

# Driving Climate Action

## How Federal Leadership Can Shape Mandatory Building Performance Standards in Canada

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Efficiency  
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Carleton  
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## About the author

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## About Efficiency Canada

Efficiency Canada is the national voice for an energy-efficient economy. Our mission is to create a sustainable environment and better life for all Canadians by making our country a global leader in energy efficiency policy, technology, and jobs. Efficiency Canada is housed at Carleton University's Sustainable Energy Research Centre, which is located on the traditional unceded territories of the Algonquin nation.

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# Introduction

According to the 2022 Emissions Gap report, most countries, including Canada, are not on track to meet their climate commitments (UNEP, 2022).<sup>1</sup> This stark reality serves as a solemn reminder of the inadequacy of “incremental change” in the face of the escalating impact of climate change. “Broad economy-wide transformations” are urgently needed to decarbonize the economy within a predictable timeframe, aligning ambition with decisive action.

After decades of investments in voluntary measures and programs, Canada has made limited progress toward decarbonizing its building sector. Since 2005, total building emissions have increased by 2.3 Mt or 2.7 per cent (ECCC, 2023; NRCan, 2019).<sup>2</sup> Notably, retrofit rates have remained consistently low, below 1.5 per cent for both commercial and residential sectors (Haley & Torrie, 2021).

Nevertheless, these circumstances are not exclusive to Canada; countries worldwide are facing the challenge of systematically decarbonizing their buildings.<sup>3</sup> As a result, there is growing consensus that mandatory policies are necessary to ramp up retrofit activity and effectively meet our climate commitments (BPIE, 2023; Nadel & Hinge, 2023).

At the forefront of this transition are Mandatory Building Performance Standards (MBPS), also referred to as Building Performance Standards (BPS), Minimum Energy Performance Standards (MEPS) or Minimum Energy Efficiency Standards (MEES) (Lockhart & Simon, 2023).<sup>4</sup> These standards are emerging as a leading

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<sup>1</sup> The 2023 Progress Report projects that Canada is on track to surpass the original 2030 target of 30 per cent below 2005 levels but will need to implement additional measures to achieve the target of 40 to 45 per cent below 2005 levels by 2030.

<sup>2</sup> Despite an increase in total emissions, the building sector emissions intensity in tonnes of CO<sub>2e</sub> per square metre dropped from 0.037 in 2005 to 0.030 in 2020. Additionally, if building emissions accounted for offsite generation of electricity, it would likely show a greater decline in overall emissions due to grid improvements.

<sup>3</sup> In the United States, annual retrofit rates for the commercial sector is estimated to be 0.9–2.6 per cent each year (Nadel & Hinge, 2023). Across Europe, the weighted annual energy renovation rate is ~1 per cent (European Commission, 2020).

<sup>4</sup> In the United States, Building Performance Standards are common, while Minimum Energy Performance Standards (MEPS) or Minimum Energy Efficiency Standards (MEES) are more prevalent in Europe, Australia, and the United Kingdom.

outcome-based policy with the potential to reduce the environmental impact of the worst-performing buildings by requiring them to meet minimum performance levels for energy and emissions.<sup>5</sup>

Efficiency Canada and the Institute for Market Transformation (IMT) collaborated to develop the following list of ways that MBPS policies differ from more traditional approaches to regulating building energy use such as building codes and appliance standards.

1. MBPS apply to **all existing buildings** within a geography that meet certain size and use criteria, irrespective of renovation activities, as opposed to building energy codes that apply to new construction and major renovations.
2. MBPS are triggered by **date-certain** deadlines for all covered buildings, rather than being triggered by the application for a permit or the replacement of a piece of equipment.
3. MBPS are **outcome-based** policies that evaluate real-world, measured energy and/or emissions performance—in contrast to building codes, which often rely on modelled performance.
4. MBPS apply to the **whole building** and are measured at the whole building level, including all tenant spaces, not just to a single appliance or to the parts of a building being renovated.
5. MBPS impose **negative consequences for non-compliance** on buildings that fail to meet the criteria, such as an alternative compliance payment or fines, contrasting with regulations that primarily offer incentives.
6. Most MBPS policies use a policy framework that sets out a **long-term trajectory** for performance improvements, rather than focusing simply on the next few years, which allows building owners to make informed long-term capital investment decisions.

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<sup>5</sup> Some jurisdictions also include water and other technical measures (e.g., efficiency standards for heating, cooling and appliances) in their MBPS programs.

Since 2018, the United States has witnessed the adoption of 14 MBPS programs at all levels of government (IMT, n.d.).<sup>6</sup> While program details vary, their common focus is reducing energy and emissions from large commercial and multifamily buildings. Although these programs are in their infancy, an evaluation of eight MBPS initiatives estimates a cumulative reduction of 337.63 MMT of CO<sub>2</sub>e emissions over their respective lifetimes, or 563.52 MMT by 2050, assuming program targets remain unchanged (ClearlyEnergy, 2023).<sup>7</sup> These findings highlight the significance of MBPS as a pivotal policy tool for jurisdictions, particularly municipalities, in their endeavours to decarbonize local economies. Across jurisdictions, the impact varies, ranging from eight per cent to 63 per cent in emission reduction goals fulfilment. For instance, the Cambridge MBPS program is projected to fulfil 63.3 per cent of its climate goals, while Boston's MBPS program is expected to cover 30.2 per cent.

The growth in popularity of MBPS policies in the United States can be attributed in part to a close partnership between state and local governments and federal investment and technical assistance. Federal assistance has been essential to build the necessary capacity, expertise and infrastructure to advance climate action and promote environmental justice (The White House, 2022). Without federal support, MBPS might have remained limited to a few large and well-funded coastal cities. However, through initiatives like the “National Building Performance Standards Coalition,” led by the White House and the Institute for Market Transformation (IMT), over 40 jurisdictions in the U.S. have committed to adopting MBPS by 2026 (IMT, 2021).

In Canada, four jurisdictions—Vancouver, Metro Vancouver, Toronto and Quebec—have outlined their intention to adopt MBPS policies to address building emissions

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<sup>6</sup> As of January 2024, MBPS programs passed in the U.S. include Boston, MA; Cambridge, MA; Chula Vista, CA; Denver, CO; Montgomery County, MD; New York, NY; Seattle, WA; St. Louis, MO; Washington, DC; state of Colorado; state of Maryland; state of Oregon; state of Washington; and Federal Buildings Program.

