SCE's Energy Savings Assistance

Building Electrification Program Update

March 25, 2025

SCE's Building Electrification Program

SCE's Building Electrification (BE) Program offers income-qualified homeowners and renters the opportunity to electrify their homes by replacing natural gas appliances with high-efficiency electric equipment, such as:

- Heat pump HVAC system
- Induction Cooking Appliance
- Heat Pump Water Heater
- And More

Customer eligibility:

- SCE customer with an active service account;
- Reside in a single-family home;
- Home must currently have a natural gas furnace and water heater that can be replaced with heat pump equipment;
- Meet income qualification; and
- A **bill and rate analysis** must be performed to estimate savings can be achieved from electrification retrofit prior to commencing work.

For additional information, visit: www.sce.com/goelectric

The Building Electrification Program is funded by California utility ratepayers and administered by Southern California Edison under the auspices of the California Public Utilities Commission. Eligibility requirements apply and Program services are offered on a first-come, first-served basis until funds are no longer available or the Program is discontinued. California consumers are not obligated to purchase any full-fee service or other services not funded by this Program.

SCE's Building Electrification Program cont.

SCE contracted MAROMA Energy Services to implement the BE Program and manage each step of the project.

The BE Program initially targeted CARE high-usage and high cooling load customers living in single-family homes within disadvantaged communities. Efforts were focused on geographical areas with a higher density of potential customers. Since then, we have applied lessons learned and coordinated with other programs to leverage funds, referrals, and other services, such as solar and battery solutions, to maximize benefits for customers.

We continue to collaborate with MAROMA to identify other opportunities:

- Implement a project milestone payment to enhance installation contractor cash flow to undertake and deliver more projects.
- Participant accounts are updated, based on the heat pump installations, to receive baseline allowance allocations and increase bill savings potential.
- Potential for zonal electrification.

A component to implementation has been the contractor training. Developing training sessions that covered topics such as building electrification benefits, potential bill savings, SCE rates, and heat pump technology.

SCE's Building Electrification Program cont.

The BE Program has made significant strides and increased productivity. There are over 500 customers in various stages of the process.

Project Stage	Number of Homes
Enrollment phase (e.g., home assessment, scope development, etc.)	179
Installation in-progress (e.g., procuring equipment and permit, electrical upgrade, etc.)	217
Installations complete, pending final documentation (e.g., completing Title 24, permit inspection, etc.)	36
Subtotal	432
Homes Treated	155
TOTAL	587

All homes treated have received a heat pump HVAC and heat pump water heater. Additionally, 50% of participants have received an electric clothes dryer, and 39% have received an induction cooking appliance, along with the necessary cookware.

It is important to note that SCE required the MAROMA to perform a rate and bill analysis before any electrification work commenced. This ensures that the energy operating costs for participating customers are not adversely affected by the electrification retrofits.

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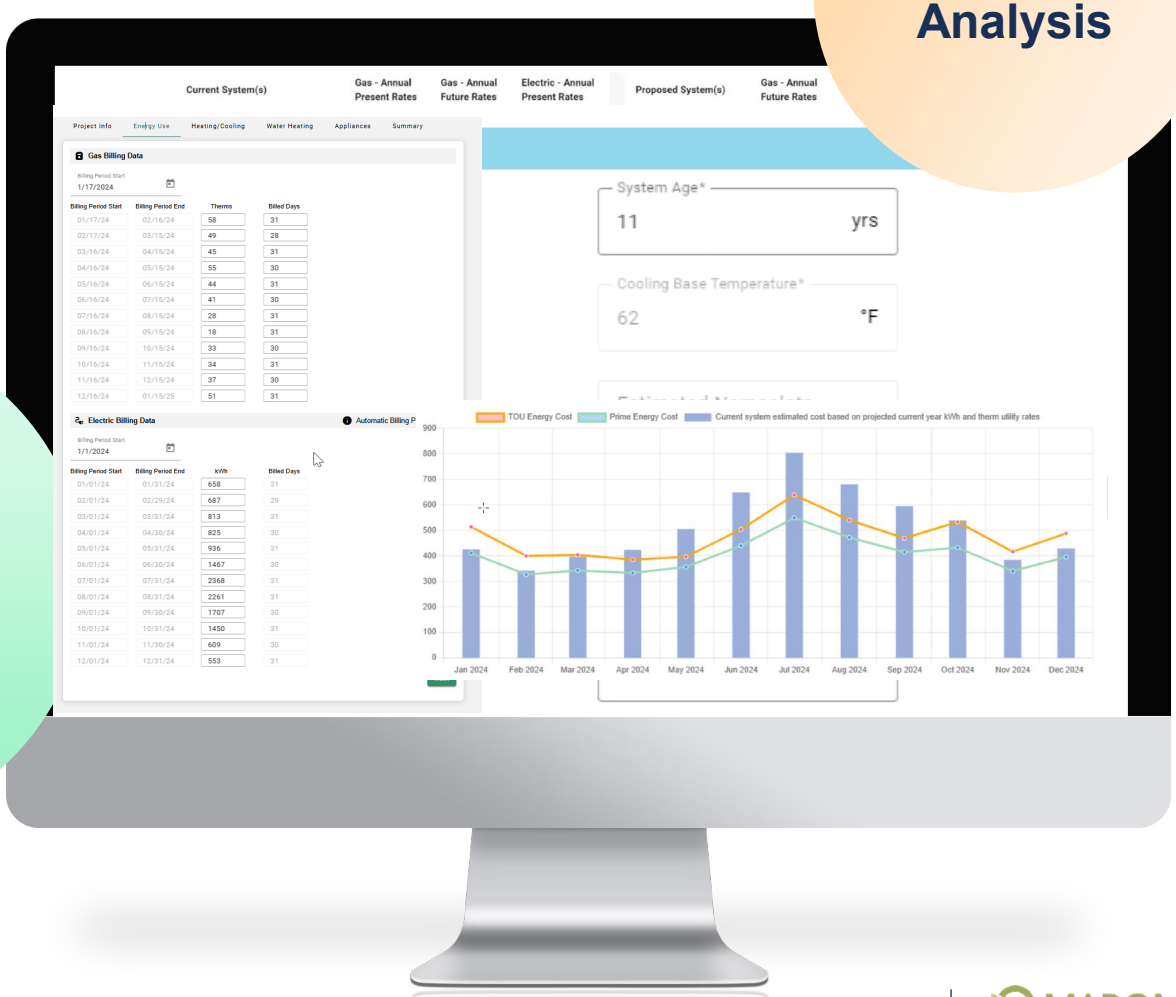
Fuel Substitution Tool Demonstration

