



The Missing Third

Improving BC tenants' rights to energy efficient, climate resilient, and safe housing

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March 2023

This report was produced as part of the UBC Sustainability Scholars Program, a partnership between the University of British Columbia and various local governments and organisations in support of providing graduate students with opportunities to do applied research on projects that advance sustainability across the region.

This project was conducted under the mentorship of Ecotrust Canada staff. The opinions and recommendations in this report and any errors are those of the author and do not necessarily reflect the views of Ecotrust Canada or the University of British Columbia.



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Acknowledgements

The author acknowledges that the work for this project took place on the unceded ancestral lands of the xwməθkwəyəm (Musqueam), Skwxwú7mesh (Squamish), Stó:lō, Stz'uminus and Səlílwətaʔ/Selilwitulh (Tsleil- Waututh) Nations, and the unceded lands of the Hul'qumi'num Treaty Group – in what is also referred to as Vancouver, BC.

The author would like to thank the following individuals for their contribution, feedback, and support throughout this project: Josephine Schrott, Dylan Heerema, Abhilash Kantamneni, David Hutniak, and Leila Ghaffari.

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Executive Summary

This report examines the policy and regulatory pathways available to improve tenants' rights to energy efficient, climate resilient and safe rental housing in British Columbia (BC). In a time of increasing weather extremes, improving the energy efficiency and climate resilience of housing is of mounting vital importance. BC has many incentives and programs for homeowners to retrofit their homes, however, tenants do not have the same access to these incentives, nor do they have the same rights to alter their living environment.

The report summarizes findings from a literature review on policies and programs targeting tenants' energy issues, key interviews, and a comparative analysis. Over 70 policies, regulations, and programs were evaluated based on equity, effectiveness, and contextual feasibility. The existing local (BC) initiatives featured voluntary incentive programs that catered to landlords, while cost-sharing, prescriptive standards, performance standards, and tenants' rights initiatives in other jurisdictions improved different dimensions of equity and effectiveness.

The analysis concludes that combining multiple initiatives—specifically mandatory energy labelling, tenant involvement in the renovation process, prescriptive standards, performance standards, and affordability covenants—offers the most promising way of improving tenants' rights to energy efficient housing without disincentivizing rental housing improvements. The report makes two types of recommendations for BC policymakers: foundational initiatives and policy-program pathway options. The four foundational initiatives are:

1. Establish a provincial rental housing registry
2. Add a rental energy disclosure requirement to the Residential Tenancy Act
3. Mandate the use of future climate files for energy audits
4. Enable the creation of a labelling system for residential energy efficiency & climate adaptation

These four foundational recommendations will help implement any of the three recommended policy-program pathways:

- Pathway 1: Regulation through the BC Existing Building Renewal Strategy
- Pathway 2: Regulation through amending the Residential Tenancy Act
- Pathway 3: Incentive through utility cost splitting

Implementation of the first four initiatives will quantify BC's rental housing stock, demystify energy usage information, and enable more strategic and effective energy efficiency policy. Each program-policy pathway increases tenants' rights while encouraging rental stock retrofits.

Introduction

The negative impacts of climate change are being experienced more frequently – with formerly rare weather extremes such as heat waves, poor air quality, flooding, and extreme cold snaps becoming “normal” – and sometimes happening all in one year. Much of BC’s residential housing has not been built to deal with these weather extremes – with many not having any cooling systems, air filtration systems, or ability to create cross-breezes. Moreover, most existing residential housing in BC is energy-inefficient¹, so moderate and low-income homeowners and tenants may struggle with heightened utility bills, especially as energy costs increase.

However, regardless of income, tenants are almost never able to alter their own living environment to deal with these extremes or to improve energy efficiency. Landlords have the power to prevent tenant-led renovations, and often write anti-alteration clauses into leases. Therefore, it can be said that BC tenant households are missing rights to control their own living environments to maintain safe and healthy housing. Since tenants account for 33% of the total households across the province (669,450 tenant households)², this means that a third of BC households are missing these rights: the missing third.

Tenants, can purchase their own equipment (such as portable air conditioners and heaters) to temporarily adapt to weather extremes, but this can be costly to operate, costly to purchase, and may not be very effective if the space itself is not energy efficient. This added cost contributes to energy poverty among tenants – with some who are unable to afford energy costs foregoing basic energy use or other essentials like food. Having inadequate access to energy systems to cool, heat, or filter air further contributes to tenant energy poverty or energy insecurity, which can be defined as a tenant not being able to afford or access sufficient energy services to meet their basic domestic needs or safeguard their health³.

The fact that most tenants in BC pay for utilities contributes to tenant energy poverty. This is due to the split incentive problem; landlords are not motivated to improve rental housing energy efficiency or operating systems because they do not pay for the cost of these ineffective systems – tenants do, in the form of utility bills. In BC, at least 300,000 households experience energy

1. Minimum requirements for energy efficiency were only introduced into the BC Building code in 2014, as per Government of British Columbia, “FACTSHEET”.

2. Statistics Canada, *2021 Census Profile*.

3. Definition is a truncation of the G20 definition of energy poverty, outlined in Group of Twenty, “Executive Note”.

poverty⁴, and these households usually have less disposable income available to address energy efficiency, extreme weather, or health issues in their homes. Retrofitting rental housing to be energy efficient and have sufficient energy systems to meet tenant domestic and health needs will contribute to reducing tenant energy poverty.

