

Regional Approaches to Building Electrification and Decarbonization

Dana Murray, City of Goleta Sustainability Manager

Garrett Wong, County of Santa Barbara Climate Program Manager

Erin Maker, City of Carpinteria Environmental Program Manager

Angeline Foshay, City of Goleta Sustainability Analyst

Kristian Hoffland, City of Santa Barbara Energy & Climate Analyst

GOLETA
ELEVATION 35 FEET

Introduction

Jurisdictions Developing Policy



Technical Assistance



NegaWatt



GHG Goals and Clean Energy Policies

SB 350

- Reduce GHG to 40% below 1990 levels by 2030
- Reduce GHGs to 80% below 1990 levels by 2050
- Double statewide energy efficiency savings in electricity and natural gas end uses by 2030

State's energy targets for new construction aim for:

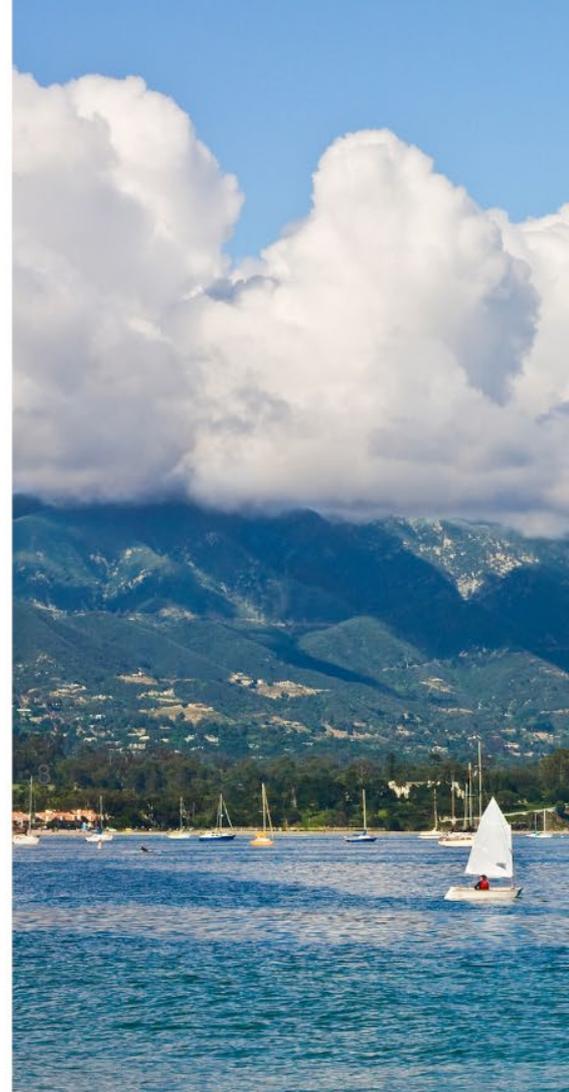
- Zero-net-energy (ZNE) 2020-2025 (residential & municipal)
- ZNE 2030 (nonresidential)

How?