E - Switch, a ready-to-use, web-based bill analysis tool

- ✓ Utilizes customer's historic energy consumption to conduct a bill and rate analysis and forecast future energy bill impacts
- ✓ Models electrification impacts using dwelling characteristics and actual energy consumption to enable custom evaluation for each property
- ✓ Disaggregates energy data to provide monthly bill impact estimates per end use
- ✓ Supports time-of-use (TOU), tiered, discounts, and solar rate classes

Delivers Realistic & Data-Driven Insights

Bill Impact Analysis



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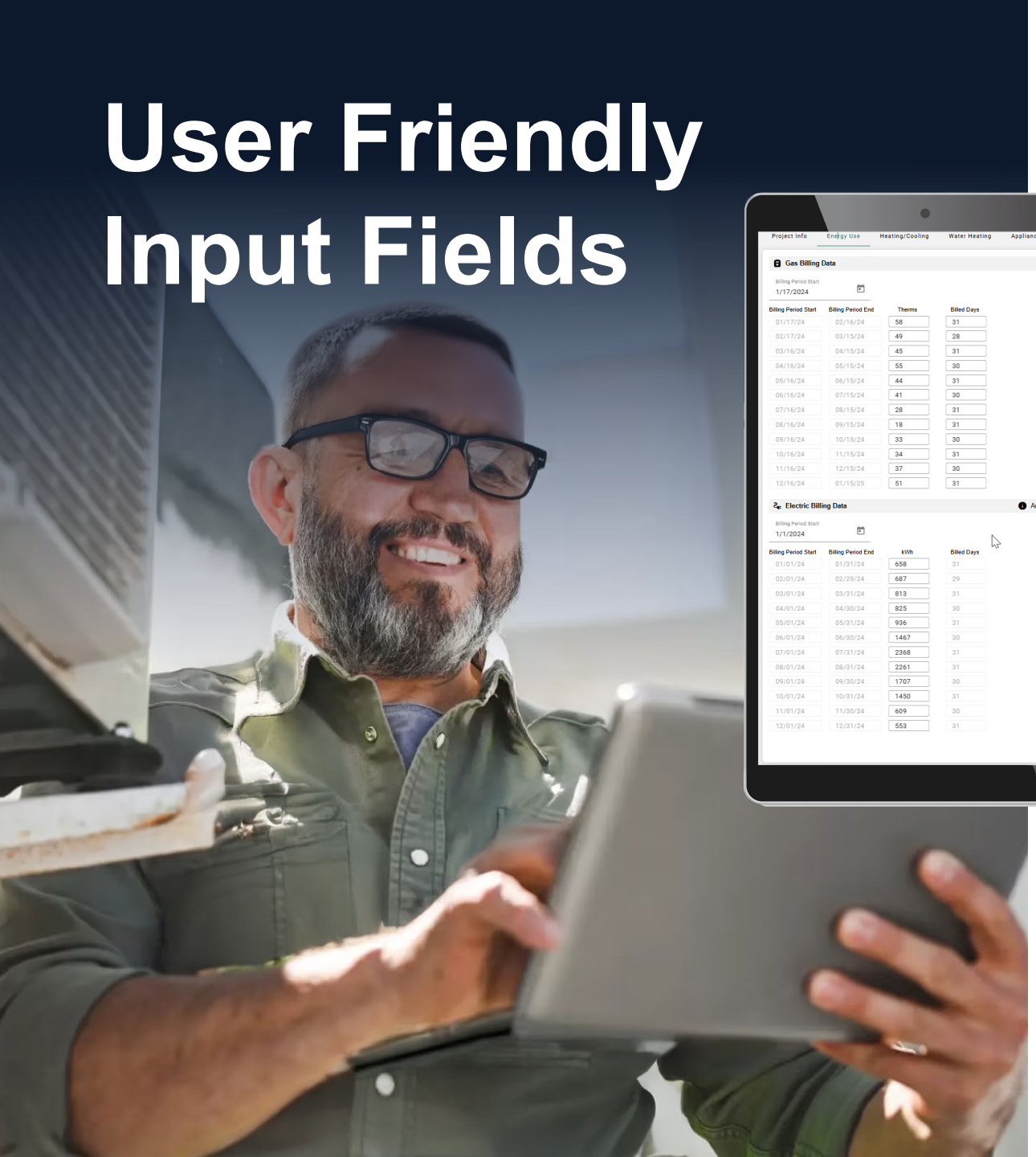
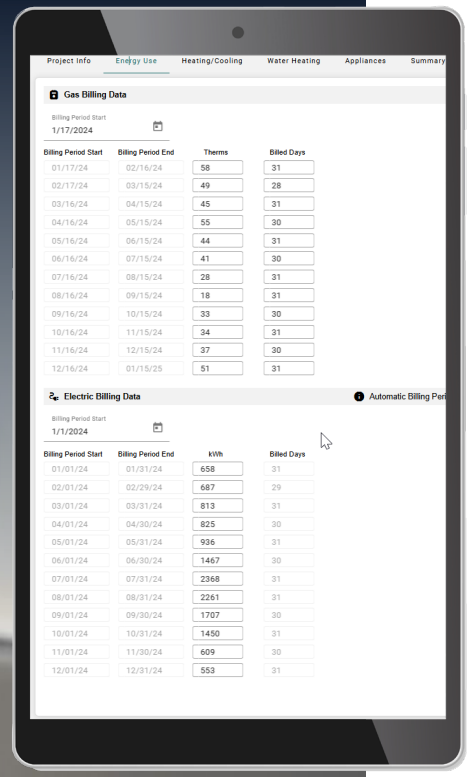
User Friendly Input Fields





