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Increasing Ontarian's Access to Clean and Affordable Energy Via Heat Pumps

Dear Mr. Phillips,

We, the undersigned heating, ventilation and air conditioning (HVAC) industry leaders, applaud the Government of Ontario for committing to encouraging the use of heat pumps in the *Made-in-Ontario Environment Plan*.

This letter provides actionable recommendations for how the Province can accelerate use of heat pumps, while generating multiple environmental, economic, and social benefits. These recommendations were developed by Ontario HVAC industry leaders, including major heat pump manufacturers, distributors, contractors, engineers, investors, and trade associations. These industry leaders convened at a workshop facilitated by The Atmospheric Fund¹ which led to consensus on government and industry solutions for broader heat pump adoption in Ontario.

ENCOURAGING HEAT PUMPS WHERE THEY MAKE SENSE

The Made-in-Ontario Environment Plan sensibly commits to encouraging the use of heat pumps where they make sense. ***We the undersigned agree that the following sectors should be considered the immediate priorities:***

- ***Retrofits of existing homes and buildings heated by electric resistance, fuel oil, or propane;***
- ***New construction projects.***

Due to the low price of natural gas, the business case for retrofitting existing gas heated homes and buildings is challenging. This may change in the medium-term as climate policies reduce the gap between electricity and gas prices. In the short-term, ***homes and buildings heated with electric resistance or other fuels provide an excellent opportunity for accelerating heat pump adoption.*** Non-gas heated buildings can achieve substantial reductions in energy costs and carbon emissions via heat pumps, while improving health and comfort. Many of these buildings lack central cooling, which is a growing public health concern, given the increasing frequency and severity of heat waves. ***Heat pump retrofits, in addition to providing reliable***

high efficiency heating, have the added benefit of also providing high efficiency air conditioning while still reducing total energy costs.

In the new construction sector, heat pumps can provide cost-effective, low-carbon solutions for all projects. The combination of high-performance building envelopes with heat pumps can provide efficient heating and cooling through a single system while keeping energy costs exceptionally low. Heat pumps, like air-source and ground-source, can also be combined with gas-burning equipment in hybrid systems that provide flexibility, resilience, and even demand-response fuel-switching capability.

RECOMMENDATIONS

HVAC industry members agree these recommendations would address key barriers to heat pump adoption in Ontario:

1. Provide incentives for heat pump retrofits

There are currently no incentives targeted at heat pump retrofits in Ontario. We call on the Government to establish a targeted incentive program(s) for heat pump retrofits in homes and buildings heated with electricity, propane, or fuel oil. The program(s) could be expanded to gas-heated buildings in the future, when such projects become economically feasible.

Owners of homes and buildings heated with electricity, propane or fuel oil are disproportionately likely to struggle with high energy costs. For example, over 400,000 Ontario households live in electrically heated multi-residential buildings, including over 70,000 low-income households. Many of these households are experiencing energy poverty – meaning utility costs consume more than 10% of their income.

Relatedly, many electrically heated multi-residential buildings lack air conditioning. In the context of increasingly frequent and severe heat waves, this is a major public health risk. For example, Toronto Public Health has estimated that extreme heat contributes to an average of 120 premature deaths every year in the City of Toronto alone.¹ Heat pumps have the added advantage of providing air conditioning even as they reduce total energy use. The potential health benefits of heat pump retrofits should be taken into account when assessing the business case for retrofits.

The incentive program(s) should also be used to drive the market towards best-in-class equipment and installation practices. For example, the Northeast Energy Efficiency Partnership provides both a qualified product list and installation best practices which have been widely used by similar programs. Adoption of similar standards and rule structures is encouraged for rollout of a new heat pump incentive program(s). Building strong standards into program design helps protect consumers and ensure desired outcomes are achieved.