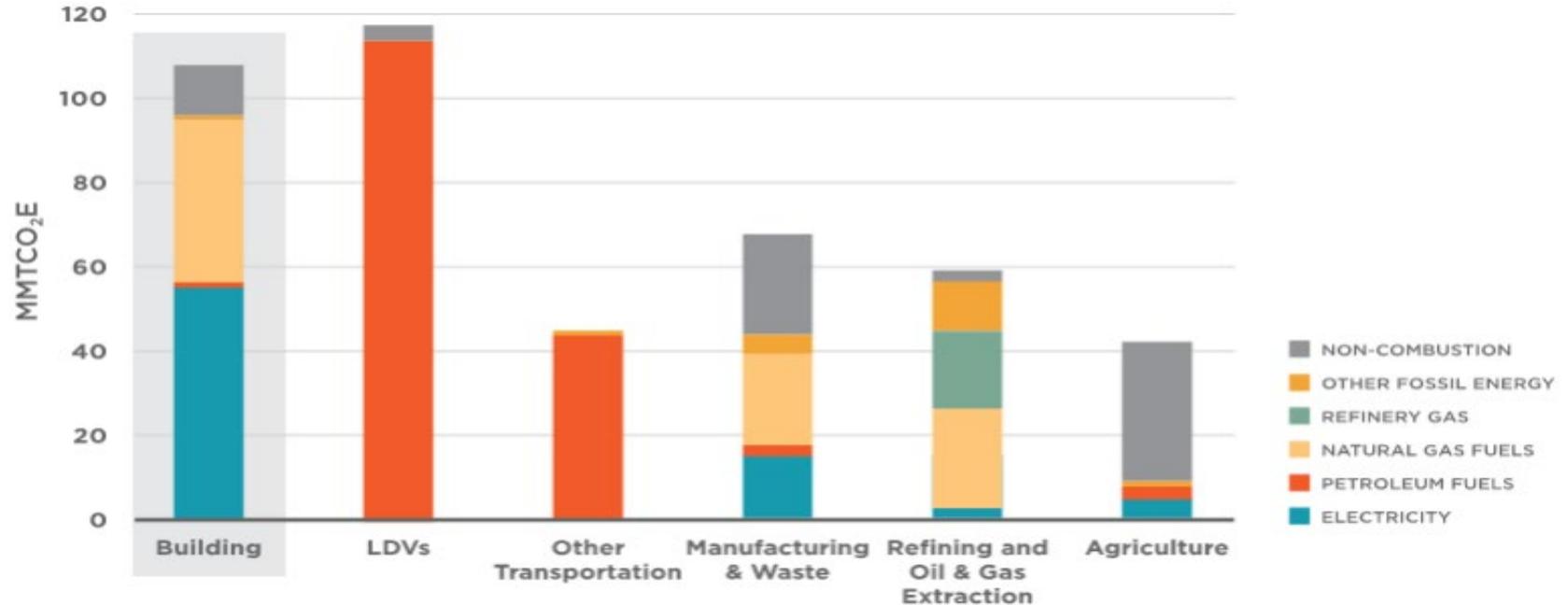
- California Air Resources Board (CARB)
- California Public Utilities Commission (CPUC)
- California Energy Commission (CEC)

Local Goals and Policies

- County of Santa Barbara: 50% emissions reduction by 2030



Buildings produce 24% of total carbon emissions



Source: Building Decarbonization Coalition

Reducing GHG Emissions in New Construction

Every 3 years CA cities required to adopt new CA Building Standards Code
Local governments can draft local energy codes that “reach” beyond CA minimum requirements

Key strategy in building sector: reducing GHGs through All-Electric Buildings
50+ cities in CA have adopted codes above state requirements related to electrification in 2019-2022



Heat Pumps:
The New Standard

New Homes to Be
Electric-Ready

Solar and Storage
Use Expanded

Co-Benefits of All-Electric Buildings

- Reduced construction costs
- Reduced indoor air quality/health concerns
- Reduced hazards
- Improved outdoor air quality
- Improved vistas/views



Electrification is Cost Effective

Avoided costs of new natural gas infrastructure makes all-electric relatively cheaper to build in lifetime analysis.

All-electric new construction is cost-effective* in all climate zones.

All-electric + PV is on-bill cost effective in all climate zones.

*lifecycle savings greater than initial costs



What about Reliability?

Extreme heat, wildfire and Public Safety Power Shutoffs, exacerbated by climate change, pose a constant threat

Gas appliances that rely on electric ignition may also not be operable in the face of electric outages

Aging methane natural gas infrastructure also remains a critical concern

New all-electric buildings would not significantly change the overall demand for electricity

Investments in clean and reliable energy sources and grid infrastructure will continue to be made

An offshore oil rig is visible in the background on the left side of the slide, set against a blue sky and ocean. The rig is a complex structure with a tall derrick and various platforms.

General Purpose of Collaboration

Develop local codes that “reach” beyond or exceed the State code to reduce greenhouse gas emissions in new construction to be effective in:

- County of Santa Barbara (unincorporated area)
- City of Goleta
- City of Carpinteria

Replace fossil fuel use with clean electricity to reduce GHG emissions and improve air quality

CA Energy Codes and Standards group studies conclude that All-Electric Buildings are cost-effective

Concepts & Coordination

Planning Meetings

Local Govts and Technical Assistance Providers review & prepare code, prepare community engagement activities

Internal Meetings

Lead staff meet with internal stakeholders to vet policy, process and implementation

Santa Barbara South Coast Chamber

Monthly updates to Public Policy Committee

Technical Advisory Committee

Industry and high-touch stakeholders (invited) to provide feedback on policy, community workshops, and outreach

Public Workshops

Open meetings to introduce the concept, respond to concerns and ideas

Cost-Effectiveness Studies

Statewide studies to provide justification

	July	August	September	October	November	December	January					
Planning Meetings (bi-weekly)	1.1	2.1	3.1	3.4	3.5	3.8	3.10	3.13	3.15	3.18	4.1	4.8
Community Advisory Committee				3.6			3.12		3.17			
Internal Meetings		2.2					3.12					
SBSC Chamber Public Policy Meeting			3.2		3.9			3.14		3.19		4.9
Public Workshop				3.7				3.16				
Board/City Council			3.3							4.2 - 4.6		

