

Sustainable Retrofitting in the 21st Century: Reviewing the Impact of Municipal Policy on Rental

Property Owners

by

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Abstract

The climate crisis is influenced by many factors, including energy use in residential buildings, which accounts for approximately 10% of Canada's total greenhouse gas emissions. Achieving net-zero emissions by 2050 requires that 85% of existing buildings be retrofitted to a zero-carbon-ready state. Rental properties, often less energy efficient than owner-occupied homes, must also be improved to meet these targets. This study investigates how prepared rental property operators in Regina are to meet the City's net-zero emissions goal by 2050, as outlined in the Energy and Sustainability Framework. Through interviews with rental property operators and municipal representatives and reviewing relevant literature, this research identifies the challenges and opportunities in adopting energy-efficient practices in the rental sector. The findings provide insights for policymakers, highlighting the gap between policy goals and the practical realities rental property operators face. The researcher's personal experience in the rental property industry and governmental roles enriches the study. The thesis includes an introduction, literature review, methodology, findings, discussion, conclusion, references, and appendices.

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List of Abbreviations

GHG – Greenhouse Gases

SCECD - Standing Committee on Environment and Sustainable Development

CCBFC - Canadian Commission on Building and Fire Codes

CICC – Canadian Institute for Climate Choices

CUSP - Canadian Urban Sustainability Practitioners

NBC – National Building Code

NEC – National Energy Code

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Background and Context

The climate crisis is the result of a wide range of factors, and high energy use in residential dwellings is one of them. Canada has approximately 15 million dwellings comprised of single detached, single attached apartments, and mobile homes (Statistics Canada, 2021). These households' operations (electricity and natural gas demand) account for about 6% of Canada's total greenhouse gas emissions (Statistics Canada, 2021). When emissions from the upstream generation of electricity used in dwellings are included, that number jumps to 10% (Standing Committee on Environment and Sustainable Development, 2018). The breakdown of these emissions is 68% for space heating, 20% for water heating, 9% for appliance operation, 2% for lighting, and 1% for space cooling (SCESD, 2018). Emissions vary significantly based on the source production methods. In Regina and Saskatchewan, 81% of electricity production relies on fossil fuels. This is almost evenly split between natural gas (40%) and coal (41%). The remaining 19% comes primarily from renewable sources, with hydroelectricity being the dominant contributor (Canada Energy Regulator, 2020).

Net-zero-ready or zero-carbon-ready for a building indicates that it can produce as much clean energy as it consumes. The International Energy Agency suggests that 85 percent of existing buildings globally must be retrofitted to a zero-carbon-ready state for global net zero emissions by 2050 (Kantammi & Haley, 2023). Energy efficiency in rental units will need to be improved at the same rate as other housing types to ensure emissions across the sector are reduced to net zero levels. Rental properties are traditionally less energy efficient than owner-occupied housing, a result of tenants requiring more energy to maintain similar comfort levels because they reside in accommodations that have less effective building envelopes (Heffernan et

al., 2021; Lang et al., 2022). Despite renters in Canada accounting for 33.1% of the population (Statistics Canada, 2022), operators and occupants of these dwellings have historically been underrepresented in participation in government-sponsored energy conservation programs (Maruejols & Young, 2011). There continues to be a lack of consensus regarding what policies would best deliver a more sustainable rental sector (Heffernan et al., 2021).

Excluding renters from energy efficiency initiatives renders tenant populations more vulnerable than homeowners to climate impacts, such as extreme heat events (Lewis et al., 2019; Gabbe et al., 2023). This exclusion reproduces and compounds the historic under-resourcing of traditionally marginalized communities while continuing vulnerability patterns (Midlemiss & Gillard, 2015; Gillard et al., 2017; Lewis et al., 2019). Kantammeni and Haley (2023) argue that the dual objectives of high-performing, efficient buildings and affordable, stable housing for renters must not be separated.

Research Focus

This study examines the financial and operational readiness of rental property operators, including both owners and managers in Regina, to contribute to the municipal government's goal of achieving net-zero emissions by 2050. This goal is outlined in *The Energy and Sustainability Framework Energy and Emissions Reduction Action Plan (The Framework)* (City of Regina, 2022), produced by the City of Regina. This study seeks to provide a broader understanding of the challenges and opportunities faced by rental property operators in energy-efficiency upgrades and how this may contribute to realizing the City's long-term sustainability goals of net-zero emissions.

To investigate this problem, I conducted targeted interviews with rental property operators to gather insights into their challenges and suggestions for improvement on the topic. I interviewed city officials to understand the regulatory framework and policy implementation process. To contextualize the interview findings, I reviewed relevant literature, including academic research and industry reports. By integrating these perspectives with existing literature, I present a broad analysis of the current situation and identify potential areas for improvement.

The study is intended to offer insights that can inform municipal policymakers. By scrutinizing the feasibility and potential for success of policy types related to residential energy retrofits in Regina, this study strives to provide policymakers with evidence-based perspectives through qualitative interviews with both policymakers and rental property operators. Furthermore, it aims to bridge the gap between the municipal net-zero mission aspirations and the practical realities rental property operators face.

This thesis starts with an introduction outlining the research objectives, the problem, and my interest in the study. The literature review summarizes existing research, covering past, present, and future perspectives. The methodology section describes the research methods, including interviews and desktop analysis. The findings section presents the insights from these interviews. The discussion section analyzes these findings about the literature review and my understanding. Finally, the conclusion summarizes the main points and suggests areas for further research. The thesis concludes with references and an appendix.

Personal Interest

This topic holds significant personal interest for me. Having been immersed in the rental property industry from a young age, I have observed that economic considerations often take

precedence in decision-making, with a secondary but lesser emphasis on pride of ownership. My family's three decades of experience owning and operating multi-unit apartment buildings and various real estate holdings in Southern Saskatchewan, particularly within the Regina area, provides a nuanced perspective on the challenges inherent in rental property ownership in this region. Additionally, I own five residential properties categorized as single-family dwellings leased through conventional market channels.

The experiences gained as a rental property owner, and the retrofitting challenges encountered by my family highlight the importance of collaboration across industry sectors and with all levels of government in finding new and novel opportunities for more effective and durable climate action in the sector.

As a project manager for the Government of BC permitting solutions branch, I supported various housing permitting initiatives. This allowed me to gain a new perspective on the opportunities and limitations governments must manage to enact change in the housing industry. My team was tasked with overcoming a siloed organization's challenges to enhance the permitting process and eliminate delays caused by large-scale organizational inefficiencies.

My enthusiasm lies in exploring the power dynamics, social structures, and economic implications in the rental industry and alternate paradigms in this field, exploring opportunities to critique and enhance our current understanding. While recognizing the importance of economic viability in sustaining any organization, I had realized there is more to the story. I dove into what could be done to achieve greater alignment across stakeholder groups and explore areas of potential emissions reductions within the industry.

Literature Review

This literature review examines the implementation of building energy efficiency changes proposed by the municipality of Regina, delving into critical facets such as the definition of energy retrofitting, diverse certification standards, dynamics of Canadian politics, jurisdictional capabilities at various levels, barriers encountered by property operators in other geographic settings, and the complexities associated with the split incentive, whereas the party responsible for making decisions about energy-related investments and the one who ultimately bears the costs and enjoys the benefits are different entities (Heffernan et al., 2021; Ahlrichs & Rockstuhl, 2022).

What is an Energy Retrofit

Energy retrofits aim to enhance the efficiency of a building's envelope and energy systems. This can be achieved through improved energy production or optimized energy use, reducing consumption and lowering costs (Government of Canada, 2019). Webb (2017) defines retrofits as modifying existing equipment, systems, or buildings for better performance, updated operation, improved energy efficiency, or a combination of these factors. This includes upgrading environmental systems like mechanical, electrical, plumbing, and elements affecting thermal comfort, such as insulation (Gultekin et al., 2014). It may include adding insulation, upgrading windows and air sealing, replacing lighting, upgrading heating, ventilation, and air conditioning equipment, and adjusting operation schedules.

Retrofits hold the potential to reduce building energy consumption and carbon emissions significantly (Koester et al., 2006; Bruce et al., 2015; Webb, 2017; Kantammeni & Haley, 2023). According to the Government of Canada (2019), retrofits are classified into minor retrofits,

major retrofits, and deep retrofits. Minor retrofits involve low-cost and easily implementable modifications, often called "low-hanging fruit," such as caulking, spray foam application, insulation addition, and lighting system upgrades. Major retrofits include more substantial changes that include replacing window glazing and doors, updating inefficient heating and cooling systems, and installing sensor-equipped low-flow faucets and sub-metering. These measures are effective while causing minimal disruption to building tenants. Deep retrofits aim for a 60% reduction in energy costs and include extensive changes such as interior reconfiguration, roof replacement, window adjustments for increased daylight, and replacing heating, ventilation, and air-conditioning systems with renewable technologies such as ground-source heat pumps (Government of Canada, 2019).

Retrofitting existing buildings is crucial for achieving broader sustainable development goals (Zhou et al., 2016). Zhou et al. (2016) categorize the factors influencing the effectiveness of building energy-efficient retrofits into two groups: technological aspects (solar, lighting, high efficiency) and management aspects (resourcing, comfort levels, scheduling). The management aspects are focused on how technological aspects are used. This includes ensuring that energy usage is scheduled only when needed and not providing excess power for times of low need or ensuring that the comfort levels of individuals are maintained but not at the expense of increased energy usage, which can often be a side effect of energy enhancements. Gultekin et al. (2014) emphasizes the transformative impact of retrofitting on meeting current and future energy demands. Gultekin et al. (2014) presents a compelling statistic, noting that residential buildings constructed before 1980 can consume over three times the energy compared to modern dwellings built following the latest energy efficiency guidelines.

Certification and Standards

Retrofitting can reduce emissions, lower energy demand, and reduce costs; once the retrofit is complete, the next step is to validate the retrofit. This is often accomplished through certification or by achieving specific accepted performance standards. Buildings undergo various classifications to assess their environmental impact. Some of the more common certifications include Building Operators and Managers Association Building Environmental Standards (BOMA BEST), Building Research Establishment Environmental Assessment Method (BREEAM), BuiltGreen, EnerGuide, Energy Star, and Green Globes (Green Building Canada, 2024). Yudelson (2016) discusses the influence of technology, emphasizing its role in revolutionizing green buildings. Technological advancements offer a range of benefits, including real-time energy usage reporting and remote or sensor-controlled lighting management.

Government bodies around the globe often struggle to persuade private landlords to improve energy efficiency in their rental properties (Department for Energy Security and Net Zero, 2023; Hope & Booth, 2014). In the UK, the Standard Assessment Procedure, an energy performance rating system for buildings, helps compare homes by assigning a score from A to G. Notably, privately rented homes in the UK tend to be the least energy-efficient, with only 8% of homes achieving an energy rating of A to C, compared to 15% of owner-occupied homes (Hope & Booth, 2014). This stark contrast highlights the significant energy efficiency gap between rental and non-rental properties, emphasizing the need for focused interventions in the private rental sector to address these inefficiencies.

