



March 10, 2026

Napa Climate Action Committee
1195 Third Street, Suite 210
Napa, CA 94559

RE: Inquiries and Input on the Regional Climate Action and Adaptation Plan (RCAAP)

TO: Members of the Napa Climate Action Committee (CAC), the Napa County Board of Supervisors (BOS), and the City/Town Councils of American Canyon, Calistoga, Napa, St. Helena, and Yountville:

On behalf of the North Bay Association of REALTORS®, thank you for receiving our comments on the Regional Climate Action and Adaptation Plan (RCAAP). There can be little doubt that the impacts of climate change are serious, and that homeowners have a role to play in the health and safety of Napa County.

We are writing to offer input, make inquiries and recommendations on the RCAAP - and to implore the CAC to better engage directly impacted stakeholders. Missing this means that serious gaps remain in understanding of how this Plan could (and couldn't) work, the consequences it brings, and viable alternatives.

The Bay Area Air District is now considering major amendments and exceptions to their existing Rules banning gas appliances, recognizing the very real capacity and cost issues that will impact thousands of homeowners and the overall affordability of housing throughout the Bay Area. The RCAAP proposes over 100 measures, estimated at over 1 billion dollars, with the most costly, unfeasible mandates being disproportionately targeting homeowners - even when they are not (even near) the primary emitters.

OVERVIEW

1. **Electrification/retrofits of existing homes is not only an ineffective policy choice, but all parties are also unprepared to accommodate what the RCAAP aims to mandate** – an impulsive mandate will do untold distress to the local housing economy (and everyone that relies on it).
2. **Residential buildings account for far less emissions than other areas (~11%).** Why are housing and homeowners disproportionately prioritized, especially when housing affordability is a top priority?
3. **Napa's housing and homeowner landscape is extremely diverse;** owners should have a choice in how they improve their homes in a safe, responsible way.
4. **Decision-makers and municipalities should lead by example** – most emissions are in your court – transportation and equipment (48%), solid waste and wastewater (20%), nearly 70% of emissions. Our municipalities should take the lead, with mandates on local home and business owners benefitting from the lessons learned by the County and cities piloting these mandates.
5. **Climate change is a shared responsibility, but the RCAAP** is severely imbalanced in its costs, risks, mandates, and consequences. The County, cities, and industries (transportation, housing, business, etc.) must all contribute a range of inseparable, achievable, rational solutions.

Oppose: BE-1: Retrofit Existing Buildings to Zero Carbon

While reducing building emissions is important, mandatory retrofits of all Napa homes is an inefficient, harmful approach when larger, more serious emissions remain largely mandate-free in the RCAAP.

1. **Massive, Insurmountable Costs:** The estimated cost for retrofitting a home is over highly variable especially for pre-code homes (58% in Napa) that oftentimes require panel upgrades, rewiring, driveway or road reconstruction - estimates for individual home electrification projects vary, but a "menu" of appliances and services can add up from tens of thousands to over \$200,000 depending on the number and type of systems needed ([SCC/SM Association of REALTORS®, 2022](#)).
2. **Severe capacity shortfalls and risks to housing should be taken seriously,** especially as housing affordability remains one of our most pressing problems. A mandate of this magnitude in the face of severe capacity shortfalls – from energy supply to grid/microgrid infrastructure, contractors and inspectors, permitting, compliance, and code enforcement – creates unworkable pressure on the system. Coupling such a mandate with this insufficiency risks destabilizing housing, eroding affordability, and undermining public confidence in the policies meant to advance housing goals.

Napa's People & Housing, [US Census Bureau, ACS Data Profiles 2023](#)

1. **The majority are not high-income earners, nor are the majority high-end homes.**
 - a. **40% of owners carrying a mortgage are spending 30(+)% of their income on housing**
 - b. 63% of owner-occupied units are carrying a mortgage (unknown how many rentals)
 - c. 55% have housing costs over \$3000/month
 - d. 67% of Napa homes are under \$1,000,000; 18% are under \$500,000
 - e. 65% earn less than \$150,000 annually (median household income is \$108,000)
2. **The homes are older, and a punishing amount of renovation is likely necessary.**
 - a. **Over 58% of Napa's homes (~32,000) were built before 1980 and lack the electrical infrastructure to support full electrification.**
 - b. 39% (~22,000) were built prior to 1960, and upgrading panels, wiring, and even streets or driveways to accommodate new systems can be prohibitively expensive and creates an outsized burden on homeowners, particularly in older neighborhoods.
 - c. 64% use gas to heat their homes vs. 27% with electricity
 - d. More people are using WOOD (1.7%) than solar (1.4%) right now.

