



- Presentation will begin shortly
- Session will be recorded
- All attendees are muted
- Please be aware of Q&A at bottom of screen – ask your questions there
- We will address questions at various points in the session

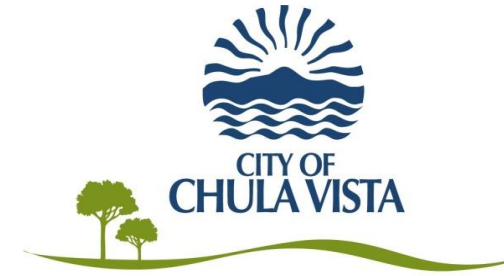
www.chulavistaca.gov/clean



SUMMER SUSTAINABILITY SERIES

- **August 27:** Composting 101 & other best practices for gardening at home
- **September 10:** Going Electric in Chula Vista
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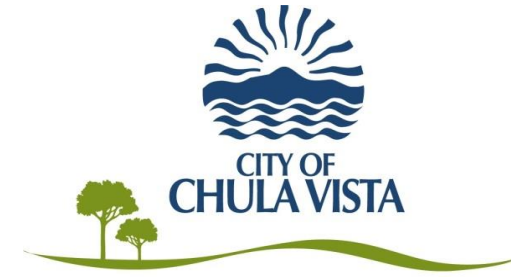
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SUMMER SUSTAINABILITY SERIES

Clean Energy @ Home

August 20th, 2020



SUMMER SUSTAINABILITY SERIES



**All attendees are muted
Please type your questions in the question box**

CLEAN ENERGY AT HOME



City of Chula Vista: Summer Sustainability Series

8/20/20



SUMMER SUSTAINABILITY SERIES

An aerial photograph of San Diego, California, showing the city skyline, the San Diego Bay, and the waterfront. The image is used as a background for a text overlay. The text is centered in a white box with a black border.

**JOSH DEAN, CEM, USGBC FACULTY
EXECUTIVE DIRECTOR
SAN DIEGO GREEN BUILDING COUNCIL**

SAN DIEGO GREEN BUILDING COUNCIL



Inspire, educate and collaborate within our community to transform our built environment toward true sustainability

Our buildings and communities will regenerate and sustain the health and vitality of all life within a generation.



NATIONAL CONNECTIONS

LOCAL FOCUS

PERSONAL INTERACTIONS

IMPLEMENTATION



AGENDA



What's trending?



Policy & Market Drivers



Identifying Ways to Electrify Your Home



Education & Engagement



Q&A

What's Trending?



Decarbonizing Buildings Is the Next Innovation

In California, building GHG emissions are second only to transportation, when accounting for electricity use, water use, and wastewater treatment. The focus over the past decade has been on advancing zero-net-energy buildings, and this must pivot to zero-emission buildings as the state mobilizes to meet its 2030 and 2050 climate goals. This change from zero-net energy to zero-emission buildings focuses squarely on reducing GHG emissions from the entire building including natural gas, other fuels, as well as cooling systems and building GHGs.

N Natural Resources Defense Council

Los Angeles City-Owned Buildings to Go 100% Carbon Free

Los Angeles Mayor Garcetti today committed all new or substantially rehabilitated buildings owned by the City of Los Angeles to be 100 percent



...
1 day ago

UT The San Diego Union-Tribune

Encinitas weighs ban on natural gas hookups for new construction

Now Encinitas may be exploring whether to limit natural gas use. City Environmental Commissioner James Wang, who was instrumental in the ...

Nov 20, 2019



IBT International Business Times

Local Law 97: How A NYC Law Can Change The Way We Look At Emissions

New York State is one of the U.S.' sustainability leaders and is ... Local Law 97 is applicable to all buildings in New York City that are over ...

Aug 20, 2019



The materialsCAN Initiative

Embodied carbon is the carbon dioxide emitted during the extraction, manufacturing and transport of building materials and product ingredients. It will make up half of all carbon emissions from new construction between 2020 and 2050.

But carbon reduction initiatives typically only focus on **operational carbon**, the CO₂ emitted during a building's life.

To change that, the materialsCAN (Carbon Action Network) initiative has been formed by the following manufacturers:



Reach Codes Frontrunner: City of Carlsbad

Inside this issue...

- CITY OF CARLSBAD BECOMES FIRST CALIFORNIA CITY TO ADOPT 2019 ENERGY REACH CODES
- The Adoption Process
- Resources

CITY OF CARLSBAD BECOMES FIRST CALIFORNIA CITY TO ADOPT 2019 ENERGY REACH CODES

OVERVIEW

Nestled along the southern California coastline, between Los Angeles and San Diego, the City of Carlsbad offers its nearly 120,000 residents magnificent beaches, temperate weather, a robust and diversified economy, and a strong commitment to protecting the local environment. The City is home to numerous tourist attractions, such as LEGOLAND® California Resort, SEA LIFE Aquarium and The Flower Fields, as well as a hub for the biotech sector.



Forward-Looking Cities Lead the Way to a Gas-Free Future

By Matt Gough December 19, 2019

How To Reach U.S. Net Zero Emissions By 2050: Decarbonizing Buildings



Energy Innovation: Policy and Technology Contributor

Energy

We are a nonpartisan climate policy think tank helping policymakers make informed energy policy choices and accelerate clean energy by supporting the policies that most effectively reduce greenhouse gas emissions.