Building and Energy Codes

Industry standards and certification requirements can serve as targets for enhancement, but there is a need to create, publicize, and enforce minimum standards as well. In Canada, the National Building Code (NBC) and National Energy Code (NEC) serve this function by acting as objective-based policies developed by the Canadian Commission on Building and Fire Codes, available for selective adoption by provincial and territorial governments (CCBFC, 2020a). The NBC sets technical requirements for the construction of new buildings and alterations, change of use, and demolition of existing buildings (CCBFC, 2020a). The NEC sets the technical requirements for energy-efficient design and construction of new buildings and additions (CCBFC, 2020b). Jurisdiction over these codes lies with provincial or territorial governments, allowing them to adopt the NBC and NEC for buildings without modification or with adjustments to suit regional needs (CCBFC, 2020a). These codes ensure that new construction and retrofits align with safety, durability, and energy efficiency standards, consistent with political directives (CCBFC, 2020a). It is important to note that, according to the NBC, generally building codes no longer apply once a building is occupied unless it is undergoing alteration, change of use, or demolition (CCBFC, 2020a).

Retrofitting older rental properties presents significant challenges, as many were constructed before the introduction of modern building codes. These buildings frequently fall short of today's standards for energy efficiency, safety, and structural integrity. In Canada, 74 percent of purpose-built rental properties were built prior to 1990, with a large portion originating from the apartment construction boom of the 1960s (Pomeroy & MacLennan, 2019). The age of this housing stock contributes to higher emissions, as multi-unit residential buildings

constructed before 2005 consume 50% more energy compared to those built today (Jackson et al., 2023).

Canada's future building codes are expected to reflect environmental requirements more comprehensively, including adding general GHG emissions standards with the 2025 code. Provincial governments, however, will retain the authority to decide when and how to implement and amend these updated codes (CICC, September 2021). Saskatchewan has only recently adopted the 2020 national codes, and as of January 1, 2024, they were enforced (Government of Saskatchewan, 2023d)

Municipalities in Canada are responsible for ensuring that construction adheres to the baseline requirements outlined in both the building and energy codes. Traditional rental properties in urban centers, particularly high-rise or multi-family units, often fall short of modern building and energy code standards. These properties, typically older structures predating stringent regulations, face significant challenges in meeting contemporary requirements (Webb, 2017). Building operators considering retrofits are tasked with upgrading their structures to align with as much of the modern code as is feasible. In many cases, this means that operators must upgrade the retrofitted sections to comply with the latest standards, while the rest of the building may not need to be fully brought up to code unless there is a major alteration or change of use.

Rental Operators' Barriers to Retrofit

Heffernan et al. (2021) identify several key barriers that impede rental property operators from pursuing retrofits. These include:

- high upfront costs;
- a perceived lack of return on investment;

- insufficient awareness and information about the benefits of retrofitting;
- the absence of mandatory regulations enforcing minimum energy efficiency standards;
- and the significant market influence held by landlords.

Although Heffernan et al.'s research is based in Australia, their findings align closely with studies conducted in Canada, which report similar obstacles (Pomeroy & Maclellan, 2019; Jackson et al., 2023). This suggests that the challenges faced by rental markets regarding energy retrofits are not unique to one region, but rather reflect broader, global trends in the sector. Proactive retrofitting by rental operators is uncommon, and when it does occur, it usually takes the form of low-cost incremental energy-efficient improvements such as spot LED lighting replacements or a low-flow showerhead (Lang et al., 2022). Government subsidies, tenant requests, and system malfunctions are activities which would primarily prompt retrofitting activities. Despite its significance for energy efficiency, retrofitting is more often associated with landlords' financial capacity than tenants' needs (Lang et al., 2022; Hope & Booth, 2022). According to Hope and Booth (2022), the upfront costs of retrofitting are a significant barrier. However, reports show that subsidies at about one-third of the total retrofit cost seem sufficient to gain rental operator interest (Hope and Booth, 2022). The same report also highlights that a lack of confidence in the financing schemes is another barrier private landlords face when considering retrofits (Hope & Booth, 2014). A line that best represents Hope & Booth's (2014) findings is "Simple language, simple schemes" (Hope & Booth, 2014, p. 22), outlining that for programs to be effective, they must be easily understood.

Split Incentives Between Landlords and Tenants

Landlords face substantial barriers to retrofitting; the most cited issue for rental property operators when determining whether to retrofit their units is the split incentive (Hope & Booth, 2014; Lucie & Young, 2011). The split incentive is exaggerated when there are energy performance gaps, meaning that the potential benefits of energy-saving are never realized. Tenants do not make optimal decisions that align with the most efficient energy practices, resulting in a lower return on investment than expected. Moeller and Bauer (2022) found that, in the European market, the potential reduction in heating energy consumption in existing buildings is not achieved because of these energy performance gaps. Retrofitting a building to improve its thermal capacity can lead occupants to open windows for quicker cooling, negating the benefits of the enhancements. These are "rebound" energy performance gaps that are associated with refurbished and newly constructed buildings; there is evidence to show that an alternate "prebound" effect has been noted in older, mainly non-renovated buildings where the energy consumption is often less than the predicted heating demand (Moeller & Bauer, 2022).

According to a report by Maruejols and Young (2011), supported by Melvin (2018), tenants are significantly less likely to turn their thermostats down at night when landlords pay the energy bill. Conversely, landlords are much less likely to install enhanced building envelope materials when tenants pay their energy bills. Melvin (2018) reports that renters use approximately 2.7% more energy overall due to California's landlord-tenant split incentive issue. This figure may be even greater in Canada due to more significant weather fluctuations requiring additional energy usage. Canadians residing in multi-family residences are generally unresponsive to energy prices; this is exaggerated by the findings that these same households

often opt for increased thermal comfort over those who pay for heat (Lucie & Young, 2011). Policies aimed at improving energy efficiency should specifically target the impacts of the behaviour of those not paying for energy use (Lucie & Young, 2011). The next section considers government and industry policies that incentivize sustainability.

Federal Infrastructure Plan

The Government of Canada has outlined several strategies to help reduce emissions. For housing, they have allocated funding for several initiatives to retrofit buildings nationwide. This includes a \$200 million investment in the Deep Retrofit Accelerator Initiative, a \$150 million Canada Green Buildings Strategy, and a \$182 million Energy Efficient Buildings Program. These are all part of the \$180 billion Investing in Canada Plan supporting emissions reduction in buildings on a national scale (Canada, 2022). Within these funding models, various programs target the retrofitting of existing building stock to enhance public buy-in on similar initiatives.

The Canadian Home Builders Association (CHBA) has introduced the Net Zero Home Labeling Program for renovations. This program, launched in 2023, provides certification and training to builders and renovators, enabling them to produce Net Zero and Net Zero Ready Homes (Canadian Home Builders Association, 2023). Proactively adapting to the net-zero transition presents an opportunity to build resilient and energy-efficient homes that meet climate commitments and facilitate necessary emissions reductions (CICC, September 2021).

The Investing in Canada Report outlines the Federal Government's funding plan for various infrastructure initiatives, with a commitment of \$16.1 billion over 11 years led by the Canada Mortgage and Housing Corporation. (Infrastructure Canada, 2018). A vital element of this plan is establishing a national housing co-investment fund to maintain existing rental

housing and develop new affordable housing integrated with support and services (Infrastructure Canada, 2018).

The Building Pathways report, produced by the Canadian government, delineates the strategic approach necessary to effectively meet the infrastructure needs of all Canadians, including privately owned rental dwellings. It emphasizes that Canadian infrastructure investments should drive the nation toward net-zero emissions while building resilience to climate change (Government of Canada, 2021). The report also underscores the importance of federal collaboration with all levels of government in developing the infrastructure strategy, recognizing that most infrastructure is not federally owned (Government of Canada, 2021).

Provincial Building and Energy Plan

The Government of Saskatchewan launched 'Prairie Resilience: A Made in Saskatchewan Climate Change Strategy' in December 2017 (Government of Saskatchewan, 2017). This document delineates the direction and strategy of the Saskatchewan Province concerning its climate action plan. It emphasizes the province's interest in reducing greenhouse gas emissions while investing in enhanced adaptation initiatives, asserting that "Our agriculture and resource-rich province must also focus on climate adaptation and resilience to be effective" (Government of Saskatchewan, 2017, p. 2). The report addresses the pushback against the federally mandated carbon tax, arguing that it does little to reduce emissions and penalizes Saskatchewan residents for lacking a stable alternative energy source.

The Saskatchewan Climate Strategy report discusses provincial targets, and some of the initiatives it outlines include:

- Adopting the 2015 NBC, effective January 1, 2018, with provisions to improve energy efficiency standards for houses and small buildings taking effect January 1, 2019.
- Adopting the 2015 National Energy Code for Buildings, which will apply to large buildings, effective January 1, 2019.
- Exploring options to label buildings for energy performance.
- Encouraging the industry to develop innovative solutions to meet energy performance requirements.
- Increasing the number of government buildings with sustainability certification.
- Requiring new and renovated government buildings to exceed the energy performance requirements of the 2015 National Energy Code for Buildings by ten percent.
- Collaborating with other provincial and territorial governments, in partnership with the National Research Council, to enhance standards for climate resilience in building design.

(Government of Saskatchewan, 2017, p. 8)

The 2023 progress report on the Prairie Resilience Strategy indicates improvement in 20 targets and maintenance on two. The updated report details progress on five related physical infrastructure targets, with columns outlining the area of Focus, the 2030 target, the status, and its trend over prior years (Government of Saskatchewan, 2017).

In 2018, Canada passed the carbon tax. In 2019, Alberta, Saskatchewan, and Ontario brought a case to the Supreme Court aiming to "axe the tax", resulting in the justices rejecting their appeal ruling that the carbon tax was constitutional (Supreme Court of Canada, 2021). Since the federal government enacted the carbon tax, Saskatchewan has been collecting carbon

tax through home heating and power bills. Still, the Saskatchewan Premier recently decided not to collect this federal carbon tax on home heating. This came after the federal government removed the carbon tax on maritime households using heating oil to heat their homes. Saskatchewan Crown Investments Corporation Minister Dustin Duncan has stated that this job is to "...protect Saskatchewan Families' ability to afford to heat their homes this winter" (Government of Saskatchewan, 2023a, p. np).

Saskatchewan currently has incentives and grant programs that aim to increase the availability of rental units in communities. The two most recent programs are the Secondary Suite Incentive Grant Program and the Provincial Sales Tax Rebate for New Homes Construction (Government of Saskatchewan, 2023b). Both programs target the private market and attempt to incentivize them to build more homes and rental units without referencing energy efficiency as a target, goal, application requirement, or in any other context.

Municipal Authority

This study focuses on the third level of government: municipalities. In Saskatchewan, municipalities derive their authority directly from the province through the Cities Act or Municipalities Act, which were created depending on size and designation. The Cities Act, under which Regina is legislated, outlines constitutionally granted abilities for cities to govern their constituents (Government of Saskatchewan, 2021). According to the Cities Act, within Saskatchewan, the purpose of a city is to accomplish the following:

- “(a) provide good Government;
- (b) provide services, facilities, and other things that, in the opinion of the council, are necessary and desirable for all or a part of the city;
- (c) develop and maintain a safe and viable community;
- (d) foster economic, social, and environmental well-being;

(e) provide wise stewardship of public assets. The Act mandates that the city enact bylaws and resolutions utilizing a city council.” (Government of Saskatchewan, 2021, p. 15).