<sup>7</sup> These impacts assume grid decarbonization and building energy efficiency policies are enacted concurrently.



and energy usage since 2019.<sup>8,9</sup> Furthermore, mandatory reporting and disclosure programs, a vital precursor to MBPS, have been in place in Ontario, Vancouver and Montreal since 2017 (Simon, 2023a).<sup>10</sup> Concurrently, there has been an increased uptake in voluntary reporting and disclosure programs in twenty-two municipalities in British Columbia, as well as cities like Calgary, Edmonton, Winnipeg and Ottawa and the Province of Nova Scotia (Simon, 2023a).

Canada's progress is hampered by persistent market barriers highlighted in the Green Building Strategy: What We Heard report (NRCan, 2023a):

- limited federal and provincial/territorial governments leadership to trigger the scale of transformation,
- diversity of legal authorities among local governments, adding complexity to regulating the building sector and,
- poor alignment and support from utilities and the financial sector.

In this report, we consider the role of the federal government in advancing building decarbonization at scale, using Mandatory Building Performance Standards, through *design, investment, implementation* and *regulation*. Notably, our approach organises these mechanisms based on ease of implementation rather than their potential impact. For further details on the fundamental principles of MBPS, please review the following report: "Regulating energy and emissions in existing buildings: A primer for Canadian municipalities" (Lockhart & Simon, 2023).

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<sup>8</sup> On January 26, 2024, the Metro Vancouver Regional District Board of Directors made a significant decision by voting against proceeding with the second phase of engagement with industry stakeholders aimed at developing regulations to address emissions from large buildings (Metro Vancouver, 2024). This decision has the potential to significantly impact the trajectory of the program, although the exact ramifications remain unclear at this time.

<sup>9</sup> Buildings are a significant source of emissions in Vancouver, Metro Vancouver and Toronto, accounting for 57, 25 and 58 per cent of total community-wide emissions (Metro Vancouver, 2022; Toronto, n.d.; Vancouver, 2022).

<sup>10</sup> In December 2023, the City of Toronto passed a bylaw that requires owners of commercial, multi-residential, institutional, and industrial buildings  $\geq 929$  square metres to report energy and water data to the City annually. The data will be used to calculate building emissions by the City (Simon, 2023b).

## Enabling by design

For decades, the federal government has influenced building policies by centralising model building code development, establishing national standards, providing toolkits, guidelines and an array of resources, including tools and software.

Leveraging their extensive infrastructure and experience in building construction, operations, and technologies, Natural Resources Canada (NRCan) and the National Research Council (NRC) are strategically positioned to contribute significantly to the development of technical resources for MBPS. These resources are invaluable for jurisdictions during the design phase, establishing a standardised framework and alleviating administrative burdens.

### The challenge and current federal design efforts

The design phase of an MBPS program is multifaceted and time-intensive, usually spanning several years due to the legislative process, policy development, and negotiations with stakeholders, as well as the choice in many jurisdictions to collect baseline energy performance data before developing and implementing an MBPS.<sup>11,12</sup> Technical challenges, economic considerations, and industry lead time further contribute to the elongation of the timeline.

Recognizing these challenges, the federal government can play a pivotal role in expediting the design process by offering tailored technical guidance and practical assistance. A decade ago, NRCan took an important step by partnering with the U.S. Environmental Protection Agency (EPA) to bring the ENERGY STAR® Portfolio Manager benchmarking tool and ENERGY STAR Certification to Canada; ENERGY

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<sup>11</sup> In existing programs, the design phase encompasses the establishment of bylaws/ordinances to the start of the first compliance cycle. Compliance cycles typically range from four to six years (EPA, 2021; Nadel & Hinge, 2023).

<sup>12</sup> In Vancouver, the City staff began engaging stakeholders on building emissions regulations in 2019 with the first emissions limits coming into effect in 2026 (Vancouver, n.d.). In Toronto, the City adopted its existing building strategy in 2021 and the first target is likely to come into effect in 2026 or thereafter (Toronto, 2023a).

STAR Portfolio Manager has been the technical foundation of most benchmarking and MBPS programs in North America.

Recently, NRCan released a best practice guide for utilities on providing access to aggregated whole-building performance data (NRCan, 2023b). The guide presents eight essential recommendations, focusing on implementing effective data aggregation processes, ensuring the provision of accurate and timely data, and leveraging Portfolio Manager's API for data delivery. These recommendations are vital for streamlining processes and maintaining data accuracy, particularly to support multi-tenant building owners to comply with MBPS requirements.

Currently, NRCan is developing a Building Performance Standards (BPS) Toolkit, set for release in early 2024, providing insights into key design considerations and best practices (T. Kennedy, personal communication, December 14, 2023). This resource is anticipated to be a valuable guide for jurisdictions.<sup>13</sup> However, additional measures mirroring successful approaches in other jurisdictions are imperative to realise the benefits of MBPS.

## Development of additional technical supports and tools

In the United States, federal agencies, including the Department of Energy (DOE), the Environmental Protection Agency (EPA), and prominent national laboratories such as Lawrence Berkeley National Laboratory (LBNL), National Renewable Energy Laboratory (NREL), and Pacific Northwest National Laboratory (PNNL), have a long history of collaboration, and in 2022, launched the BPS Technical Assistance Network (EERE, n.d.). The network extends support to states, cities, and building owners by providing in-depth analysis, policy and program guidance, and strategic recommendations.

Moreover, federal agencies and national labs have developed a suite of low-cost tools aimed at enhancing data collection, reporting, and management, which have

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<sup>13</sup> NRCan is expected to develop a similar toolkit to the EPA's Benchmarking and Building Performance Standards Policy Toolkit (EPA, 2021). This toolkit has four sections, which include an overview of state and local benchmarking programs (Section 1) and MBPS programs (Section 2). It also describes the role of state and local decision-makers in establishing such programs (Section 3) and explores the crucial role of utilities in providing access to whole-building energy consumption data (Section 4).

mostly been available for over a decade (Table 1). These tools are especially invaluable to jurisdictions dealing with resource constraints.