- ✓ Property demographics
- ✓ Electric and gas billing data
  - ✓ Allows Custom billing periods
- ✓ HVAC and DHW heating specs
- ✓ Other electrification upgrades - electric clothes dryers, water heaters, and cooking systems
- ✓ Heating and Cooling setpoints
- ✓ Utility rate plans and discounts

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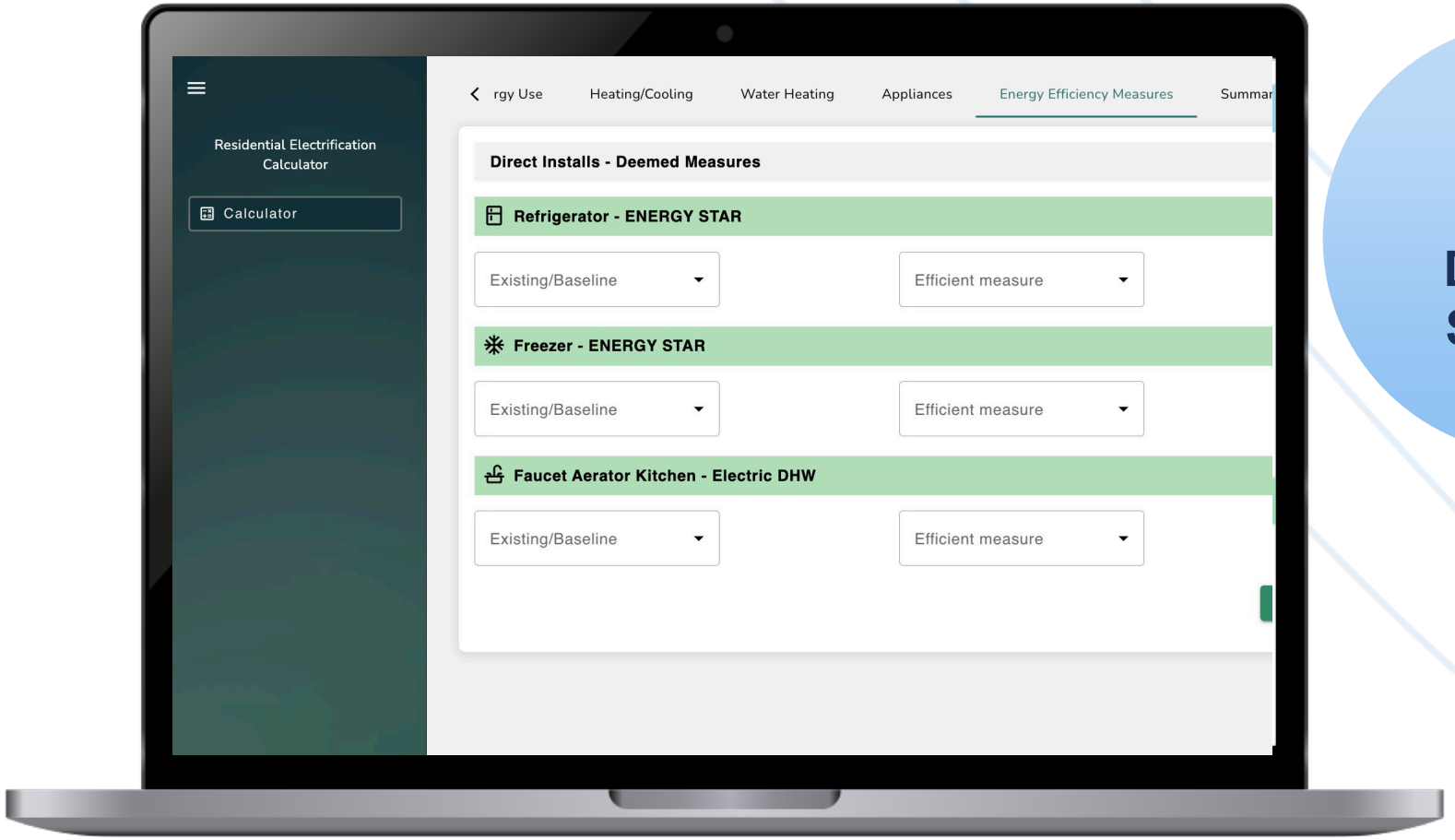
Energy Efficiency Measures



