

Clean Heat for Arlington

Sustainable Buildings Now!

Fossil Fuel Free Infrastructure Warrant Article

Frequently Asked Environmental Questions



What is the environmental motivation for the proposed bylaw?

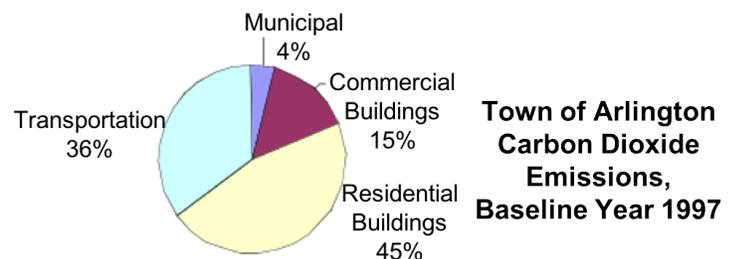
We are facing a global climate crisis of extreme proportions, requiring significant actions to prevent the worst outcomes. Massachusetts is one of the fastest-warming states in the country. We have seen a rapid increase in extreme heat events that threaten our health the ecosystems we rely on. Rising seas and increased flooding threaten Boston and coastal communities. Climate change brings significant public health risks, including heat-related illnesses and deaths, as well as worse disease outbreaks. As natural ecosystems change or collapse, Massachusetts farmers, fishermen, and residents will suffer.

We as a Town and as a State have committed to try to tackle these threats. The 2006 Global Warming Solutions Act mandates that the state reduce emissions by 2050 to 80% below 1990 levels. Arlington and many other municipalities in MA have committed to having net zero emissions by 2050 or earlier, and Gov. Baker has recently committed the state to reach Net Zero by 2050. **There is no way to meet these legally mandated goals while including large-scale use of fossil fuels for home heating.** Every new building constructed with fossil fuel infrastructure makes the Net Zero goal harder to achieve because the use of these carbon-emitting fuels continues unabated. It is unfair to the next generation to continue to install infrastructure that we already know will need to be replaced in a very short time.



Is building heat a significant source of emissions in Arlington?

Residential and commercial building heat is one of the largest sources of emissions in Arlington. According to Arlington's 2005 Climate Action Plan, **residential and commercial buildings accounted for 60% of the Town's overall emissions.** According to the U.S. Energy Information Administration, in Massachusetts space and water heating account for 75% of residential building energy use. This makes heating alone one of the largest sources of emissions in Arlington.



Get involved and learn more: Learn more at

www.cleanheatforarlingtonma.org,

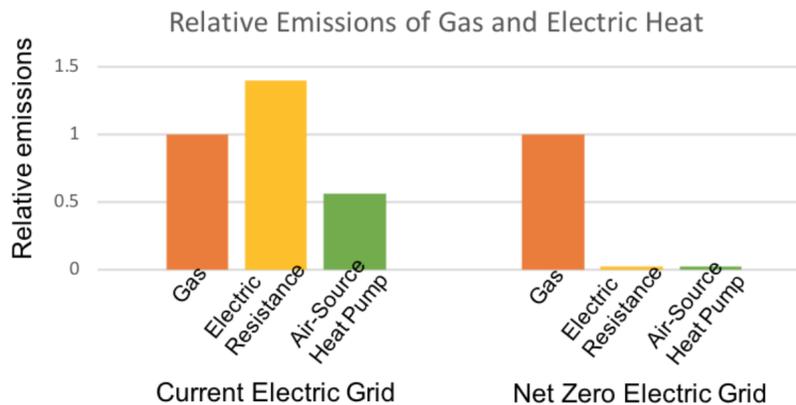
and contact us to volunteer or ask questions.

Clean Heat
for Arlington



If natural gas is used to generate electricity, does switching to electric heat actually lower emissions?

For modern cold-climate Air Source Heat Pumps the answer is a clear yes. These systems use electricity to move heat around rather than creating it directly, allowing them to be extremely efficient, even down to temperatures as low as -12°F . **They are so efficient that averaged over the whole winter, with natural gas currently producing about 50% of the electricity we use, using a heat pump results in roughly half the emissions of burning natural gas in your home.** More importantly, however, electric heating is the only way to get close to Net Zero emissions. This will never be possible with burning fossil fuels for home heating.



Many towns considering fossil fuel bans also have green community choice aggregation programs, as in Arlington, which use a higher default percentage of renewable energy and also give you the opportunity to opt-up to higher percentages of renewables. Learn more at <https://arlingtoncca.com/>

Can our electric grid handle this?

Yes! Electrical demand is currently declining in New England due to both solar panels on building roofs and gains in energy efficiency through retrofits such as LED light bulbs for street lights. There are declines in both annual and peak demand, and these declines are expected to continue. Furthermore, the proposed bylaw will affect such a small fraction of buildings on the grid (<1% turnover in any one year, even if adopted across the entire New England grid territory), that it should not have an appreciable impact on the power grid, which already has year-on-year variation exceeding 1%.

While peak consumption is already a significant challenge to manage, it is currently a summer problem when AC kicks in on hot days. In the winter, **the bigger problem is actually natural gas shortages, which should be slightly alleviated by this policy.**

Data sources: Relative emissions from "Northeast/Mid-Atlantic Air-Source Heat Pump Market Strategies Report, 2016 Update." Northeast Energy Efficiency Partnerships (NEEP). January 2017. Grid resource mix, electricity use trends, and variability are from ISO-NE "Key Grid and Market Stats." <https://www.iso-ne.com/about/key-stats>