

Public Review of Proposed Changes to the 2020 National Model Codes

April 8, 2024



Efficiency
Canada

Carleton
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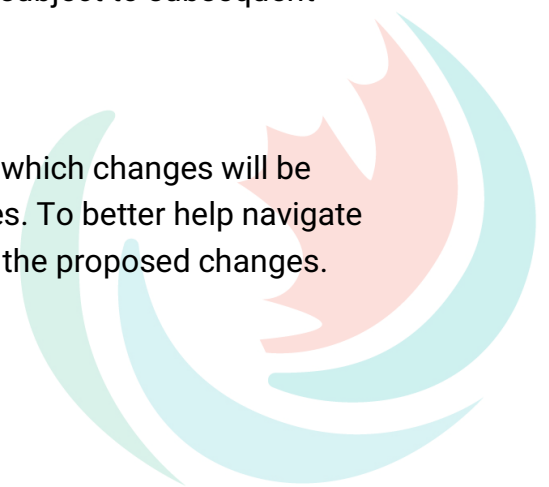
First released in March of 2022, the National Energy Code for Buildings (NECB) and the National Building Code (NBC) make up the foundation for Canada's first national tiered energy codes. These model codes, alongside the National Fire Code, National Farm Buildings Codes, and National Plumbing Code, are developed on a five-year cycle. As the 2020-2025 code development cycle comes to a close, the proposed changes are available via a public review period that is now open and runs until April 29, 2024. This review period is intended to collect feedback related to proposed changes to the 2020 editions of the model codes.

Many of the proposed changes presented are intended to support the development and implementation of the Alterations to Existing Buildings (AEB) code, the development of provisions to limit excessive emissions arising from building operations. Other notable proposed changes include the addition of an energy use intensity compliance path in the NECB, as well as the completion of the point-based prescriptive path for the upper tiers of the NBC. This last change also includes requirements for mandatory airtightness testing at tiers 4 and 5.

The public review period provides an opportunity for those in the buildings sector and other interested parties to review and comment on the proposed changes. Feedback can be submitted via written comments, and commenters can note their support/lack of support for the proposed changes, with or without comments through the CBHCC's online comment form. Comments gathered are then sorted and analyzed by Codes Canada staff, and a draft resolution is provided to the responsible code development committees, which may recommend that the CBHCC:

- Approve the proposed changes for publication,
- revise the proposed changes for publication,
- defer publication pending further development – subject to subsequent public review, or
- withdraw the proposed code change.

After reviewing the draft resolution, the CBHCC decides which changes will be published in the next edition of the National Model Codes. To better help navigate the proposed changes, this article offers an overview of the proposed changes.



Proposed changes to the NECB

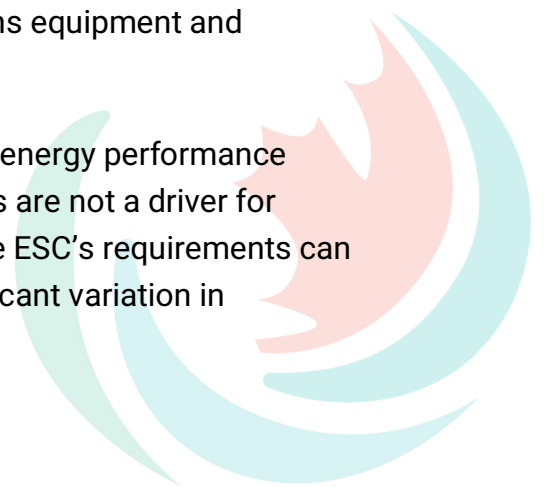
The NECB was Canada's first national standard for building energy performance. It was introduced in 1997 as the Model National Energy Code for Buildings and later renamed the National Energy Code (NECB) for Buildings in 2011. The NECB applies to what are commonly referred to as Part 3 buildings, large residential and commercial buildings exceeding 600 m² in building area or exceeding three storeys in building height.

