

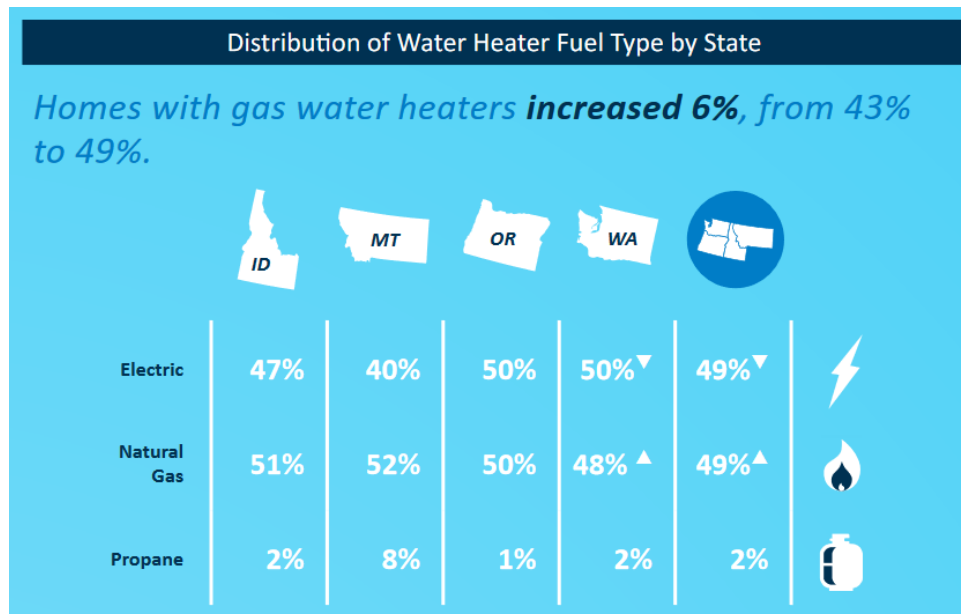
Healthy Homes & Clean Buildings – FAQ

What does this bill do? This bill aligns regulations governing the use of fossil fuels for space and water heating in homes and buildings with the statewide greenhouse gas limits. It does this by:

1. strengthening the energy code for new building construction,
2. establishing a clean heat standard for companies that provide natural gas for space and water heating,
3. aligning utility incentives to allow and encourage the conversion of fossil fuel based heating equipment to clean electricity; and
4. creating a statewide heat pump program to jumpstart the transition.

Why is this bill necessary? Residential and commercial buildings are the second-largest source of greenhouse gas emissions in Washington, accounting for one-fifth of statewide emissions. They also represent the fastest-growing source of emissions in the state. Over the next several decades, it will be necessary to significantly reduce emissions from residential and commercial buildings in order to meet the state’s greenhouse gas emissions limits in 2030, 2040, and 2050. The lowest cost pathway for reducing emissions from this sector is by converting fossil fuel-based heating sources like oil and natural gas to high-efficiency electric equipment.

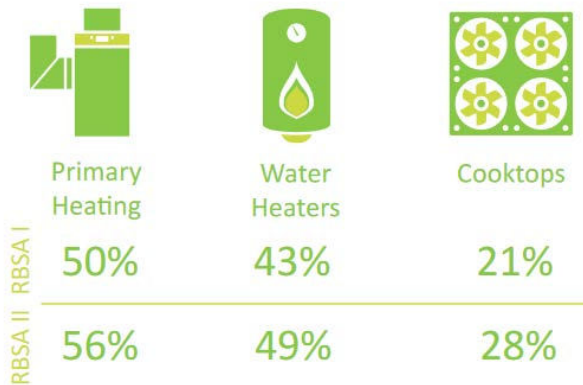
The use of gas for residential space and water heating, in particular, is moving in the wrong direction. Between 2011 and 2019, the use of natural gas for residential space and water heating increased in the Northwest by six percent.¹



¹ Data from NEEA Residential Buildings Stock Assessment (RBSA I: 2011 ; RBSA II: 2019)

More homes are using gas equipment and appliances

Gas fuel shares for primary heating systems, water heaters, stoves, and ovens have increased, while the share of other fuel types, such as electric, have decreased.



At this rate, it could take hundreds of years to upgrade the building stock at the levels required to meet the state's climate goals. Meeting 2030 GHG limits will require a shift to 100% sales share of high efficiency, and mostly electric equipment by 2030.

What is the impact of this legislation on new buildings? The bill requires the state building code council to adopt progressively more stringent energy codes for new buildings leading up to the 2027 state energy code. Currently, the law requires that the 2031 energy code must achieve a 70 percent reduction in annual net energy consumption. The bill advances this requirement to go into effect in 2027, and also requires that the code eliminate on-site fossil fuel combustion for space heating and water heating in new buildings.