Berkeley voted unanimously to adopt a "first in the state" ordinance that prohibited gas in all new construction. Berkeley's gas ordinance was unique because it did not go through the traditional reach code route, which requires approval from the California Energy Commission (CEC). Instead, Berkeley used its city police powers to prohibit new gas hookups on the grounds of public health and safety. The ordinance was widely supported by the community, including PG&E, East Bay Clean Energy, environmental and climate organizations, and green builders. The city is currently



CA CLIMATE POLICY LEADERSHIP

AB-32 (2006); SB-32 (2016) - Called for CA to reduce GHG emissions to 1990 levels by 2020 → 40% below 1990 levels by 2030 → 80% below 1990 levels by 2050

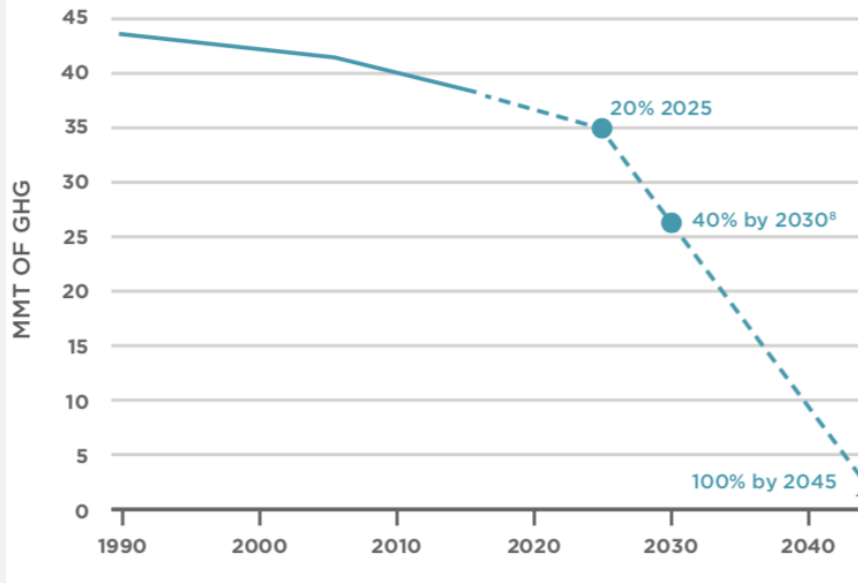
CA Long Term Energy Efficiency Strategic Plan (2008) - All new residential construction will be ZNE by 2020; All new commercial construction will be ZNE by 2030; 50% of commercial buildings will be retrofit to ZNE by 2030; 50% of new major renovations of state buildings will be ZNE by 2025.

Title 24, Part 6: Building Energy Efficiency Standards – Updated every 3 years and is the incremental pathway to help buildings meet the ZNE goals.

Jan. 1, 2020: Residential Solar PV and ZNE

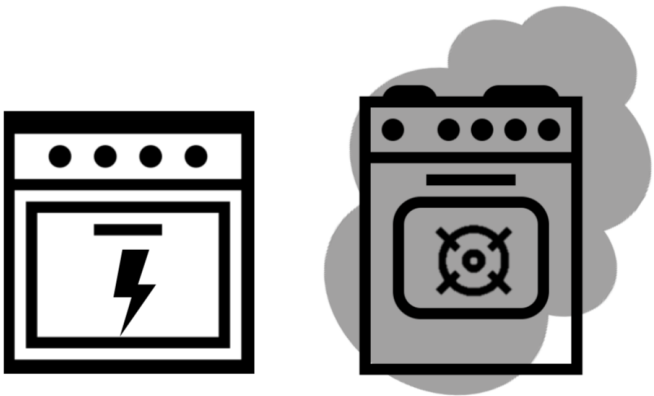
Recent Legislation: Senate Bill 350, Senate Bill 1477, Assembly Bill 3232

DECARBONIZATION OF THE BUILDING SECTOR⁷



Source: http://www.buildingdecarb.org/uploads/3/0/7/3/30734489/bdc_roadmap_2_12_19.pdf

Homes with gas stoves have
50 - 400% higher NO₂ emissions
than homes with electric stoves



Source: <https://rmi.org/insight/gas-stoves-pollution-health/>

BENEFITS OF CLEAN ENERGY HOMES

- Lower energy bills over the life of the equipment
- Reduce cost of new housing by limiting gas infrastructure
- Improve indoor air quality and health through reducing NO_x, CO, PM, and Formaldehydes
- Create new workforce in the construction industry
- Decrease risks of gas leaks, fires, and explosions
- Improve climate resiliency through efficient cooling

Source: <https://www.sierraclub.org/articles/2019/12/building-electrification-action-plan-outlines-how-policymakers-can-equitably-phase>

NEW HOME ENERGY REQUIREMENTS

- Effective Jan.1, 2020
- Solar PV required
- Improved building envelope
- Demand response options
 - Energy storage
 - Heat pump water heaters
- Improved indoor air quality

CALIFORNIA'S 2019 RESIDENTIAL BUILDING ENERGY EFFICIENCY STANDARDS

CALIFORNIA ENERGY COMMISSION

The state's energy efficiency standards for new buildings and appliances have saved consumers billions in lower electricity and natural gas bills. The 2019 Building Energy Efficiency Standards for residential buildings includes a first-in-the-nation requirement to install solar photovoltaic systems. Other features enable homes to reduce the electricity demand from the grid, helping to reduce energy bills and the carbon footprint.

\$19,000 SAVINGS OVER A 30 YR. MORTGAGE | INITIAL COST \$9,500



SOLAR PHOTOVOLTAIC SYSTEM

Promote installing solar photovoltaic systems in newly constructed residential buildings. The systems include smart inverters with optional battery storage. This will increase the self-utilization of the electricity generated to power the home's electricity loads including plug-in appliances. California is the first state in the nation to require smart systems on homes.



DEMAND RESPONSE COMPLIANCE OPTIONS

Encourage battery storage and heat pump water heaters that shift the energy use of the house from peak periods to off-peak periods. Utilities moving to time-of-use pricing assists the grid to meet the state's climate change goals and helps homes reduce energy bills.