Tools	Description
Avoided Emissions and Generation Tool (AVERT)	Calculates and quantifies the avoided emissions resulting from the implementation of energy efficiency programs.
Building Energy Audit Template	Provides a template for managing building stock data, aiding in the assessment of data quality and completeness during energy audits.
Building Performance Database (BPD)	A publicly available repository of measured energy performance data for over 1 million U.S. buildings.
CO-Benefits Risk Assessment Health Impacts Screening and Mapping Tool (COBRA)	Assesses and assigns an economic value to the health co-benefits associated with various energy and environmental interventions.
Energy Savings and Impacts Scenario Tool (ESIST)	Compares energy savings and cost implications across various scenarios and interventions.
ENERGY STAR Portfolio Manager	Free industry-standard energy and emissions benchmarking tool that enables measuring building energy performance against peers and historical trends. Widely used across North American jurisdictions for tracking and reporting energy data for benchmarking and MBPS compliance, Portfolio Manager was initially developed by the EPA in the U.S. and subsequently adapted for use in Canada by NRCan.
Standard Energy Efficiency Data Platform (SEED)	An open-source database product that helps automate the processes involved in collecting and organising building data from diverse sources, streamlining the data collation process and the software core for many private tools used by jurisdictions to run their MBPS programs.

Unique Building Identifier (UBID)

A tool to generate a unique id number for a building based on its spatial characteristics, resolving issues around street address matching.

Table 1. Select MBPS-relevant data collection, reporting and management tools developed by EPA and DOE (ASHRAE, 2021)

Similar to their U.S. counterparts, NRCan and NRC are well positioned to develop tailored technical resources for the MBPS design stage. This could include step-by-step guides that provide practical insights, complementing NRCan’s BPS Toolkit. Similar to the BPS Technical Assistance Network, these organisations could explore additional ways of supporting jurisdictions, particularly considering their diverse needs and resource constraints (e.g., financial and workforce).

For jurisdictions without benchmarking programs, federal organisations could establish emissions or energy performance targets aligned with the overarching net-zero objectives.<sup>14</sup> This information, derived from national performance data, building energy simulations, and pilot studies categorised by climate zones, could reduce the need for developing a benchmarking program first, expediting the adoption process of MBPS. Nevertheless, jurisdictions will need to offer alternative compliance pathways for outlier buildings and eventually revise these standards once verified local data is gathered.<sup>15</sup>

Additionally, federal organisations could develop streamlined systems or databases to support the generation of covered building lists and unique building identifier codes, addressing challenges faced by many jurisdictions in this labour-intensive task. Any intervention at this level would significantly reduce the time and resources invested in creating these lists, fostering improved communication with building owners.

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<sup>14</sup> The U.S. Department of Energy is in the process of developing a national definition of a zero-emissions building, and published a draft for public comment in January 2024. This will serve as a crucial market signal, providing a consistent target for both jurisdictions and building owners (EERE, 2024).

<sup>15</sup> In the absence of sufficient reliable benchmarking data, the City of Vancouver used U.S. datasets as key inputs to help design its MBPS program (Duer-Balkind, M., et. al. 2022).

These examples are not exhaustive, but they highlight initiatives that can significantly expedite the design phase, contributing to a more efficient and effective implementation of MBPS.

## Enabling by direct investment

Retrofitting a substantial percentage of a region's building stock over a multi-decadal span is an ambitious yet challenging task. This undertaking demands a substantial and enduring financial commitment, comprehensive technical training programs, strategic workforce development initiatives and robust public education and outreach efforts (Webb & McConnell, 2023). Adequate financial support is crucial not only for mitigating upfront cost barriers and encouraging compliance among building owners but also for establishing and maintaining MBPS programs long-term.<sup>16</sup>

## Supporting jurisdictions taking action

In terms of climate action, there is a notable disparity between the actions taken by municipalities and those adopted by most provinces. Quebec and British Columbia stand out for their proactive measures, with Quebec proposing a provincial MBPS and British Columbia granting municipalities the autonomy to adopt stricter building standards (Vérin & Poirier, 2024). Meanwhile, other provinces have taken a more passive approach. In the absence of clear direction, municipalities have assumed a leading role, leveraging their diverse authority to implement voluntary and, occasionally, mandatory building policies (Vérin & Poirier, 2024). Unfortunately, there are instances where preemptive actions by provinces, or the fear thereof, have actively hindered local governments from enacting any meaningful measures.<sup>17</sup>

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<sup>16</sup> The City of Toronto is currently working on creating an MBPS program and foresees an initial cost of \$1.161 million in the first year (2024) to implement mandatory emissions performance reporting. Subsequently, the expected annual operating costs until 2034 are projected to be \$0.261 million per year (Toronto, 2023d).

<sup>17</sup> Select examples of preemption: Ontario introduced More Homes Built Faster Act (Bill 23) in 2022 in an attempt to curtail green development standards (TAF, 2023). In 2023, Alberta's government proposed changes to the city charters, removing building code bylaw authority, preventing cities from making bylaws regarding energy consumption and heat retention (Alberta, 2023).

Nevertheless, climate action requires public funding, and leading actors such as municipalities face significant financial and human resource constraints due to restricted revenue streams (CUPE, 2014). Relying on a narrow spectrum of funding mechanisms, such as property taxes, user fees, development charges, licences and permits, creates difficulties in developing and maintaining long-term climate initiatives such as a MBPS program. As a result, municipalities are increasingly seeking support and resources from federal, provincial and territorial governments to establish predictable and innovative sources of municipal revenue, including intergovernmental transfers and new direct taxation powers (Toronto, 2023c).

In the absence of a new fiscal framework, it becomes imperative for the federal government to play a greater role in supporting subnational climate initiatives. In this context, the federal government can strategically invest through earmarked funding and leverage tax credits to advance MBPS adoption and overall compliance.

## Earmarked funding and federal spending power

Federal spending power has historically played a pivotal role in supporting various aspects of the welfare state, including health care, workforce development, housing and early learning and child care (Graefe & Fiorillo, 2023). Given concerns over federal intrusion and constitutional overreach, this approach has proven successful in addressing policies and objectives that typically fall within provincial purview.

As it pertains to climate objectives, federal funds are often used to advance specific environmental goals, for example, those outlined in the Pan-Canadian Framework on Clean Growth and Climate Change (PCF) and the 2030 Emissions Reduction Plan. To date, the federal government has established targeted financial support mechanisms, such as the \$2 billion Low Carbon Economy Fund, \$2.6 billion Canada's Greener Homes Initiative, \$1.6 billion Green Municipal Fund, and \$100 million Codes Acceleration Fund. These initiatives effectively engage a range of stakeholders by deploying a mix of grants, loans, and services, contingent upon specific criteria.

To bolster ongoing subnational MBPS initiatives, the federal government can mirror strategic investment efforts undertaken by the federal government of the United States, as outlined in Table 2.