What is the impact of this legislation on existing buildings? The Department of Commerce is authorized to adopt energy management and benchmarking requirements for commercial buildings >10,000 sq. ft. The requirements are based on sections 5, 6, and 7 of ANSI/ASHRAE/IES standard 100-2018, which includes completing an energy management plan, operations and maintenance plan and benchmarking the building.

- For Tier 2 covered commercial buildings (25,000 – 50,000 sq. ft.): by July 1, 2025, owners of Tier 2 buildings must submit reporting documentation to the department to verify that they have completed an energy management plan, operations and maintenance plan and benchmarked the building.

- For Tier 3 covered commercial buildings (10,000 – 25,000 sq. ft.): by July 1, 2026, owners of Tier 3 buildings must submit reporting documentation to the department to verify that they have completed an energy management plan, operations and maintenance plan and benchmarked the building.

The Department of Commerce is authorized to adopt rules for the inclusion of Tier 2 and 3 commercial buildings in the state energy performance standard created in RCW 19.27A.210 starting in 2029.

How does this bill align incentives for residential and commercial heating with the greenhouse gas limits? The bill will provide incentives for building decarbonization and electrification through utility programs, and reverse incentives for fossil fuels heating:

1. Natural gas utilities are required to adopt a plan, approved by the Utilities and Transportation Commission (UTC), for meeting the greenhouse gas limits. An approved plan may include: energy efficiency improvements for buildings, conversion of customers to high-efficiency electric heating equipment, reductions of the carbon content of delivered natural gas, or expansion of renewable natural gas. The plan is funded through a climate protection surcharge, set by the UTC.

2. Electric utilities are authorized to provide incentives for beneficial electrification, or converting fossil fuel heating sources to high-efficiency electric equipment.

3. The subsidization of natural gas pipeline extension is eliminated by requiring any new gas line extensions to recover the full cost from the new customer.

I thought heat pumps didn't work in Washington?

This is an outdated concern that is not well founded, given developments in heat pump technology. Older air source heat pumps did not provide reasonable heating output at lower temperatures, leading to increased use of electric resistance back up heat. Newer heat pumps provide very good performance well matched to all of Washington's climates. A specific classification has been developed by utility programs operating in northern climates called, "Cold Climate Heat Pumps". A listing provided by the Northwest Energy Efficiency Partnership² has been adopted by the regions utilities through NEEA³. This lists many heat pump models that provide 100% heat pump capacity at 5 degrees F. Very few hours need to be served with electric resistance heating only during the coldest hours of the year.

² https://ashp.neep.org/#!/product_list/

³ <https://neea.org/our-work/cold-climate-dhp-specification>

Alternatives to air source heat pumps have been in service for many years. This includes ground source or water source heat pumps, heat pumps that use wastewater as a heat source and other heat recovery configurations, such as recovery from a large data center. Some operating at 500% efficiency. King County Metro has developed the wastewater resource making it widely available to building owners through new program offerings⁴.

Heat pumps also provide water heating. This includes a wide range of sizes for single family up to very large systems for multi-unit housing and commercial buildings. Heat pumps already serve process loads in lumber drying and food processing operations in Washington.

How am I going to keep my home heated when the power goes out?

Most residential buildings currently do not have natural gas as a primary or backup source of heat, and electricity outages are infrequent. We expect electric service reliability to increase over time as the electric grid modernizes. Storm-related outages would likely increase without policy to address climate change.

Some building owners may choose to provide backup heat using renewable natural gas, wood pellets, or propane. These are not prohibited by the legislation.

As buildings are built to newer energy code standards and retrofitted over time, they will lose less heat as a result of the changes in codes and performance standards. There will be less energy required to maintain temperature during an outage.

What about cooking with gas or propane?

Most households do not use gas or propane for cooking. However, in 2019, gas cooktops served about 28 percent of residences and gas range about 19 percent. Cooking with gas cooking appliances has been shown to affect air quality in homes. Studies conducted by Lawrence Berkeley National Laboratory⁵ has concluded that occupants of housing units served by natural gas cooking appliances have an increased risk of exposure to fine particulate matter (PM2.5), nitrogen dioxide (NO2), formaldehyde and carbon dioxide (CO2). While kitchen range hoods that exhaust to the exterior provide benefits, the effectiveness is uncertain. Some cooking range and hood combinations do not sufficiently mitigate health issues. In many cases, occupants do not operate the range hood. There are many residential occupancies that do not require hoods that exhaust to the exterior. In Washington, this includes older homes and newer R-2 occupancies greater than 3 stories in height.

⁴ <https://www.kingcounty.gov/depts/dnrp/newsroom/newsreleases/2020/November/05-sewer-heat-project.aspx>

⁵ <https://indoor.lbl.gov/publications/indoor-air-quality-new-and-renovated>