefits                                   | BENEFIT | BENEFIT | BENEFIT |             | BENEFIT |         |         |         |
| Reliability Costs                                      | COST    | COST    | COST    |             | COST    |         |         |         |
| Non-bypassable charges (departing load charges)        |         |         | COST    | COST        |         |         |         |         |

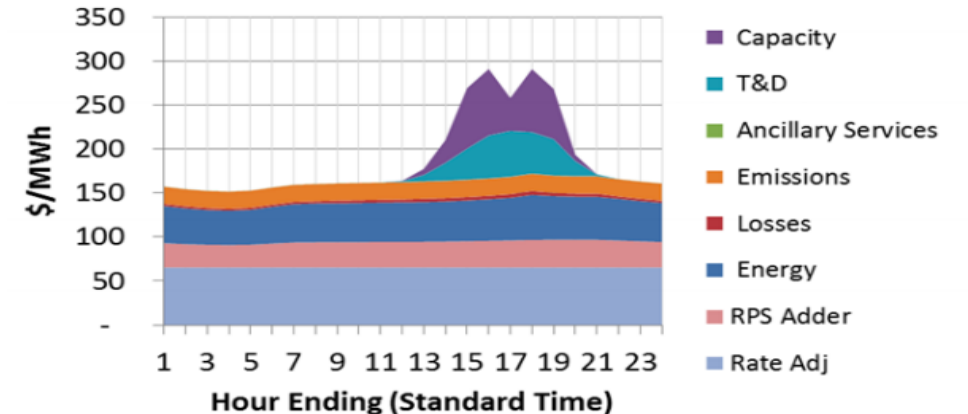
Blue text indicates cost or benefit which is used only for DR and/or DG, not EE

Source: Joy Morgenstern, Energy Division, 2015

## CPUC Avoided Cost Calculator

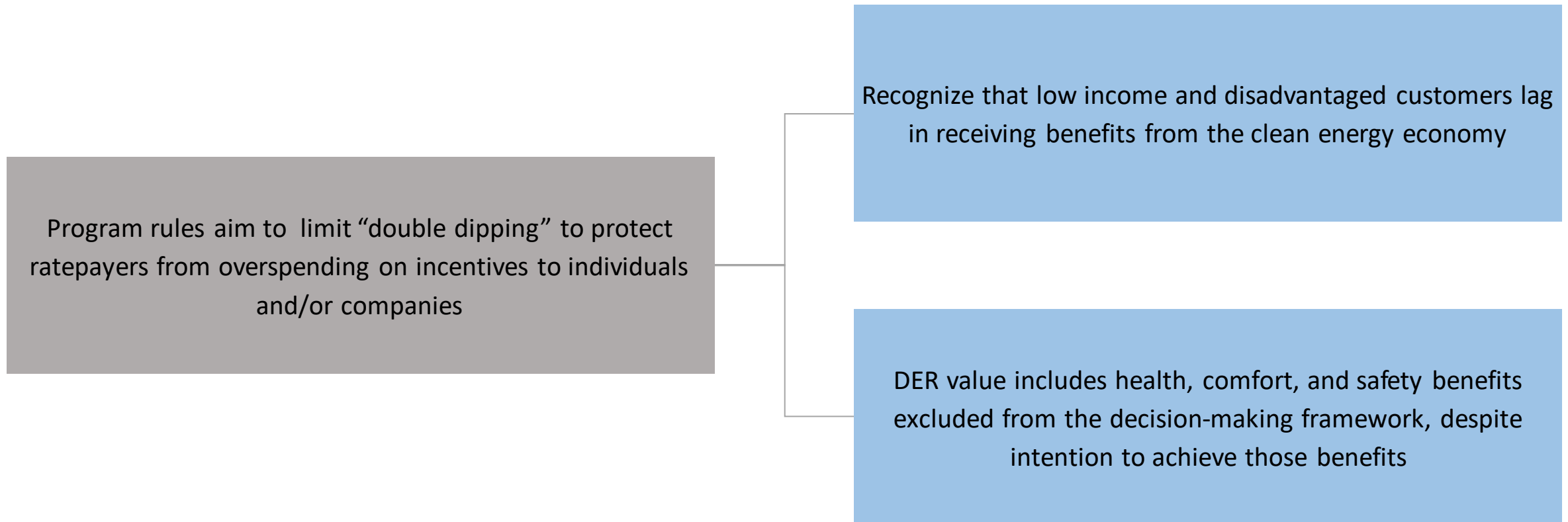


## CEC Time Dependent Valuation



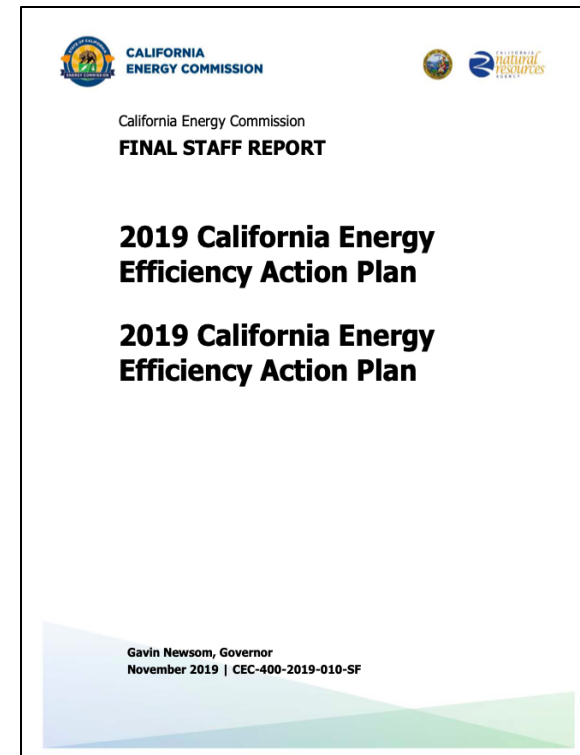
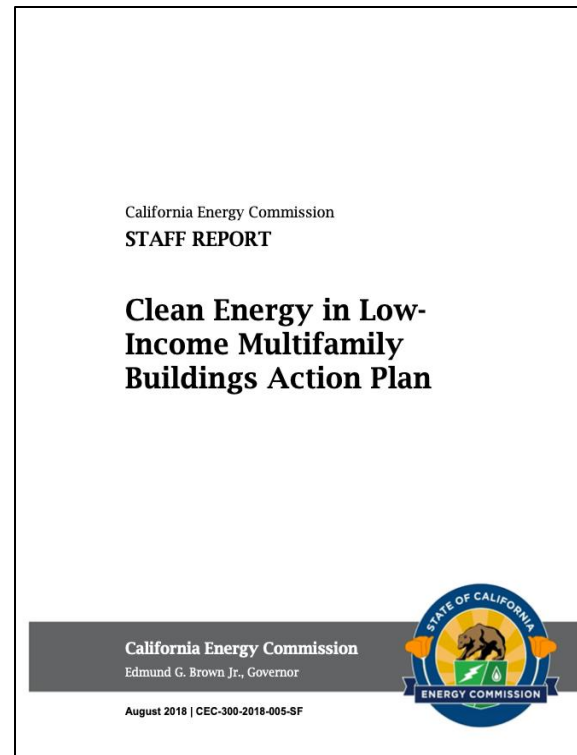
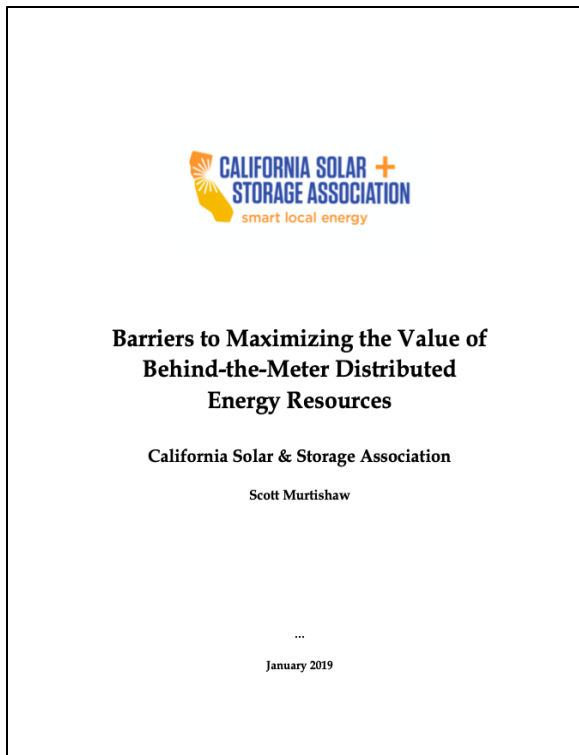
Source: E3, 2016

# Oversights within Program Oversight



# Solutions Already Exist!

Parties, including agencies, must remain accountable for results and transparently track the right metrics



# Implement and Track Existing Recommendations

Clarify that receipt of an incentive and/or financing does not automatically disqualify new or existing resources from participating in a procurement mechanism (CalSSA)

Design programs using a holistic approach that prioritizes overall energy efficiency, health, comfort, and safety (CEC)

Leverage the California Technical Forum to study market gaps and quantify building decarbonization co-benefits, including improvements to indoor air quality and workforce benefits (CEC and CPUC)

Track recommendations implementation via an advisory group (CEC and CPUC)

# Initiate Innovative Solutions and New Partnerships

Aggregate authorized incentives into a balancing account as a pool for grants to community-based organizations' projects in underserved communities

Provide technical assistance to community-based organizations to support project design and operations & maintenance

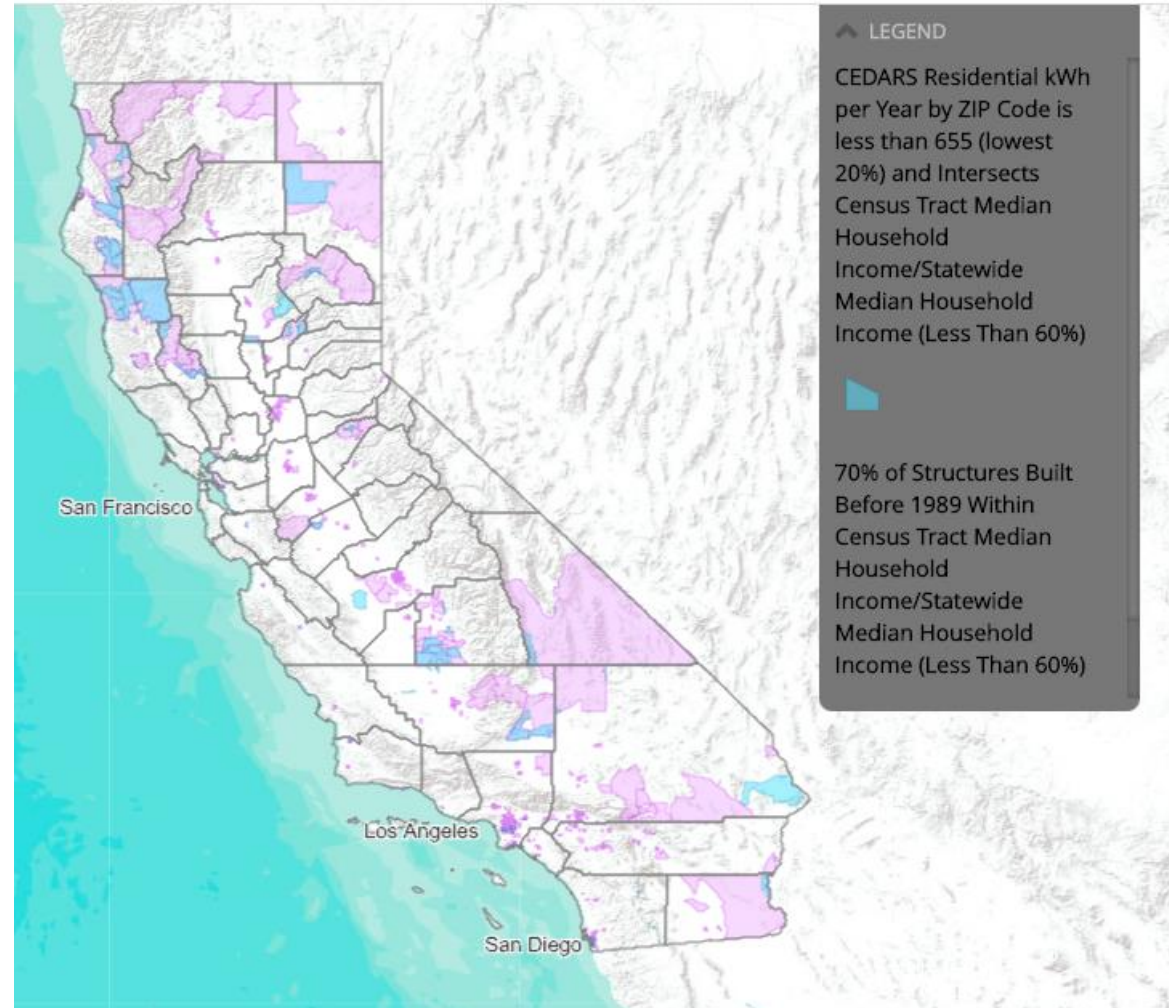
Determine project value with program participants throughout implementation and operations & maintenance

Develop a long-term framework to work with Community Development Financial Institutions to leverage public/private funding

# Target via the CEC's Energy Equity Indicator Tool

Shows census tract-level data where low levels of energy efficiency participation overlap with low levels of energy efficiency investment near low-income areas, especially where older homes exist.

***These areas had on average eight households per 1,000 participating in energy efficiency programs.***



# Thank you!

- Contact: <https://gridworks.org/>; [katiwu@gridworks.org](mailto:katiwu@gridworks.org)
- Resources:
  - *Deep Decarbonization in a High Renewables Future*, Energy and Environmental Economics (E3), [https://www.ethree.com/wp-content/uploads/2018/06/Deep\\_Decarbonization\\_in\\_a\\_High\\_Renewables\\_Future\\_CEC-500-2018-012-1.pdf](https://www.ethree.com/wp-content/uploads/2018/06/Deep_Decarbonization_in_a_High_Renewables_Future_CEC-500-2018-012-1.pdf)
  - *Clean Energy in Low Income Multifamily Buildings Action Plan*, 2018, California Energy Commission Staff Report [https://listserver.energy.ca.gov/business\\_meetings/2018\\_packets/2018-11-07/Item\\_06.pdf](https://listserver.energy.ca.gov/business_meetings/2018_packets/2018-11-07/Item_06.pdf)
  - *Barriers to Maximizing the Value of Behind-the-Meter Distributed Energy Resources*, 2019, California Solar & Storage Association (CalSSA) <https://calssa.org/press-releases/2019/1/29/california-solar-amp-storage-association-issues-white-paper-on-der-barriers>
  - *2019 California Energy Efficiency Action Plan*, California Energy Commission Staff Report [https://ww2.energy.ca.gov/business\\_meetings/2019\\_packets/2019-12-11/Item\\_06\\_2019%20California%20Energy%20Efficiency%20Action%20Plan%20\(19-IEPR-06\).pdf](https://ww2.energy.ca.gov/business_meetings/2019_packets/2019-12-11/Item_06_2019%20California%20Energy%20Efficiency%20Action%20Plan%20(19-IEPR-06).pdf)
  - California Energy Commission Energy Equity Indicators (see maps and geospatial information) <https://www.energy.ca.gov/rules-and-regulations/energy-suppliers-reporting/clean-energy-and-pollution-reduction-act-sb-350-3>

The background features a light gray grid pattern with several faint, stylized power line towers. The Recurve logo is centered at the top, with the tagline 'SHAPE THE FUTURE OF ENERGY' below it. A series of colorful, curved lines in shades of blue, purple, red, and orange sweep across the bottom half of the slide, creating a sense of motion and energy.

**RECURVE**

SHAPE THE FUTURE OF ENERGY

# Decarbonization Incentives

D.20-03-027 Workshop Hosted by the  
California Public Utilities Commission



# The Total Resource Cost Test Disincentivizes Co-Funding

## Two Residential Programs in PG&E’s 2017 Portfolio<sup>1</sup>:

| Program | \$ Net Private Invest. per \$ Program Spend | \$ Benefits* per \$ Program Spend |
|---------|---|-----------------------------------|
| A       | \$2.85                                      | \$1.56                            |
| B       | \$0.03                                      | \$0.68                            |

\*Utility Avoided Costs

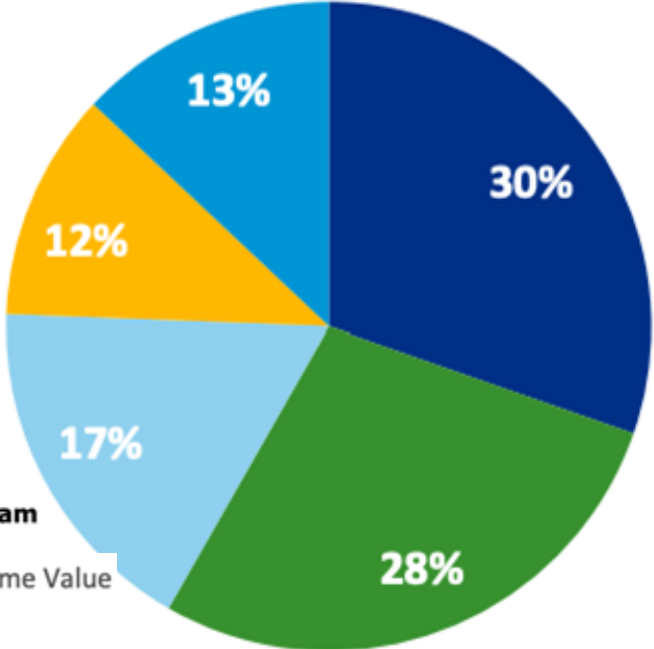


Figure 5-15. Point allocation for benefits experienced on the HUP/AHUP program

■ Increase Comfort ■ Reduce Bill ■ Save Energy ■ Help Environment ■ Home Value

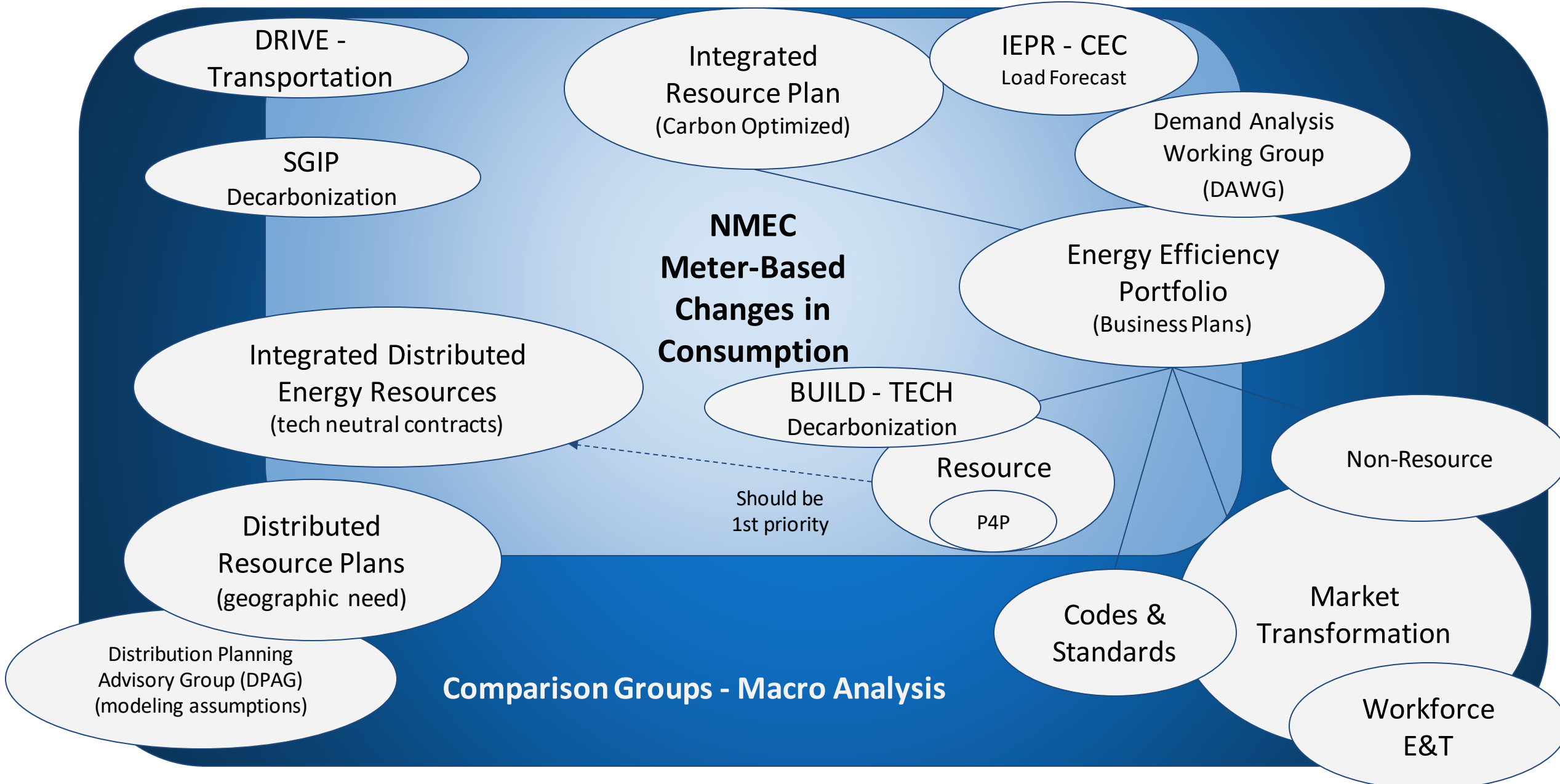
Which program is more cost-effective?