Proposed change 1989: Greenhouse gas emissions: Application of a new part on operational greenhouse gas emissions

This proposed change is part of the CBHCC's objective to limit operational emissions arising from building operations and to provide a benefit to society by mitigating the effect of climate change on the environment. Embodied emissions, those associated with building materials and construction processes, are not to be addressed until the 2030 edition of the model codes. Addressing operational GHG emissions within the national model codes requires the addition of a new section of the building code that will contain technical requirements for GHG emissions, Part 11. This proposed change is largely administrative, as it adds the application of Part 11 to Division A of the NECB.

Nonetheless, this proposed change is critical as the code's objectives provide information for code-users to achieve compliance with each of the code's five objectives (safety, health, accessibility for persons with disabilities, fire and structural protection, and the environment). Each code requirement is linked to a code objective, and this change will facilitate the addition of provisions that require newly constructed buildings to incorporate low-emissions equipment and appliances.

As the BC Energy Step Code (ESC) has shown, stringent energy performance targets such as those provided by the 2020 model codes are not a driver for mechanical system selection. While compliance with the ESC's requirements can be met with any type of heating system, there is a significant variation in



Greenhouse Gas Intensity (GHGI) at each step. For example, the GHGI for a large single-family dwelling at the highest tier using an electric heat pump is 93 per cent lower than the same building using an all-gas heating system. This trend extends to Part 3 buildings as well, with the GHGI at the highest step being 87 per cent lower on average for heat pump systems versus all-gas systems across all archetypes.¹ These variations point to the need to reconsider the building codes' traditional fuel-agnostic approach that treats all fuels used for building operations equally. If the goal of the net-zero emissions code is indeed to decarbonize the buildings sector, there will be a substantial role for the use of low-emissions electricity heat pumps that produce fewer emissions than gas alternatives, even when accounting for potential refrigerant leaks.

Support.

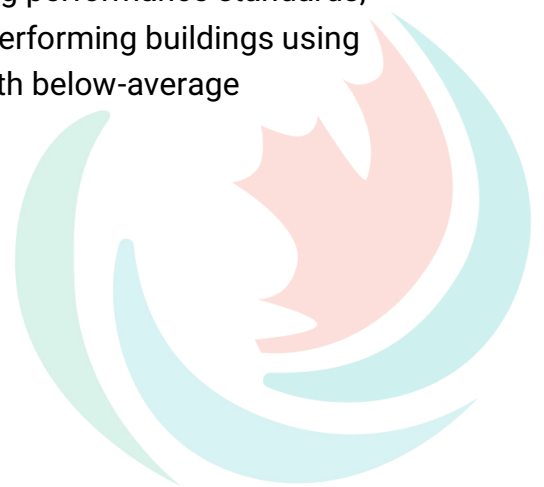
Proposed change 1990: Addition of the defined term "alteration"

Defined terms within the NECB and NBC are noted in italics and indicate that these words have a specific meaning. In this proposed change, the term "alteration" is introduced as a defined term within the NECB. While previously defined in the NBC, this proposed change aligns Section 9.36 and the NECB and removes any inconsistency between the two codes to limit misinterpretation or misapplication of the code's requirements.

Despite the importance of a building code intended to regulate interventions in existing buildings, building code requirements, including those under consideration for the AEB, typically apply only to those buildings undergoing significant voluntary renovation activities. However, the worst-performing buildings are often the least likely to undertake major renovations. Mandatory building performance standards, on the other hand, can be designed to target the worst-performing buildings using building performance benchmarks that identify those with below-average performance.

Support.

¹ BC Step Code, BC Step Code GHGI Report. November 2019.



Proposed change 2016: New abbreviations related to operational GHG emissions

This proposed change assigns meaning for several new abbreviated terms to both the NBC and NECB that are commonly used within the industry. These terms include:

- CO₂e or carbon dioxide equivalent,
- GHG to indicate greenhouse gas,
- GJ or gigajoule(s), and
- kWh to indicate kilowatt hour(s).