Regina and its council are governed under this Cities Act. Through this Act, the city has several options to enforce its bylaws, including fines, imprisonment, and remedying bylaw contraventions through dealing with or disposing of real or personal property via a broad range of activities, as the city sees fit (Government of Saskatchewan, 2021). Another tool that Regina can utilize is its ability to create and control a system of licenses, inspections, permits, and approvals (Government of Saskatchewan, 2021). According to the Act, the fee that may be established for a license, inspection, permit, or approval must not exceed the cost to the city of (a) administering and regulating the activity and enforcing the regulatory scheme for which the license, inspection, permit, or approval is required; and (b) enforcing payment of the license, inspection, permit, or approval fee. The Cities Act recognizes that cities, as local governments, are a responsible and accountable level of government within their jurisdiction, subject to provincial laws and certain limits and restrictions in the provincial interest (Government of Saskatchewan, 2021).

There are calls for a shift in decision-making power to transition from the federal and provincial levels to increased autonomy at the municipal level of government (Andrew, 2002; Bec-Hanson, 2016). Municipalities face challenges when enacting changes, including doing more with limited, rigid access to funding and autonomous areas of responsibility (Andrew, 2002; Bec-Hansen, 2016). According to Bec-Hanson (2016), the greater empowerment of Canadian municipalities brings with it some concerns as few urban centers can self-govern with high efficiency; a majority of the 4000 municipalities in Canada consider themselves under-

resourced, and with enhanced autonomy would not be able to function and provide the same level of services to their constituents. Intergovernmental relationships will nonetheless be critical moving forward to better address issues; leveraging the ability of municipalities to apply innovative, location-specific, cross-business line solutions to complex issues will help create more capacity among the municipalities (Andrew, 2002; Bec-Hansen, 2016).

The Case Study: Regina and Saskatchewan Historical Effort

Regina, as of the 2021 census, is home to 249,217 people with 108,120 private dwellings (Statistics Canada, 2021). Among the reported household characteristics, 31,520 dwellings, or 31.5%, are rented, aligning with the national trend where approximately 33% of dwellings across Canada are rented (Statistics Canada, 2021). Notably, in the census data, 65,510 dwellings, accounting for 65%, were constructed before 1990 (Statistics Canada, 2021). According to the 2021 census data, 14.95% of tenants in Canada reside in subsidized housing. Additionally, 35.4% of tenant households spend more than 30% of their income on shelter costs. Lower-income individuals typically allocate more of their income to heating and cooling expenses than homeowners (Statistics Canada, 2021). Across North America, but also places like Europe and Australasia, there has been a notable surge in private renting, making it the second most common household arrangement after owner occupation (Lang et al., 2022). Understanding the housing landscape, both locally and globally, including rental trends, affordability issues, the age of dwellings and the direct and indirect cost of utilities for renters, is essential when considering energy efficiency in rental properties. The next section considers policy efforts in the case city.

Regina Environmental Policy

Regina developed an energy and sustainability framework in 2018, approved by the city council (City of Regina, 2022), to guide its strategic vision toward achieving net-zero emissions by 2050. This sustainability framework was collaboratively drafted through consultations with municipal stakeholders, special interest groups, and external advisors. This resulted in a strategic vision incorporating significant initiatives the City plans to leverage to meet its 2050 target. The document highlights vital strategies, particularly in building retrofits, identified as a crucial driver in the city's efforts to reduce emissions. The City is focusing on three major initiatives within its framework (City of Regina, 2022), which are closely linked to this research and inspired many of the interview questions:

Building Retrofit Actions: This includes deep retrofits aimed at achieving a 50% increase in thermal efficiency and a 10% reduction in energy use for all residential buildings by 2035.

1. **Clean Heating Actions:** This involves switching to clean fuels in all residential buildings, with a goal of 75% completion by 2035. This transition includes adopting air source heat pumps and electric water heaters when current systems reach the end of their lifespan.
2. **Renewable Energy Generation Actions:** This focuses on maximizing rooftop solar installations and meeting the city's energy demands through local production, such as wind and solar power.

Regina relies on its official community plan, initially crafted and approved by the City council in 2012, to guide its strategic vision for the City's growth to 300,000 residents, with a long-term vision for 500,000 (City of Regina, 2023d). The plan adheres to the principle that "Regina aims

to be a sustainable four-season community that meets its current needs without compromising the needs and quality of life of future generations" (City of Regina, 2023d, p. 7). Among the numerous strategic aims outlined in the plan, two goals are particularly relevant to this study. Goal 4.14 emphasizes collaboration with stakeholders on environmental mitigation measures, targeting more energy-efficient construction, promoting green building design, and reducing greenhouse gas emissions through alternative energy sources. Another closely related goal is Goal 2 in Section E, precisely Item 14.9, which focuses on community engagement as a critical piece of the community-building process (City of Regina, 2023d).

On June 14, 2023, Renewable Regina provided an update to the Executive Committee on the progress of the *Energy and Sustainability Framework* implementation (City of Regina, 2023b). This update highlights advancements made toward *The Framework's* (City of Regina, 2022) primary goals. The report highlights the initial work on a streamlined retrofit permitting process, implementing a green building policy, launching a residential retrofit pilot, conducting a Property Assessed Clean Energy feasibility study, and undertaking education and engagement campaigns alongside city facility energy audits and retrofits (City of Regina, 2023b). The update states that a thorough review of the progress on the seven big moves will only happen every three years due to the resource requirements that level of reporting requires; the update focuses more on the City and its related emissions as a corporation and not on the broader municipal level emissions produced from its constituents. As a corporation, it states that while energy consumption is up over the prior year, net GHG emissions have been reduced through increased renewable energy production (City of Regina, 2023b).

The City of Regina provides incentives for renovating and retrofitting rental units, with programs that often align with or piggyback on federal requirements. One such example is Regina's Housing Incentives Policy, which mimics the approach of the federal co-investment strategy (City of Regina, 2023a). Primarily focused on cost and location, this policy offers grants and tax exemptions to encourage the construction of additional rental units, not specifically energy-efficient units. The policy mentions sustainable design in the appendix, accounting for 8 out of 100 available points on the scorecard used to evaluate potential projects. This is the only section where renewable, sustainable, or efficiency metrics are referenced (City of Regina, 2023a).

Another initiative, the Revitalization Incentive Policy, delineates the boundaries for revitalization projects and outlines incentives through tax exemptions or grants (City of Regina, 2023c). The City funds programs meeting specific criteria with either the total eligible costs incurred, or a one-time lump sum grant capped at \$50,000. Alternatively, the City may provide funding based on the estimated eligible costs, provided they do not exceed five years of current taxes on the subject property. (City of Regina, 2023c). Like the Housing Incentives Policy, the Revitalization Policy prioritizes specific neighborhoods, safety, and visual revitalization activities such as building facade improvements, demolishing existing buildings for replacement, and interior improvements for safety compliance without including any level of energy efficient prioritization (City of Regina, 2023c). A recent addition to the list of rebates is the Home Efficiency Retrofit Rebate, providing up to \$2,000 for air sealing, insulation, windows, and door upgrades (Sask Energy, 2024a). This program, like many others, is targeted toward Saskatchewan homeowners, and rental units are not eligible. This program also relies on funding

through the Federal Greener Homes Grant program, which recently stopped accepting new applicants. (Sask Energy, 2024a).

A program that is available to rental property operators of residential units is the Residential Equipment Replacement Rebate Program offered by SaskEnergy. This program provides rebates for customers to install high-efficiency natural gas appliances, including furnaces, boilers, and water heaters, with rebates going up to \$1,000 depending on the installed product (Sask Energy, 2024b). SaskEnergy also provides a rebate based on MBH (1,000 BTU/hr) for the same equipment but designed for more industrial or commercial applications such as a multi-family residence, which they call the Commercial Space and Water Heating Rebate (Sask Energy, 2024c). SaskPower also offers a program to homeowners or renters called the Energy Assistance Program, in which they will send out a Home Energy Coach with the permission of the landlord and upgrade one home with free energy-efficient items such as smart thermostat, Energy Star LED light bulbs, smart power strips, high-efficiency showerheads, aerators and drying racks. This is paired with a personalized coaching session providing residents and tenants with tips to keep energy use down (SaskPower, 2024).

Incentives to Retrofit Rental Units

The difficulty policymakers face as they try to find solutions that effectively scale up energy efficiency in homes to address energy and climate challenges is not unique to Canada. It is a predicament faced by policymakers in the United States and other nations abroad (Fuller et al., 2010; Yudelson, 2016; Zhou et al., 2016; Heffernan et al., 2021). The report by Fuller et al. (2010) delves into a more specific inquiry, examining how individuals in developed countries can be persuaded to invest their valued time and resources into home upgrades. The goal was to

eliminate energy waste, reduce high utility bills, and, consequently, stimulate economic growth. After an extensive literature review, industry expert interviews, and residential contractor surveys, Fuller et al. (2010) scrutinized 14 different residential energy efficiency programs and found that a multifaceted approach, grounded in a comprehensive understanding of homeowners' and contractors' motivations, is crucial for any large-scale acceptance of residential market energy reduction targets. According to Gultekin et al. (2014), who explored the decision-making and system selection process through a case study of a deep retrofit, an integrated decision-making model is crucial for designing effective energy-efficient retrofits. They emphasize the importance of incorporating both owners' and tenants' spatial needs into the design. In a study by Zhao et al. (2010) conducted via a household mailing survey in Florida, the impacts of tax credits and interest-free loans on stimulating homeowners to adopt more energy-efficient products were explored. The study revealed that over half of the respondents expressed interest in energy-efficient and renewable energy products, with high investment costs being a significant concern (Zhou et al., 2016). Notably, homeowners valued tax credits higher than interest-free loans, with only 2-12% of respondents in one American study expressing interest based on current federal home energy tax credit levels, which were found to be insufficient for expensive products such as solar panels and that a higher amount of incentives is required for lower-income earners (Zhou et al., 2016). To attract lower-income families and individuals in older households, the study recommended a higher rate of tax credits for expensive products like solar panels (Zhou et al., 2016).

Hoicka et al. (2014) assessed the differences in outcomes of four residential energy programs that were introduced in Waterloo from 1999 to 2011. This report found that

implementing new energy-reducing programs is more likely to garner higher participation when accompanied by incentives (Hoicka et al., 2014). The study also suggests that there is a substantial population of properties that could benefit from incentive-based programs. While evidence for incentives is strong, this report and others heavily advocate for a more flexible design approach. Effective programs should be designed more tailored to the specific needs of the target audience, recognizing that these needs will likely vary by region. (Hoicka et al., 2014; Fuller et al., 2010; Zhou et al., 2016).

This need for flexibility can be categorized, as per Heffernan et al. (2021), into carrot, cusp, or stick policies. Carrot policies encompass tax incentives, rebates, and grants. Stick policies involve minimum standards and mandatory disclosure. Cusp policies include items that do not neatly fit into either category, such as loans, energy arrangements, and improved rental rights (Heffernan et al., 2021). An example of a cusp policy is in certain parts of Germany, where the exploration of a "percentage-retrofitting fee" is underway. Allowing landlords to recoup their capital expense by charging a percentage of the upfront investment amount spent on retrofits on top of the current rent (Ahlrichs & Rockstuhl, 2022). To achieve lasting change, an integrated low-energy policy is necessary to influence the behaviours of landlords, tenants, and property managers (Lang et al., 2022).

Energy Poverty is a Major Issue.

