IOU Initiatives Supporting Electrification

July 30, 2026
Dave Intner, AIA
SCE Codes & Standards

Today's Journey

- Codes and Standards Key Initiatives
- Reach Codes
- Industry Support
- Technology Testing
- Demand Flexibility and Rate Design
- Customer Programs

Click image for link

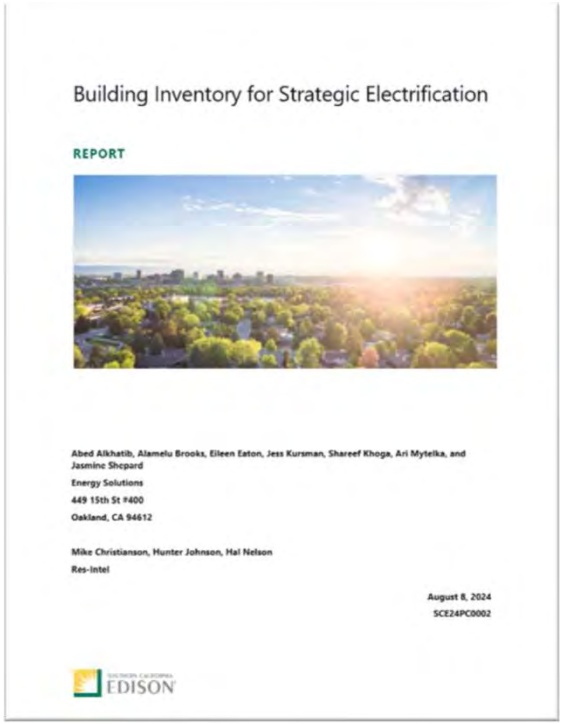
Codes and Standards- Key Initiatives

Building Inventory Geospatial (BIG) Database

Types of Questions this Project was Seeking to Answer

Where will electrification occur and when? And who will benefit?

- What are the most prominent electrification barriers in a geographical area and who occupies the buildings?
- Which measures are most likely to be adopted based on customer propensity and barriers?
- How does anticipated measure adoption correlate with where the most vulnerable customers reside? Will these measures lead to bill savings?
- Which circuits do not have sufficient capacity and where do load management measures need to be installed to turn a building from a grid risk to a grid asset?



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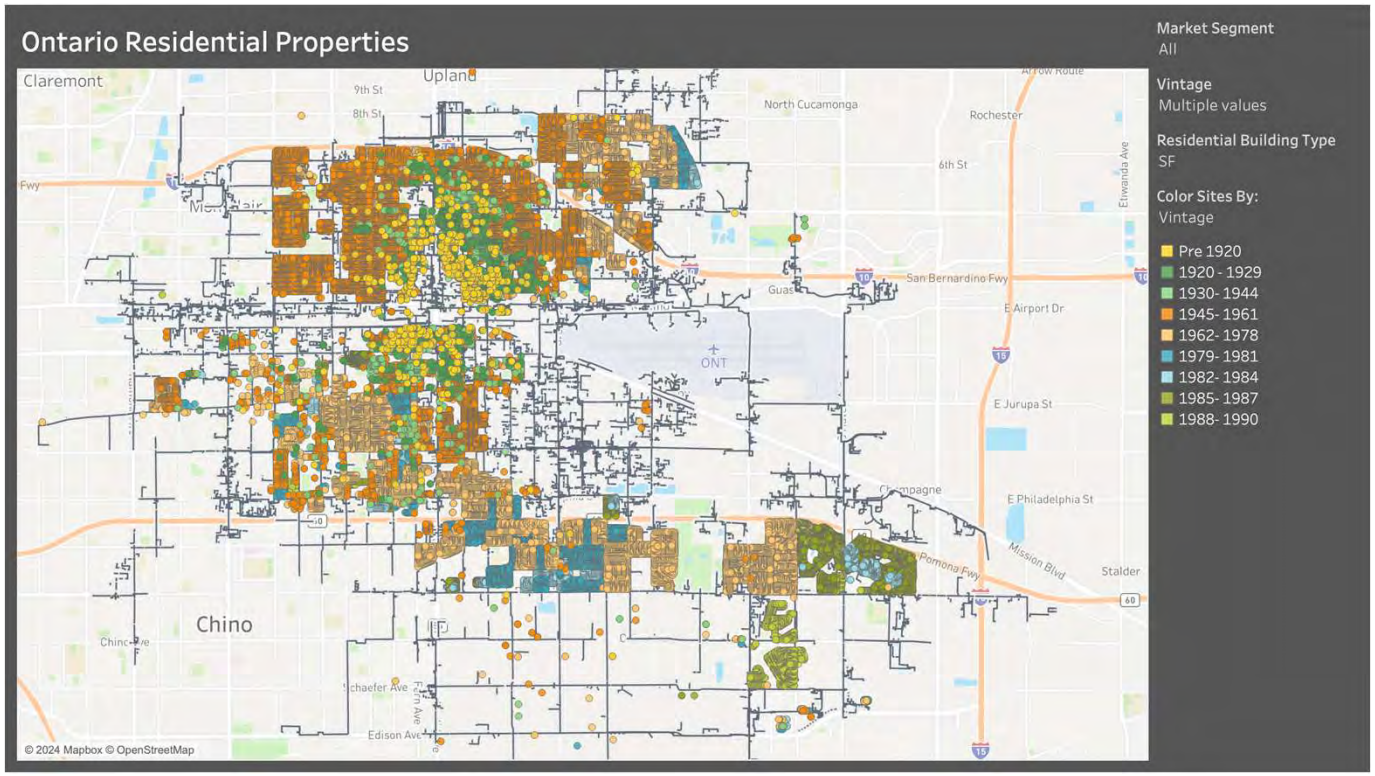
Project Objectives

Building Inventory Geospatial (BIG) Database



Map view of Ontario single family properties built prior to 1990

- *What is the age and distribution of existing structures?*
- *Which areas are low income?*
- *Which areas are impacted by poor air quality*

Building Stock Characterization

Building Inventory Geospatial (BIG) Database

What would happen to Remaining Circuit Capacity if all SFH had All-Electric Retrofits?

