Power and Politics in Building Sector Decarbonization: Multilevel governance in Canada

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ABSTRACT

An increasing variety of policies aim to decarbonize buildings. These efforts occur in a multilevel governance context where power struggles influence whether initiatives reinforce the status quo, foster incremental improvements, or deliver decarbonization by overcoming the sector's dependence on fossil fuels. This paper presents a framework that helps explore how multilevel power dynamics shape building sector decarbonization trajectories in Canada. This study is based on an analysis of over 200 policy documents, press releases, and industry reports, and 27 interviews with policymakers, industry stakeholders, and academic experts in the provinces of Alberta, British Columbia, and Quebec. Results show that the federal government uses its constitutional power over trade policies to ensure improvements in energy efficiency and emissions across the country. Cities and non-governmental organizations framing of greenhouse gas emissions as urban pollution, enhances municipal authority over building emissions and opens the door to the adoption of building performance standards and fuel bans. These initiatives place both bottom-up and top-down pressure on provinces to enact building decarbonization policies. However, overall building sector trajectories depend on the nature and relative power of coalitions between provincial governments and utilities. This study identifies four leverage points – coalition capacities, certainty, trust, and transparency – that can foster power structures that are more conducive to transformative building sector decarbonization.

Introduction

Canada ranks 9th globally in absolute and per capita GHG emissions (World Bank 2024). Buildings are responsible for 17% of Canada's GHG emissions (ECCC 2022a). The country ranked 13th in ACEEE's International Energy Efficiency Scorecard (Subramanian et al., 2022). Despite emission reduction targets and building energy efficiency and decarbonization policies and programs, the building sector's emissions have grown by 10% since 2015 (ECCC 2022b).

Decarbonization policy studies typically focus on policy mix characteristics, emission targets, projections, and measurements (Bulkeley et al. 2012, Hale et al. 2022). While important, these approaches overlook the impact of politics and power on policy effectiveness. This depoliticization portrays decarbonization as a technical problem rather than a contested political process (Marquardt and Nasiritousi 2022).

This paper understands decarbonization as the process of overcoming society's dependence on fossil-fuels. This dependence is the result of coevolving emission intensive technologies, institutions, and behaviors in industrial economies, known as carbon lock-in. "Disrupting carbon lock-in is fundamentally a political activity" requiring that fossil fuel supporting norms, institutions, capacities, and coalitions be questioned (Bernstein and Hoffmann 2018, p. 191). Research on building sector decarbonization politics has focused mainly on the urban scale (Tozer 2020). But building sector decarbonization politics play out within a multilevel governance context characterized by power struggles between interdependent

coalitions. This study aims to answer two main research questions. First, how do multilevel power dynamics shape building sector trajectories? Second, how can power dynamic analysis help identify ways to foster power structures that support decarbonization?

This paper is structured as follows. First, I present the analytical framework and provide a brief description of the methods used. Next, I provide background information on buildings policy in Canada before delving into how power dynamics have played out at federal, provincial, and municipal levels in the provinces of Alberta, British Columbia, and Québec. I conclude by identifying ways to foster power structures that support transformative decarbonization.

Power in building sector decarbonization

Building sector decarbonization efforts occur within multilevel governance structures where decision-making powers are distributed across interdependent public and private spheres of authority (Hooghe and Marks 2003). Some view this flexible structure as an efficient, even necessary, means to address complex, rapidly evolving, cross-cutting policy challenges such as climate change (Jänicke 2015). Collaboration, learning, innovation, and participation enhance the effectiveness and resilience of multilevel governance systems (Hooghe and Marks 2003). But multilevel governance, as a process of constant coalition building and breaking, also poses challenges. Tensions over authority, autonomy, and resources can prevent consistent and coherent policy mix developement (Scott et al. 2023). Overlapping, contradicting, watered-down policies can jeopardize policy objectives (Newig and Fritsch 2009). Unequal capacities to participate can undermine the equity and social justice of climate policy. Yet, few studies address the role of power in multilevel governance (Marquardt 2017). Combining Marquardt's (2017) multilevel power with Bernstein and Hoffman's (2018) decarbonization politics results in a framework, illustrated in Figure 1, that helps analyze how power shapes trajectories.

Marquardt (2017) conceptualizes power in multilevel governance arrangements in terms of capacities, resources, and structures. *Capacities* may be financial (revenues, expenses, taxes, grants, borrowing), professional (expertise, administrative capacity), or informational (data). These capacities determine the extent to which actors can mobilize power resources. *Power resources* may be hard or soft. Hard power resources include constitutional resources (assigned by the constitution), regulatory resources (administrative rules, control, enforcement) and political resources (public support, representation). Soft power resources include the ability to engage in agenda setting (attracting attention to or away from political issues) and framing (defining problems, solutions, and responsibilities). *Structures* refer to the spheres of authority that possess power resources and capacities, and their relative power. I use the term spheres of authority, instead of jurisdictional levels, to capture non-governmental actors and public-private coalitions. Coalitions can share or compete for power resources and capacities. Relative power refers to the ability of competing coalitions to build capacities and garner resources.

Bernstein and Hoffmann (2018) propose that three political mechanisms – coalition building, norm change, and capacity building, the procedural equivalents to Marquardt (2017) power dimensions – determine whether decarbonization efforts will deliver system change. System change results from scaling or entrenchment. Scaling occurs when initiatives increase their scope, are emulated in other locations, or inspire the development of complementary initiatives. Entrenchment refers to ways in which initiatives become permanent, harder to change over time, or provide increasing returns to those who adopt them. System effects position communities on different trajectories: status quo reinforcement, incremental improvements

within a carbon-intensive system, or transformational decarbonization where fossil fuels are replaced by emission-free alternatives (Bernstein and Hoffmann 2018).

