Climate Smart San José: Pathway to Carbon Neutrality by 2030

City Council, Item 6.2
June 14, 2022

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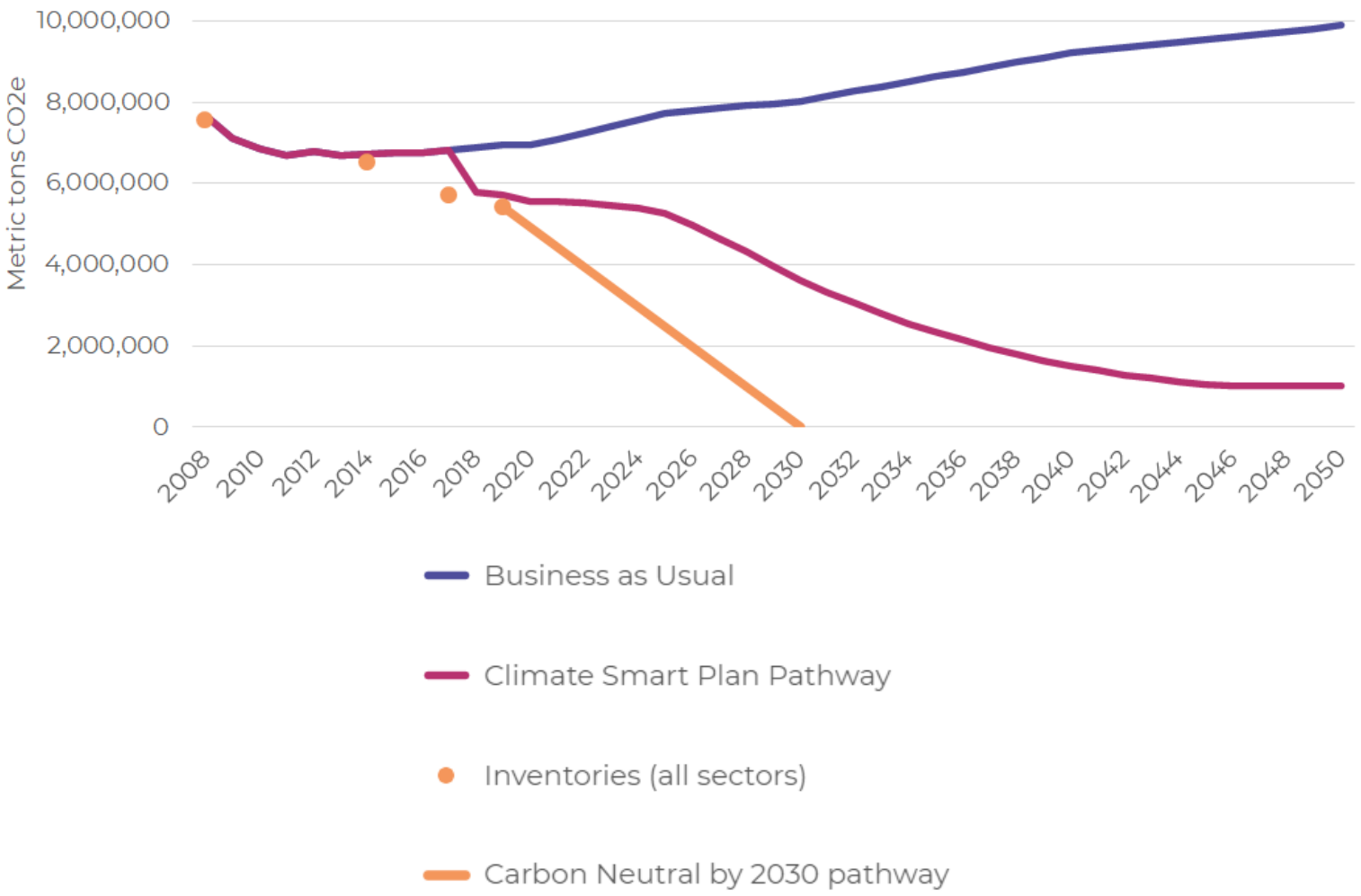
BACKGROUND

- Climate Smart San José plan (2019)
  - Aligned with Paris Agreement
  - Focused on energy, water and mobility
- Science indicates we must do more, faster, to avoid significant and irreversible impacts
- Council adopted aspirational goal of carbon neutrality by 2030
  - Directed staff to return with Climate Smart acceleration strategies in June 2022



VISION

San José will become a better, stronger and more resilient community by accelerating climate action and moving to carbon neutrality by 2030.