Single Family Homes
- All Electric Appliances
- No Solar, Batteries, EV Level 2 Charger

Single Family Homes
- All Electric Appliances, Solar, Batteries
- No EV Level 2 Charger

- Retrofitting all existing single-family homes with all-electric appliances only (*excluding EV Level 2 chargers*) does not impact circuit capacity
- Adding solar and batteries (*excluding EV Level 2 chargers*) modestly increases capacity for certain circuits

Visualization Insights

Building Inventory Geospatial (BIG) Database

What would happen to Remaining Circuit Capacity if all SFH went All-Electric With Level 2 EV Charging?

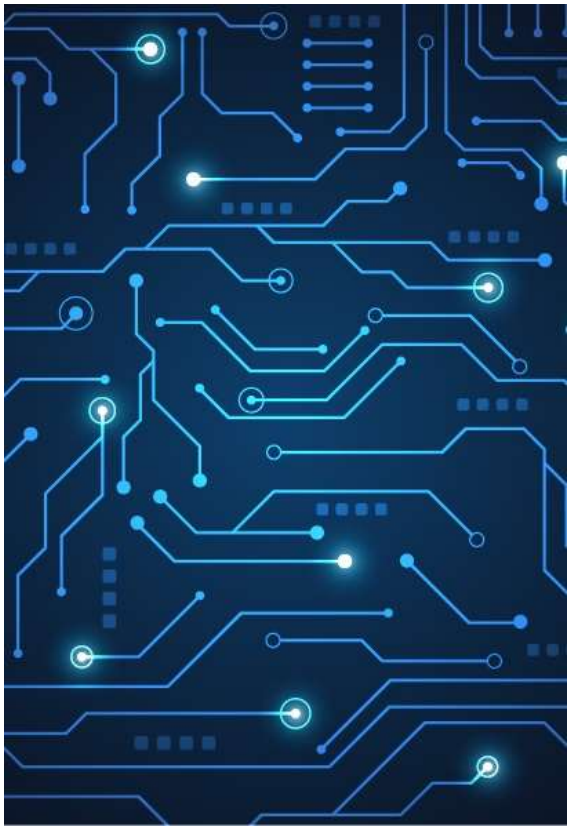
Single Family Homes
- All Electric Appliances, EV Level 2 Charger
- No Solar & Batteries

Single Family Homes
- All Electric Appliances, EV Level 2 Charger
- With Solar & Batteries

- Adding EV Level 2 chargers with no load management controls **ADVERSELY** impacts circuit capacity
- Adding solar and batteries *does not significantly mitigate load impact of EV Level 2 chargers*

Visualization Insights

Building Inventory Geospatial (BIG) Database



By knowing when, where, and what kind of building electrification measures will likely be adopted, we can examine the best intervention strategies. For example:

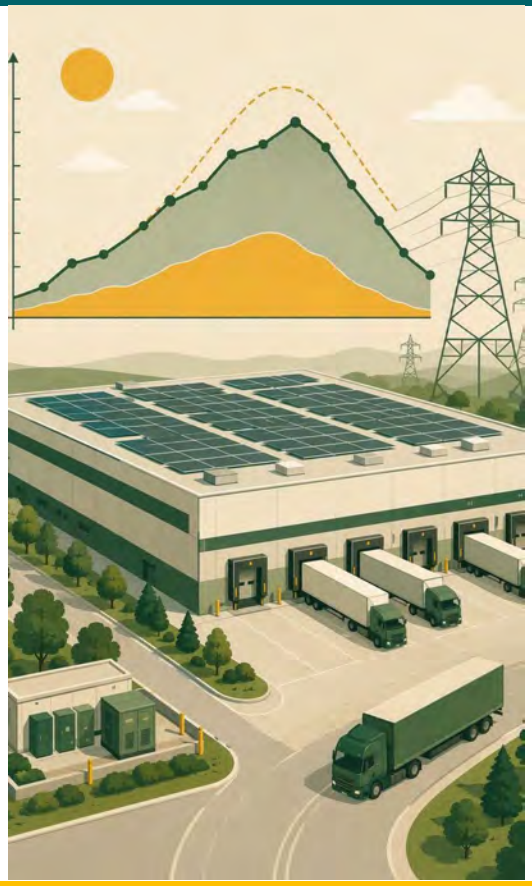
- Reach Code development
- Targeted programs and marketing
- Deployment of flexible demand programs and DERs
- Infrastructure planning

Software & Energy Modeling

*SCE delivered refreshed warehouse demand assumptions to System Planning & Engineering to help update the **Distribution Design Standards (DDS).** The models better capture today's warehouse and distribution-center growth.*

- Split the single warehouse category into three demand types with distinct load profiles: Distribution Centers, Refrigerated Warehouses, and E-Commerce facilities.
- Built Title 24-compliant EnergyPlus prototype models, calibrated against metered data from 16 warehouses across SCE's CEC climate zones.
- Produced peak volt-amp-per-square-foot and load-factor values for each climate zone, inclusive of on-site solar per Title 24 PV requirements.
- Provided planning guidance for speculative projects with no known tenant

KEY OUTCOME The refreshed assumptions give system planners more accurate demand estimates for the warehouse and e-commerce boom across SCE's territory.



Updating the Distribution Design Standards Warehouse Model

Software & Energy Modeling

SCE provides ongoing support to the California Energy Commission (CEC) to develop enhancements within CBECC, the state's primary compliance software engine

- **California Utility Allowance Calculator (CUAC)** functionality within CBECC has been a major focus of SCE's development support, building on multi-year efforts.
- Identified assumptions and requirements that differ by project type, since these vary across affordable-housing programs.
- Assessed software gaps in the current CUAC pathway and proposed updates to address them.

KEY OUTCOME Embedding CUAC in CBECC gives affordable, all-electric new construction a clear pathway to demonstrate energy-code compliance, advancing equity in disadvantaged communities.

