2022 Residential Energy Code Amendments

FREQUENTLY ASKED QUESTIONS

How all-electric homes can be healthier, more comfortable, and better for the climate. 6

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Table of Contents



| What is building electrification? |
|---|
| Why is moving to clean electric homes important? |
| What is an energy code? |
| What is the process for updating the Washington State Energy Code? |
| What are key proposed changes to the residential energy code related to climate change? 2 |
| What role does the residential energy code play in building emissions? |
| What about our electric grid? Is there enough electricity to electrify homes and buildings? |
| What about when the power goes out? Can I still heat my home? |
| How good are modern electric appliances, compared to gas versions? |
| How will jobs be affected as we transition to all-electric buildings? |
| How will electrifying new homes impact costs to customers? |
| What about using renewable natural gas (RNG) or hydrogen to heat and cool buildings?5 |
| How will electrification impact housing prices? |
| Are there programs to help with upfront costs for electrifying existing buildings? |
| Are you trying to take away my gas stove from my house? |
| Doesn't this code violate my choice as a customer to use whatever fuel source I want? |
| What are the racial and economic equity considerations of these code proposals? |

In Washington State, emissions from homes and buildings are growing faster than any other source of carbon pollution, with this increase largely attributable to the use of methane gas in homes and buildings. Transitioning buildings to electric systems that can run on 100% clean electricity is critical to addressing climate change, but it is also achievable, affordable, safe, and creates a more resilient energy system.

What is building electrification?

Instead of relying on fossil fuels to heat our homes and buildings, building electrification ensures we use clean electricity and highly-efficient heat pumps for heating and cooling. Approximately <u>23% of Washington's carbon emissions</u> come from buildings. With the passage of 2019's Clean Energy Transformation Act (CETA), all of Washington's electricity will be fossil-free by 2045. Now it's time to use our increasingly clean grid to heat our homes and buildings.

Why is moving to clean electric homes important?

We need to deeply reduce carbon emissions from buildings to achieve our climate goals – while also ensuring that all Washingtonians can benefit from the clean energy transition. For decades, Washington's government has incentivized methane gas use over electricity in homes and other buildings by allowing statutory preferences for gas. Not only is gas bad for the climate, from its extraction through fracking to its use as a fuel source, but it also releases dangerous pollutants into our living spaces linked to lung disease and other health risks.

As Washington sees higher summer temperatures and increased wildfire smoke, indoor air cooling is critical to protect our health. Fortunately, high-efficiency electric heat pumps reduce indoor air pollution and can provide both cooling and heating. Electrifying our homes and buildings also keeps us safer from gas leaks and fires, and creates clean



energy jobs. Electrification will be critically important economically, as we invest in large scale renewable energy production and transition our state off of increasingly volatile and expensive fossil fuels like methane gas.

What is an energy code?

Energy use and efficiency in new buildings is governed by a statewide energy code. Across the country, energy codes are increasingly being seen as a climate issue, since the type of energy we use in our buildings can include fossil fuels like oil and gas. In Washington, the energy code is revised approximately every three years. The energy code is divided into two sections:

- The <u>residential energy code</u>, which regulates single-family homes, townhomes, and low-rise multifamily buildings (three floors and shorter); and
- The <u>commercial energy code</u>, which regulates commercial buildings and large multifamily buildings (four floors and taller).

What is the process for updating the Washington State Energy Code?

Approximately every three years, the Washington State Building Code Council (SBCC) updates the state's energy code to align with national standards, clarify language, incorporate the latest technologies into our state's newest buildings, and continue moving forward on state targets for efficiency and fossil fuel-free new construction. In April 2022, the SBCC finalized their update for the commercial energy code, which governs the construction of commercial and large multifamily buildings in the state, and are moving on to updating the residential energy code through the rest of the year. The commercial code update included provisions that require heat pumps for space and water heating, eliminating most uses of fossil fuels in covered buildings.

Upcoming Residential Code Timeline

- March-April 2022: The SBCC solicits proposals to update the energy code. More than 5 proposals regarding electrification were submitted this cycle from various code experts locally and nationally.
- April-June 2022: A technical advisory group (TAG), made up of experts in various aspects of new building construction and alteration, reviews – and modifies, approves, or disapproves – each proposal.
- June 17, 2022: The technical advisory group provides a package of proposed changes to the SBCC, and the SBCC votes on which proposals will be moved on for public comment.
- Fall 2022: A 60-day public comment process is opened, including public hearings on dates to be determined.
- November 18, 2022: SBCC reviews public comments and determines whether to make any changes to the proposed energy code. The SBCC then approves the fully modified energy code, to go into effect the following year.
- July 2023: Amended residential and commercial energy codes go into effect for new permits after this date.