Existing BC programs and policies that encourage residential energy retrofits largely target and benefit homeowners – this research seeks to find alternative strategies that encourage rental housing retrofits while not downloading the costs of these retrofits onto the tenant. The recommendations in this report provide policy, regulation, and program suggestions, based on best practices from around the world, which improve energy efficiency, climate resilience and safety standards for rental housing. For the purposes of this research, only climate resilience to extreme heat/cold and poor air quality will be addressed, and “safety” is being used in the context of maintaining tenants’ health during extreme temperatures and poor air quality events.

Using three different methodologies (conducting environmental scans, conducting key informative interviews, and doing a comparative analysis through the lenses of equity, effectiveness, and feasibility), this research reviewed local (BC) and international initiatives to gain key insights that are applicable to the BC context and that will help improve tenants’ rights to energy efficient, climate resilient, and safe housing.

Background

British Columbia’s private rental market is complex and is comprised of many distinct types of housing, which are available in the primary and secondary rental markets. The primary private rental market is synonymous with purpose-built rental housing, which in BC mostly comprises of apartment buildings. The secondary rental market includes condominiums, laneway homes, houses (inclusive of townhomes, duplexes, semi-detached, and detached houses), and secondary suites (a self-contained dwelling unit that is part of a house that has a maximum of two dwelling units). The secondary market makes up the majority of BC’s rental stock (approximately 70% across the province, and 100% in some communities⁵). Additionally, BC is in the midst of an affordability crisis, with 37.8% of BC tenants spending 30% or more of their income on shelter⁶, and an average province-wide rental vacancy rate of 1.3%⁷. The analysis and recommendations in

4. Das, Martiskainen and Li, “Quantifying”.

5. UBCM – Province Advisory Group on Short-Term Rentals, *Priorities for Action*.

6. Statistics Canada, *2021 Census*.

7. CMHC, *British Columbia*. 5% is considered a healthy vacancy rate.

this report consider the current context of the BC rental housing market, and the final recommendations aim to be applicable in both the primary and secondary rental markets.

BC municipalities have legislative power through the Local Government Act and the Vancouver Charter to create policy and regulations to affirm tenant’s rights to energy efficient, resilient, and safe homes through creating energy standards and other requirements as part of the rental permitting process, or by including cooling systems as part of [Rental Building] Standards of Maintenance bylaws. Municipal Standards of Maintenance or “Good Neighbour” bylaws set standards of operation and maintenance for rental housing. They can cover heating and hot water systems, elevators, and roofing, and are where minimum indoor temperature requirements are stated. However, it is not mandatory for municipalities to have a Standards of Maintenance Bylaw⁸, nor is it required to list a minimum indoor temperature in the bylaw. This inconsistency means that tenants have different rights to interior thermal comfort levels, depending on the municipality that they live in.

BC wants to increase energy efficiency home retrofits on a large scale in order to meet CleanBC goals of net-zero carbon pollution by 2050 and reducing provincial emissions to 40% below 2007 levels by 2030. In 2020, BC residential housing energy use accounted for 21% of provincial energy greenhouse gas (GHG) emissions, and 7% of BC’s total GHG emissions⁹. Fuel switching (from gas to electricity) and energy efficiency retrofits will lower GHG emissions by using less GHG intensive fuels to power houses and making the most of the energy that houses do use. Currently, households experiencing energy poverty or insecurity are among those least able to retrofit their homes, even though they are disproportionately impacted by high energy bills, extreme heat and cold, and health impacts resulting from unhealthy housing. This disparity is most evident in lower-income, tenant households that currently have little power over the energy efficiency of their homes. The recommendations in this report aim to start changing this reality.

Air quality is closely linked to the health and safety of a space and its occupants. Beyond needing adequate ventilation to mitigate viruses, ventilation systems, air cooling, air heating systems prevent and manage mold growth; filtration systems reduce incidences of asthma, lung disease/cancer, heart disease; and all of these systems can stave off reductions in physical

8. Tenant Resource & Advisory Centre. “Repairs and Maintenance”.

9. Government of British Columbia, *Provincial Inventory 1990-2020*.

performance (e.g., increased fall risk associated with cold indoor temperatures)^{10,11} and death from toxic mold¹². The 2021 heat dome brought to the forefront the dire consequences that lower-income, tenant households face due to energy insecurity, as the hot weather and a systemic failure to support at-risk populations led to 619 deaths in BC^{13,14}. This has caused an increased interest in making housing more climate resilient, with the BC Coroner calling for all new and old buildings to have air conditioning to prevent future deaths due to extreme heat¹⁵. The Vancouver City Planning Commission also urged the adoption of a comprehensive list of measures to mitigate the effects of extreme heat and poor air quality, including provision of air conditioners and air purifiers, amendments to the Residential Tenancy Act, air quality regulation building standards, cooling design standards, and retrofits.¹⁶

However, as noted above, even tenants that have the funds to alter their living environment to be more energy efficient or climate resilient do not have the right to do so, and any requests for upgrades are subject to the willingness of their landlord. The power disparity between landlord and tenants is so notable that in other parts of Canada, tenants have been threatened with eviction because of the extra energy that their personally purchased air conditioners used, since air conditioners were not a listed permitted appliance in the tenant's lease¹⁷.

Research Approach

This research was approached using a three-pronged methodology that occurred in three phases.

