CANADIAN HOME BUILDERS' ASSOCIATION BRITISH COLUMBIA

November 28, 2022

Steven Groves
Senior Policy Advisor, Energy Efficiency
Ministry of Energy, Mines and Low Carbon Innovation

Submitted via e-mail to Steven.Groves@gov.bc.ca

Dear Mr. Groves:

Re: Demand-Side Measures (DSM) Regulation Amendment

The Canadian Home Builders' Association of BC (CHBA BC) is the leading advocate for the residential construction industry, representing 2,200 member firms through our eight locally affiliated home building associations. Our members are small- and medium-sized businesses who are builders, renovators, tradespeople, service professionals, and suppliers. We are essential to supporting the province's housing, economic, and climate change efforts, such as those outlined in the CleanBC Roadmap to 2030. In 2021, as one of the largest sources of employment in the province, the residential construction industry provided over 200,000 on- and off-site jobs, over $14 billion in wages and almost $28 billion in built investment value in British Columbia.

CHBA BC appreciates the opportunity to inform the proposed amendments to the DSM Regulation by sharing our members' real-world experiences with current incentives and the impact on the residential construction industry and housing affordability.

Unpredictable and insufficient incentives disrupt market readiness for future standards and codes

During the B.C. Government's Budget 2023 consultation, CHBA BC expressed concern that the significant cut in investments for CleanBC Energy Efficient Buildings would leave insufficient funding to realize key actions proposed under the CleanBC Roadmap to 2030, including zero-carbon new construction by 2030. With the abrupt suspension of the CleanBC Better Homes New Construction Program in September 2021 due to oversubscription, we had foreseen the reduced funding (from $20 million to $11 million for the 2022/23 fiscal year) in Budget 2022 would be insufficient and that the program would be fully subscribed in a matter of months.

As of August 2022, the CleanBC Better Homes New Construction Program was fully subscribed, and any potential reopening subject to Budget 2023 onwards. This comes just under three months after the program was relaunched in May of this year. Consequently, eligible projects that missed the pre-approval period have less options to bring forward market-affordable high-performance homes, especially given the pressures of high inflation and increasing mortgage rates. To illustrate the operational costs to homeowners for projects unable to access incentives due to oversubscription: for a 4-bedroom, 1,900 ft^2 townhome in the Lower Mainland, BC Hydro bills[1]

[1] BC Hydro bills are assumed to cover two months of usage.

ranged from $500 to $700 for units with electric resistance heat, compared to a gas bill of $65 to $85 per month for units with natural gas furnaces during the heating season.

The pattern of unsustainable incentives undermines the CleanBC Roadmap's commitments to *"shift the focus of utility-funded efficiency programs to support market readiness for future standards and codes, place more emphasis on electrification, and to ensure affordability for households and businesses."* This issue will not be resolved by the proposed DSM Regulation amendment.

Separate phase out for conventional gas equipment below 100% efficient from DSM Regulation

CHBA BC is aware that the Province is developing policy options to implement the *highest efficiency standards for space and water heating equipment* commitment outlined in the CleanBC Roadmap to 2030. Two regulatory mechanisms being considered for this policy are point of sale standards and point of installation standards. The existing DSM Regulation under Section 4(1.4) allows utilities to attribute a portion of a standard's future benefits to demand-side measures that "increase the use of a regulated item" during the period after the standard is proposed or passed into law, but before it comes into force. If the Ministry issues a public proposal with respect to future standards on the highest efficiency space and water heating equipment (that refers to the DSM Regulation), it follows that standards attribution under Section 4(1.4) will be possible with no amendment necessary. It is unclear why the Province is proposing to incorporate equipment efficiency requirements directly within the DSM Regulation when existing language provides a pathway to achieving CleanBC goals. Rather, the Province should focus on updating the appropriate standards, including sufficient lead time and clear, phased timelines that will encourage utilities to incentivize the use of highest efficiency equipment and enable an effective transition to 2030.

As presented during the Ministry of Energy, Mines and Low Carbon Innovation's (EMLI) virtual engagement session, the proposal will limit new home construction programs to offerings that provide space and water heating with electric, hybrid or gas heat pumps only. This would mean that a new home that achieves Step 4 or higher under the BC Energy Step Code with a tankless natural gas water heater or gas combination heating and hot water system will no longer be eligible for an incentive, despite exceeding energy efficiency levels using both building envelope and mechanical system improvements. For multi-family units, small and laneway houses, where space is at a premium, a tankless hot water system grants more flexibility than a conventional tank system and heat pump water heater – more usable space and more locations to install equipment in the home. A heat pump water heater is larger than conventional tanks and requires adequate ventilation, which prevents this equipment from fitting within confined mechanical rooms and makes it impractical for most small homes. It should also be noted that some of these homes that use a combination of electric and natural gas for space and hot water heating may still achieve a reduced greenhouse gas emissions level.[2]

[2] 63 new homes across Climates Zones 4 to 6 that contain a combination of electric and natural gas space and hot water heating systems achieve a total GHG emissions below 1 tCO_2e/year per house, as calculated by HOT2000 energy modelling software. These homes may meet either the medium or low GHG emission level under the Carbon Pollution Standard proposed by the Building and Safety Standards Branch.