Commitments to help us achieve our vision:

- Engaging our community throughout the planning process
- Making all voices heard

FOCUS AREAS

Transportation

Buildings

Power Source

The Pathway focuses on three key areas, which together generate **85 percent** of the greenhouse gas (GHG) emissions in San José.

KEY STRATEGIES

The Pathway identifies four key acceleration strategies toward carbon neutrality by 2030:

Transportation

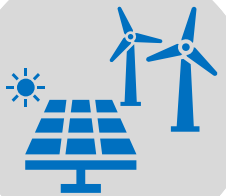
Move to Zero-Emission Vehicles

Reduce the Miles We Travel in Our Vehicles by at Least 20%

Buildings

Switch Our Appliances from Fossil Fuel to Electric

Power Source

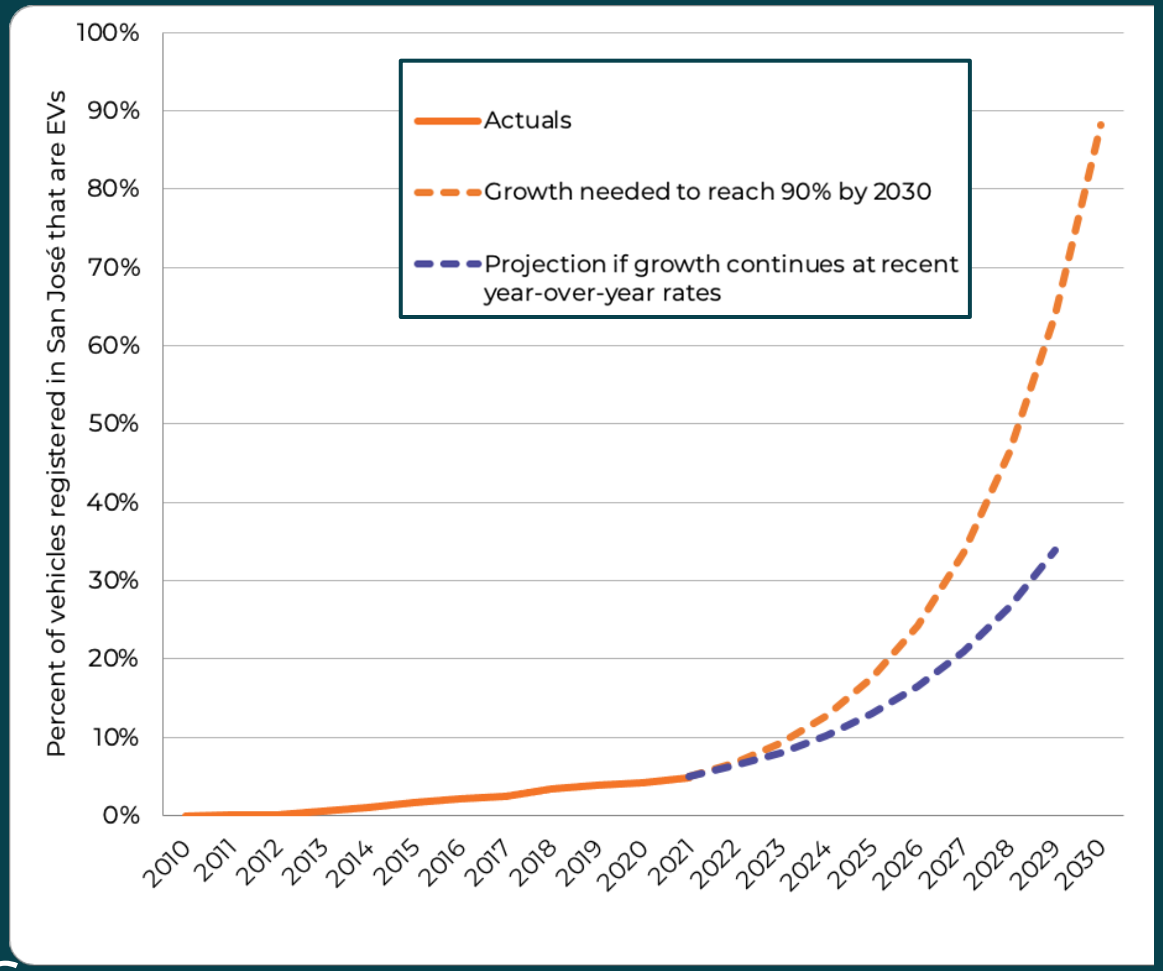


Power Our Community with 100% Carbon-Neutral Electricity

STRATEGY 1: MOVE TO ZERO-EMISSION VEHICLES

Key Data Takeaways:

- Focus should be on passenger vehicles, as well as trucks and commercial vehicles
- Need to significantly accelerate pace of electric vehicle (EV) adoption and buildout of EV infrastructure



Pathway includes supporting actions to increase EV charging and EV awareness and uptake

STRATEGY 2: REDUCE VEHICLE MILES TRAVELLED BY 20%

Key Data Takeaways:

- Reducing vehicle miles travelled (VMT) to current 2030 Climate Smart goal will require significant focus
- Development choices made from now to 2030 will have lasting VMT and GHG effects

Pathway includes supporting actions to improve and encourage transportation mode-shift.

STRATEGY 3: SWITCH APPLIANCES TO ELECTRIC

Key Data Takeaways:

- Focus should be on residential space and water heating
- Existing programs and incentives can support transition
- Low-income communities will require assistance
- Solar and appliance replacement at end-of-life can improve economics

Pathway includes supporting actions to guide equitable building electrification and streamline implementation