Phase 1 and Phase 2 involved conducting environmental scans of existing initiatives that are relevant to tenants' rights to energy efficient, climate resilience, and healthy housing. Phase 1 was devoted to exploring local (British Columbia) initiatives, which Phase 2 involved looking at initiatives in other jurisdictions-- both within Canada and internationally. Information on these initiatives were drawn from the resource databases that Ecotrust Canada provided, from online

10. Janssen et al., *Cold Homes*.

11. Roy, "As Toronto gets hotter".

12. Lawson, "Charity calls".

13. Fenton and Wong, "This is Tracey McKinlay".

14. Human Rights Watch, "Canada: Disastrous Impact of Extreme Heat".

15. Martins, "B.C. Chief Coroner says"

16. Vancouver City Planning Commission, *Planning for Extreme Heat*.

17. CBC News, "Facing eviction".

news articles, from initiative and government websites, and from journal articles (where applicable). These initiatives were categorized by initiative type and evaluated on their applicability to improving tenants' rights (as opposed to solely improving energy efficiency). The results of these scans are in the [Findings](#) section, and [Appendix A](#) contains a full list of initiatives reviewed.

Three interviews with subject matter experts were conducted during Phases 2 and 3, to gain more insights on the challenges and opportunities of current and recommended initiatives regarding improving tenants' rights to energy efficient, climate resilience, and healthy housing. Interview information can be found in the [Interview Findings](#) section.

Phase 3 involved conducting a comparative analysis of Phase 1 & 2 initiatives and creating recommendations for BC policymakers (outlined in the [Recommendations](#) section). Initiatives were analyzed based on three types of criteria: equity, efficacy, and feasibility (in BC).

Analysis Criteria, Definitions, and Assumptions

Analysis and evaluation of equity was based on the Urban Sustainability Director's Network's definitions of equity¹⁸:

- Procedural Equity (PE) – inclusive, accessible, authentic engagement and representation in processes to develop or implement programs and policies. (Yes, Partly, No)
 - Study related example: In Hartford, Connecticut, tenants are allowed to install active cooling systems in their rental unit without the owner's permission as long as they provide proof of proper installation
- Distributional Equity (DE) –programs and policies result in fair distributions of benefits and burdens across all segments of a community, prioritizing those with highest need. (Yes, Partly, No)
 - Study related example: A carbon tax cost splitting scheme which places the burden of payment on the landlord for inefficient housing, and the burden of payment on the tenant for efficient housing
- Structural Equity (SE) –decision-makers institutionalize accountability; decisions are made with a recognition of the historical, cultural, and institutional dynamics and structures that have routinely advantaged privileged groups in society and resulted in chronic, cumulative disadvantage for subordinated groups. (Yes, Partly, No)

18. Park, *Equity in Sustainability*, 5.

- Study related example: Mandatory energy efficiency labelling
- Transgenerational Equity (TE) – decisions consider generational impacts and do not result in unfair burdens on future generations (Yes, Partly, No)
 - Study related example: A law passed to allow tenants to use outdoor clotheslines

In this equity evaluation, it is assumed that tenants are usually in a lower socioeconomic position than their landlords and thus are characterized as the group with higher needs and/or as the group that is disadvantaged in the landlord-tenant relationship. It is recognized that this is not the case in all tenant-landlord situations, however, landlords in BC generally hold all the power in terms of allowing and conducting unit retrofits – as most leases contain a clause preventing permanent tenant-led improvements or at minimum requiring the landlord’s written consent for tenant improvements¹⁹.

Initiatives were also evaluated on their effectiveness in 4 categories, and on their political feasibility and technical feasibility:

- *Effectiveness* (Yes, No, Partly, Inc)
 - Energy Efficiency: Decreasing GHG emissions and energy use
 - Housing Stability: Not downloading costs to tenants or displacing tenants
 - Climate Resilience: Improving resilience to extreme heat/cold or poor air quality
 - Restricted to these three climate impacts for the purposes of this project
 - Safety: Improving or maintaining access to heating/cooling systems or clean air ventilation systems that impact personal health and enjoyment of space
 - Restricted to these types of benefits for the purposes of this project
- *Political Feasibility*: What are the main supporters and opponents of this policy? (High, Medium, Low)
 - High = broad support from landlords, tenants, professionals, politicians
 - Medium = split support/opposition amongst landlords, tenants, professionals, politicians
 - Low = more opposition than support from landlords, tenants, professionals, politicians
- *Technical Feasibility*: Is this something that can be implemented in the BC context? (High, Medium, Low)
 - Can it be enacted as part of BC/municipality powers?
 - Can it be practically enforced?
 - Are there resources for this?

19. Tenant Resource and Advisory Centre, “Tenant Responsibilities”.

- Has something like this been done before?

These evaluations informed the recommendations section of this summary, which aims to provide options that are effective, increase equity, and are feasible in BC or BC municipalities.

Findings

A list of all the initiatives reviewed in this research can be found in [Appendix A](#).

BC Initiatives: Categorization and Analysis

The existing landscape of initiatives in BC that address or impact energy poverty and energy efficiency for tenants can be placed in in four categories: policies, regulations, incentive programs, and informational resources.

Existing Policies & Regulations

The current legislative framework that tenants' rights could reside within covers both voluntary and mandatory measures.

The BC Residential Tenancy Act (RTA) requires landlords to maintain units in compliance with legal health, safety, and housing standards, and specifically mentions providing working heating systems as being necessary for the health and safety of occupants. As of July 1, 2021, the BC RTA states that the Residential Tenancy Branch (RTB) decides whether a landlord has sufficient grounds to evict a tenant due to unit repairs or renovations²⁰; wording put in place to disincentivize renovations²¹. The RTA also protects tenants from having to absorb the financial cost of upgrades to their unit.