Funding Opportunities	Description
Climate Pollution Reduction Grants (CPRG) program	\$250 million to states, territories and municipalities to develop climate pollution reduction strategies and \$4.6 billion for the implementation of these GHG reduction programs, policies, and projects. Funding supports the development and implementation of benchmarking and MBPS programs.
Resilient and Efficient Codes Initiative	\$90 million to support projects on building energy codes and MBPS; seven projects working on MBPS policies across 20 cities and seven states have been awarded \$2.5 to \$5 million to support ongoing community-led work.
Greenhouse Gas Reduction Fund	<p>\$14 billion to two or three national nonprofits to partner with private capital providers to deliver financing at scale for clean technology projects (i.e., the National Clean Investment Fund).</p> <p>\$6 billion to fund community investment hubs to finance pollution-reducing projects in low-income and disadvantaged communities (i.e., Clean Communities Investment Accelerator).</p>
Thriving Community Technical Assistance Centers	\$177 million to establish a network of technical assistance centres across the nation providing direct technical assistance, training, and capacity-building support to communities and organisations to advance environmental and energy justice priorities.
Environmental and Climate Justice Community Change Grants Program	\$2 billion to support environmental and climate justice activities in disadvantaged communities through projects that reduce pollution, increase community climate resilience, and build community capacity to address environmental and climate justice challenges.
Inflation Reduction Act Technical	\$1 billion in funding for projects at the state and city levels to support the adoption and implementation of the latest building codes and “innovative” approaches like MBPS.

Table 2. Examples of U.S. federal funding opportunities that support MBPS initiatives

Canada’s federal government can strengthen its support for MBPS initiatives through dedicated streams within established funds such as the Codes Acceleration Fund and the Green Municipal Fund. Leveraging the Code



Acceleration Fund offers advantages as its scope encompasses provinces and municipalities with authority, unlike the Green Municipal Fund, which exclusively supports local governments. These streams could support MBPS policy development and implementation along with other related precursor activities such as mandatory benchmarking. Knowledge-sharing provisions should be included to ensure jurisdictions adopting these measures later can benefit from the experiences of early adopters (Vérin et al., 2021). Moreover, these funds should include built-in transparency measures such as disclosing fund balances and recipient details.

In addition, the Canada Infrastructure Bank (CIB) can enhance its support for both private and public sector building owners by establishing greater coordination with jurisdictions that are actively developing MBPS programs. This collaborative approach would aim to simplify the intricate process of identifying, aggregating, and funding large-scale building or portfolio-level retrofit activities.

Currently, the Building Retrofits Initiative offers building owners financing for decarbonization projects (CIB, n.d.).<sup>18</sup> The CIB extends low-interest loans to owners through various avenues, such as direct investment, participation agreements, and partnerships with privately-owned retrofit aggregators (e.g., SOFIAC, Johnson Controls Canada L.P. and Efficiency Capital Inc) and banks (e.g., BMO Canada). Additionally, the federal government supports the Deep Retrofit Accelerator Initiative (DRAI), allocating funds worth \$200 million, to organisations helping building owners create and implement deep retrofit projects. The DRAI also plays a pivotal role in securing funding and financing for these transformative initiatives.

To enhance the reach of the CIB and its aggregators, collaborating with the DRAI and jurisdictions actively engaged in MBPS will help cultivate a thriving market for retrofits. The introduction of concierge services is pivotal in stimulating market growth, offering both technical assistance and diverse financing options tailored to the unique needs of building owners. The CIB can also share building performance data derived from ongoing investment projects. This data will serve as a compelling resource for jurisdictions to illustrate the feasibility of retrofit activities.

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<sup>18</sup> CIB retrofit aggregators typically deal with building owners seeking investments valued less than \$25M whereas CIB usually are directly involved in projects >\$25 million.

## The use of tax credits

In the 2023 budget, draft legislation was unveiled, introducing five Clean Investment Tax Credits, covering Clean Technology, Carbon Capture, Utilisation and Storage, Clean Electricity, Clean Technology Manufacturing and Clean Hydrogen (Blakes, 2023; GC, 2020a; Jankovic et al., 2023). With a total investment surpassing \$60 billion over the next decade, these credits are designed to propel Canada's green economy and reduce GHG emissions.

In the context of the building sector, the Clean Technology and Clean Electricity Credits hold particular relevance. The Clean Technology incentive is a refundable tax credit applicable to the capital cost of “clean technology property” acquired by taxable Canadian corporations, including partnership members.<sup>19</sup> It covers eligible property, including solar heating equipment, heat pumps and heat recovery equipment, intended for use in Canada.<sup>20</sup>

The Clean Electricity Credit provides a 15 per cent refundable credit to taxable and non-taxable entities for eligible investments in non-emitting electricity generation systems, abated natural gas electricity-fired electricity generation and equipment for the transmission of electricity between provinces and territories (GC, 2023a).

To ensure alignment with broader government objectives, meeting specific labour requirements has been established as a prerequisite to qualify for the full credit (GC 2020a). This includes ensuring wages meet prevailing levels alongside the creation of apprenticeship training opportunities.

## How tax credits may be used to advance MBPS

There is an opportunity to fortify the impact of these proposed credits by integrating supplementary provisions. For instance, expanding the eligibility of the Clean Technology Credit to encompass not-for-profit and tax-exempt entities, such as strata developments and condominiums, could enhance inclusivity within the

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<sup>19</sup> Specified tax percentages: before March 28, 2023, nil; on or after March 28, 2023 and before January 1, 2034, 30 per cent; after December 31, 2033 and before January 1, 2035, 15 per cent; and after December 31, 2034, nil (GC, 2020a).

<sup>20</sup> Eligible equipment is specified in Class 43.1 in Schedule II to the Income Tax Regulations (CanmetENERGY, 2019).

clean technology initiatives.<sup>21</sup> These buildings often face financial and capacity constraints, necessitating increased support for emissions reduction projects.

Furthermore, considering the pivotal role of data access and aggregation services in compliance with MBPS programs,<sup>22</sup> receiving the Clean Electricity Credit could be contingent on utilities advancing these critical services. The lack of whole-building data access remains a significant barrier to compliance with any mandatory benchmarking programs. By tying the Clean Electricity Credit to utilities providing robust data access and aggregation services, the government can address this challenge, while encouraging the decarbonization of the electricity sector.

Nevertheless, tax credits primarily target incentivizing building owners to retrofit their buildings, thereby making compliance with MBPS programs more economically viable, rather than directly aiding program administration by jurisdictions. Moreover, larger corporations stand to gain the most substantial advantages due to their greater access to financial resources and mature organisational structures. The system's administration and usability are likely to carry significant administrative burdens for both stakeholders and administrators, raising concerns about potential complexities (PWC, 2023). Also, there are no requirements for building owners to share the benefits of incentives with tenants and occupants and to avoid rent increases or evictions.