STRATEGY 4: 100% CARBON-NEUTRAL ELECTRICITY

Key Data Takeaways:

- SJCE already offers low-carbon power
- Should maintain and potentially grow SJCE's customer base
- Should monitor GreenValue enrollment and impact on goals
- Reaching goal requires deployment of both utility-scale and rooftop solar, paired with energy storage

Pathway includes supporting actions to procure additional renewables and storage, support grid resiliency and renewable service uptake, and increase onsite solar and storage.

LEADING BY EXAMPLE

Key Data Takeaways:

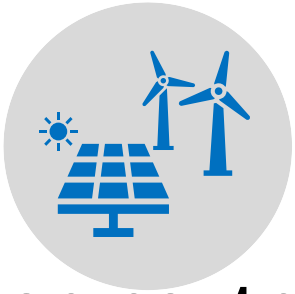
- Municipal operations are minor contributor but under City's control
- Focus on employee commutes & buildings
- Within buildings, focus on Airport central utility plant
- Can move to 100% renewable electricity quickly via SJCE

Pathway includes supporting actions to support all-electric municipal buildings, address employee commutes and City fleet, and move to carbon-neutral electricity

THE SCALE OF EFFORT REQUIRED

90% EVs =
~83K passenger EVs/yr. and
~7.5K public EV chargers/yr.

20% VMT reduction/ service population =
~2% reduction in VMT/service population/yr.



100% carbon-neutral power =
~650 MW of renewables, ~200-300 MW of storage, and ~200 MW of hybrid and/or green gas

100% buildings electrified =
~43K homes/ yr. and
~9.7M sq.ft. commercial space/ yr.

SUPPORTING RESOURCES

- Existing programs and incentives
- Public-private partnerships
- Significant federal and state funding to initiate and scale programs
- San José Clean Energy funding for programs anticipated to start in Fiscal Year 24-25

NEXT STEPS

- Continue to address cost and grid reliability
- Broad public engagement and technical analysis to refine initial supporting actions
- Integrate into upcoming Climate Smart update
- Ongoing tracking and reporting of progress
- Secure funding