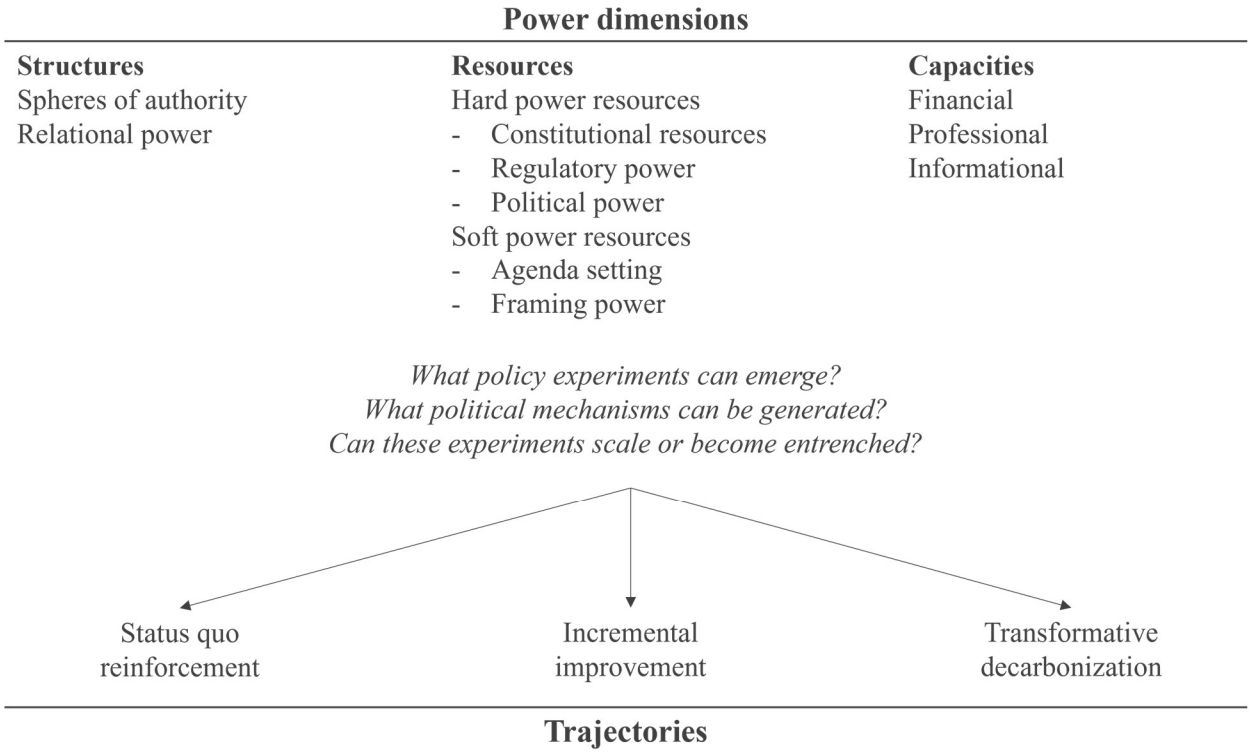

Figure 1. Framework to analyse how multilevel power dynamics shape system trajectories

Methods: document review, interviews, and participant observation

This research is based on an iterative review of policy documents, academic and grey literature, semi-structured interviews and informal conversations. Data on the study period – January 2016 to April 2024 – was collected from August 2023 to April 2024. 27 semi-structured interviews lasting 30-90 minutes were conducted. These interviews were supplemented with information from 21 less formal conversations with participants of the 2024 National Building Decarbonization Forum held in Ottawa on April 17-18, 2024. Research participants were selected based on their involvement in building sector policy development and implementation in Alberta (AB), British Columbia (BC), and Québec (QC). These provinces were selected based on variations in their relationships to the fossil fuel industry[1].

To protect respondent anonymity, quotes are assigned to stakeholder category codes and numbered sequentially by interview date[2]. Informational conversations are labeled (Inf#). All documents, interview transcripts, and conversation notes were analyzed using qualitative coding software. Policy documents and scoping interviews were analyzed first, followed by an iterative review of interviews, informal conversation notes, and additional documentary sources for

[1] AB and BC (to a lesser extent) are fossil fuel producers. The emission intensity of the electric grid in BC and QC is low (7.3; 1.5g of CO_2e/kWh), while in AB it is high (590g of CO_2e/kWh) (Canada Energy Regulator 2024).
[2] A, academia, think tanks, consultants (6 interviews/6 conversations); F, federal government (2/0); P, provincial government (3/3); M, municipal government (3/3); I, industry (3/4); IO, international organizations (4/0); N, nongovernmental organizations (6/2); U, energy utilities (0/3).

analytical triangulation. Deductive coding was based on our framework's analytical categories (subcategories): structures (spheres of authority, relationships), resources (constitutional, regulatory, political, agenda-setting, framing), and capacities (financial, professional, informational). Inductive coding was used to identify frames based on recurring themes.

Building sector decarbonization trajectories through the lens of power

This section examines how power shapes building sector trajectories in Canada. The framework, described above, is used to structure the analysis. I start by providing background information on Canadian building policies and discuss their potential to contribute to decarbonization. This is followed by our analysis of how power over these policies plays out at federal, provincial, and municipal levels in Alberta, British Columbia, and Québec.

Building sector policy in Canada

In Canada, constitutional resources are assigned to federal and provincial governments through the Canadian Constitution Act[3]. Local governments gain regulatory resources through provincial legislation. While most local governments have similar powers, variations remain. Calgary, Edmonton, Montreal, and Vancouver are Charter Cities having additional regulatory resources, including the right to enact building bylaws. Of all levels of government, provinces have the greatest regulatory resources and financial capacities, reflecting their responsibilities for major policies and programs (Harrison 2023). In late 2015 – through the Paris Agreement – Canada committed to decarbonize its economy by 2050. This the publication of the Pan Canadian Framework on Clean Growth and Climate Change (PCF), signed by all provinces and territories except Saskatchewan. The PCF's approach to building sector emissions focused on three main regulatory instruments: equipment efficiency standards, building codes, and building performance standards. Table 1 provides an overview of these and other building sector policies.

The federal Equipment Efficiency Act prevents underperforming products from being transported across provincial and international borders. Provincial and municipal governments can set their own standards to regulate products manufactured and sold locally, not covered by federal regulation, or to increase minimum requirements. Equipment efficiency standards do not prevent the sale of fossil fuel equipment. Thus, from a trajectory perspective, equipment efficiency standards foster incremental improvements but also lock-in emissions from long-lived fuel-fired equipment. As we will see later, some provinces and municipalities are finding creative ways to use equipment efficiency standards to drive transformative decarbonization.

Building codes, regulating new construction, are a provincial *regulatory resource*. While Model National Codes are developed at the federal level, building code adaptation and adoption remains a provincial responsibility. Most provinces adopt the National Building Code (NBC) with minor modifications. Alberta, British Columbia, Ontario, and Québec publish their own versions of the NBC with amendments. In some provinces, municipalities can adopt different or more stringent requirements[4]. NBC adoption has varied significantly across Canada, taking 5-7 years (National Research Council Canada 2022). Energy code adoption has varied even more.