Much like the environmental risk that operators face, so too is there a risk to society as renters face disproportionate impacts from rising energy prices as they lack the capacity to make energy improvements to their homes, leading to potential health, financial and social problems (Lang et al., 2022). If a household spends more than 6% of its annual after-tax income on heating

and energy costs, it can be said to be experiencing energy hardship (Canadian Urban Sustainability Practitioners, 2019). Saskatchewan has just over 20% of its population which face energy hardship (CUSP, 2019)

Much like other parts of the world, Canada faces issues with a growing backlog of repairs required to maintain its housing stock. This means that moving people off the streets or shelters and into housing may not always improve their living conditions (Gaetz et al., 2014). Municipalities have bylaws to legislate habitability. However, these bylaws are often ineffective or ignored, with a lack of capacity for municipal workers to police units proactively and are relegated to waiting until they receive complaints. However, such complaints may never come due to the shortfall of available capacity and high rental rates (Gaetz et al., 2014).

This energy poverty issue highlights the compounding problem of delayed energy efficiency retrofits in rental units. As energy-efficient rental housing falls further behind, the cost burden increases, widening the gap between those who can afford retrofits and those who cannot. Given these challenges in maintaining housing standards and the compounding issue of energy poverty, it is crucial to investigate the specific barriers rental property operators face when implementing energy efficiency measures. The following section discusses the methodology for exploring barriers to policy implementation.

Methodology

Research Question

I developed the research question after recognizing a gap in climate action within the residential rental sector. The research explores the perceived limitations in understanding and

engaging with energy-efficient retrofit practices in the residential rental sector. The question that guided this study was: "Do rental operators in Regina face financial and/or operational limitations as they engage with energy efficiency changes proposed by the municipality?" To answer this question, I analyzed financial and operational components through interviews and document analysis.

Objectives

When formulating the interview questions, it was important to set guiding principles to ensure that they would provide complementary and enriching responses. The research question defines the goal, while the objectives provide a roadmap to achieve it and outline the scope of the study.

Table 1

Research Objectives

#	Objective	Method: Sample Group
1	To Identify the awareness and preparedness of rental property operators regarding current and upcoming municipal environmental policy.	Interview: Rental Property Operators
2	To determine rental property owner's desire to see environmental enhancements to their building stock.	Interview: Rental Property Operators
3	To identify the bureaucratic capabilities, municipal policymakers have to influence retrofits in the rental sector.	Combination of interviews and document analysis: Municipal Representative
4	To determine whether municipal policy is a leading or lagging factor influencing emissions-reducing residential retrofits.	Interview: Rental Property Operators & Municipal Representative
5	To determine whether Regina's environmental policies enhance or deter rental property operators from implementing energy efficiency upgrades.	Interview: Rental Property Operators
6	To explore policy opportunities for the City of Regina to increase effectiveness and help drive emission-reducing renovation among rental property operators.	Critical analysis

Qualitative Methods

This study used a combination of qualitative methods to explore the relationship between policy and Regina's rental property operators. Utilizing evaluative research methods (O'Leary, 2021), this project aimed to analyze the alignment and divergence between the perspectives of municipal government (the providers) and rental property operators (the recipients). This analysis was anchored in *The Framework* as the primary policy document, serving as the foundational basis for the assessment.

Discourse analysis (O'Leary, 2021) was applied to examine the deeper social and cultural meanings embedded in the language used by the respondents. This method allowed for an exploration of how participants expressed their views on energy efficiency, not only in operational or financial terms but also in ways that revealed broader cultural paradigms. For instance, rental property operators often framed retrofits as not only financially unfeasible but also as unnecessary or low-priority, reflecting a cultural resistance to change. In contrast, municipal representatives frequently discussed energy efficiency within the context of public good and regulatory compliance, emphasizing the need for systemic improvements.

By analyzing how these perspectives were communicated, the discourse analysis revealed how underlying values and institutional norms influenced decision-making.

Data Collection

Two primary methods were used to gather data for this study. The first was an in-depth document analysis (O'Leary, 2021) focusing on *The Framework*. This method reviewed key metrics and “big moves” the City of Regina identified as critical within the report and provided

high-level targets that homeowners, including rental property operators, would have to meet to achieve the goals.

The second method was a series of strategic interviews conducted under an ethical review approved with oversight from Royal Roads University. This method aimed to report on the perspectives of rental property operators and their subjective ability to meet the goals of *The Framework*, as well as the opinions of key decision-makers and municipal representatives who engaged in some capacity with the drafting or implementation of *The Framework*. One stakeholder group that was not included in the interviews, but later emerged as potentially significant, was the actual renters of these units. Although they were not initially identified as a critical response group at the outset of this research, it became evident upon completion that their insights had potentially substantial and impactful contributions to the study's findings.

The output of this study allows the reader to see the differences between city targets and what rental property operators believed they could accomplish given their currently available resources. Responses captured throughout the interview process were treated as confidential. Overall summaries of responses were shared, along with some supporting non-identifiable quotes, to protect the privacy of individual participants. Interview responses were stored in a secure password-protected file on a third-party hard drive to mitigate the potential for data loss. All responses will be destroyed once the analysis is complete.

The initial target was to conduct between six and twelve interviews with both municipal representatives and rental operators, aligning with the researcher's capacity while ensuring a sample size that would allow for response consistency and some level of data saturation.

Ultimately, seven interviews were completed for each group; this number allowed for a response pattern to develop with minimal response variation of each additional participant.

Nine individuals from the City of Regina were listed as being part of *The Framework's*) creation. I was able to conduct interviews with two of these individuals. For the remaining five interviews with municipal representatives, I identified others involved in sustainability, incentives rollout, or general policy work who could provide unique insights into the goals, obstacles, and operations the city navigates to enact changes like those listed in *The Framework*. These obstacles include bureaucratic hurdles, funding constraints, achieving stakeholder buy-in, public awareness and engagement, technical challenges, interdepartmental coordination, and economic factors. This group included City councilors, City managers, policy analysts, sustainability managers, and individuals who supported but were not directly involved with the drafting of the *Energy and Sustainability Framework*. These individuals were selected for their involvement in the energy framework rollout and their availability and willingness to participate in interviews. Using purposive sampling, I identified seven representatives of rental property operators in Regina and was able to conduct a series of semi-structured interviews aiming to explore how the municipal government impacts their operations and planning. They were contacted through direct email correspondence and word of mouth from other respondents.

Including respondents representing the municipality was critical to gaining further insight into why policies, specifically *The Framework*, are or are not implemented, what some of the traditional challenges are with implementation and how the City measures success in like policies. This dual-sided interview process aimed to review how the intended outcomes align or misalign with the realized outcomes, specifically from a select stakeholder group: those engaged

with private rental properties. The interview structure and its line of questions (Appendix A – Rental Property Operators Questions; Appendix B – Municipal Policy Workers Questions) were designed to explore how the intended outcomes of *The Framework* could be enhanced or better received to enhance the residential rental market outcomes.

Table 2.0

Interview Data Overview

Participant Group	Number of Interviews	Type of Interview	Key Focus Areas
Rental Property Operators	7	Semi-Structured	Demographics, future renovation plans, impact of government policies on operations, perceptions of energy-efficient retrofits
Municipal Representatives	7	Semi-Structured	Role in implementing energy efficiency policies, challenges in policy enforcement, collaboration with rental property owners
Total	14		

Bias Identification

Each phase of the study necessitated that I acknowledge and understand my biases vis-a-vis the research to ensure objectivity for both the process and findings. In instances where my biases could impact the study, I tried to identify and disclose them. I acknowledged the potential for my stake in the study as a rental property owner influencing the setup and structure of each study phase. When formulating interview questions, I aimed to maintain a neutral line of questions that did not prematurely guide toward a specific answer or line of thinking. I maintained the authenticity of respondents' messages during analysis, ensuring the integrity of the data presented in the study. During desktop analysis, selecting various sources to gain diverse insights was crucial, avoiding similar perspectives.

Data Analysis

The qualitative data analysis (QDA) tool NVivo was used to analyze interview data from both rental property operators and municipal representatives. By leveraging my industry knowledge and using NVivo as both an exploratory and validation tool, I systematically examined interview responses concerning key research questions and themes. The use of QDA was instrumental in coding the data collected through purposive sampling (O'Leary, 2021), allowing for a more detailed analysis of a larger data set and enhancing the visibility of emerging trends.

During the coding process, several categories or "nodes" were created in NVivo to organize the data. The primary codes used were centered around recurring themes, including Financial Barriers: encompassing terms like "cost," "expenses," "upfront investment," and "return on investment." Operational Challenges: including references to "logistics," "maintenance," "workforce limitations," and "regulatory hurdles." Perception of Energy Efficiency Programs: capturing opinions on "retrofits," "sustainability programs," and "energy efficiency policies."

Each code was developed iteratively, with the software enabling constant comparison between rental property operators' and municipal representatives' responses. This coding process provided clarity on where perspectives aligned and diverged, helping to illuminate the challenges that each group faces in adopting and implementing energy-efficient practices.

Having conducted a thorough analysis of the financial and operational barriers identified through coding and discourse analysis, the findings offer critical insights into how rental property operators and municipal policymakers perceive energy-efficient retrofits. These results

provide a foundation for understanding the complexities involved in promoting energy efficiency within the rental market, which will be discussed in detail in the subsequent section.

Findings

The findings are presented according to key themes that follow the research question and are divided between financial and operational limitations as rental operator respondents perceive them. In each section, related findings from the municipal representative respondents will also be included to show potential discrepancies or support for the rental operator's response.

Rental property operator interview respondents fit into two different groups: those who directly own and operate their stock of rental properties and those who do not own rental properties but are engaged with the management of units on behalf of other ownership groups. This is largely reflective of the general market. However, one large demographic was not interviewed: those who own their units but do not manage them. Given the time and scope limitations, this was not an audience that was included.

The following tables provide a detailed demographic breakdown of the rental property operators and municipal representatives who participated in the study. Table 3.0 summarizes key characteristics of the rental property operators, including the quantity and type of units they manage, who pays utilities, their perceived tenant income brackets, and their renovation plans and rationale. Table 4.0 presents a similar breakdown for municipal representatives, detailing their job categories, connections to *The Framework*, and whether they own rental units. These tables offer important context for understanding the respondents' perspectives on energy-efficient retrofits and related challenges while maintaining a level of respondent confidentiality.

Table 3.0*Rental Operator Demographic Breakdown*

ID	Quantity of Units	Duration of Involvement	Type of Units	Utilities Payer	Perceived Tenant Income bracket	Renovation Plans	Renovation Rationale
RO1	26-50	38 years	Single Family	Tenant	Low Income	Increase quantity	Constant functional renovations as needed
RO2	1-5	15 years	Single Family	Tenant	Middle Income	Increase quantity (wants larger scope property. 10+ units)	Plans to renovate 1 of 4. Others have been done recently.
RO3	101+	15 Years	Multi Family (Some up down duplex, infill)	Mix. Tenant pays power	Middle Income	Grow portfolio and add more units	Focus on maintaining and completing low-hanging fruit.
RO4	6-25	Three years	Fourplex + Duplex	Mix. Tenant pays power	Middle – High Income	Increase quantity	As needed. No plans for major changes
RO5	26-50	Ten years	Duplex (up / down, side by side)	Tenant	Middle – Low income	Increase quantity	Renovate as needed, open to energy efficiency
RO6	101+	Ten years	Multi Family	Shared	Middle income	Increase	Proactive upgrades during COVID. General maintaining now
RO7	6-25	Ten years	Townhouses / Duplex	Tenant	Middle	Increase	Standard maintenance. No Major reno plans.