Gaps in Capacity to Implement the RCAAP: Energy, Infrastructure, Permitting, Enforcement

1. **The RCAAP acknowledges that whether the capacity and/or infrastructure will be able to support neighborhood-level electrification has not been discussed, much less confirmed.**
2. **Neighborhood Electricity and Grid Limits:** Areas of the county lack transmission and/or microgrid capacity – and the availability of electricity remains in question.
 - a. Entire subdivisions may not be able to handle the upgrade to 10%+ of the homes in a given neighborhood. How will that work? Whoever upgrades first?
 - b. Older electrical systems may not support simultaneous operation of multiple high-load vehicles and appliances (EVs, HVAC, electric stove, dryer, water heaters).
3. **Grid Reliability and Public Safety Risks:** More demand without prior investment means more outages and higher rates. In a world of wildfire risk and the likelihood of PSPS outages, the loss of options for heating, cooling, cooking, and powering essentials is a very real problem for Northern California.
4. **Gaps in Market, Contractor, and Enforcement Capacity**
 - a. Limited availability of electricians, HVAC specialists, heat pump installers, skilled labor
 - b. Permitting and code enforcement capacity already limited and suffer ongoing delays

Housing Supply and Economy Already Stressed

1. Mandates may unintentionally accelerate displacement and/or reduce affordable housing stock.
2. **The majority of Napa's housing is older, pre-modern building code-stock, likely with** structural limitations and cannot easily accommodate added electrical loads without rewiring and construction.
 - a. How many units are there – how many permits per year are estimated (for replacements, repairs)? Are the JPA partners prepared to expeditiously manage this?
 - b. What percentage of homes have the capability vs. need upgrades?
 - c. How would this work in a rural, high-fire area where over 70% of the homes are single-family?

- d. We are prone to wildfires, PSPS outages, and blackouts, **reliance on electric homes without backup systems can compromise safety, access to heat, hot water, and cooking?**
 - e. Certain upgrades may make older, smaller, or more affordable homes economically infeasible to maintain; or result in a dramatically higher cost for all housing.
3. **Up-front costs are often out of reach** for low and moderate-income owners are disproportionately affected. Even with rebates, electrification requires thousands in upfront cash or credit. Low-income families often don't have access to affordable financing or home equity to cover those costs.
- a. Even with rebate/incentive programs, this still requires navigating complex applications, contractors, and permitting processes. Barriers disproportionately exclude households without time, language access, or internet access.
 - b. Retrofits often require temporary relocation, extensive construction, or removal of interior/exterior elements. Can take several weeks to months, disrupting families.

Disproportionate Focus on Housing; Lack of Mandates on Transportation and Public Sector Emitters

1. **Residential accounts for a relatively small portion of GHG emissions (~11%) compared to transportation, industrial, and waste.** Buildings account for 23% of total emissions, and residential buildings make up 49% of that, meaning residential buildings represent ~11% of total emissions.
 - a. Even if all homes were electrified, the reduction in emissions would be modest compared to transportation, vehicles/equipment, solid waste, and wastewater.
2. **On-road transportation accounts for nearly 40% of emissions** - with 81% of the workforce commuting by car, truck, or van, and only 1% taking public transportation.
3. **A full 16% is from solid waste;** solid waste and methane diversion/solutions can be more efficiently improved than attempting to retrofit tens of thousands of homes.

Housing and Homeowners are Diverse: CHOICES are Needed

1. From 19th-century farmhouses to mid-century tract homes, to new multifamily units – Napa's housing is extremely diverse in type, age, and owner capacity. **A one-size-fits-all mandate ignores this diversity and places disproportionate burdens on certain homes, particularly those in older or lower-income communities where retrofits are far more complex and expensive.**
2. **The RCAAP should offer a menu of options that allows homeowners to select the most practical, cost-effective, and safe upgrades for their specific property.** This could include energy efficiency improvements, partial electrification, renewable integration, or other decarbonization pathways.
3. Giving homeowners flexibility and choice not only makes compliance more achievable but also builds greater buy-in and participation, resulting in faster progress toward shared climate goals. A rigid mandate risks alienating homeowners and stalling progress. A flexible, options-based approach respects the unique character of California's housing landscape, ensures equity, and encourages responsible renovations that actually get done.

