



City of SACRAMENTO

EXISTING BUILDING ELECTRIFICATION

Frequently Asked Questions

On June 1, 2021, the Sacramento City Council adopted a framework for existing building electrification ([Resolution No. 2021-0166](#)). The framework defines how the City will develop a strategy to transition existing buildings to all-electric by 2045. Electrification of existing buildings is a crucial step in the City's work to achieve carbon neutrality and advance equity.

What is existing building electrification?

Transitioning Sacramento's existing buildings to all-electric means replacing natural gas or propane appliances with electric alternatives, such as electric heat pump space heating and water heating, cooktops, ovens, ranges, and dryers. In some cases, electric panel upgrades, sub-panels, or other retrofits may be necessary. There are also opportunities to pair electric appliance retrofits with solar photovoltaic arrays, battery storage, weatherization improvements, and energy efficiency upgrades.

Why is the City developing a strategy for existing building electrification?

All-electric buildings reduce greenhouse gas emissions, improve public health and safety, and provide cost benefits. The City has committed to developing an equitable electrification pathway that avoids bill increases and ensures that benefits flow to historically marginalized communities.

- **Achieving carbon neutrality:** All-electric buildings are an essential part of Sacramento's path to carbon neutrality. By replacing fossil fuel appliances with appliances that use renewable electricity, Sacramento can significantly reduce greenhouse gas emissions from the building sector. SMUD, a core partner in the City's electrification work, is already generating approximately 72% carbon-free electricity and has committed to providing 100% carbon-neutral electricity by 2030.¹ All-electric buildings that use SMUD's 100% renewable electricity will be zero-emission.
- **Public health:** Reducing natural gas and propane use improves both indoor and outdoor air quality, with important public health benefits.
 - Indoors, burning gas in household appliances produces nitrogen oxides, carbon monoxide, formaldehyde, and other harmful pollutants that increase the risk of respiratory disease.^{2,3,4,5} For example, living in a home with a gas stove may

¹ SMUD's carbon-free energy resources include large hydroelectric. Currently, SMUD's power is approximately 30% eligible renewable for purposes of California reporting, which excludes large hydroelectric. On April 28, 2021, SMUD's Board of Directors adopted the [2030 Zero Carbon Plan](#), which establishes the commitment to zero carbon for SMUD's energy resources by 2030.

² Krasner, A., Jones, T. S., & La Rocque, R. (2021) Cooking with Gas, Household Air Pollution, and Asthma: Little Recognized Risk for Children. *Journal of Environmental Health*, 83(8), 14-18. <https://www.proquest.com/scholarly-journals/cooking-with-gas-household-air-pollution-asthma/docview/2505418593/se-2?accountid=201395>.

³ Seals, B., & Krasner, A. (2020). *Health Effects from Gas Stove Pollution*. Rocky Mountain Institute, Physicians for Social Responsibility, Mothers Out Front, and Sierra Club. <https://rmi.org/insight/gasstoves-pollution-health>.

⁴ Zhao, H., Chan, W. R., Cohn, S., Delp, W. W., Walker, I. S., & Singer, B. C. (2020) Indoor air quality in new and renovated low-income apartments with mechanical ventilation and natural gas cooking in California. *International Journal of Indoor Environment and Health*, 31(3), 717-729. <https://doi.org/10.1111/ina.12764>

⁵ Logue, J. M., Klepeis, N. E., Lobscheid, A. B., & Singer, B. C. (2014) Pollutant exposures from natural gas cooking burners: A simulation-based assessment for Southern California. *Environmental Health Perspectives*, 122(1), 43-50. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3888569/>.

increase children's risk of asthma by 42%.⁶ Low-income households may particularly benefit from building electrification because they are more likely to live in substandard housing with worse indoor air quality.

- Reducing combustion of gas and propane in buildings also decreases formation of harmful pollutants outdoors, including nitrogen oxides and ozone. The gas and propane burned in buildings generate six times more nitrogen oxides emissions than all in-state power plants combined.⁷ Reducing nitrogen oxides emissions decreases formation of ground-level ozone, a major pollutant in the Sacramento region.^{8,9} Improving outdoor air quality is particularly impactful for disadvantaged communities¹⁰ which are often located in areas with greater air pollution.
- **Fire Safety:** Transitioning to all-electric buildings decreases the risk of natural gas leaks, explosions, and fires. Nationwide, natural gas ignites over 4,000 home structure fires annually, causing on average 40 deaths and \$54 million in property damage per year.¹¹
- **Cost Savings:** Although electrification retrofits to existing buildings may have large upfront costs, retrofits including heat pump water heating and space heating, ventilation, and air conditioning are cost-effective for single-family homes and low-rise multi-family buildings in Sacramento.¹² As technology advances, costs for electric options are increasingly competitive compared to gas options. Additionally, over the next several decades, natural gas system costs are expected to increase, with escalating customer costs that would hit the lowest income households hardest. An equitable and inclusive approach to electrification is an important long-term cost-saving strategy for ratepayers.¹³

Will the City require me to replace my gas stove or retrofit my building?