No.	Meeting Name	Meeting Purpose	Stakeholders	Approx. Timefram
1.1	Planning Meeting	Reach Code overview; 3C-REN services, SCE services, timeline, future coordination Outreach & Engagement – stakeholder mapping, advisory committee, partners Timeline – Cost effectiveness studies, stakeholder engagement, ordinance timelines	3C-REN, County, cities	7/18/2022
Phase 1: Technical Development				
2.1	Planning Meeting	Determine if the ordinance will be sited as a Title 24 Overlay, a municipal code, or a local amendment. Review ordinance language, cost effectiveness studies, building sector types and considerations Begin identifying and engaging stakeholders to inform scope.	3C-REN, County, cities	8/1/2022
2.2	Internal Meetings	Review ordinance language, cost effectiveness studies, building sector types and considerations internally and with Building Official and legal counsel and revise, as necessary.	Project leads with internal agency staff	8/8/2022

Presentations & Events (abridged)

Sept 15, 2022 - Reach Code Advisory Committee Meeting #1

Sept 28, 2022 - Santa Barbara South Coast Chamber of Commerce Public Policy Committee

October 4, 2022 - County Board of Supervisors

October 6, 2022 - County Agriculture Advisory Committee

October 10, 2022 - Carpinteria City Council

October 12, 2022 - City of Goleta Green Committee

October 13, 2022 - Public Workshops for New Building Electrification Codes

October 18, 2022 - Reach Code Advisory Committee Meeting #2

October 27, 2022 - Cities-County Joint Affordable Housing Task Group Meeting

December 5, 2022 - Santa Barbara Association of Realtor's Meeting

December 7, 2022 - Santa Barbara Regional Climate Collaborative - Equity, Outreach & Advocacy Subcommittee Presentation

January 23, 2023 - City of Goleta Green Committee

January 26, 2023 - Reach Code Advisory Committee Meeting #3

February 21, 2023 - Public Workshop for New Building Electrification Codes

February 23, 2023 - Memo to Santa Barbara South Coast Chamber of Commerce Public Policy Committee

March 13, 2023 - City of Goleta Green Committee

March 17, 2023 - Electric Cooking Demonstration at Goleta Valley Library

March 18, 2023 - Electric Cooking Demonstration at Carpinteria Library

March 29, 2023 - Santa Barbara South Coast Chamber of Commerce Public Policy Committee

April 18, 2023 - Goleta City Council

9th Circuit Decision - City of Berkeley

April 17, 2023 - 9th Circuit Court of Appeals overturned City of Berkeley's prohibition on natural gas in new construction in *California Restaurant Association v. City of Berkeley*

Paused adoption/implementation of many natural gas prohibitions

May 31, 2023 - Berkeley submits petition for rehearing, supported by National League of Cities, NY State Public Service Commission & others

9th Circuit Decision - City of Berkeley

Why is this important?

Other prohibitions, including *Reach Code Working Group* draft ordinances, based on Berkeley's ordinance

Other states & agencies, including New York, have adopted similar regulations

What's Next?

Continuing to monitor this case while exploring other options.



Collaboration across Jurisdictions

Environmental regulations and policies have changed the way local governments approach working together.

Solid Waste

Water Quality

Community Choice Energy

Santa Barbara Climate Collaborative

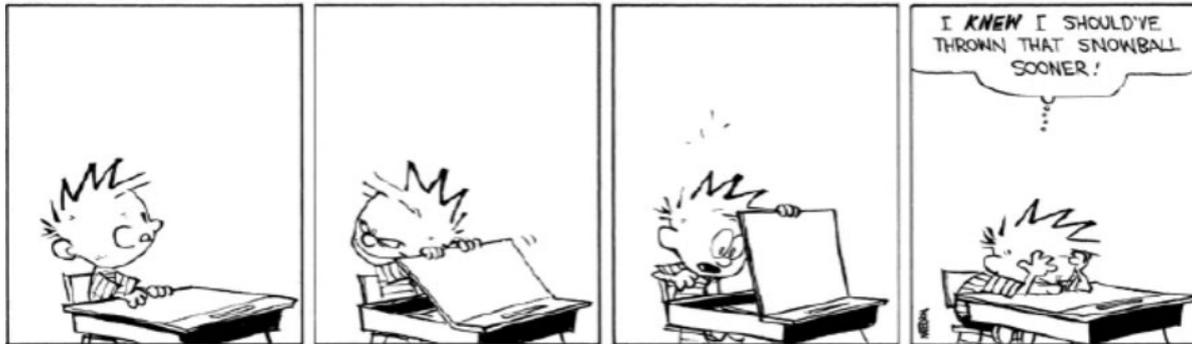


Collaboration & Lessons Learned

Collaborative efforts leverage resources and provide regional consistency when developing policies

Working together allows us to have a wider reach and more capacity when educating the community

We can't anticipate everything!





