

## Frequently Asked Questions

### **Article 31: Home Rule Petition and Bylaw Amendment to Prohibit the Expansion of Fossil Fuel Infrastructure for New Construction**

#### **What is the purpose of Article 31?**

The purpose of this article is to protect the health, safety and welfare of Town residents. This article is the next step in Concord's strategy to meet the climate goals set at the 2017 Town Meeting. Article 31 offers an essential tool to make progress toward that goal. More than 60% of Concord's GHG emissions come from the energy used to power our buildings. Given CMLP's commitment to eliminate the carbon footprint of our community's electric supply, electrifying buildings is the best way to significantly reduce emissions from buildings. We need to take action to meet our 2050 goal of reducing emissions 80% by 2050. Simply put, we cannot afford to expand the number of homes and buildings using fossil fuel for the next 30-40 years. Taking this action now will ensure we don't continue to add infrastructure that doesn't benefit the community and will be more difficult and expensive for homeowners to replace down the road.

#### **What are the benefits?**

The benefits of all-electric new construction using super-efficient heat pumps for heating and cooling include lower operating costs for building occupants, upfront cost savings, improved indoor air quality, and directly contributing to Concord's 2050 GHG reduction goal.

#### **Why electrify buildings?**

Buildings are the largest source of GHG emissions in Concord, contributing over 60% of community-wide emissions. To reduce emissions from our buildings, in addition to building and renovating buildings to be very energy efficient, we need to electrify and clean up the grid. Electricity is the only fuel that we can make renewable. All-electric buildings are also the most efficient buildings because heat pumps are the most efficient heating and cooling technology.

#### **Why is "electrify everything" the strategy?**

The reason that "electrify everything" works in reducing GHG emissions is because electricity is the only "fuel" we can make renewable and carbon-free. Concord's emissions dropped by 22% between 2008 and 2019. A significant driver in that emissions reduction was a cleaner electricity supply provided by Concord Municipal Light Plant (CMLP). Even with 100% carbon-free electricity (which is the Town's 2030 target), Concord's emissions will only drop 32% unless we address other forms of fuel consumption in Town by converting them to electricity.

#### **Is electricity actually cleaner than gas? Doesn't our electricity come from fossil fuels?**

Electricity is the only fuel we can make fossil fuel free and Concord's electricity is already over 50% carbon-free. The electrical grid in Massachusetts is greening by State mandate. Concord's electricity is provided by Concord Municipal Light Plant (CMLP). CMLP has a goal of providing 100% carbon-free electricity by 2030 and is already more than halfway there. Natural gas is a fossil fuel that cannot be cleaned up. It contributes to climate change

and its combustion releases pollutants such as particulate matter and nitrogen oxides that are harmful to human health.

### **What does an all-electric solution look like?**

Heat pumps are highly efficient heating and cooling systems able to heat a home or business in the winter and provide air conditioning in the summer. Air-source heat pumps are a cost-effective technology. Newer heat pumps also work well in cold climates. Several manufacturers have heat pumps that can effectively heat when outdoor temperatures drop as low as -10 to -15 degrees Fahrenheit. Because they move heat rather than generate it, heat pumps are very efficient. Coupled with tightly sealed buildings (more wall insulation, better windows, tighter air sealing, etc.), electric home heating systems promise increased efficiency and a reduced carbon footprint. Alternatives to combusting fossil fuels also include induction stoves, electric stoves, and heat pump hot water heating systems.

### **What are the costs of using all-electric systems in our buildings?**

All-electric buildings are often cheaper to build than buildings that require gas distribution piping running from the street main into each gas appliance. The Rocky Mountain Institute (RMI) analyzed the costs of a new all-electric home versus a new mixed-fuel home that relies on gas for cooking, space heating, and water heating. In Boston, the all-electric home has lower upfront costs, lower 15-year net present costs, and nearly equivalent annual energy bills. RMI customized this analysis for Concord electricity rates and the findings are even more favorable - upfront costs are lower, net present costs are lower, and annual utility costs are lower - for a new all-electric home compared to a fossil fuel home.

### **Can CMLP handle the additional electrical load?**

Yes, CMLP has capacity to meet the additional electrical load today and in the coming years. This article will result in a gradual increase in electrical demand as about 25 new homes are built in Concord every year. CMLP's strategic plan includes beneficial electrification of transportation and heating and cooling homes, both of which will result in increased electrical demand. CMLP is continuously evaluating electrical load and planning for a future that includes beneficial electrification.