Climate Smart San José: Existing Building Electrification Framework

City Council, Item 6.1
June 14, 2022

Presented by:
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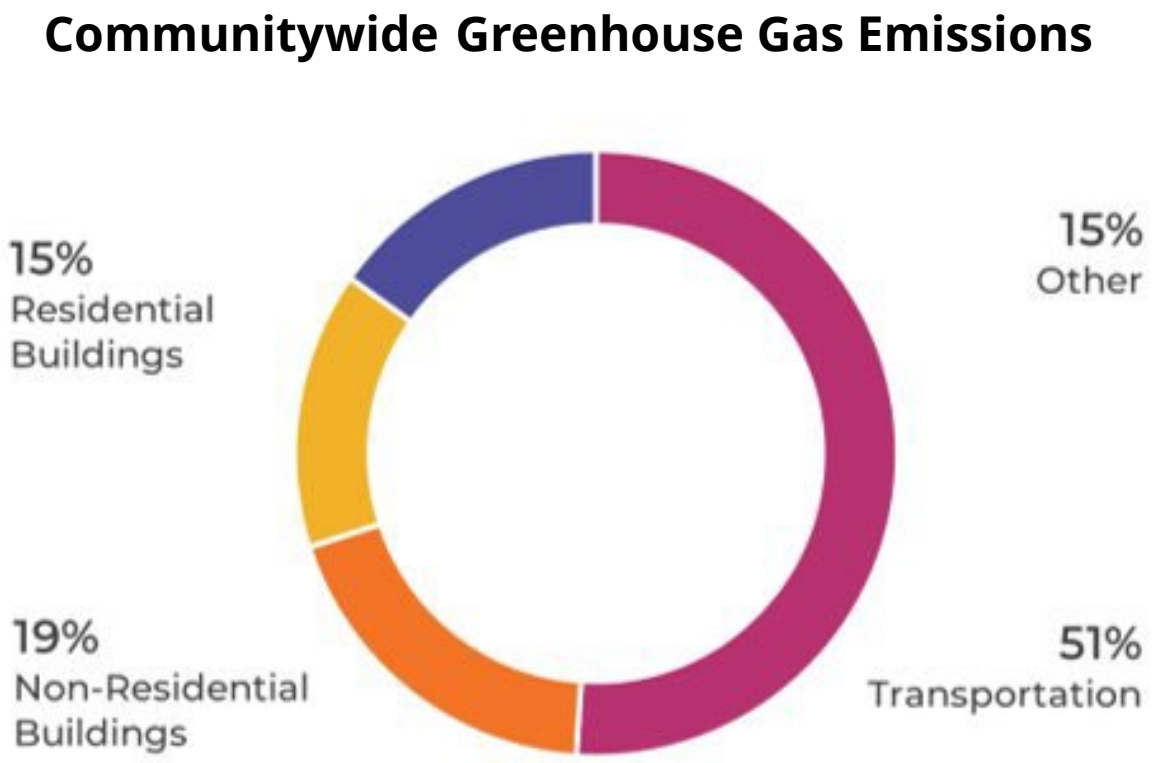
BACKGROUND

- Climate Smart San Jose plan (2019) includes building electrification goals
- City adopted all-electric building requirements for new buildings (2019, 2020)
- Council adopted aspirational goal of carbon neutrality by 2030
  - Considering Climate Smart acceleration strategies today
  - Framework is a supporting action in the building electrification acceleration strategy
- Community engagement on Framework 2020-2022
  - Draft Framework released in March 2022
  - Held additional community meetings to refine



WHAT IS BUILDING ELECTRIFICATION?

Replacing natural gas appliances in our homes and businesses with electric options, such as:

- Heat pump heating, ventilation, and air conditioning (HVAC) systems
- Heat pump water heaters