Impact Evaluation Report: Home Upgrade Program – Residential Program Year 2017, DNV GL, 2019.

A = Advanced Home Upgrade  
 B = Residential Energy Fitness

<sup>1</sup>Data from PG&E’s 2017 CEDARS Annual Filing

# Siloed Regulations & Programs

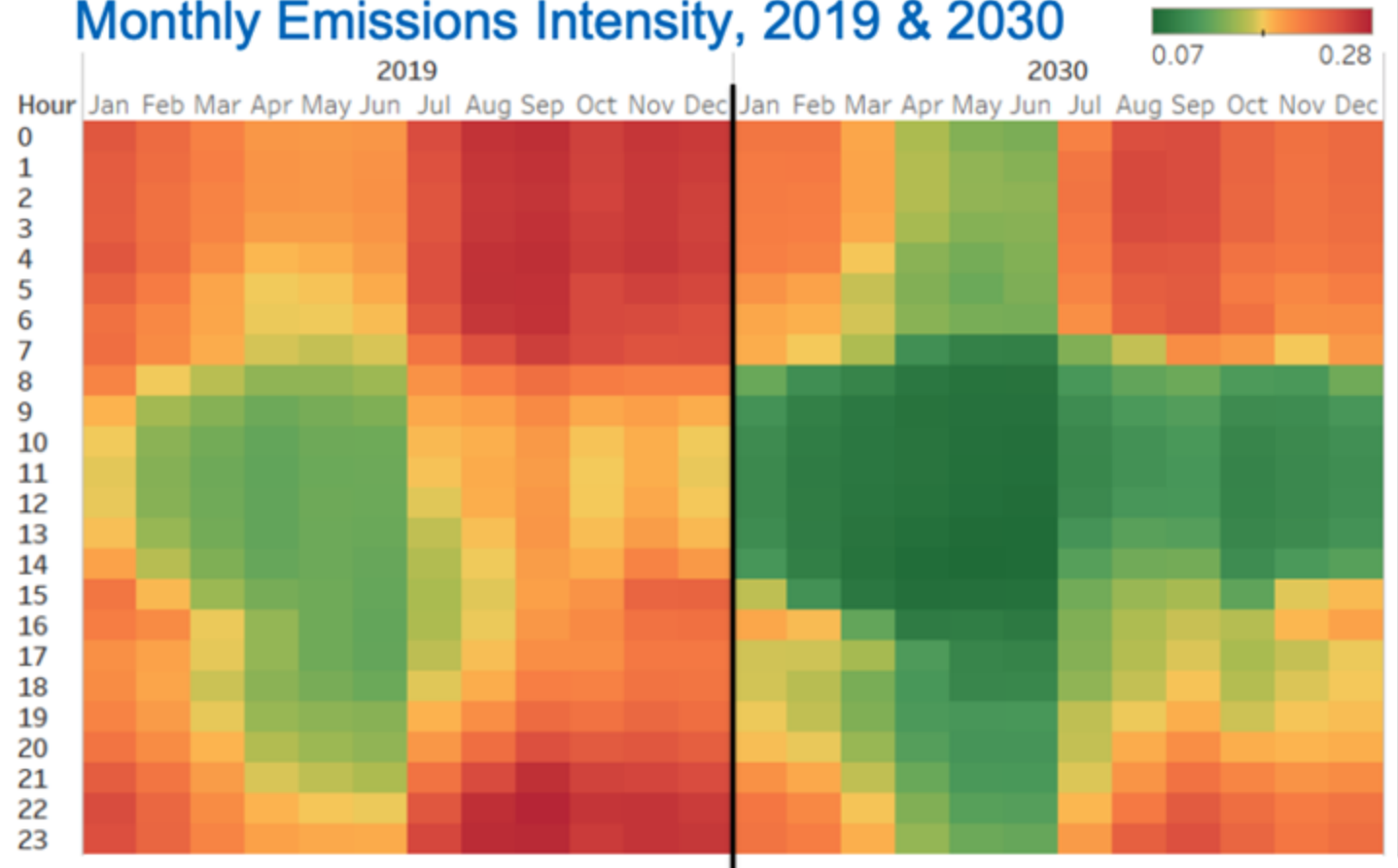




Normalized  
Metered  
Energy  
Consumption

# Electricity CO<sub>2</sub> Intensity

Monthly Emissions Intensity, 2019 & 2030



# Framework & Tools Already Available



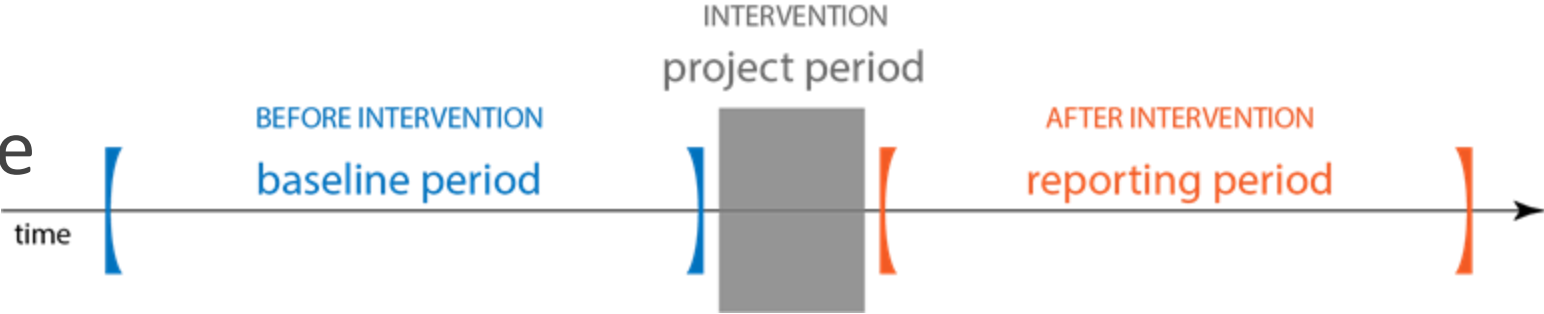
- Standard M&V Calculation Methods
- Monthly, Daily, and Hourly
- Public Stakeholders Empirical Process
- [www.CalTRACK.org](http://www.CalTRACK.org)



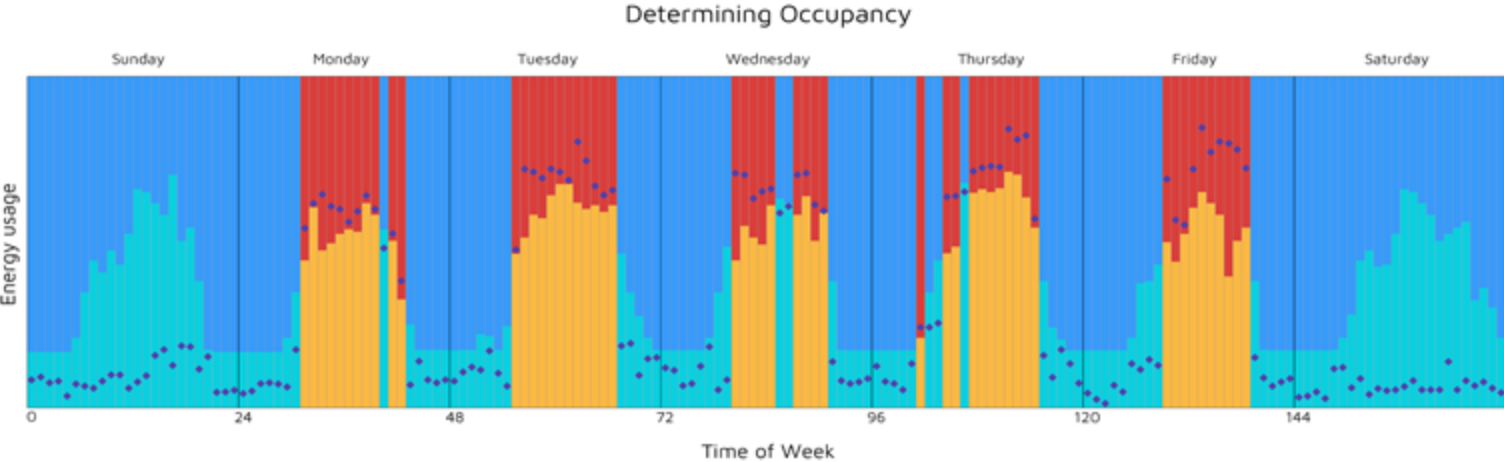
- Python CalTRACK Engine
- Open Source [Apache 2.0](https://www.apache.org/licenses/LICENSE-2.0)
- How It Works:  
<https://www.lfenergy.org/projects/openeemeter/>
- Code Repo: <https://goo.gl/qFdW4P>

RECURVE

# Technology Agnostic Change In Consumption

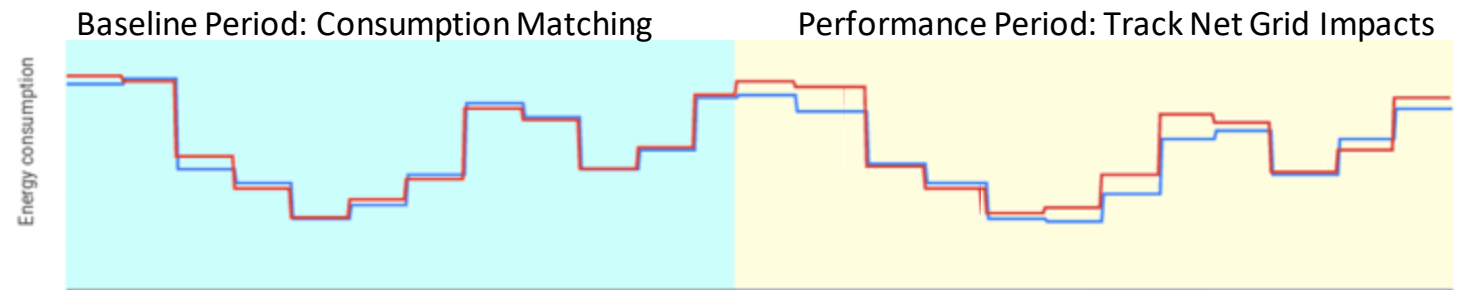
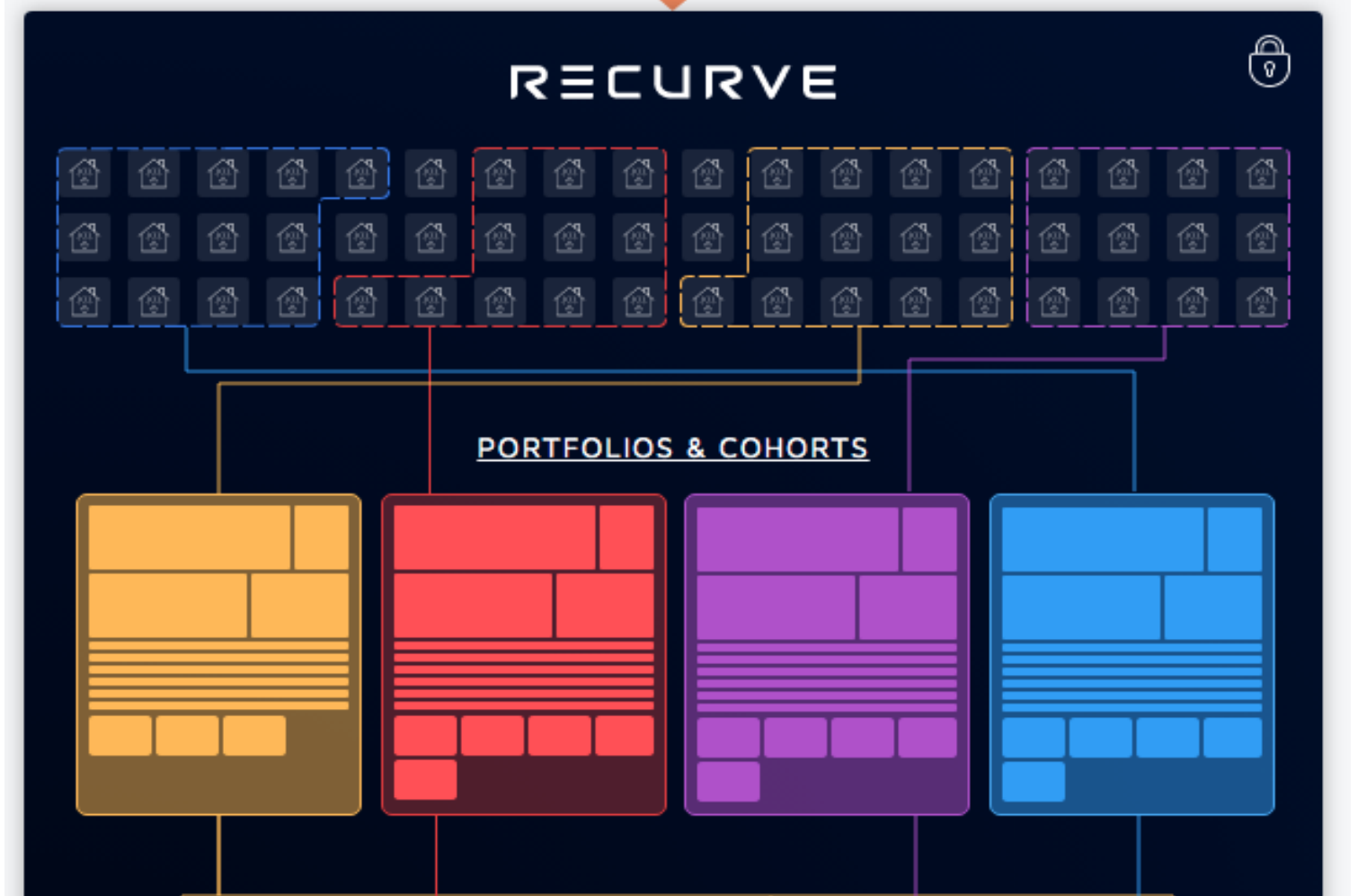


# CalTRACK Hourly Time of Week Temperature Model



# Comparison Groups Enable System Analysis

RECURVE

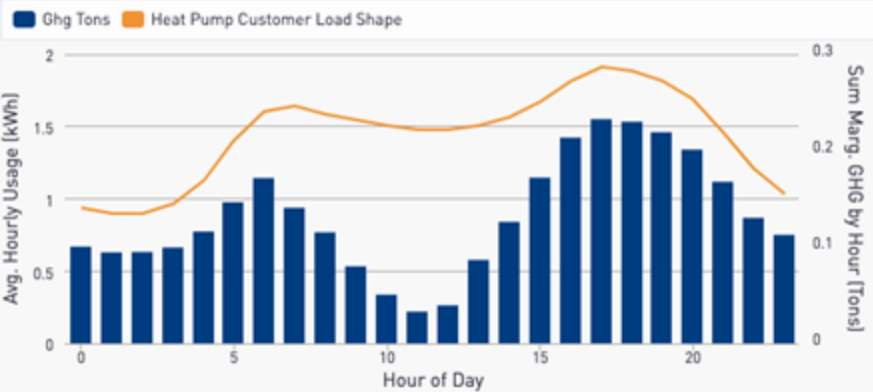


# Building Electrification and Hourly Carbon Accounting

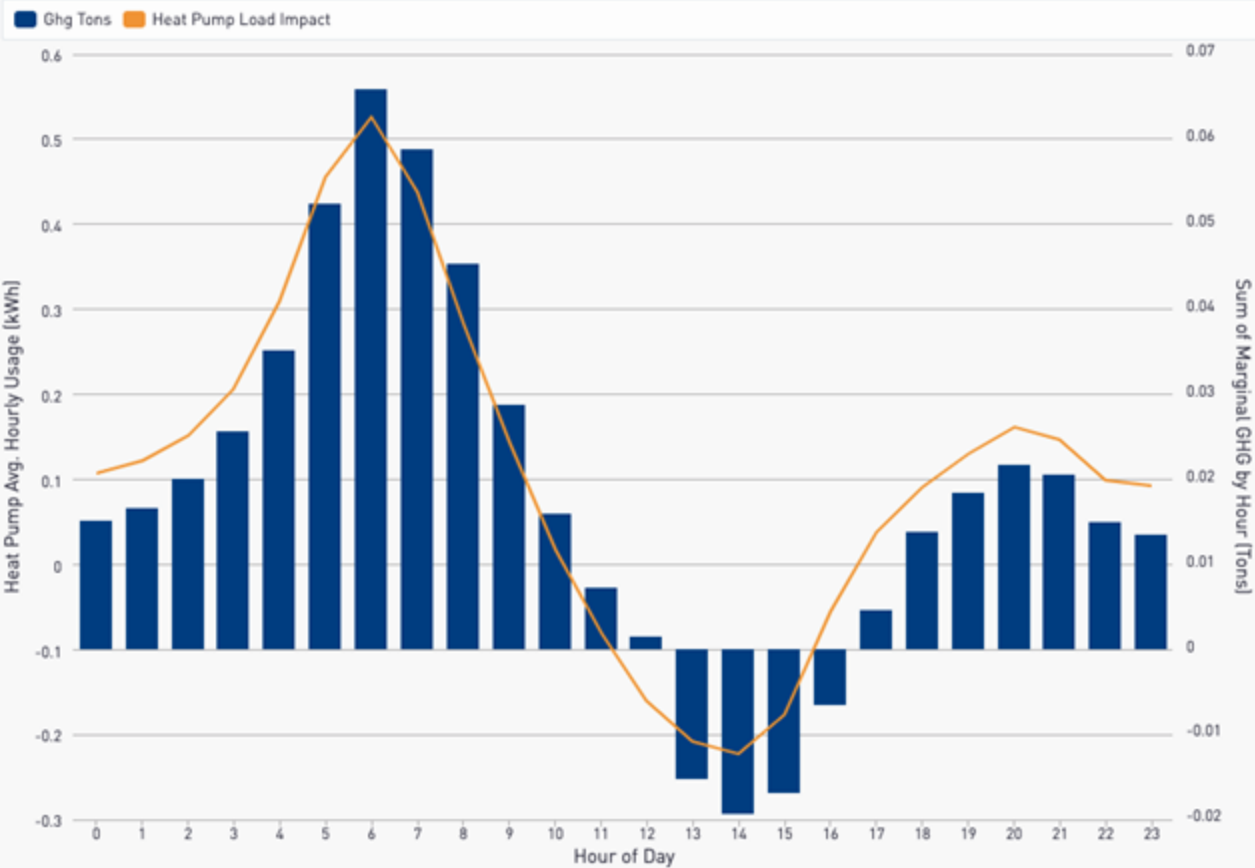
## Heat Pump Marginal GHG Impacts



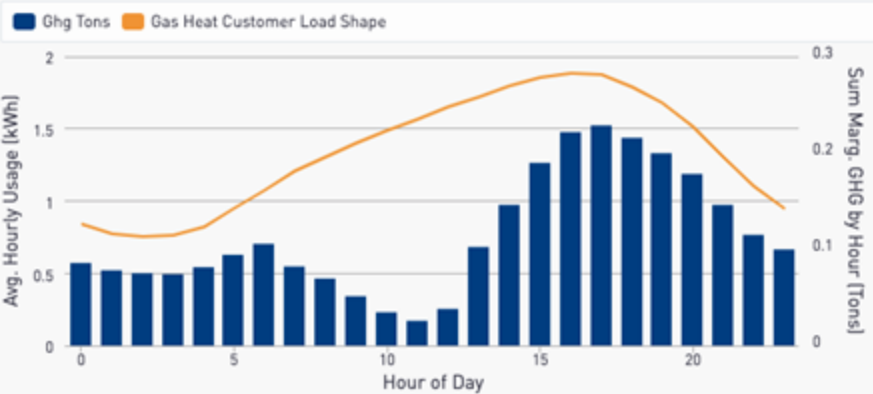
Avg. Res. Heat Pump Customer 2025 Marginal GHG Forecast