[3] This paper does not go into the power dynamics of the territories. The rest of the paper refers mainly to provinces.
[4] Local governments in Québec, Labrador, Saskatchewan, and the Yukon can adopt more stringent building requirements. Municipalities in Newfoundland can adopt different requirements to those prescribed by the province. In BC, local governments except for the City of Vancouver adopt the BC Building Code (Efficiency Canada 2022)

Table 1. Overview of building sector policy in Alberta, British Columbia, and Québec

Federal	Environmental Protection Act, Energy Efficiency Act, Model Codes		
Provincial	Alberta	British Columbia	Québec
Equipment efficiency standards	No provincial equipment efficiency standards	Provincial equipment efficiency standards (Draft) Highest Energy Efficiency Standard	Extensive provincial equipment efficiency standards
Building code development and adoption	AB adopted the NBC 2015 incl. section 9.36 and the NECB 2017 AB has adopted Tier 1 of the 2020 NBC and 2020 NECB	BC plans to adopt Tiers 3, 4, 5 of the 2020 NBC and Tiers 2, 3, and 4 of 2020 NECB	QC will use the 2015 NBC excl. section 9.36 and 2015 NECB Residential efficiency requirements align with Novoclimat
Fuel bans	N/A	N/A	Oil-fired heating ban
Municipal			
Equipment efficiency standards	N/A	Vancouver air conditioning must also be able to provide heat	Montreal solid-fuel-burning equipment efficiency standard
Building code and tier adoption	Municipalities cannot adopt more stringent requirements	Municipalities choose which energy and carbon tiers/steps they adopt	Municipalities can adopt more stringent requirements but won't have tiers for guidance
Building performance standards	Calgary, Edmonton's authority over building performance is contested	Vancouver adopted a BPS including energy and carbon reporting requirements in 2022	Montreal adopted energy reporting requirements in 2021 and its BPS in 2023
Fuel bans	N/A	Nine municipalities have banned fossil fuels use for primary heat in new buildings	Four municipalities have banned fossil fuel use in new buildings but allow biofuels

In Québec, requirements for residential buildings are aligned with the energy efficient residential construction program Novoclimat. In 2017, BC introduced its Energy Step Code that sets requirements for different energy performance levels, allowing municipalities to choose which level to adopt. The BC Zero Carbon Step Code was published in 2023. Canada's 2020 editions of the NBC and NECB adopt a similar tiered approach for energy efficiency. Tiered requirements for emissions are expected in the 2025 building codes. Requiring high levels of energy efficiency through building codes can drive incremental improvements for new buildings. Tiered energy codes supported by provincial/municipal roadmaps towards Net Zero Energy Ready Buildings (80% more efficient than buildings built to NECB 2015) suggest more transformational change. But building codes remain fuel neutral. They neither prevent the use of fossil fuels, nor incentivise renewable energy use or generation. Future emission requirements in the code could place new buildings on a transformative decarbonization trajectory.

While building codes are effective policy instruments, they have two main shortcomings: they neither regulate operations, nor guarantee performance. Building performance standards (BPS) regulating existing building energy and/or emissions are viewed as a promising tool to

address these regulatory gaps. BPS have been gaining momentum since the early 2000s (Nadel and Hinge 2023). Vancouver was the first Canadian city to adopt a BPS in 2022, followed by Montreal in 2023. Toronto's BPS is under development and Ottawa plans to follow suit. BPS are typically based on benchmarking and disclosure policies. These policies provide cities and building managers with the *informational capacities* needed to set and achieve emission targets. BPS also often include enabling policies (information hubs, grants) that ensure that building managers have the *financial, professional, and informational capacities* needed to comply. Alternate compliance paths allow buildings that face particular challenges (historical buildings, affordable housing) to comply. Thus, BPS can place existing buildings on a transformative decarbonization trajectory provided they apply to a wide range of buildings and explicitly phase-out fossil fuel use. In sum, equipment efficiency standards, building codes, and BPS can all contribute to transformative decarbonization. However, the extent to which these policies are transformative depends on their scope, ambition, and adoption.

Federal use of constitutional resources to reduce building sector emissions

Since 2015, the Liberal federal government has increasingly mobilized its *constitutional resources* to enact climate policies (Harrison 2023). The federal government can regulate emissions through the Canadian Environmental Protection Act – an instrument of criminal law – or trade policies. The latter tend to be less controversial. Using its *framing resources*, the federal government proceeded to portray the construction industry as suffering from trade barriers due to a lack of policy harmonization. This *focused the agenda* on timely standard alignment, formalized through the Construction Codes Reconciliation Agreement (RRCT 2022) that promised to facilitate the movement of goods, services, and investments by harmonizing equipment efficiency standards and construction codes. The Agreement makes no mention of climate impacts. But research participants indicated that the Liberals' desire to meet national climate commitments was a key motivator for the Agreement.

Three EEA amendments were proposed between 2017-2021. Amendment 17 enhanced federal *regulatory resources* by allowing the Minister to modify the EEA and reference internal standards. Industry stakeholders indicated that bypassing standard development and public consultation processes would limit their opportunities to exercise their *framing and agenda setting resources* (Efficiency Canada 2024). Amendments 18 and 19 proposed mandatory appliances certification and further alignment with US standards. These changes were opposed by appliance manufactures. Their adoption was delayed until 2027 based on the argument that this aligned with US timelines. NGOs warn that these delays could jeopardize efficiency improvements if *political resources* change in Canada or the U.S. (Efficiency Canada 2024).

The Agreement also enhances the federal government's *regulatory resources* with respect to building codes. It calls for the reduction (or elimination) of variations across provincial building codes, the accelerated adoption of National Model Codes, and the implementation of a new code development system. One interviewee felt that "the federal government is treating provincial building codes, essentially, as another federal policy instrument" (I3). Some provincial respondents felt that the Agreement reduces their *regulatory resources* with respect to building codes. Other provincial officials, however, indicated that, while provinces have lost the right to choose when and if they adopt Model Codes, they have gained the ability to influence them. Provinces gain decision-making *regulatory resources* by sitting on the Canadian Board for Harmonized Construction Codes (Codes Board). Before, provincial/territorial representatives could only mobilize *soft power resources* through the Policy Advisory Committee on Codes.