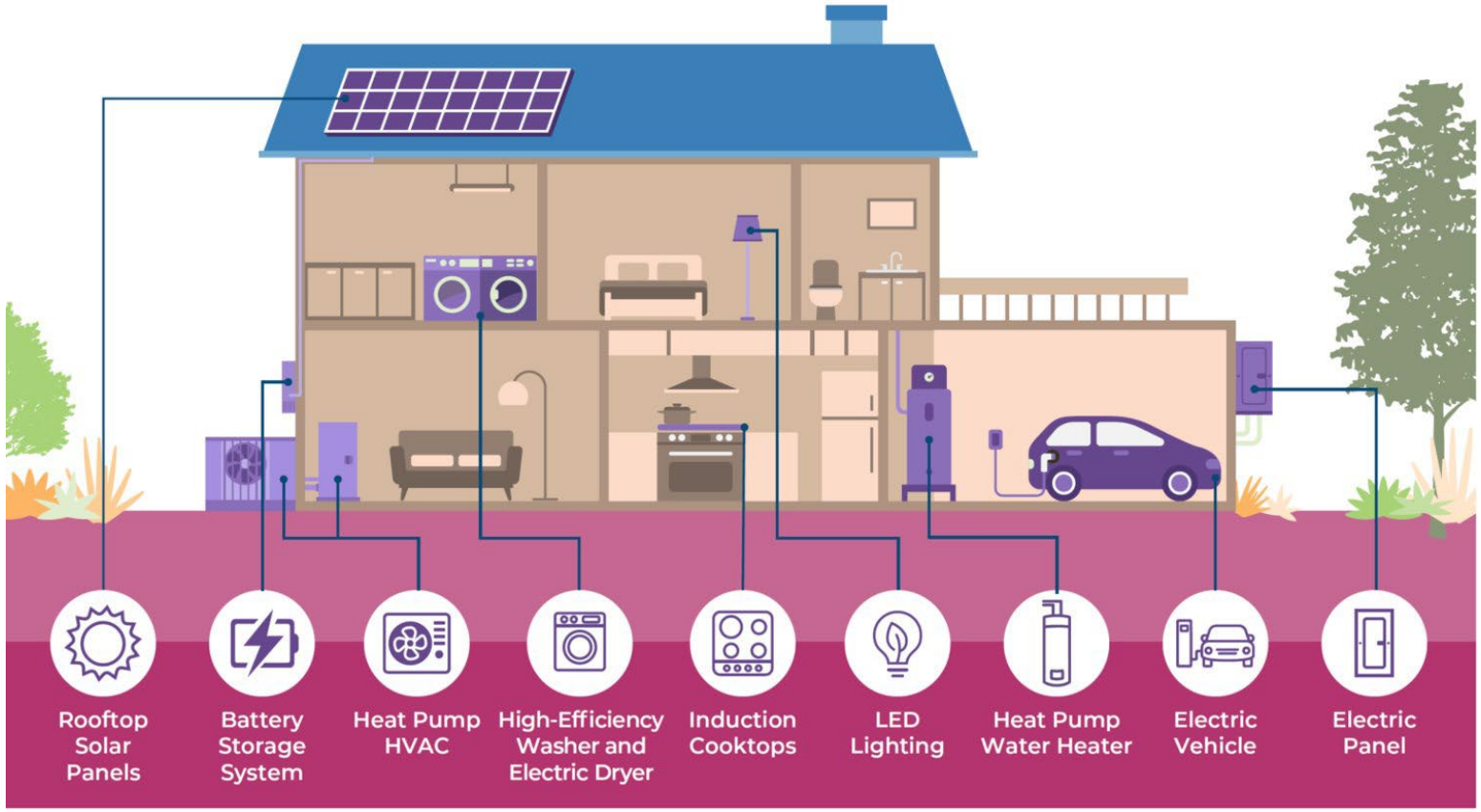


Photo Credit: City of Palo Alto Utilities

BENEFITS OF BUILDING ELECTRIFICATION

Health

- Improved indoor air quality by eliminating harmful pollutants emitted from natural gas appliances

Energy Efficiency

- Lower operating costs as a result of highly energy-efficient heat pump technology (saving energy and money!)

Clean Energy

- Ability to couple electric appliances with smart controls to allow use when energy is cleanest
- Ability to use on-site solar and battery back-up

MOMENTUM FOR BUILDING ELECTRIFICATION

Regional Regulations	CA Building Code	State Investment	Federal Investment
Bay Area Air Quality Management District draft regulations - Phase out the sales of some gas appliances starting in 2027	Adopted 2022 Building Code – Strongly incentivizes all-electric new construction	BUILD ($80M) and TECH ($120M) incentives for all-electric buildings Governor's Proposed Budget – over $5B for building decarbonization and grid reliability	Infrastructure and Investment Jobs Act - over $65B for grid infrastructure upgrades, energy efficiency, electrification, and renewable energy