Many BC municipalities also have more specific operating and maintenance requirements for rental units in their Standards of Maintenance or “Good Neighbour” bylaws. Some of these bylaws have a requirement that individual temperature controls must be available in each dwelling for Part 9 buildings (Part 9 of the BC Building Code, applies to “simple” buildings-houses, small apartment buildings, as well as small commercial), and some have mandatory minimum temperature requirements for heating equipment, e.g., heating systems must be able to maintain a minimum indoor temperature of 22 degrees Celsius in all living spaces.

20. *Residential Tenancy Act*, s. 49.2

21. Government of British Columbia, “Renovictions”.

The [BC Energy Step Code](#) is a voluntary BC Building Code regulation that municipalities can use to provide incentives or create regulations around providing energy efficient homes. The City of [Vancouver Building Bylaw Part 11](#) (Existing Buildings) outlines required energy efficiency retrofits that are triggered by different types of building renovation permit requests. For example, in a building with 1-2 dwelling units, if there is an interior or exterior repair to replace existing building components that is equal to or more than \$75,000, the building must have an EnerGuide Assessment, air tightness upgrades, and increases in attic and sloped roof insulation²².

The existing policies and regulations that could help address energy poverty and tenants' access to safe, energy efficient, and resilient rental units are either voluntary, tied to renovations, or have gaps in coverage; with basic building code and tenancy act requirements only addressing mandatory access to adequate building heating systems. The RTA does offer tenants some protections against unnecessary evictions and protections against being delegated the cost of repairs.

Upcoming Regulations

Though there is a lack of existing policy or regulations specific to addressing and affirming a tenant's rights to energy efficient, resilient, and safe homes in the context of climate change and extreme heat, there is ongoing work on policies that could be used help support tenants' rights.

The Government of BC is drafting an Existing Buildings Renewal Strategy (sometimes referred to as a BC Retrofits Code or Alterations Code) that outlines requirements for energy efficient retrofits that are mapped onto different existing building alteration scenarios²³. Vancouver Building Bylaw Part 11 informs this strategy.

The City of Vancouver passed a Greenhouse Gas and Energy Limits Bylaw in 2022 that applies to existing and new buildings and will require GHG benchmarking and specific energy limits for multi-family buildings as soon as 2024²⁴. GHG limits could be used to trigger retrofits on existing rental stock (when emissions are looked at on a building level), and benchmarking could be used in future regulations or programs, with building energy labelling, and have a role in rental market ads and education.

22. [City of Vancouver, By-law No. 12511, Part 11 s. 11.2.1.4.](#)

23. [Government of British Columbia, "Existing buildings renewal strategy".](#)

24. [City of Vancouver, By-law No. 13472.](#)

Incentive Programs

There are many provincial-level incentive programs for energy efficient building retrofits, including the installation of heat pump and envelope retrofits, however, most of these incentives apply to owners of buildings. The one provincial incentive for retrofits that can apply to tenants is the CleanBC Income Qualified Program (which provides up to 95% of the cost of qualifying retrofits depending on the combined income of the house residents²⁵), however, this requires landlord permission as part of the rebate application paperwork. As it targets lower income tenants and homeowners, this program could be used as a step in addressing the lack of energy efficiency and cooling in rental buildings, but the landlord permission requirement could be limiting.

Informational Resources

There are many different provincial-level resources that advise homeowners and tenants on how to adapt to extreme temperatures and improve the energy efficiency of their homes. BC Housing's [Extreme Heat and Wildfire Smoke webpage](#) contains resources on behavioural and retrofit strategies to adapt to extreme heat and poor air quality events. Utility companies BC Hydro and FortisBC have multiple webpages devoted to energy saving tips, programs, and incentives. The BC Government's [Extreme Heat website](#) has resources on being prepared for extreme heat, which includes planning, relocation, and space altering strategies; however, these are voluntary strategies, and most concern changing tenant behaviour, energy use, and habits during a heat wave. The [BC Energy Step Code Design Supplement S3](#) on Overheating and Air Quality is a resource that provides builders with information and design strategies to tackle energy efficiency, extreme heat, and poor air quality all at once. Some of these design requirements, such as installing operable or permanent exterior shading, could be applied to building retrofits.

Analysis

Overall, the current BC initiatives that could address energy poverty and lack of access to energy efficient and air-cooling systems put the onus on the tenant to either provide their own means of adapting to extreme heat (within their lease allowances), or to convince their landlord or building manager/owner to support or provide energy efficient and air-cooling systems. These initiatives are focused on informing and altering the behaviour of tenants and providing information and

25. [CleanBC, "CleanBC Income Qualified Program"](#).

some voluntary incentives to landlords/building owners – but do not yet have wording that affirm or support a tenant’s right to energy efficient, climate resilience, and healthy housing.

A summary analysis of BC initiatives related to tenants’ rights to energy efficient, climate resilience, and safety is below in Table 1. They initiatives are grouped in five broad categories, see [Appendix B](#) for detailed information on initiative analysis.