Table 4.0*Municipal Representative Demographic Breakdown*

ID	Job Category	Framework Connection	Own Rental Units
MR1	Academic – University	Engaged with and supported open consultation prior to drafting and facilitated engagement sessions with the public to validate community support.	No
MR2	City Staff	Engaged in implementing Regina’s Energy Sustainability Framework	No
MR3	City Representative	Supported the original motion to create <i>The Framework</i>	No
MR4	City Staff	<i>The Framework</i> is an informal guide to the work process	No
MR5	City Staff	<i>The Framework</i> is an informal guide to the work process	Yes,
MR6	City Staff	Engaged with advocacy, not engaged with operations	No
MR7	City Staff	Supported and drove the creation and continued implementation of <i>The Framework</i>	No

Financial Limitations:***Rental Operators – Financial Dilemma***

Financial limitations appeared consistently across all interviews with rental property operators and municipal representatives. Rental property operators often cited the need to ensure that the potential for increased rent offsets the cost of the energy-efficient retrofit. If this was not the case, they highlighted that government intervention would be required to provide an incentive to implement the retrofits.

“I hate to say it, but the bottom line for property management companies is going to be 90% of the time money. So, you know, one thing that helps a lot is the government incentives” (RO6, June 1, 2023)

Rental property operators and managers accept that energy costs are going up. A shared response was that the baseline minimum charge for utilities is quite high, and even if energy efficiency changes were implemented, this baseline would still be high, severely hampering the potential for cost savings. An example was noted in the water bills in Regina, in which, with mandatory fees and service charges, the respondents found they were hard-pressed to get their bill under \$100/month. Even with minimal use and high-efficiency appliances, they do not believe they will see enough financial return, with the floor of these bills being perceived as high and not feasible to reduce.

“I think the baseline on any water stuff [bills] is about \$100 right now. So, you cannot even consume less than \$100. Right now, they have almost baselined people” (RO5, May 31, 2023).

Rental property operators have difficulty validating the cost of major retrofits to their units when they will not see a direct return in cash flow. Several respondents referenced the split incentive indirectly as a cause of their concerns. One respondent outlined why they do not plan

on adding solar to their rental units. Their rationale was that if they are not paying for the direct costs of electricity, gas, or any of the utilities, then they will not put a large sum of money into such costly complex projects as solar as they will not gain financial benefit.

Some respondents discussed the rationale for avoiding specific retrofits, such as transitioning to high-efficiency appliances, because replacement parts are perceived to be very expensive. In these examples, there is a preference to find used appliances, notably furnaces, as they believe the older lower-efficiency models are better functioning, more cost-effective, and have greater access to parts and the ability to self-maintain.

During the interviews, there was concern about who should bear the economic burden of ensuring the transition to more energy-efficient rental units. Recognizing that they are not the experts and there is little perceived incentive for this stakeholder group to take proactive action, rental operators rely on governing bodies and outside groups to inform and support any expected transition. “I am supportive of climate change endeavours, but not at my expense...” (RO4, June 30, 2023).

Municipal Representatives - Cost Challenges of Energy-Efficient Retrofits

Municipal representatives shared their understanding that cost is a major inhibitor of change, specifically around energy-efficient retrofits. One municipal respondent mentioned the following as one of the sector's biggest environmental risks.

“I think it is easy for the rental sector to just be like, no, we are not doing that because it costs too much, and you cannot force us to do that kind of thing. I think that is the biggest risk” (MR1, June 30, 2023).

The risk is that commercial rental operators would decide that the transition cost is too great to bear and choose not to implement any substantive efficiency-enhancing measures. This would

result in a large portion of the housing stock undermining the City's net zero target. Another related finding indicated that the City acknowledges its role in implementing programs and policies and that program recipients expect a return on any investment. The municipality discussed its duty to conduct due diligence to ensure that the programs they implement support the net-zero goal and gain traction with the target market.

The split incentive was a very consistent phenomenon reported in the literature. The funder and receiver of benefits are separate parties, resulting in a reduced incentive for action from either party. During interviews with municipal representatives, it was discussed as a recognized barrier that municipal representatives must deal with during any rental market program rollout.

“You run into this situation where through the way leases are structured, the occupant will pay the operating costs of a unit, so they will pay the monthly gas bill or whatever electricity bill, but the occupant is not responsible for maintenance and replacement of that unit” (MR4, August 24, 2024).

Another example of cost as a limitation raised during interviews with municipal officials was that cost could be a limitation on energy efficiency by being too high (lack of retrofits based on high upfront costs), or too low with the cost of water being so low, there is less incentive for one to prioritize reducing or increasing the efficiency of water use. This same logical process can be applied to energy and other city services, such as dumping waste. If the costs of these services are perceived to be low, then users have little economic incentive to change their habits, and if they are perceived to be too high, then users will also have difficulty affording them. A solution to this problem that one respondent identified was to allow for less market manipulation by passing more true and less subsidized costs back to the end user to help change behaviour and buying patterns.

Following the concept of passing along true costs, MR7 shared that costs were inflated for certain items, such as heat pumps. It was noted that the price for heat pumps and their relevant value chain items seems to be heavily inflated compared to what municipal representatives expected. However, the rationale for this inflation is unclear. This finding is aligned with the concept of passing true costs back to consumers, in that the respondent believes that if the true costs of the heat pumps were available as they expected, then more consumers would buy in instead of dealing with the artificially inflated costs as they are now.

“Like a \$5,000 heat pump. They are installing for about \$20,000, and we are not really understanding why, I think it is a push back by the suppliers that they do not want to do it. So, we have some challenges that we need to get around” (MR7, September 13, 2023).

Municipal responses included discussion around the City's ability to raise additional revenue. When discussing using property tax levers (discounts to rental operators), the response was that it would be a challenge and that it would reduce the resources available to enact the City's own operational sustainability and social goals.

Operational Limitations

Rental Operators - Implementation Issues

During the interviews with rental operators, it became apparent that most are not aware of Regina's environmental targets and what role they, as rental operators, may play in supporting those targets. There was generally a vague understanding that organizations and varying levels of government are moving towards net zero operations and that it is important to consider emissions reduction in all aspects of society. However, respondents' ability to identify any program or policy impacting their operations outside of the federal Greener Homes grant was nil. The understanding of the Greener Homes Grant was limited. The respondents were generally aware

that it was provided to homeowners for their principal residence, sharing some confusion as to why rental units were not eligible for the program or why an alternate program was not available for rental properties. One response from a rental operator around the topic of energy policy was, “Truthfully, I know nothing about it; I’m in the dark there; I am not paying close attention” (RO4, June 30, 2023). There was also a recognized discrepancy between the current building code and the code at the time many of the city's rental units were built. Implementing current codes in new construction is more straightforward: instead of A, you need to install B. The cost difference is marginal, and the rest of the home systems can be designed with that in mind. There are a variety of challenges to changing preexisting systems to the new code standard. Replacing old functioning systems creates waste, individually replacing components creates a performance gap from a lack of cross-systems synergies¹, and replacing or optimizing up and downstream systems increases costs. “A lot needs to be done. I have taken apart houses with sawdust in the walls and horsehair and a variety of other products that would not align with current building code” (RO1, May 29, 2023).

Rental operator respondents had diverse backgrounds, but a similarity between the respondents was that many were individuals or small-scale businesses managing their units alone or with very few employees. Their feedback suggested that private, inadequately managed, or resource-limited organizations might struggle to meet new policy requirements, especially those demanding higher energy efficiency standards.

¹ Cross-system synergies in energy-efficient retrofits refer to the benefits that arise when multiple energy systems within a home are upgraded and work together more effectively. This holistic approach maximizes energy savings and efficiency by ensuring that improvements in one system enhance the performance of others.

The respondents described the challenges they face and what they believe are unnecessary complexities that come with obtaining the available grants within the application, reporting, and other requirements. They believe that grants and other government programs are difficult to understand and utilize in most cases, suggesting that they would not consider grants a feasible incentive unless they were easy to obtain. RO1 highlights an example of this frustration.

“I hate paperwork. It would have to be pretty simple. Government grants would have to be something simple because they seem to make it difficult and complicated, this causes anxiety for guys like us.” (RO1, May 29, 2023).

Rental Operators - Maintenance and Upkeep

The general theme of the responses is that maintenance and upgrades are planned on an as-needed basis, driven both by internal demand and end-of-useful life requirements. Internal demand is traditionally based on owner and occupant preferences for appearance and functionality. The end of useful life is when current equipment's maintenance or operating costs are such that replacing it with a newer, more effective product would provide greater economic benefit. One respondent who represented a larger organization shared their recent actions on major building stock upgrades leveraging economies of scale and their budgetary ability to plan several substantial upgrades. Recently, windows, patio doors, boilers, and other systems were replaced following an internal evaluation. This evaluation showed that many of these systems were nearing the end of their useful life, and there were more efficient alternatives available that would also enhance the building envelope.

“Currently, we are replacing many patio doors on our high rises. For efficiency's sake, they're older doors. They are terrible for, you know, temperature. So, replacing those has been a big project” (RO6, June 1, 2023).

It is important to note that in this example, multi-unit residential buildings were upgraded, and in these buildings, the building owner pays the water and heating bills.

Rental Operators - Collaboration and Communication

The rental operators believe they were not engaged and informed about municipal policy related to energy efficiency. This was further validated through the findings that none of the respondents could provide an example of a local energy policy, initiative, or program the City was enacting, except for the Greener Homes Grant piggyback program the City of Regina offered. One response that exposes the feelings of some respondents towards the current working relationship with the City as an organization was "I have stopped even looking at what the City is doing" (RO3, June 29) or "The City is very difficult to work with. Honestly, I feel like there's a large population of property managers and like five City workers" (RO, June 1, 2023).

While rental operators shared some understanding and appreciation of the challenges the municipality faces, they also expressed frustration about the communication and working relationships they had with the City of Regina. They felt that there should be a more streamlined two-way flow of communication for such a big and critical (housing) industry. Rental operators listed inefficient communication, lack of support, and misaligned programs as grievances with the City organization.

“They came out with stuff where there is always a catch, and it is hard. To work with them on it [City programs]”(RO3, June 29, 2023).

They indicated the need for incentives when asked what would bring greater buy-in and alignment between the City’s targets and industry support. In addition, they stressed the need for patience to allow operators time and a pathway for upgrading older buildings. They wanted a

progressive, iterative upgrading approach, recognizing the opportunities and challenges between retrofitting and building new.

Municipal Representatives - Challenges in Implementation

Some municipal respondents stated that they understood that replacing systems before the end of life can be a difficult and not economically wise decision. Building on that, they stated that their hope was for the end of life to be a straightforward transition to newer technologies aligned with the City's plan of achieving net zero status by 2050. However, this transition is still not common in practice. One respondent spoke about aligning with the energy providers to ensure that these energy-efficient products, installation, servicing, and information networks are stable to ease consumers' transitions. However, there were still gaps in the process. One technology that was identified as facing some of these issues and gaps is heat pumps. Regina is a smaller market with dramatic temperature extremes. However, there has not been enough regional market validation to convince the local Saskatchewan population of the efficacy of these products in colder climates such as Regina's.

“We need to get some common messaging together, and we need to build capacity in that area to do the work and do the work for the price it should be done for it in the end. If your air conditioner goes, you should be able to install a heat pump to replace it for almost the same cost as the air conditioner and kill two birds with one stone” (MR7, September 13, 2023).

Electricity generation is outside the municipal government's control. The City is constrained by SaskPower crown corporation's policies, operational incentives that SaskPower does or does not want to provide, and customer pricing. Municipal representatives identified this as a limiting factor hampering the impact municipal operations can have on energy efficiency transitions through direct electricity generation or use programs.

