

December 21, 2018

Equipment Division
Office of Energy Efficiency
Natural Resources Canada
930 Carling Avenue, Building 3, 1st Floor
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RE: Amendment 15 to the Energy Efficiency Regulations

This letter constitutes the comments of the Appliance Standards Awareness Project (ASAP) and the American Council for an Energy-Efficient Economy (ACEEE) on the Natural Resources Canada (NRCan) October 2018 pre-publication of Amendment 15 to the Energy Efficiency Regulations. ASAP organizes and leads a broad-based coalition of efficiency proponents in the United States that includes efficiency, consumer, and environmental groups; utility companies; state government agencies; and others. Working together, the ASAP coalition seeks to build support for new and updated appliance, equipment, and lighting standards through technical and policy advocacy and outreach and education. ACEEE acts as a catalyst to advance energy efficiency policies, programs, technologies, investments, and behaviors.

We believe that it is appropriate for Canada to take the lead in establishing strong standards for heating and ventilation products. The analysis for Amendment 15 shows that the proposed minimum energy performance standards (MEPS) would yield net benefits of more than \$1.8 billion from shipments through 2030.¹ Below we provide our detailed comments. In summary:

- We generally strongly support the proposed MEPS in Amendment 15
- We encourage NRCan to consider applying the proposed condensing-level MEPS for commercial gas-fired storage water heaters to both new and replacement applications
- We believe that the proposed prescriptive path to meet the fan energy rating (FER) standards for furnace fans is unnecessary
- We encourage NRCan to ensure that modular blowers are included in the scope of the FER standards

We generally strongly support the proposed MEPS in Amendment 15. Amendment 15 would establish the first MEPS for a range of products including gas fireplaces, residential instantaneous water heaters, and commercial boilers and water heaters. The Regulatory Analysis Impact Statement for Amendment 15 notes that the Pan-Canadian Framework on Clean Growth and Climate Change includes a short-term goal to have all fuel-burning technologies for primary space heating for sale in Canada meet condensing efficiency levels by 2025.² The proposed MEPS in Amendment 15 would help meet this goal by setting new condensing-level efficiency standards for equipment including residential and commercial gas-fired

¹ <http://www.gazette.gc.ca/rp-pr/p1/2018/2018-10-20/html/reg3-eng.html>.

² *Ibid.*

hot water boilers and certain residential and commercial gas water heaters. The proposed MEPS would also strengthen the standards for residential furnaces, which are already at condensing levels.

We support NRCan going beyond the U.S. DOE efficiency levels for both residential and commercial gas-fired hot water boilers to condensing-level MEPS. The proposed standards for gas-fired boilers would provide \$65 million in net benefits for residential equipment and \$380 million for commercial equipment. As noted in the cost-benefit analysis, for residential gas-fired hot water boilers, the proposed standard level is equivalent to the current ENERGY STAR specification.³ The cost-benefit analysis also notes that 77% of the residential gas boiler market is already compliant with the proposed standards. Regarding venting, we agree with NRCan's conclusion that "the experience with condensing gas furnaces has shown that industry has adapted to solve difficult residential venting situations in a timely manner" and that it is reasonable to expect the same will occur with condensing gas hot water boilers.⁴ For commercial gas boilers, the cost-benefit analysis notes that 72% of the market is already compliant. As we described in our comments on the February 2018 Technical Bulletin, condensing boilers can provide large savings in both new and existing buildings.

For residential gas furnaces, we support increasing the AFUE level to 95% AFUE. The proposed standard would provide more than \$300 million in net benefits, and the cost-benefit analysis notes that 84% of the market is already compliant.

We also support the proposed MEPS for gas fireplaces. The proposed standards would provide \$950 million in net benefits. The cost-benefit analysis notes that the proposed standards are designed to achieve similar outcomes as the recently-established British Columbia standards that will go into effect on January 1, 2019. Prohibiting standing pilot lights in gas fireplaces would eliminate a significant source of energy waste, and a minimum fireplace efficiency of 50% for heating gas fireplaces would eliminate the least-efficient models from the market.

We encourage NRCan to consider applying the proposed condensing-level MEPS for commercial gas-fired storage water heaters to all equipment, including replacement applications. For commercial gas-fired storage water heaters (including residential-duty commercial units), NRCan is proposing to set condensing-level MEPS for only those products "that are not replacement units." We understand that the majority of units sold are for replacement applications. Standards that require condensing equipment for new construction only will likely be difficult to enforce since non-condensing equipment will be widely available in the market. The U.S. DOE proposed rule for commercial water heaters published on May 31, 2016 proposed condensing levels for all commercial gas-fired storage water heaters (as well as for gas-fired instantaneous water heaters and hot water supply boilers).⁵ We encourage NRCan to consider establishing condensing levels for all commercial gas-fired storage water heaters, which would provide significantly greater energy savings.