Regardless, direct investment through earmarked funding and existing tax credits acknowledges the associated costs of these programs. Not only are there opportunities to support jurisdictions delivering these programs, but also building owners who are subject to changing market conditions.

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<sup>21</sup> City of Toronto advocates for the expansion of federal Clean Technology Investment Tax Credit (CTITC) to non-taxable entities (Toronto, 2023b).

<sup>22</sup> Data aggregate assembles and anonymizes tenant energy use, allowing tracking of energy use at the whole building level while protecting customer privacy (EPA, 2021). Without this data, it is challenging for multi-tenant buildings to comply with MBPS requirements. This service is offered by utility companies, at the request of Provinces (in most cases).

## Enabling by implementation

As one of the largest real property owners in Canada, the federal government can exemplify innovative decarbonization approaches by implementing Mandatory Building Performance Standards (GC, 2023b). By integrating MBPS into the Greening Government Strategy, the federal government can showcase the policy's effectiveness and mitigate any associated risks while also accelerating the decarbonization of its real property.

### Overview of Greening Government Strategy

The primary objective of the strategy is to achieve net-zero carbon and climate-resilient buildings by 2050 (Table 3). To realise this goal, the strategy outlines interim targets, including a 40 per cent reduction in scope 1 and scope 2 emissions<sup>23</sup> below 2005/2006 levels by 2025, with an additional 10 per cent reduction every five years thereafter (GC, 2023b).

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<sup>23</sup> Scope 1 emissions are produced by sources that are owned or controlled by the government (e.g., the combustion of fuels in vehicles or in buildings), whereas scope 2 emissions are those generated indirectly from the consumption of purchased energy (e.g., electricity, heating, and cooling) (GC, 2023c).

Building types	Summary of main approach
New construction	All new buildings must be net-zero carbon or net-zero-carbon-ready, contingent on the life-cycle cost-benefit analysis.
Existing buildings	A GHG reduction life-cycle cost analysis, with a \$300 per tonne shadow carbon price, is employed to consider various options for major retrofits.
Leased buildings	By 2030, 75 per cent of domestic office leases will be in net-zero carbon buildings. Starting in 2023, landlords of domestic office leases greater than 500 square meters must report building energy, emissions, water usage, and waste using ENERGY STAR Portfolio Manager. Public disclosure of building performance in major urban centres will commence in 2023, extending to the majority of office space by 2025.

Table 3. Targets and key decision-making approaches for specific building types within the Greening Government Strategy

To enhance real property portfolio management, departments will also need to:

- Use 100 per cent clean electricity by 2025 at the latest, either through production or purchasing renewable electricity.
- Implement a regular schedule of recommissioning large energy-intensive buildings and/or deploy smart building technology.
- Commence metering of energy use by 2022 for energy-intensive government-owned buildings greater than 1,000 square metres.
- Convert or replace existing HVAC systems using high global warming potential and ozone-depleting refrigerants, and hydrofluorocarbons by 2030.

## Current status and shortcomings

Under this strategy, the federal government has achieved significant progress, realising an overall emissions reduction of 39.8 per cent from facilities and fleet

operations below the 2005/2006 levels.<sup>24</sup> Emissions from facilities have seen a notable decline by 41.1 per cent, amounting to 676 kt of carbon dioxide equivalent (CO<sub>2e</sub>) from 2005-2006 to present. Figure 1 demonstrates that this reduction is primarily attributed to factors, such as the improvement in the greenhouse gas (GHG) intensity of purchased electricity and contracting mechanisms, rather than individual building improvements.

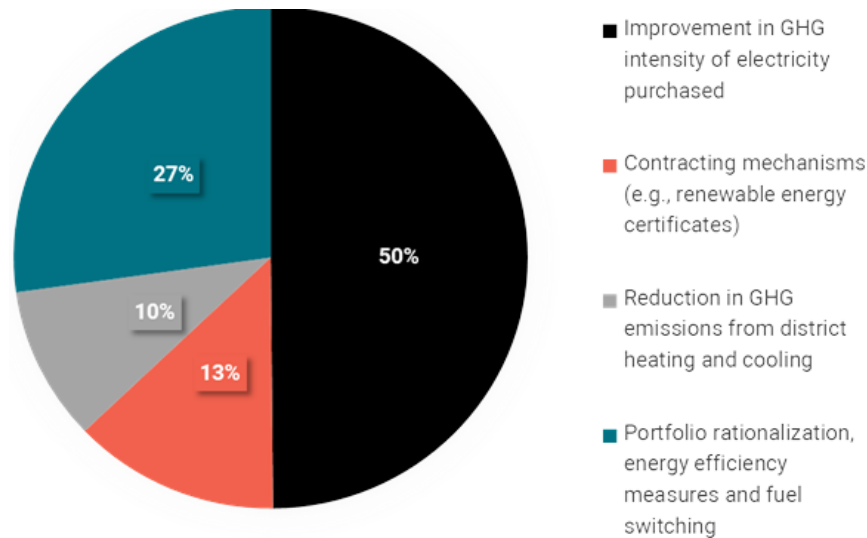


Figure 1. Main reasons for 41.1 per cent reduction in GHG emissions below 2005-2006 levels (GC, 2023c)

Nevertheless, an independent audit of the National Defence and Transport Canada, the main contributors to emissions in federal buildings and fleets, has revealed current efforts "were not as complete" as specified in the Strategy (OAG, 2022). Notably, some departments did not develop detailed emissions plans, which delineate their path toward net zero or identify potential risks that may impede progress. Additionally, some departments failed to provide sufficient context regarding their current emissions profiles. The audit highlighted the need for enhanced monitoring and reporting mechanisms encompassing all emission sources, coupled with the inclusion of precise costs and savings estimates associated with achieving the net-zero target.

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<sup>24</sup> Ibid.

## Integration with MBPS policy

Incorporating MBPS into the Greening Government Strategy enables the federal government to effectively tackle existing challenges, thereby serving as a catalyst for wider adoption by other jurisdictions and portfolio managers.

A typical MBPS policy includes a comprehensive framework with defined scope and exclusions, designated metrics, and prescriptive and performance pathways to achieve specific objectives. Central to this framework is annual performance reporting and management, complemented by relevant public disclosure policies. The development of an emissions-reduction plan, coupled with adherence to specified timelines, facilitates easy monitoring of progress.