Deemed Savings

Deemed Measures

eTRM

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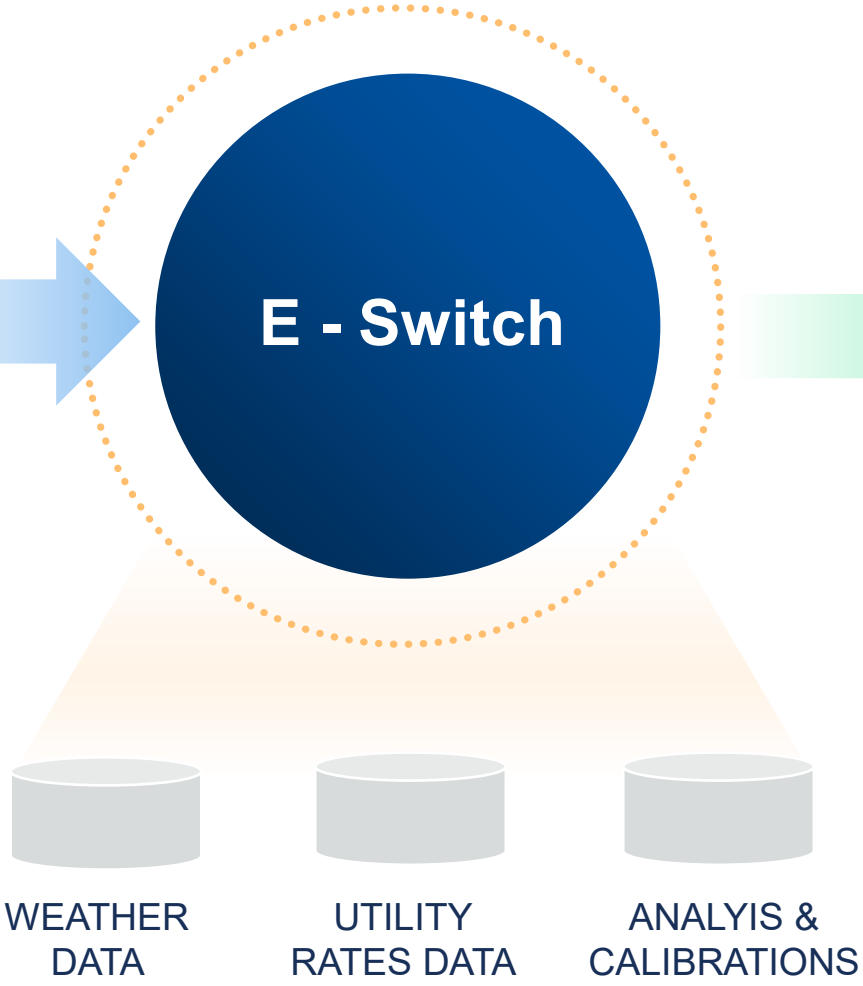
Accurate, Data-Driven Results in Minutes

Simple Input Process

1. Basic home information
2. Historic electric and natural gas usage
3. Current equipment
4. New measures



Results

- Bill impacts calculation
- Estimated Savings
- E- Switch Report

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Easy-to-read E-Switch Report

Simple, Summarized Results

Clear Insights

Utility Rate Comparison

	Current System(s)	Gas - Annual Present Rates	Gas - Annual Future Rates	Electric - Annual Present Rates
Heating	Gas Furnace w/ Ducts	828	525	99
Cooling	Central Split AC	0	0	739
Hot Water Heater	50 Gallon Gas Storage (Tank)	255	180	0
Cooking	Electric In-Wall Oven (Single) and Electric Stand-alone Cooktop	38	27	0
Dryer	Top-loading	28	20	0
All Other Equipment	None Recorded for Conversion	0	0	2,894
Gas Service Charge	Fixed Rate	60	60	0
Total		1,208	811	3,733