CUAC Evaluation Within CBECC

Software & Energy Modeling

*SCE worked to established the technical and analytical foundation for a scalable, credible, and equitable statewide **home energy rating and labeling system**, informing the CEC's rulemaking.*

- Tier 1 — Public data (parcel records, vintage, square footage, climate zone) builds a baseline model that is universally deployable at low cost.
- Tier 2 — Adds historical utility meter data to calibrate results to real consumption, narrowing uncertainty without in-home audits.
- Tier 3 — Optional homeowner inputs (setpoints, occupancy, equipment) address occupant-behavior uncertainty.

KEY OUTCOME The tiered approach offers a scalable, cost-efficient pathway to label millions of homes statewide — without intrusive field audits.

Home Energy Rating & Labeling Support

Software & Energy Modeling

*The **Market Informed Demand Automation Server (MIDAS)** provides access to utilities' time-varying rates, greenhouse gas emission signals, and California Independent System Operator (California ISO) FlexAlerts.*

- Transformed a technically complex, hard-to-access database into a practical planning and analysis tool for utilities, energy modelers, and program designers.
- Provides access to hourly utility rate data and grid greenhouse-gas emissions-intensity data.
- Powers demand-flexibility analysis, technology modeling, and program design.
- Enables secure data sharing with research partners and regulatory agencies.

KEY OUTCOME Strengthens the analytical foundation for codes and standards, demand-side strategy, and long-term planning — advancing scalable, data-driven coordination.

A User-Friendly Interface for the MIDAS Database

Reach Codes

Reach Codes

California IOU support is broadening reach code options beyond new construction electrification.

- **Technical Assistance**
  - Cost-effectiveness studies
  - Model ordinance language
  - Implementation tools
  - Staff reports
  - Stakeholder engagement support
- **Central Resource Hub**
  Local Energy Codes is the primary landing point for jurisdictions exploring local reach codes

https://localenergycodes.com/

Technical Support for Jurisdictions

Reach Codes

Flexible retrofit policies target practical points of intervention.

The existing-building portfolio gives jurisdictions choices that can trigger energy and decarbonization improvements during remodels or equipment replacement cycles.

Single-Family Flex Path
Menu-based pathway for electrification, efficiency, solar, and readiness measures while meeting an overall energy target score.
Adoptions noted: San Rafael, San Luis Obispo, Corte Madera, Ojai

Residential AC-to-Heat Pump
Time-of-replacement approach that encourages heat pumps when air conditioning is added or replaced.
Adoptions noted: Moreno Valley, Glendale

Nonresidential AC-to-Heat Pump
Commercial rooftop HVAC replacement pathway that encourages heat pumps with an alternative compliance option.
Adoptions noted: Santa Cruz

Reach Codes

Building Performance Standards extend reach code strategy over time.

Statewide IOU's and collaborating NGO's are supporting jurisdictions through:

- Policy development
- Benchmarking
- Building stock analysis
- Stakeholder engagement
- Implementation planning.
- Centralized resources

https://www.cabuildinghub.org/

USGBC CA

Industry Support

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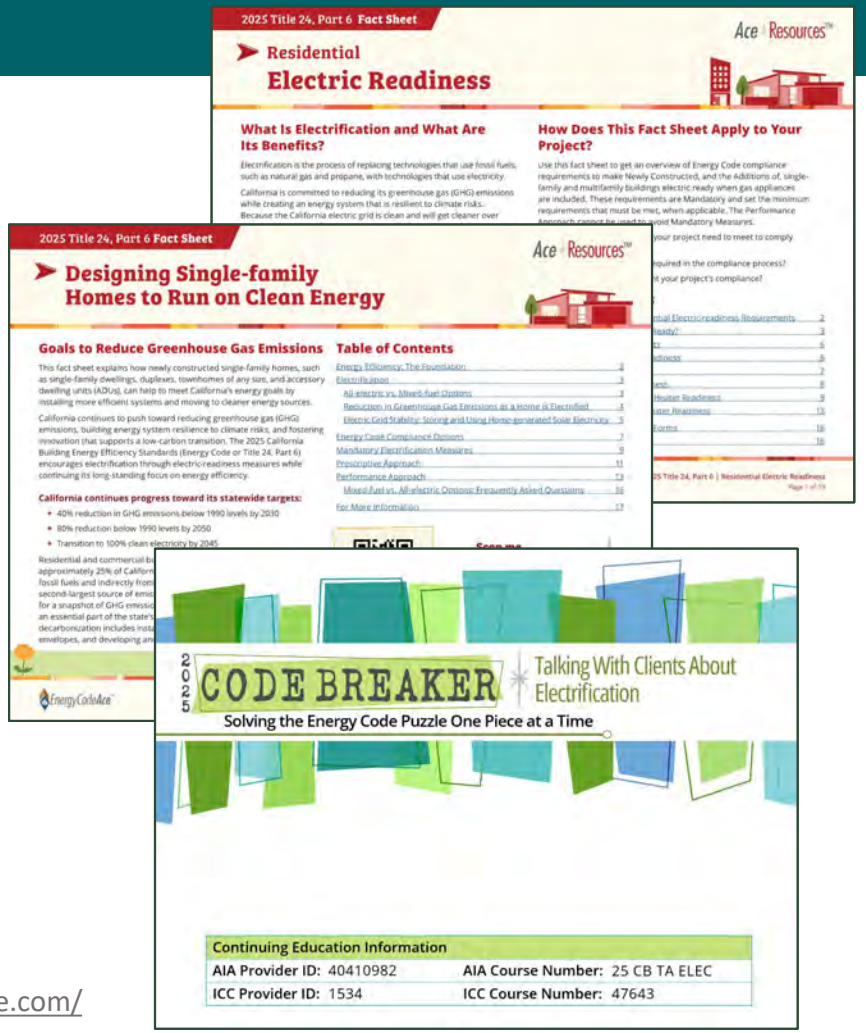
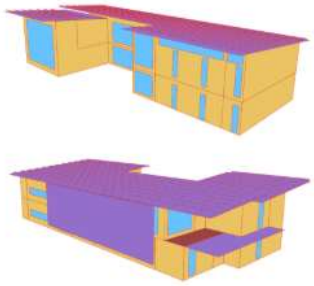
Energy Code Ace

