



## Grounded in Reality

The Impacts of Electrification in Urban Nevada (Las Vegas and Reno)

*Executive Summary*

### Introduction

As Nevada seeks to reduce greenhouse gas emissions, the continued use of natural gas, which provides efficient, safe, reliable, and affordable energy, will be essential to meeting this goal. Natural gas is already helping Nevada move to a cleaner energy future, providing reliable energy in homes and businesses while driving down emissions, while also enabling the integration of renewable energy and helping maintain grid reliability. The consistent steps towards greater energy efficiency are also saving consumers money and protecting customer choice.

This analysis, prepared by the American Gas Association (AGA) using the forecasts developed by the National Renewable Energy Laboratory (NREL) and its ReEDS model of electric power markets<sup>1</sup>, shows that the use of natural gas can support Nevada's economy by creating a sustainable path to a clean energy future while keeping energy costs low for consumers and businesses. Alternatively, employing an electrification policy in Nevada would do just the opposite, driving up costs for consumers, communities, and businesses without significant environmental gains.

### The Data Supports Natural Gas

AGA modeled the impact of a local gas moratorium in "Urban Nevada," the three-county metropolitan area<sup>2</sup> containing Las Vegas and Reno, to understand the implications of a gas moratorium for consumers, the environment and the local economy. The data shows just how devastating this policy change would be.

The analysis found that the annual average energy cost for a Las Vegas home with high-efficiency gas would be \$660 per year, while an all electrified home—without the additional cost of any upgrades to its electrical panel—would cost between \$860 and \$1,040 per year. In Reno, which has colder winters, the gas home would cost an average of \$840 per year, while an electrified home would cost \$1,140 to \$1,320 per year, an increase in costs of between 36 percent and 57 percent for residential customers. Over a 20-year period, the cost of ownership from an electrified house in Las Vegas would be between \$17,300 and \$20,800, compared to \$13,300 for a home using gas. In Reno, the cost of ownership of an electrified house would be \$22,800 to \$26,300 over 20 years, compared to \$16,800 for high-efficiency gas.

In the commercial sector, Las Vegas businesses with high-efficiency gas would have an average fuel cost of \$3,460 per year – compared to commercial buildings using electricity at \$6,010 per year. Meanwhile, Reno businesses using natural gas would pay an annual fuel cost of \$6,360 per year,

---

<sup>1</sup> See Methodology section at end of "Grounded in Reality" report.

<sup>2</sup> The Las Vegas metropolitan area (Clark County) and the Reno metropolitan area (Washoe and Storey Counties).

compared with \$9,910 if using only electricity. All told, using natural gas provides a savings of 36 percent over all-electric in Reno and savings of 42 percent in Las Vegas.

The analysis assumed that electrification would proceed gradually over the next three decades as additional new buildings come online and existing buildings' heating equipment reaches end of life. By 2050, net costs for residential customers in the Las Vegas metropolitan area would be \$181 million higher, and commercial customers' costs would be \$47 million higher. Over the period from 2022 to 2050, residential customers' aggregate increase in costs from a forced electrification policy would be \$2.6 billion, and commercial customers' increase in costs would be \$742 million.

In Reno, mandated electrification would increase net costs for residential customers by \$148 million and commercial customers by \$27 million. By 2050, residential customers' cumulative net cost increase would reach \$2.1 billion and commercial customers would see cost increases of \$439 million, for a combined increase in net costs of \$2.6 billion in the Reno area.

The higher costs of living and doing business would have significant and negative implications for economic growth in Urban Nevada. Households facing higher energy costs would likely reduce their spending on consumer staples, which would negatively impact the service sector in the area. Businesses that pay more for energy would pass their higher costs along to customers and be less competitive.

And if either Reno or Las Vegas enacted a local natural gas moratorium, the city would cause even more harm to the cities' economies. By 2050, such a policy would mean 2,000 fewer jobs in the area than compared to a scenario where high-efficiency gas is available to customers.