Proposed System(s)	Gas - Annual Future Rates	Electric - Annual with TOU PRIME Rates	Electric - Annual with Tiered Rates
Central Heat Pump	Electrified	648	792
Central Heat Pump	Optimized	525	578
80 Gallon 3.5 UEF Heat Pump Water Heater	Electrified	164	189
Cooking	Electrified	107	123
Laundry	Electrified	57	65
No Change (Utility Rate Only)	0	2,414	2,837
Fixed Rate	60	0	0
	60	3,915	4,583

Savings Summary	Tiered	Prime
Heating	-168	-24
Cooling	161	214
Hot Water Heater	-8	17
Cooking	-96	-81
Dryer	-45	-37
All Other Equipment	58	480
Total Cost Savings (Based on Current Rates)	-99	569

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E-Switch in Action

LOW INCOME PROGRAMS

SOUTHERN CALIFORNIA EDISON
An *EDISON INTERNATIONAL* Company

Building Electrification Pilot

STATE OF CALIFORNIA ENERGY COMMISSION

Equitable Building Decarbonization (North)*

PG&E

Strategic Early Replacement Program**

Zonal Equity Electrification Pilot

*Under consideration **Funded by TECH Clean California

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Methodologies

Billing Analysis

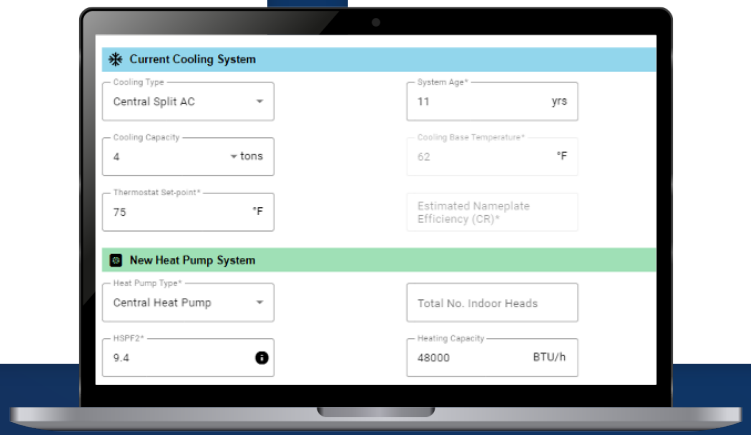
- Weather normalizes energy data using actual weather data from closest weather station
- Calculates historical heating and cooling degree-days
- Disaggregates heating and cooling energy use
- Enables precise energy consumption estimates

Measure Types

- Modeled savings
- Deemed savings
- Run scenarios with or without weatherization measures
- Disaggregates energy for each measure to be electrified

Functionality

- Web Access
- Easy user interface with built-in guidance
- Instant export for reporting project parameters and analysis



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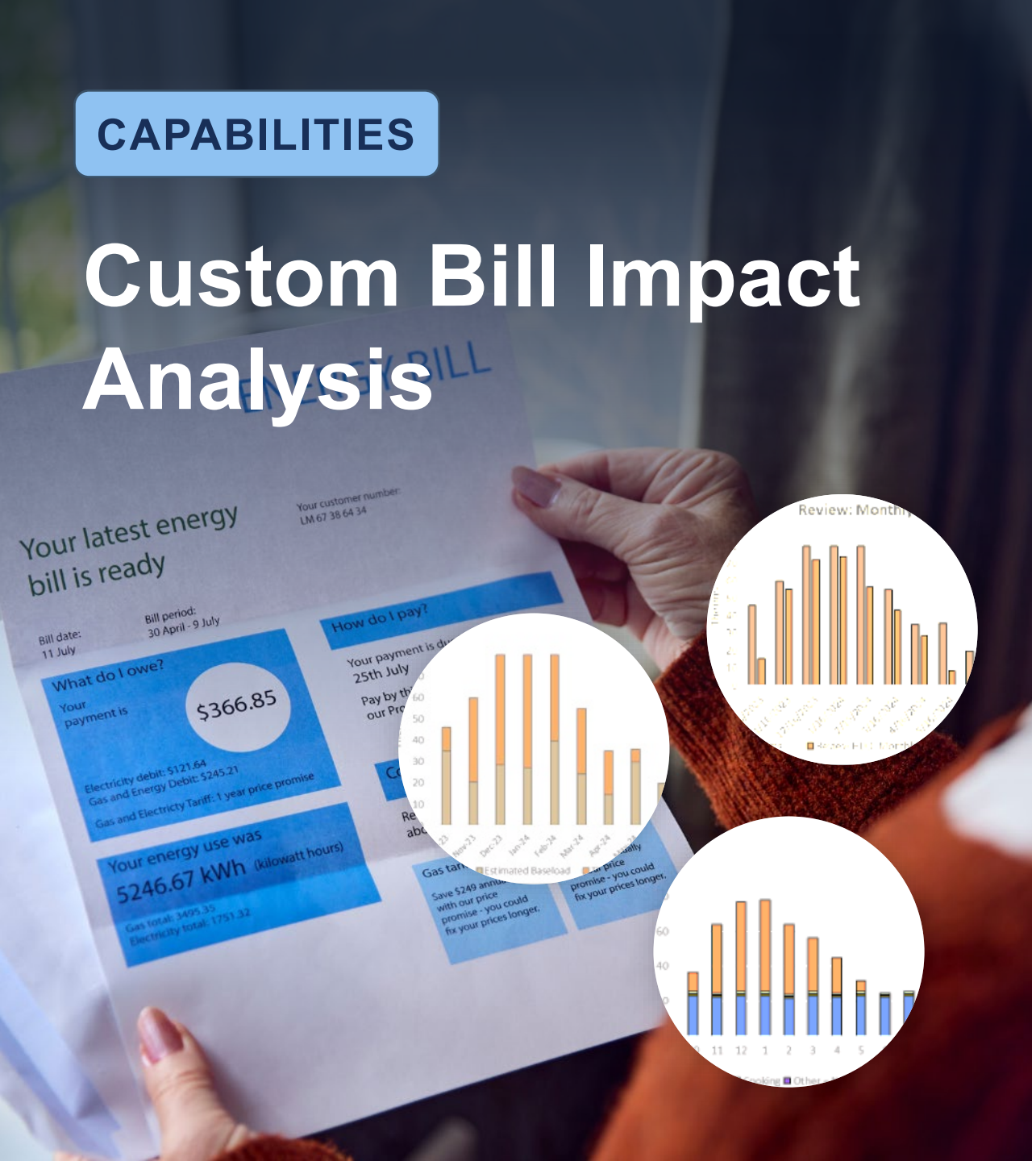
CAPABILITIES