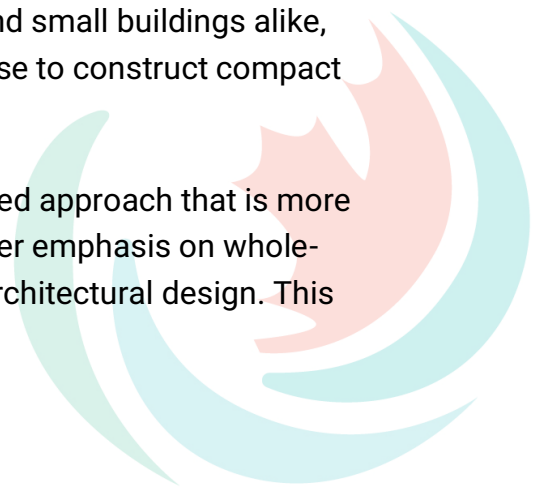
As these changes are administrative and act to enhance clarity, and consistency, and serve to enhance communication and interpretation for code requirements, there is little or no expected impact on code users.

Support.

Proposed change 1868: Energy use intensity compliance path

This proposed change introduces a welcome addition to the code's compliance paths as it provides an energy compliance path for code users that is based on the building's energy use intensity (EUI) target. To demonstrate compliance with the performance path, the NECB currently uses the "reference" building approach. This compliance path compares a 'reference building' designed to the code's prescriptive measures versus the proposed building and compares the anticipated energy use of each. This approach does not recognize the reduced energy requirements of smaller houses, and treats both large and small buildings alike, thereby placing a burden on those code users who choose to construct compact and efficient forms.

EUI metrics have the potential to drive an outcomes-based approach that is more likely to encourage builders and designers to put a greater emphasis on whole-building efficiency and smaller buildings and compact architectural design. This



approach incentivizes passive energy measures such as window type and placement for daylighting, thermal mass, solar gains, and more simple shapes and forms.

Where there currently is no method within the NECB for variations in how occupant behaviour affects energy use, this proposed change introduces the addition of a peak receptacle load to better capture the internal loads of the building in the energy model.

Support with comment:

We applaud the efforts of those involved in the development of the proposed change in 1868. This proposed change is a welcome addition to the code's compliance paths. This proposed change helps to limit local variations in modeling requirements as well as reduce the time and resources directed to energy modeling. As indicated in the proposed change's problem statement, the initial set of building archetypes provides energy targets for the most commonly constructed building typologies, we encourage the CBHCC to expand this set of archetypes to ensure that the use of EUI metrics as a compliance path is available to all code users.

Proposed change 1962: Use of the term "grade" in NECB

This proposed change clarifies the use of the term "ground" instead of the defined term "grade" in Note A-3.2.1.1.(1) of the NECB. The term "grade" is used to establish requirements to reduce heat loss as it helps to determine a building's height, starting from the lowest average levels of the finished ground that contacts each exterior wall of the building. This definition does not accurately capture elements below or in contact with the ground, i.e., storage garages underground or vegetative/green roofs in contact with the ground. If used as such in the NECB, this term may not reflect the level of the building accurately, opening the door to scenarios in which there is insufficient exterior insulation required to meet the objectives of the NECB.

Support.

Proposed change 1653: Use of the term “grade” in NECB

Similar to Proposed Change 1962, this proposed change clarifies Note A-3.2.3.2.(1) by replacing the term “grade” with the term “ground” to refer to the finished ground level, thereby more accurately determining the appropriate level of thermal insulation needed to meet the building code’s requirements.

Support.