HEALTHY INDOOR AIR QUALITY

Enable using highly efficient filters that trap hazardous particulates from both outdoor air and cooking and improve kitchen ventilation systems. Moving air around and in and out of the home while filtering out allergens and other particles makes the home healthier.

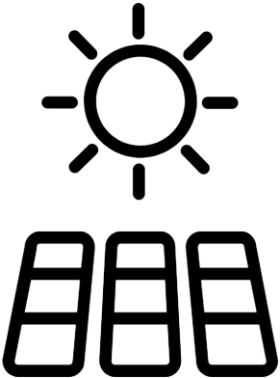


BUILDING ENVELOPE

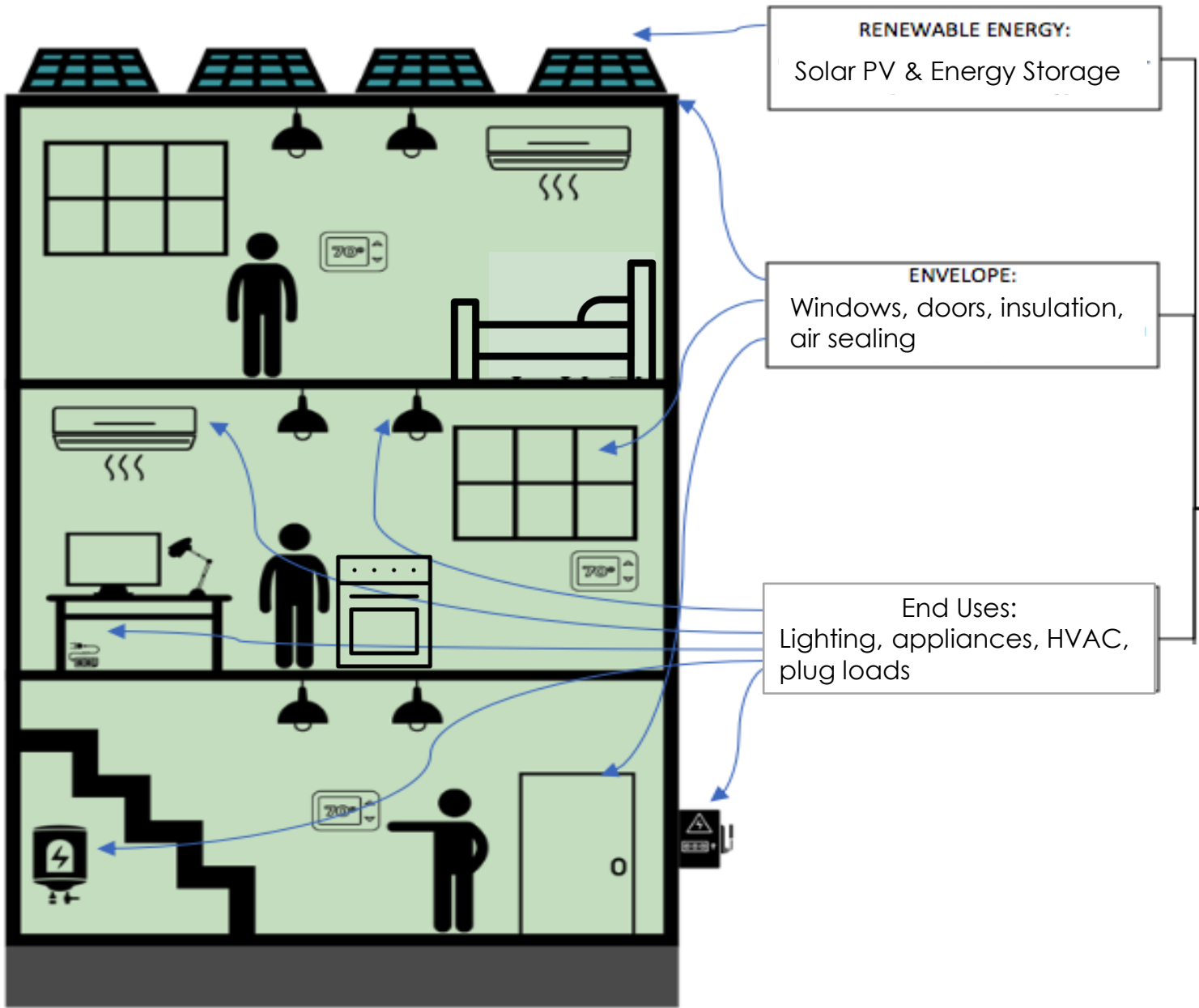
Strengthen insulation in attics, walls and windows to improve comfort and energy savings. Keeping the heat out during the summer and warm air during the winter makes a home more resilient to climate change.



“A zero energy building is an energy-efficient building that produces as much energy as it consumes over the course of a year, usually by incorporating solar photovoltaic (PV) on-site” (from New Buildings Institute).



ZERO NET
ENERGY
(ZNE)
BASIC
CONCEPT



IDENTIFYING
WAYS TO
ELECTRIFY YOUR
HOME



Decide to take action and reduce GHG emissions



Understand how your home uses energy



Choose Energy Efficiency Measures (EEMs)



Identify rebates & incentives



Install EEMs

WHAT CAN
YOU DO?

RESOURCES FOR CLEAN ENERGY



**SELF-GENERATION
INCENTIVE PROGRAM**
San Diego Gas & Electric® (SDG&E) territory



Electric Heat Pump
Water Heaters

\$400
Instant Rebate
[Store and Product List](#)



A  Sempra Energy utility®

A screenshot of the SDG&E Marketplace website. The header includes the "SDG&E Marketplace" logo, a search bar, and buttons for "Claim Rebate" and "Sign in". Below the header, there's a navigation bar for "533 Air Conditioners" with a "Track Prices" button. The main content area shows search filters for price (\$105 to \$4,199) and sorting by relevance. A "Top picks for you" section displays three product cards: "BEST OVERALL" (Panasonic XE9SKUA, \$1,399), "LOWEST PRICE" (Garrison 35-54182, \$298), and "MOST EFFICIENT" (LG LA090HYV1, \$1,266). Each card includes a small image of the product and a "Compare" button.