While some municipal respondents stated that the operational friction or tension between government bodies is minimal, more senior respondents outlined that there are very apparent jurisdictional problems with policy, specifically environmental.

“There is some overlapping jurisdiction on all these things. Thus, we have many targets. And I think that one of the challenges is that our targets aren't always aligned. And, you know, we heard that during The Framework development process, and we like the importance of aligning our targets with each other” (MR7, September 13, 2023).

Some municipal respondents stated that they did not believe that the municipal government should use its limited financial capacity to fund for-profit landlords' or homeowners' energy-efficient retrofits. They believed that municipalities require additional support and leadership from the provincial and federal governments to ensure these programs' success, reducing the operational and financial burden of cities like Regina.

“I personally, I do not think it is a very good use of municipal money, at least to be given to landlords; I do not even think it is great that they had this pilot program for homeowners. I do not even think that that is really the role of the municipal government either since they are so constrained in their revenue-raising capabilities” (MR1, June 30, 2023).

Driving demand for change can be led by one or many stakeholders: tenant, owner, operator, city, province, or country. The response from a municipal representative was that they do not believe it will be renters who will drive or demand this change for enhanced efficiency. They believe it is up to the government to regulate and ensure consistent improvements in minimum standards.

Throughout the interviews with Municipal Representatives, there was an overall recognition of how upgrading rental units coincides with increased rental costs for the consumer, a growing issue in Regina and many other Canadian municipalities. Improving efficiency without driving a greater wealth gap in housing was raised as a challenge. This same issue was

raised during the interviews from a broader perspective, sharing their belief that wealthy residents will get by all right and be able to pay the increased energy bills. Those who cannot pay the increased bills are the concern. Municipal respondents were concerned about how the City transitions and brings that population along. This will require more due diligence to ensure these populations are properly supported.

“I just see, housing is becoming less and less affordable. And that's a challenging place because it has become less affordable. And then when you add on environmental initiatives to that, and it further erodes the affordability it places people in a bad place” (MR7, September 13, 2023).

Municipal respondents discussed how Regina might learn from other municipalities. One respondent talked about how this was a benefit: being "a year or two" behind other municipalities allowed Regina to take proven steps and evaluate the success of other municipalities before they implemented different policies and programs.

The table below summarizes the key findings from the study, organized by the research objectives. Each objective highlights how rental property operators and municipal representatives perceive energy efficiency policies and their readiness to engage with retrofits. These findings provide a clear overview of the core challenges and opportunities identified in the research, setting the stage for the subsequent discussion on policy modifications and strategic interventions.

Table 5.0

Summary of Findings Against Research Objectives

Research Objective is to understand...	Key Findings
Objective 1: Awareness and readiness of rental operators to respond to policies	Rental operators demonstrated limited awareness of environmental policies, with many unaware of <i>The Framework</i> or any other municipal energy efficiency plans.
Objective 2: Desire for environmental enhancements in properties	Rental operators expressed indifference toward energy retrofits unless financially incentivized. Municipal representatives noted operators' lack of engagement.
Objective 3: Impact of municipal policies on rental property renovations	Both rental operators and municipal representatives recognized that current municipal policies lack the necessary incentives to drive widespread retrofits.
Objective 4: Municipal policy as a leading or lagging factor	Municipal representatives see the public as demanding greater environmental action, but rental operators view policy as insufficient to prompt action.
Objective 5: Role of The Framework in encouraging retrofits	Both groups emphasized the need for a balanced policy mix, including financial incentives, streamlined processes, and improved communication. <i>The Framework</i> was listed as a good start but not substantive enough for driving action.
Objective 6: Areas for policy modification	Both groups emphasized the need for a balanced policy mix, including financial incentives, streamlined processes, and improved communication.

The findings presented in this section illustrate the financial, operational, and communication challenges that rental property operators and municipal representatives face when considering energy-efficient retrofits. While both groups acknowledge the importance of reducing emissions, a lack of awareness, perceived financial risks, and communication barriers have hindered progress. These findings will now be examined in the discussion section, where they will be synthesized with relevant literature to explore potential policy modifications and solutions to drive greater engagement in energy-efficient retrofits.

Discussion

I conducted a comprehensive analysis of the research findings in this section, examining the six key study objectives. Each point of discussion is reviewed against relevant literature, thereby creating a narrative that bridges this study's financial and operational dimensions. By drawing on established theories and prior research, this approach not only emphasizes the importance and implications of the findings but also effectively positions them within the wider academic discourse. This integration ensures a broader understanding, demonstrating how the insights gained from this study contribute to advancing knowledge in the field.

Objective 1: Understanding how well rental property operators are informed and how ready they are to respond to the municipality's environmental policies.

Based on the responses from rental property operators, who represent a significant portion of Regina's rental market, there is a general lack of awareness about current environmental policies in Regina. None of the operators interviewed had heard of *The Framework* despite its “big moves” that could impact their commercial and private operations. Some operators expressed regret about their lack of awareness, indicating a willingness to support environmental initiatives but lack the motivation or awareness to seek out information themselves. They preferred having this information provided to them proactively to help them plan for the future. Municipal representatives seemed to understand the challenge of informing and engaging rental operators on an energy transition. They believe that looking more long-term and focusing on net savings over time will allow the responsible rental operators the economic validation they need to begin to align their operations with the energy-efficient improvement targets of the City of Regina.

The findings show that there is often a gap in understanding and awareness, which is supported by literature (Heffernan et al., 2021; Ambrose, 2015; Hope & Booth, 2014). Rental operators not being aware of programs and policies around environmental action is a common trend globally, and this was a common response from the Regina respondents. Hope and Booth (2014) describe how most respondents in their research had never heard of the Green Deal Scheme the British Government enacted to help fund energy-efficient renovations available for rental units, much like the Federal Greener Homes Grant in Canada.

Rental operators and Regina's municipal representative appear to have good intentions, but there is a misalignment in messaging. Rental operators are not hearing *The Framework's* intended message as a city-wide plan, much like other environmental policies, leading to disengagement and a lack of buy-in.

Objective 2: Assessing the extent to which rental property operators express a desire for environmental enhancements within their properties.

One of the main areas of divergence between rental operators and municipal representatives was the source of interest in environmental enhancements or retrofits to Regina's building stock. Rental operators shared an awareness but an overall indifference to renovating their units for any reason outside of economic return. They were looking for programs, policies, and incentives to validate any enhancements that were not operationally needed and financially beneficial. This theme was noted in respondents' answers, unanimously favouring greater incentives to align with any enhanced energy metrics not driven by short-term financial decision-making.

Municipal representatives' motivation to see change was perceived to be driven primarily by intrinsic duty to community improvement and ensuring alignment with other mandates that fit within their net-zero targets. *The Framework* concept originated from individual leaders attending conferences where other municipalities shared their actions. City of Regina leaders chose to emulate some of these by producing the *Energy and Sustainability Framework*.

Rental operators prefer to work in the Heffernan et al. (2021) carrot realm, policies generally categorized as tax incentives, rebates, or grants. There is no clear response on what method will more effectively engage rental operators to enact greater energy efficiency measures in Regina. Again, this global problem is often attributed to the split incentive, principal-agent, or tenant-landlord problem. The related literature that explored this problem overwhelmingly suggested a blend of policy tools or, in the case of Heffernan et al. (2021), a blend of carrot, cusp, and stick policies that are designed with the specific end user in mind and try to avoid designing a broad level solution intending to meet all stakeholders' needs (Heffernan et al., 2021; Ambrose, 2015).

"The results indicate that government policy has consistently failed to engage private sector landlords in the issue of energy efficiency, and thus, measures must be taken to understand the motivations of landlords in order to design effective incentives and interventions." (Hope & Booth, 2014, p. 1)

Rental operators' and municipal representatives' responses would support the literature findings that operators are generally willing to adjust housing stock efficiency in the rental market. However, there has not yet been a presented policy mix that has driven substantial action from this stakeholder group. While some responses from municipal representatives indicated a more holistic desire for change, listing items such as greater good and community benefit as a

rationale for action, none of the rental operator respondents expressed these items as priorities. The rental operators appreciated energy efficiency and enhanced building performance to reduce emissions. However, they said they would not act without the municipality's support and direction.

Objective 3: Identifying and understanding the extent to which municipal policymakers can impact and shape renovations within the residential rental sector through their bureaucratic capacities.

Municipalities have various tools to drive their constituents to make more energy-efficient changes. According to municipal respondents, the City of Regina has the ability to implement greater incentive programs (grants, rebates, tax breaks) or greater policing of minimum standards (bylaw enforcement, tighter regulation, more stringent permit requirements).

The problem recognized in the literature and by many municipal respondents is identifying the policy mix which municipalities can implement to get the optimal return on their investment. Municipal representative respondents discussed how there was not substantial financial capacity available to provide direct incentives in the form of rebates or grants. Also, only with minimal staff directly engaged with the *Energy and Sustainability Framework*, staffing capacity also acts as a barrier.

Rental operator responses highlighted that they are aware that the policing of bylaws is inconsistent. For example, one respondent who spoke about having to change their windows because they were not egress but was told by the bylaw officer that the City is not able to act on every infringement and relies on complaints from the public.

The feasibility of implementing specific policy options was not thoroughly explored with municipal representatives during the interviews, nor were the tools used to drive policy engagement clearly identified. When questioned about potential policy mechanisms, respondents generally referred to broad approaches that align with the "carrot, stick, and cusp" policies discussed by Heffernan et al. (2021).

Objective 4: Determining whether municipal policy acts as a leading or lagging factor in influencing the implementation of emissions-reducing renovations in homes.

The interviews showed that the municipal government must answer to and support the mandates of three customers: the federal government, the provincial government, and their own constituents. Taylor and Bradford (2020) support this finding by asserting that municipalities have historically been marginalized, primarily tasked with implementing provincial policies or acting as silent partners in federal programs.

The federal government is indirectly engaged with the municipality. They can impact the cities decision-making process through legislation, incentives, and national building and energy codes, among other measures. While they do not control cities' actions, the support and direction they provide to municipalities can sway and change program implementation that a municipality may take on. In this case, it was found that most of the Regina's interaction with the federal government is through available incentives. It was also found that the perception of municipal respondents is that the federal government is working to make it easier for municipalities to engage with environmental enhancements and that the federal government generally supports municipalities taking leadership on climate action.

The provincial government, through the Canadian Constitution, is the governing body that grants all cities, including Regina, all their rights and powers. This dictates that the province has a much more direct influence on the City's actions and, by law, would have much more direct influence and selective control on municipal matters. It was the opinion of several municipal respondents that there was a perception of indifference on the part of the provincial government in energy policy matters. One municipal representative stated, “I think politically, we see the province right now resisting many of those [environmental] items wherever possible” (MR6, September 6, 2023). They outlined that there was little support but also little opposition to a municipality engaging in more energy-based policy.

The third customer is the City's constituents. They are granted power through the democratic process, being able to vote for the officials who best represent their values. Constituents show their support and opposition through demonstrations, rallies, voting, emails, petitions, focus groups, and other means. While sitting elected officials can enact policies that oppose their constituents' wishes, doing so could result in their replacement in the next election. This democratic process means public opinion is important; the municipal respondents understand this. A general theme among municipal representatives indicated that public opinion was a main driver in the current energy policy work. As one statement captured, there was “Lots of grassroots input [*Energy and Sustainability Framework*]. I remember the day before; we were about to take the motion to Council to discuss it. We packed a bar downtown to talk about it” (MR3, July 12, 2023). The idea for *The Framework* may have resulted from a national conference. However, public support gave the rationale for getting *The Framework* through the hurdles and publishing it as a formal policy mandate.