Table 1: Analysis Summary of Existing BC Initiatives

Initiative	Equity				Effectiveness at addressing			
	PE	DE	SE	TE	Energy Efficiency	Housing Stability	Safety	Climate Resilience
Requiring Energy Upgrades During Renovations	No	Yes	Partly	No	Yes	No	No	Partly
Residential Tenancy Act: restrictions on renovation related evictions and rent increases	No	Yes	Yes	Yes	No	Partly	No	No
Minimum required temperature in Standards of Maintenance Regulations	No	Yes	Yes	Yes	No	No	Yes	No
Rebates on Energy Efficient Home Renovation costs	No	Partly	No	Partly	Yes	No	Partly	No
Free services or funding for multi-unit residential building (MURB) rental units undergoing energy efficiency renovations	No	Partly	No	Partly	Yes	No	Partly	No

The table does not address political or technical feasibility since these programs currently exist. Note that none of the existing programs address procedural equity, and only the Residential Tenancy Act partially addresses Housing Stability in its efforts to prevent renovictions or passing down the financial burden of renovations onto tenants. Transgenerational equity is considered applicable when there is a permanent change to policy that is applicable for future generations, e.g., stating a minimum required indoor temperature in bylaw.

In addition to these existing policies, there is ongoing work by the BC provincial government to create an Alterations Code by 2024, which would create standards for energy efficiency and climate resilience for existing buildings. The City of Vancouver has also adopted, but not yet implemented a Greenhouse Gas & Energy bylaw that includes energy and carbon reporting requirements. In September 2022, the Union of BC Municipalities (UBCM) passed a resolution supporting a Clothesline Act²⁶, which would enable tenants and other types of residents be able to use outdoor clotheslines, despite existing restrictive bylaws. The table below outlines the likely effects of these initiatives. See Appendix B for detailed information on initiative analyses.

Table 2: Analysis Summary of Upcoming BC Initiatives

Initiative	Equity				Effectiveness at addressing			
	PE	DE	SE	TE	Energy Efficiency	Housing Stability	Safety	Climate Resilience
Energy Efficiency and Climate Resilience Measures in Alterations Code	No	Yes	Partly	Yes	Yes	No	Partly	Yes
Vancouver Greenhouse Gas & Energy Bylaw	No	Yes	Partly	Yes	Yes	No	No	Yes
UBCM Clothesline Act	Yes	Yes	Yes	Yes	Yes	No	No	No

These ongoing initiatives are expected to increase transgenerational equity by making permanent policy changes that will benefit future generations in tangible ways: Energy efficiency and climate resilience measures in the Alterations Code will improve the quality of housing and

26. [UBCM, "Clothesline Act"](#).

energy systems, the Vancouver Greenhouse Gas & Energy Bylaw will also improve information access by having a database of energy information on buildings, and the UBCM Clothesline Act will instate a right to practice energy efficient habits that also serves to increase procedural justice as tenants become involved in energy efficient activities. However, none of these in progress initiatives address housing stability. The Alterations Code may be able to address energy efficiency and climate resilience in rental buildings, however, is depends on how climate resiliency and energy efficiency is framed in the document.

A note: Though this does not directly apply to the private rental sector, [BC Housing's Mobilizing Building Adaptation and Resilience \(MBAR\)](#) research initiative is conducting research and field trials on how to economically incorporate climate resilient design into energy efficiency retrofits. Commonalities can be drawn between construction in the private and public rental housing sector, and this information can be used to increase the climate resilience of private rental buildings.

Initiatives in Other Jurisdictions: Categorization and Analysis

Addressing tenant energy poverty and energy efficiency is being done across the world via diverse mechanisms and for varying reasons. Some jurisdictions focus on energy efficiency and building design to address extreme heat, others address access to affordable heating, and many focus on improving energy efficiency of homes to not only reduce emissions but to also reduce tenant utility bills. The initiatives reviewed include promising existing initiatives and potential effective future initiatives.

The landscape of existing initiatives that address or impact tenant energy efficiency and energy poverty fall into five broad categories:

- Minimum Housing Quality Standards
- Prescriptive Standards
- Performance Standards, Energy Efficiency Ratings, and Energy Efficiency Disclosure
- Cost Sharing, Funding, and Grant programs
- Improving Rights

Minimum housing quality standards set general housing quality standards for rental units. They are often regulated on a provincial/state scale or national scale, such as through requirements in Canadian provincial Residential Tenancy Acts or through building codes. They cover topics that range from plumbing and drainage, to ventilation, to setting minimum standards for insulations

and heating. Though they are criticized for focusing on the residential unit scale and for not having a focus of maximizing any energy savings²⁷ (after all, it is a minimum standard), what is included as a minimum or essential level of service can have an impact on energy poverty and security.

Many of the more recent initiatives that improve tenants' rights to adequate and healthy housing revolve around specifying minimum floor and roof insulation ([Flanders, Belgium](#)), and setting minimum standards for heating and insulation ([Victoria](#) and [New South Wales](#) in Australia, and in [New Zealand](#)). Including these types of specifications could potentially improve energy efficiency in new and existing rental units depending on their content and the complementary legislation/requirements that are passed to implement the change; however, minimum requirements for heating or cooling for this type of standard appear to be associated with increased energy use²⁸, as they often require new cooling/heating in units that previously did not have those systems.

Prescriptive standards set a base level of energy efficiency, resilience, and health by specifying specific minimum design requirements for building elements such as insulation or electrical systems. They differ from minimum housing quality standards in their goal and their implementation as they are usually adopted as a standalone regulation on a municipal level. Prescriptive standards often discuss a “trigger point” in the rental housing lifespan at which point the unit/building will need to update to conform to the prescriptive standards.