Source: <https://www.sdge.com/>





Source: <https://www.cvclimatechallenge.com/>



Source: <https://www.acterra.org/induction>

EDUCATION & ENGAGEMENT

SAN DIEGO GREEN BUILDING COUNCIL **GET INVOLVED**

- ✓ **SIGN UP FOR NEWSLETTER**
- ✓ **BECOME A MEMBER**
- ✓ **VOLUNTEER**
- ✓ **SPONSOR AND DONATE**
- ✓ **GROW YOUR NETWORK**
- ✓ **SUPPORT GREEN BUILDINGS IN SAN DIEGO**

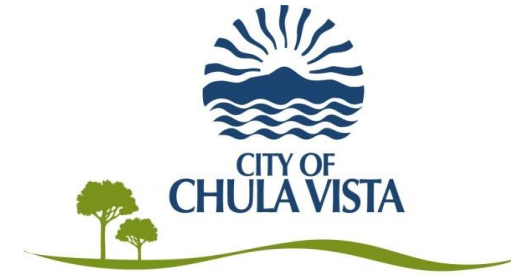
CONNECT AND LEARN MORE:

WWW.SD_GBC.ORG
INFO@SD-GBC.ORG





SUMMER SUSTAINABILITY SERIES



Please type your questions in the question box



THANK
YOU

Josh Dean, CEM, USGBC Faculty
Executive Director
San Diego Green Building Council
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Greenhouse Gas Emissions Municipal Inventory 2016

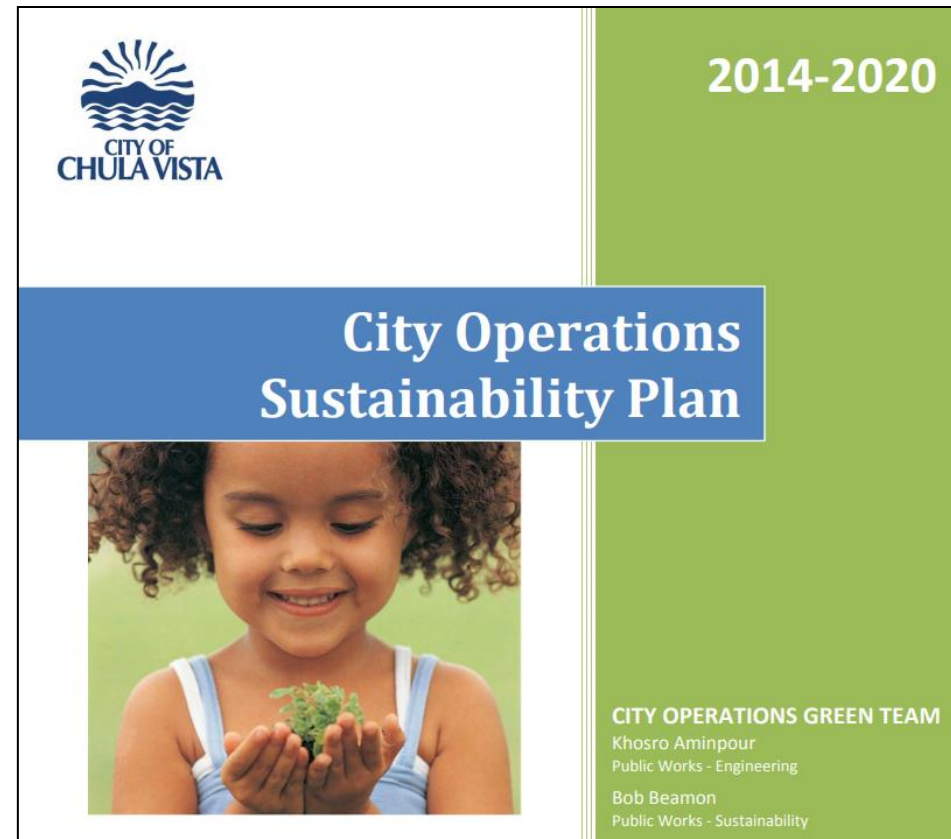


Office of Sustainability

Background



2017 Climate
Action Plan



City Operations
Sustainability Plan

Data Sources

Municipal Inventories

- Energy
 - Electricity & Natural Gas
- Transportation
 - Fuel Consumption – City Fleet
- Solid Waste
 - Waste Hauled
- Wastewater
 - Wastewater Pumps
- Water
 - Water Consumption
- Other
 - Refrigerants, Fired Ordinances, Pools

Methodology

Municipal Inventories

Methodology:

