

Natural Resources Canada
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RE: Consultation on the proposed New Minimum Energy Performance Standard (MEPS) for Commercial Boilers

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FortisBC appreciates the opportunity to participate in the consultation for regulatory amendment to Commercial Boilers. FortisBC have reviewed the proposal and compared the analysis to its own Commercial Efficient Boiler Program findings and supports the proposed MEPS of 90% for commercial boilers in new construction but not for retrofit applications. The details of our review are provided below.

FortisBC has been operating an energy efficiency program for natural gas fired commercial hot water boilers for over 10 years to encourage market transformation and through which the company has gained an understanding of the opportunities and limitations of the operations in the commercial sector. Through a detailed review of the information provided by NRCan and the company's program, FortisBC has arrived at the following:

Findings that align with those provided by NRCan:

- The energy savings estimates are reasonable and consistent with those from Fortis BC's commercial boiler program.
- The costing estimates for new construction are reasonable and consistent with those from Fortis BC's commercial boiler program,

Findings that do not align with those provided by NRCan:

- The costing estimates for retrofit situations are understated and do not accurately account for the cost of renovations and additional venting costs to replace an existing boiler with a 90% efficient commercial boiler. In addition, the costing does not adequately represent all of the difficulties existing building owners may need to address in a boiler retrofit situation.
- The estimated measure life of 24 years is unreasonable as virtually all energy conservation programs in North America assume a 20 year lifespan.

Natural Gas Savings and Equipment Costing

By way of its Commercial program FortisBC gathers equipment and installation information. Using FortisBC's current hot water boiler costing models and NRCan's stipulated heating plant capacities the company's cost estimate for equipment aligns reasonably well with the equipment cost presented by NRCan

New Construction versus Retrofit Situations

It is imperative to note that construction and retrofit applications vary substantially both from a practicality and costing perspective and it is our view that NRcan has not taken this into consideration in its analysis and thereby its proposal. New construction projects can incorporate varying requirements in the planning stage that are specific to condensing boiler systems to ensure optimal installation and operation. In contrast, the population of existing boiler installations are much more diverse and as such the replacement of an existing system with a condensing boiler will impose installation requirements beyond practicality and with substantial cost with little in the way of energy benefits.

The company reviewed the applicants in its Efficient Boiler Program for new construction and retrofit of hot water boilers in commercial facilities through which FEI has gained extensive industry knowledge pertaining to installation practices in the new construction and retrofit market. Through its review, FortisBC has identified that installation requirements specific to condensing equipment can typically be incorporated into the building design. New construction projects can benefit from condensing boilers as their distribution and terminal units are designed to achieve condensing operation year-around. Non-condensing equipment in new construction applications are the exception, one example would be health care facilities which require dual fuel capability of their heating systems.

The retrofit market is very different from the new construction market. While there may be a desire by the building owner/operator to replace existing equipment with high efficient boilers the ultimate decision is primarily driven by constraints in equipment venting. In most retrofit scenarios, the existing vent material and pathway will not be available for reuse when switching from non-condensing to condensing equipment. Through its analysis, FortisBC has come across many scenarios for building types and existing mechanical systems where the replacement of venting to accommodate condensing equipment is beyond practical and often requiring very expensive civil work including disassembling and reconstructing walls and risers to establish and follow new vent pathways. On the other hand, retrofits in these buildings with near condensing equipment instead of condensing equipment allows the reuse of existing venting while providing the best possible heating system performance as the building heating systems are typically not favorable for condensing operation of heating boilers.

Assumption for Measured Life in the Economic analysis

FortisBC uses a measured life of 20 years for boiler retrofits which is consistent with the value used by other North American utilities. Manufacturers typically provide a 5-year warranty for parts of their boiler system. With that, we believe that a measure life of 24 years as used by NRCAN is not well substantiated and should be amended to 20 years.

Conclusion and Recommendation

Generally, we understand the need for regulations as a means to complete the full cycle of technology adoption following market interventions such as utility rebates. FortisBC's Commercial Efficient Boiler Program continues to be a very active rebate program, which shows that commercial heating hot water boilers continue to be in the market transformation process.

NRCAN presented that the Canadian Institute of Plumbing and Heating (CIPH) identified that non-condensing boilers continue to make up a sizeable share of the commercial boiler shipments. Non-condensing commercial hot water boilers continue to be very common, primarily in the retrofit market. The retrofit market requires non-condensing boilers because barriers such as venting issues make it very impractical to install condensing units. Bringing in regulations too early can have negative effects on the building industry affecting a wide range of stakeholders resulting in a range of unintended consequences.

Market share numbers as a means of understanding the scale of market transformation need to be evaluated along with understanding the market as a whole as market transformation is a holistic approach. There are currently barriers to installing and operating condensing hot water boilers, primarily in the retrofit market, which need to be addressed before bringing in regulations. This further supports our position on the proposed Minimum Equipment Performance Standard of 90% for commercial boilers in new construction but not for retrofit applications in the timeframe proposed.

FortisBC believes that a distinction in the regulation should be made between new and retrofit boiler installations as retrofit scenarios exist where the installation of new venting for condensing equipment is beyond practical and will not provide the desired energy benefits when compared to near condensing equipment. The cost for venting in retrofit scenarios varies so greatly that representative costing for retrofits cannot be established. The costing analysis provided by NRCAN can be viewed as reasonable for new construction scenarios it is not reasonable for all retrofit scenarios.

Sincerely,

Bea Bains
Manager, Energy Products and Services,
FortisBC