¹Toronto Public Health, Protecting Vulnerable People from Health Impacts of Extreme Heat. Available at http://www.climateontario.ca/doc/ORAC_Products/TPH/Protecting%20Vulnerable%20People%20from%20Health%20Impacts%20of%20Extreme%20Heat.pdf

This recommendation could be effected through the IESO's Save on Energy Programs and/or through the proposed Ontario Carbon Trust. In order to generate meaningful market participation, the incentive should be designed to cover at least one third of retrofit costs.

2. Provide incentives for use of heat pumps in new construction

Buildings built today can be expected to last beyond the end of this century, yet the vast majority of new homes and buildings are being designed to use natural gas for heating. In the long-term, continued use of natural gas as a primary heat source is incompatible with a low carbon future. New homes and buildings can combine high performance envelopes with heat pumps to minimize carbon emissions while achieving exceptionally low energy costs. Hybrid systems using gas and heat pumps can also offer flexibility and resiliency, while enabling real-time fuel switching to address peak demand constraints. Incorporating heat pumps in new buildings is much more cost-effective than retrofitting them in future years.

There are currently no incentives for the use of heat pumps in new construction. Heat pump specific incentives could be established through the IESO, or through the proposed Ontario Carbon Trust.

3. Support project financing for heat pump deployment

While incentives should be used to reduce the upfront cost of heat pump projects, households and building owners will still be covering the majority of costs. Some home and building owners face barriers accessing financing at affordable rates. The Province should support the development of suitable financing programs to support these projects. Local Improvement Charge (LIC) financing programs, such as the City of Toronto's HELP program, are one promising model. However, smaller municipalities would require provincial support to develop and administer LIC financing programs. There are a variety of alternative financing models that could be considered, including on-bill financing, or the use of credit enhancements to mobilize capital from private investors.

This recommendation could be enacted via the proposed Ontario Carbon Trust, by including provision of financing and/or credit enhancement in the new organization's remit. Ideally, financing programs should be integrated in some fashion with incentives to provide a seamless and simple customer experience.

4. Support heat pump adoption through the Ontario Building Code

The Ontario Building Code (OBC) should support the transition to heat pumps in new construction. As currently structured, the OBC is essentially fuel neutral. This approach fails to capture the full benefits of heat pump technology. Heat pumps achieve savings in two ways: (1) heat pumps are much higher efficiency than gas-combustion equipment (approximately 3X more efficient), and; (2) heat pumps use a lower carbon fuel (approximately 3X less carbon per kWh than natural gas). As a result, heat pumps can reduce carbon pollution from heating new buildings by a factor of 9.

This recommendation could be enacted via the next update to the Ontario Building Code, for example by establishing suitable carbon intensity requirements for the performance pathways.

CONCLUSION

We are encouraged by the Government’s commitment to supporting the use of heat pumps in Ontario. We have outlined several actionable recommendations that would help to deliver on that commitment. However, we also recognize that there is a major role for the HVAC industry to play in supporting broader adoption of heat pumps, and we are committed to working with the Government on this priority. In particular, the HVAC industry can take a lead role in expanding training opportunities for contractors and engineers, and establishing and promoting best practices in heat pump design, installation, operations and maintenance. HVAC Industry stakeholders also stand ready to standardize messaging of technology and energy savings and create a level playing field with industry norms around design standards and pricing.

Thank you for your consideration in reviewing these recommendations. We look forward to continuing to work with the Ontario government to support the increased use of heat pumps as part of the *Made-in-Ontario Environment Plan*.

Sincerely,

Heating, Ventilation and Air Conditioning (HVAC) industry representatives:

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CC: David Donovan Director of Policy, Office of the Honourable Rod Phillips, Ministry of the Environment, Conservation and Parks

ⁱ The Atmospheric Fund (TAF) is a public agency established in 1991 by the City of Toronto and endowed by the City and the Province of Ontario. TAF works closely with stakeholders across the Greater Toronto and Hamilton Area (GTHA) to test and advance innovative programs to reduce greenhouse gas (GHG) emissions and air pollution. However, the views expressed in this submission do not necessarily represent those of the City of Toronto, the Province of Ontario or other GTHA stakeholders.