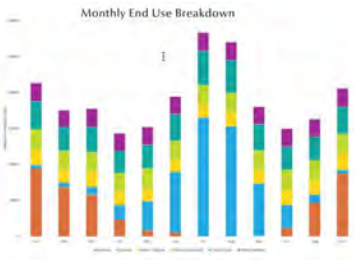


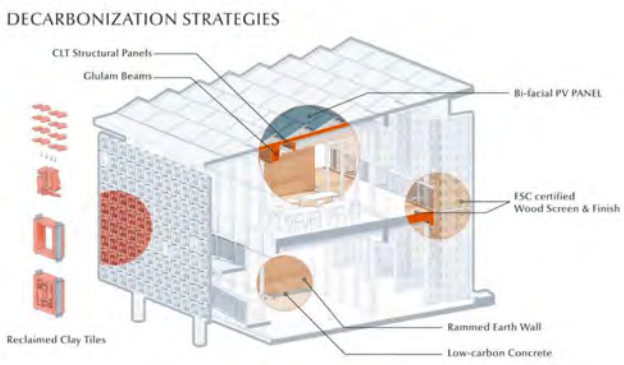
https://energycodeace.com/

Architecture at Zero

Architecture at Zero is a design competition for **decarbonization, equity, and resilience**, open to students and professionals worldwide. It serves to engage the fields of architecture, design, engineering and planning in the pursuit of sustainable design.



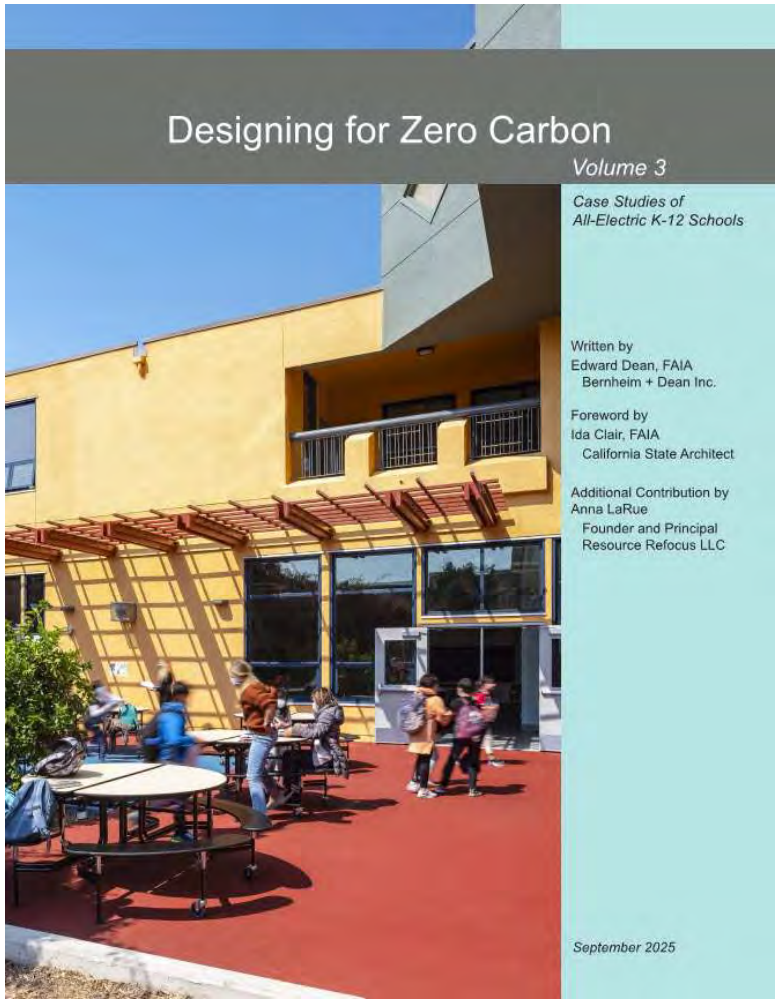


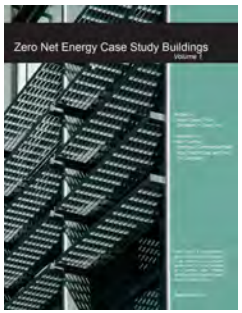


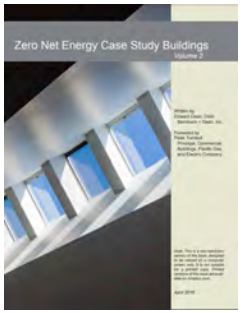
https://www.architectureatzero.com/2026-winners

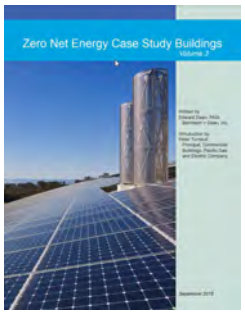
2026 Competiton: La Plaza Cultural & Resilience Center, Antelope Valley, CA

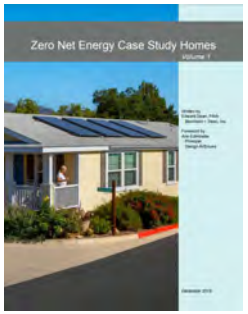
Designing for Zero Carbon Case Studies Books

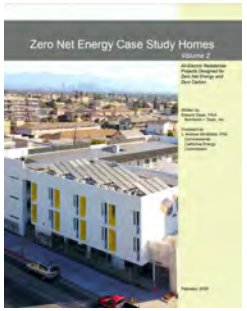


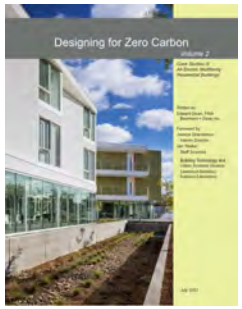












https://calbem.ibpsa.us/resources/case-study-books/

Technology Testing & Demonstration

Energy for What's Ahead®

SOUTHERN CALIFORNIA EDISON®

SCE Technology Test Center

Testing emerging technologies for a decarbonized future

- **Evaluate technology in controlled, real-world conditions**
  Engineers and technical specialists assess emerging technologies in lab environments that mirror operating conditions.
- **Measure efficiency and demand flexibility**
  Testing focuses on performance and flexible load potential across HPWHs, HVAC, refrigeration, appliances, and plug loads.
- **Generate data that informs decisions**
  Findings support utility program design, policy development, stakeholder engagement, and customer decision-making.
- **Showcase emerging solutions**
  The HPWH Lab demonstrates new technologies and supports residential and small commercial systems in dedicated testing bays.