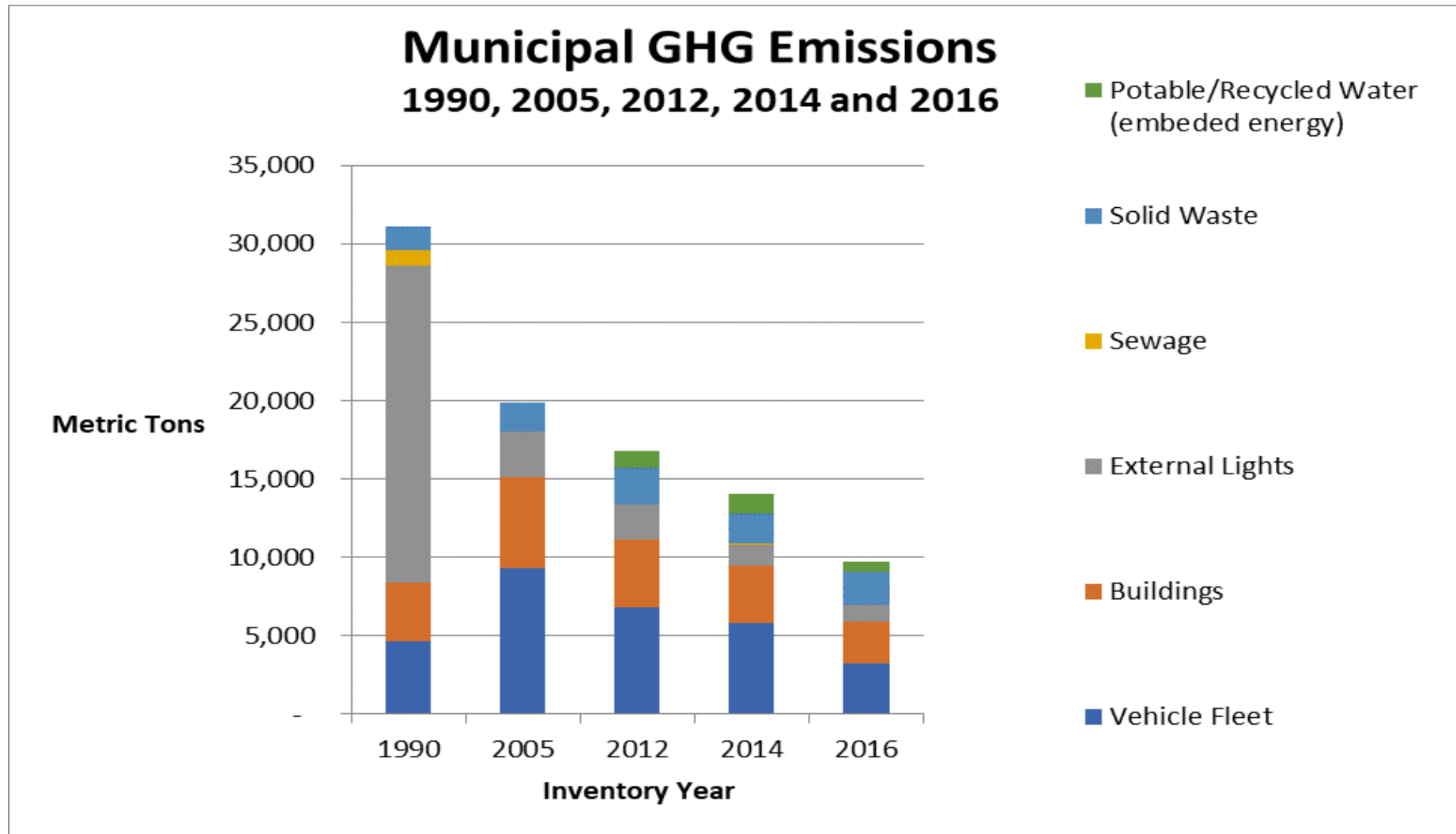
- ICLEI Clear Path

Update :

- MTS Data Excluded



Municipal Emissions



Results

Municipal Inventories

The 2016 inventory shows that Chula Vista's municipal GHG emissions equal to 9,740 metric tons of carbon dioxide equivalents (MT CO₂e).

- 31% decrease in total emissions since 2014
 - 14,076 MT CO₂e
- 69% decrease when compared to the initial 1990 inventory
 - 31,095 MT CO₂e