Proposed change 1859: Alteration of HVAC systems

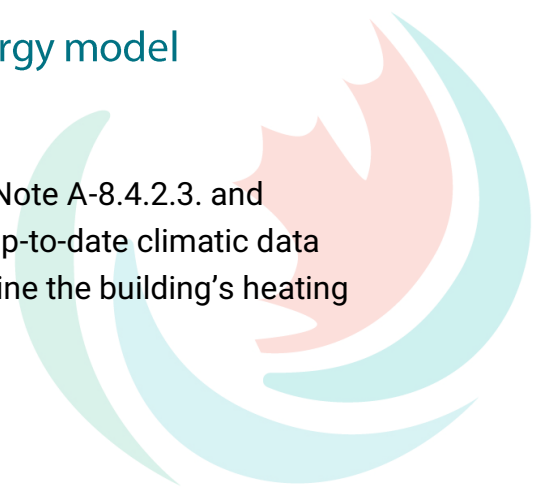
As part of the Alterations to Existing Buildings code, this proposed change introduces requirements for the application of NECB Part 5 to HVAC systems that are to be altered. While HVAC systems are infrequently updated over the lifespan of the building, this proposed change establishes requirements for cost-effective updates to HVAC components and subsystems while acknowledging their interconnected nature.

This proposed change sets requirements for proposed alteration work to HVAC systems where significant thermal loads are added, or where significant lengths of ductwork or piping have been added to the distribution system. A threshold is used to trigger AEB HVAC requirements based on additions where the supplementary thermal load does not exceed 60 per cent of the peak design load of the existing system, or the length of replacement ductwork/piping does not exceed 60 per cent of the existing distribution system.

Support.

Proposed change 2009: Climatic data for energy model calculations

This proposed change updates the NECB’s explanatory Note A-8.4.2.3. and explanatory note A-9.36.5.5.(1) of Division B to include up-to-date climatic data references. Climatic data references are used to determine the building’s heating



and cooling loads, and ultimately the size of heating and cooling equipment. These updated references are intended to ensure the accurate sizing of equipment and avoid under or oversizing of said equipment.

Support.

Proposed change 2003: Operational GHG emissions: Tiered performance requirements in the NECB

Similar to the energy tiers of the 2020 model codes, this proposed change introduces to the NECB tiers A-F (with A being the highest tier) to progressively reduce the operational emissions of newly constructed buildings. For example, those arising from lighting, heating and cooling, hot water heating and pumping, and electrical power and lighting systems.

Compliance with the tiers is determined by designing and constructing the building to meet one of the five performance tiers based on the annual operation emissions of the proposed building, expressed as a percentage of the operational emissions target, or as a percentage improvement of the proposed building relative to the reference building.

Given the different make-up of provincial gas and electricity systems and associated emissions, emissions factors are expected to play an important role in determining the appropriate emissions reductions. Emissions factors are provided, based on the data provided by Environment and Climate Change Canada. This proposed change would also provide code users with the option to use emissions factors provided by the regulated utility responsible for delivering energy to the building site. Emissions factors are also provided for district energy, diesel, heating oil, and propane.

It is important to note fossil fuel-heated buildings can reach the least stringent tiers without incurring incremental costs. However, building envelope improvements and higher efficiency heating systems are required to reach level D and above. While this improves the emissions performance of fossil fuel-heated buildings by approximately 25 per cent, such buildings are not likely to cost-

effectively reduce emissions further. As an alternative, electricity-fuelled buildings without further envelope improvements can reach the highest tiers in provinces and territories with low emissions factors, and levels B, C, and D in provinces and territories with mid to high emissions factors. Combining electrification with envelope improvements makes achieving higher levels of emissions performance much more practical in provinces with mid to high emissions factors in their electricity system. The percentage of electricity-fueled buildings can be expected to improve further, as provinces and territories take steps to reduce emissions associated with electricity generation.

Support with comment:

Efficiency Canada recognizes the significant efforts of those involved in developing this important proposed change and supports this direct approach to tackling emissions from building operations. As the BC Energy Step Code (ESC) has shown, energy performance targets alone, such as those provided by the 2020 model codes, are not a driver for the selection of low-carbon mechanical systems (see Building Safety and Standards Branch Ministry of Attorney General and Minister Responsible for Housing, Province of BC, BC Energy Step Code Metrics Report Update (2022)).

We look forward to future refinements of Section 11: Tiered Operational GHG Emissions Performance Compliance as defined in the proposed change 2003 that would see the addition of absolute GHGI metrics, versus the proposed reference approach contained in this proposed change, to better align with the addition of an EUI as proposed in change 1868.