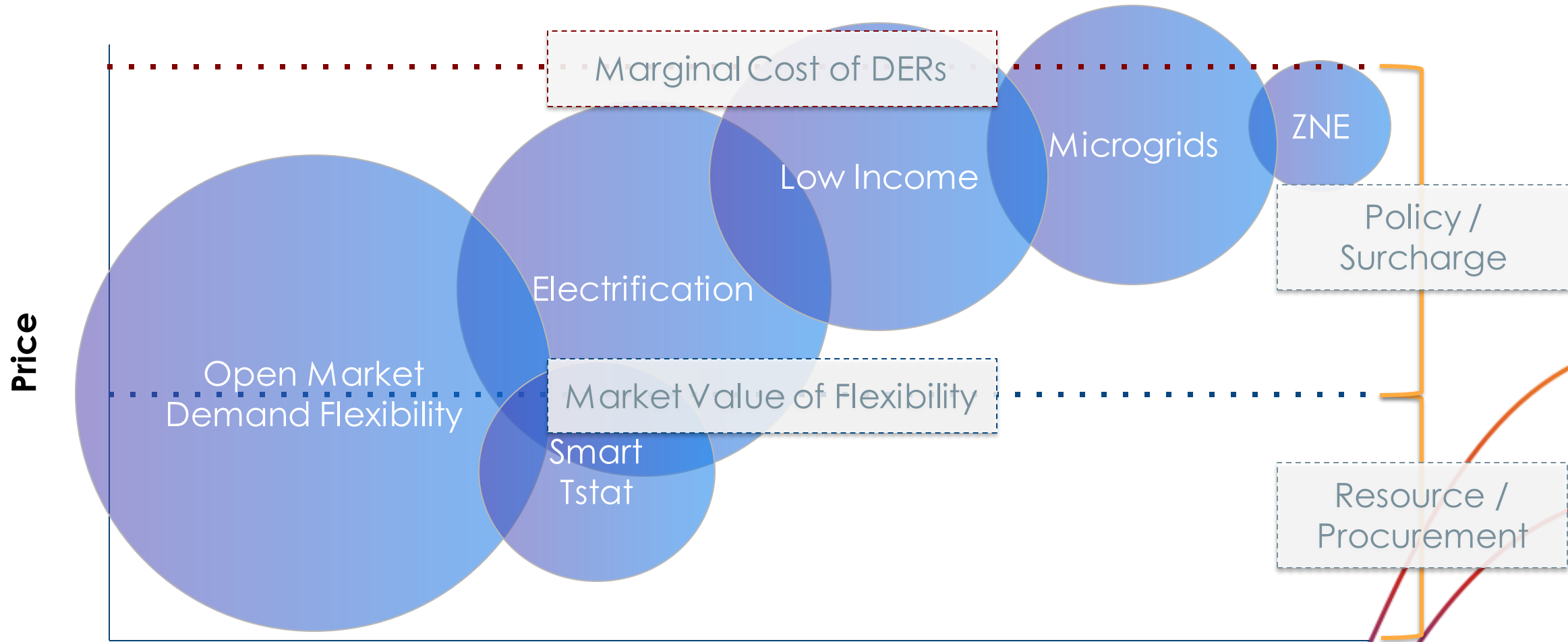
Avg. Res. Isolated Heat Pump 2025 Marginal GHG Impact



2025 Avg. Res. Gas Heating Customer 2025 Marginal GHG Forecast

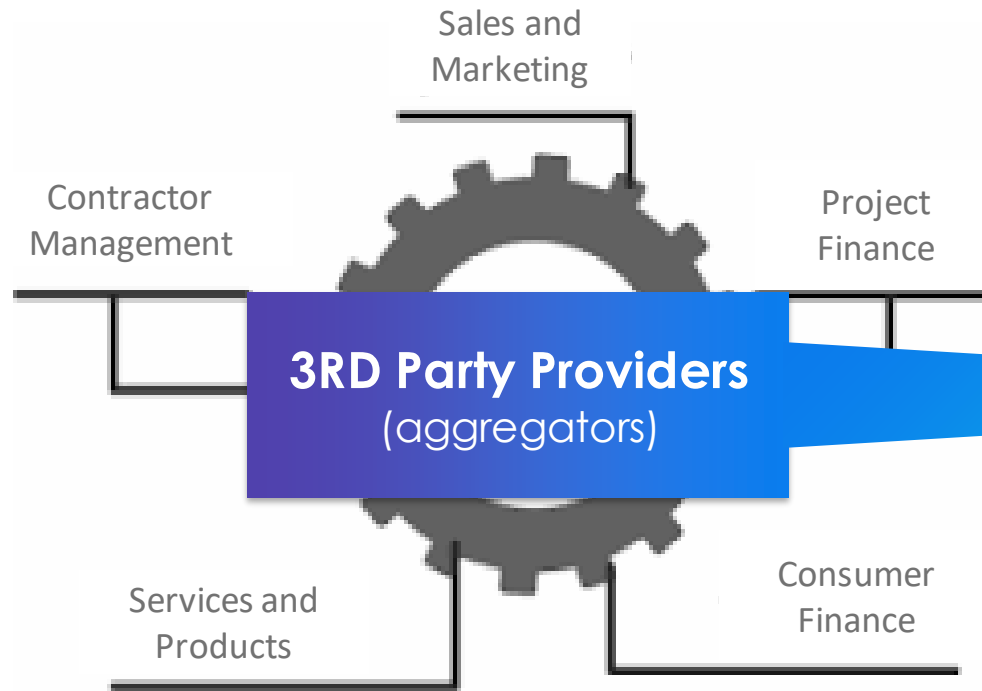


# Program Design → Market Design

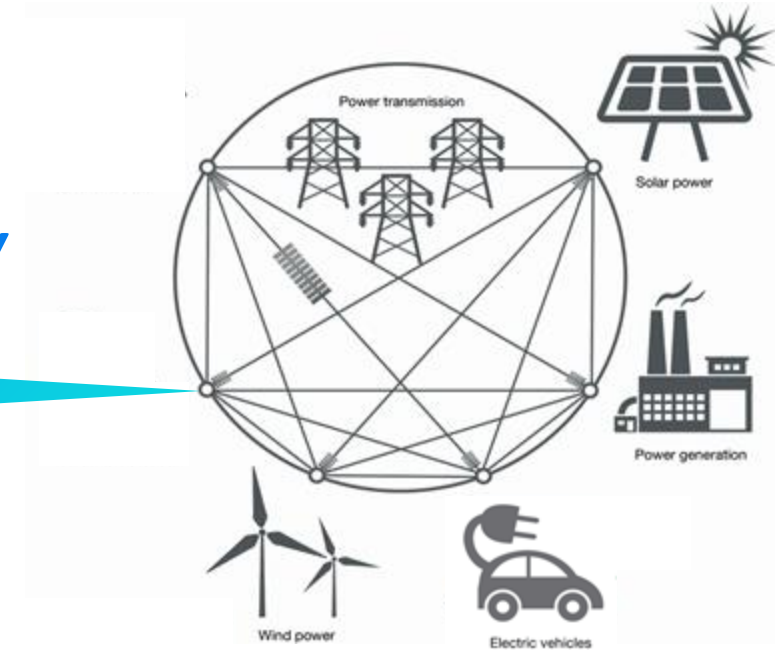




# Market-Based Decarbonization



**DEMAND FLEXIBILITY**



**Carmen Best**  
Director of Policy & Emerging Markets  
[carmen@recurve.com](mailto:carmen@recurve.com)

Savings Comfort Health





Brewery Blocks, Portland, OR  
Photo: Gerding Edlen Development


**nbi** new buildings  
institute

# CPUC Incentive Layering Workshop

June 30, 2020

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# New Buildings Institute

The background of the slide features a rooftop solar panel array in the foreground, with a city skyline, including a prominent domed building, visible in the distance under a clear sky.

**Vision:** We envision a transformed built environment that is carbon-free, sustainable, and energy-efficient and supports thriving economies that benefit all people and the planet.

**Mission:** We push for better buildings that achieve zero energy, zero carbon, and beyond – through research, policy, guidance, and market transformation – to protect people and the planet.

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# Program Areas

NBI works to make buildings more efficient. We shape a new energy future with innovation, research, design guidance, and advanced building policy.

- **Getting to Zero Leadership**  
Driving scale in zero energy and zero carbon buildings
- **Building & Program Innovation**  
Best practices in new and existing buildings
- **Advancing Codes & Policy**  
Continuous code and policy innovation

# Policy Leadership



## AB 32

Requires California to reduce its GHG emissions to 1990 levels by 2020 — a reduction of approximately 15 percent below emissions expected under a “business as usual” scenario.

## AB 3232

*...”assess the potential for the state to reduce the emissions of greenhouse gases in the state’s residential and commercial building stock by at least 40 percent below 1990 levels by January 1, 2030.”*

## SB 350

*(1) To increase from 33 percent to 50 percent, the procurement of our electricity from renewable sources.*

*(2) To double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.*

## SB 1477

Article 12. Building Initiative for Low-Emissions Development (BUILD) Program

Article 13. Technology and Equipment for Clean Heating (TECH) Initiative

## EO B-55-18

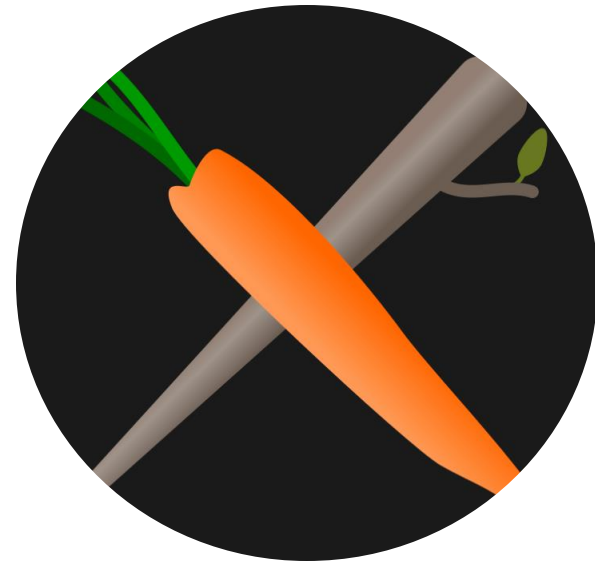
A new statewide goal is established to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This goal is in addition to the existing statewide targets of reducing greenhouse gas emissions.



Incentives



Regulations



Rates



San Jose Mayor Liccardo announcing Decarbonization Reach Code

# Northern California Jurisdictions with Decarbonized Reach Code

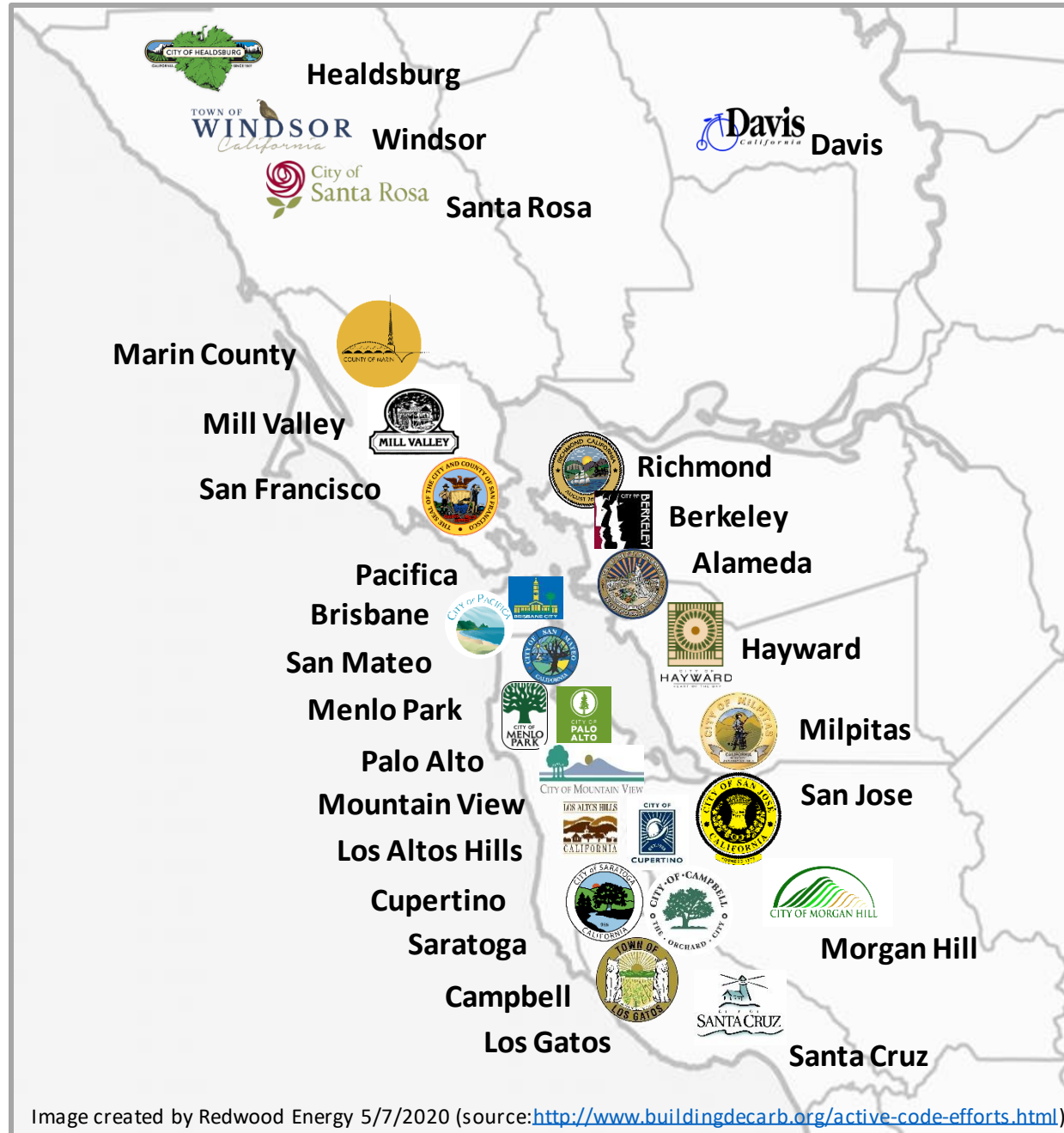


Image created by Redwood Energy 5/7/2020 (source: <http://www.buildingdecarb.org/active-code-efforts.html>)





# Incentive “Layering”

- **Double-dipping: Taking advantage of multiple financial incentives offered by multiple programs for undertaking only one activity.**
- Programs should be **designed to eliminate potential double-dipping** by program participants into more than one ratepayer- or taxpayer-funded public purpose program
- The risk of abuse can be minimized through careful participant tracking and coordination among programs
- Customers accepting financial incentives through any program approved by the Commission should be required to acknowledge the source of funds by signing an affidavit or other paperwork **declaring that they have received no funds for the same activity from another program or source**