City of Carpinteria Reach Code Adoption

Alignment with City policies & plans

- Sustainable Community Policy: Reduce GHG emissions, develop and implement standards to reduce energy use; continue to collaborate with regional and state entities to reduce impacts to the environment and reduce energy consumption

Internal support from Community Development and Building & Safety for regulations



City of Carpinteria - Ordinance Process

October 10, 2022 - City Council initiates a building electrification ordinance

January 9, 2023 - Council receives an update on ordinance, as well as energy resilience & reliability and available trainings

April 10, 2023 - Natural Gas Prohibition in New Construction passed upon first reading 5-0



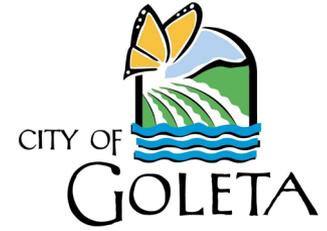
City of Carpinteria - Ordinance Process

Applicability:

Newly constructed building: A building that has never before been used or occupied for any purpose, or a construction project where an alteration where the size or the value of the alteration exceeds 50-percent of the size or the value of the existing building

Exemptions Attached accessory dwelling units where fuel gas infrastructure already exists in primary building, labs or clean-rooms, commercial cooking, & public interest projects

Reach Code Alignment with Goleta



2021-23 Goleta Strategic Plan

- 1.1.4. Explore adoption of a "Reach" Building Code
- 1.1.5. Continue to work with the Santa Barbara County Regional Climate Collaborative to share resources to address climate change

Reach Codes identified by Council as the top priority for Sustainability's upcoming projects during the 2022-23 PER Annual Work Program process

City Reach Code was developed and passed on first hearing in April 2023



City of Goleta - Ord. Passed on First Reading



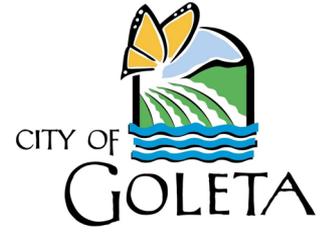
Key Definitions

Newly Constructed Building

- A building that has never before been used or occupied for any purpose
- A construction alteration that include replacement or addition of over 50 percent of the existing foundation for purposes other than a repair or reinforcement
- When over 50 percent of the existing framing above the sill plate is removed or replaced for purposes other than repair



City of Goleta - Ord. Passed on First Reading



Core Components:

Would not apply to portable propane appliances

Electric readiness for qualifying exemptions; all exemptions granted should pre-wire for electric conversion in the future

Periodic review (every 3 years)

Applications for exemptions would be available available for:

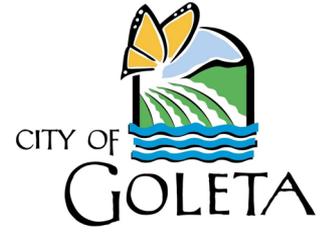
Attached ADUs & JADUs, in which fuel gas infrastructure already exists

Commercial cooking (limited time, at least 2 years)

Public interest projects



Current Status of Building Electrification



April 18, 2023 - Goleta City Council unanimously passed all-electric new construction ordinance
City paused second reading on ordinance due to *California Restaurant Association v. City of Berkeley*
CA cities pursuing alternative options for electrification
Goleta monitoring local government best practices as they develop across the state to support electrification
Actively developing an EV reach code to advance transportation electrification



Alternative Electrification Policies



Policies Goleta is considering:

Electric-preferred reach code policy

- a. Heavily incentivize all-electric construction
- b. Recently adopted model codes by City of San Luis Obispo
- c. Bay Area jurisdictions exploring similar models