Leading Emissions Reductions

City Vehicle Fleet



45%
reduction
since 2014

32%
reduction
since 1990

Leading Emissions Reductions

Sewage



44%
reduction
since 2014

99%
reduction
since 1990

Leading Emissions Reductions

Building Energy Consumption



25%
reduction
since 2014

27%
reduction
since 1990

Leading Emissions Reductions

External Lighting

21%
reduction
since 2014

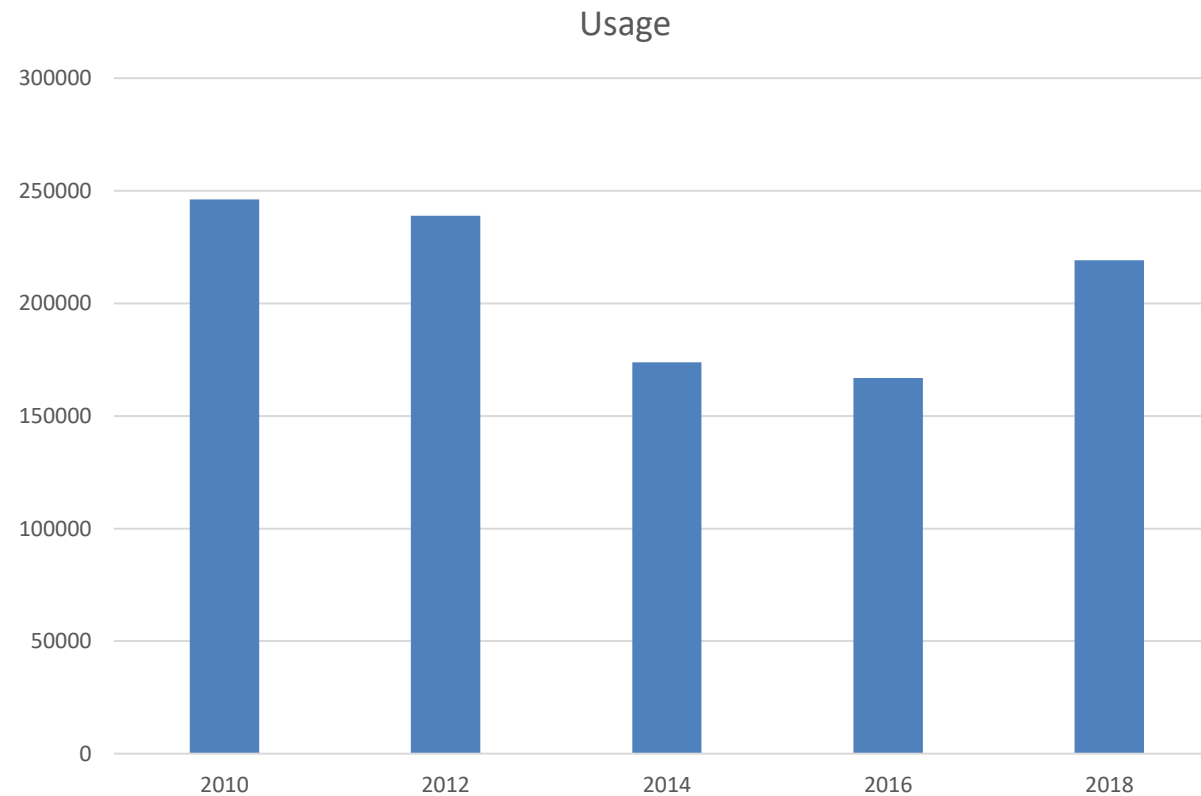
95%
reduction
since 1990



Municipal Emissions

32%
reduction
since 2010

Natural Gas



THANK YOU

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Sustainability Specialist
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August 20th, 2020