Heat Pump Water Heater Lab

https://www.sce.com/clean-energy-efficiency/energy-education/technology-test-center

SCE Foodservice Technology Center

Energy Audits, Rebates, Training, and more!

- **Equipment Performance Testing**
  Assessing the energy savings potential and effectiveness of various foodservice equipment technologies
- **"Try Before you Buy"**
  Restauranteurs can prepare recipes in our test kitchens to try out the electric option for their cooking process
- **Induction Lending Program**
  Opportunities for consumers to check out portable equipment and experience induction in their own homes or businesses.
- **Facility Audits**
  Unbiased professional advice and recommendations for customers' commercial kitchens and food prep areas

Realtors from the San Gabriel Valley learn about wok cooking with induction

https://www.sce.com/clean-energy-efficiency/energy-education/foodservice-technology-center

Rate Design and Demand Flexibility

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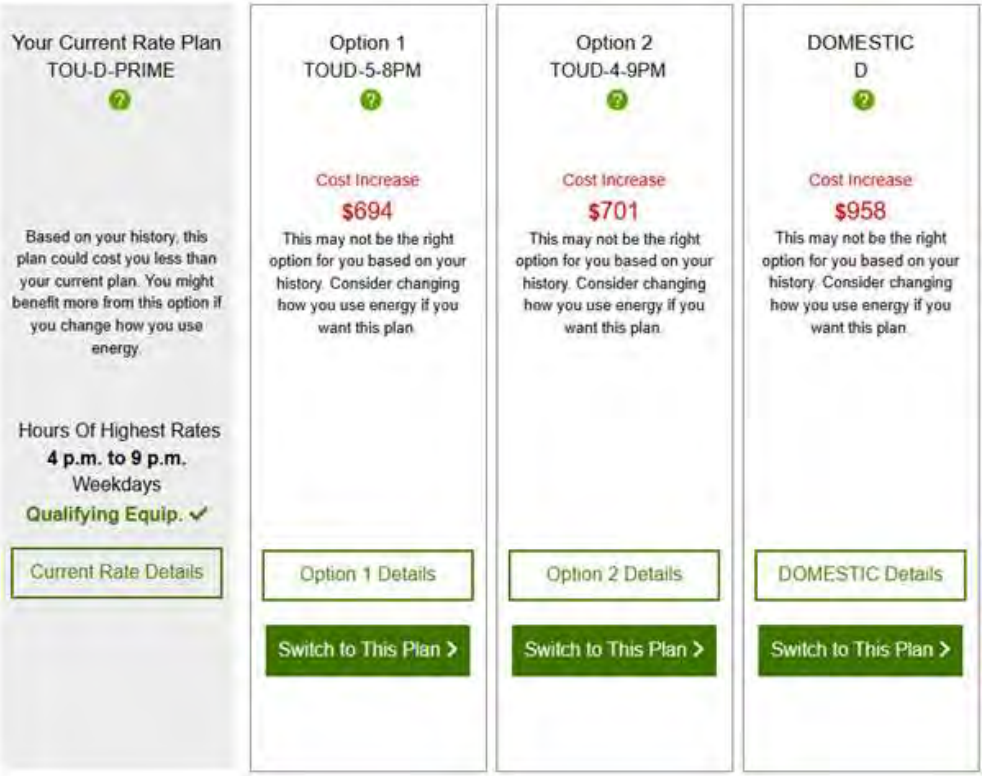
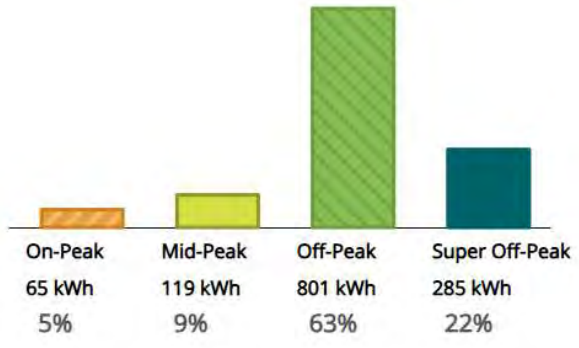
TOU-D-PRIME



- SCE's TOU-D-Prime rate provides a discounted off-peak price compared to other Time-of-Use rates
- Eligibility Requires a Heat Pump, Residential battery, or Electric Vehicle



https://www.sce.com/save-money/rates-financing/residential-rate-plans/time-of-use-plans

Example Customer Rate Comparison

Flexible Pricing Rate Pilot

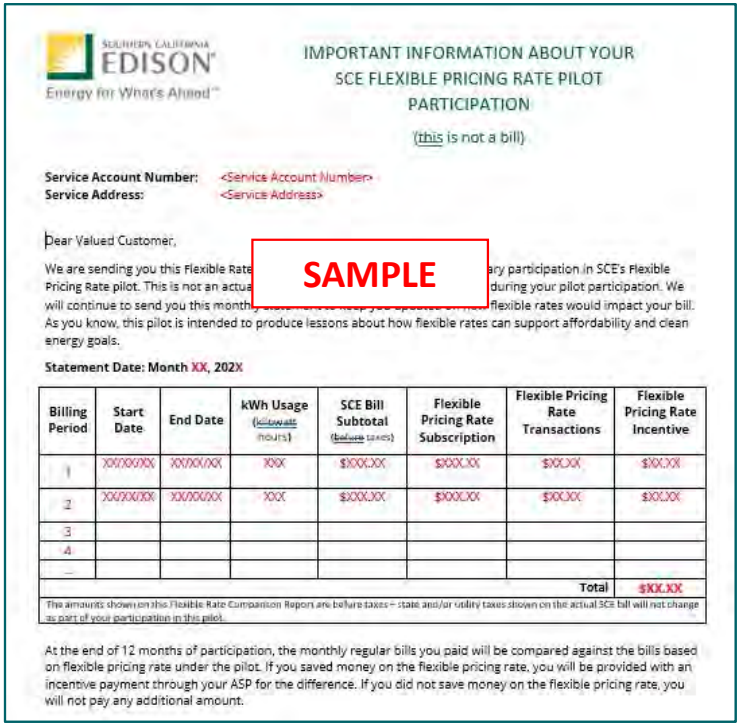
Enrollment: Conducted through the Automation Service Provider (ASP) or directly through SCE

Billing: Customers remain with and are billed on their current rate, and they are "shadow billed" monthly by a vendor.