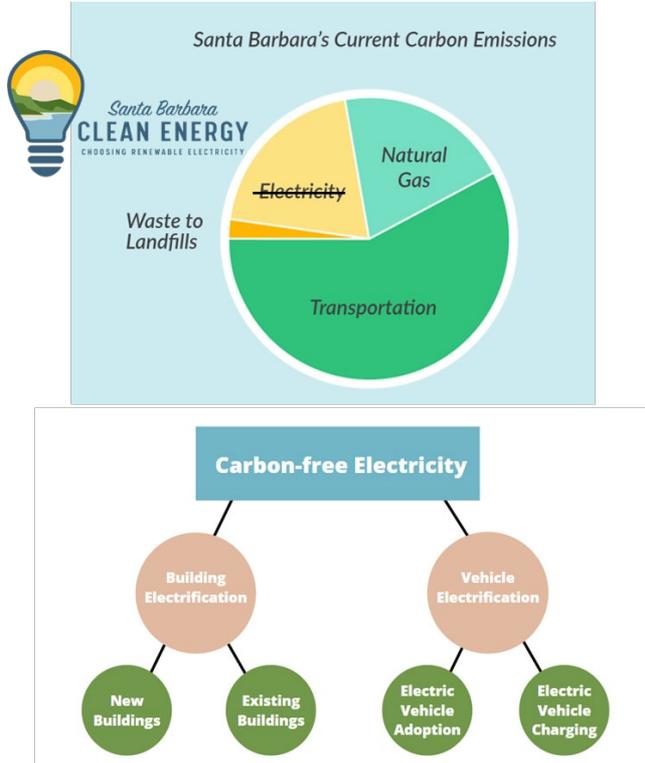
Reducing new and existing building electrification barriers

- a. Researching reducing or removing permit fees for all electric appliances (electric heat pumps, induction cooktops, etc.)

Developing an EV reach code for all new construction

- a. Expand L1 & L2 charging access in multifamily residential and workplaces (office, industrial zoning)

Climate Goals



California:

- SB 32 40% GHG reduction by 2030
- SB 350 50% increase in energy efficiency
- SB 100 100% carbon free energy by 2045
- AB 1279: Carbon neutrality by 2045

City:

- Carbon neutrality by 2035
- SBCE predominantly eliminated emissions from electricity sector in 2022
- Buildings remain second largest GHG sources

Reasons for City to Adopt Electrification Reach Code



- Eliminate fossil fuel use
- Lower carbon footprint and reduce GHG emissions
- Save money* with greater energy efficiency
- Take advantage of any local utility rebates and incentives
- Maximize the benefits of solar panel installation
- Better indoor air quality / Community Health
- Technology Exists and is Proven
- CA electric grid is a summer peaking system, Increase in demand would be mostly in winter months when capacity is available**
- Best available solution now

*California Energy Codes & Standards New Construction Reach Code Cost-Effectiveness Study's 2019, 2022

**SCE Pathway 2045, (2019)



Prohibition of Natural Gas in New Construction Ordinance Timeline



Code Development & Stakeholder Engagement



- Building Industry
- Trades
- Architects
- Utilities
- CBO's
- Real Estate Industry
- General Public
- Internal City Staff
- Academia
- Regional/Local Code Consultants and Decarbonization Advocacy Groups
- Statewide Codes and Standards Team



Stakeholder Concerns



Induction
Cooktops



Heat Pump
Water Heater



Air Source Heat
Pump

- Realign Definition of New Construction
- Government Mandate – Removal of Choice
- Technology Familiarity & Effectiveness
- Reliability
- Outdoor Fire Pits & Radiant Heat
- Pipefitters Labor Union-Jobs
- Pool Heaters and Fireplaces
- Medical Facilities / Labs
- Commercial Kitchen Equipment
- Fireplaces & Cooktops
- ReBuild
- ADU's
- Existing Buildings



Details of Ordinance

- Health & Safety Ordinance, not Building Code Amendment
- Only affects New Construction and Major Demolition (75% rule)
- Used Existing Cost Effectiveness studies
- Exemptions for
 - Medical Labs
 - Commercial Kitchen
Cooking Equipment
 - Physically Infeasible
 - Public Interest



Resources

- Press Release
- Recorded trainings
- FAQ's
- Info Flyer for Architects & Engineers
- Notification Letters to permit & planning applicants
- Planning Handout:
 - Ordinance Overview
 - Submission Guideline
 - Verification Worksheet
 - Exemption Request Form



 **PROHIBITING NATURAL GAS INFRASTRUCTURE IN NEW BUILDINGS**
**Guidance for Architects, Engineers,
and Builders**

On July 27th 2021, Santa Barbara City Council adopted Ordinance 6014 that **prohibits the installation of natural gas infrastructure in new buildings.**

WHERE: Any building located within city limits, both municipal and private.

WHEN: Permit application submitted after **4:00pm December 22, 2021**. The ordinance reads this goes into effect for applications submitted after **December 31st 2021**; however, the City and City's building permit portal, ACA, will be closed for business Dec. 24th-Jan 7th.