Clean Energy @ Home



**RECENT CHULA VISTA
GREENHOUSE GAS EMISSION
TRENDS**

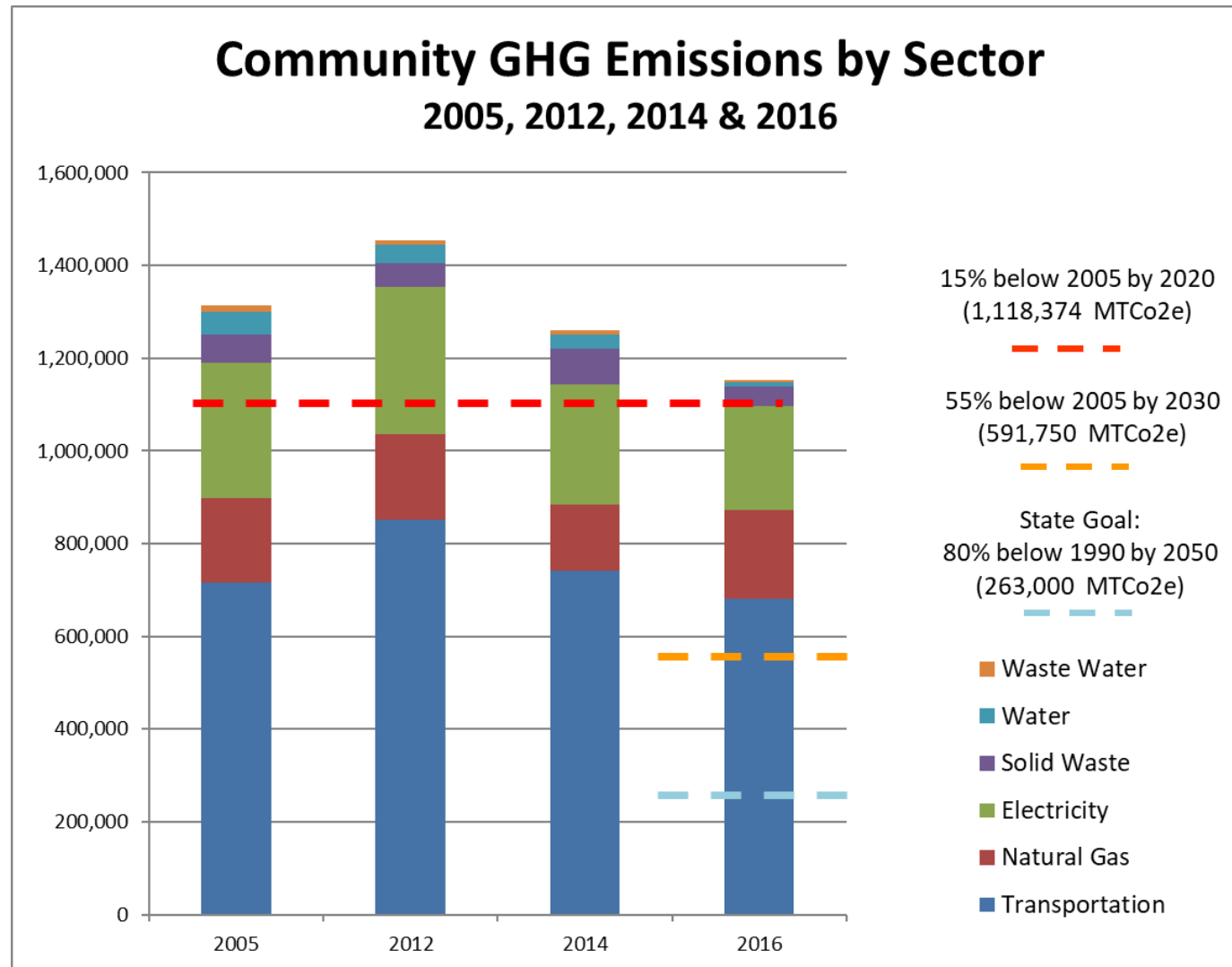


**WHAT RESIDENTS CAN DO TO
LOWER EMISSIONS**



HEALTH CO-BENEFITS

Community Emissions



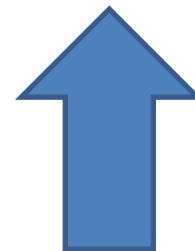
Energy

Mixed Emissions Results

- Electricity – 14% reduction

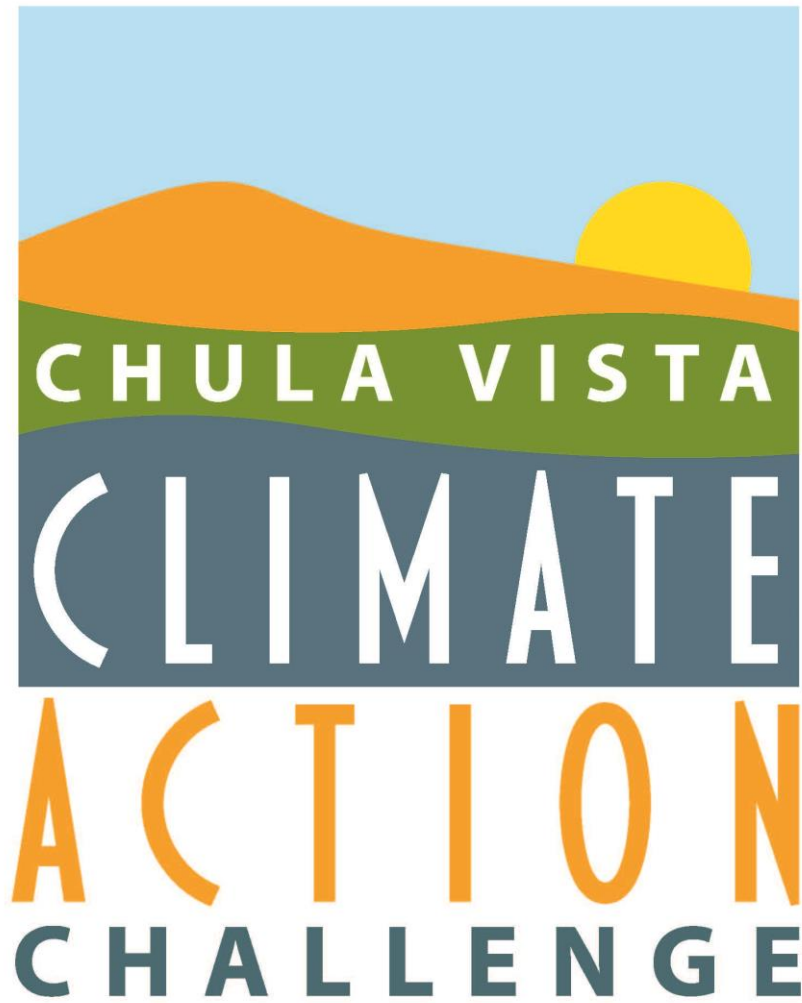


- Natural gas – 33% increase



3%
increase
since 2014

12%
reduction
since 2005



CHULA VISTA CLIMATE ACTION CHALLENGE

Join the Chula Vista Climate Action Challenge and help create a safer, healthier future!

[JOIN THE CHALLENGE](#)

[WHY JOIN? →](#)

<p>PROGRESS 261 HOMES</p>	500 HOUSEHOLDS BY DECEMBER 2019 PARTICIPATION GOAL	<p>PROGRESS 49%</p>	250 TONS OF CO ₂ BY DECEMBER 2019 REDUCTION GOAL
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TOP COMMUNITY GROUP
Bonita Vista High School- organized by Ms. Leon

TOP TEAM
SB Sustainable Communities - Vance St

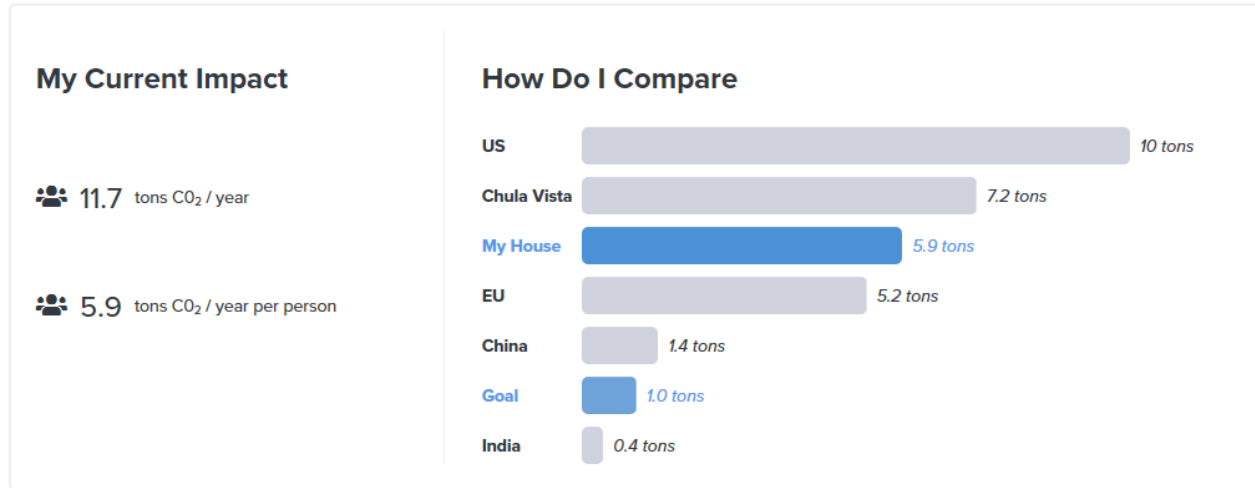
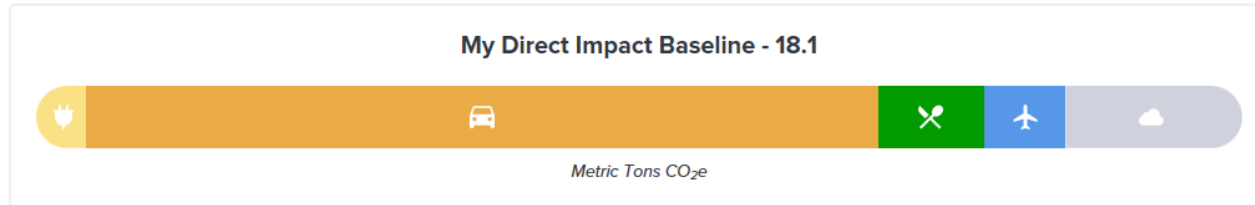
www.cvclimatechallenge.com