The standards usually require updates to multiple building systems (insulation, lighting, plumbing) when the unit is sold ([Burlington, VT](#)), or undergoing a major renovation (Berkeley, CA). In new construction or major renovations, prescriptive standards should detail restrictions to avoid energy inefficient designs – e.g., no apartment can have windows solely on the North or West aspect – to prevent the use of excessive heating/cooling equipment and to increase energy inefficiency. Prescriptive standards can be quite effective at countering energy poverty if they consider energy efficiency on the unit level (rather than only the building level) and if they are not overwhelmingly difficult standards to meet.

Performance standards set performance levels for the overall energy efficiency or carbon intensity of a building or unit; yet, unlike prescriptive standards, they focus on the unit's total energy performance rather than the specific design parameters. They are integrally connected to

27. Hinge, *Minimum Energy Standards for Renter Properties*.

28. Hinge, *Minimum Energy Standards for Renter Properties*, 20.

energy efficiency ratings and **energy efficiency disclosure**; performance standards usually involve choosing a minimum energy efficiency rating/measurement that buildings need to meet and require disclosure of energy efficiency ratings/measurements to the government to gauge adherence to the standard. Performance standards can be used in different ways to incentivize or compel landlords to renovate their buildings, however they have to be carefully crafted to be achievable and must be supported with an affordable inspection scheme.

Many cities use their **energy efficiency rating system** and **energy efficiency disclosure policies** as a motivator to incentivize landlords to voluntarily improve housing; requiring landlords to share energy efficiency information and ratings with prospective tenants. The thought is that energy efficient homes will be more desirable and thus command a higher rent, so it is in the landlord's best interest to renovate to increase their energy efficiency rating so that they can maximize profits. This system and policy mix can also be applied more generally to all residential buildings to encourage renovations that benefit would-be tenants and homebuyers alike.

Some cities use these rating systems to compel landlords to renovate. In 2023, in a bid to both improve energy efficiency and relieve rent pressures, Brussels (Belgium) mandated that rental buildings with ratings of F and G (using more than 500 and 600 kWh/m²/year, 30% of all rental housing supply) would not be permitted to increase their rents²⁹ (see Figure 1 for details of labelling system).

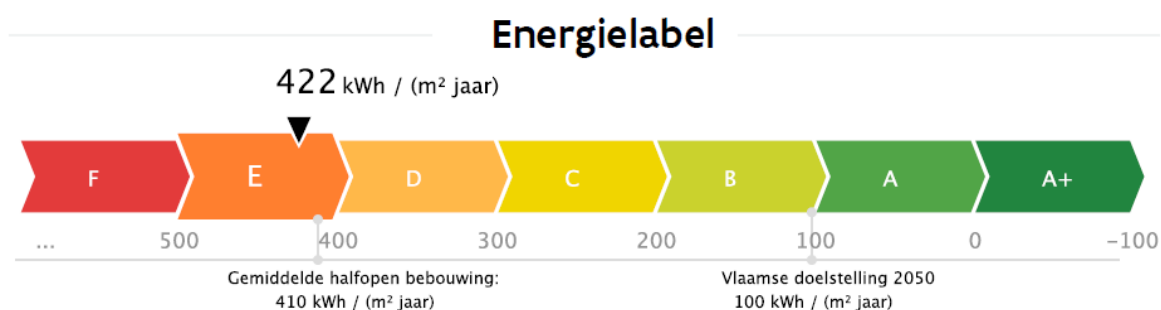


Figure 1: Flanders Energy Labelling System³⁰

England and Wales's Minimum Energy Efficiency Standards state that rental units must meet an energy efficiency level of E or higher to be rented out (see Figure 2 for more information) and landlords are fined for non-compliance. These energy efficiency levels are stated on a building's

29. Lyons, "Brussels agrees to limit rent increases".

30. Vlaanderen, "Uitleg bij de onderdelen van het 'EPC Residentiële eenheid'".

Energy Performance Certificate (EPC); a mandatory certificate for all new, renovated, and rented buildings that is valid for a period of 10 years³¹.

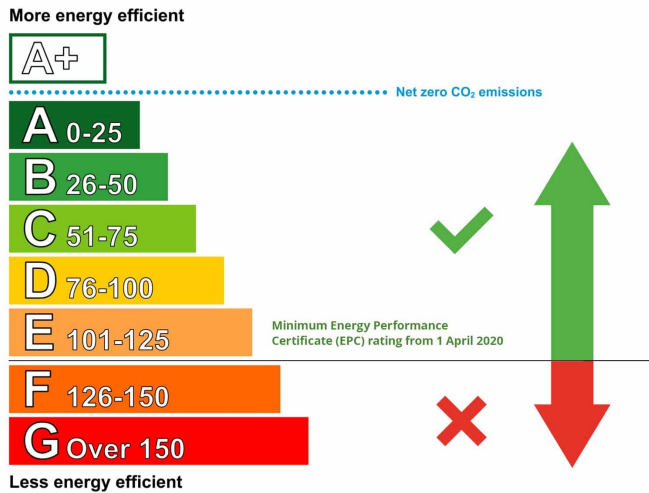


Figure 2: UK Energy Labelling System³²

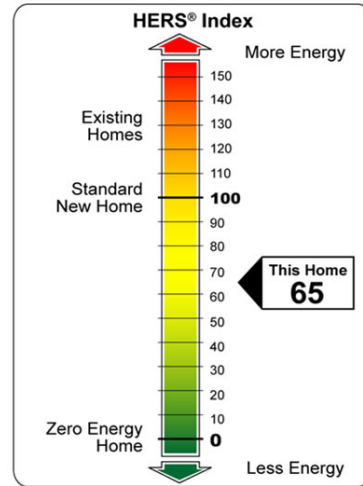


Figure 3: US Energy Scoring System³³

The numbers on the EPC scale in Figure 2 are an integrated score that a qualified assessor calculates after looking at a variety of factors that impact how energy is used on a property³⁴.