Using annual performance data, the strategy can be designed to incorporate a direct emissions decarbonization requirement for a percentage of the floor area or stipulate a percent reduction in total direct emissions from the federal portfolio, encompassing gas and fuel oil emissions.

It is crucial to emphasise that the implementation of this policy does not jeopardise current progress. Rather, it establishes a structured framework for compliance and monitoring. The United States has already embraced this approach by introducing a federal MBPS program in December 2022. This program complements existing measures aimed at addressing scope 1 emissions from federal buildings (Table 4).<sup>25</sup>

By enhancing transparency and accountability, the federal government indirectly influences the broader market. Demonstrating the efficacy of MBPS within the vast and diverse portfolio of Canada's federal government provides compelling evidence of the feasibility and adaptability of this policy, setting a benchmark for local advocates and jurisdictions.

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<sup>25</sup> In the United States, scope 1 emissions from federal buildings amount to 8600 kt of CO<sub>2e</sub>, which is nearly nine times greater than Canada's scope 1 and 2 emissions (CEQ, 2022).

Elements	Summary
Covered building	All federally owned, EISA-covered facilities within the United States and U.S. territories, reporting any non-zero scope 1 GHG emissions from on-site combustion of fossil fuels as of October 1, 2021. <sup>26</sup>
Exclusions	Excludes emissions from mission-critical activities and select process loads lacking feasible strategies to eliminate scope 1 emissions.
Metrics	Scope 1 emissions measured in metric tons of CO <sub>2e</sub> per year (MT CO <sub>2e</sub> /yr).
Targets	By 2030, aim for 30 per cent of each agency's Federal buildings (by total building area) achieving zero scope 1 emissions through building electrification. By 2028, the Council on Environmental Quality (CEQ) will establish new goals and increase floor area targets for 2038 and 2045. The goal is for the building portfolio to achieve net-zero emissions by 2045.
Compliance pathways and cycle	<p>Performance pathway: Efficient electrification of all equipment and Appliances to achieve zero scope 1 emissions. Prescriptive pathway: Implement practicable electrification for space and water heating, fully electrify cooling, cooking, non-emergency backup generators, and laundry loads (excluding exclusions).</p> <p>Data captured in annual Compliance Tracking System (CTS) reports to the Federal Energy Management Program (FEMP), starting FY 2024. Annual progress targets set in consultation with CEQ and Office of Management and Budget (OMB), commencing 2024. Progress is reviewed annually with satisfaction assessed in 2030.</p>

<sup>26</sup> Section 432 of the Energy Independence and Security Act of 2007 (EISA) defines "facility" as any building, installation, structure, or other property owned or operated by, or constructed or manufactured and leased to, the government. This includes individual buildings, and groups of facilities or contractor-operated facilities owned by the federal government.



Supportive programs	Agencies can leverage support from DOE’s Better Buildings Decarbonization Resource Hub and Building Data Tools, General Services Administration’s Sustainable Facilities Tool, ASHRAE’s Decarbonization Related Policies, Briefs, and Standards and EPA’s Benchmarking Policies and Building Performance Standards.
Penalties	No penalties specified.

Table 4. Key elements of the United States Federal Building Performance Standard (CEQ, 2022)

## Enabling by regulation

In Canada, building regulations are divided between federal and subnational governments, offering both advantages and challenges to the implementation of MBPS. In the absence of federal oversight, subnational governments can experiment with tailored policies, reflecting local needs and aspirations, without nationwide risks (Shapiro, 2009). These regulations are easier to enforce as they are closer to the communities they serve. However, federal regulations are essential for maintaining uniformity, addressing cross-border issues and providing leadership.

Challenges arise when provinces introduce lenient regulations or deviate from national commitments. Striking a delicate federal-provincial balance is crucial to prevent conflicts over potential intrusions into provincial jurisdiction (Centre for Constitutional Studies. n.d.). This section explores the role of federal regulation in advancing MBPS, including available mechanisms and feasibility (ECE LAW, 2023).

## Constitutional jurisdiction over the environment

Sections 91 and 92 of the *Constitution Act, 1867* (or the “Act”) allocate legislative or law-making powers between the federal government (Parliament) and provinces, respectively (JUS, 2021a; 2021b). However, the terms “the environment”, “climate change” and “greenhouse gas emissions” are not explicitly listed or assigned. Consequently, the Supreme Court of Canada recognizes the protection

of the environment, including climate change and GHG emissions, as a shared responsibility between the federal government and provincial legislatures.

## Federal powers used to regulate emissions

The federal government has a spectrum of legislative and regulatory powers under the *Constitution Act, 1867*, including taxation, trade and commerce, and treaty-making. Regulating emissions primarily falls within its criminal law and residuary powers (whereby any matter within the power of provincial legislatures comes within the power of federal parliament) (ECCC, 2020). The following sections delve into each of these aspects to consider the possibility of regulating emissions through the MBPS policy.

### Application of criminal law powers

Section 91(21) of the *Act* empowers Parliament to enact “criminal” laws (JUS, 2021a). In legal terms, a valid criminal law is characterised by a “prohibition”, a “penalty” and a “criminal purpose” aimed at preserving safety and suppressing some form of “evil or injurious or undesirable effect” (SCC, 2020). This definition is not restrictive, giving Parliament the flexibility to enact a variety of regulatory laws distinct from the traditional criminal prohibitions (e.g., such as theft and assault).

Under the authority of the criminal law power, the principal federal legislation addressing environmental protection and public health from toxic and other harmful substances is the *Canadian Environmental Protection Act, 1999 (CEPA)* (JUS, 1999). *CEPA* is a comprehensive regulatory process designed to identify, control, manage, and, when necessary, prohibit toxic substances, including GHG emissions, throughout their lifecycle, i.e., from research and development to final disposal or recycling. Recent amendments under Bill S-5 have expanded the government’s authority to regulate not only “the substance or product containing [the substance]” but also “a product that may release the substance” (GC, 2023d).

Additionally, *CEPA*’s initial virtual elimination scheme has been replaced by a new “two-track” system (GC, 2017). Part 1 lists high-risk substances for “total, partial or conditional prohibition”, whereas Part 2 focuses on “pollution prevention” measures, including controls, management, or even prohibition. This change signals a critical shift towards “more tailored approaches” that prioritise risk management of toxic substances through pollution prevention, instead of virtual

elimination which is deemed “unworkable” or “dysfunctional” (House of Commons, 2017).