OPPOSE: BE-2: Energy Audits for Existing Non-Residential Buildings (disclosure point-of-sale)

Mandating audits, inspections, and/or retrofits at the point-of-sale is ineffective, slow, regressive, can wreak havoc on a transaction and housing affordability, and are a costly burden on public agencies.

1. Because only ~2-3% of homes sell each year in Napa, only a tiny, random fraction of properties are subject each year, and at the MOST precarious time. Escrow is a time sensitive process, and a mandated step only delays the process and adds unnecessary complexity.
2. Even in a booming economy, a point-of-sale mandate is a fundamentally irrational and ineffective public policy because it has such high costs, such a small public benefit, and such massive consequences for housing and homeownership.
3. The clear alternative is to create a comprehensive, cost-effective program that can ensure regular maintenance or whatever activity/goal is under consideration.

ALTERNATIVES & RECOMMENDATIONS

1. **Review, address, and respond to feasibility concerns** - particularly those pertaining to PG&E, infrastructure, local permitting, and compliance cost and capacity.
 - a. **Understand Napa's Limitations:** Napa is still uncertain whether the electricity, contracting, infrastructure, planning/permitting, code enforcement, capacity exists. Creating permanent mandates before the JPA has certainty on these is not responsible leadership.
2. **Restructure Electrification Mandate:** What is needed – buildings to become more energy efficient? Create a menu of options and incentivize property owners to retrofit the most cost-effective options in their homes. There are plenty of models already in existence – please research and consider.
 - a. **Homeowners should have a choice about how they target efficiencies on their properties.**
 - b. **By far the most efficient and effective means by which to reduce the use of natural gas in buildings is at the time of construction, which is ALREADY mandated.**
3. **Lead by Example:** JPA member governments should first electrify County/city buildings, facilities, fleet, and solid waste, and wastewater emitters; pilot and evaluate the process, challenges, and costs before mandating tens of thousands to follow suit. Piloting these activities would be a critical learning process for local governments as they prepare to mandate this on every building in the county.
 - a. **Secure incentives/public financing before mandating and create practical models** and menus by which residential, commercial, and agricultural owners can realistically adopt.
 - b. **Design and fully fund a countywide incentive and education program**, capable of guiding and financially supporting homeowners through implementation.
 - c. **Neutrality:** These solutions are copies pushed out by large organizations that stand to benefit from the adoption of these very policies via grants and program admin, consulting services, and the very strategic planning services that lead to these very proposals in the first place.
Napa County residents deserve courageous, independent advocates and representatives.
4. **Expand RCAAP's Vision and Values**
 - a. **The Plan prioritizes laudable values such as environmental justice and climate equity, but what about housing affordability and economic stability, fairness and neutrality when considering the needs of your constituents, and who can and should bear the burden?**
 - b. **Prioritize interventions with the highest climate impact per dollar spent**, such as cleaner transit, fleet electrification, and waste reduction programs, while ALSO minimizing economic and social disruption.

We respectfully request modifications to the RCAAP to ensure clarity, feasibility, and compassion in the path forward. The CAC's public engagement has been touted - but has been deficient with those that own/manage the homes, businesses, and systems that would be most impacted. Deliberately working with industry and those that represent the thousands of businesses, homes, and homeowners in good faith, especially after they requested to do so (and for responses to inquiries) – was not complete.

Our housing supply and affordability crisis is clear, and we need your leadership – government must be the entity that respects its stakeholders, overcomes rhetoric, and makes data-driven decisions that limit unintended consequences. We remain eager to serve as a resource and partner for a sustainable housing economy; please contact Lisa Badenfort, CEO with any questions at (707) 636-4294 or ceo@nba.realtor.