While we support this proposed change, we would appreciate clarity in regards to the need for a separate modeling exercise (a reference model) alongside the energy use intensity compliance path (Proposed Change 1868: Energy Use Intensity Compliance Path).



Proposed change 1991: Scope and application of proposed part 13

This proposed change states the scope and application of proposed Part 13 of the NECB for the alteration of existing buildings. As a new component of the model codes, this change introduces various subsections of the proposed Part 13 that outline the scope, application, and extent of alterations under Part 13, as well as defined words related to alterations.

Support with comment:

Development of the AEB has proven to be a sizable task and Efficiency Canada would like to note our appreciation for the significant efforts of all those involved.

Proposed change 1857: Alteration of the building envelope

This proposed change adds requirements defining how Part 3 of the NECB applies to the building envelope subjected to alteration. It acknowledges the cost impact of alterations to the existing building envelope in existing buildings and provides exemptions and relaxations to maintain cost-effectiveness. Proposed exemptions include those for work related to storm windows and glazing panels over existing glazing, the replacement of glazing where there is no decline in performance, and the alteration of roof, wall, or floor components where existing insulation is sufficient or where the addition of insulation would be impractical. Relaxations include those related to potential increases in air leakage rates of the air barrier system or assemblies, and vertical fenestration required to maintain functionality.

Support.

Proposed change 1858: Alteration of lighting systems

This proposed change adds requirements for lighting systems altered under Part 4 of the NECB. This proposed change is intended to ensure that opportunities to increase the efficiency of lighting systems are maximized by requiring LED lighting technology and lighting controls that monitor occupancy. To do so, this proposed change seeks to bring lighting systems in existing buildings close to current market practice, defined as the previous code's requirements. It also aligns the

threshold for interior/exterior lighting with those contained in ANSI/ASHRAE/IES 90.1-2022, “Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings (I-P Edition),” and Vancouver Building By-law 2019. Given the costs of upgrading lighting systems in existing buildings, requirements have been adapted to the unique considerations of retrofits within existing buildings to maintain cost-effectiveness.

Support.

Proposed change 1860: Alteration of service water systems

This proposed change adds requirements defining how Part 6 of the NECB applies to service water systems subjected to alteration. Similar to proposed changes in 1857 and 1858, this proposed change seeks to upgrade service water systems to current market practice. A threshold of 60 per cent of the service water heating load or additional or replacement piping is defined as the point at which further intervention is required, where practical.

Support.

Proposed change 1862: Alteration of the building envelope

This proposed change adds administrative requirements in Division C of the building code related to the alteration of the building envelope, namely the requirement for documentation and other information required to demonstrate compliance with the code. It is intended to facilitate compliance enforcement by the Authority Having Jurisdiction.

Support.

Proposed change 1863: Alteration of lighting systems

To prepare for the alteration of existing buildings, this proposed change updates Division C of the NECB by adding administrative requirements related to the alteration of lighting systems. Similar to Proposed Change 1862, it adds

administrative requirements in Division C of the building code related to the alteration of lighting systems.

Support.

Proposed change 1861: Alteration of electrical power systems and motors

This proposed change adds requirements that define the application of NECB Part 7 to electrical power systems and motors subjected to alteration. Given the infrequent alteration of electrical power systems and motors, this proposed change seeks to upgrade these systems to the minimum requirements of the code. It provides opportunities for the re-use of existing components (repair and maintenance, relocation of existing equipment) where the pre-alteration performance is not diminished.

Support.

Proposed change 1864: Alteration of HVAC systems

To prepare for the alteration of existing buildings, this proposed change updates Division C of the NECB by adding administrative requirements related to the alteration of HVAC systems. Similar to Proposed Changes 1862 and 1863, it adds administrative requirements in Division C of the building code, but related to the alteration of HVAC systems.

Support.