*CEPA* plays an instrumental role in regulating GHG emissions from various sources, including coal-fired electricity generation, liquid fossil fuels produced in or imported into Canada and on-road vehicles (Table 5). Presently, the federal government is also developing *Clean Electricity Regulations* under *CEPA* to further accelerate the decarbonization of sectors that contribute substantially to the overall emissions profile in Canada (GC, 2023e).

Regulation and powers bestowed by CEPA	Primary objective	Implementation and applicability
<p><i>Coal-fired Electricity Regulations (2012)</i> Subsections 93(1) and 330(3.2) Beale, 2019; GC, 2018a</p>	<p>Establish a regime for reducing carbon dioxide emissions from coal-fired electricity production.</p>	<p>Annual emission standard of 420 t/GWh was set for new units<sup>27</sup> from July 1, 2015, or existing units by December 31, 2029, or at the end of their useful life (whichever is sooner).</p>
<p><i>The Clean Fuel Regulations (2022)</i> Subsections 140(1), 326 and 330(2) GC, 2020b</p>	<p>Require liquid fossil fuel producers and importers (i.e., suppliers) to reduce the carbon intensity of gasoline and diesel they produce and sell within Canada.</p>	<p>Suppliers need to reduce the carbon intensity of fuels from baseline<sup>28</sup> by 3.5 gCO<sub>2e</sub>/MJ in 2023 and by 1.5 gCO<sub>2e</sub>/MJ annually until 2030. To comply, suppliers must create or buy credits.<sup>29</sup></p>
<p><i>Passenger Automobile and Light Truck Greenhouse Gas Emissions Regulations (2010)</i><sup>30</sup> Subsections 160 and 162 ECCC, 2018; GC, 2022</p>	<p>Reduce emissions from passenger automobiles and light trucks manufactured or imported into Canada by establishing emission standards and test procedures, aligned with U.S federal requirements.</p>	<p>Regulations set progressively more stringent emission standards for new passenger automobiles and light trucks. For model years 2017 to 2025, CO<sub>2e</sub> emission performance of passenger cars is expected to improve by 5 per cent each year; light trucks are expected to improve by 3.5 per cent each year from 2017 to 2021 and 5 per cent each year from 2022 to 2025.</p>

Table 5. Overview of CEPA-enacted environmental regulations

<sup>27</sup> Units refer to physically connected equipment located in a power plant that operate to produce electricity using coal as a fuel, whether in conjunction with other fuels or not.

<sup>28</sup> The 2016 baseline levels for carbon intensity of gasoline and diesel are 95 gCO<sub>2e</sub>/MJ and 93 gCO<sub>2e</sub>/MJ (JUS, 2023).

<sup>29</sup> Compliance credits can be created by undertaking projects that reduce the lifecycle carbon intensity of liquid fossil fuels, supplying low carbon fuels, and fuel/energy to advanced vehicle technology. (ECCC, 2024).

## Challenges to the use of criminal law powers

Although the use of criminal law powers to regulate emissions has not yet been subjected to legal challenges, precedents from cases such as *R v Hydro-Quebec* and *Syncrude Canada Ltd. v Canada (Attorney General)* shed light on the division of powers between federal and provincial governments in environmental matters.

In the case of *R v Hydro-Quebec*, the constitutional authority of the federal government to enact an "Interim Order" under *CEPA*, restricting the release of polychlorinated biphenyls ("PCBs") into the environment, was examined (Leclair, 1998; Muldoon & Lundgren, 1997; SCC, 1997). The Supreme Court of Canada (SCC) affirmed the challenged provisions constituted a legitimate exercise of criminal law powers and did not infringe on the legislative powers allocated to the provinces. The Act did not ban "the use, importation or manufacture of all chemical products" but rather focussed on restricting "substances that are dangerous [or toxic] to the environment." In short, the Act established "a limited prohibition applicable to a restricted number of substances."

In the case of *Syncrude Canada Ltd. v Canada (Attorney General)*, Syncrude contested the validity and applicability of Section 5(2) of the Renewable Fuels Regulations, enacted under subsection 140(2) of *CEPA* (CanLII, 1999; 2010; 2014). This section mandates diesel fuel produced, imported or sold in Canada must contain at least two per cent renewable fuel. Syncrude argued the regulations were an attempt by the federal government to create a domestic market for renewable fuels. The Federal Court found that the regulations were valid and properly made within the scope of *CEPA*, creating demand for the development of next-generation technologies "to suppress the evil of air pollution" in the long term (CanLII, 2014). This decision was subsequently upheld on appeal, which rejected Syncrude's implicit contention that economic measures cannot legitimately serve the advancement of criminal law purposes (CanLII, 2016).

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<sup>30</sup> The regulation is being amended to impose zero-emission vehicles sales targets on regulated entities: 100 per cent of passenger car and light truck sales be zero-emission vehicles (ZEVs) by 2035, with interim targets of at least 20 per cent by 2026, and at least 60 per cent by 2030.

## Application of residuary powers

Section 91 of the *Constitution Act*, 1867 grants Parliament the authority to enact laws for “the Peace, Order, and Good Government of Canada” (POGG). This POGG power is divided into three branches (Centre for Constitutional Studies, n.d.):

1. Gap branch: Enables federal legislation for matters not explicitly listed as provincial powers under in Sections 91 or 92 of the *Act*, effectively bridging legislative voids.
2. National concern branch: Empowers federal laws to address issues transcending provincial concerns, focusing on matters impacting the entire nation.
3. Emergency branch: Grants federal authority for laws during temporary extraordinary needs or emergencies, facilitating swift action during a crisis.

Regulation (year)	Primary objective	Implementation and applicability
Greenhouse Gas Pollution Pricing Act (2018) GC, 2018b	Address climate change by implementing a national pricing mechanism for greenhouse gas (GHG) emissions, to encourage sectors, businesses and individuals to adopt cleaner practices and invest in low-carbon technologies.	The system includes a fee on fossil fuels for certain producers, distributors and importers and an output-based pricing system (OBPS) for industrial GHG emissions (GC, 2022a). The federal fuel charge starts at \$30/t CO <sub>2e</sub> in 2020, increasing annually by \$10/t. In the OBPS system, facilities emitting less than their limit earn credits they can use or trade, while those exceeding the limit must compensate by a specified deadline.

Table 6. Overview of *Greenhouse Gas Pollution Pricing Act* enabled by POGG powers

Under the “national concern” branch, the federal government passed the *Greenhouse Gas Pollution Pricing Act* (“GGPPA”) (Table 6). This legislation establishes a minimum national pricing scheme for GHG emissions, encouraging

uniformity and coherence nationwide. *GGPPA* serves as a backstop, applying solely to provinces and territories lacking a sufficiently stringent GHG pricing system.