Respectfully,



Heather Thurber, President
Board of Directors



Lisa Badenfort, Chief Executive Officer
AE/Government Affairs Director

Appendix A: Questions Regarding Feasibility and Readiness

As local, regional, and state entities move toward electrification of existing buildings, it is essential to assess whether utility supply and infrastructure, local implementation and compliance systems, and homeowners themselves can reliably and affordably meet these requirements. **Our questions are intended to support fact-finding and guide policy development, ensuring that any approach is judicious and data-driven while striving to advance our shared public goals.**

1. Grid Capacity and Reliability

- a. Has PG&E/utilities confirmed that current infrastructure can support the implementation of Rule 6 across all Bay Area Air District counties?
- b. What is the projected increase in system demand, and how will reliability be maintained during peak load periods?
- c. How will PG&E/utilities address service interruptions, Public Safety Power Shutoffs, or load-shedding risks in an all-electric environment?

2. Infrastructure Readiness and Upgrades

- a. Has PG&E/utilities confirmed if (and when) local transformers and neighborhood circuits can accommodate increased load?
- b. What substations, transformers, and neighborhood circuits/infrastructure will require upgrades to accommodate increased load?
- c. What is the timeline for scaling generation, transmission, and distribution capacity to meet the demand (~120,000 per year)?
- d. What is the estimated cost for these improvements?
- e. How will PG&E/utilities coordinate with local governments, builders, and property owners on necessary panel or service upgrades?
- f. Are older neighborhoods particularly constrained; how will those constraints be addressed?
- g. Are rural neighborhoods particularly constrained; how will those constraints be addressed?

3. Cost, Funding, and Rate Impacts

- a. What are the estimated costs of system upgrades necessary to achieve implementation of Rule 6?
- b. Who will bear these costs of utility upgrades - ratepayers, taxpayers, or the utility?
- c. What are the projected effects on monthly electricity costs for single-family homes?
- d. The District found “an uncertain incentive landscape,” what does this mean?
- e. What specific funding or incentive programs exist to offset upgrade costs for homeowners?
- f. How will Rule 6 affect housing production, renovation, and affordability?
- g. What assistance will be available for low and moderate-income homeowners?

4. Energy Supply and Generation

- a. Has PG&E/utilities evaluated and committed to providing the energy needed to supply and upgrade non-gas water heaters and furnaces across all BAAD counties?
- b. How will increased demand align with renewable portfolio standards and emissions goals?
- c. What role will generation, storage, and microgrids play in maintaining resilience and affordability?

5. Implementation and Workforce

- a. The District estimates that 75% of HPWH single-family projects take one day for installation. Assuming this is correct, ~30,000 “edge cases” in dire need of help will remain. [A recent statewide study](#) indicates approximately **800,000 water heaters are replaced each year in California**. If Sonoma County has ~2% of California’s households, that’s 16,000 replacements annually. Have all counties confirmed they understand and can accommodate the permitting necessary?
- b. Has PG&E/utilities evaluated and committed to having a sufficient workforce - engineers, contractors, and lineworkers - to execute the required upgrades on schedule?

- c. Are there enough qualified and affordable licensed contractors, electricians, plumbers, and HVAC professionals to meet the scale of demand created by Rule 6?

6. Resilience and Backup Power

- a. What backup solutions will be available for homes and essential facilities during outages?
- b. How will homes remain livable during extended power interruptions or emergencies?
- c. What contingency plans exist for medically vulnerable or high-risk residents dependent on electric systems – who will not have hot water, heating, or cooling?

7. Local Implementation Capacity: Homeowners, Permitting, and Contractors

- a. Has the BAAD confirmed with local permitting authorities and departments that they are ready and able to efficiently accommodate the permitting and inspection demand?
- b. Has the BAAD confirmed with local permitting authorities and departments that they are ready and able to accommodate emergency replacement permits?
- c. What are current wait times for electrical upgrades, panel replacements, or heat pump installations, and how will those change under Rule 6?
- d. Is there adequate availability of required equipment (panels, heat pumps, water heaters) in the regional supply chain?
- e. How will homeowners - especially those in older properties - be supported in navigating technical, financial, and permitting requirements?
- f. What educational or outreach programs will help property owners understand costs, incentives, and compliance timelines?