Attachment 1

## ENERGY EFFICIENCY POLICY MANUAL

Version 1  
Prepared by the Energy Division  
October 2001

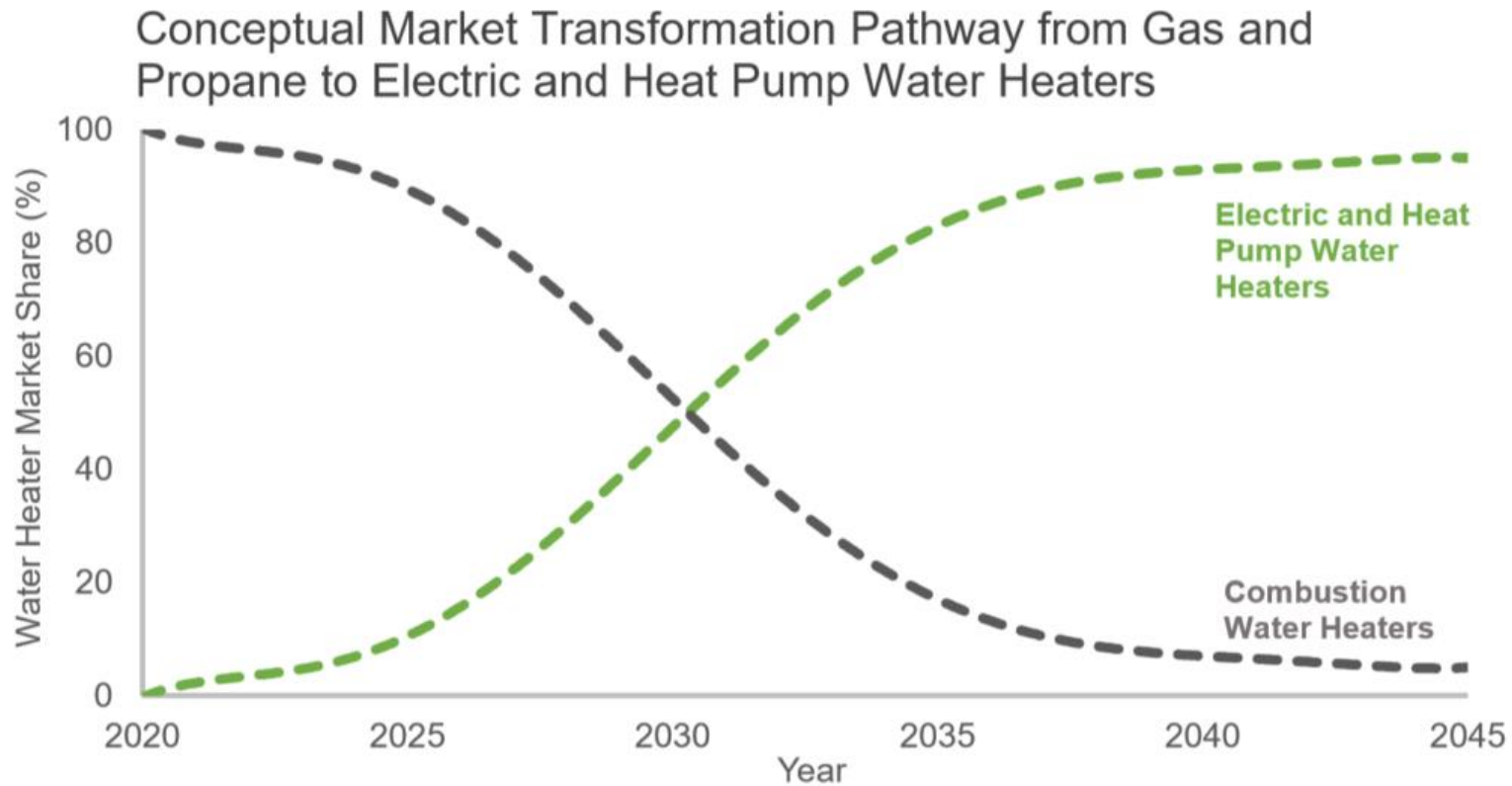
Draft: November 29, 2001

1

CPUC

# Advanced Water Heating Initiative

~13.5 million water heaters in CA, ~95% gas/propane



# HPWH Program Landscape

Content newly input/edited by nbi & to be reviewed by Column B org

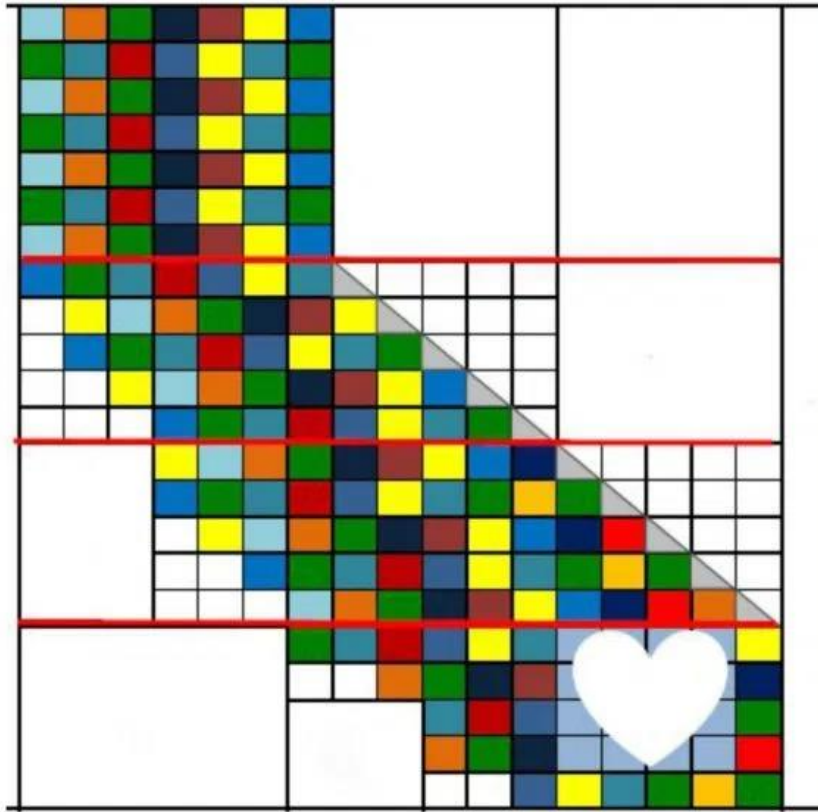
| Org Type               | Org Name                    | Program/ Initiative | Program Type          | New Construction (NC) or Existing Buildings (EB) | Program Type | Pilot?            | Gas or Electric 2 Electric | Incentive Structure (\$)  | 2020 Forecasted Installs | 2019 Actual Installs | Unit/ Home Upgrade | Market Segment               |
|------------------------|-----------------------------|---------------------|-----------------------|--|--------------|-------------------|----------------------------|---|--------------------------|----------------------|--------------------|------------------------------|
| CA Codes               | T24                         | Regulation          | -                     | NC   | -            | -                 | E2E                        | -   | ~10000                   | -                    | -                  | Residential                  |
| Utility                | PG&E                        | Program             | Downstream            |  | EE           | N                 |                            | \$300   |                          |                      | Unit               | Residential                  |
| Utility                | PG&E                        | Program             | Downstream            |  |              | N                 |                            | \$500 (T)   |                          |                      | Unit               | Commercial                   |
| Utility                | PG&E                        | Program             | Downstream            |  |              | N                 |                            | \$12,500 E, \$7,500 Adv   |                          |                      | Home               | Residential                  |
| Utility                | SCE                         | Program             | Downstream            | EB   | EE           | N                 |                            | \$500   |                          |                      | Unit               | Residential                  |
| Utility                | SCE                         | Program             | Downstream            | EB   | EE           | N                 |                            | \$500   |                          |                      | Unit               | Multifamily                  |
| Utility                | SCE                         | Program             | Downstream            | NC   |              | N                 |                            | \$3000-\$6500   |                          |                      | Home               | Residential                  |
| Utility                | SCE                         | Program             | Midstream             | EB   | EE           | N                 | G2E & E2E                  | Est. \$750 to \$1,000   |                          |                      | Unit               | Residential                  |
| Utility                | SCE                         | Program             | Upstream              |  | PLA          | N                 |                            | \$1,000   |                          |                      | Both               | Residential                  |
| Utility                | SCE                         | Program             |                       | EB   | ESA          | Y/Planning        |                            |   | 1700                     |                      | Unit               | Residential                  |
| Utility                | SCE                         | Program             |                       | NC   | ESA          | Y/Planning        |                            |   | 3500                     |                      | Unit               | Residential                  |
| Utility                | SMUD                        | Program             | Downstream            | EB   |              | N                 |                            | \$1,200   |                          |                      | Unit               | Multifamily/<br>Food Service |
| Utility                | SMUD                        | Program             | Midstream             | EB   |              | N                 | G2E                        | \$3,000   | 600                      |                      | Unit               | Residential                  |
| Utility                | SMUD                        | Program             | Midstream             | EB   |              | N                 | E2E                        | \$1,000   | 100                      |                      | Unit               | Residential                  |
| Utility                | SMUD                        | Program             | Downstream            | EB   |              | N                 | G2E                        | \$3,000   | 300                      |                      | Unit               | Residential                  |
| Utility                | SMUD                        | Program             | Downstream            | EB   |              | N                 | E2E                        | \$1,000   | 0                        |                      | Unit               | Residential                  |
| Utility                | SMUD                        | Program             | New Multifamily       | NC   |              | N                 | G2E                        | \$1,750   | 0                        |                      | Unit               | Multifamily                  |
| Utility                | SMUD                        | Program             | Central HPWH          | Both   |              | N                 | G2E                        | varies  | 0                        |                      | Building           | Multifamily                  |
| Utility                | SCP                         | Program             | Downstream            |  |              | N                 |                            | \$12,500 E, \$7,500 Adv   |                          |                      | Home               | Residential                  |
| Utility                | SDG&E                       | Program             | Downstream (in-store) |  |              | N                 |                            | \$350 E2E   |                          |                      | Unit               | Residential                  |
| City                   | Palo Alto                   | Program             | Downstream            |  |              | Y                 |                            | \$1,500   |                          |                      | Unit               | Residential                  |
| CCA                    | Silicon Valley Clean Energy | Program             | Downstream            |  |              | Y (limited spots) |                            | \$2000 base<br>+1500 for DR-ready<br>+1500 for low income<br>+2500 for 200A Service Panel upgrade |                          |                      | Unit               | Residential                  |
| City                   | San Jose                    | Program             | Downstream            |  |              | Y (limited spots) |                            | \$6,000 IQ  |                          |                      | Unit               | Residential                  |
| County                 | Marin                       | Program             | Downstream            |  |              | N                 |                            | \$1,000, \$2,000 IQ   |                          |                      | Unit               | Residential                  |
| Public Agency funded w | BayREN (StopWaste)          | Initiative          | Midstream             | EB   |              | -                 | G2E                        | \$1,000   | 500                      |                      | Unit               | Residential                  |
| Public Agency funded w | BayREN (StopWaste)          | Initiative          | Central HPWH          | EB   |              | -                 |                            | family installations through BAMBE program  | 250                      |                      | Upgraded unit      | Residential                  |



Photo by Valeria Boltneva from Pexels

## MY CALIFORNIA HOME

Pattern by: Beth Bryant



# California Patchwork Quilt Pattern

100% of sale proceeds  
go to Wildfire Relief Fun

<https://www.diaryofaquilter.com/2018/11/free-motion-quilting-at-home.html/california-patchwork-pattern>



Try Solar Calculator

DSIRE Insight



# Database of State Incentives for Renewables & Efficiency<sup>®</sup>

Find Policies & Incentives Near You

Zip Code

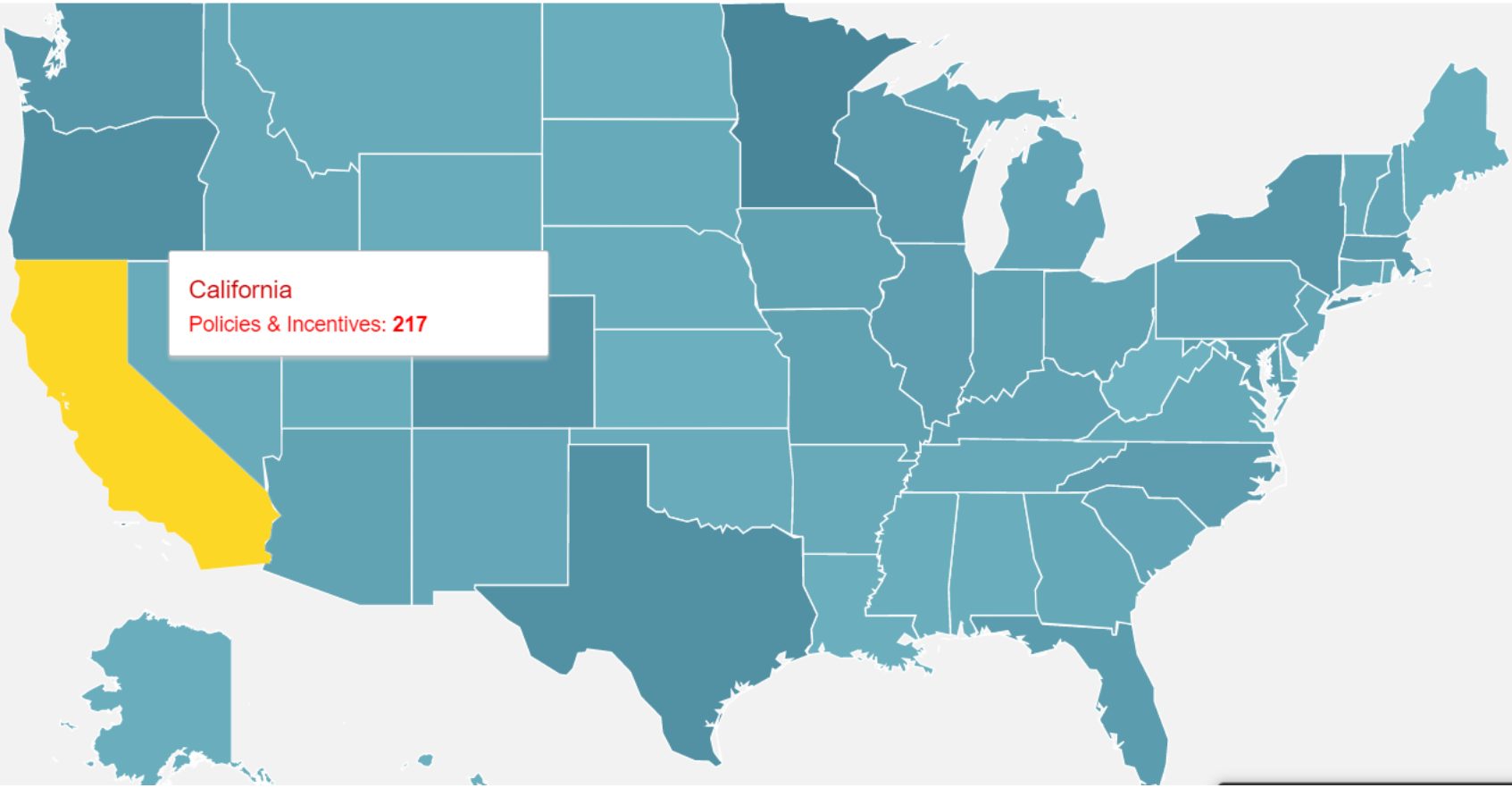
Search



Please enter your email address to be added to our mailing list.

hotjar

Next >







Search by type, brand, model... 

Sign in



PG&E does not profit from the retail sales revenue of the products on this site. 


# PG&E Marketplace

Search all major retailers at once and find energy efficient products.

Search by type, brand, model...

Search



Thermostats  




Connected Home Applications



Connected Homes



Gas Water Heaters



Electric Water Heaters  




Portable Power Stations



Explore More Categories



Search by type, brand, model...

Sign in



## Top picks for you

We analyze product data daily across major retailers to provide you with highly efficient recommendations.

### BEST OVERALL

99



Rheem XE50T10HD50U1  
Rheem XE50T10HD50U1 50 gal.  
Electric Heat Pump

\$300 rebate



\$1,299

Compare

[See offer](#)

### LOWEST PRICE

99



Rheem PROPH50T2RH350DCB  
Rheem PROPH50 T2 RH350  
DCB

Up to a \$300 rebate



\$1,455

Compare

[See offer](#)

### MOST EFFICIENT

100



Rheem PROPH65T2RH350DCB  
Rheem PROPH65 T2 RH350  
DCB

no rebate



\$1,825

### Top picks for you

We analyze product data daily across major retailers to provide you with highly efficient recommendations.

#### BEST OVERALL



Rheem PROPH80T2RH350DCB  
Rheem PROPH80 T2 RH350 DCB



\$2,145

Compare

See offer

#### MOST EFFICIENT



Rheem PROPH65T2RH350DCB  
Rheem PROPH65 T2 RH350 DCB



\$1,825

#### LOWEST PRICE



Atmor AT-905-11TB  
Atmor AT-905-11TB 12" Digital Thermostatic

★★★★☆ (71)



\$145

Compare

See all 3 offers

with pickmysolar



Explore Whole Home Battery Backup Incentives Just for You

Shop Here

with pickmysolar



## Top picks for you

We analyze product data daily across major retailers to provide you with the best products for your needs.

### BEST OVERALL ①



Rheem PROP80T2RH350D  
Rheem PROP80 T2  
DCB



Compare

### MOST EFFICIENT ①



Rheem PROP65T2RH350D  
Rheem PROP65 T2  
DCB



Powered by  
Enevee

## Rebate Fast Track

Before submitting an application please review and understand the [Terms and Conditions](#) for rebates offered by Southern California Edison. You may be eligible for other rebates, not offered by SCE, view the links below for details.

- [SoCalGas \\$50 Smart Thermostat Rebate](#)
- [South Coast AQMD Residential Lawnmower Rebate](#)
- [South Coast AQMD Commercial Lawn & Garden Incentive and Exchange Program](#) \*For professional landscapers/gardeners, local government, nonprofits and schools/colleges

Select your eligible product



Explore Whole Home Battery Backup Incentives Just for You

[Shop Here](#)

with [pickmysolar](#)



Nominal Capacity (Gallons): 50

[Clear All](#)

Sort by: **Featured**



### Availability

FREE Pickup Today at San Francisco Lowe's [\(change store\)](#)

### Fuel Source

Natural gas (18)  
 Liquid propane (1)

### Nominal Capacity (Gallons)

30 (4)  
 40 (24)  
 50 (19)  
 74 (3)  
 75 (2)

Compare



**A.O. Smith** Signature Select 50-Gallon Tall 9-Year Limited Natural Ga...

Item: #962543  
Model: #G9-T5040NVR

★★★★★ (526)

**\$531.50**

Compare



**A.O. Smith** Signature Premier 50-Gallon Short 6-Year Limited Natural Ga...

Item: #816136  
Model: #G6-PVS5040NV

★★★★☆ (168)

**\$1,008.16**

Compare



**A.O. Smith** Signature 50-Gallon Tall 6-Year Limited Natural Gas Water Heater

Item: #962540  
Model: #G6N-T5040NVR

★★★★☆ (380)

**\$476.22**

Compare



**A.O. Smith** Signature 50-Gallon Tall 6-Year Limited Liquid Propane Water...

Item: #962541  
Model: #G6N-T5040PVR

★★★★☆ (41)

**\$620.08**

Nominal Capacity (Gallons): 50.0 (x)

[Clear All](#)

Sort by: **Featured**

**Availability**

FREE Pickup Today at San Francisco Lowe's [\(change store\)](#)

**Nominal Capacity (Gallons)**

- 0.5 (1)
- 1 (1)
- 12 (1)
- 19 (1)
- 2.5 (2)

[+ Show More](#)

**Water Heater Style**

- Short (3)

Compare



**A.O. Smith** Signature 50-Gallon Tall 6-year Limited 4500-Watt Double Elem...

Item: #816159  
Model: #E6-50H45DV

★★★★★ (1079)

**\$335.95**

Compare



**A.O. Smith** Signature Premier 50-Gallon Short 12-year Limited 5500-W...

Item: #1142384  
Model: #EG12-50R55DV

★★★★★ (333)

**\$533.80**

Compare



**A.O. Smith** A. O. Smith 50-Gallon Short 6-Year 4500-Watt Double Elem...

Item: #2483230  
Model: #E6-50R45D TTP

☆☆☆☆☆

[Write a review](#)

**\$419.05**

Compare



**A.O. Smith** A. O. Smith 50-Gallon Tall 6-Year 4500-Watt Double Elem...

Item: #2483229  
Model: #E6-50H45D TTP

☆☆☆☆☆

[Write a review](#)

**\$418.74**



Residents

Multifamily

Workforce

Business

Government

About

Local Governments Empowering Our Communities

# Heat Pump Water Heater (HPWH) Incentive for Contractors

BayREN and participating Bay Area electricity suppliers are offering an incentive up to \$1,000—paid directly to licensed contractors—for replacing their customers’ natural gas or propane residential water heaters with high efficiency heat pump water heaters (HPWH).

You can browse Qualified Products by [clicking here](#).

Participation Agreement >

Training & Events >

**BayREN Heat Pump Water Heater Incentive for Contractors**

BayREN and participating Bay Area electricity suppliers are offering an incentive up to \$1,000—paid directly to licensed contractors—for replacing their customers’ natural gas or propane residential water heaters with high efficiency heat pump water heaters.

**Contractors**

Replace your customer's non-electric water heater with a heat pump water heater and get **\$1,000 cash back**

**Now is the time to switch**  
Heat pump water heaters can cost more than conventional gas or electric water heaters, but the energy savings saves money over time. And with the BayREN \$1,000 incentive for contractors—along with rebates and credits available for homeowners, including BayREN's \$1,000 Home+ incentive—there has never been a better time to switch to heat pump water heating.

**Added value for homes with solar**  
If your customer has a solar electricity system or is considering installing one, they will see even greater benefits if they switch to heat pump water heating. They are powered by electricity, so the solar electric system can be sized to produce enough electricity to offset most or all of the water heater's energy costs. For homeowners wishing to fully electrify their homes, an HPWH is a must.

**Proven technology**  
A heat pump water heater works like a refrigerator in reverse. It uses electricity and a refrigerant to take heat from the surrounding air and transfer it to the water in the tank.

**BENEFITS**  
Heat pump water heaters are highly energy efficient. Homeowners who switch from a conventional natural gas water heater to an electric heat pump water heater can:

- Save energy and money
- Reduce air pollution
- Reduce carbon emissions that contribute to climate change

**Learn more**  
[www.bayren.org/hpwh](http://www.bayren.org/hpwh)






Click on image above to download flyer.



Local Governments Empowering Our Communities

Residents

Multifamily

Workforce

Business

Government

About

# How to Enroll



## Step 1. Eligible?

Review the eligibility criteria below.  
If you meet those, move forward.



## Step 2. Agreement

Download, complete and submit  
the Contractor Participation  
Agreement.



## Step 3. Confirmation

Once your eligibility and agreement  
is confirmed, you will be enrolled,  
and a log-in link to the Incentive  
Processing Platform will be  
provided.



# BayREN Heat Pump Water Heater Incentive

## for Contractors

BayREN and participating Bay Area electricity suppliers are offering an incentive up to \$1,000—paid directly to licensed contractors—for replacing their customers’ natural gas or propane residential water heaters with high efficiency heat pump water heaters.

**Contractors**

Replace your customer's non-electric water heater with a heat pump water heater and get

**\$1,000 cash back**



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A heat pump water heater works like a refrigerator in reverse. It uses electricity and a refrigerant to take heat from the surrounding air and transfer it to the water in the tank.