The City of Boulder’s SmartRegs ordinance is viewed as a best practice case for improving energy efficiency in existing rental stock. This initiative involved setting a performance standard that states that a minimum acceptable energy efficiency level is required for landlords to be able to obtain rental licenses. It also included an alternative prescriptive checklist to follow. The program requires that units pass a SmartRegs inspection (in addition to a Rental License Inspection) before a rental business license is granted³⁵. This program has had 99% adherence within 10 years³⁶.

Cost sharing, funding, and grant programs are financial mechanisms through which governments can reduce the cost of energy and/or energy efficiency upgrades for tenants and landlords. Germany recently passed their CO₂ cost allocation law

31. [UK Department for Levelling Up, Housing, & Communities, “Official Statistics Energy Performance”](#).

32. URP Group, “Minimum Energy Efficiency Standards”.

33. Bailes, “Everything You Ever”.

34. Energy Saving Trust, “Energy at Home”.

35. City of Boulder, “SmartRegs FAQs”.

36. Mazur, “Energy efficiency”. Hinge, *Minimum Energy Standards for Renter Properties*, 10.

(“[Kohlendioxidkostenaufteilungsgesetz](#)”) to tackle the split incentive. The law makes landlords responsible for up to 95% of the carbon tax in energy inefficient buildings, and tenants responsible for up to 100% of the tax in the most efficient buildings, along a spectrum of 10 cost distribution categories.

This is a partial solution to the split incentive – the landlord has an incentive to renovate for improved energy efficiency, but in an energy efficient home, the tenant is still incentivized to reduce personal energy consumption. However, this cost sharing only applies to the carbon tax and not the entire utility bill (which could still be significant); and is predicted to only save tenants between €12 and €72 (\$17.27CAD and \$103.64CAD) per year on average³⁷.

Sweden has another approach to the split incentive –many landlords [pay for all utilities and pay a high carbon tax](#), which provides a significant incentive to landlords/building owners to renovate. However, this situation does not do anything to incentivize tenants to practice energy efficient behaviour. In an effort to encourage energy efficient behaviour, some Swedish landlords do charge for heat based on a set temperature, where instead of paying per kWh, tenants pay for the cost of heating above a set threshold³⁸.

Many cities across the world have grants to help support energy efficiency transitions; in the UK (England and Wales), there are programs that specifically help low-income households pay for energy efficient renovations.

Improving tenant’s rights: There are a few types of policies that increase tenants’ rights. Maine’s Rental Energy Disclosure Policy gives prospective potential tenants the right to get 12 months of energy information from energy suppliers for the units they are interested in applying for³⁹. Hartford, Connecticut, gives tenants the rights to make non-structural energy-saving home improvements such as installing weatherstripping, removable interior storm windows, or installing appliance insulation⁴⁰.

Summary

The policies that were the most effective at improving energy efficiency were ones that were clear, targeted the right building segment, and involved mandatory actions that were tied to permitting. Both the Boulder Smart Regs program and the London Housing Supplementary

37. [Kurmayer, “Germany splits carbon tax”](#).

38. [Görlach, “Making the building sector”](#).

39. [Maine, Title 14: Court Procedure -- Civil, Part 7, c. 710 s. 6030-C](#)

40. [Hartford, Connecticut, Municipal Code, c. 18 s. 51-8 \(2019\)](#)

Planning Guide were extremely successful (92-99% compliance⁴¹,) because they were mandatory, targeted the rental unit, had clear goals to meet that were tied to maintaining rental unit legitimacy and had little to no exemptions permitted. Robust supporting policies and programs to support these homeowner renovations also contributed to their success.

Analysis

This comparative analysis includes laws, regulations, and policies from other Canadian cities, from the USA, and from European countries. They are depicted in Table 3 in broad categories. See [Appendix B](#) for detailed information on initiative analyses.

Table 3: Analysis Summary of Existing Initiatives in Other Jurisdictions

#	Initiative	Equity				Effectiveness at addressing					
		PE	DE	SE	TE	Energy Efficiency	Housing Stability	Safety	Climate Resilience	Political Feasibility	Technical Feasibility
1	Maximum indoor temperature for buildings with air conditioners	No	Partly	Yes	Yes	No	No	Yes	Yes	High	High
2	Minimum Energy Efficiency levels as a precondition for rental licensing	No	Yes	Yes	No	Yes	No	No	Yes	Medium	Low
3	Energy labelling or disclosure - mandatory	No	Yes	Yes	Yes	Yes*	Yes	No	No	High	Medium
4	Energy labelling or disclosure - voluntary	No	No	No	No	No	No	No	No	High	High
5	Cost-splitting carbon tax	No	Yes	Yes	Yes	Partly	No	No	Partly	Medium	Low
6	Landowner pays for utilities	No	Yes	Yes	Yes	Partly	Low	Yes	No	Medium	Low

