January 25, 2024

Energy Efficiency Branch (c/o Sean LeRoy)
B.C. Ministry of Energy, Mines and Low-Carbon Innovation
P.O. Box 9314 Stn. Prov. Govt.
Victoria, B.C. V8W 9N1

Dear Sean,

Thank you for the opportunity to comment on the proposed regulatory approach for the Highest Efficiency Equipment Standards (HEES). Ecotrust Canada supports the intent and approach of the HEES and believes it will play a critical role in achieving the province's emissions reduction and climate readiness goals.

Ecotrust Canada believes that the emphasis on point-of-sale standards is appropriate, with point-of-installation standards reserved for higher-complexity systems and applications. Certain measures may need to be taken to prevent leakage (for example, to prevent contractors in northeastern B.C. from purchasing equipment in Alberta to be installed in B.C.) In general, the approach proposed by the Province is feasible, minimally complex, and should capture the vast majority of sales and installations.

The modelling completed by EMLI (and the Canadian Climate Institute) clearly demonstrates that electric heat pump technologies have the potential to unlock lifetime cost savings for nearly all building and HVAC equipment types, scenarios, and climate zones. In addition, this discussion paper shows clearly the critical role this regulation will play in reducing emissions from the built environment, with a 79% reduction in emissions by 2050 relative to 2017 levels.

This regulation will create the most important legal backstop in B.C.'s building sector, both for reducing emissions as well as driving long-term cost savings for British Columbians. It is, therefore, extremely important that this regulation not be delayed or weakened, as either would be detrimental to the public interest. We support a timely and full implementation of the HEES, alongside a plan for appropriate enforcement.

On hybrid (dual-fuel) and gas absorption heat pump systems

Ecotrust Canada reiterates our position that there is a relatively limited scope of applications where dual-fuel and gas-driven heat pump systems are necessary to achieve adequate performance or operating cost goals. We accept the Province's concerns that, for certain regions of Northern and Interior B.C., a dual-fuel system may provide the best mix of performance and operating cost – with the caveat that new models of cold climate electric

heat pumps with electric resistance backup have the potential to make dual-fuel systems obsolete before 2030.

We believe that there is a significant downside risk to "locking in" gas connections as a result of dual-fuel systems, including the construction and replacement of gas pipelines and infrastructure that may not be necessary given available all-electric equipment alternatives. This scenario would lead to higher emissions as well as higher costs for customers who will pay fixed and delivery costs for both gas and electric utility services. This risk needs to be managed in parallel to the HEES, including providing strong direction to the BC Utilities Commission not to approve gas infrastructure that is not consistent with B.C.'s emissions reductions plan, or that may become a stranded asset.

The Province's modelled emissions reductions of 79% below 2017 levels could be undershot if hybrid systems are utilized extensively in their gas operation mode. Monitoring will be necessary to ensure that these systems work as intended and are utilizing gas as a non-primary fuel source only. Dual-fuel systems should be required to be greater than 100% efficient on a *seasonal* basis, not simply on specification. Similarly, assumptions around equipment lifespan that factor into the modelled emissions reductions should be revisited and responded to appropriately if gas furnaces installed before 2030 will not reach end of life by 2050.

We note that the application of gas absorption heat pumps is currently extremely limited – electric heat pump technologies are more cost-effective, more efficient, and result in lower emissions than gas heat pumps. In our view, development of this technology is primarily motivated by an industry desire to force continued reliance of customers on the gas distribution network and bolster support for high-cost, low-supply fuels such as "renewable natural gas" and hydrogen. Given currently available technologies, customers that utilize a gas absorption heat pump will pay higher upfront costs, achieve lower efficiencies, and produce more emissions than those utilizing electric heat pumps.

We do not support gas heat pumps as a compliance pathway under the HEES, but appreciate that this regulation is intended to be a fuel-neutral energy efficiency measure. Increasing the minimum efficiency level under the HEES to a level greater than 100% would make electric resistance heating non-compliant, which is not a desirable outcome given the low-cost utility of these appliances in certain scenarios.

Future regulations could allow for an approach that takes the expected performance of heat pump technologies in different climate zones into account, and require that gas absorption heat pumps match that of their electric counterparts in order to be considered "highest efficiency" equipment. Regardless of the approach taken, the Province will need to carefully

monitor the uptake of gas heat pump products in the future and respond appropriately if the market share of these appliances places B.C.'s overall emissions reduction goals in jeopardy.