Appendix B: Space and Electrical Constraints and Scenarios

There are many circumstances where space and electrical constraints could result in a project in the tens of thousands. Below are common scenarios that would dramatically increase the cost and complexity of an upgrade:

Panel & Service Limitations (location, condition, clearance, utility constraints)

1. Non-Code-Compliant or Inaccessible Panel Locations

- a. **Insufficient physical, structural, technical, space or clearance for panel relocation**
- b. Older homes frequently lack required working clearances or wall space to accommodate modern panels
- c. Panels located in closets, kitchens, hallways, exterior walls, or outbuildings, all requiring full relocation to meet code
- d. Panels placed in confined areas that cannot meet required clearances: 3' front working space, 30" width, 65" height
- e. Relocation often requires new framing, drywall removal, waterproofing, structural modification

2. Physical or Structural Barriers to Relocation

- a. No viable wall space for a larger modern panel
- b. Walls that cannot support panel installation without reinforcement or reconstruction
- c. Adjacent construction (stairs, cabinetry, beams) preventing compliant placement

3. Unsafe, Obsolete, or Non-Expandable Equipment

- a. Federal Pacific, Zinsco, other obsolete panels requiring replacement; expansions unsafe
- b. Weather-damaged or deteriorated equipment requiring replacement plus structural repair

4. Service Mast, Meter, and Utility Work Required

- a. Panel upgrades triggering mandatory modifications to: service mast height; meter location; utility-required clearances
- b. Overhead-service homes in wildfire zones requiring service hardening or relocation

5. Long Distances Between Panel and Appliances

- a. Panels located on opposite sides of the house from water heaters or HVAC equipment
- b. Requires long conduit runs through finished walls, attics, or crawlspaces - often not feasible without demolition

Wiring Load, Circuit Capacity, and Pathway Barriers

1. Outdated or Incompatible Wiring

- a. Cloth-covered, aluminum, or undersized-gauge wiring incapable of carrying new 240V loads
- b. Requires full branch-circuit replacement, not just a new breaker

2. Panel Has Nominal Capacity but No Usable Space

- a. Panels rated at 100–200 amps but lacking: available breaker slots; sufficient load capacity; ability to add 30–50-amp circuits required for HPWH/HVAC

3. Inaccessible or Nonexistent Wiring Paths

- a. Conduit embedded in concrete, tile, finished walls, plaster, demolition/reconstruction
- b. Tight crawlspaces or blocked attic routes preventing code-compliant conduit installation

4. Excessive Distance = Excessive Cost

- a. Long-distance wiring runs adding:
 - i. Labor hours
 - ii. Conduit, fittings, and new junction boxes
 - iii. Drywall repair and repainting

Site, Code, and Systemwide Triggers That Inflate Project Scope

1. Trenching and Hard Surface Excavation

- a. Slab-on-grade homes requiring concrete cutting for conduit runs
- b. Multifamily parcels requiring trenching across driveways, patios, walkways, landscaping

2. Panel Work Triggering Mandatory Whole-House Code Compliance

- a. Upgrading a panel often triggers:
 - i. Grounding and bonding upgrades
 - ii. GFCI/AFCI protection additions
 - iii. Smoke/CO detector modernization
 - iv. Knob-and-tube removal if discovered
 - v. Main service relocation to bring the home up to current code

3. Interaction with Solar, Batteries, and Subpanels

- a. Reconfiguration of inverters, battery storage, subpanels, and critical-load panels
- b. Requires new load calculations, inspections, and often new equipment mounting surfaces

4. Hidden Damage Discovered During Upgrade

- a. Fire, water, pest, structural damage requiring repair before new circuits can be installed
- b. Weather-exposed or deteriorated installations; replacement may require new framing, waterproofing, or utility relocation

Property-Specific and Regional Barriers (Sonoma & Napa)

1. Rural, Agricultural, and Multi-Building Properties

- a. Multiple structures sharing a single panel or meter
- b. Long distances between buildings making new 240V runs technically/financially untenable
- c. ADUs, barns, workshops, or pump houses relying on the same service

2. High Wildfire-Risk Areas

- a. Utility standards requiring:
 - i. Conductor upgrades
 - ii. Service relocation
 - iii. Additional grounding
 - iv. Pole-side modifications
- b. All triggered simply by seeking a panel upgrade

3. Historic or Preservation-Zoned Homes

- a. Moving or altering electrical service may require:
 - i. Preservation board review; special materials; restricted conduit runs
- b. Leading to long delays and significant cost