Custom Bill Impact Analysis



- ✓ **Bill Regression.** Analyzes actual electric and fuel utility bill data, actual weather data
- ✓ **Base Temperatures.** Calculates for heating and cooling based on inputs
- ✓ **Disaggregation.** Estimates weather normalized heating, cooling and baseload hourly energy
- ✓ **Loads.** Performs heating and cooling load analysis (comparable to Manual J)

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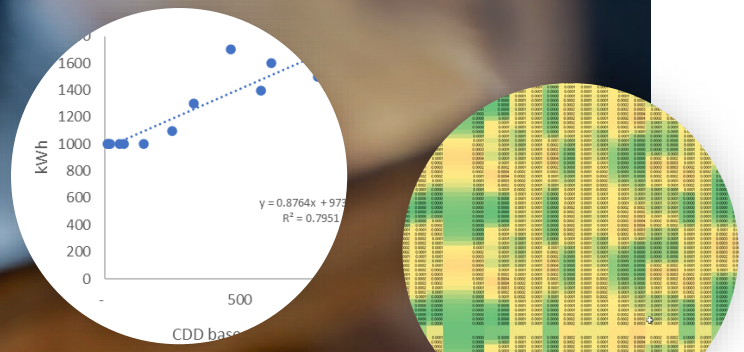
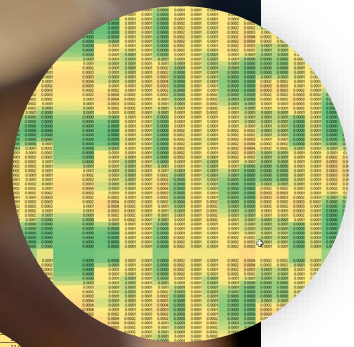
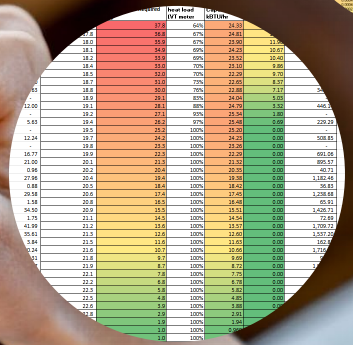
Advanced Calibrations and Load Profiles







- ✓ **Trusted.** End-use load profiles for modeled and deemed measures sourced from NREL and LBNL
- ✓ **Granular.** Calibrates hourly HVAC efficiencies (as a function of outdoor air dry-bulb temperature)
- ✓ **Holistic.** Calibrates results based on exterior envelope assessment
- ✓ **Diverse Measure Options.** Estimates energy use for non-weather-dependent appliances (cooking, laundry) based on demographics
- ✓ **Bill Impact Due Diligence.** Calculates energy expenditures for heating, cooling, and major appliances; both before and after electrification; with current and alternative utility rates

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CAPABILITIES

User Safeguards to Ensure Accuracy

- ✓ **Flag.** Billing inaccuracies and vacancies generate can be flagged for potential errors
- ✓ **Substandard Data.** System automatically switches to default alternatives if inputted billing data are invalid
- ✓ **Tool Tips.** Pop-up guidance located throughout tool for novice users
- ✓ **Errors Messages.** Users receive notifications for invalid billing analysis