The Agreement also changes which capacities are needed to shape building codes. Under the old system, provinces developed code requirements based on their *regulatory and political resources*, and *professional and informational capacities.* Under the new system, influencing codes depends on the strategic use of *framing resources* by cross-provincial coalitions. To be accepted, code variations must be framed in terms of prior provincial commitments or Codes Board priorities (accessibility, alteration to existing buildings, climate change mitigation, climate change adaptation, housing supply, performance-based solutions). One BC government official explained that BC is allowed to go forward with its own accessibility requirements because the province had promised to address accessibility through the BC Building Code. Regulatory variations for mid-rise wood construction – requested by a coalition between BC and QC – were permitted based on wood construction's contribution to climate mitigation. However, these requirements won't be included in the NCB because "the new national system didn't necessarily have the appetite or the capacity to move this forward" (PT1). This suggests that provincial representatives now have a greater say in what code requirements other provinces can adopt.

Provincial governments are not the only actors whose power is affected. Industry actors and NGOs felt that transferring decision-making power from the Commission to the Codes Board reduced their *framing and agenda setting resources*. The Commission – whose membership ensured broad technical expertise and geographic representation – made policy decision based on advice from the provinces/territories, technical code committees, industry, and the general public. Policy advice was public, as were the Commission's discussions and decision-making processes. One federal representative explained, "instead of bringing [policy positions] to the Commission for a discussion, which is a public discussion, they [the Codes Board] are doing it through in camera meetings." (F1) Provincial and academic respondents warned that closed-door decision-making could allow provincial/territorial representatives to veto decarbonization requirements without being subject to public scrutiny.

The federal government's use of its *framing resources* to justify increased use of *constitutional resources* to regulate building emissions is clear. However, with *political support* for the Liberal government fading (Coletto 2024) industry actors, concerned about regulatory uncertainty, are adopting a wait-and-see approach. "There will be a change at the federal level at some point. […] People are banking on that kind of change." (N4)

Alberta: reinforcing the status quo through powerful provincial/fossil fuel coalitions

In AB, the dominant provincial government/fossil fuel industry coalition reinforces the status quo. This is achieved by combining the *constitutional and regulatory resources* of the provincial government with the *financial, professional, and informational capacities* of industry. This coalition uses its *framing resources* to portray building sector decarbonization as a problem best addressed through harmonized standards, justifying the adoption of minimum federal regulations and the restriction of municipal *regulatory resources*. While this power configuration will deliver incremental improvements, it limits the emergence, scaling, and entrenchment of transformative bottom-up initiatives. Thus, AB's overall trajectory leans towards status quo reinforcement. Figure 2 illustrates the power structures, relative power resources, and capacities of the main coalitions in AB.

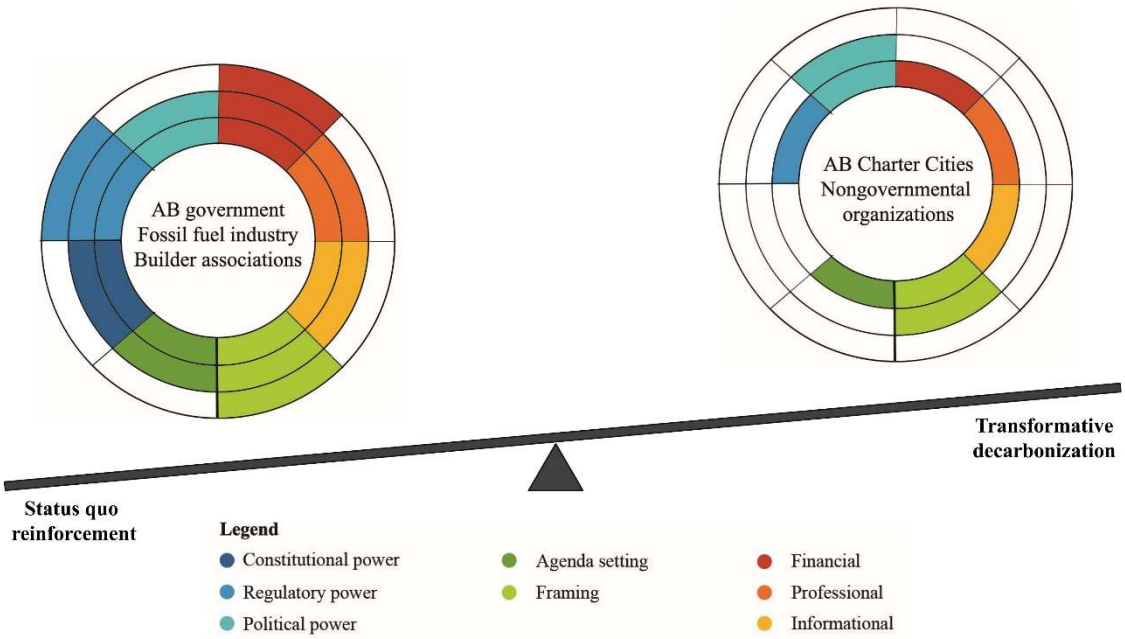

Figure 2. Power resources and capacities of the main coalitions in AB and their relative power.

Alberta's climate strategy for buildings has been to adopt minimum federal policy. AB does not have its own equipment efficiency standards, allowing less efficient products to be sold, locking-in higher energy consumption and emissions (Efficiency Canada 2024). For building codes, Alberta has also followed the federal government's lead, adopting the latest energy efficiency requirements for new construction. Energy efficiency aligns with the province's aim to reduce costs for residents. Accordingly, AB mobilized significant *financial*, *professional*, and *informational capacities* to enhance industry awareness and compliance. However, a federal government official revealed that Alberta's adoption was not motivated by cost savings but rather by a desire to avoid new oil and gas regulations. The respondent explained that provincial negotiators used their *agenda-setting resources* to shift discussions away from conflict over oil and gas regulations, towards consensus on building regulations. This trend continues as Alberta has adopted Tier 1 of the 2020 NBC and NECB. Prompt adoption of federal policy will ensure incremental improvements in new construction in AB. However, it is likely that AB's building sector trajectory will follow the least ambitious pathway permitted by the federal government. More crucially, building sector decarbonization progress may be largely offset by status quo reinforcement in the oil and gas industry.