### **Why does this article only address new construction? What does that mean?**

New construction requirements are a sensible first step in the building electrification transition that will help prevent us from making the problem worse. Designing a new home from scratch can be the best time to integrate fossil-fuel free alternatives for heating, cooling, and hot water needs, taking advantage of new construction materials for building a well-insulated home. This bylaw will apply to any new construction that will require heating and/or cooling and that is associated with a valid building permit application. This includes construction on a vacant lot, to replace a demolished building, or of a new accessory building constructed on an existing residential or commercial property.

### **Will I have to make changes to my home?**

The bylaw would only apply to new construction. However, many Concord residents and businesses are already transitioning their heating and cooling to heat pumps. There are generous rebates, incentives, and coaching support available from CMLP through [Concord Clean Comfort](#).

**What happens to an all-electric home if the electricity goes out?**

Most people lose heat in a power outage regardless of whether they have electricity, gas, propane, or oil. Gas furnaces require electricity to operate thermostat controls, safety devices that control gas flow, and blower fans. This was observed in the winter storm and outages in Texas in Feb 2021.

**How will the bylaw be enforced?**

The Concord Building and Inspections Department is authorized to enforce this bylaw. It will require that no building permits be issued by the Town for the construction of new buildings that include the installation of new on-site fossil fuel infrastructure. An applicant who is aggrieved by a denial of a building permit, in whole or part, in connection with this bylaw, may appeal to the board or committee designated by the Town Manager to hear and resolve such appeals.

**How unique is this Article? Who else is doing this?**

Legislation, or bylaws requiring new construction to be fossil fuel free are happening in other cities and towns across the country. Closer to home, Brookline, Arlington, and Lexington have passed similar articles at their 2021 Town Meetings. Belmont, Acton, Worcester, Cambridge, Northampton, and Salem are also working on this.

**What is a Home Rule Petition? How is this different from a bylaw?**

Article 31 includes a Home Rule Petition and a Bylaw. A Home Rule Petition, voted on at Town Meeting, requests authority from the Massachusetts Legislature for special authority to implement the bylaw. The bylaw requiring that new construction be fossil fuel free will only be implemented if both Article 31 is approved by Town Meeting and if the home rule petition authority is granted by the Legislature.

**Will there be any exemptions granted?**

Yes. Exemptions are included in the bylaw for affordable housing, restaurant and commercial kitchen cooking equipment, portable propane appliances, and back-up emergency generators.

**Why is there an exemption for affordable housing?**

We are confident that the affordable housing boards will choose all-electric for new developments because all-electric buildings provide significant benefits to both owners and occupants, including lower upfront cost, lower utility bills, and improved indoor air quality. In fact, a new affordable house being built on Warner Pond is planned to be all-electric. However, in developing this article, affordable housing advocates and the Select Board requested an exemption so that they would not be hindered from acting quickly on opportunities to build or retrofit new homes while they learn more about all-electric technologies. The planned all-electric affordable housing development is a great opportunity to demonstrate the cost-effectiveness of all-electric solutions for future development of affordable housing.

**Why are emergency generators exempt?**

There are some buildings that require added security in the event of electrical failure for medical or emergency operations reasons. The purpose of the article is to address emissions from heating and cooling buildings as it is the largest source of emissions from new buildings. Backup generators are rarely used and therefore are a less

significant source of emissions. Battery storage is a cleaner option for backup power and it is becoming more and more economically viable. We have seen multiple installations of battery storage in Concord and expect that trend will continue.

**Will fireplaces be allowed?**

Wood burning fireplaces, wood burning stoves and wood burning inserts are all allowed in new construction under the bylaw. Natural gas or propane burning fireplaces or devices would not be allowed in new construction.

**How does this relate to the recent state climate bill?**

The Next Generation Climate Roadmap bill signed into law on March 26, 2021, includes a provision that requires the Department of Energy Resources to establish a new opt-in net zero stretch code for municipalities. While this is a promising step that will help improve the energy efficiency of new construction, and it is likely that Concord will opt-in when it's available, there are a lot of unknowns about the timing and details of this new stretch code. More specifically, we don't know if the code will require all-electric construction and when exactly it will be available for implementation. What we do know is that all-electric new construction is practical today and is critical to meeting our climate goals. Joining with other communities taking this same approach lets the state know that communities want fossil fuel free new construction and prepares Concord for the new stretch code when it is available.

**Which Town departments and organizations support this Article?**

Article 31 is sponsored by Concord Select Board. It is supported by multiple Concord town committees and boards including the Concord Municipal Light Board, Planning Board, Climate Action Advisory Board, and Comprehensive Sustainability and Energy Committee.

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