Proposed change 1865: Alteration of service water systems

To prepare for the alteration of existing buildings, this proposed change updates Division C of the NECB by adding administrative requirements related to the alteration of service water systems. Similar to Proposed Changes 1862, 1863, and 1864, it adds administrative requirements in Division C of the building code, but related to the alteration of service water systems.

Support.

Proposed changes to the NBC

Established in 1941, the NBC first introduced energy compliance requirements, known as Section 9.36, in 2012. Section 9.36 is specifically intended for Part 9 buildings. These are considered small buildings with a floor area under 300 m² and residential buildings with a footprint less than 600 m² and whose height is three storeys or fewer storeys. The NBC includes requirements for regulated energy uses including space heating, space cooling, ventilation, lighting, service water heating, motors, and other end-uses.

Proposed change 2004: Operational GHG emissions: Tiered performance requirements in the NBC

Similar to changes introduced to the NECB, this proposed change introduces performance requirements in Section 9.36. of the NBC to reduce operational GHG emissions. Please see Proposed Change 1989 for comments related to the NECB's tiered performance requirements.

Support.



Proposed change 2026: Operational GHG emissions: Tiered prescriptive requirements in the NBC

This proposed change introduces prescriptive requirements in the NBC to reduce operational GHG emissions. Similar to requirements proposed in the NECB, GHG performance levels are set out ranging from A to F, albeit with space heating and service water heating equipment prescribed for each tier and corresponding to a minimum energy efficiency tier.

Compliance can be demonstrated in two ways: by achieving a defined amount of tiered points-based prescriptive trade-off requirements set out in Subsection 9.36.8, or by meeting the tiered prescriptive requirements set out in Subsection 9.36.9.

Support.

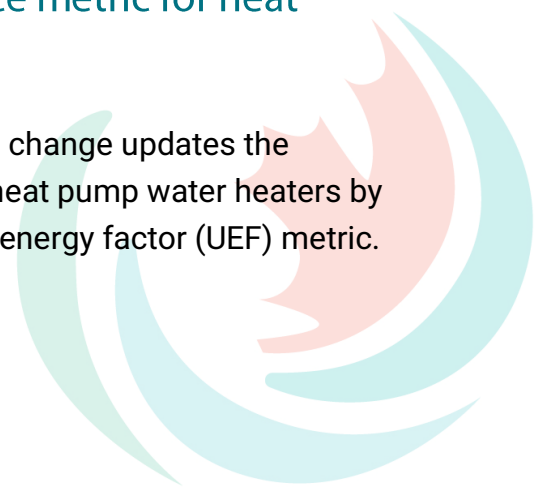
Proposed change 1951: Continuity of insulation

This proposed change updates requirements for insulation at the rough opening gap around windows and doors, by excluding the sill from minimum insulation requirements required at the joints and junctions between the walls and building envelope components. The reason for this relaxation is to ensure that water drainage issues do not occur within the rough opening, particularly at the sills of windows and doors. Note A-9.36.2.5.(11) is introduced to direct code users to facilitate positive drainage at the sill.

Support.

Proposed change 2011: Updated performance metric for heat pump water heaters

To better align with referenced standards, this proposed change updates the metric used to state the performance requirements for heat pump water heaters by replacing the energy factor (EF) metric with the uniform energy factor (UEF) metric.



This proposed change will help code users avoid non-compliance with code requirements, and help regulators evaluate equipment performance.

Support.

Proposed change 1819: Removing ACH50 and harmonizing airtightness requirements in Section 9.36

This proposed change replaces ACH50 with NLR50 as the regulating airtightness metric in Section 9.36. and revises the airtightness requirements in the compliance paths and for proposed house modeling. This change is proposed because ACH50 does not account for variations in surface-area-to-volume ratios or the geometry of the buildings. As such, it may create misalignment between different sections of the code that attempt to address improvements of the building envelope that are not tied to building geometry or size. This proposed change also clarifies and streamlines the use of airtightness metrics, by removing one of three metrics, thereby reducing complexity. NLR50 is proposed to be used as the regulating metric to align the airtightness metrics with building envelope requirements. This proposed change also addresses inconsistencies between the performance path and tiered performance path, namely different levels of airtightness required in each.