WHAT: New buildings which are defined, in general, as a completely **new building**, a **complete demolish and rebuild**, or **removing more than 75% of any two of the following**:

- *Structural roof or roof framing*
- *Structural exterior walls (or are no longer an integral structural component)*
- *Foundation (or are no longer an integral structural component)*

Accessory Dwelling Units: ADUs that are completely new buildings must be all-electric. ADUs that are completely within or are an addition to an existing building do not have to comply with the ordinance, unless the existing building meets two or more of the criteria listed above.

Additions: Additions to an existing structure do not have to comply unless the existing building meets two or more of the criteria listed above.



EXEMPTIONS
Applicants may apply for several exemptions, including:

- Cooking appliances in commercial kitchens
- Medical building laboratory equipment or clean-rooms
- When in the public interest after considering:
 - Availability of alternative technologies or systems which do not use natural gas
 - Any other impacts on the health, safety, or welfare of the public

What is typically NOT considered an exemption?
Any of the following natural gas connections/uses:

- Space heating (interior or exterior)
- Domestic water heating
- Residential pool or spa heating
- Fire pit, BBQ, or fireplace (interior or exterior)
- Residential cooking appliances or equipment
- Clothes Dryer

To read this ordinance and learn more visit:
<https://sustainability.santabarbara.gov/climate-actions/>

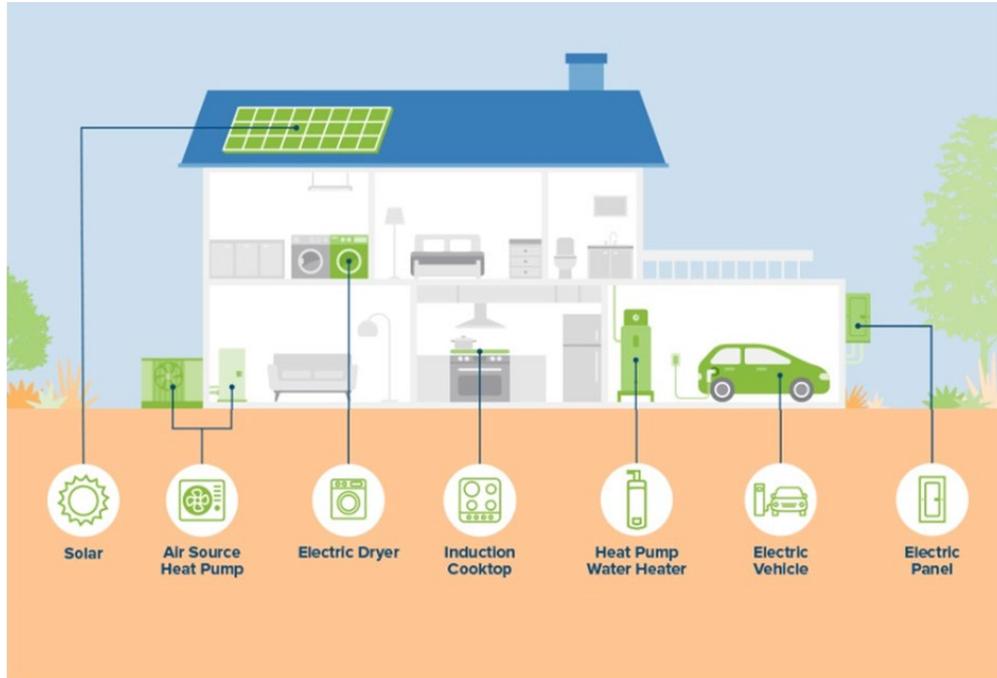
For any questions, please contact:
Kristian Hoffland, Energy & Climate Division
khoffland@santabarbara.gov
(805) 284-5280



City of Santa Barbara
**SUSTAINABILITY
& RESILIENCE
DEPARTMENT**



Lessons Learned



- Biggest gap is contractor comfort/knowledge
- Large Additions not Captured
- Technology is evolving: Commercial Kitchens
- Certain Industries are slow to adopt
- Still some misinformation about Technology
- Overall, positive reaction from most stakeholder groups
- Clear information, rules and guidelines help avoid confusion & frustration
- Have a main POC for stakeholders to ask questions

COUNTY OF SANTA BARBARA



2030 Climate Action Plan adoption slated for Q1 2024

New construction ordinance on hold

Exploring options for policies and programs affecting existing buildings, including electric vehicle charging, also non-building code options for new construction

Draft White Paper to Help the Community Understand Costs of Electrification (CAP Implementation)

Conceptual analyses of use cases that may represent some experiences across the community