Albertan cities have been more engaged in transformative decarbonization efforts. The Municipal Climate Change Action Centre has helped cities enhance their *financial*, *professional*, and *informational* capacities though coalition and capacity building. However, *regulatory resources* and initiatives, have been limited to Alberta's two Charter Cities. Supported by *political resources* from citizens, Calgary and Edmonton have indicated an interest in adopting reporting, disclosure, and labelling policies for existing buildings, and more stringent energy efficiency requirements for new construction (City of Calgary 2022; City of Edmonton 2021). But the use of these regulatory resources is being challenged. Through Bill 20 the AB government proposes to revoke municipal *regulatory resources* to adopt building bylaws. The provincial government, using its *framing resources*, portrays the change to City Charters as necessary to safeguard housing affordability, accessibility, standard harmonization, and

individual choice (Government of Alberta n.d., 2024). This framing is supported by construction industry associations that view regulatory variations as barriers preventing builders and homebuyers from benefiting from economies of scale and making choices about their homes (BILD Alberta n.d.). Whether adopted or not, Bill 20 has significant implications for decarbonization. It signals to cities that they do not have the *regulatory resources* to regulate building energy or emissions. It also signals to industry that the province will not mandate decarbonization, reinforcing business-as-usual.

To avoid provincial pre-emption, cities are supporting decarbonization by acting as property developers and energy providers. Edmonton's Blatchford sustainable community will house 30,000 people and use 100 percent renewable energy (City of Edmonton n.d.). This project – developed by the city and supplied by a municipally owned district energy corporation – relies heavily on Edmonton's *financial* and *professional capacities* rather than on its *regulatory resources.* Thus, the scalability of this approach depends on the *professional and financial capacities* of other cities. Finally, because cities' right to act as utilities depends on provincial law, provincial pre-emption remains a threat.

British Columbia: transformative decarbonization through fossil fuel industry isolation

BC's power dynamics foster transformative decarbonization through a broad coalition of government, renewable energy utilities, and construction industry actors, leaving the fossil fuel industry with limited power over policy. This power configuration can be attributed to fossil fuels' relative contribution to provincial coffers. Hydroelectric profits contribute directly to BC's economic prosperity, fossil fuel profits accrue to corporations outside BC. Further, BC's hydro resources mean that switching from gas to electricity reduces BC's emissions while bolstering its *financial capacities*. This alignment of economic and environmental imperatives supports the scaling and entrenchment of transformative decarbonization initiatives across government levels and geographic regions. Figure 3 illustrates the power configuration in BC.

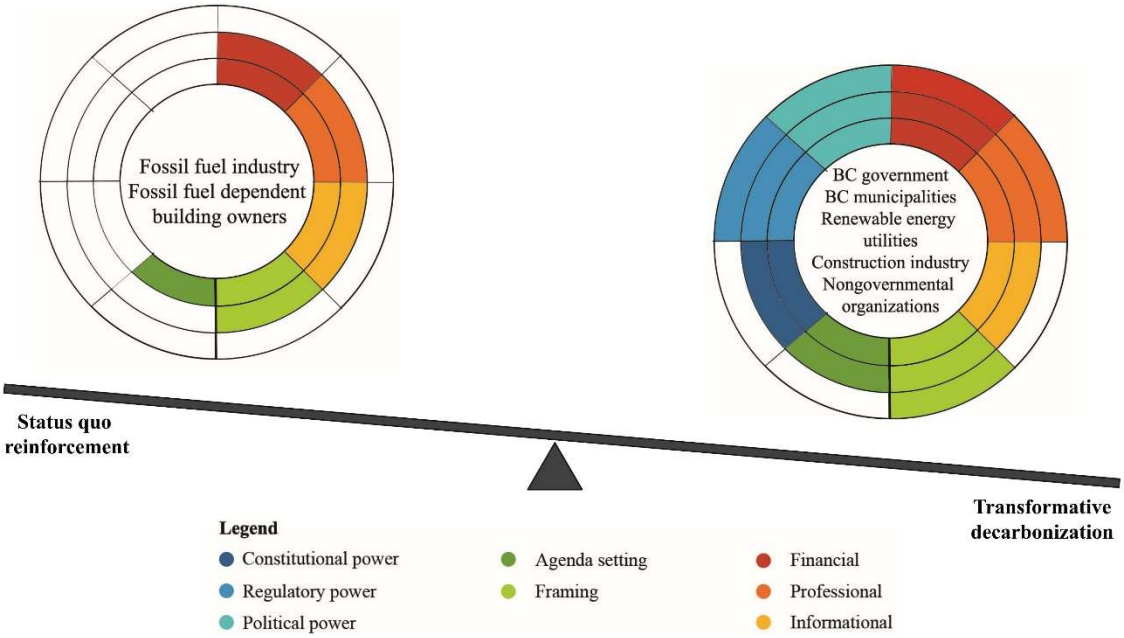

Figure 3. Power resources and capacities of the main coalitions in BC and their relative power.

BC's Energy Step Code is a good example of scaling and entrenchment. In 2007 – supported by strong *political and regulatory resources* – BC set climate targets and asked local governments to include climate actions in their community plans. This resulted in a patchwork of voluntary programs having little impact. Most communities "lacked the *capacity, expertise, and/or political will* necessary to meaningfully tackle building energy, a leading source of greenhouse gas emissions" (Glave and Wark 2019, p. 30 italics added). To address this, the BC government required that BC Hydro use energy efficiency to reduce the need for investment in new electric capacity. BC Hydro leveraged its *financial capacities* to develop municipal *professional capacities* through Community Energy Managers and intermunicipal learning platforms. This empowered local governments to develop stronger incentives but also led to conflicting by-laws and uncertainty for builders.

Responding to rising industry pressures, BC passed the Building Act in 2015, reaffirming building regulations as provincial *regulatory resources*[5]. However, the province agreed to develop the BC Energy Step Code through a multistakeholder process. In 2017, the BC Energy Step Code was included in the BC Building Code, making Step 1 mandatory provincewide. Municipalities maintained the right to adopt higher performance levels. While at first municipal regulatory resources were a cause for concern, the collaborative development of policymaking guidelines (Energy Step Code Council 2019) helped build trust between municipal authorities and the construction industry. Publishing all Steps provided guidance for builders and helped increase industry's *professional capacity* to support future regulations. As of March 2024, over a dozen local governments had adopted higher steps[6] demonstrating successful scaling. In 2023, BC's Zero Carbon Step Code expanded the scope from energy efficiency to emissions. These effects are multiplied by the inclusion of similar tiered requirements in the 2020 Model Codes.