The interviews and analysis with municipal customers revealed that municipal policy often acts as a lagging factor in driving emissions-reducing renovations in homes. In Regina, municipal representatives noted that it is primarily the City's constituents pushing for more action, while the provincial government maintains a neutral stance, neither actively supporting nor discouraging such initiatives. Although the federal government is supportive, it lacks the operational control to enforce action directly. Instead, its involvement is mainly through assisting with grants and programs in a more fragmented manner.

Objective 5: Exploring whether Regina's policies (*The Framework*) serve to enhance or deter rental property operators from engaging in energy efficiency improvements.

Substantial research has been done on different policy options and their engagement success within varying geographic regions across the globe. This study reviewed literature from Canada, China, Australia, Great Britain, and Germany. These sources provide global examples of energy-efficient building retrofits, their limitations, challenges, successes, and suggested areas to engage in further research (Ahlrichs & Rockstuhl, 2022; Ambrose, 2015; Fuller et al., 2010; Zhou et al., 2016). These sources all validate the importance of finding the right policy mix to engage the rental market and overcome the split incentive dilemma. The literature echoes the findings of Ambrose: "...not enough is known about what deters landlords from taking what policymakers believe is rational action" (Ambrose, 2015).

While Regina has produced a broad framework that outlines several energy-efficient targets and steps to achieving them, it has not yet created a plan that the interviewed constituents are aware of. The result is that the current policy mix, as understood by rental property operators,

neither enhances nor deters rental property operators from engaging in energy-efficient retrofits, as they maintain an indifferent outlook on them.

Objective 6: Identifying potential areas within policies that could be reviewed and modified to encourage and drive energy-efficient renovations in the rental property sector.

The literature highlights numerous options that can be leveraged to address various policy needs. Kantamneni and Haley (2023) produced an extensive list of policies implemented across Canada, ranging from regulatory measures to incentive programs. Their comprehensive research emphasizes that a policy mix approach combining multiple policy types is most effective in addressing complex issues. This finding suggests that integrating diverse strategies can enhance overall policy effectiveness by catering to different aspects of the problem. However, the ability to find options is not the primary issue. The bigger hurdle lies in identifying which approaches will best suit the specific group they are intended for. This involves understanding the target audience's unique characteristics, needs, and preferences to ensure that the chosen policies will be effective and well-received.

Fuller et al. (2010) provide compelling evidence of this requirement in their *Driving Demand for Home Energy Improvements* report. Their research highlights that while there are many potential strategies to encourage home energy improvements, the success of these strategies depends significantly on how well they are tailored to the specific demographic profiles of the target households.

The analysis of the interview responses revealed consistent findings, indicating that rental operators not only sought financial incentives as could be expected but, more importantly,

desired active involvement in the policy decision-making process. Both rental operators and municipal representatives identified inadequate information flow and challenging communication channels as significant bottlenecks that hinder effective policy development and enhancement.

Therefore, the key challenge for policymakers is to select from the array of available options and conduct thorough assessments of the target group to determine the most appropriate and effective policy mix. This approach ensures that policies are theoretically sound, practically viable, and impactful in the real world.

"Success will require multifaceted approaches that acknowledge a deeper understanding of what motivates homeowners and contractors. Effective programs will be tailored to the location, thoughtfully researched and piloted, personalized to the target audience, and more labor-intensive than simple incentive programs. Just as there is no single, monolithic customer, there is no silver bullet answer to driving demand for home energy improvements—but experience and research offer policymakers and program designers a strong foundation on which to build" (Fuller et al., 2010, p. 71).

The result is clear: both municipalities and operators agree that it is important to engage with each other to determine the best path forward for an effective energy efficiency policy.

Conclusion

Identified Problem

The study problem can be simplified down to the fact that a significant number of rented dwellings in Regina are not undergoing renovation for energy enhancement. This problem is exaggerated because the stakeholders involved do not face pressure to shift their current state of thought. Operators renovate only when financially or legally required and are not overtly

interested in seeing an industry shift. Municipal representatives who are not personally invested in the financial success of rental units are willing to support industry efficiency enhancements. However, their commitment and sense of urgency are limited, preferring a gradual, organic approach to avoid creating friction among stakeholders.

Literature on engaging the rental market to spur the transition to energy-efficient operations covered a wide swath of tools, minimum standards, incentives, regulations, and other levers that could be engaged with to see a more effective transition potentially. The respondents, both rental operators and municipal representatives, were much more engaged in a conversation on incentives. Rental operators could be summarized as generally having a "show me the money" attitude while being open to engaging in further retrofit discussions. The municipal representatives had more dynamic responses, ranging from not believing that the local government should incentivize for-profit rental operators to being very strategic with how incentives are rolled out, ensuring that the outcomes are worth the City investment.

Recommendations

Rental operators and municipal representatives strongly supported enhanced communication and engagement between the two groups. They both listed a disconnect up to this point and believed that to engage better, there would need to be greater dialogue to find what tools and supports are needed to get this stakeholder group on board to help drive to the net-zero targets. The desire for incentives from the rental operators was obvious, but they were also open to alternative co-working methods but struggled to provide concrete examples. Fuller et al. (2010) provided a report on how to get the most optimal outcomes when attempting to implement greater energy efficiency measures more broadly in all dwellings. Their findings directly apply to the rental

sector as they face many of the same challenges. "Success will require multifaceted approaches that acknowledge a deeper understanding of what motivates homeowners and contractors" (Fuller et al., 2010, p. 71). Using Fuller et al. (2010) work as a foundation and then leveraging some of the very specific policy mixes presented by Kantamneni & Haley (2023) could result in a process that is supported both by the findings of this report and more broadly accepted by the available literature.

Concrete examples of this are listed in the below table that align with the findings of this research.

Table 6.0

Implementation Recommendations

Area of Focus	Recommendations
Foster Enhanced Communication and Engagement	Establish regular dialogue sessions between rental operators and municipal representatives to facilitate open communication. These sessions can be organized as multi-actor workshops where participants collaboratively identify challenges, share best practices, and co-create strategies for achieving net-zero targets. This will help bridge the existing communication gap and foster a sense of shared responsibility.
Develop Tailored Incentive Programs	Design incentive programs that directly address the needs of rental operators. Consider offering grants, tax credits, or low-interest loans for energy-efficient renovations. Additionally, involve rental operators in designing these programs to ensure they align with their motivations and operational realities. This collaborative approach will increase the likelihood of program uptake.
Establish a Centralized Support Hub	Create an online platform that serves as a one-stop resource center for rental operators, offering clear guidance on The Framework, relevant policies, best practices for energy-efficient retrofitting, and access to financial incentives. This hub should also facilitate communication between rental operators and municipal representatives, enabling direct feedback and support.
Implement Pilot Retrofit Projects	Launch pilot retrofit projects in collaboration with selected rental operators to test and demonstrate the practical application of energy-efficient measures. Document the outcomes,

	challenges, and successes of these projects and use them as case studies to encourage wider adoption among rental operators.
Leverage Fuller et al. (2010) Multifaceted Approach	Adopt a multifaceted strategy that recognizes the diverse motivations of rental operators, as recommended by Fuller et al. (2010). This could include combining financial incentives with educational programs, technical support, and opportunities for co-working with municipal representatives to facilitate a holistic approach to energy efficiency.
Utilize Policy Mixes from Kantamneni & Haley (2023)	Integrate the specific policy mixes outlined by Kantamneni & Haley (2023) to develop a comprehensive set of measures that support energy-efficient retrofits. This might involve combining regulatory measures, financial incentives, and educational campaigns to create an environment that encourages rental operators to take action.
Promote Collaborative Learning Opportunities	Organize joint training sessions, workshops, and information-sharing forums where rental operators and municipal representatives can learn from each other. These sessions can focus on practical aspects of retrofitting, available incentives, and long-term benefits, fostering a culture of collaboration and continuous improvement.

The Framework

The *Energy and Sustainability Framework* is the core policy document of this study. It provided the foundation for the interview questions and acted as a collective strategy ensuring accountability among municipal representatives. However, *The Framework* is vast and covers several items outside the scope of this study. Retrofitting and strategic direction were heavily evaluated during this research. The rental operator respondents were generally unfamiliar with *The Framework* and even less familiar with how it might impact them. Currently, it does not appear that *The Framework* will have any measurable impact on how rental operators do business without a more enhanced rollout that specifically includes policies and programs that become regulations or offer incentives.

The presence of *The Framework* is perceived to act as the catalyst for action rather than the contents themselves. Its existence and recognition as a guiding document may spur initiatives, policy changes, and community engagement more effectively than the specific details or directives it contains. People and organizations may be motivated by aligning with an established framework, viewing it as an authoritative source that legitimizes and drives their actions. Thus, *The Framework's* symbolic value and institutional endorsement can be more influential in mobilizing efforts and resources than the actual content outlined within it. The details of the building retrofit targets may not clearly outline what policies will be implemented when and in what capacity to hit targets, but they do begin to lay the expectation that work needs to be done in these areas. It is entirely possible that this study and the questions raised would not be explored if *The Framework* did not exist, as there would have been no core documentation to leverage. There is obvious room for improvement, but the general concept is that by existing, *The Framework* creates value and aligns varying stakeholders on a shared mission.

Significance of Research and Outcomes

This study's findings and analysis aim to provide enhanced visibility into the current environment around rental property energy efficiency programs in Regina. Various research has been completed in global markets and more macro-level environments, but the macro-level findings often do not translate into successful outcomes in Regina. It may not consider regional bias, historical trends, current political movements, local influence or other factors that are not as significant when averaged over a larger geo-political boundary. This study aimed to bring the macro literature findings and apply them to the Regina environment through a broad-level analysis and provide a primary validation of the strengths, weaknesses, opportunities, and threats

that energy efficiency programs may have when applied to the Regina region. The outcomes from this study are intended to support greater alignment between rental operators and municipal representatives along their journey of shared efficiency improvements.

Limitations of the Study:

In this study, I aimed to illuminate the interactions between municipalities and rental property operators. I intentionally took a broad approach, examining various aspects to understand the overall picture. However, it is important to recognize the study's limitations.

The interview sample size was relatively small. While I tried to include diverse perspectives, the findings may not accurately represent the wider population of municipal representatives and rental operators.

While this study provides valuable insights, being aware of these limitations is essential. One needs to interpret the results cautiously and consider avenues for future research to address these constraints and improve the quality of findings in this area.

Future Research Directions:

While this study primarily focused on the dynamics between rental property operators and municipal representatives, it became evident that including renters' perspectives would be crucial for a more comprehensive understanding. Understanding the shared and diverging values among renters, rental operators, and municipal policymakers could pave the way for more effective programs that garner support across the rental system. One rental property operator provided insights into their clientele's attitudes, highlighting that tenants often prioritize immediate concerns over long-term environmental considerations. This underscores the need to

incorporate renter perspectives into discussions about energy efficiency and sustainability initiatives.

Drawing on the work of reputable sources, it would be advantageous to assess how specific policy combinations might perform in distinct geographical areas such as Regina. Adopting a similar interview approach with property operators and local authorities could provide valuable insights into the effectiveness of different policy measures.