- Customers can track their progress throughout the year, and at the end of a 12-month period* if their "shadow billed" charges are less than their current rate charges, the customer will receive the difference as a bill credit.
- If customers' shadow billed charges are more than their current rate charges, the customer will only be responsible for current rate charges.

Pricing Structure

- The generation rate includes the CAISO market prices
- The distribution dynamic rate is customized based customer location
- Both the generation and distribution rates fluctuate hourly
- Customers receive a monthly subscription amount based on their historical usage, if available
  - The subscription price incorporates fixed and non-volumetric charges and credits based on the Retail tariff (eg, demand charges, baseline credits)



SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead™

IMPORTANT INFORMATION ABOUT YOUR SCE FLEXIBLE PRICING RATE PILOT PARTICIPATION

(this is not a bill)

Service Account Number: <Service Account Number>
Service Address: <Service Address>

Dear Valued Customer,

SAMPLE

We are sending you this Flexible Rate ... ary participation in SCE's Flexible Pricing Rate pilot. This is not an actua... during your pilot participation. We will continue to send you this month... flexible rates would impact your bill. As you know, this pilot is intended to produce lessons about how flexible rates can support affordability and clean energy goals.

Statement Date: Month XX, 202X

Billing Period	Start Date	End Date	kWh Usage (kilowatt hours)	SCE Bill Subtotal (before taxes)	Flexible Pricing Rate Subscription	Flexible Pricing Rate Transactions	Flexible Pricing Rate Incentive
1	XX/XX/XX	XX/XX/XX	XXX	$XXX.XX	$XXX.XX	$XX.XX	$XX.XX
2	XX/XX/XX	XX/XX/XX	XXX	$XXX.XX	$XXX.XX	$XX.XX	$XX.XX
3							
4							
...							
						Total	$XX.XX

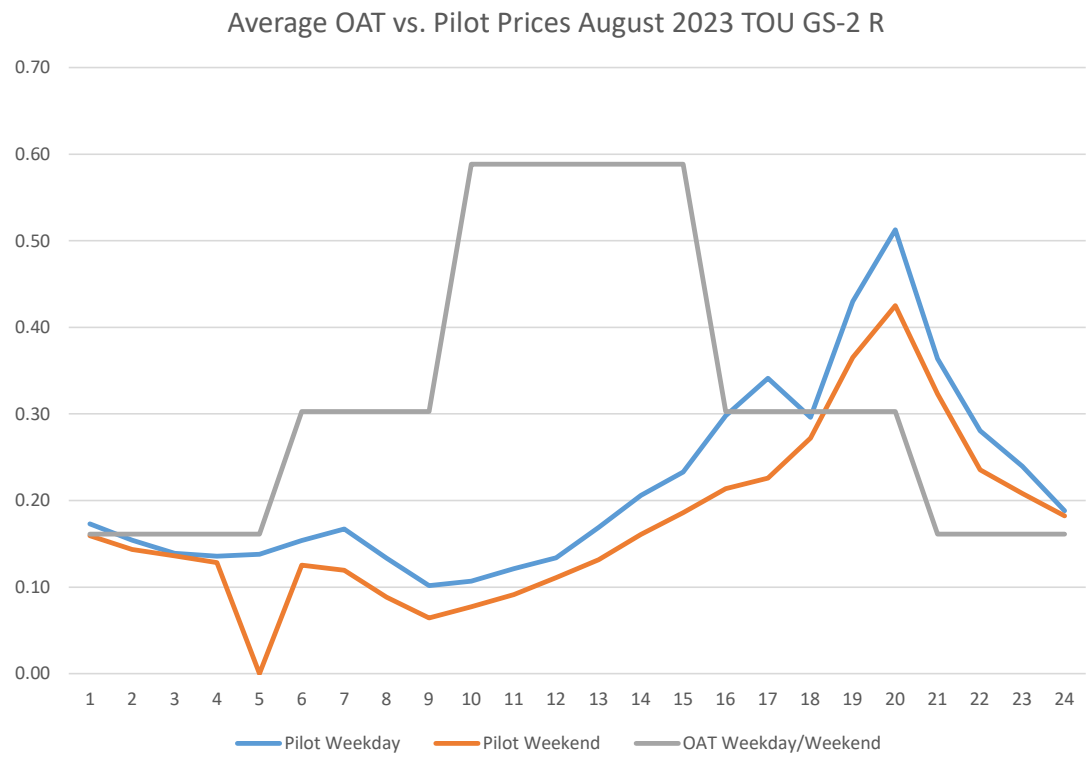
The amounts shown on this Flexible Rate Comparison Report are before taxes – state and/or utility taxes shown on the actual SCE bill will not change as part of your participation in this pilot.

At the end of 12 months of participation, the monthly regular bills you paid will be compared against the bills based on flexible pricing rate under the pilot. If you saved money on the flexible pricing rate, you will be provided with an incentive payment through your ASP for the difference. If you did not save money on the flexible pricing rate, you will not pay any additional amount.

https://www.sce.com/sce-expanded-flexible-pricing-rate-pilot

Flexible Pricing Rate Pilot

Hour	Pilot Weekday	Pilot Weekend	OAT Weekday/ Weekend
1	0.17	0.16	0.16
2	0.15	0.14	0.16
3	0.14	0.14	0.16
4	0.14	0.13	0.16
5	0.14	0.00	0.16
6	0.15	0.13	0.30
7	0.17	0.12	0.30
8	0.13	0.09	0.30
9	0.10	0.06	0.30
10	0.11	0.08	0.59
11	0.12	0.09	0.59
12	0.13	0.11	0.59
13	0.17	0.13	0.59
14	0.21	0.16	0.59
15	0.23	0.19	0.59
16	0.30	0.21	0.30
17	0.34	0.23	0.30
18	0.30	0.27	0.30
19	0.43	0.37	0.30
20	0.51	0.43	0.30
21	0.36	0.32	0.16
22	0.28	0.24	0.16
23	0.24	0.21	0.16
24	0.19	0.18	0.16



Demand Charges are not included in this illustration. Pilot demand charge is a $0.13 volumetric adder (for this customer, this month)

Example Scenario

Demand Flexibility

OUR VISION – Provide continuous, reliable, real-time load flexibility that will deliver affordability benefits for participating and non-participating customers by accelerating speed-to-power and maximizing the value of existing infrastructure.