Learn more  
[www.bayren.org/hpwh](http://www.bayren.org/hpwh)

### BENEFITS

Heat pump water heaters are highly energy efficient. Homeowners who switch from a conventional natural gas water heater to an electric heat pump water heater can:

- Save energy and money
- Reduce air pollution
- Reduce carbon emissions that contribute to climate change



## BAYREN HEAT PUMP WATER HEATER INCENTIVE

### Contractor Application Process:

1. Review the eligibility criteria below.
2. Go to [www.bayren.org/hpwh](http://www.bayren.org/hpwh) and complete the Contractor Participation Agreement.
3. Once enrolled, incentive processing is easy through a log-in portal.

| Program Details                  | Eligibility Criteria   |
|----------------------------------|--|
| <b>Incentive Details</b>         | <ul style="list-style-type: none"> <li>• \$1,000 per heat pump water heater installed</li> <li>• Paid directly to the participating contractor</li> </ul>  |
| <b>Contractor Eligibility</b>    | <ul style="list-style-type: none"> <li>• Must be a licensed contractor holding C-20, C-36 or General B license</li> <li>• Must complete the program participation agreement</li> </ul>   |
| <b>Site/Customer Eligibility</b> | <ul style="list-style-type: none"> <li>• The homeowner must be a current customer of one of these participating electricity suppliers (expected incentive program start date is in parenthesis):               <ul style="list-style-type: none"> <li>○ East Bay Community Energy (May 2020)</li> <li>○ MCE (May 2020)</li> <li>○ CleanPowerSF (Summer 2020)</li> </ul> </li> </ul>            |
| <b>Equipment Eligibility</b>     | <ul style="list-style-type: none"> <li>• The heat pump water heater must:               <ul style="list-style-type: none"> <li>○ Be replacing an existing natural gas or propane water heater</li> <li>○ Have a Uniform Energy Factor (UEF) of 3.1 or greater</li> <li>○ Have grid-connected capabilities</li> <li>○ Be listed on the program's Qualified Products List</li> </ul> </li> </ul> |

READY TO GET STARTED? GO TO

[www.bayren.org/hpwh](http://www.bayren.org/hpwh)





# Connect & save

Earn \$150 and save on your energy bill by signing up for the PowerMinder program.

Sign up today



\$1,667<sup>21</sup> (\$0.53 / oz)

& FREE Shipping

Pay \$138.93/month for 12 months (plus S&H, tax) with 0% interest equal monthly payments when you're approved for an Amazon Store Card

Arrives: July 9 - 17

Only 2 left in stock - order soon.

electric water heater 240v



ECOTOUCH Electric Tankless Water Heater Point-of-Use Hot Water Heater Digital Display...

★★★★☆ 348

\$118<sup>99</sup>

✓prime FREE One-Day Get it Tomorrow, Jun 28



Rheem 240V Heating Chamber RTEX-13 Residential Tankless Water Heater, GRAY

★★★★☆ 168

\$295<sup>00</sup>

✓prime FREE One-Day Get it Tomorrow, Jun 28 Only 15 left in stock - order soon.



Tankless Water Heater Electric ECOTOUCH 9KW 240V on Demand Water Heater Self-...

★★★★☆ 49

\$169<sup>99</sup> ~~\$199.99~~

✓prime FREE Delivery Wed, Jul 1

gas water heater 50 gallon na...



Bradford White BWC RE350T6-1NCWW 50GAL 240V

★★★★★ 1

\$750<sup>00</sup>

FREE Shipping



A.O. Smith XCR-50 ProMax Plus High Efficiency Gas Water Heater, 50 gal

★★★★☆ 2

\$1,159<sup>88</sup>

FREE Shipping

Only 10 left in stock - order soon.



50 gal. Residential Gas Water Heater, NG, 38000 BtuH

\$934<sup>03</sup>

FREE Shipping

Only 10 left in stock - order soon.

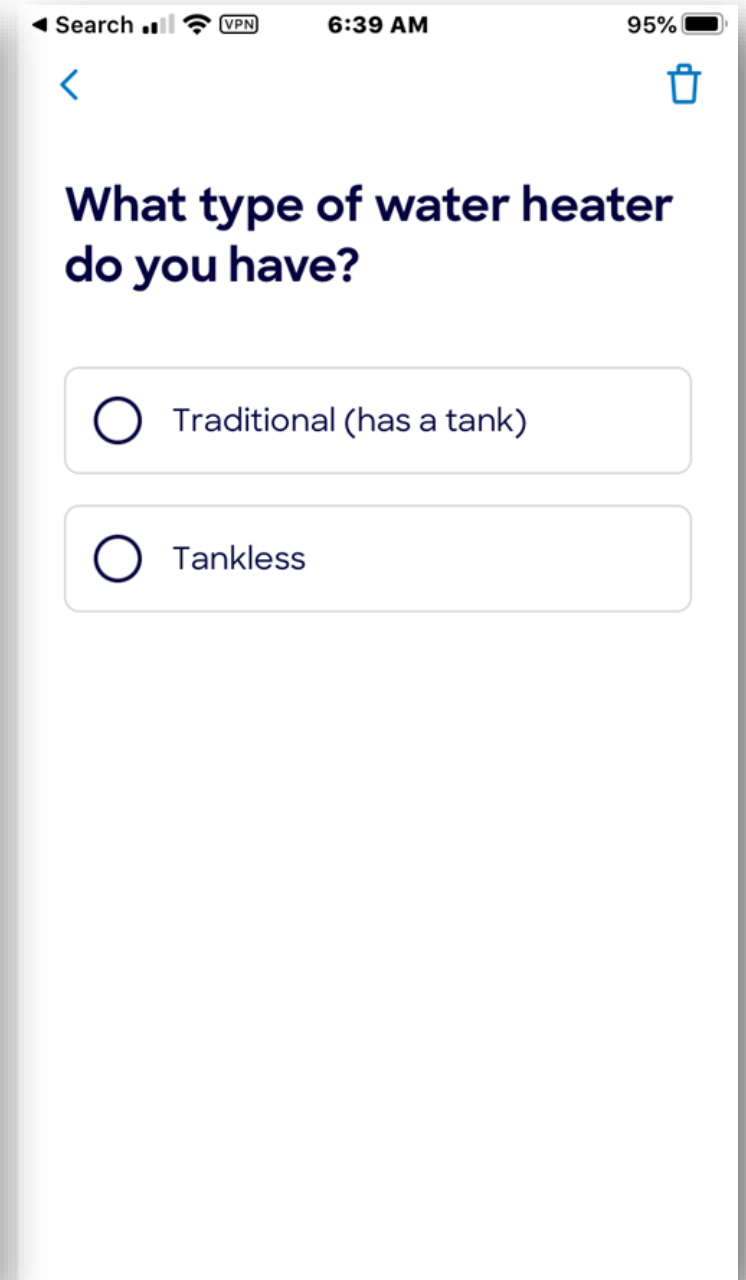
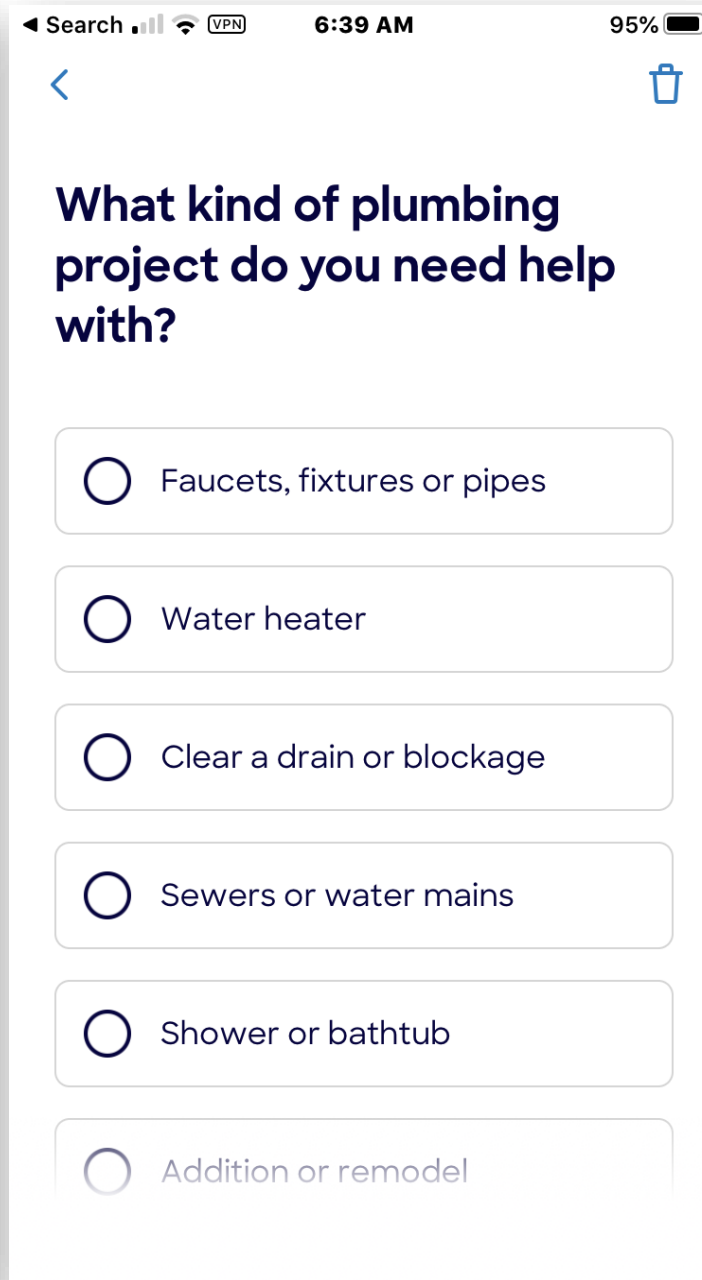
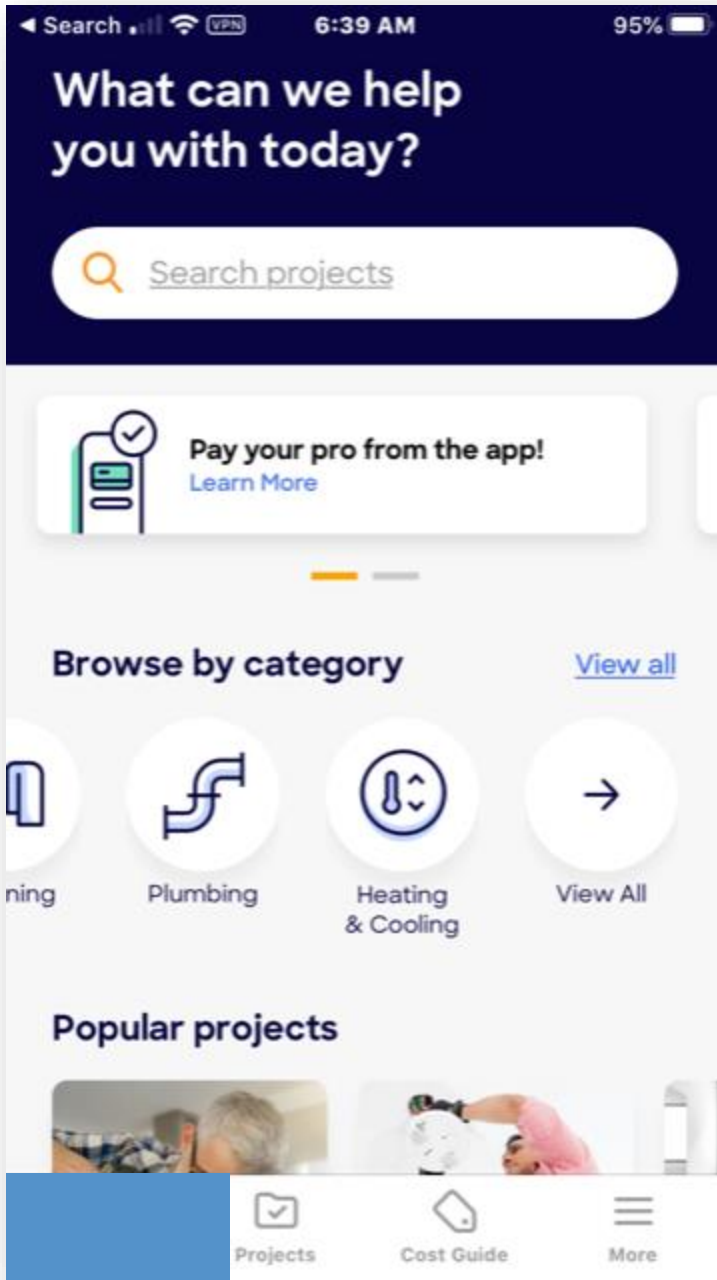


A.O. Smith GCG-50 ProMax Tall Gas Water Heater, 50 gal


★★★★☆ 7

\$770<sup>59</sup>

FREE Shipping




Search 95% 6:40 AM VPN

Water Heater - Install or Replac... 


### What's your project's ZIP Code?

ZIP Code

Next

|           |          |   |
|-----------|----------|---|
| 1         | 2<br>ABC | 3<br>DEF  |
| 4<br>GHI  | 5<br>JKL | 6<br>MNO  |
| 7<br>PQRS | 8<br>TUV | 9<br>WXYZ   |
|           | 0        |  |

Search 95% 6:40 AM VPN


Water Heater - Install or Replac... 

### Is this an emergency?

Yes

No

Search 95% 6:41 AM VPN

Water Heater - Install or Replac... 

### Project Status:

Ready to Hire

Planning & Budgeting

Search Verizon 6:41 AM 95%

Water Heater - Install or Replac...

### To be completed in:

- Timing is flexible
- Within 1 week
- 1 - 2 weeks
- More than 2 weeks

Verizon 6:41 AM 94%

Water Heater - Install or Replac...

### What is your project address?

Street Address

City  
Portland

ZIP Code  
97214

Next

Verizon 6:42 AM 94%

Water Heater - Install or Replac...

### We have matching Water Heater Installation Services in your area!

Get quotes from up to 3 prescreened p...

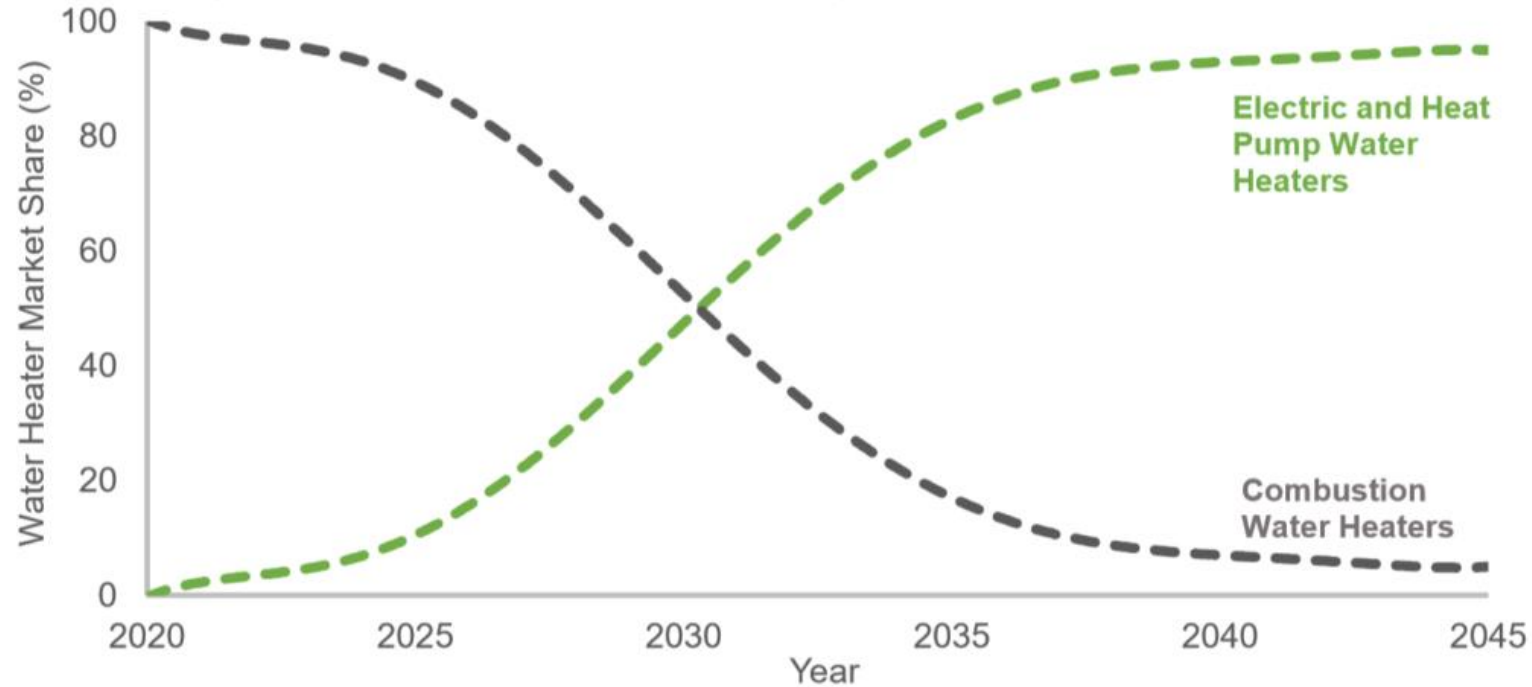
First Name

Last Name

Phone



## Conceptual Market Transformation Pathway from Gas and Propane to Electric and Heat Pump Water Heaters



13.5 million units (~90% gas), about 1 million replaced/yr.

15% = 2,025,000

2,025,000 x \$700 = \$1,417,500,000



Search ... 

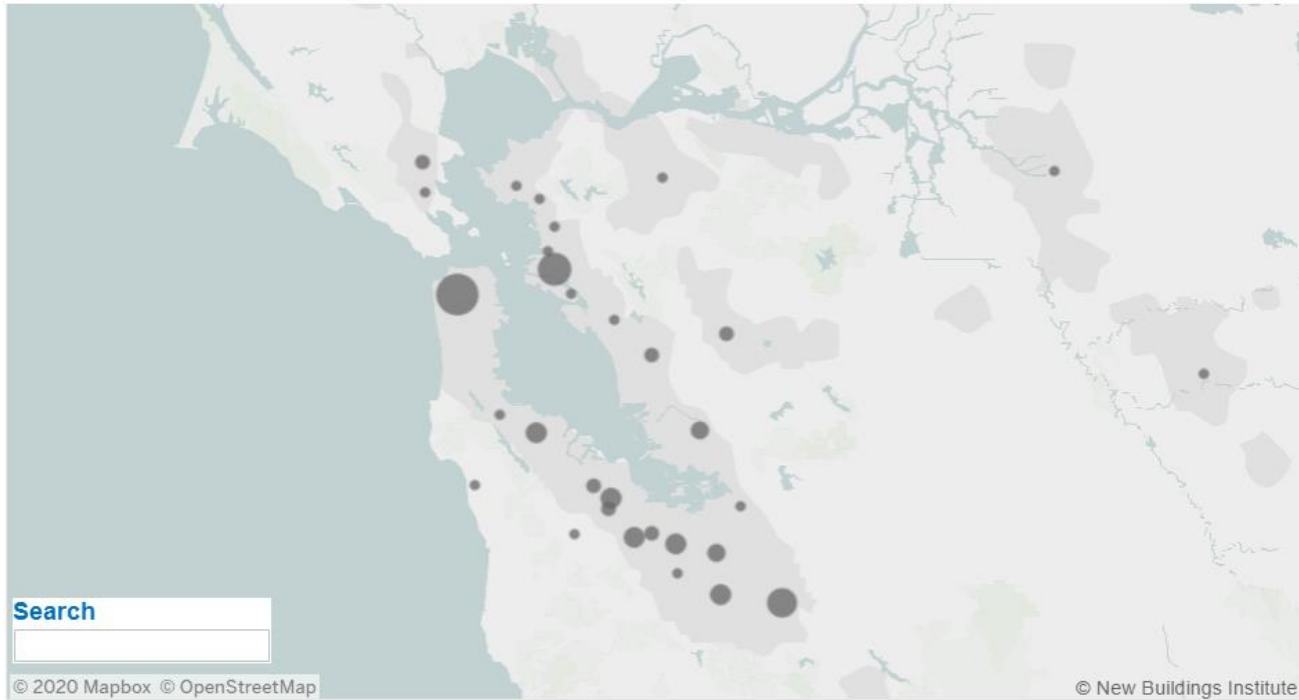
- Emerging 232
- Verified 48

State or Province

- (All)
- Alabama
- Alberta
- Arizona
- Arkansas
- British Columbia
- California
- Colorado
- Connecticut
- Delaware