The equipment efficiency proposed under this DSM Regulation amendment is too restrictive and fails to account for the performance-based, whole-house approach that is widely supported by the residential construction industry under the Energy Step Code. The loss of high-efficiency gas equipment measures will negatively impact adoption of whole building and multi-measure programs, which will diminish the overall GHG emissions reductions from the new construction sector. Similarly, homeowners may choose to forego incremental equipment upgrades and deep retrofits for existing housing if incentive measures are no longer available. An incentive system focused on reducing energy use and GHG emissions should still recognize measures, such as upgrading fossil fuel-based equipment, that result in actual GHG emissions reductions. **CHBA BC recommends that performance-based incentives, such as the Step Code pathway and water heater pathway, remain exempt from the proposed removal of below 100% efficient equipment.**

Placing additional efficiency restrictions for utilities to provide incentives under the DSM Regulation amendment will add undue complexity in enforcement and verification and will reduce the innovative pathways that are available to support market transformation and ensure affordability for households and businesses. **CHBA BC recommends that the highest efficiency standards for space and water heating equipment remain separate from the DSM Regulation.**

Clarify hybrid system pathways available under all utilities new construction programs

CHBA BC supports the continuation of hybrid heat pumps under new construction programs. Hybrid heat pumps are currently accepted under the FortisBC New Home Program, but not eligible under the Better Homes New Construction Program. Details on whether utilities will determine if incentives for hybrid heat pumps is a feasible pathway under the proposed minimum coefficient of performance (COP) requirements is lacking. We are concerned that hybrid heat pump incentives will not be realized across all utilities under the proposed DSM regulation amendment, which will impact housing affordability and exacerbate regional disparity. The amendment should clearly articulate that hybrid heat pumps (either under the equipment pathway or Step Code pathway) will be allowed across all utilities, not just gas utilities. Particularly in colder climates, many gas options for heat come at a fraction of the cost of heat pump systems. For instance, an incremental cost of $12,000 was quoted for the equipment and installation of a cold climate air source heat pump over a conventional high efficiency furnace for a 1,500 ft^2 single-storey single family dwelling in Quesnel. *This means that homeowners ultimately bear significant costs associated with reducing greenhouse gas emissions, unless appropriate incentives are in place.*

Add Northern and Remote Communities Programs to Adequacy Section 3

With increasing frequency and severity of extreme weather events, the number of storm-related BC Hydro customer outages has nearly tripled: about a 265 per cent increase from 323,000 customers

in 2013 to 1.18 million in 2017.[3] Additionally, BC Hydro research[4] indicates 76 per cent of British Columbians are more concerned than ever about grid reliability due to extreme weather and climate change, with the average British Columbian spending six hours without electricity in fiscal 2022.[5]

Grid reliability and maintaining adequate heat remain top concerns for builders, particularly during winter power outages in colder climates and remote communities. Communities that experience regular – and sometimes prolonged – power outages are unable to heat their homes without access to an alternate heat source. This becomes increasingly problematic in locations that experience temperatures of -30°C and below. It should be noted that using wood-burning appliances as emergency backup systems alone is not an appropriate solution to meet the differing needs of occupants, especially homeowners with smoke allergies, occupants with medical or physical limitations, as well as our growing aging population. The proposed 100% efficient equipment and COP restrictions do not fully consider the health risk to occupants during winter power outages and is inequitable for homes in colder climates that must rely on supplemental heat.

While CHBA BC appreciates the introduction of a Northern Residential Heat Pump Top-up Incentive to achieve better parity across all climate zones, this incentive was quickly oversubscribed under the CleanBC Better Homes New Construction program as previously noted. **CHBA BC recommends that northern and remote communities be exempted from the 100% equipment efficiency and COP requirements, and be included as programs to Section 3 Adequacy of the DSM Regulation.**

Address Electrical Extension Fees

As BC moves along the path to electrification of housing, the calculated load for the service supplying a house is increasing. The major increases to calculated loads are attributable to items that need to be calculated at 100% of their load, such as electric heat, air conditioning, electric hot water heaters and electric vehicle (EV) chargers. Additionally, some local jurisdictions impose minimum loads that further limit the available load for the main panel on a standard 200A service: e.g. a minimum 32A load demand factor for EV chargers; and a minimum 60A service for secondary suites or coach houses. Altogether, many new homes are forced to upgrade from 200A to 400A service, which comes at a significant incremental cost to the homeowner.