BC's draft Highest Efficiency Equipment Standards (HEES) is another transformative decarbonization policy. HEES proposes that new space and water heating sold and installed in BC must be at least 100% efficient by 2030 (Government of British Columbia 2023a). This prevents phases-out the use of most fossil fuel systems in nearly all buildings. Hybrid and high-efficiency gas heat pumps are permitted. HEES's implementation depends on energy efficiency standards for packaged systems – a provincial *regulatory resource* – and the national code development process – a shared *regulatory resource* – for custom systems. One BC government respondent indicated that provinces can use their "resources to lead a change and then bring it back to the national system" (PT1). This implies that provinces with significant *financial, professional, and informational capacities* may benefit from greater *agenda setting resources*.

At the municipal level, Vancouver used its *regulatory* and *political resources* to adopt a Building Performance Standard (BPS) in 2022 (City of Vancouver 2022). This action, framed emissions as urban pollution. This frame implies that all cities can regulate emissions based on their *regulatory resources* over environmental quality. NGOs used their *framing resources* to disseminate this idea, encouraging BPS development in other non-Charter cities (Canadian Environmental Law Association 2023). This new appreciation of municipal authority also supported the development of fuel bans. Nine BC municipalities have adopted fuel bans preventing the use of fossil fuels for primary heating in new construction[7]. Fuel bans that prevent fossil fuel use are transformative policies that can be implemented quickly with limited *financial,*

[5] The Building Act does not apply to the City of Vancouver or federal lands.
[6] Colwood, Central Saanish, Saanish, North Cowichan, North Vancouver, West Vancouver, Nanaimo, Nelson, Richmond, Rossland, Victoria, View Royal, Whistler.
[7] Vancouver, Victoria, Saanich, Central Saanich, and North Cowichan,

professional, and informational capacities. This direct approach to decarbonization, however, faces resistance from fossil fuel utilities, fuel-burning equipment manufacturers, developers, business owners, and residents (City of Nanaimo 2023).

Québec: seesawing between transformative decarbonization and incremental improvement

Québec's building sector is following a non-linear trajectory between incremental improvement and transformative decarbonization. This reflects the relative balance of power between coalitions that are difficult to peg as decarbonization coalitions or counter-coalitions. QC's government and province-owned gas and hydroelectric utilities form a coalition with significant *regulatory resources and capacities*. This coalition is counterbalanced by a coalition between municipal governments and NGOs having significant *political, agenda setting, and framing resources*. The interplay between these coalitions makes scaling and entrenchment of initiatives uncertain. Figure 4 illustrates the power structures, relative power resources, and capacities of the main coalitions in QC.

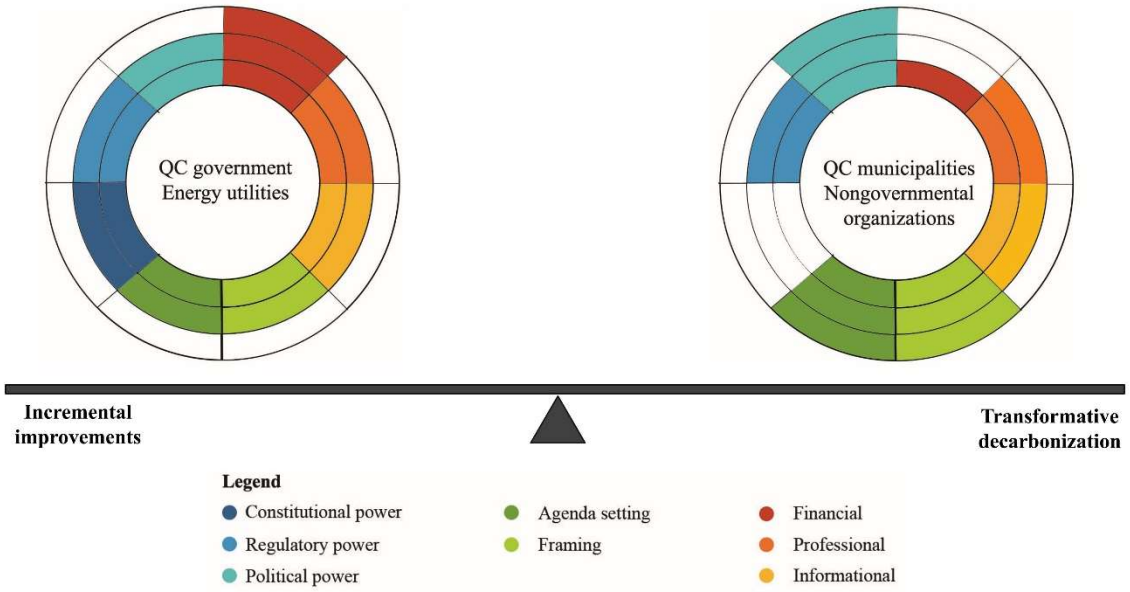

Figure 4. Power resources and capacities of the main coalitions in QC and their relative power.

The QC government used its *framing resources* to portray gas and electric utilities as allies needed to deliver cost-optimal decarbonization (Gouvernement du Québec 2020, 2023). This frame was formalized through the Duel energy agreement (Régie de l'énergie 2022) that states that Énergir – QC's gas utility – will reduce gas use in buildings by 50% by incentivizing hybrid electric/gas heating systems. In return, Hydro-Québec (HQ) – QC's hydroelectricity utility – will compensate Énergir for lost revenues. Duel energy quickly became the subject of a *framing resource* battle. Industrial consumers claimed that Énergir's $2.4M compensation would lead to tariff increases for hydroelectricity consumers, going against the polluter-pays principle. Environmental groups warned that installing gas-fired equipment would make decarbonizing by 2050 impossible (Équiterre 2022). In response, QC's energy board clarified that HQ could not transfer compensation costs to consumers (Régie de l'énergie 2022). The QC government and Énergir emphasized that gas from zero emission renewable sources would be available (Énergir 2023). Academic, industry, and environmental respondents viewed this as wishful thinking. They

do not believe biofuels will replace fossil fuels or have near zero emissions. They view biofuels as a limited resource to be used only when electricity cannot replace fuels (aviation, industrial processes). Despite these concerns, the Dual energy approach remains.

The coalition between fuel and renewable energy utilities in QC can be understood in light of peak load problems. Meeting peak winter demand for electricity is difficult. Peak loads can be addressed by increasing energy supply, investing in storage or reducing consumption. All these options require that HQ invest in infrastructures or incentives. Dual energy, however, eliminates electric peak loads by switching to fuels. This reduces the need for infrastructure projects that may not have sufficient *political support*. Pedroli and Mousseau (2022) found that QC's building managers and developers interpreted the Dual energy agreement as a sign that HQ did not believe in decarbonization through electrification. This highlights how provincial/utility coalitions' *framing resources* shape which trajectories are perceived to be possible.