4. Septic, Well, and Critical System Loads

- a. Sonoma County alone has 30,000+ septic systems dependent on electrical pumps
- b. Adding HPWH/HVAC loads may exceed service capacity needed for waste/water systems
- c. Some parcels require subpanels or dedicated circuits to isolate essential systems

5. Multi-Unit, Shared-Service, or HOA-Regulated Properties

- a. Shared metering or panels requiring whole-building coordination
- b. HOA or landlord approval needed for:
 - i. Panel relocation
 - ii. Exterior wall penetration
 - iii. Conduit routing
- c. Often impossible within required timelines



Estimate

Date	Estimate No.
8/29/2025	76

93 Chelsea Ave.
Napa CA 94558

Name/Address

SKN Construction Inc.
5350 Washinton St.
Napa Ca. 94558

Description	Qty	Rate	Total
<p>Electric Conversion on average house.</p> <p>3 Ton GE Connect Heat Pump Air Handler and Ducting</p> <ul style="list-style-type: none"> •Install 3 ton GE Appliances NS18H36HA5 Residential Heat Pump, 3 ton, 33.4 Kbtu/hr Heating, 208-240 VAC, 1 ph Model # GECNS18H36HA5 •Install 3 ton GE Appliances, NAM36V1TA5S, Air Handler, 3 ton Nominal, 36000 Btu/hr Cooling, 208/230 V, 1 ph, 60 Hz Power Source, TXV Control, R-454B Refrigerant, Variable Speed Motor Model # GECNAM36V1TA5S •Install copper linest 50' 3/4" x 3/8" with communication wire. •Install 3/4" pvc drains. •Install 30 Amp disconnect at air handler. •Install 60 amp disconnect at outdoor unit with fuses. •Install Rectorseal Surge Protector. <p>5 year limited warranty on parts. 10 year limited warranty on compressor honored through Pace supply. All work performed is covered by a 1 year warranty through LH Heating & Air. Warranty to be voided if equipment is serviced by another company.</p>		13,500.00	13,500.00
Total			\$13,500.00

Phone #
7073633543

E-mail
Lhheatingandair@gmail.com

DeGraw Electrical Contractors

4134 Fairfax Dr
Napa Ca 94558
707 363 1428
degrawelectrical@gmail.com
Lic# 907078

Estimate

Estimate No: 136
Date: 09/05/2025

For: SKN Construction /Kevin Nickerson
Sknbuilds@outlook.com
(707) 637-6944

Description	Quantity	Rate	Amount
Converting from gas to electric appliances	1	\$0.00	\$0.00
<p>My name is Brandon DeGraw, and I own DeGraw Electrical Contractors here in Napa. I've been asked to write a letter concerning the proposed idea of switching to all electrical services in Napa county doing away with natural gas. In my opinion, this is just crazy talk. Let's just start with our electrical infrastructure. We don't have the grid to carry all of that extra load. It's bad enough that when it gets warm outside, we're told not to run our air conditioners or ovens due to insufficient grid capacity. Now you want to go all electric. Maka that make sence. im not sure you can.It would literally take years and hundreds of millions of dollars, which would ultimately be paid for by us, the consumer. Then there's the time and money that it would take to convert your average home to all electric. Let's get into that.</p> <p>Your average home has a tanked gas water heater, and most often, in newer homes, you will see a gas tankless water heater. To convert from gas to electric on a tanked water heater, you would need to hire a plumber to install the heater and an electrician to power it up. For a standard tanked water heater, you're probably going to be looking at around \$750.00 to \$1,200. If the home owner has a tankless and wants to go electric for there tank less, which in most cases would require a main electrical service upgrade due to the simple fact the the water heater is going to require a minimum 100a 250v circuit. All in for a tankless water heater and a service upgrade could end up costing homeowners up to \$20,000.00 depending on the panel location. We also have to think about gas ovens and cooktops. Again, there is more money that homeowners would have to spend. I've seen electric appliances range anywhere from 30a 250v all the way up to 80a 250v. Once again, it's probably another service upgrade. With costs possibly reaching the \$20,000.00 mark. How do you expect folks to bear that kind of financial burden. Our home heater mostly comes from natural gas furnaces, which would also need to be converted to electric heat pumps. Again, there is more money out of homeowners' pockets</p> <p>In closing, the grid can't handle it, and the majority of folk out here can't afford to have this jammed down there throats.</p> <p>Brandon DeGraw DeGraw Electrical Contractors</p>	1	\$0.00	\$0.00