Flexible Loads & Resources

- Includes solar, batteries, electric vehicles, and other flexible loads
- May be routed directly from the IOU or via aggregators

Real-Time Control & Coordination

- Leverages forecasting plus real-time data to provide control signals or scheduling
- Meets location- and time-specific distribution needs

Regulatory Pathways & Planning

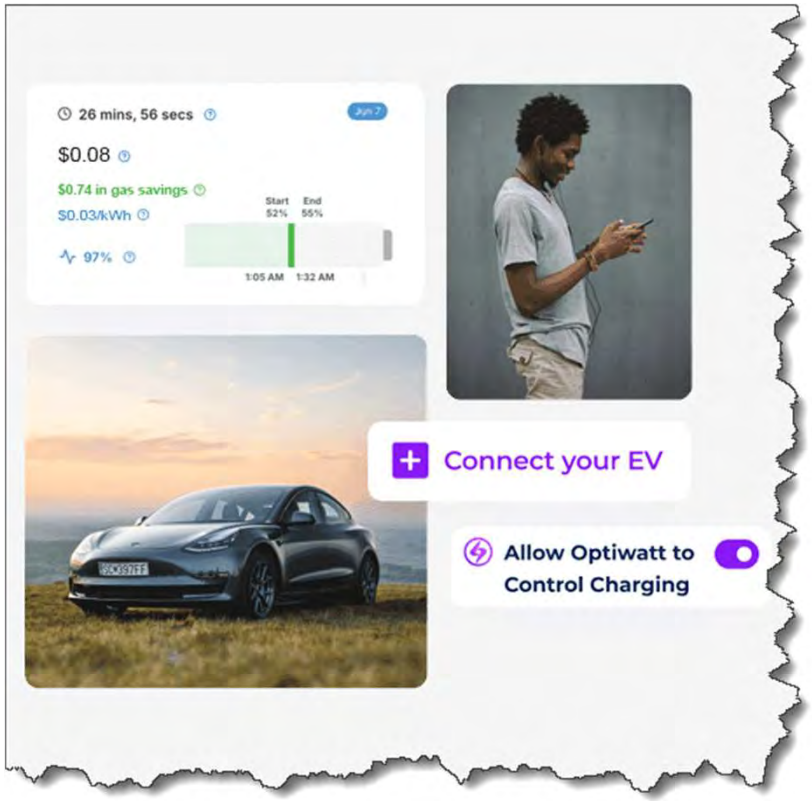
- A suite of flexible resources put in place through related CPUC proceedings: Flexible Service Connections (Energization), Limited Generation Profiles (Rule 21), and Firm and Non-firm Capacity (High DER Track 3)
- Must be incorporated into planning to capture key affordability benefits (e.g., asset deferral)

Demand Flexibility

SCE is advancing DF across two coordinated fronts: enabling the grid and empowering flexible customer participation.

	Grid + System Enablement	Customer Behavior & Experience
Purpose	Enable grid visibility, targeting, and orchestration	Enable scalable customer participation and flexible load management
Capabilities & Efforts/ Initiatives	*Grid Visibility & Coordination* • **DERMS/SIDER** • **DFMS** • **AMI 2.0**	*Managed Charging & EV Flexibility* • **ChargeSmart** • **ORCHARD** • **V2G Demos**
	Planning & Forecasting • **Load forecasting enhancements** • **Distribution planning integration**	*Multi-Device & Aggregator Studies & Programs* • **BOLTS & DR Programs** • **Multi-DER Pilots** • **Ready Grid**
	Grid Ops & Dispatch • **Local constraint identification** • **Dispatch coordination studies**	*Modeling & Studies* • **Energy Shift Capacity Study** • **Oracle DF Study** • **AMI Studies**

Demand Flexibility



WeaveGrid Launches "Charge Smart - SoCal" Initiative with Southern California Edison for EV Drivers in Gateway Cities Corridor

Announcements July 16, 2025

WeaveGrid recently launched a pilot program with Southern California Edison (SCE) called Charge Smart - SoCal. This program will help optimize electric vehicle (EV) charging for thousands of drivers in the Gateway Cities, offering dynamic scheduling to enhance customer savings and grid reliability. The initiative aims to enroll at least 2,000 EV drivers in the Gateway Cities region

Managed Charging Pilots

Customer Programs

Energy for What's Ahead®

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Wildfire Rebuild Programs

Base Program Incentives

Unit Type	Rebuild Standard	Base Incentive	Equity Incentive
Single Family	Title 24 All-Electric	$10,000	$15,000
Modular Housing	Title 24 All-Electric	$8,000	$12,000
Manufactured Housing	ENERGY STAR Version 2 All-Electric	$7,000	$10,500
ADU	Title 24 All-Electric	$7,000	$10,500
Multifamily	Title 24 All-Electric	$5,000* *per unit	$7,500* *per unit

RISE Homes

RISE Homes- (Rebuilding Incentives for Sustainable Electric Homes)

Wildfire Rebuild Programs

Bonus Incentives

Bonus Type	Bonus Incentive	Bonus Equity Incentive
Whole Home Battery	$5,000	$7,500
Ultra-Low GWP Refrigerant Heat Pump Water Heater	$3,000	$4,500
Passive House Measures	$20,000	$30,000

https://risehomesca.com/

RISE Homes

RISE Homes- (Rebuilding Incentives for Sustainable Electric Homes)