Bottom-up environmental policy in QC has historically been supported by *political resources*. Montreal restricted the use of solid-fuel-burning appliances, confirming the city's *regulatory* and *political resources*. In 2020, Montreal along with other municipalities, supported by NGOs, announced plans to prohibit oil-fired heating. Their combined *agenda-setting resources* resulted in the adopting of a provincewide ban of oil-fired equipment (Gouvernement du Québec 2021). This set two important precedents. First, it showed that municipal coalitions can catalyze provincial action. Second, it showed that the use of specific fuels in buildings can be prohibited. This encouraged municipalities, backed by *political resources*, to go further.

Montreal passed an energy/emission disclosure bylaw in 2021, followed by a roadmap to zero emission buildings (Ville de Montréal 2022). While the roadmap showed a trajectory towards zero emission buildings by 2040 it did not initially propose to ban fossil fuel use. Yet, in October 2023, Montreal's BPS banned GHG emitting equipment for new buildings (Ville de Montréal 2023). Supported by Municipal Council's *political resources* confirmed through public consultation, the Commission recommended that all fuels be banned. The final regulation allows the use of gas from renewable sources. A key city employee confirmed that this reflects the relative balance of power between municipal government and provincial utilities. Smaller municipalities, lacking the *capacities* to implement BPS, are also adopting fuel bans. Prévost's gas ban (Ville de Prévost 2023) led to a legal challenge from Énergir, questioning municipal *regulatory resources* over energy sources (Remiorz 2023). This lawsuit did not have the *political resources* it needed and was heavily criticized in the media. The case was withdrawn following Prévost's bylaw amendment allowing replacement equipment to use gas from renewable sources.

QC's Law 41 is another example of the push and pull between these two coalitions. Law 41 scaled up Montreal's reporting regulations to the province (Assemblée National du Québec 2024b. But it also proposed to limit municipal *regulatory resources* by preventing cities from adopting building bylaws that differed from provincial requirements. Elected municipal officials and environmental groups used their combined *framing resources* to contest this position during public consultations (Assemblée National du Québec 2024a). Their efforts resulted in cities retaining their right to adopt building bylaws so long as they do not affect the ability of utilities to provide energy to consumers. While Law 41's trajectory depends on future rulemaking, what is certain is that cities can no longer ban fuels without prior approval from the Minister of the Economy, Innovation and Energy.

Conclusion: Power dynamics and opportunities for decarbonization

Power dynamics surrounding building policy in Canada support different outcomes. The federal government has used its *constitutional and framing resources* to ensure incremental improvements through policy harmonization. The *regulatory resources* of cities have been enhanced by municipal/NGO coalitions *framing* building emissions as sources of urban pollution, empowering cities to engage in transformative decarbonization efforts. These top-down and bottom-up pressures for provincial climate action are present in all cases. However, overall trajectories depend on the nature and relative power of provincial/utility coalitions.

Policies tend to reinforce the status quo or favour incremental improvements when provincial governments form strong coalitions with fossil fuel utilities. When fossil fuel revenues accrue to local companies – as in Alberta – or to provincial agencies – as in Québec, these coalitions combine strong *regulatory resources* with private *financial capacities*. In BC, where fossil fuel revenues benefit a Newfoundland-based company, alliances are formed with municipalities, local renewable energy providers, and builders. This structure leaves fossil fuel utilities with limited power to influence regulations. In all cases, transformative decarbonization is only possible when supported by *political resources*. These findings suggest four ways to foster power structures that support transformative decarbonization based on coalition capacities, certainty, trust, and transparency.

First, dissociate provincial coalition capacities from fossil fuel revenues. This relationship, found to favour economic development over environmental objectives (Harrison 2023) also poses challenges for building sector decarbonization. Dissociation can be achieved by increasing financial transparency surrounding the contribution of fossil fuels to the regional economy, eliminating fossil fuel subsidies, or enhancing the capacities of competing coalitions (energy efficiency, energy conservation, renewable energy). Fossil fuel utilities can also be incentivized to transition towards non-fuel business models by allowing them to provide deep retrofit and district thermal energy services. This approach has had some success in the US (Building Decarbonization Coalition 2023). Simply replacing fossil fuels with biofuels, however, reinforces buildings' dependence on fuels whose availability and emissions remain uncertain.

Second, provide local governments and the real estate industry with policy certainty. Clarifying the distribution of regulatory resources over climate policy for buildings would reduce the financial burden for municipalities and increase policy certainty for industry. The cost of legal opinions and developing bylaws that may be overturned are significant barriers to local climate action. For industry, the absence of regulatory certainty prompts a wait-and-see approach, reinforcing the status quo. As one interviewee indicated, "uncertainty is the death of long-term planning" (A7). A real estate respondent highlighted that decarbonization is a problem of policy certainty not industry capacity in saying "money for decarbonization will be there when we are sure that decarbonization will be required" (Inf5).

Third, distribute regulatory resources based on trust. In BC, the transformative decarbonization trajectory is facilitated by the provincial government trusting local governments to adopt building performance levels that industry can deliver. Allowing cities with the *political resources* and *financial, professional, and informational capacities* to go further builds industry capacity for more ambitious regulations. In AB and QC, lack of trust has resulted in provinces limiting municipal *regulatory resources*. This makes it harder for transformative decarbonization initiatives to emerge, scale up, and become entrenched.

Finally, for political resources to support transformative decarbonization trajectories processes must be transparent and inclusive. Public consultations allowed Montréal to include a partial fuel ban in its BPS and prevented the province from revoking municipal rights to adopt more stringent building bylaws. Enhancing the transparency of the new code development process could allay concerns that decision-making is not open to public debate. Transparency helps ensure transformative as well as democratic decarbonization.

This paper explored how power shapes sociotechnical trajectories. Results show that increasing use of constitutional and regulatory power by federal and municipal governments is putting pressure on provincial governments to act. How provinces respond depends mainly on the configuration and relative power of coalitions between provincial governments and energy utilities. The analysis of three Canadian provinces reveals four leverage points that can help foster power structures that are conducive to transformative building sector decarbonization based on coalition capacities, certainty, trust, and transparency.

References

Assemblée National du Québec. 2024a. Consultations particulières et auditions publiques sur le projet de loi n° 41.