Building Type

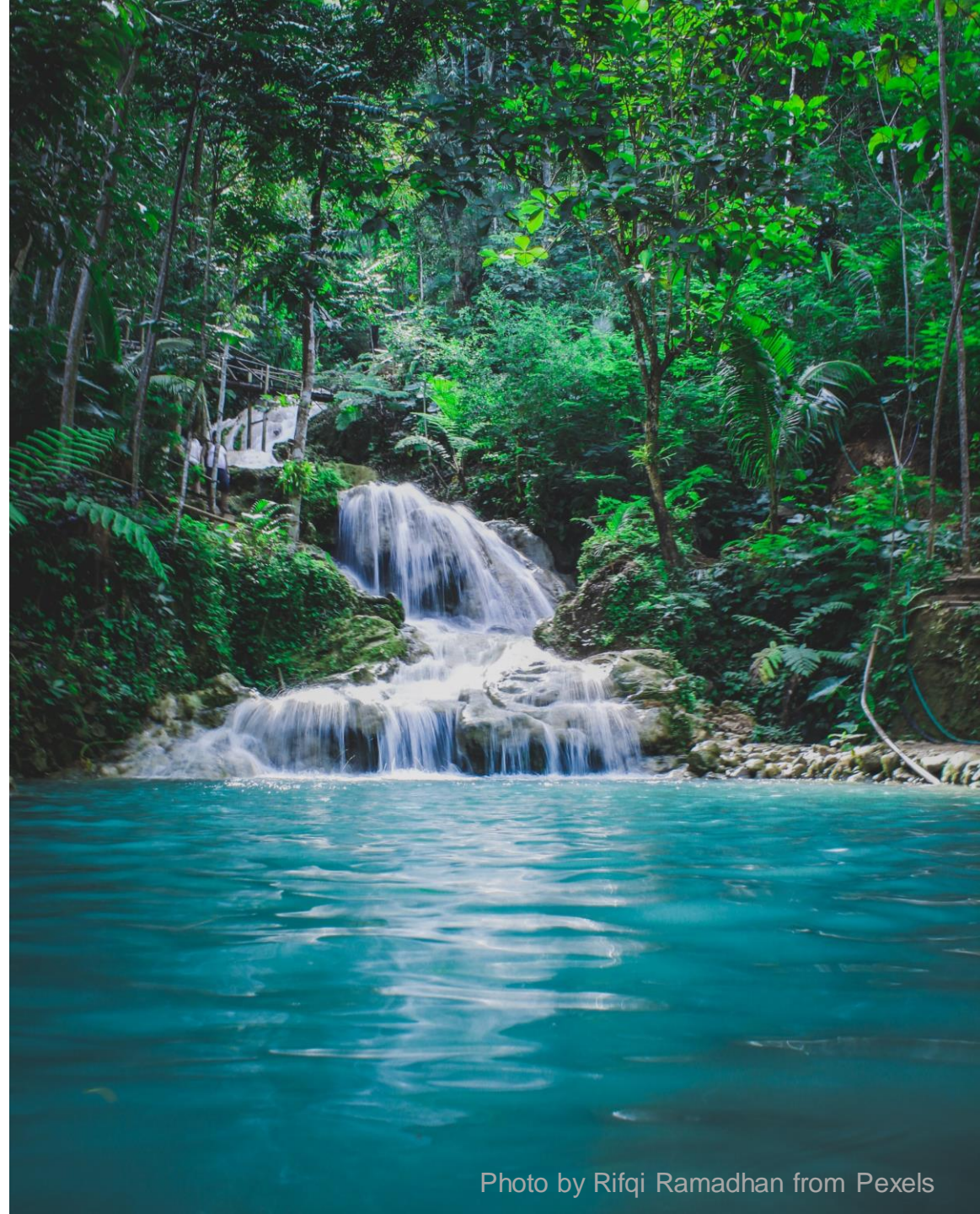
- (All)
- Education
- Food Sales
- Food Service
- Health Care (Inpatient)
- Health Care (Outpatient)
- Lodging
- Mercantile (Enclosed an...)
- Mercantile (Retail Other...)
- ...



| ZE Status | State or Province | Name                                    | Certifications | City       | Building Type | Size (sf) | Total Site EUI | Net Site EUI |
|-----------|-------------------|---|----------------|------------|---------------|-----------|----------------|--------------|
| Verified  | CA                | 008 Energy Commission Building          |                | Sacramento | Office        | 142,378   | 39             | 0            |
| Verified  | CA                | 010 Dept. of Rehabilitation             |                | Sacramento | Office        | 163,350   | 49             | 0            |
| Verified  | CA                | 013 EDD Solar Building (incl. subterr.) |                | Sacramento | Office        | 272,546   | 38             | 0            |
| Verified  | CA                | 021 State Personnel Building            |                | Sacramento | Office        | 84,400    | 47             | 0            |
| Verified  | CA                | 039 and 045 Office Building 8 and 9     |                | Sacramento | Office        | 628,592   | 44             | 0            |
| Verified  | CA                | 049 Education Building                  |                | Sacramento | Office        | 562,582   | 41             | 0            |

# Incentive Opportunities

- Connect programs goals to State climate goals and policy
- Move upstream and deliver cost parity
- Harmonize programs across the state and provide a dashboard
- Streamline and simplify customer journey – move complexity to the back-end
- Address new construction and retrofit in parallel
- **Prioritize disadvantaged communities**



---

Thank you!

Ralph DiNola  
ralph@newbuildings.org

**nbi** new buildings  
institute

[www.newbuildings.org](http://www.newbuildings.org)



# Questions?



# Layering of Electrification Incentives

Beckie Menten, Program Manager  
East Bay Community Energy

June 16, 2020



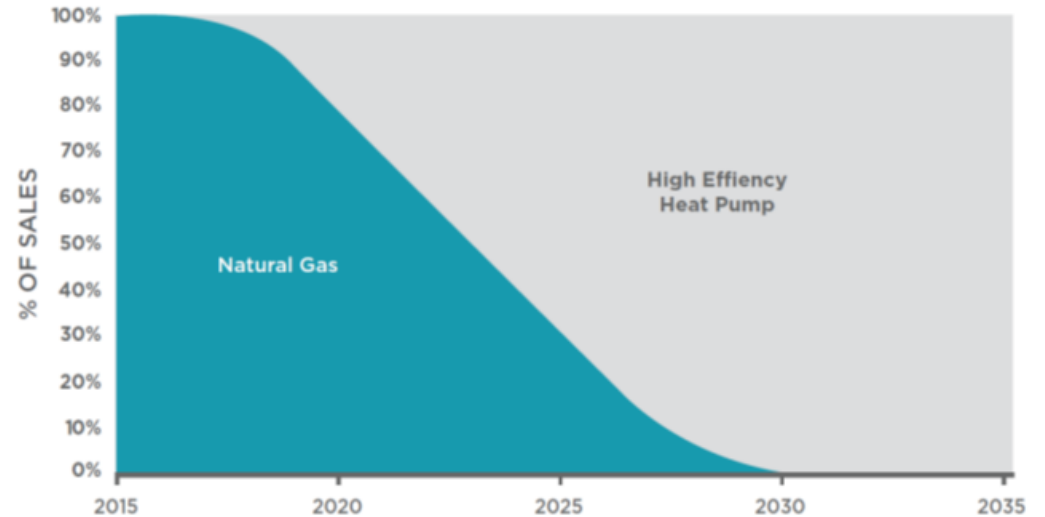
# Overview

- Framing the issue: We need to electrify everything, now!
- Layering is key
  - “Will we be the only society to die because it wasn’t cost-effective to save ourselves?”
  - This is a pilot: learn from it!
- Learn from and work with early leaders – CCAs, POUs, local government

Disclaimer: This is the opinion of one community choice aggregator!

# Framework

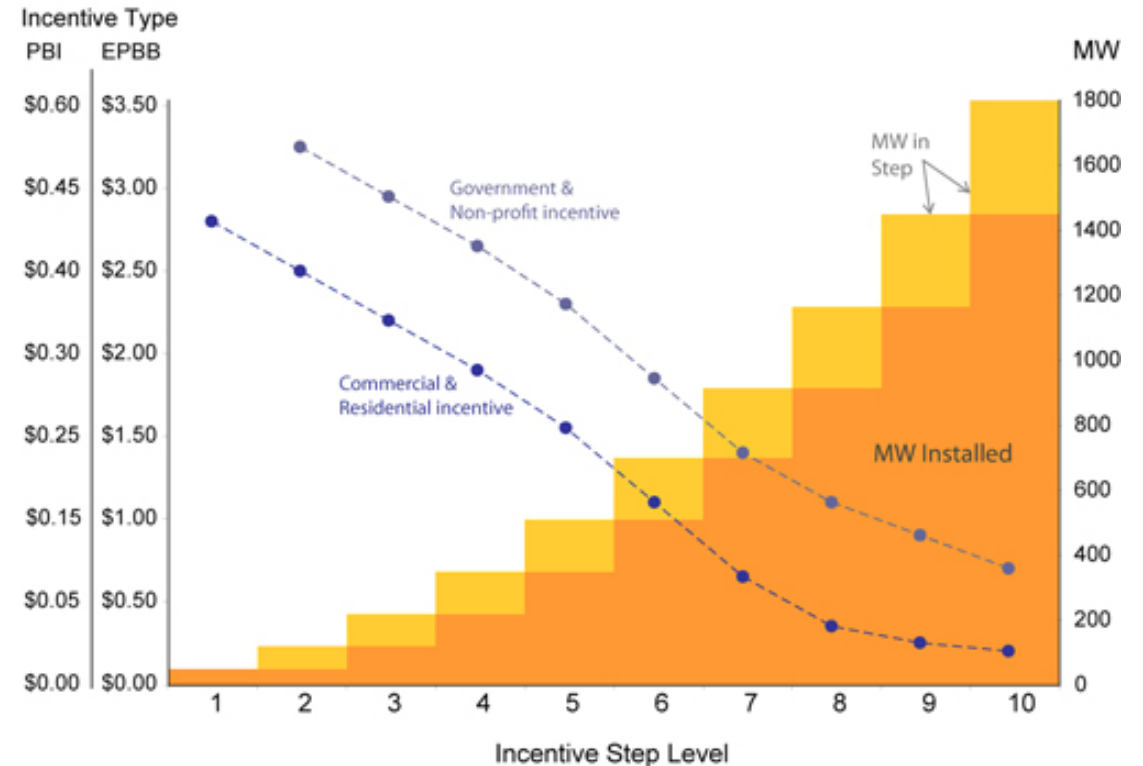
- Electrification needs to happen to meet climate goals
- Current adoption rates are very low – 1-3%
- Existing funding much less than the need
- This is the first step in a larger effort – learn, adapt



Source: *A Roadmap to Decarbonize California Buildings*.  
Building Decarbonization Coalition, p6.

# What can we learn from CSI?

- Designed for market transformation
- Clear market signal
  - Incentive steps tied to volume
  - Statewide
  - Long-term committed funding
- Clear and transparent data
- Administratively simple
- Plays well with others (federal tax credit, PPA, rate design)



PBI: Performance Based Incentive, paid over 5 years, in \$ / kWh  
EPBB: Expected Performance Based Buydown, paid upfront, in \$ / W

Image source: <https://www.cpuc.ca.gov/General.aspx?id=6058>



# Is Additionality a Concern?

- Existing funding streams have built in controls
  - Energy efficiency: Avoided Cost
  - SGIP: Storage benefits
- SB 1477: GHG benefits
- Is there a risk that costs outweigh benefits?

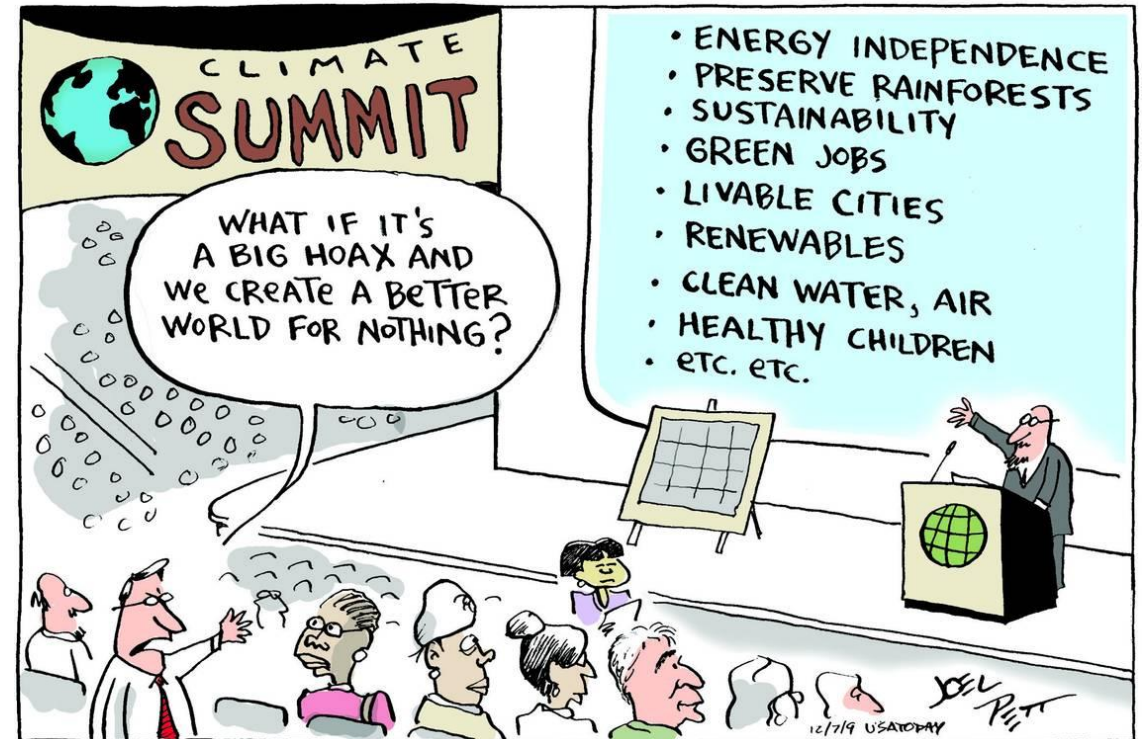


Image source: Joel Pett for USA Today  
(<https://earthdesk.blogs.pace.edu/2013/07/21/climate-summit-by-joel-pett/>)

# Incentives Should Layer

- Design incentives for stacking
  - Invisible to consumer
  - Easy for installer
  - Consistent requirements (eligible technology, installer requirements)
  - Coordinated messaging
- Rate design should support electrification and flexible load
  - CCAs are key stakeholders in rate design
- Allow non-regulated dollars to layer
- Track data to understand cost / benefits

# CCA Leadership in Building Electrification

- CCAs, Local Governments, POUs have been funding building electrification programs for years
- Important early market development
- CCAs are important stakeholders with important lessons learned



# CCA Electrification Programs

| CCA                            | Programs Offered  |
|--------------------------------|---|
| CleanPowerSF                   | Regional HPWH incentives, upcoming EE programs  |
| East Bay Community Energy      | Regional HPWH incentives, Reach Codes, all-electric design assistance, induction cooking, P4P focused on EE / flexible load |
| MCE                            | Regional HPWH Incentives, LIFT program, Advanced Energy Rebuild Napa  |
| Peninsula Clean Energy         | Reach Code assistance, new construction electrification, HPWH rebates, Innovation grants                                    |
| Redwood Coast Energy Authority | HPWH rebates, space conditioning HP rebates   |
| San Jose Clean Energy          | HPWH rebates, service panel rebates, induction cooking, Reach Codes   |
| Silicon Valley Clean Energy    | HPWH rebates, Showcase program, Innovation grants, community decarbonization planning, Reach Codes                          |
| Sonoma Clean Power             | Advanced Energy Rebuild / Build, Lead Locally, GridSavvy, Reach Codes, Induction Cooking                                    |
| Monterey Bay Community Power   | Reach Codes, MUD Electrification Grant Program  |

# EBCE Example: Water Heaters

- Objective: market development
- Informed by earlier efforts
  - Incentive level
  - Eligible technology
- Integrated with other programs
  - One application for mid-stream and Home+ program
  - Working to also integrate with WatterSaver
- Plan to shift when state funds available
  - Incentive shift to marginal value to CCA



[This Photo](#) by Unknown n Author is licensed under [CC BY-SA](#)

# THANK YOU!



EBCE.org



/EastBayCommunityEnergy



@PoweredbyEBCE



bmenten@ebce.org



(510) 988-1736



# Building Decarb Incentive Layering Workshop: Demand Side Program Incentive Interactions

June 30, 2020

# Sacramento Municipal Utility District (SMUD)

Electric utility (*PG&E gas territory*)

Community-owned not-for-profit

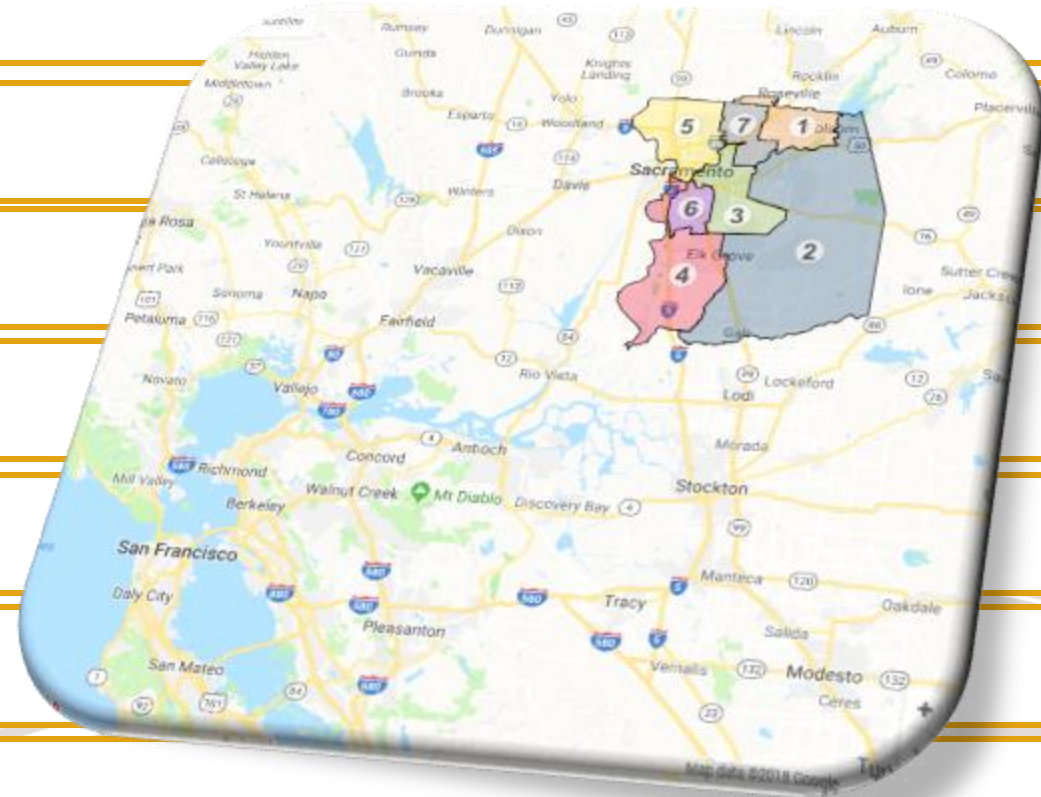
Established 1946

Population 1.5 million

2,219 employees

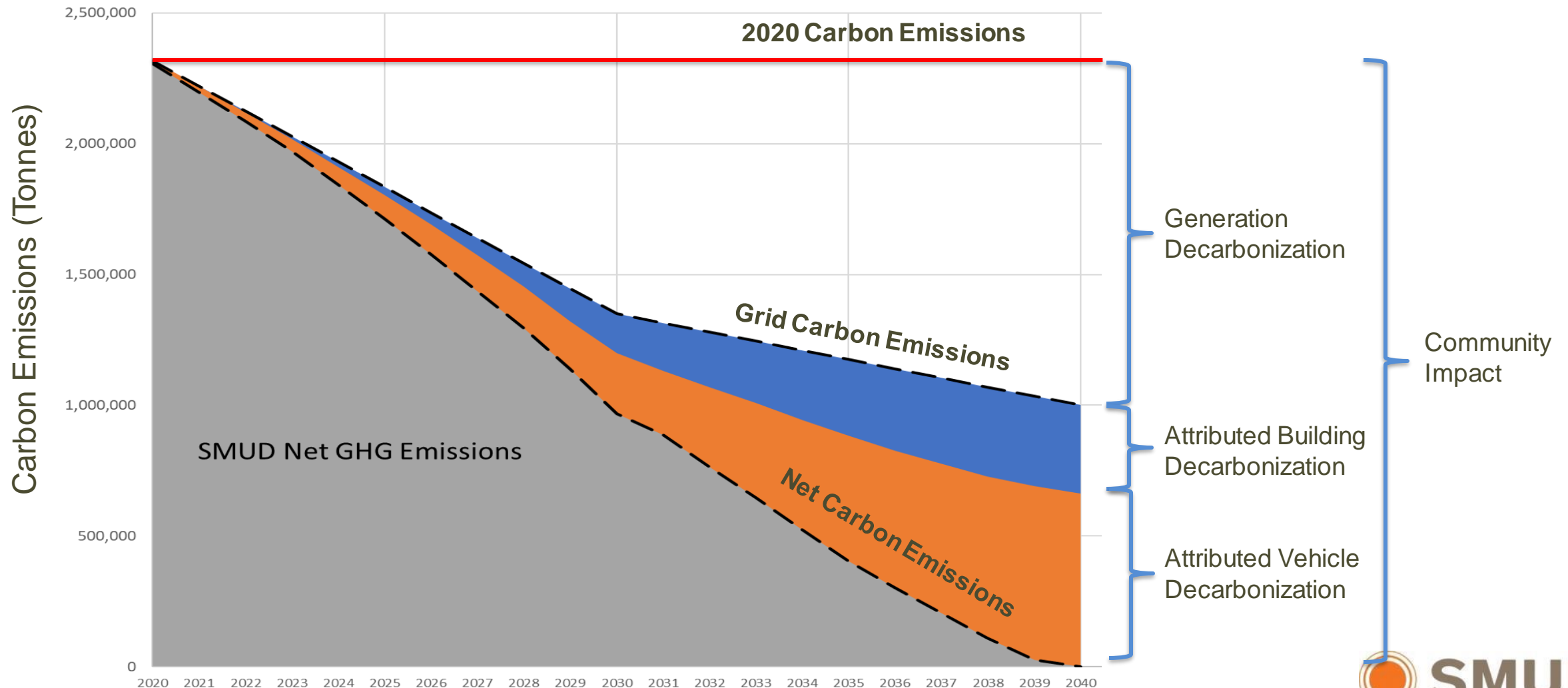
50% carbon free electricity

626,460 accounts





# SMUD's Net Zero Carbon Plan



# Great news

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## BUILD, TECH, SGIP and others supporting decarbonization