In colder climate zones, it is increasingly common to max out a 200A service due to higher heating loads, even before factoring additional loads such as EV chargers. For fully electric-based heating, the heating load cannot be removed or reduced from the loads in the panel, as would occur if using

[3] BC Hydro. (2018, November). *Storm warning: The impact B.C.'s wild weather is having on British Columbians and their power*. https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/news-and-features/report-the-impact-wild-weather-is-having-on-british-columbians-and-their-power.pdf

[4] BC Hydro. (2022, January). *2021: A record-breaking year for electricity demand and extreme weather.* https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/news-and-features/2021-demand-report.pdf

[5] BC Hydro (2022, May 12). *Annual Reporting of Reliability Indices.* https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/regulatory-planning-documents/regulatory-filings/rra/2022-05-12-bchydro-f05-f06-rra-directive-26-f2022.pdf

an alternate energy source for the heat, like gas, or other loads such as the stove or water heating. Features that may be more commonplace in milder climates (EV chargers, hot tubs, out buildings, etc.) are either eliminated or forced to compromise for homes in a colder climate unless a significant additional expense is incurred by the homeowner.

The following scenarios of increased costs have been provided by a builder in Northern B.C.:

- Required upgrades to existing BC Hydro infrastructure outside of the property being serviced: This happens any time that BC Hydro needs to install a new pole, or additional transformer so that the development can be connected to BC Hydro.
  - A client was quoted by BC Hydro $12,000 to $15,000 to install a single pole in line with the property line so that they could be connected. Note, the pole will not be located on the client's property, nor will the client own the pole. BC Hydro may use that pole to the benefit of a neighbouring property if they choose.
- An additional 100A or 200A service to be run into the property:
  - Private contractor estimates for a 250m long service to an all-electric home was roughly $50,000 (BC Hydro's preliminary estimate to cover the same distance was $85,000).
  - The portion of this service that would have to be duplicated is approximately $43,000 in cost (excluding costs from the first service's trench and excavating that could be used by the second service).
  - A standard dip service on a town lot costs $4,000 to $6,000. This amount would double to run a second service into the lot to accommodate any loads that would not fit on the first 200A service.
  - These install costs would be in addition to any charges from BC Hydro to upgrade their infrastructure off the property.
- PV generation independent from secondary service:
  - e.g. The EV charger load was relegated to a secondary service, as it would not fit within the capacity of the primary 200A service. This means that the EV charger cannot benefit from the solar PV generation on the primary service.

Costs attributed to adding BC Hydro infrastructure and upgrading electrical service from a typical 200A to 400A service are substantial and have not been addressed under the BC Hydro Review nor covered under any CleanBC incentive programs. While it is understood this issue may not fall directly within the scope of the DSM Regulation, the Province needs to properly address the impacts of electrical infrastructure costs that are borne by homeowners as a primary barrier to achieving its commitments to electrification under the CleanBC Roadmap to 2030.

Increase capacity of heat pump installers and refrigeration technicians

As an alternative to requiring the phase out of conventional gas equipment in DSM Regulation, the Province should direct attention to promoting technology innovation programs that increase workforce and skills readiness for heat pump technologies, which is aligned with actions under the CleanBC Roadmap to 2030. For instance, utilities should offer programs that support reskilling a current journeyman plumber or gas fitter to be a refrigeration technician or mechanic. This is especially useful for companies that lack a certified refrigeration mechanic on staff, which currently prevents them from performing heat pump installations and accepting apprentices. Creating a

pathway to transfer existing skilled trades to support heat pump installation will help close the gap in the market for skilled refrigeration mechanics. This provides more opportunities for plumbing and HVAC companies to expand and diversify into heat pump offerings, a pathway which is presently extremely limited or unattainable.

Timelines

EMLI has expressed a strong desire to approve amendments to the DSM Regulation in December 2022. CHBA BC received no communication of the Province's timelines prior to November 1, 2022, and is disappointed by the condensed stakeholder engagement process. The narrow timeline for approval makes it challenging to offer meaningful feedback and pragmatic solutions. If a delayed regulation amendment prevents poor consequences, it is worth adjusting timelines as needed.

Closing Remarks

CHBA BC supports changes that offer flexibility and choice for the industry to innovate and determine the best path to achieving requirements and provincial goals. We recognize the provincial commitment to have new buildings be zero-carbon by 2030, and welcome future opportunities to support the Province in finding practical solutions to meeting the CleanBC Roadmap.

We look forward to future stakeholder engagements and sharing the knowledge gained from our members' depth of experience. If you have questions, or would like to have a follow up discussion, please contact the undersigned.

Regards,

Pauline Rupp
Director, Technical and Building Innovation