Assemblée National du Québec. 2024b. *Projet de loi 41: Loi édictant la Loi sur la performance des bâtiments et modifiant diverses dispositions en matière de transition énergétique*.

Bernstein, S.,M. Hoffmann. 2018. The politics of decarbonization and the catalytic impact of subnational climate experiments. *Policy Sciences, 51*(2), 189-211.

BILD Alberta. n.d. City Charters. bildalberta.ca/city-charters/

Building Decarbonization Coalition. 2023. *Neighborhood Scale: The Future of Building Decarbonization*.

Bulkeley, H., V. C. Broto,G. Edwards. 2012. Bringing climate change to the city: towards low carbon urbanism? *Local environment, 17*(5), 545-551.

Canada Energy Regulator. 2024. Provincial and Territorial Energy Profiles – Canada.

Canadian Environmental Law Association. 2023. *Recommendations for Municipalities: Mandatory Building Performance Standards*.

RRCT (Regulatory Reconciliation and Cooperation Table). 2022. *Reconciliation Agreement on Construction Codes*.

City of Calgary. 2022. *2023-2026 Climate Implementation Plan*.

City of Edmonton. 2021. *Edmonton's Community Energy Transition Strategy & Action Plan*.

City of Edmonton. n.d. *Blatchford: More Life*. www.edmonton.ca/projects_plans/blatchford

City of Nanaimo. 2023. *Natural gas in Nanaimo: here are the facts.*

City of Vancouver. 2022. *Annual Carbon Pollution Limits for Existing Large Commercial and Multifamily Buildings*.

Coletto, D. 2024. Abacus Data Poll: Conservatives lead by 17. abacusdata.ca/conservatives-lead-by-17-abacus-data-polling-canada/

Commission sur l'eau, l'environnement, le développement durable et les grands parcs. n.d. *Feuille de route - Vers des bâtiments montréalais zéro émission dès 2040*.

Consumers Council of Canada. 2007. *Energy Efficiency in Building Codes in Canada for the Office of Consumer Affairs, Industry Canada*.

Efficiency Canada. 2022. *The Municipal Guide to Net Zero Energy Ready Building Codes.*

Efficiency Canada. 2024. *Advancing Canadian Appliance and Equipment Standards*.

Énergir. 2023. Vers la carboneutralité des bâtiments - Énergir s'engage à effectuer des nouveaux raccordements 100 % renouvelables.

Energy Step Code Council. 2019. *BC Energy Step Code: A Best Practices Guide*.

ECCC (Environment and Climate Change Canada). 2022a. *2030 Emissions Reduction Plan: Canada's Next Steps for Clean Air and a Strong Economy*.

ECCC (Environment and Climate Change Canada). 2022b. *Canada's Greenhouse Gas and Air Pollutant Emissions Projections 2021*.

Équiterre. 2022. Entente biénergie Hydro-Québec et Énergir - Une décision déplorable qui est loin de faire l'unanimité au sein de la Régie de l'énergie.

Glave, J.,R. Wark. 2019. *Lessons From the BC Energy Step Code*.

Gouvernement du Québec. 2020. *2030 Plan for a Green Economy*.

Gouvernement du Québec. 2021. *Décret 1412-2021: Appareils de chauffage au mazout*.

Gouvernement du Québec. 2023. *Plan pour une économie verte:Plan de mise en œuvre 2023-2028*.

Government of Alberta. 2024. City charters for Edmonton and Calgary. bit.ly/4aRji2c

Government of Alberta. n.d. Affordability is key for City Charters. bit.ly/457F8wV

Government of British Columbia. 2023a. *Clean BC: Highest Efficiency Equipment Standards.*

Hale, T., S. M. Smith, R. Black, K. Cullen, B. Fay, J. Lang,S. Mahmood. (2022). Assessing the rapidly-emerging landscape of net zero targets. *Climate Policy, 22*(1), 18-29.

Harrison, K. 2023. *Climate Governance and Federalism in Canada.* In Climate Governance and Federalism. Cambridge University Press. 64-85.

Hooghe, L.,G. Marks. 2003. Unraveling the central state, but how? Types of multi-level governance. *American Political Science Review*, 233-243.

Jänicke, M. 2015. Horizontal and vertical reinforcement in global climate governance. *Energies, 8*(6), 5782-5799.

Marquardt, J. 2017. Conceptualizing power in multi-level climate governance. *Journal of Cleaner Production, 154*, 167-175.

Marquardt, J.,N. Nasiritousi. 2022. Imaginary lock-ins in climate change politics: the challenge to envision a fossil-free future. *Environmental Politics, 31*(4), 621-642.

Nadel, S.,A. Hinge. 2023. *Mandatory Building Performance Standards: A Key Policy for Achieving Climate Goals*.

Newig, J.,O. Fritsch. 2009. Environmental governance: participatory, multi-level–and effective? *Environmental policy and governance, 19*(3), 197-214.

Pedroli, F.,N. Mousseau. 2022. *Enjeux, leviers et freins de la décarbonation des bâtiments commerciaux et institutionnels au Québec.*

Régie de l'énergie. 2022. *Décision D-2022-061: Demande relative aux mesures de soutien à la décarbonation du chauffage des bâtiments*.

Remiorz, R. 2023. Énergir conteste un règlement de Prévost sur la décarbonation des bâtiments. *Le Devoir*.

Scott, W. A., E. Rhodes,C. Hoicka. 2023. Multi-level climate governance: examining impacts and interactions between national and sub-national emissions mitigation policy mixes in Canada. *Climate Policy*, 1-15.

Subramanian, S., Bastian, H., Hoffmeister, A., Jennings, B., Tolentino, C., Vaidyanathan, S., & Nadel, S. (2022). *International Energy Efficiency Scorecard, ACEEE Report*

Tozer, L. 2020. Catalyzing political momentum for the effective implementation of decarbonization for urban buildings. *Energy Policy, 136*, 111042.

Ville de Montréal. 2022. *Vers des bâtiments montréalais zéro émission dès 2040*.

Ville de Montréal. 2023. *Règlement sur les émissions de gaz à effet de serrre des nouveaux bâtiments*. montreal.ca/reglements-municipaux/recherche /65849a2df1c2f151e36b0d07

Ville de Prévost. 2023. Prévost devient la première ville au Québec à adopter un règlement sur la décarbonation.

World Bank. 2024. World Bank open data – CO2 emissions. https://data.worldbank.org/