

To: Arlington Select Board  
From: Karen E. Kelleher   
Town Meeting Member, Precinct 5  
Member, Housing Plan Implementation Committee

Date: March 6, 2020

Re: Proposed Bylaw Amendment/Fossil Fuel Infrastructure Ban

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I write to offer my support for a proposed bylaw amendment to ban fossil fuel burning building systems.

In addition to being an Arlington resident and Town Meeting Member, I serve as the Executive Director of the Boston office of Local Initiatives Support Corporation (LISC). LISC is a community development support organization that has supported the production of affordable housing in Massachusetts for more than 30 years through financing, grants, technical assistance and training. And, for more than a decade, we have also worked to make the Commonwealth's affordable housing energy efficient and healthy. Most recently, we are working to promote housing resiliency in the face of climate change. These goals are difficult to achieve in a state with a lot of older housing stock. Which is all the more reason why it is important to incorporate efficient, clean energy systems in new buildings.

Because LISC works at the intersection of affordable housing and energy efficiency, we have evaluated the impact on multifamily housing of the fossil fuel bans that have been enacted or proposed recently by Massachusetts municipalities. While I'm not personally an expert in building systems, my organization works closely with experts to ensure we advocate for effective, feasible policies that are consistent with our deep commitment to housing affordability. I attach a brief memo that we prepared recently to guide gas ban ordinances of the type that appears to be proposed by Warrant Article 13. Consistent with the memo, I offer three drafting suggestions to avoid enacting gas ban that materially deters or increases the cost of new construction or substantial rehabilitation of multifamily housing:

- **HVAC Systems:** All-electric heating and cooling systems are widely available and costs are comparable to gas-powered systems. I support a ban on fossil fuel powered HVAC systems.
- **Domestic Hot Water Systems:** The market for all-electric hot water systems is still evolving, and a ban on fossil fuel-fired hot water heating could, at least in the short term, add significant cost. Any such ban should include an exemption or waiver process for buildings including affordable or moderate income housing, or should be paired with subsidies to cover this additional cost.
- **Emergency Backup Systems:** The building industry does not yet have realistic alternatives to fossil fuel fired emergency backup systems. Any ban should not apply to these systems.

I reviewed a draft of the proposed bylaw amendment dated March 4 based on the one recently passed in Brookline, and it appears to contain waivers and exclusions consistent with this guidance. I encourage the Select Board to vote yes on Warrant Article 13 and applaud Town efforts to promote clean energy, efficiency and high performing buildings, in a manner that does not increase housing cost burdens, particularly on low and moderate income households. Thank you very much for your consideration.

Attachment: "LISC Boston, Smart Gas Ban Ordinances for Multifamily," January 29, 2020


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## Smart Gas Ban Ordinances for Multifamily Housing


January 29, 2020

LISC Boston is deeply committed to climate resiliency and encouraged by local fossil fuel bans proposed recently that would require building electrification for new construction and rehabilitation projects. We applaud these communities' efforts to move swiftly toward high-performance, carbon neutrality, and particularly the call for all-electric heating and cooling systems in new multifamily buildings.

We are also deeply committed to housing affordability and safety. Accordingly, we urge communities drafting fossil fuel bans to consider the practical effects such bans may have on multifamily housing, and consider supporting additional investments/subsidies, exemptions or other measures to ensure safe, inclusive communities and avoid unintended consequences:

 **Heating and Cooling Systems.** All-Electric HVAC, or heating and cooling, systems are broadly available for multifamily new construction and gut rehabilitation projects, and the cost of all-electric systems is generally equivalent to that of gas-powered HVAC systems. There is a strong case for banning gas-powered HVAC systems.

 **Domestic Hot Water Systems.** There is an evolving market for electric-powered domestic hot water systems. However, the capital cost of such systems is currently approximately three times the cost of comparable gas-powered systems, and there is currently only one local supplier. Banning gas-powered domestic hot water systems may result in increased construction costs, exacerbating our housing affordability crisis and pushing more low- and moderate- income residents out of the communities imposing such bans. LISC is a longstanding advocate for efficiency and resiliency in affordable housing. However, we cannot afford to absorb this added cost with current affordable housing subsidies. We urge the pairing of domestic hot water bans with additional investment to support the added cost, or consider exemptions for multifamily buildings that will include restricted low- or moderate- income housing.

 **Emergency Backup Systems.** There is currently no sufficient all-electric option available for emergency backup systems in multifamily rental homes. Often, on-site diesel generators power emergency backup systems where they are required. While municipal gas bans should not touch these systems, it is important to note that the building sector does not yet have realistic, cost-effective (or subsidized) alternatives to fossil fuel-powered backup systems.

To ease the transition to high-performance, all-electric buildings, we will need additional investment from the energy and climate resiliency sectors to ensure Massachusetts addresses its affordable housing and climate change crises in a truly comprehensive and synergistic way.

### Encourage Efficient Building Standards – Specifically Passive House

In addition, we urge communities to consider encouraging multifamily new construction to be designed to high-performance building standards such as Passive House, to increase building efficiency and

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reduce utility consumption. Mass Save offers valuable [Passive House financial incentives](#) and [training](#) to support the use of Passive House. Combining clean energy with high-performance building standards is an ambitious and viable approach that will help Massachusetts achieve carbon neutrality by 2050.

Following are some examples of how electric-powered heating and cooling systems, combined with efficient building design and operation, are producing multifamily buildings that are dramatically less reliant on fossil fuels and helping to position Massachusetts for climate neutrality:

- **Passive House Plus Electric HVAC.** The Massachusetts Clean Energy Center provided funding to subsidize the cost of building eight new multifamily affordable housing developments to Passive House standards in their recent [Passive House Design Challenge](#). All eight developments are using highly efficient all-electric HVAC systems. Building science expert New Ecology advises that such systems often cost less than gas-powered HVAC systems, especially where air source heat pump (ASHPs) mini-splits are used.<sup>1</sup> Operating costs for such systems are also the same or less than a similar gas-powered HVAC system if projects are built to [the Massachusetts Building Energy Stretch Code](#), or Building Energy Base Code.
- **Planning for Electric Hot Water Systems.** The City of Cambridge is allowing high-efficiency gas-powered hot water systems, while encouraging developers to reserve enough space in their designs for future central tanks. This way, when the costs and technology for large-scale heat pump water heaters evolve, they will be well-positioned to transition to all-electric systems.
- **Solar Thermal Hot Water Heating Systems.** Some multifamily affordable housing developers are considering using solar thermal systems to reduce water heating loads by 60-80%, and then using gas systems to heat the remaining DHW load. While this may be a promising path for the multifamily sector to pursue, it is important to note that there are currently only two solar thermal companies operating in the New England area. Solar thermal systems also require a relatively higher level of maintenance, so any owner/operator pursuing this option should ensure they have an appropriate maintenance contract. It is also likely that the existing valuable state-level incentives available for solar thermal systems may sunset over the next few years.
- **Building Operator Certification Training.** Reducing utility consumption and fossil fuel reliance doesn't stop with systems installation. Research shows that training maintenance staff in energy efficiency practices saves energy and money and optimizes performance. Twenty building operators are currently completing an 8-day training class for operators of multifamily affordable housing that LISC has cosponsored with its partners, the Mel King Institute, NEAHMA, CHAPA and the City of Boston. We are working to make such training standard practice.

We welcome your feedback and will update as more information becomes available.

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<sup>1</sup> Variable refrigerant flow (VRF) systems are more expensive than ASHPs and cannot yet be submetered, making them an attractive option only for owners/operators that plan to pay for residents' heating and cooling loads, such as those building supportive and senior housing.