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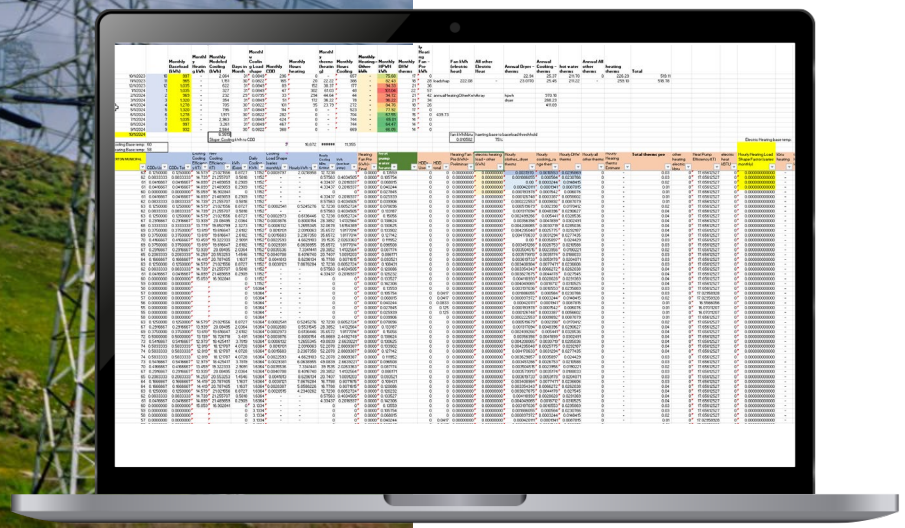
CAPABILITIES

Relevant Utility Rates and Weather Data



- ✓ **Complex Rates.** Rate analysis supports both Time-of-Use (TOU) and Tiered rate types
- ✓ **Past and Present Rates.** Incorporates current and historical rates for billing analysis
- ✓ **Forecasted Rates.** Can calculate projected electric and fuel cost rates based on historic trends or utility forecasts
- ✓ **Relevant Weather.** Allocates closest weather station to site, with up-to-date values

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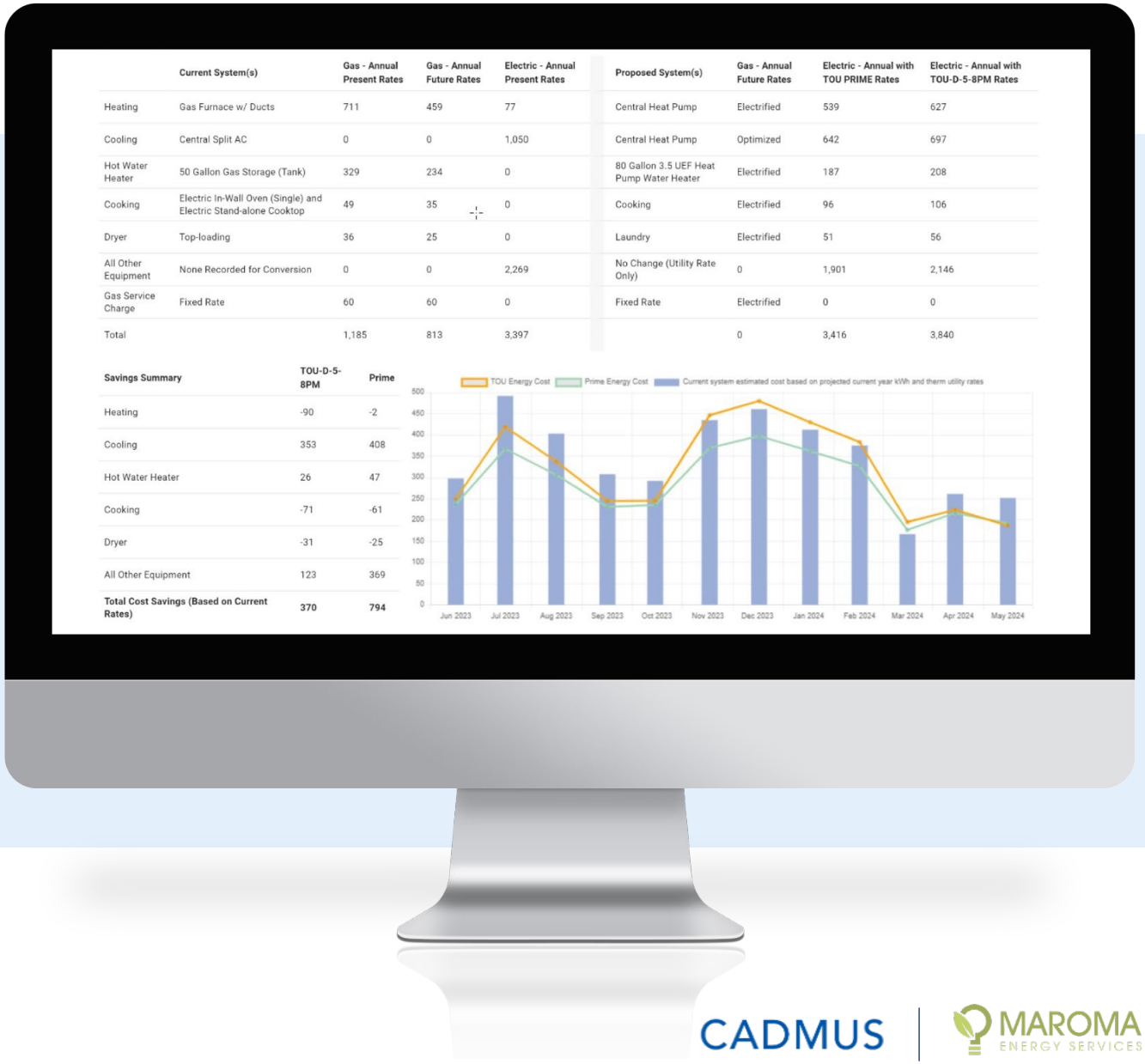
Live Demo