We believe that the proposed prescriptive path to meet the FER standards for furnace fans is unnecessary. In the December 2018 Technical Bulletin, NRCan proposed providing a prescriptive path as an alternative to meeting the FER standard for furnace fans. Specifically, NRCan proposed that the standards could be met either by complying with the FER standard based on the U.S. DOE test

³ "A Cost-Benefit Analysis: Details to Support Proposed Amendments to the *Energy Efficiency Regulations, 2016* (Amendment 15). December 7, 2018.

⁴ <http://www.gazette.gc.ca/rp-pr/p1/2018/2018-10-20/html/reg3-eng.html>.

⁵ <https://www.regulations.gov/document?D=EERE-2014-BT-STD-0042-0018>.

procedure, or prescriptively by using a brushless permanent magnet (BPM) motor. The Technical Bulletin states that this proposal is a result of the non-enforcement guidance on FER in the U.S.⁶

We oppose AHRI's petition on AFUE2 and believe that the U.S. DOE's non-enforcement guidance is unlawful. AHRI's AFUE2 proposal would result in significant lost energy savings by effectively eliminating the furnace fan standards for condensing furnaces. In addition, by combining direct fuel use and electricity use on a site energy basis, the AFUE2 metric would provide misleading information about both consumer operating costs and primary energy use and would not properly value electricity savings. We believe that the non-enforcement guidance violates the Energy Policy and Conservation Act's (EPCA's) anti-backsliding provision. Further, the non-enforcement guidance does not remove the obligation of manufacturers to comply with the FER standards. In particular, EPCA contains a citizen suit provision, which provides that "any person may commence a civil action against . . . any manufacturer or private labeler who is alleged to be in violation of any provision of this part or any rule under this part." 42 U.S.C. § 6305(a)(1).

We are pleased that NRCAN does not intend to repeal the FER standards for gas- and oil-fired furnaces or remove the Amendment 15 proposal for FER standards for electric furnaces and gas furnaces for relocatable buildings. However, we believe that manufacturers must comply with the FER standards in the U.S. beginning on July 3, 2019 and that therefore the alternative prescriptive path is unnecessary. We also note that the prescriptive path may not deliver equivalent savings to the FER performance path. The U.S. DOE FER levels for gas furnaces are based on constant-torque BPM motors and multi-stage controls. Multi-staging provides additional savings because in a multi-stage (e.g. two-stage) furnace, the fan operates for a longer number of hours at a lower speed, and fan power consumption decreases with the cube of the speed. In addition, motor efficiency likely varies across models, and there are additional considerations that impact furnace fan efficiency, such as airflow path design.

We encourage NRCAN to ensure that modular blowers are included in the scope of the FER standards.

As part of Amendment 15, NRCAN is proposing to set MEPS for furnace fans that are part of electric furnaces. The proposed definition for "electric furnace" is:

electric furnace means an automatic operating central forced air furnace that uses single-phase electric current to heat one or more electrical resistance heating elements and has an input rate of not more than 65.92 kW (225,000 Btu/h).

We understand that, at least in the U.S., electric furnaces are typically sold as modular blowers with an electric resistance heating kit that is installed in the field. The U.S. DOE furnace fan standards include a product class for "non-weatherized electric furnace/modular blower fan." The U.S. DOE definition for modular blower is:

Modular blower means a product which only uses single-phase electric current, and which:
(a) Is designed to be the principal air circulation source for the living space of a residence;
(b) Is not contained within the same cabinet as a furnace or central air conditioner; and

⁶ https://www.nrcan.gc.ca/energy/regulations-codes-standards/21604?_cldee=am1hdWVvQHNOYW5kYXJkc2FzYXAub3Jn&recipientid=contact-c249b0494b03e61180d95065f38af9b1-bc20a71e30dd45b394af6564660fd059&esid=dcc77a7f-6bf9-e811-a94c-000d3a34e213

(c) Is designed to be paired with HVAC products that have a heat input rate of less than 225,000 Btu per hour and cooling capacity less than 65,000 Btu per hour.⁷


We encourage NRCan to ensure that modular blowers are included in the scope of the FER standards so that products sold with a separate electric resistance heating kit (but which are otherwise identical to electric furnaces) are not exempt from the furnace fan MEPS.

Thank you for considering these comments.

Sincerely,



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⁷ https://www.ecfr.gov/cgi-bin/text-idx?SID=4fcbebe5c645d358340abc0f251d51a7&mc=true&node=ap10.3.430_127.aa&rgn=div9.