What are key proposed changes to the residential energy code related to climate change?

There are three key proposals for the residential code regarding electrification:

- One proposal that would require all-electric new construction, including clothes dryers and stoves;
- A proposal to require heat pump space heating in new construction; and
- A proposal to require heat pump water heating in new construction;

Additionally, there are two proposals submitted by Washington Physician for Social Responsibility to address the public health impacts of burning gas in homes that would require more stringent ventilation requirements for gas stoves in new homes and multifamily homes. These proposals would be irrelevant in the case that the all-electric proposal passes.

The commercial code that was recently adopted by the State Building Code Council included similar amendments that required the use of electric heat pumps for space and water heating in all new commercial and large multifamily (four stories and over) buildings.

What role does the residential energy code play in building emissions?

The Washington State Residential energy code (WSEC-R) shapes how new and substantially renovated single-family homes, townhomes, and small multifamily buildings (three stories and under) use energy.

- The updated code contains technical changes that will improve the energy performance of newly constructed and substantially renovated buildings.
- The code includes specific criteria to minimize the burning of fossil fuels; increase access to on-site solar; optimize for efficient lighting; and use more efficient materials and methods in buildings' roofs, walls, and windows.
- These changes ensure high-performance buildings that are better for people and our climate, and make efficient and fossil fuel-free buildings our new normal.

What about our electric grid? Is there enough electricity to electrify homes and buildings?

Utilities are continuously planning to ensure they have enough energy to keep your lights on and to maintain safe temperatures in buildings. Utilities go through robust planning processes every two to three years to determine what new tools they need, such as wind, solar, or energy efficiency. The transition to clean buildings will be gradual, and it will be done in coordination with utility planning. And because heat pumps are so efficient,



in <u>Washington's 2021 State Energy Strategy's</u> modeled scenario for full electrification, the increased electric load from buildings is minimal. Adding smart electric load will actually benefit all electric customers and is expected to put downward pressure on rates.

What about when the power goes out? Can I still heat my home?

Most modern gas appliances, including gas furnaces, water heaters, stoves, and fireplaces, rely on electricity for controls, pilot lights, and venting — so there's no advantage to many gas appliances if the electricity goes out. And older gas appliances without electric controls typically have poor venting, increasing indoor air pollution. We're also more vulnerable with gas during disasters like earthquakes and wildfires; gas

is responsible for at least 20% of postearthquake fire ignitions, and is also a liability because gas lines <u>take 30 times</u> <u>longer to restore</u> than the electric system after natural disasters. Also, all-electric homes can be built with backup systems such as rooftop solar and battery systems to protect from outages — in fact, heat pump water heaters can use electricity from rooftop solar to heat water and store it for over 24 hours.

How good are modern electric appliances, compared to gas versions?



Today's electric appliances are much more efficient than previous models. High efficiency electric heat pumps work well in Washington's varied climate zones, including the colder eastern parts of the state. Modern electric appliances use less energy overall: electric heat pumps are 200-400% more energy-efficient than gas-fired equipment, while simultaneously providing air cooling that is essential for our increasingly hot summers and longer wildfire seasons.

How will jobs be affected as we transition to all-electric buildings?

Moving to clean-powered buildings will create jobs in the HVAC industry — including in weatherization, electric appliance installation, service, and maintenance — as well as construction jobs associated with building modifications. A study by UCLA found that updating to efficient electric appliances in California's buildings over the next 25 years would create 100,000 full-time new jobs annually in construction, manufacturing, and the energy sector.

How will electrifying new homes impact costs to customers?

Research shows that all-electric new homes will save customers money over the lifetime of the building. In Seattle, <u>a new all-electric home saves \$4,300 in lifecycle costs</u> over a 15year period compared to a new home with gas heating, cooling, and cooking. Moving to highly energy-efficient heat pumps reduces overall energy use, and as more customers move to electric heating and cooling, that will help keep energy prices stable and put downward pressure on rates. Methane gas, on the other hand, is covered by Washington's new Climate Commitment Act, which will require emissions from gas to drop 95% by 2050, driving gas rates higher. Without an intentional transition strategy, gas users are likely to see <u>unsustainable rate increases</u> as utilities turn to expensive alternative fuels, like renewable natural gas (RNG, a.k.a. biogas or biomethane), to decarbonize. These codes keep us from hooking new homes up to gas and thus digging the hole deeper, and instead set us on a path to focus on a just, gradual transition for all homes.