- ✓ Straightforward user interface
- ✓ Input data for electrification measure scenarios (HP, HPWH, Cooking, Dryer)
- ✓ Model all-inclusive energy expenditure
- ✓ Output E-Switch Report
- ✓ Compare costs of existing electric rate with eclectic home TOU-PRIME rate
- ✓ Save project, parameters and analysis



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Roadmap

Planned 2.0 Release

- Expand (deemed savings) measure catalog
- Incorporate CO2e emissions impacts
- Turn on forecasted rates
- Turn on visualizations

Expected 3.0 Release

- Incorporate additional financial metrics (savings to investment ratio)
- Expand measures to include custom packages

Evaluating

- CRM integrations
- Dwelling data service integrations (floor area, year built, etc.)
- Non-residential applications

Q&A

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About us

MAROMA ENERGY SERVICES

MAROMA Energy services is a certified minority-owned business administering turnkey direct installation energy programs for low-income customers across California and Nevada since 2014.

Key California programs include

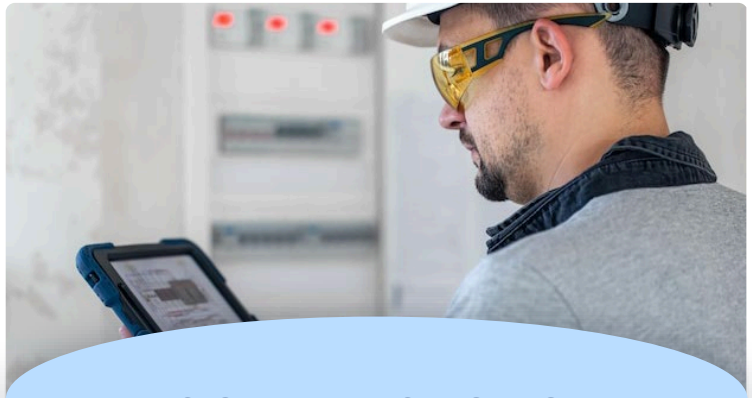
- Building Electrification Pilot
- Low Income Weatherization Program
- Whole Home Program

CADMUS

Cadmus is an international strategic and technical consultancy with 40+ years of success.

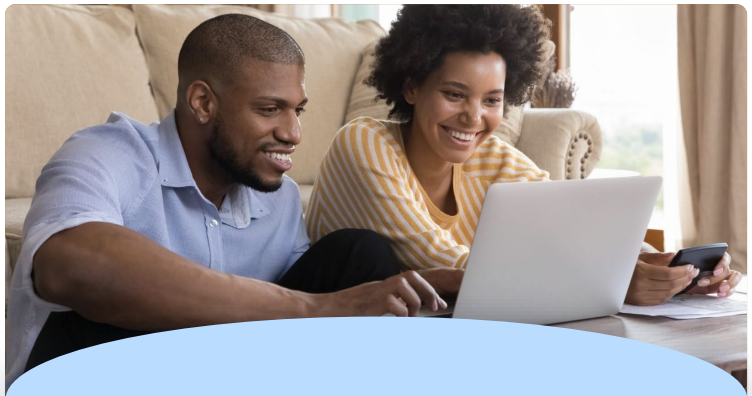
Our experts have provided program planning, design, and evaluation activities and research-backed outreach and education for decarbonization and market transformation programs on behalf of 50+ utilities and government entities.

Tailored to Meet Users' Needs



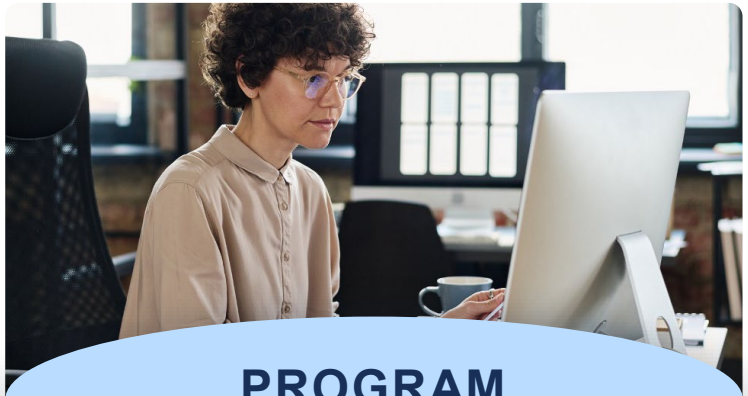
CONTRACTORS

- Compare specific home against prototypical homes
- Run scenarios with and without additional energy efficiency measures
- Analyze billing data instantly



HOMEOWNERS

- Calculate impact of electrification utility bills
- Evaluate rebate offerings and ROI
- Run electrification scenarios



PROGRAM ADMINISTRATORS

- Gather data to design future programs
- Boost heat pump participation
- Show weather impact insights
- Leverage bulk data for decisions