



## Restrictions on Natural Gas Use in Buildings

By Christina Van Winkle, Andrea Denka, and Erin Reynolds

Some U.S. cities have adopted legislation to limit or restrict the use of natural gas systems in new construction, instead requiring building systems or appliances to be powered by electricity. In response to these natural gas prohibitions, some states have enacted legislation prohibiting cities from restricting natural gas systems in new construction. This *issue brief* provides background on the issue and how it applies to Colorado.

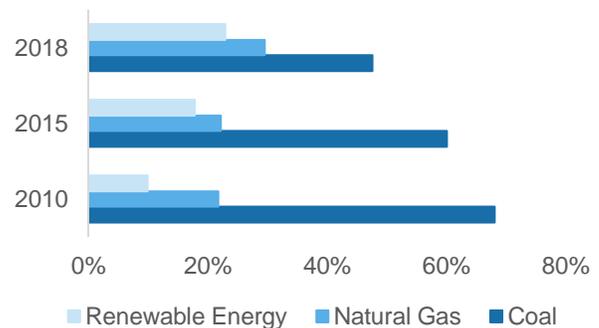
### The Role of Natural Gas

Natural gas accounts for one-third of Colorado's energy mix and is used primarily to generate electricity and as a heating source for homes and buildings.<sup>1</sup> Nearly 40 percent of the natural gas consumed in Colorado is used by the residential and commercial sectors for building applications such as space and water heating and cooking.

Natural gas has played an important role in transitioning the electricity sector away from other energy sources like coal. When burned for energy production, natural gas results in fewer pollutants and about one-half of the carbon dioxide emissions as coal. However, when extracted, natural gas—which is primarily methane, a potent greenhouse gas—causes some methane to leak into the atmosphere, contributing to climate change. In addition, burning natural gas indoors has been linked to respiratory and other health-related issues.

From 2010 to 2018, electricity demand in Colorado grew nearly 10 percent, while emissions from the electricity sector declined by around 15 percent over the same time period.<sup>2</sup> This change reflects the phasing out of coal-fired power plants and their replacement by both natural gas and renewable energy sources, such as wind and solar, which produce no greenhouse gas emissions, as illustrated in Figure 1.

Figure 1. Colorado's Electricity Resource Mix 2010 to 2018



Source: U.S. Energy Information Administration.

While renewable energy offers emission-free energy, expansion of its use is limited in the near-term by the lack of storage and transmission infrastructure, among other factors.

### Natural Gas Use in Buildings

Natural gas is used in residential and commercial buildings to power appliances such as furnaces,

<sup>1</sup>A small portion (2%) of natural gas consumed in Colorado is used as an alternative transportation fuel.

<sup>2</sup>EIA State Electricity Profile:

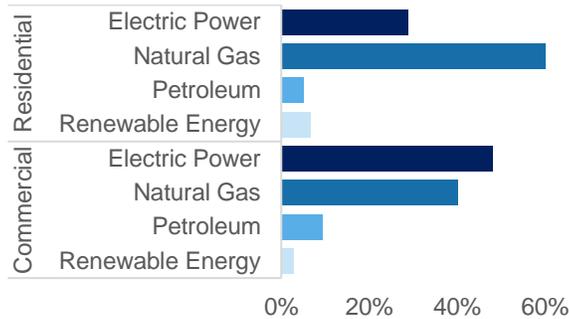
<https://www.eia.gov/electricity/state/colorado/> and CDPHE

Greenhouse Gas Inventory:

<https://www.colorado.gov/pacific/cdphe/colorado-greenhouse-gas-reports>

water heaters, stoves, and clothes dryers. About 60 percent of homes in Colorado are powered by natural gas. Figure 2, on the following page, shows the energy mix used by residential and commercial end users in Colorado.

**Figure 2. Colorado's Energy Resource Mix for Residential and Commercial Buildings 2010 to 2018**



Source: U.S. Energy Information Administration.

According to the Colorado Department of Public Health and Environment, natural gas used in Colorado's residential and commercial buildings emits approximately 12 million metric tons of greenhouse gases annually, which accounts for 9 percent of statewide annual greenhouse gas emissions. Emissions from the use of natural gas in Colorado buildings has remained relatively constant since 2010.

## Natural Gas Restrictions in New Construction

Some municipalities in other states have begun to prohibit or restrict the use of natural gas in newly constructed buildings. Reasons cited by these municipalities include: addressing climate change by transitioning away from carbon energy sources; improving residents' health and safety; and readying area infrastructure for energy produced from renewable sources. These strategies are sometimes referred to as "decarbonizing buildings" or "beneficial electrification."

In July 2019, the City of Berkeley, California, became the first city to adopt an ordinance banning natural gas infrastructure in newly constructed buildings. To date, about 30 cities and counties in California have adopted measures to transition newly

constructed buildings from natural gas to electricity. In addition, municipalities in Massachusetts, New York, Ohio, Oregon, and Washington have adopted or are considering codes restricting or prohibiting the installation of natural gas appliances. These measures vary from restricting certain natural gas-powered appliances to requiring buildings to be pre-wired for electric-powered appliances.

In response to these local government restrictions on natural gas, some states have enacted laws prohibiting local governments from restricting natural gas use in buildings. Reasons cited for these statewide prohibitions on natural gas restrictions include: the role natural gas has played in driving down energy costs; reduced electricity-related emissions; delivering a reliable source of energy; and ensuring consumer choice. Arizona, Louisiana, Oklahoma, and Tennessee have recently adopted measures prohibiting local governments from restricting natural gas, and Georgia and Minnesota are considering adopting similar legislation.

## Building Regulation in Colorado

In Colorado, building regulation, including adopting and enforcing building energy codes, is a function of local governments. The General Assembly passed House Bill 19-1260 in 2019, which requires local governments to adopt and enforce one of the three most recent versions of the International Energy Conservation Code (IECC) upon updating any other building code. The IECC codes establish baselines for energy efficiency by setting performance standards for building and energy systems in homes and commercial businesses.

**Boulder, Colorado.** In March 2020, the City of Boulder adopted the 2018 IECC code, with additional provisions concerning energy efficiency. The city is using its building code to encourage electrification by establishing a maximum energy use per square foot on new residential construction and major renovations. These provisions are designed to meet the city's long-term goal of ensuring that all new residential and commercial buildings are built to net zero emissions standards by 2030.