Support.

Proposed change 1890: Energy conservation points for energy performance Tiers 3, 4 and 5

This proposed change assigns minimum sums of energy conservation points for Energy Performance Tiers 3, 4 and 5 in the prescriptive trade-off compliance path. It is meant to align the prescriptive trade-off path that contained only Tiers 1 and 2 with the five energy performance tiers introduced in the 2020 model codes. This proposed change would provide code users an opportunity to demonstrate compliance via the prescriptive trade-off path with Tiers 3, 4, and 5. In addition to ensuring that a minimum number of energy conservation points come from

building envelope measures, the proposed changes assign minimum airtightness levels.

Support with comment:

We support the addition of energy conservation points for Tiers 3, 4, and 5 as a way for code users to demonstrate compliance with the prescriptive trade-off path, and applaud the addition of mandatory airtightness testing as a way to demonstrate compliance in the prescriptive path's Tiers 4 and 5. This addition will benefit from the increased number of energy advisors available as a result of the success of the Greener Homes Program. Reducing heating and cooling loads is key to the design and construction of net-zero energy-ready buildings. The building envelope must be as airtight as possible while taking in fresh air and expelling stale air through controlled ventilation. The only way to quantitatively ensure this is an airtightness test. We recommend consideration of higher mandatory airtightness levels from what is currently proposed in Section 9.36.8.2.6, proposed as levels AL3 and AL4B (1.5 ACH50) to levels AL4A and AL4B (1.0 ACH50).

Proposed change 1838: Energy conservation points for HRVs/ERVs and the building envelope

This proposed change adjusts the points for energy conservation measures for the building envelope and for heat-recovery ventilators (HRVs) and for energy-recovery ventilators (ERVs) to align modeling with the performance path. In the 2020 model codes, modeling for the reference house required using the code's minimum performance requirements for HRVs, whereas the performance path did not. This proposed change updates the energy conservation points provided for ventilation systems by updating the modeling requirements for the reference house to no longer require HRVs or ERVs. In doing so, it aligns the requirements to demonstrate compliance with the performance path with those required to demonstrate compliance with the prescriptive trade-off path. This proposed change also required an update to the points assigned to energy conservation measures for the building envelope.

Support.

Proposed change 1923: Energy conservation points for the building envelope

This proposed change assigns energy conservation points for new building envelope measures, thereby providing code users with additional options to demonstrate compliance with the upper tiers in the prescriptive trade-off path, particularly for conservation measures that exceed the minimum performance requirements of Tier 1. For example, ceilings below attics, cathedral ceilings or flat roofs, exposed floors or slabs-on-grade.

Support.

Proposed change 2000: Energy conservation points for oil-fired furnaces

This proposed change assigns energy conservation points to oil-fired furnaces in the prescriptive trade-off path, where that equipment exceeds the minimum performance required in Tier 1 of the energy performance path. This is intended to allow code users who install high-efficiency oil-fired furnaces to achieve a higher energy performance tier.

Do not support, with comment:

Proposed change 2026 provides prescriptive measures by which code users can demonstrate compliance with the prescriptive requirements for operational GHG emissions. Given that no points within this prescriptive emissions path are provided for oil-fired heating equipment, it makes little sense to provide energy conservation points for such equipment, as proposed change 2000 does. We urge reconsideration of proposed change 2000 to eliminate points for oil-fired furnaces, regardless of their efficiency. As noted in this proposed change's impact statement, "Upgrading to a higher efficiency oil-fired furnace does not result in a substantial increase in energy savings relative to the increase in the incremental cost of the equipment." Moreover, code users who install oil-fired equipment will be locked into a higher emissions pathway for the life of that equipment, and operational affordability will be compromised in the face of rising fuel oil costs.

Proposed change 2001: Energy conservation points for air-source heat pumps

This proposed change assigns energy conservation points to air-source heat pumps in the prescriptive trade-off path, where that equipment exceeds the minimum performance required in Tier 1 of the energy performance path. This is intended to allow code users who install air-source heat pump furnaces to achieve a higher energy performance tier.