- My dashboard
- My team
- My community group
- My region
- Actions
- Questions
- My energy profile**
- Account settings
- Policies
- Sign out



Create your profile

My Impact





Take sustainable actions

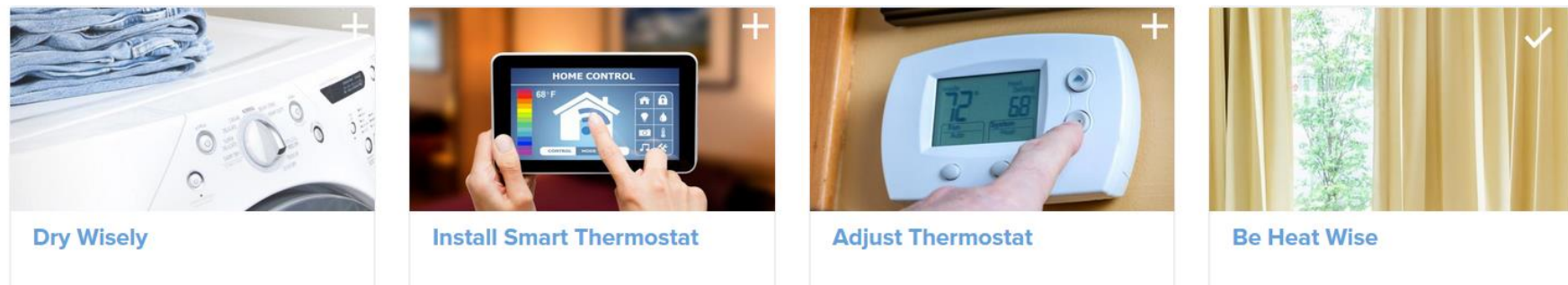
Choose a Category below or [explore all actions](#).



Hanging Out at Home **29**

Actions you can take while sheltering at home that make a difference and save you money!

[Load more](#)



Climate Action Challenge



Line Dry Clothes

Sun shine, fresh scent—all for free

★ Easy ☆ 200 \$ 20



Weatherize and Insulate Attic

A cozy attic equals big savings

☆ Challenging ☆ 260 \$ 50



Upgrade Air Conditioner

Stay cool and save money

☆ Challenging ☆ 130 \$ 60



Install Electric Heat Pump Water Heater

Go heat pump for a big impact!

★ Medium ☆ 5,080 \$ 190

Weatherize and Insulate Attic

Insulating and weatherizing your attic can provide some of the biggest energy savings in your home. You can save up to 30% off your heating and cooling bills while making your home more comfortable year-round.

[VIEW DISCUSSION](#)

[+ CREATE POST](#)

Your Impact **360 points**

[SHARE](#)

UPFRONT COST

\$500 - \$2000 \$\$\$\$

TIME COMMITMENT

4.0 hours ⌚⌚⌚⌚

RESOURCE SAVINGS

142 kWh Electricity ⚡⚡⚡⚡

15 Therms Natural Gas 🔥🔥🔥🔥

ANNUAL SAVINGS

\$60 💰💰💰💰

Our attic has:

No insulation ▼

GET STARTED

Introduction ^

Do you have drafty rooms in your home or high heating and cooling bills? If so, consider weatherizing and insulating your attic. In most homes, the attic is where you lose the most energy and money on heating and cooling. Sealing air leaks (weatherization) and adding insulation is the most effective way to keep heat in and your home cozy and comfortable in the winter. It also helps keep cool air in during the summer, providing year-round comfort. The best part—it can save up to 30% or more on your heating and cooling bill!



1 Check to see if your attic needs weatherization or (more) insulation v

2 Decide whether to DIY or hire a professional v

3 Weatherize & insulate your attic v

Resources

REBATE/CREDIT

[Home Energy Upgrades Incentive](#)

Up to \$5,500 in rebates for home energy improvements

FINANCING


[PACE Financing](#)

PROGRAMS

[SDG&E Energy Saving Assistance Program \(ESAP\)](#)

The ESAP program can make minor improvements to your home at no cost to you, such as insulation and appliance replacement, to help save energy.

Health Co-Benefits



BEAT THE HEAT: Extreme Heat

Heat-related deaths are preventable

WHAT:
Extreme heat or heat waves occur when the temperature reaches extremely high levels or when the combination of heat and humidity causes the air to become oppressive.

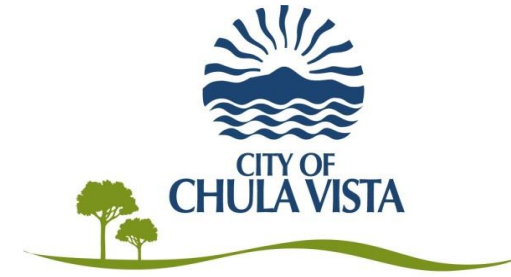
WHO:
Children
Older adults
More males than females are affected
Outside workers
People with disabilities

WHERE:
Houses with little to no AC
Construction worksites
Cars

HOW to AVOID:
Stay hydrated with water, avoid sugary beverages
Stay cool in an air conditioned area
Wear lightweight, light-colored, loose-fitting clothes



SUMMER SUSTAINABILITY SERIES



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