- Utility budgets are taking a big hit from COVID fallout
  - Suspension of many SMUD programs in May due to reduced income
- Layering these programs in support of utility programs will help keep the state's market transformation progressing
- We have a good problem of many different incentives

# Customer perspective

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- Ideally, SMUD would have the customer touch point
- Other incentives/ programs would be invisible to the customer

*Customers sees the cake, not the layers*

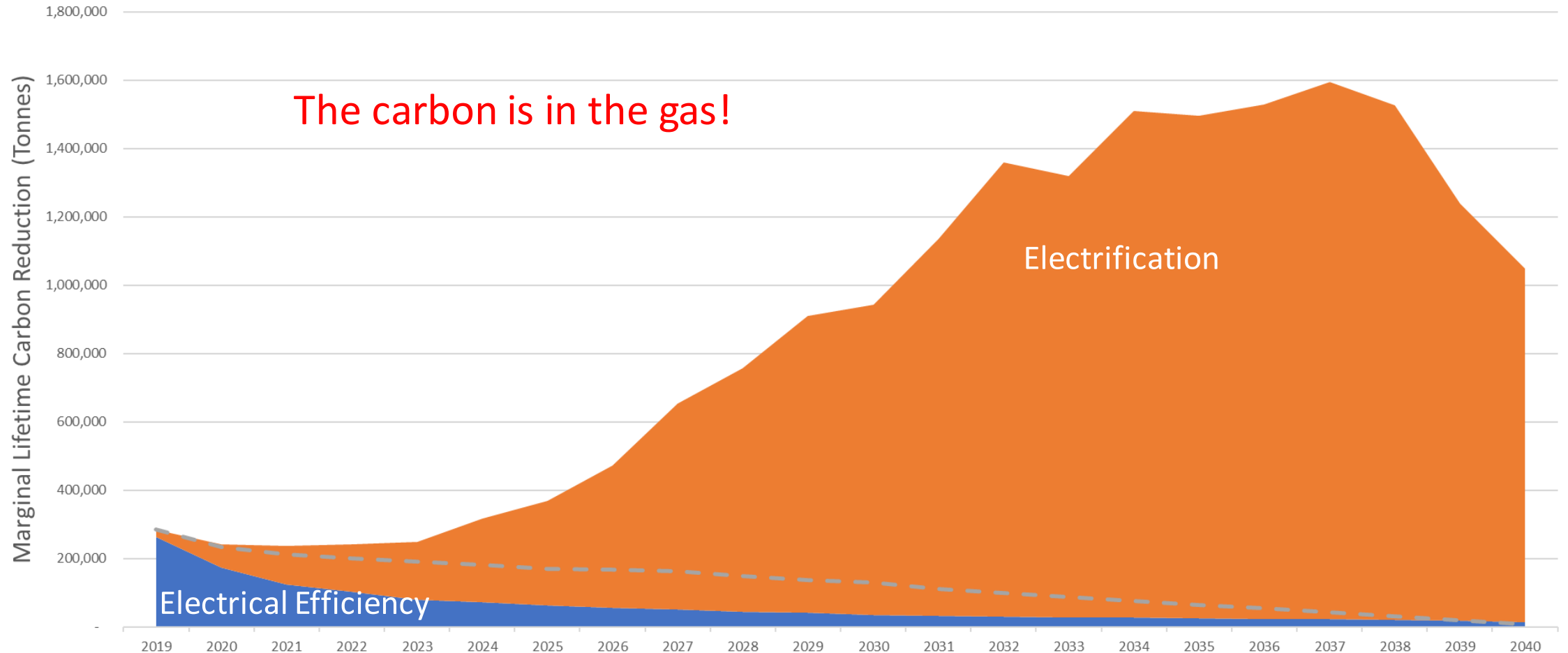


# All about market transformation

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- Better to get the money in the market than put onerous control in place to safeguard “double dipping”
- Use these funds to enhance existing programs not usurp them
- The carbon is in the gas!
  - Let code set minimum efficiencies where possible

# Reduce carbon = eliminate gas



The carbon is in the gas!

Electrification

Electrical Efficiency

The amount of carbon in electricity diminishes greatly over time

# What is being incentivized

---

- SGIP: HPWH (possibly panels)
- TECH: HPWH and HP-HVAC
- BUILD:
  - Low income → MF → central HPWH
  - Disproportionate amount will go to central HPWH
    - And that is OK – It is needed

# Concepts on layers

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- As high upstream as possible
  - Set incentives so equipment is less expensive than gas counterpart at point of purchase
- Augment existing program budgets
  - Move funds to existing programs
  - Program verifies installation and additional receipts/ permits
  - Program assumes upstream incentives
- Where existing programs do not exist use a state-wide administrator for installation

# Post-COVID Electrification Programs

|                                       | Launch Date                  | Total Possible Incentive | Base Incentive | HP-HVAC | HPWH    | Induction | Bonus                |
|---------------------------------------|------------------------------|--------------------------|----------------|---------|---------|-----------|----------------------|
| <b>Single Family New Construction</b> | March 2018                   | <b>\$6,000</b>           | \$3,000        | ✓       | ✓       | \$1,000   | \$2,000              |
| <b>Multifamily New Construction</b>   | March 2018                   | <b>\$2,000</b>           | \$1,500        | ✓       | ✓       | \$500     | x                    |
| <b>Single Family Existing</b>         | May 2018                     | <b>\$10,000</b>          | n/a            | \$4,500 | \$2,500 | \$500     | \$2,500 <sup>1</sup> |
| <b>HPWH Equipment Efficiency</b>      | June 2018                    | <b>\$2,500</b>           | \$2,500        | n/a     | ✓       | n/a       | x                    |
| <b>Multifamily Existing</b>           | December 2018                | <b>\$2,500</b>           | n/a            | \$1,000 | \$1,000 | \$500     | 25%                  |
| <b>HP-HVAC Equipment Efficiency</b>   | 3 <sup>rd</sup> Quarter 2019 | <b>\$4,500</b>           | \$1,500        | \$2,500 | n/a     | n/a       | \$500 <sup>2</sup>   |
| <b>HPWH Direct Install Program</b>    | On Hold                      | <b>\$2,500</b>           | n/a            | n/a     | ✓       | n/a       | x                    |



**Thank you**

**Scott Blunk**  
scott.blunk@smud.org



# BayREN Regional Heat Pump Water Heater Program: A Case Study in Layering

Jennifer West, StopWaste

[jwest@stopwaste.org](mailto:jwest@stopwaste.org)  
(510) 891-6555



# Key points

- Keep the market in mind
- Consistent standards across programs
- Hard work pays off: streamline applications
- It takes a village

# Bay Area Regional Energy Network (BayREN)

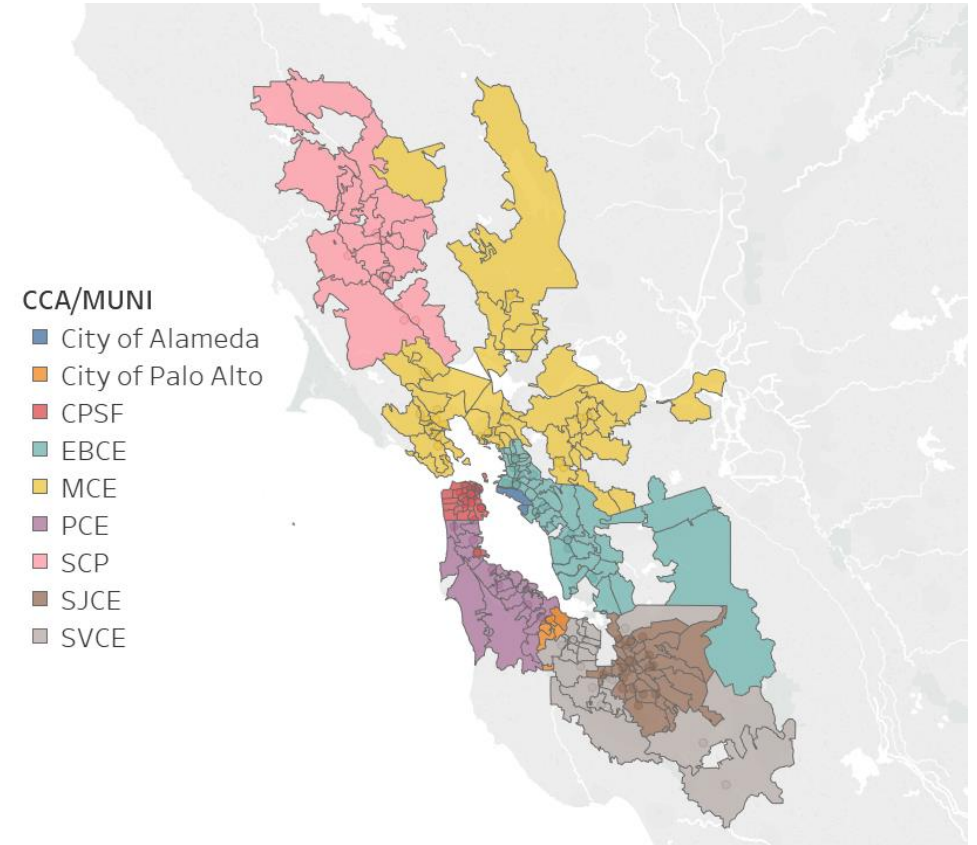


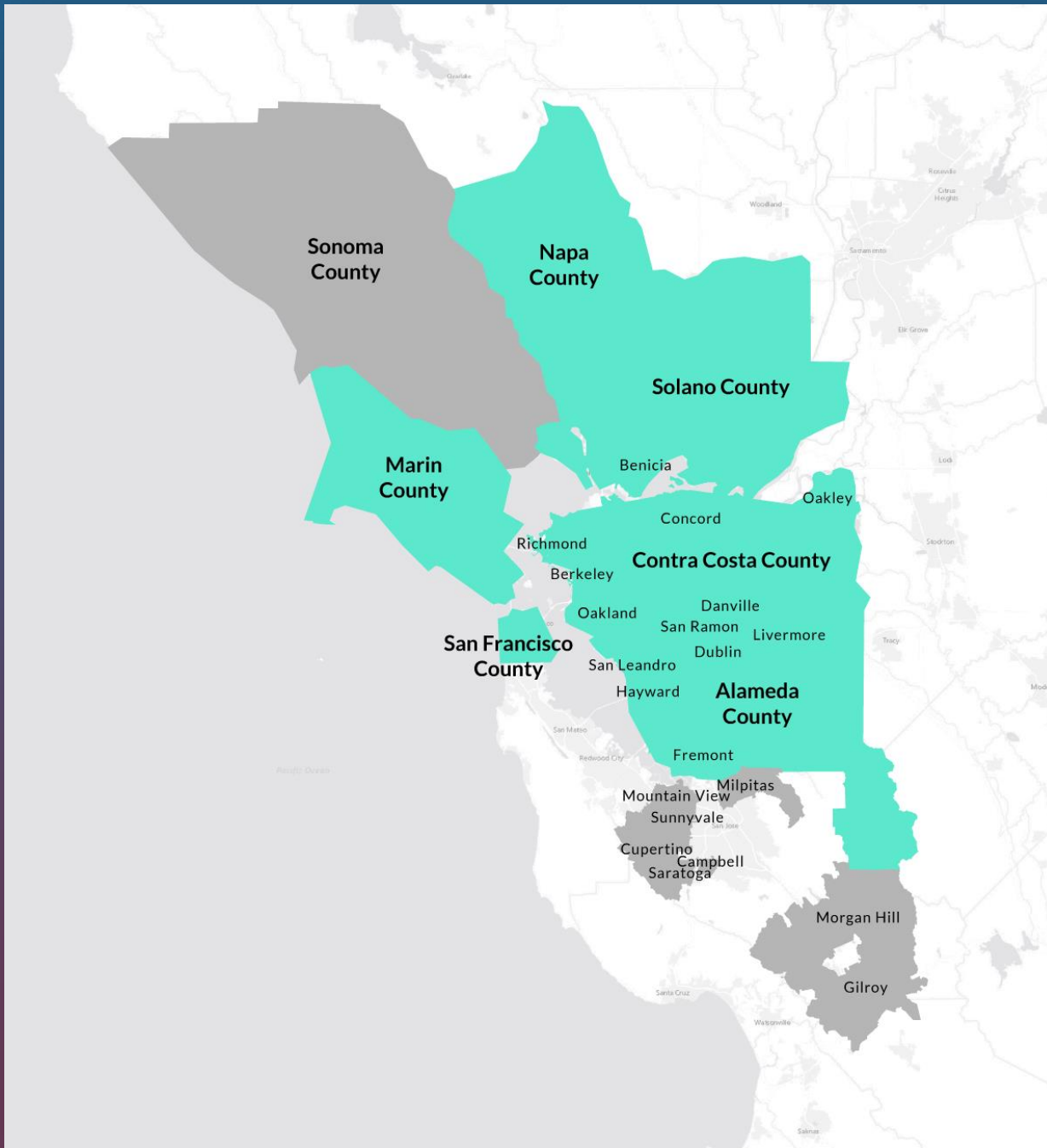
BayREN is:

- One of three regional energy networks (RENs) in California funded by the CPUC
- A collaboration of the nine counties that make up the San Francisco Bay Area
- Energy efficiency and related efforts with local governments

# Regional HPWH Program

- Simple, uniform program
- Catalyze residential market
- Midstream contractor program
- \$1,000/HPWH
- Grid-capable
- Incentives from local energy providers
- BAAQMD provided set up program funding





## Regional HPWH Program Operating Territories

EBCE and MCE territories  
- May 2020

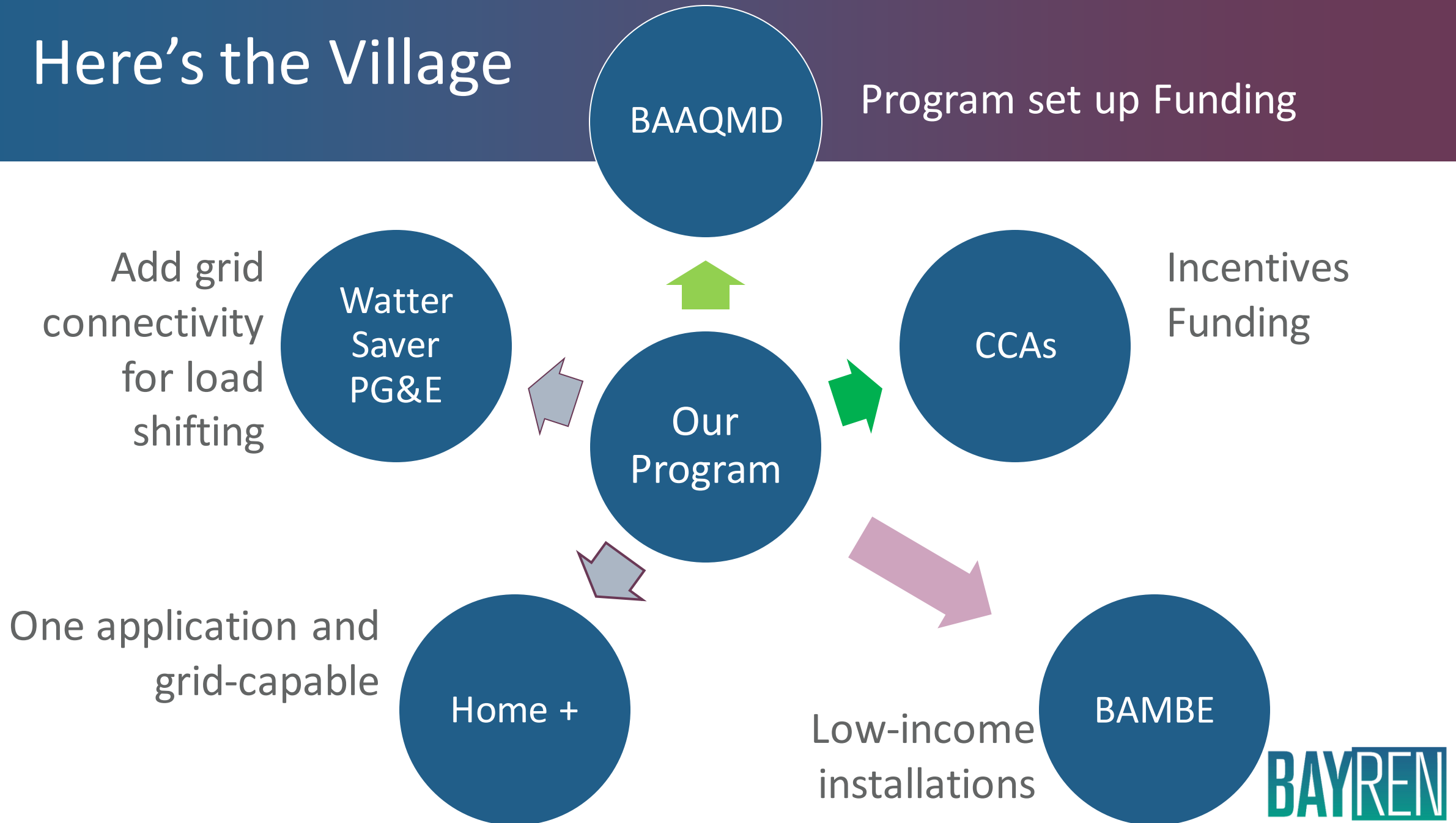
CleanPowerSF  
- August 2020

6 of 9 counties

# Challenges for our program

- Limited incentive
- Simple enough to entice contractors
- Helping low-income residents
- Perfect is not possible
- Simultaneous parallel efforts
- No double-dipping

# Here's the Village

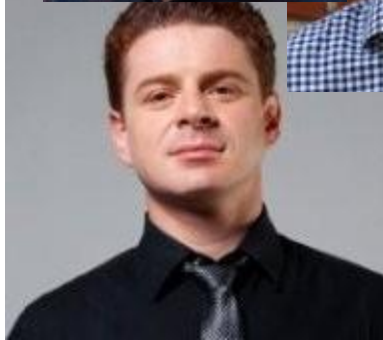
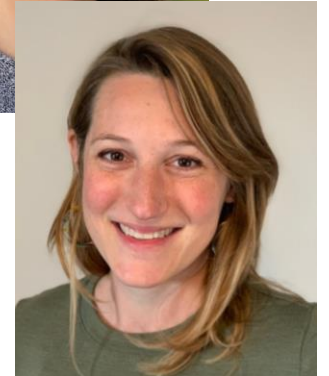




# Layering Success

- Home +
  - Downstream program focused on EE
  - Ratepayer funds through BayREN
  - + \$1,000 (looking for layering, contractor training)
  - Started March 2020
- Water Saver
  - Customer serving program using CPUC funds through PG&E
  - Load shifting, grid-connectivity
  - Starts Summer 2020

# Here are the people



Matter  
Saver  
PG&E



CCAs



# Other considerations

- Data sharing and privacy
- Meta-program facilitator role created
- Regulatory bodies: allow flexibility for collaboration
- Equity – public funds must address inequities
- Nothing is perfect

# Key points

- Look at incentives from the user's point of view
- The market prefers consistent, predictable standards across programs
- Hard work pays off: streamline applications
- Build your connections

Thank you!