The existing building electrification strategy will serve as a guiding policy document; it will not establish mandatory requirements for immediate appliance replacements or building retrofits. As the City's long-term electrification strategy, the document will recommend actions to advance electrification in a manner that equitably distributes benefits and minimizes negative impacts, with a focus on historically marginalized low-income people of color and small local businesses. The City and partners will conduct extensive community engagement to develop recommended actions to transition existing buildings to all-electric by 2045.

⁶ Weiwei, L., Brunekreef, B., & Gehring, U. (2013). Meta-analysis of the effects of indoor nitrogen dioxide and gas cooking on asthma and wheeze in children. *International Journal of Epidemiology*, 42(6), 1724–1737. <https://doi.org/10.1093/ije/dyt150>.

⁷ California Air Resources Board. 2016 SIP Emission Projection Data: 2012 Estimated Annual Average Emissions. <https://www.arb.ca.gov/ei/emissiondata.htm>

⁸ Sacramento Metropolitan Air Quality Management District. (2021). Air quality pollution and standards. <http://www.airquality.org/air-quality-health/air-quality-pollutants-and-standards>

⁹ American Lung Association. (2021). *State of the Air 2021*. <https://www.lung.org/research/sota>

¹⁰ Senate Bill 535 (De León, Statutes of 2012) defines disadvantaged communities as areas disproportionately burdened by multiple sources of pollution and/or high rates of poverty. The California Environmental Protection Agency identifies disadvantaged communities using [CalEnviroScreen](#), a tool of the Office of Environmental Health Hazard Assessment.

¹¹ Ahrens, M. & Evarts, B. (2018). *Natural Gas and Propane Fires, Explosions and Leaks Estimates and Incident Descriptions*. National Fire Protection Association. <https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Hazardous-materials/osNaturalGasPropaneFires>.

¹² E3 Energy and Environmental Economics, Inc. (2019). *Residential Building Electrification in California*. https://www.ethree.com/wp-content/uploads/2019/04/E3_Residential_Building_Electrification_in_California_April_2019.pdf

¹³ Energy and Environmental Economics, Inc. (2020). *The Challenge of Retail Gas in California's Low-Carbon Future*. California Energy Commission. <https://www.energy.ca.gov/sites/default/files/2021-06/CEC-500-2019-055-F.pdf>

For example, recommendations may include requiring that, after a certain date, large appliances (e.g., hot water heaters and space heating, ventilation, and air conditioning equipment) be replaced with electric equipment at the end of their useful life. Once the recommended existing building electrification strategy is complete, additional action by the City Council would generally be necessary to implement new significant programs, standards, or requirements.

How will the City develop an existing building electrification strategy?

The City Council adopted a framework for existing building electrification ([Resolution No. 2021-0166](#)) on June 1, 2021. The framework defines the timeline and objectives for developing a strategy to transition Sacramento's existing buildings to all-electric by 2045. The process prioritizes engaging with residents, businesses, and other stakeholders to plan a transition that is equitable, avoids bill increases, and benefits historically marginalized low-income communities and communities of color.

City staff are starting an 18-month planning process to develop a policy roadmap for existing building electrification. To deliver this work and conduct extensive engagement, the City is entering into an agreement with a consultant team. The project will involve a multi-pronged outreach approach, with committed participation by SMUD and PG&E. Staff plan to deliver a recommended electrification strategy to City Council by the end of 2022.

What types of buildings will be affected?

The existing building electrification strategy will examine opportunities to transition existing building types to all-electric, both owner-occupied and rental buildings. Due to the abundance of single-family homes in Sacramento and available data, single family buildings will be a key focus of the study. However, the study will also address multi-family residential buildings and nonresidential buildings, with varying levels of detail. While recommendations will vary by building type, the strategy will provide a holistic policy approach to achieve City goals.

How will existing building electrification affect homes and businesses?

The existing building electrification pathway will identify specific recommended policies, programs, and funding needs and financing opportunities to transition existing buildings to all-electric by 2045. Policies and programs may include recommended incentives, standards, and assistance for replacing gas appliances with electric alternatives. Expanding current programs that offer weatherization services, energy efficiency upgrades, and rooftop solar may also support the transition to all-electric buildings. The final strategy will provide the City's roadmap to achieve Council's goals for electrification of the existing building stock. As a strategy, the document will provide a task list of additional actions for the City, SMUD, and other partners to achieve long-term 2045 goals. Generally, the enactment of new programs, standards, or requirements would require additional action by the City Council or appropriate approving body for implementation.

What electrification incentives are available in Sacramento?

SMUD currently provides industry-leading incentives to support building electrification. These include [rebates for businesses](#) as well as [home rebates](#). SMUD also offers several other [programs for income-eligible customers](#), including the Energy Assistance Program Rate for low-income households and non-profits, and energy efficiency and building electrification retrofits in collaboration with community partners like [Habitat for Humanity](#).