Potential Cost Range of All-Electric Conversion

Building Electrification Cost Study Published: June 27, 2022

STRUCTURAL COSTS	Low End*	High End*
APPLIANCES		
Air/Heating System	\$4,500	\$40,000
Range Cooktop	\$800	\$6,500
Water Heater	\$1,000	\$7,500
Clothes Dryer	\$1,000	\$3,000
SERVICES		
Rewiring & New 220 Amp Outlets	\$3,650	\$22,000
Construction Access to Electrical	\$2,000	\$9,000
Abatement of Asbestos & Lead	\$4,000	\$36,000
Replacement Housing During Asbestos Removal & Construction Upgrades	\$5,000	\$10,000
Electric Panel Upgrade from 50/100 to 200 amp	\$3,000	\$15,000
Undergrounding of Lines	\$3,500	\$15,000
Replacment of 2 inch pipe with 3 inch pipe to accommodate 200 amp service	\$5,000	\$30,000
PG&E Capping-Off Gas Lines	\$9,500	\$25,000
Permitting	\$1,000	\$5,000
SUBTOTAL APPLIANCES & SERVICES	\$43,950	\$224,000
ADDITIONAL FACTORS		
Solar Panels + Structural Upgrades	\$25,000	\$50,000
New Roof	\$20,000	\$75,000
Backup Battery	\$7,500	\$30,000
Swimming Pool/Spa Conversion**	\$10,000	\$35,000
Trigger for Fire Sprinklers	\$10,000	\$35,000
Trigger for Sewer Lateral	\$9,000	\$30,000
*Cost of Labor is the Most Significant Unknown Factor		
** Conversion to Electric is Discouraged by Pool Companies due to Inefficiency		
TOTAL STRUCTURAL COST	\$125,450	\$479,000

Sources: Based upon a study conducted by the Santa Clara County Association of REALTORS® (SCCAOR) with estimates from 7 Electrical Contractors in Santa Clara County.

The appliances, services, and additional factors are a "menu" of options and range of costs. Some newer homes will require fewer of the options and older homes will require most of the listed services and additional factors.

Potential Cost Range of All-Electric Conversion

Building Electrification Cost Study Published: August 31, 2021

STRUCTURAL COSTS	Low End*	High End*
APPLIANCES		
Air/Heating System	\$10,000	\$25,000
Range Cooktop	\$1,500	\$4,000
Water Heater	\$2,000	\$5,000
Clothes Dryer	\$1,000	\$2,000
SERVICES		
Rewiring & New 220 Amp Outlets	\$5,000	\$10,000
Construction Access to Electrical	\$3,000	\$6,000
Abatement of Asbestos & Lead	\$5,000	\$10,000
Replacement Housing During Asbestos Removal & Construction Upgrades	\$5,000	\$10,000
Electric Panel Upgrade from 50-100 to 200 amp	\$4,000	\$6,000
Undergrounding of Lines	\$5,000	\$10,000
To Accommodate 200 Amp Service, Replacement of 2 Inch Pipe with 3 Inch Pipe Under Driveway from House to Street	\$5,000	\$20,000
PG&E Capping-Off Gas Line	\$10,000	\$15,000
SUBTOTAL APPLIANCES & SERVICES	\$56,500	\$123,000
ADDITIONAL FACTORS		
Solar Panels	\$25,000	\$60,000
New Roof	\$20,000	\$40,000
Backup Battery	\$9,000	\$20,000
Swimming Pool/Spa Conversion**	\$8,000	\$10,000
Trigger for Fire Sprinklers	\$10,000	\$25,000
Trigger for Sewer Lateral	\$6,000	\$15,000
*Most Significant Unknown = Cost of Labor		
** Discouraged by Pool Company Due to Inefficiency		
TOTAL STRUCTURAL COST	\$134,500	\$293,000

Sources: Based on a study commissioned by the SAMCAR Government Affairs Committee with estimates from 8 Electrical Contractors in San Mateo County and a Pool Service Company.

The appliances, services, and range of costs is a “Menu” of possible options. Some homes will require few of the options, many will require most, and some will require all.