Summarize and present existing industry research and experience to provide conceptual costs that would be informative - but not authoritative - to decision makers, households and businesses

Relatable rough orders of magnitude costs associated with transitioning to low-carbon or carbon-free, or all-electric, lifestyles and operations



Funding is Available, Additional for Low -Income

Federal

Inflation Reduction Act

Tax credits

- Building systems
- Vehicles & charging

Rebate programs (not yet available)

- Performance Based
- Point of Sale

State

TECH rebates

Golden State rebates

Equitable Building

Decarbonization Direct

Install Program (not yet available)

Regional/Local

Investor Owned Utilities

- PG&E, SCE

Publicly Owned Utilities

- City of Lompoc

Regional Programs

- Central Coast Community Energy
- Tri-County Regional Energy Network

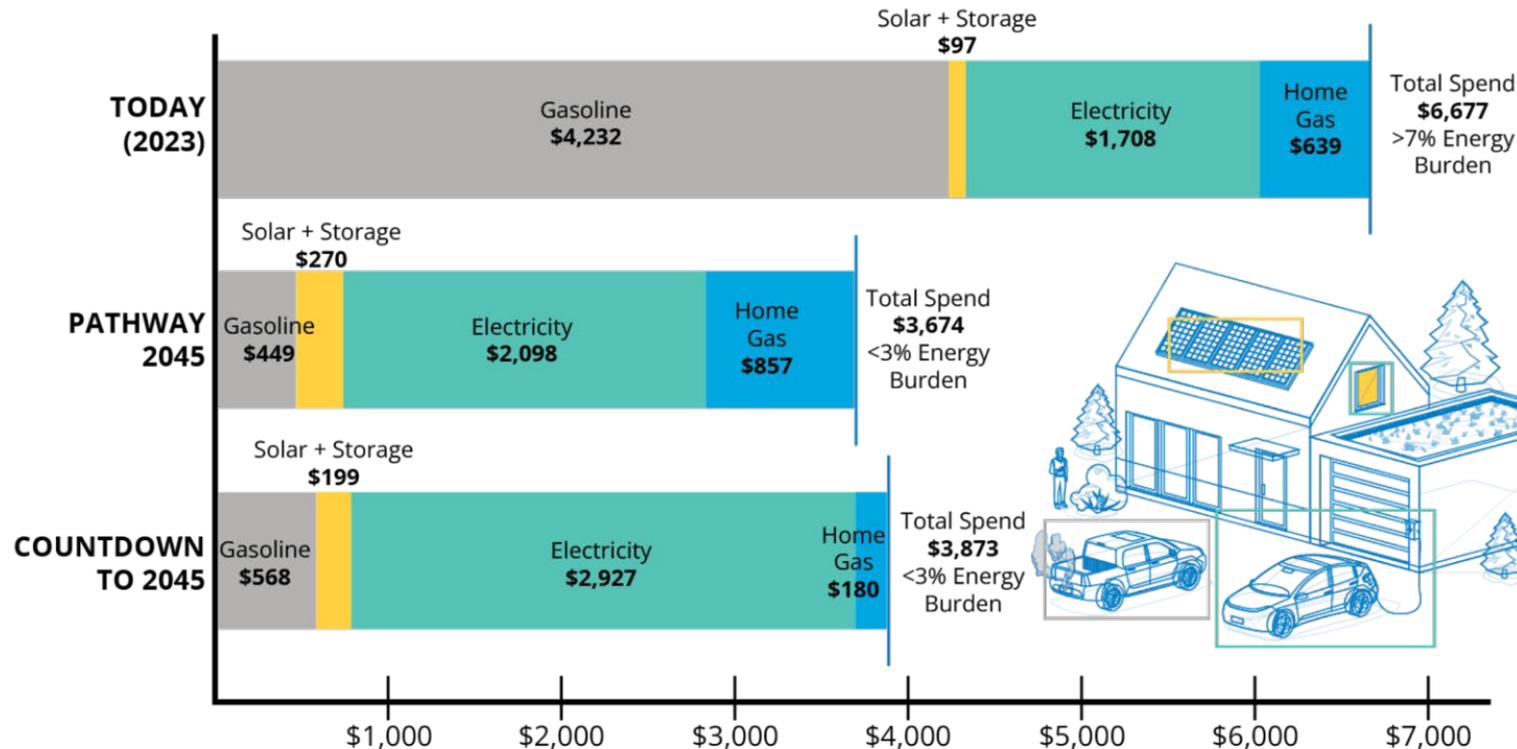
Potential Single Family Home Electrification Costs (HVAC & Water Heating)