Additionally, examining the value chain of specific technologies, such as heat pumps, and validating their feasibility for implementation could be beneficial, particularly in regions with limited alternatives, such as Regina.

Furthermore, exploring similar processes involving provincial or federal representatives could yield valuable perspectives on policy implementation and coordination at higher levels of government. This broader scope of inquiry would contribute to a more comprehensive understanding of the factors influencing energy efficiency initiatives in the rental sector.

Conclusion

This study examined the relationship between rental property operators and the municipal governance structure with which they operate, with a particular focus on the urban center of Regina. The selection of Regina as the primary research site stems from the researcher's familiarity with the region, affording a more comprehensive understanding of its underlying systems, biases, historical influences, and localized paradigms. While other studies have underscored the significance of engaging the rental market in more robust energy efficiency retrofits and have addressed challenges such as the split incentive phenomenon, this study provides a comparative analysis from a regional perspective. It delves into how local

governmental entities intersect within the broader socio-economic system, exploring the potential ramifications of their decisions and their perceived organizational constraints in spearheading transformative initiatives towards more energy-efficient practices.

Financially, there was an overwhelming concern about financing an energy efficiency transition in the rental market. The rental operators do not want to pay out of pocket for something that does not improve their bottom line as they are hampered by the split incentive (landlord-tenant dilemma). The municipal representatives listed the challenge of allocating enough capital to this with few tools to expand their funding base. In essence, they suggested that more money spent on energy-efficient programs means less funding for other programs as municipalities have fairly rigid access to funding.

Operationally, the largest challenge seems to be aligning the value chain. Steps need to be taken to inform operators, supply products, maintain systems, and optimize for economic gain, but these are thus far cost prohibitive.

This study examined the effectiveness of *The Energy and Sustainability Framework* from the perspective of the recipient (rental property operators), suggesting that, in its current form, it falls short of a definitive success. The study's methodology involved investigating the relationship between the City of Regina and rental operators. It focused on the operators' viewpoints to assess whether the environmental policies—specifically, *The Energy and Sustainability Framework* - are achieving their intended outcomes. This conclusion is based solely on interviews and a review of relevant literature, highlighting that, as implemented, *The Framework* and its supporting systems do not adequately serve rental operators. It is important to note that this finding does not address the *Framework's* success or failure in meeting its

objectives with other stakeholder groups or through alternative strategies; it strictly analyzes its impact on rental operators.

With approximately one-third of Canadians living in rental properties, this demographic must not be overlooked in municipal energy policies across Canada. For net-zero targets to be met, tenants and rental operators must be engaged. Without unified efforts to improve rental units, these properties will increasingly burden the nation's energy footprint.

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Appendix

Appendix A: Interview Questions

Rentals Property Operators

Questions (Main):

Opening (Demographic)

How many rental units do you own/manage?

How long have you had rental units?

What area of the city are these units located predominantly?

How would you describe your housing stock mix. Multi-Family? Single family home? Duplex? Single family homes.

Who generally pays for utilities?

How would you generally class your customer base. Low / Middle / High Income

Are you interested in acquiring more units, maintain the same level, or looking to offload?

Do you have any plans to renovate your units soon? 3-5 years? 5-10? 10-20? What renovations?

General (Objective Based)

What are your thoughts on current and future government intervention or policy aiming to reduce the total emissions from residential buildings? Rental homes specifically, how does it Impact you? (asked, define intervention)

*Share summary of Framework Targets. What are your thoughts on the listed targets that aim to reduce the total emissions from residential buildings? Rental homes specifically, how does it Impact you?

How would a change in policy that required all rental units to be powered by air-source heat pumps affect your operations/finances? (\$5,000-\$8,000) What about the requirement for high-efficiency windows, insulation, and electric water heaters?

What are your plans regarding energy-efficient renovations? Insulation, energy usage, windows, heat sources, solar, geothermal, alternate designs, etc.

What would make you more likely to retrofit your units? Rising energy costs (bigger bill), government incentives (rebates and tax breaks), environmental factors (extreme weather), or other.

How do you feel about the city's goal of being Net Zero by 2050? Do you see yourself playing a role in that?

What do you think is needed to achieve alignment between the City and rental property owners on energy-reducing retrofit targets or practices?

What are the city's biggest environmental concerns facing the rental property sector in the next 3-5 years? 5-10? 10-20 (weather damage, government intervention, increased climate migrants)

Closing

What is the biggest determining factor in whether you retrofit or not?

Do you have any other closing remarks or comments about retrofitting, the municipal government, or climate change that you would like to add?

Municipal Representative

Demographic:

What is your job title?

How long have you been in this role?

What role did you play in creating or implementing Regina's Energy and Sustainability Framework?

Do you own any rental properties yourself?

How long have you lived in Saskatchewan?

General (Objective Based)

How impactful do you feel your role (or the city's role) in enacting energy efficiency regulations in our community? What outlet or process is most successful? How do you measure success?

Can you list any additional actions you think the city or rental property owners need to achieve the energy frameworks targets within the listed target timeline?

In your opinion, where does the municipality's role start and stop when it comes to policy implementation and policing? Specifically, around Energy Efficiency.

What are some challenges regarding policy jurisdiction on environmental policies? Is there perceived or real conflict with Provincial or Federal bodies on issues of climate action?

Do you feel that there is greater pressure from higher levels of government to introduce more stringent environmental policy or from constituents and local lobby groups in the city demanding it?

In big move #2.1 of *The Framework*, the implementation plan listed the target of adding air or ground source heat pumps and electric water heaters to 100% of buildings when current systems reach the end of life. How do you think the public, specifically rental property owners, will welcome the resulting changes?

What do you think is needed to achieve greater alignment between the City and rental property owners on energy-reducing retrofit practices for Regina's rental properties?

What is the city's biggest environmental risk facing the rental property sector in the next 3-5 years? 5-10? 15-25? (Environmental, International Migration, lobby groups)

Closing

What is the biggest determining factor in whether rental property owners retrofit?

Do you have any other closing remarks or comments about retrofitting, your role, or climate change you would like to add as it relates to energy efficiency and retrofitting in Regina?

Appendix B: Consent Form

Participant Consent Form

You are invited to participate in a research study entitled: Sustainable Retrofitting in the 21st Century: Reviewing the Impact of Municipal Policy on Rental Property Owners

Student Researcher(s):

Daniel Probe, Master of Arts in Environment and Management Graduate Student, School of Environment and Sustainability, Royal Roads University,

Supervisor:

Dr. Gary Martin PHD, Thesis Supervisor, Carleton University,

Purpose and Objective of the Research:

The research will gather opinions from city staff as individuals, not as representatives of the City of Regina and rental property owners, about incentives for energy efficiency

upgrades. Highlighting areas of policy where rental property owners are able and motivated to comply and those areas where they cannot or will not comply may be useful to municipalities in their decision-making process. If a divergence between municipal targets and rental property owner expectations becomes apparent, this research project may lead to more effective resource allocation as they attempt to accomplish the targets.

Procedures:

I would like to interview you and ask you some questions about your views and understanding of municipal policy's role in the rental property retrofitting decision-making process. I ask you to provide your consent by signing and returning this form. I will then contact you via email and/or phone to set up a mutually agreeable time to conduct the interview. I will also provide the interview questions for your preliminary review. Please let me know if you require additional clarification on any question or if you are just not comfortable answering a specific question (or questions). The interview will be via a virtual (Zoom) session and should take no more than an hour of your time. I will send you an individual meeting invitation with a passcode.

By signing this form, you agree to be recorded. However, you are free to end the interview at any time without penalty and can request the deletion of your data within two weeks of the interview.

After your interview and before the data is included in the final report, you will have a two-week opportunity to review the transcript of your interview and add, alter, or delete information as you see fit.

Please feel free to ask any questions regarding the procedures and goals of the study or your role.

Potential Risks:

Your name, affiliation, views, opinions, and thoughts will be held in strict confidence. Your confidentiality will be preserved, and your contact information and personal data will always be protected.

By participating, I do not anticipate any personal risks to you, your community, or your organization. However, I also understand that you have not waived any rights to legal recourse in the event of research-related harm by consenting to participate.

The information gathered will be strictly used for the independent research project. None of the information sought or obtained during the interview or follow-up communication will be used for any other purpose or commercially.

You are free to withdraw from the interview process at any time and to request that any or all of your responses be withdrawn within two weeks of the completed interview.

Potential Benefits:

This research aims to report on how Regina city staff and rental property owners perceive *The Framework* and what actions from both the municipality and the owners would result in the greatest opportunity to achieve the listed goals.

Conflicts of Interest and Bias:

There is a potential conflict of interest to be perceived as I own three rental units in Regina and am related to the owners of a local investment firm that owns and operates more than four hundred rental units in Regina and the surrounding area.

I will mitigate both potential conflicts of interest and bias by clearly articulating these biases and potential conflicts of interest in each interview and in the drafting of the thesis by informing all parties of my connection to the stakeholder group. There has also been effort in designing the research questions to eliminate leading questions and focus on maintaining neutral language.

Confidentiality:

Please note that although we will make every effort to safeguard your data, we cannot guarantee its privacy due to the technical vulnerabilities inherent to all online video conferencing platforms.

The summarized research findings will be collated into the final report, which will form part of the thesis submission to Royal Roads University (RRU)

If requested, the final thesis will be provided to you.

The final thesis will not disclose any personally identifiable information of any interview participant.

Confidentiality of all parties will be protected throughout the research process and thesis.

Although the data from this research project will be published and may be presented at conferences, the data will be reported in aggregate form, making it impossible to identify individuals. Moreover, the consent forms will be stored separately from the data, so it will not be possible to associate a name with any given set of responses.

Please put a checkmark on the corresponding line(s) to grant or deny permission:

I grant permission to be audio-recorded	
I grant permission to be video-recorded	

Please only select one option below:

I wish for my identity to be confidential	
I wish my identity to be confidential, but you may refer to me by a pseudonym.	
You may quote me and use my name.	
I would like to be acknowledged for contributing to the research.	

Storage of Data:

Zoom servers are in Canada, and no data will be transmitted through or stored on servers outside Canada.

I will destroy any hard copies or notes I take of our interview immediately after the analysis is completed.

Only the Researcher will have access to raw data or identifying information during the research study. The audio/video recordings and hardcopy notes will be scanned and stored on a password-protected external hard drive in the researcher's locked residence.

Right to Withdraw:

Your participation is voluntary, and you can answer only the questions you are comfortable with. You may withdraw from the research project for any reason at any time without explanation or penalty until all the data is consolidated into an anonymous dataset to be used in my research.

Should you wish to withdraw, your data will be cleansed and deleted immediately. Any details included in the thesis will be removed up to the point of data consolidation, at which point they will remain in the data results.

Follow up:

To obtain results from the study, please reach out to me, and I will ensure that upon completion, a link to the final thesis and/or a data results summary is shared with you directly.

Expected completion date: January 2024

Questions or Concerns:

Contact the researcher(s) using the information at the top of page 1.

The RRU Research Ethics Board has approved this research project. If you have any questions regarding your rights as a research participant, please contact the Office of Research Ethics

I read and explained this consent form to the participant before receiving the participant's consent, and the participant had knowledge of its contents and appeared to understand it. A return email indicating consent is sufficient if the participant does not have a scanner/printer for the participant's signature.

Name of Participant	Participant Signature	Date
Daniel Probe		September 11, 2023
Name of Researcher	Researcher Signature	Date