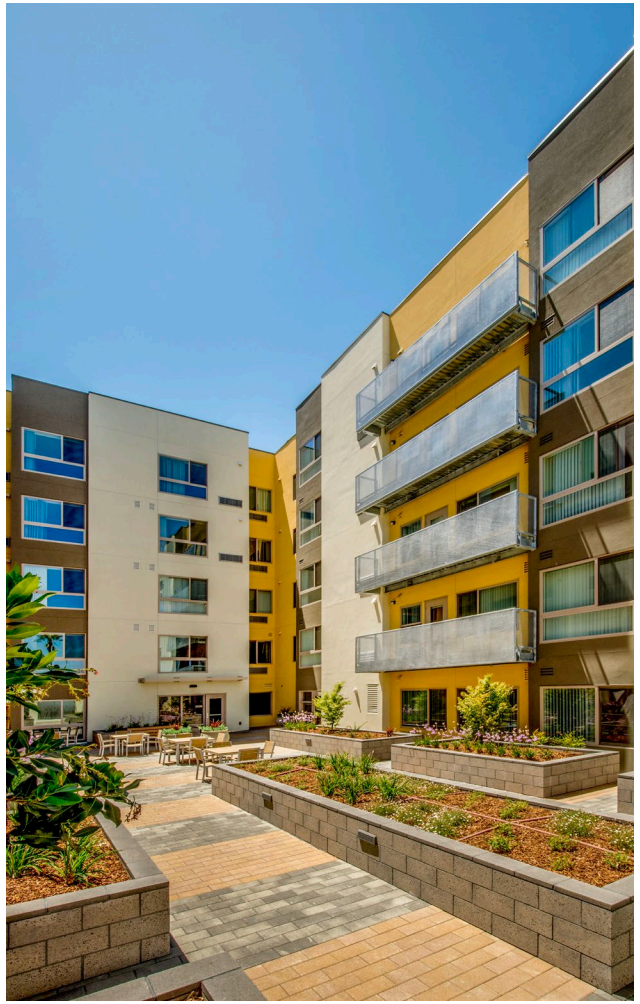
COMMUNITY CO-CREATION

2020-2022 Meetings with two community-based organizations (CBOs)

Three community forums with over 40 CBOs, labor, environmental, development and housing organizations

Five public information meetings

BUILDING ELECTRIFICATION FRAMEWORK



The City's Framework for Existing Building Electrification does not propose any mandates to switch out existing natural gas for electric equipment.

- Provides the City with guidance on how to pragmatically prepare and support community transition away from carbon-centric natural gas usage in existing homes and businesses
- Includes co-created solutions with community-based organizations and most impacted communities with a goal of making electrification accessible and beneficial for all

Housing and Energy Costs

Health & Air Quality

High Quality Job Opportunities

Clean & Reliable Energy

FOCUS AREA SUPPORTING STRATEGIES

Housing and Energy Costs

- Expand rebate programs awareness
- Launch retrofit accelerator
- Streamline permitting
- Provide cost information/ resources

Health & Air Quality

- Raise awareness of health impacts of using gas
- Support community led outreach
- Support regional and state policy efforts

High Quality Job Opportunities

- Expand contractor training opportunities
- Establish a workforce development working group
- Support regional efforts to promote high quality jobs
- Improve permit and code compliance

Clean & Reliable Energy

- Create community resiliency hubs
- Support utility scale development and grid resiliency
- Expand access to renewable energy

FREQUENTLY ASKED QUESTIONS

COST

Installation Costs:

- For priority system upgrades (HVAC, water heater), cost is est. $2,500-$22,000 **without incentives**
  - **14%-17% less** than natural gas replacements
- Est. $4,300 for panel upgrade

Operational Costs:

- Electric appliances typically reduce total home energy costs

GRID RELIABILITY

- State agencies and PG&E are planning for future electricity needs
- Modern gas appliances aren't operational in power outages
- Electric appliances can safely use a back-up power source
- Electric appliances can benefit from current and emerging technologies

NEXT STEPS

- Utilize Framework to guide existing building electrification work
- Continue to engage community on programs and policies
- Secure and leverage resources to support community
- Increase awareness of existing programs, incentives, and funding

THE SWITCH IS ON

BAYREN
Local Governments Empowering Our Communities

TECH
CLEAN CALIFORNIA