Questions?

Jennifer West, StopWaste

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(510) 891-6555





# Questions?

# Incentive Layering Workshop

## IOU Approach

June 30, 2020

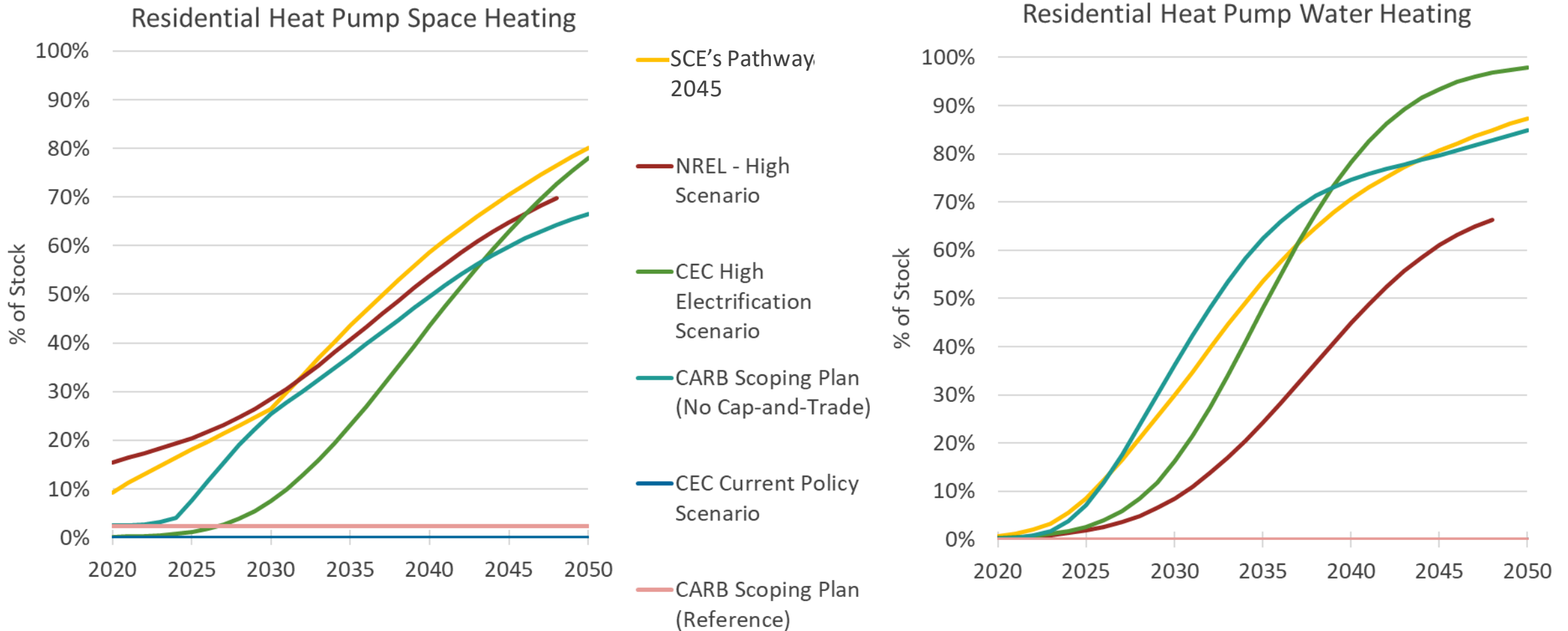


# What We'll Cover

- CA's BE Adoption Targets
- Lessons Learned from New York
- Guiding Principles
- How to Optimize Layering Incentives
- Examples and Approach (*Illustrative*)
- Development Phrases (*Illustrative*)

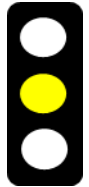


# CA's Ambitious 2050 Targets for BE Adoption

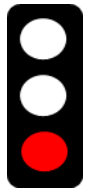


# Lessons Learned from New York's Layering Approach

## Useful Definitions:



- **Layered/Overlapping Incentives:** Financial or non-financial incentives being offered to the same market segment, customer, or technology measure at the same time.



- **Duplicative Incentives:** Incentives that provide no incremental value over another incentive or market development activity that is already being provided



- **Complementary Incentives:** A layered or overlapping incentive that provides incremental value to ratepayers or society even when an existing incentive or market development activity is already being provided.

## Recommendations:

- Develop Guiding Principles to align stakeholders
- Develop formal Program Coordination process
- Develop “Incentive Inventory”
- Recognize incentive layering in EM&V

# Guiding Principles



## 1) The Customer Comes First

- Maximize customer benefits and ease of participation
- Ensure ratepayer benefits (e.g., consider incrementality)
- Minimize market confusion while maintaining customer choice



## 2) Increase Penetration and Adoption

- Provide the right incentive for the right customer at the right time
- Consider flexible financing approaches



## 3) Be Efficient

- Reduce admin burden and overall program costs
- Minimize cost shifts
- Mitigate double-dipping

# How to Optimize Layering Incentives

## Problem Statement

- TECH and BUILD Pilots overlap with other residential DSM programs and incentives, which causes market confusion
- Potential to overpay projects if program incentives exceed optimal incentive levels
- Potential to under-serve segments if programs are unable to extend customer reach by layering
- Each program “brings to the table” its own rules and legislative mandates that could inhibit layering

## Goals

- Maximize GHG reductions
- Simplify customer participation in multiple programs
- Identify and eliminate duplicative incentives; identify opportunities for complementary offerings and/or incremental incentive benefits

## Recommendations

- Develop framework focused on continuous program coordination, while preserving programs’ existing requirements
- Leverage/enhance statewide or national existing inventory databases for tracking
- Leverage a “partnership” agreement concept across programs
- Explore long-term, consolidated market transformation incentive framework (e.g., California Solar Incentive framework)

# *Incentive Layering Examples and Approach (Illustrative)*

# Sample List of Existing or Planned HPWH Related Incentives *(not exhaustive)*

| Proceeding  | Program/Offering   | Incentives For                           | Status   |
|---|--|--|--|
| Energy Storage Procurement and Investment Plan (ESP&IP) | PG&E – WatterSaver Pilot<br>SCE – Smart HPWH Pilot           | Smart Controls and Pay for Performance   | Testimony Filed, Pending CPUC Approval (P4P)   |
| Self-Generation Incentive Program (SGIP)                | HPWH Incentive   | Equipment and Labor                      | Pending Staff Proposal, and CPUC Final Approval. Expected implementation Q1-2021. (TBD)  |
| SB1477 – Low Emission Buildings and Sources             | Technology and Equipment for Clean Heating (TECH) Initiative | Equipment, Labor, and Panel Upgrade      | TECH Initiative RFP released on June 22nd. Expected Launch Q1-2021 (Upstream/Midstream)  |
| Energy Efficiency                                       | Plug Load & Appliance Program                                | Equipment                                | SW RFP for PLA Program currently under way. Expected Launch in 2021 (Upstream/Midstream) |
| Income Qualified  | SCE - Clean Energy Homes Pilot                               | To Code, All-Electric Affordable Housing | Testimony Filed in SCE’s 2021-2026 Energy Savings Assistance (ESA) Application           |

# Retrofit Heat Pump Water Heater Incentive Layering Example

*Illustrative Example: Single Family*



| Cost                             | Incentive Layer | Program           | Incentives For:                     | Potential Incentive Amount | Benefit Claim (% of Share)   |
|----------------------------------|-----------------|-------------------|-------------------------------------|----------------------------|--|
| Smart Controls<br>\$400          | 4               | ESP&IP            | Smart Controls Only                 | \$300?                     | <ul style="list-style-type: none"> <li>• Peak Demand Reduction</li> <li>• GHG Reduction</li> </ul>     |
| Labor<br>\$700-\$1,000           | 3               | SGIP              | Equipment and Labor                 | \$1,700?                   | <ul style="list-style-type: none"> <li>• Peak Demand Reduction</li> <li>• GHG Reduction</li> </ul>     |
| Wiring<br>\$300-\$1,000          |                 |                   |                                     |                            |  |
| Panel Upgrade<br>\$3,000-\$4,000 | 2               | TECH Pilot        | Equipment, Labor, and Panel Upgrade | \$2,500?                   | <ul style="list-style-type: none"> <li>• GHG Reduction</li> </ul>                                      |
| 50G HPWH<br>\$1,500              |                 |                   |                                     |                            |  |
|                                  | 1               | Energy Efficiency | Equipment                           | \$500?                     | <ul style="list-style-type: none"> <li>• Energy Efficiency Savings</li> <li>• GHG Reduction</li> </ul> |

\$6,000 Total Installed Cost

Potential Incentives <= \$5,000

Customer Installed Cost after Incentives >= \$1,000

# New Construction Incentive Layering Example

*Illustrative Example: All-Electric Affordable Low-Rise Multifamily*



| Cost   | Incentive Layer | Program                                 | Incentives For:                 | Potential Incentive Amount | Benefit Claim (% of Share)   |
|--|-----------------|---|---------------------------------|----------------------------|--|
| Battery \$8,000  | 3               | ESP&IP (New Homes Energy Storage Pilot) | Battery Storage                 | \$7,650?                   | <ul style="list-style-type: none"> <li>• Peak Demand Reduction</li> <li>• GHG Reduction</li> </ul> |
| Smart Controls \$400   |                 | ESP&IP                                  | HPWH Smart Controls Only        | \$300?                     |  |
| HPWH \$1,120<br>HPSH \$620<br>Dryer \$820<br>Cooking \$1,800 | 2               | BUILD Pilot                             | Above EE Emissions Reductions   | \$1,000?                   | <ul style="list-style-type: none"> <li>• GHG Reduction</li> </ul>                                  |
|  | 1               | Energy Efficiency                       | Above Code Equipment Efficiency | \$1,000?                   | <ul style="list-style-type: none"> <li>• Energy Efficiency Savings</li> </ul>                      |
| Development Costs \$1,595                                    | 0               | SCE Clean Energy Homes                  | To Code                         | \$1,595?                   | <ul style="list-style-type: none"> <li>• Bill Savings</li> <li>• GHG Reduction</li> </ul>          |

\$14,355 Total Installed Cost

Potential Incentives <= \$11,545

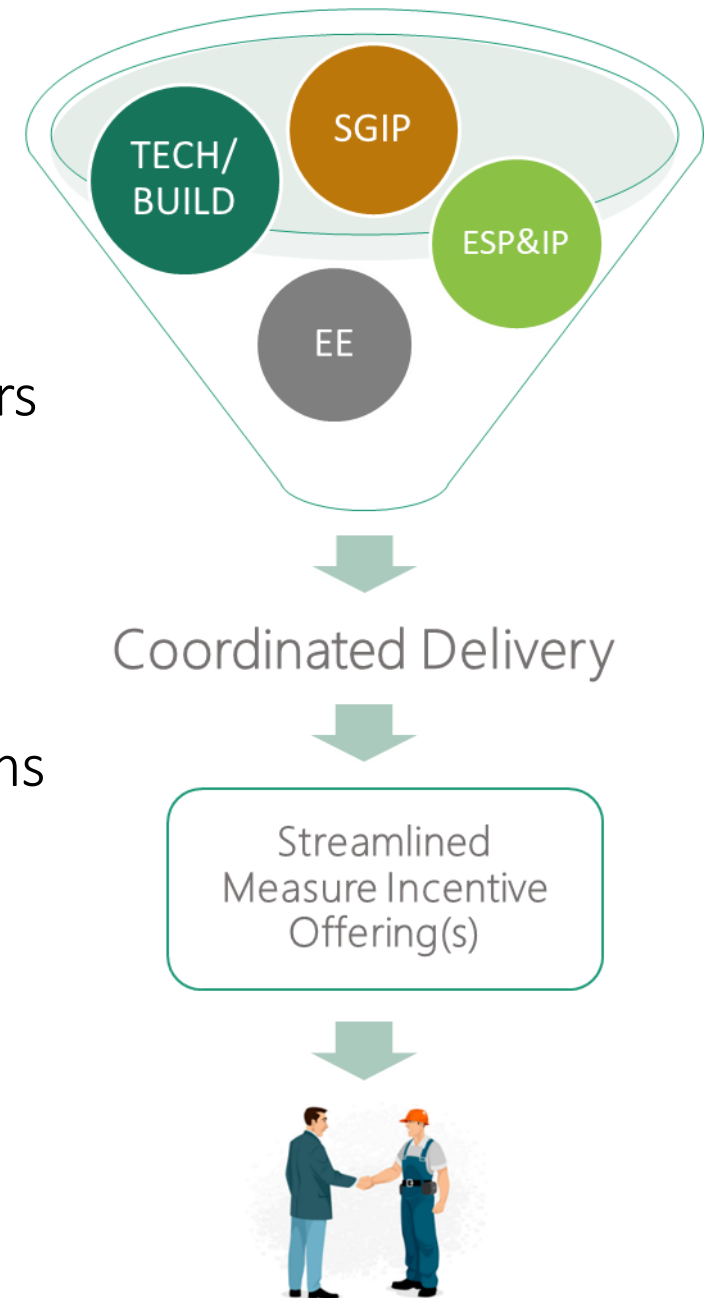
Customer Installed Cost After Incentives >= \$2,810



# Streamlined Delivery Approach

## Sample Construct

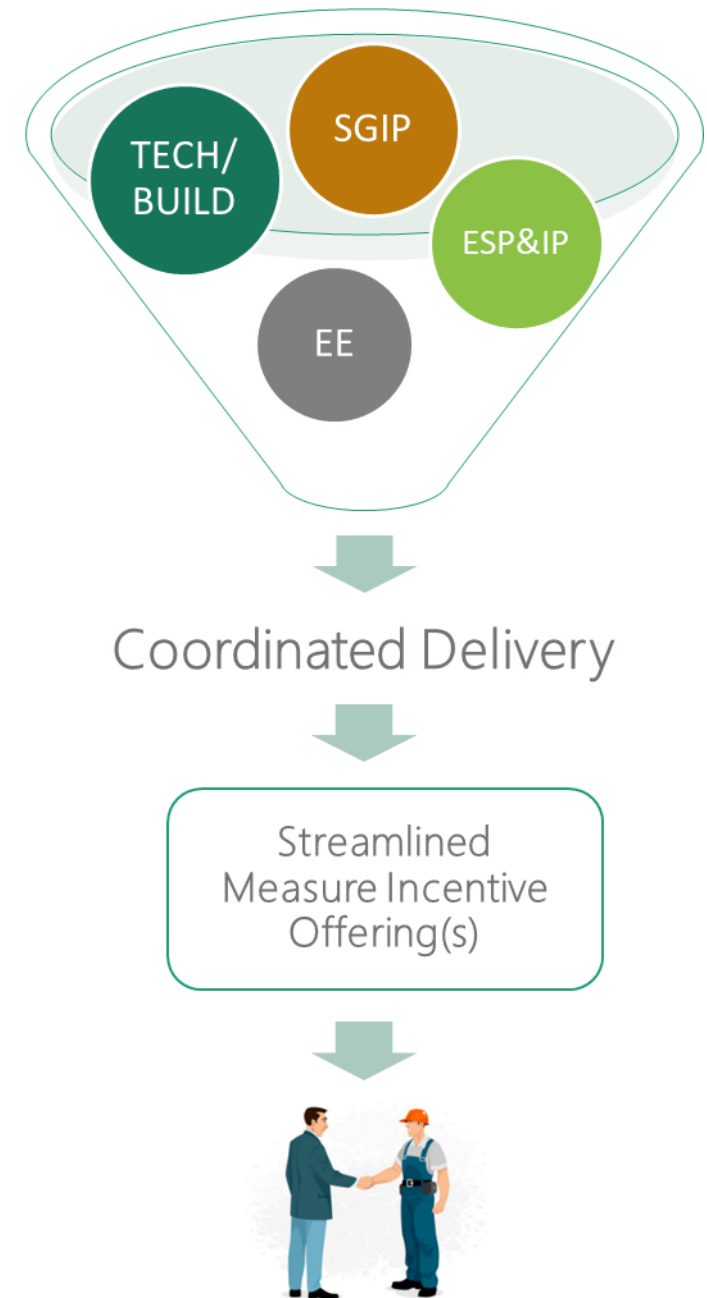
- Deliberate coordination mechanism across program administrators
- One single-point-of-contact (SPOC) for all the programs; can be measure specific
- Mechanism will be developed to parse out the program costs and coordinate Measurement & Valuation to the contributing programs
- Requires infrastructure to facilitate tracking, accounting, etc.
- Market Transformation concept fits
- Aligns with policies to improve coordination and integration of programs (e.g., Integrated Resources Plan (IRP) and Integrated Distributed Energy Resources (IDER))



# Streamlined Delivery Approach

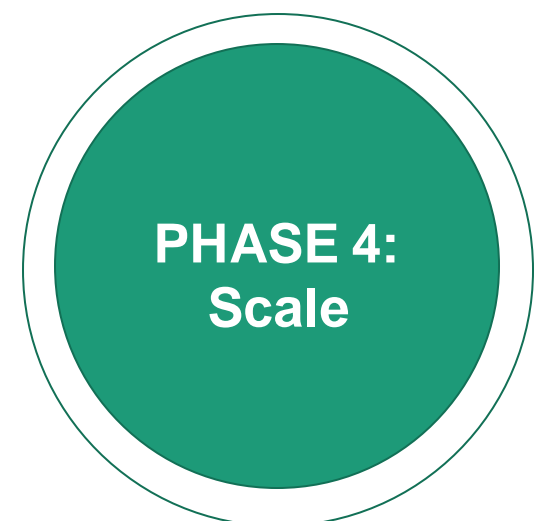
## Benefits

- Improves overall Customer Experience
- Simplifies offering(s) for all participants; Customers and Supply Chain (Manufacturers, Distributors, Installation Contractors, etc.)
- Eliminates redundancies and increases implementation cost-efficiency
- Facilitates the potential use of a single intake, application and payment to participant



# *Incentive Layering Development Phases (Illustrative)*

# A Phased Approach Allows Us to Continuously Improve the Process



**Refresh program rules, processes and policies improvements along the way**

# Phase 1 – Scope Feasibility: Key Questions

## Program

- When is it appropriate to layer incentives?
- How can BD Pilot incentives accommodate other programs' incentives changing over time?
- How do differences in methodologies for calculating GHG reductions and other benefits affect layering?
- How will CCA/REN programs layer? EE Third Party contracts? CARB programs? Other local programs?

## Process

- How will program coordination function? Quarterly meetings? Automated mechanism? Third Party administrator?
- Customer communication and intake (Single Point-of-Contact)?
- How will program costs be shared for administering incentive layering, such as building an inventory database and administrative meetings?

# Takeaways

- Layering supports **achievement of state's ambitious GHG reduction goals**
- Layering has the potential to **improve the customer's experience**
- Recommend setting up **program coordination mechanism**
- Recommend a **phased approach** as experience matures... and **explore long-term market transformation approaches**





# Questions?



# Thank You!

- TECH RFP released on June 23
- Draft staff proposal for these three topics will be noticed on R.19-01-011 proceeding
- TECH Contract to take effect Q1 of 2021\*
- Please contact Rory if you have questions or ideas for the staff proposal



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