On regulatory innovation in neighbouring jurisdictions

In contrast to B.C.'s approach, California's proposed Zero-Emission Appliance Standards would prohibit the sale of all emissions-producing appliances for space and water heating by 2030. While this standard has yet to be finalized, a proposed regulation will be brought to the California Air Resources Board in 2025.

Similarly, the City of Seattle's proposed Building Emissions Performance Standards will effectively prohibit the use of emissions-producing space and water heating appliances by 2050, though it currently applies only to larger commercial and multi-unit residential buildings. Separate legislation and regulation relating to the use of gas in new building now applies in several U.S. states and municipalities (though other states have blocked such measures).

We appreciate that there are material differences between U.S. jurisdictions' situation and B.C.'s, and that efforts in other U.S. jurisdictions have been blocked by a powerful fossil fuel lobby and a decision by the 9th U.S. Circuit Court of Appeals. However, we believe that an appropriate balance can be struck by allowing dual-fuel systems that utilize gas as a backup energy source in climate zones where there is a cost and/or performance justification for doing so.

B.C. is one of a very few jurisdictions in the world with abundant access to affordable, zero-emissions electricity, and a population largely concentrated in a temperate coastal climate zone – B.C. can demonstrate its ability to lead on this file while avoiding potential backlash. By avoiding an outright ban on the use of gas, e.g. for cooking and backup heat, our hope is that the HEES can be a resilient and successful regulation, even though this approach will undoubtedly carry some continuing affordability and health risks for British Columbians.

On implementation timelines

The cost-benefit modelling presented in the Province's discussion paper, taken in the context of the mounting urgency to reduce emissions prior to 2030, leads us to reiterate our position that certain aspects of the HEES should be accelerated. In particular:

- Domestic water heaters are easily obtained in all-electric configurations; both heat pump and electric storage variants can easily replace gas- and oil-fired water heaters. These products (and electric storage tanks in particular), are relatively inexpensive compared to space heating equipment and their performance is far less dependent on climate zone, if they are installed in conditioned spaces. We therefore believe that the

HEES could apply to residential water heaters as early as 2025 with minimal negative impact to customers.

- The cost-benefit analysis of residential forced air heating systems shows a clear lifetime benefit to switching from fossil fuel-fired equipment to electric heat pumps. Given the overall savings to consumers, the continued availability of incentives, and the additional benefits of the technology including provision of air conditioning, we believe that the HEES could apply to these systems as early as 2027.

On complimentary programs and policies

Regarding complimentary incentive programs: as electric heat pump technologies still carry higher capital costs than incumbent gas or electric resistance technologies, Ecotrust Canada strongly supports the continuation of targeted capital cost support in the form of residential sector incentives that are equity-targeted (e.g., indexed to household income). In our view, full cost coverage for lower-income and Indigenous households should be prioritized over continuing incentives to higher-income households. The existing Income-Qualified Program does not fully address this need. It still requires a co-payment, which is prohibitive for many households, and the heat pump rebate maximum is too low to reflect current installation costs.

In parallel with the HEES, it remains of great importance that new construction in B.C. be zero emissions as soon as possible. We support municipal action to require zero emissions construction under the Zero Carbon Step Code and would support Provincial action to require municipalities to adopt higher tiers of the Code prior to 2030.

Finally, we note that workforce capacity and readiness remain an issue, although in our experience, the acute contractor shortages experienced in the last three years have begun to subside as inflation and higher cost of living dampen retrofit activity across the residential sector. We have ongoing concerns regarding very high costs being charged by some contractors, particularly for heat pump installations, and support further oversight by the Province to ensure that prices charged to consumers are fair and competitive.

Summary

Ecotrust Canada supports the intent and proposed mechanism of the HEES, which is a critical regulatory tool for achieving emissions reductions in British Columbia's built environment.

We believe that there is an opportunity for the Province to further strengthen and accelerate the proposed regulations through the following modifications:

1) The timeline for implementation should be accelerated to 2025 for water heating and 2027 for space heating.
2) Systems that utilize fossil gas, RNG or hydrogen as a back-up fuel should be allowed for colder climate zones only and be required to demonstrate >100% seasonal efficiency.

That said, we understand that a balanced approach may be warranted to support the resilient and successful implementation of this cost-effective and efficient regulatory pathway.

Best Regards,

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Ecotrust Canada