To date, the “emergency” branch has yet to be invoked in issues related to climate change or GHG emissions, presenting potential challenges. The use of emergency powers requires a genuine and reasonable belief that an emergency exists (i.e., rational basis), and the proposed solution needs to have a defined time limit associated with it (i.e., temporary) (Centre for Constitutional Studies, n.d.). Although the House of Commons declared a national climate emergency in 2019, it remains unclear whether legislation pertaining to emissions could meet the ‘temporary’ prerequisite.

### Objections to the use of residuary powers

The Greenhouse Gas Pollution Pricing Act has been the subject of legal disputes, particularly with the provinces of Saskatchewan, Ontario and Alberta. These provinces have argued that the *GGPPA* intrudes into provincial jurisdiction (SCC, 2021). However, in 2021, the Supreme Court of Canada upheld the constitutionality of the *GGPPA*. The ruling of the Supreme Court emphasised the global nature of climate change, stating that it is “inherently [a] global problem” that cannot be addressed by Canada or even by any province alone (SCC, 2021). The court acknowledged that when provinces fail to take adequate measures to address climate change, it not only jeopardises the country's ability to fulfil its international obligations but also hinders global advocacy efforts to reduce greenhouse gas (GHG) emissions (King et al., 2021).

Despite affirming the constitutionality of the *GGPPA*, the Supreme Court cautioned against the use of the national concern branch to address climate change broadly. The Court noted, “any legislation... related to non-carbon pricing forms of GHG regulation—legislation with respect to... building codes... and home heating, for example—would not fall under the matter of national concern” (SCC, 2021, para. #191). While these statements are not legally binding, they offer insight into the potential hurdles the federal government may encounter if it seeks to regulate building emissions under the national concern branch in the future.

## Application to large buildings with considerations

The federal government's historical approach to mitigating emissions in various sectors, such as coal-fired electricity, clean fuel, and on-road vehicles, demonstrates a preference for measured and delicate nuanced strategies such as performance or sales targets.<sup>31</sup> These targets allow for a systematic reduction of undesirable practices and a gradual transformation of infrastructure. This approach also fosters innovation while minimising potential disruptions.

The strategy's effectiveness is emphasised by legal precedents, particularly those derived from court rulings. By customising regulations to specific sectors and establishing targeted objectives, a balance can be achieved between environmental protection and economic considerations. Notably, favourable results are often achieved when provincial oversight is not hindered.

Building upon this approach, the federal government could potentially use *CEPA* to develop regulations to curb emissions from large buildings. This might involve setting emissions targets, similar to the Passenger Automobile and Light Truck Greenhouse Gas Emissions Regulations, to effectively phase out the use of fossil fuel heating equipment exclusively or promote comprehensive building retrofits that prioritise energy efficiency measures.

From an economic efficiency and administrative perspective, regulating whole building performance, such as greenhouse gas emissions per floor area, offers building owners greater flexibility to innovate and adopt a variety of technologies and strategies tailored to the uniqueness of their buildings. Additionally, implementing this regulation nationally ensures a consistent framework for the industry. However, the introduction of such legislation is not without challenges. The intricacies surrounding building emissions, compounded by potential resistance from provincial governments, could pose substantial administrative and political hurdles.

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<sup>31</sup> The Coal-fired Electricity Regulations are an example of the use of performance targets to gradually phase-out existing coal-fired infrastructure over time while incentivizing investments in cleaner technologies. The Passenger Automobile and Light Truck Greenhouse Gas Emissions Regulations are an example of the use of sales targets to incrementally discourage the manufacture and sale of vehicles emitting greenhouse gases.



Traditionally, building regulation, such as building codes, falls under provincial jurisdiction, making the constitutional validity of federal regulation a potential point of contention (NRC, 2022). This challenge intensifies as most jurisdictions, with the exception of Quebec, have not articulated their stance on regulating building emissions.

Moreover, the application of criminal law powers to regulate buildings and their owners presents a novel and unprecedented challenge. Although the Supreme Court of Canada acknowledges Parliament's authority to use criminal law powers to take drastic measures "[the] challenge lies in protecting the environment while avoiding or compensating for negative economic side effects" (CanLII, 2016, para. #91). Balancing these dual imperatives will demand thoughtfulness and a nuanced approach to ensure effective environmental protection without unduly burdening economic stakeholders.

Additionally, regulating emissions from over half a million commercial buildings presents administrative and enforcement challenges. Addressing an undertaking of this scale requires investments in infrastructure for monitoring, reporting, and compliance verification, accompanied by tailored outreach and education initiatives for diverse stakeholders.

In summary, the federal government has successfully implemented regulations to control GHG emissions across various sectors. The consideration of extending these regulatory powers to oversee building performance or specific technologies within buildings is within the realm of possibility. However, the implementation of such a move could potentially trigger constitutional conflicts. If the federal government opts not to pursue regulations, yet wants to decarbonize buildings, it will need to rely more heavily on the other three strategies, through design, investment and implementation, to promote the adoption of MBPS throughout Canada.

## Conclusion

Canada's commercial buildings demand a targeted strategy for effective decarbonization, and Mandatory Building Performance Standards (MBPS) is an established and pivotal policy for scaling retrofit activity needed to meet jurisdictional climate commitments. Drawing insights from the United States, the federal government can employ a range of approaches to drive broad acceptance and adoption by enabling through design, investment, implementation and regulation.

The federal government's expertise and infrastructure uniquely positions it to accelerate MBPS program design via tailored guidance, practical tools, and technical assistance. Additional support, such as earmarked funding and tax credits, can further strengthen these initiatives, ensuring their effectiveness and long-term sustainability.

As one of the largest real property owners in Canada, the federal government can immediately and effectively demonstrate the viability of MBPS by integrating it into the Greening Government Strategy. This not only influences the broader market but also sets a benchmark for other jurisdictions to follow.

Acknowledging the challenges posed by diverse local government authorities, the federal government can exercise its powers to introduce tailored regulations for large buildings, drawing lessons from successful emissions regulations in other sectors. Careful consideration of constitutional, administrative, and political challenges will be essential to prevent federal-provincial disputes.

Regardless of the chosen approach, the central message is clear – achieving net zero necessitates a transformative approach in the commercial building sector. Bold and mandatory policies like MBPS are indispensable for substantial emissions reduction. The strategies proposed in this report offer diverse ideas for the federal government to position itself as a leader in driving building decarbonization.

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