What about using renewable natural gas (RNG) or hydrogen to heat and cool buildings?

Our limited supplies of RNG and hydrogen are needed to decarbonize certain hardto-electrify sectors like heavy industry and long-haul transportation, but are not good solutions for decarbonizing the building sector, where we already have cost-effective technology to reduce emissions using electrification and energy efficiency improvements.

As with methane gas, biomethane still contributes to indoor air pollution, public safety risks, and other harms when used in homes and buildings. Even if we ignore these facts, there simply isn't enough biomethane to replace fossil fuel use in buildings; a variety of decarbonization studies have concluded that <u>it could only replace approximately 3 to 16</u> <u>percent of our existing methane gas use</u> and will cost more than electrification where that is a viable option. Green hydrogen (hydrogen produced from clean electricity) has similar supply and technology constraints, making it a cost-prohibitive option for cleaning up our homes and buildings. Gas companies use RNG as a marketing tool and distraction tactic, but even if we used as much RNG as possible in buildings, all it would do is prop up the system of mostly fossil-derived gas piped into buildings.

How will electrification impact housing prices?

Building efficient and all-electric from the start is already cheaper than building with fossil fuels in Washington State. According to <u>a study by RMI</u>, constructing new homes with electric, high-efficiency appliances in Seattle provides economic benefits, saving on average \$4,500 upfront compared to homes built with gas. These cost savings could actually decrease housing costs, reduce energy burden for tenants, and expand access to life-saving air conditioning through the increased adoption of heat pumps, which provide both heating and cooling.

Are there programs people can access to help with upfront costs for electrifying existing buildings?

The proposed codes do not impact existing buildings. However, as we work in the future to phase out gas in all buildings, it will be crucial that our governments provide financial support to help residents transition off fossil fuels — particularly low-income and middle-income communities, who are the least likely to be able to make that transition without support. There will need to be efforts at all levels of government in Washington to ensure a rapid and just transition for existing buildings to clean and safe electricity. For example, the <u>city of Denver</u> launched a program in April 2022 that lets residents offset 80 percent of the cost to switch to heat pumps, add solar to a home, add battery storage and more.

There are also private companies that pay for the upfront costs of a home retrofit, and they are only paid back when you actually see measurable energy savings.

Are you trying to take away my gas stove from my house?

No! These code proposals will only impact new construction of homes and residences, and do not affect existing homes or appliances. However, it is important to note that gas stoves have both a climate impact and harm indoor air quality, and that transitioning off gas stoves ultimately will be good for our health and safety. A <u>recent study</u> showed that gas stoves release unburned methane into the atmosphere even when they are off — yearly leaks from all gas stoves in the U.S. could have as much of a climate impact as emissions from 500,000 passenger vehicles. Additionally, combusting gas in stoves and ovens releases dangerous air pollutants like nitrogen oxide (NOx), carbon monoxide



(CO), fine particulate matter (PM2.5), ultrafine particles, and formaldehyde. These pollutants can lead to a range of respiratory, cardiovascular, and neurological health issues – children in homes with gas stoves are <u>42% more likely</u> to develop asthma symptoms.

Doesn't this code violate my choice as a customer to use whatever fuel source I want?

While the code may require new construction to be built all electric, there will still be existing homes available with

access to gas. Investing in all-electric new construction removes barriers to the best electric appliances and provides tenants and prospective home buyers with greater choice to avoid toxic pollution in their homes, while offering savings on utility bills and significant benefits for the climate. Ultimately, we need to phase out the use of gas the way we have with other outdated substances and building materials that we now know to be toxic and unsafe for residents — like asbestos, lead paint, certain wood treatments and flame retardants, and others. And burning gas increases climate and air pollution for the whole community, not solely the individuals that currently choose to use it in their homes.

What are the racial and economic equity considerations of these code proposals?

All Washington residents deserve to have homes that are safe and comfortable, and not to be burdened by high utility bills associated with inefficient, polluting gas appliances and a volatile fossil fuel market. The passage of these code amendments will reduce indoor and outdoor air pollution, expand access to high efficiency heating and cooling, and mitigate the climate crisis. This is especially important considering the disproportionate impacts that historically marginalized communities, including BIPOC and low and moderate income families, experience from the housing and climate crisis.