Wildfire Rebuild Programs

Induction Range or Cooktop	Heat Pump Clothes Dryer	Heat Pump Water Heater	Heat Pump HVAC	Smart Thermostat
				
Must be ENERGY STAR® certified Must use induction heating only Must have 4 or 5 burners	Must be ENERGY STAR® certified Minimum 5.2 Combined Energy Factor (CEF) Compact models must use ultra-low GWP refrigerant (R-134a is not allowed)	120V units: Minimum 2.75 Uniform Energy Factor (UEF) 240V units: Minimum 3.3 Uniform Energy Factor (UEF)	Minimum 15.2 SEER2 (cooling efficiency) Minimum 7.7 HSPF2 (heating efficiency) Refrigerant must have GWP of 700 or lower (e.g., R-32 or R-454B)	Must be ENERGY STAR® certified Must be Wi-Fi connected or internet-enabled Must control a central AC system with a gas furnace or central heat pump
Up to $1,518	**Up to $940**	**Up to $2,417**	**Up to $2,373 per ton**	**Up to $100**

SWITCH can help you rebuild or repair

If you're rebuilding or repairing your home after the Eaton or Palisades fires, the Simplified Wildfire Incentives for Transforming Customer Homes (**SWITCH**) program can help lower the cost of replacing essential appliances and technologies. Depending on your purchase and the tonnage of your HVAC system, you could receive even more than **$13,000** in incentives for your home.

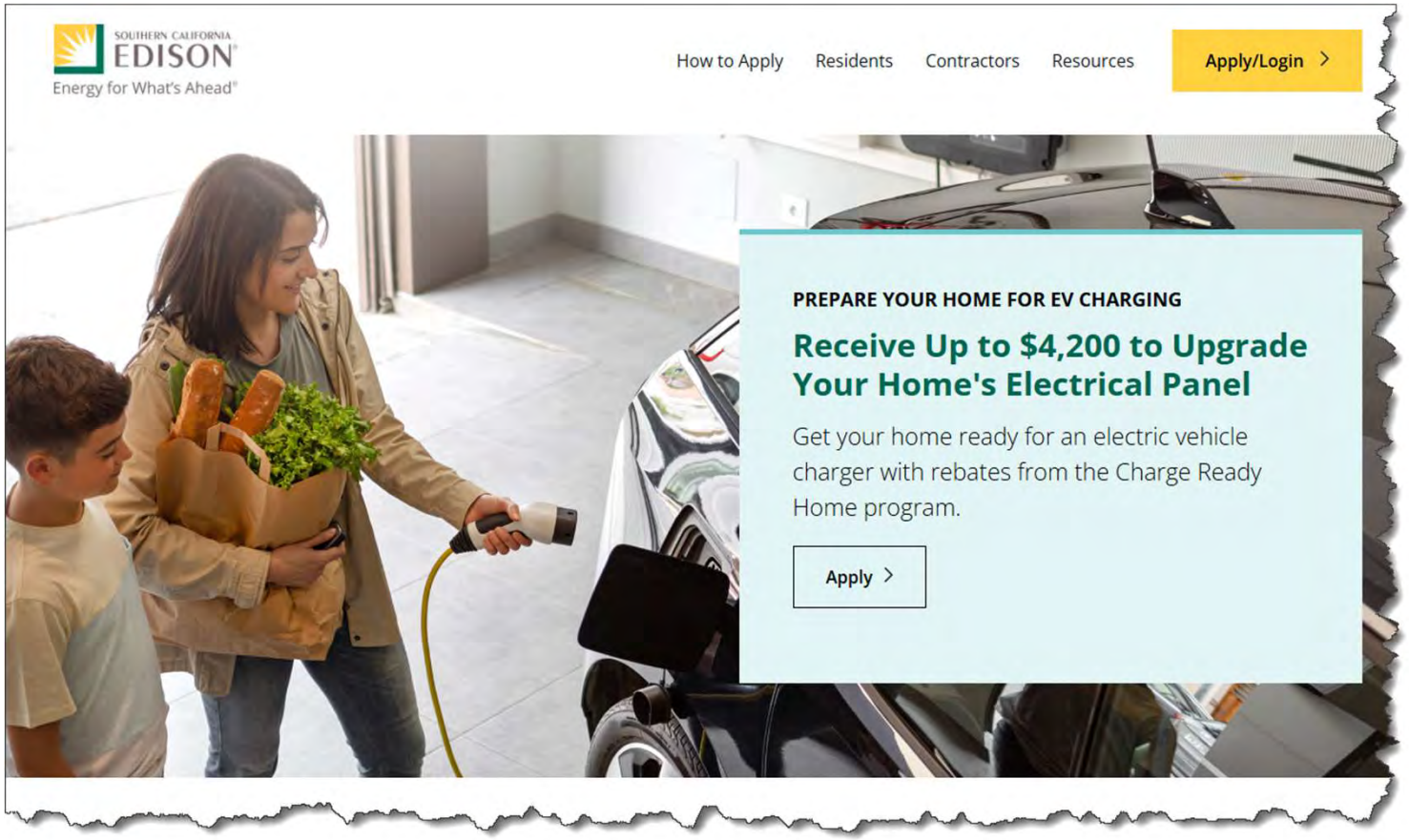
Where can I get more information?

- Visit **sce.com/SWITCH** for more information on the application process and what's required for documentation
- Email **SWITCH@sce.com** or call the program phone line at **1-800-736-4777,** M–F, 8 a.m.–6 p.m.

Important: Purchases made before Aug 1, 2026, are not eligible.

SWITCH- (Simplified Wildfire Incentives Transforming Customer Homes)

Charge Ready Home Program



Receive up to $4,200

✓ **You live in a low-income household**

Income-qualified Rebate: Applicants can qualify for a $4,200 rebate if they live in a low-income household, defined as a household earning less than 80% of the area median income (AMI) or if they can provide proof of enrollment in at least one qualifying public assistance program.

Or

Receive up to $2,100

✓ **You live in a disadvantaged community**

Geographic-based Rebate: Applicants can qualify for a $2,100 rebate if they reside in a disadvantaged community (DAC), based on the SB353 Disadvantaged Communities Map.

https://evhome.sce.com/

SCE Codes and Standards Team