Appliance/ Equipment	Estimated Installed Cost	IRA Upfront Discount	IRA 30% Tax Credit	State Incentives	Local Rebates	Final Cost
Central Heat Pump	\$ 15,000- \$ 20,000	-\$8,000 (rebate)	-\$2,000 (25C)	\$ 1,000 (TECH)	\$ 2,500-\$3,500 (3CE*) +\$ 1,000 for Low-Income	\$0-\$500
Ductless Mini-Split Heat Pump	\$ 6,100		-\$ 1,830 (25C)	\$ 1,000 (TECH)	\$ 2,500-\$3,500 (3CE*) +\$ 1,000 for Low-Income	\$0
Window Unit Heat Pump	\$ 2,000	-\$ 2,000		\$ 1,000 (TECH)	\$ 500-\$ 750 (3C-REN) \$ 2,500-\$3,500 (3CE*) +\$ 1,000 for Low-Income	\$0
Heat Pump Water Heater	\$ 4,300- \$ 6,500	-\$ 1,750	-\$ 765- \$ 2,000 (25C)	\$ 1,000 (TECH) \$ 500-\$ 900 (Golden State Rebates)	\$ 300 (PGE) \$ 2,420-\$ 8,450 (3C-REN) \$ 3,300-\$ 3,800 (3CE*) +\$ 1,000 for Low-Income	\$0

*3CE's FY 22-23 Electrify Your Home program funds have been fully spent or reserved. A budget for FY 23-24 was approved, but incentive amounts may change.

All-Electric Lifestyle Costs Less



Incentive Finders



[Learn More](#) [Make the Switch](#) [For Contractors](#) [About Us](#) [Contact](#) [FAQs](#)

INCENTIVE LOOKUP FOR CUSTOMERS

INCENTIVE TYPE ▼

- REBATE
- TAX CREDIT
- INDUCTION LENDING PROGRAMS

BUILDING TYPE ▼

- MULTI-FAMILY
- SINGLE-FAMILY

EQUIPMENT TYPE ▼

Choose ▼

INCOME QUALIFYING? ▼

- NO

WHO CAN APPLY? ▼

- HOMEOWNERS
- CONTRACTORS

93101 📍 Home Function ▼

SEARCH

CLEAR ALL

SEARCH

for local California incentives by location, specialty and more.

CONNECT

with trusted contractors, in our contractor directory

ENJOY

the benefits of your new electric appliance.

22 Incentives Available For 93101



Save \$500-\$750 Per Dwelling Unit - Rebate On Heat Pump Water Heater

GET REBATE

LEARN MORE

REQUIREMENTS

Multifamily building project scope must include 3 or more energy efficiency or electrification measures. Bonus rebate of up to \$1000 for each heat pump installed. This incentive can be used in combination with the TECH Clean California incentive

WHO CAN APPLY

- Contractors
- Homeowners
- Renters

BUILDING TYPE

- Multi-family



CONTRACTORS & INDUSTRY ▼

MULTIFAMILY PROPERTIES ▼

FOR RESIDENTS ▼



PROGRAMS AND INCENTIVES

Use our tool to find incentives specific to your home

What county do you live in?

- San Luis Obispo County
- Santa Barbara County
- Ventura County

Do you rent or own your home?

- Rent
- Own

Are you a Central Coast Community Energy (3CE) customer?

- Yes
- No

YOUR PERSONALIZED INCENTIVES:

ENERGY EFFICIENCY AND ELECTRIFICATION UPGRADES

[Inflation Reduction Act Tax Credits](#)

Claim significant tax credits for a number of energy efficiency and electrification upgrades.

[SoCalGas Appliance Rebates](#)

Small rebates for individual appliances and tools. Cannot be claimed in conjunction with 3C-REN rebates.

[Southern California Edison](#)

Small rebates for individual appliances and tools. Cannot be claimed in conjunction with 3C-REN rebates.

[PG&E Appliance Rebates](#)

Small rebates for individual appliances and tools. Cannot be claimed in conjunction with 3C-REN rebates.

[Energy Savings Assistance Program](#)

3C-REN Water Heater Loaner Program

PROBLEM:When natural gas water heaters fail, homeowners need hot water back ASAP—they don't have time to wait for the additional permitting and electrical work associated with heat pumps.

SOLUTION:Provide a “loaner” natural gas water heater while you work on getting a heat pump water heater installed.

GET PAID:3C-REN's Gas Water Heater Loaner Program pays participating contractors \$1,000 per project to use a loaner natural gas water heater while helping customers upgrade to a heat pump water heater.



Q & A