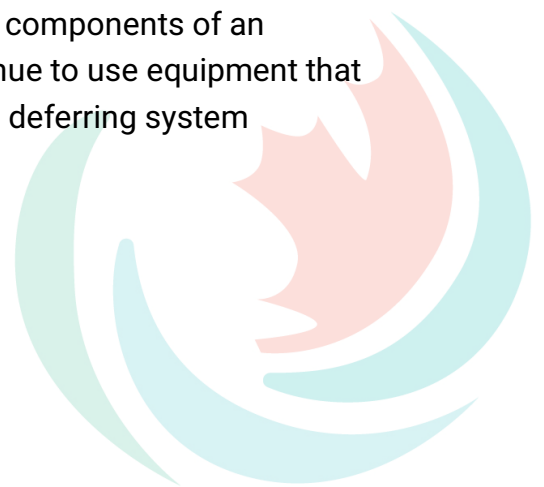
Support with comment:

We recommend providing an increased share of energy conservation points for air-source heat pumps, beyond what is proposed within Section 9.36.8.9. Space and water heating account for the majority of building emissions. Electrifying heating systems in newly constructed buildings will be essential in meeting Canada's 2050 net-zero emissions targets. Heat pumps are an integral part of this solution, due to how efficiently they use electricity to heat and cool buildings while replacing fossil fuels. Additionally, heat pumps offer building owners and occupants many benefits including increased comfort, often lower utility costs and access to efficient cooling.

Proposed change 1825: Alteration of service water heating systems

Requirements for service water heating systems subjected to alteration are introduced in this proposed change. It is intended to leverage opportunities to improve the energy performance of a service water heating system during the alteration of an existing building, while also avoiding undue burden on the building owner, a core principle of the AEB. It does so by setting out provisions for the maintenance, repair or replacement with similar parts or components of an existing system. This will allow building owners to continue to use equipment that remains functional, thereby extending its service life and deferring system replacement costs.

Support.



Proposed change 1826: Replacement of fenestration, doors and skylights

This proposed change applies code requirements for the energy performance of fenestration doors and skylights to the alteration of existing buildings. It recognizes the need to provide a consistent interpretation of code requirements, and the balance of compliance and compliance costs by providing some relaxations for the maintenance, repair, or replacement of fenestration doors and skylights in existing buildings.

Support.

Proposed change 1827: Airtightness of altered air barrier systems

This proposed change introduces requirements to ensure the continuity of the air barrier system in existing buildings subjected to alteration. It recognizes the balance between any failure to maintain the air barrier system and the limitations of meeting all requirements to do so in Section 9.36. This proposed change also seeks to clarify code requirements for existing buildings to reduce the risk of misinterpretation leading to no-compliance.

Support.



Proposed change 1828: Alteration of HVAC systems

This proposed change applies code requirements for the energy performance of fenestration doors and skylights to the alteration of existing buildings. It recognizes the need to provide a consistent interpretation of code requirements, and the balance of compliance and compliance costs by providing some relaxations for the maintenance, repair, or replacement of fenestration doors and skylights in existing buildings.

Support.

Proposed change 1829: Thermal characteristics of above-ground opaque building assemblies

This proposed change applies code requirements for the energy performance of above-ground opaque building assemblies to the alteration of existing buildings. It recognizes the need to provide a consistent interpretation of code requirements, and the balance of compliance and compliance costs by providing some relaxations for the maintenance, repair, or replacement of above-ground opaque building assemblies in existing buildings. This proposed change also seeks to clarify code requirements for existing buildings to reduce the risk of misinterpretation leading to non-compliance.

Support.

Proposed change 1954: Using NLR50 in administrative documents

NLR50 is proposed to be the preferred metric for the technical requirements found in PCF 1819. As such, this proposed change modifies the airtightness metric required on drawings and specifications for the proposed house to align the administrative and technical requirements.

Support.