Job losses would impact every sector of the economy but would impact certain sectors, such as finance, insurance, and real estate; healthcare; business and professional services; and the hotels and food services sector would be especially affected.

And to what end? Despite all these costs to homeowners and businesses, and the damage to the economy, the end reduction in GHG emissions would be minimal. The electrification scenario would decrease Las Vegas' and Reno's combined net carbon dioxide contribution to the National GHG Inventory by less than one percent (from 2019 levels) compared to high efficiency gas<sup>3</sup> – a cumulative 22.6 million metric ton reduction between 2022 and 2050. By 2050, the cost for this minor reduction would be an astounding \$6 billion (net) for customers.

To put a finer point on it – the cost of saving one metric ton of CO<sub>2</sub> in Las Vegas in this scenario would be \$317 and \$233 in Reno.

For context, the current Biden administration prices carbon at approximately \$51 per metric ton under the Social Cost of Carbon (SCC)<sup>4</sup> tool. The high cost of emissions reductions under this forced electrification strategy demonstrate that is not the most economical way to reduce emissions nor the most environmentally beneficial.

In addition to the costs that home and business owners would shoulder, the societal costs of electrification are a critical piece of the data that need to be included in any discussion about a city or state's energy future. On a nationwide basis, electrifying the entire residential sector by 2035 would increase peak electric system demand and could require the size of the entire U.S. power generation sector to nearly double. These significant increases in electric power demand would require massive

---

<sup>3</sup> <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

<sup>4</sup> The SCC is currently open for public comment: <https://www.federalregister.gov/documents/2021/05/07/2021-09679/notice-of-availability-and-request-for-comment-on-technical-support-document-social-cost-of-carbon>

new investments in new electric generation, transmission, and distribution infrastructure. The total economy-wide increase in energy-related costs from policy-driven residential electrification could be significant. Nationwide, average household annual energy costs would increase by an average of 71 percent over the lifetime of the appliance equipment.

## Methodology

This analysis, prepared with data from the AGA, shows that the use of natural gas can support Nevada's economy by creating a sustainable path to a clean energy future, while keeping energy costs low for consumers and businesses. AGA's estimate of the new emissions from power generation is derived from the forecasts developed by the NREL and its ReEDS model of electric power markets. Assumptions for this analysis come from the Low Renewable Cost Scenario and its long-term projections of marginal emissions from new sources of demand. It's worth noting, however, that the costs described in this analysis for phasing out natural gas use through the replacement of heat pumps and water heaters, are really the bare minimum. This analysis does not touch on the additional costs that would be necessary to improve electric infrastructure, resilience, and reliability – not to mention the rate increases borne by the remaining natural gas customers as other customers are driven towards electrification of these appliances.

## Conclusion

AGA has offered up this perspective as state and local policymakers develop strategies to lower greenhouse gas (GHG) emissions without burdening vulnerable communities. Policy mandated electrification would deprive consumers and business of consumer choice, while leaving them to face the increased costs. Natural gas is playing a key role in reducing emissions and increasing energy efficiency, advancing a framework that promotes a healthy, sustainable and resilient future. The natural gas industry and Nevada's natural gas utilities are committed to a sensible approach that includes all energy sources, innovative low carbon technologies like renewable natural gas and energy efficiency, without sacrificing the reliable energy that Americans want, need and expect.

As Nevada considers how it should best transition to a lower-carbon future, several key questions must be answered, including:

- How does the cost of forced electrification compare with other strategies to reduce greenhouse gas emissions?
- What are the cost and infrastructure impacts to the electric grid?
- How is customer choice factored into the decision to implement these policies?
- Which approach is best for local homes and businesses?

This analysis shows that removing natural gas from the state's suite of energy options would have negative impacts on residents and the economy with only minimal greenhouse gas emissions reductions. Cleaner-burning natural gas provides affordable, reliable energy that saves money for consumers and businesses, supports jobs, and helps reduce emissions, facts that need to be part of a transparent conversation around the future of our nation's energy portfolio.