41. Gower, “Energy Justice”. Hinge, *Minimum Energy Standards for Renter Properties*, 10.

7	Energy Efficiency Design Measures in Minimum Standards for Rental Homes	No	Yes	Yes	No	No	No	Partly	Partly	High	High
8	Performance standard - by unit, mandatory	No	Yes	Yes	Partly	Yes	No	Partly	Yes	High	High
9	Performance standard- by building, mandatory	No	Yes	Yes	Partly	No	No	Partly	Partly	High	High
10	Tenant right to make energy efficiency upgrades	Yes	Yes	Yes	Yes	Partly	Partly	No	Partly	Medium	Medium
11	Tenant right to practice energy saving behaviors	Yes	Yes	Yes	Yes	Yes	Yes	No	No	High	High

* When combined with performance-based policies

This review uncovered some initiatives regarding energy efficiency and climate resilience that provide useful lessons learned and best practice examples that can be applied to the BC context.

Prescribing a maximum allowable temperature in the summertime in rental buildings with central cooling (initiative 1) would be an effective strategy for improving safety and climate resilience, however, if not supplemented by policy that encourages energy efficient systems, it has the potential to increase energy use (as well as costs) and greenhouse gas emissions. While requiring a minimum energy efficiency to get a rental license is an effective policy (initiative 2), implementing it in the current BC housing market could be detrimental as it would likely exclude many existing rental units from being licensed and negatively impact rental housing availability.

Voluntary energy labelling and disclosure (initiative 4) encountered some significant issues in Australia – where lack of uptake made the labelling program fail to function as an informational tool for tenants – while mandatory disclosure policies (initiative 3) were observed to be quite effective in informing prospective tenants because of built in enforcement measures.

Initiatives 8 and 9 (performance standards by unit and building) are both feasible programs in the BC context, however the difference in their effectiveness is due to how energy efficiency is conceptualized. By looking at the unit level instead of the building level, [London's Housing](#)

[Supplementary Guide](#) detailed specific design and performance standards based on the orientation of the unit. Buildings that were analyzed and/or built through this method had excellent energy efficiency in all units, rather than achieving a total building high energy efficiency score by having north and east facing unit efficiency compensate for the inefficiency of the south and west facing units (seen in implementation of the Australian National Construction Code).

No initiative by itself meets all equity requirements and effectiveness goals, but a combination of some of these approaches can increase energy efficiency in housing, while not increasing rents, and not putting undue financial pressure on landlords. Efficiency Canada is currently preparing recommendations for addressing tenant energy poverty that is based on no-cost renovations, affordability covenants, and improving tenants right to engage and participate in the process. This strategy has been incorporated into the initiatives in the Recommendations section.

Possible Future Initiatives

Many existing initiatives have been effective in improving energy efficiency of rental housing; however, many programs rely on the perception of increase in unit desirability and increase in future rent as motivation for voluntary landlord participation (or as consolation for mandatory participation). This is problematic, because it essentially downloads the cost of the energy efficiency renovations onto tenants and causes low-income tenant displacement and renoventions. The International Union of Tenants (IUT) posits two potential mechanisms to combat this outcome: the model of housing cost neutrality and changing funding conditions for private rental housing renovations.

The **model of housing cost neutrality** combines social and climate goals in an ideal way and prevents renoventions by maintaining renovation affordability through ensuring that rent increases are fully balanced by tenant energy savings⁴². This involves public financing and creating programs and agreements so that landlords that guarantee housing cost neutrality can be eligible for zero or very low interest rates on loans for renovations.

The ITU mentions 2 criteria for **changing funding conditions for private rental housing renovations**: combining public funding for private rental renovations with rental caps and requiring a guarantee of tenant participation in the renovation process as a condition of receiving funding. Combining public funding for private rental renovations with rental caps criterion in BC

42. [International Union of Tenants, "A Tenant Friendly"](#).

would include applications for existing energy efficiency subsidies (which do not require any agreement regarding capping rents), not just new programs. Given the lack of existing BC incentives for landlords and the competitive rental market in BC, this criterion would likely act as a disincentive for rental housing renovations in BC unless it is supported by policy that mandates renovations.

Involving tenants in the planning and execution of energy efficient upgrades is an important requirement that improves tenants' rights that requires a shift in thinking on how tenants and landlords interact regarding retrofits. Currently, tenants are usually removed from the retrofit process, both in a decision-making sense and sometimes physically via evictions. However, from a practical standpoint it makes sense to involve the people that will be impacted by the construction in the retrofit planning process; involving tenants with lived experiences of the site-specific inefficiencies and climate impacts can give clarity on what types of systems need to be installed (improving suitability of renovations) and could make the scheduling process easier (improving ease of construction). Involving the tenant also increases procedural equity by giving the tenant more agency over their living conditions and changes the situation from one in which retrofits are imposed upon tenants to one where retrofits are done in cooperation with tenants.

The City of Toronto has renewed interest in implementing a **maximum indoor temperature standard** across all residential buildings. Presently, there is an existing maximum indoor temperature requirement of 26°C for buildings that have air conditioning but has no similar standards for non-air-conditioned buildings⁴³. While the provision of heat is considered a vital service that landlords must provide, adequate cooling is not yet considered a vital service. In August 2022, the Ontario Human Rights Commission started calling on the Ontario government to “include air conditioning a vital service” under the Residential Tenancy Act⁴⁴.

However, if implemented alone, this minimum housing quality standard would lead to an increase in energy use and greenhouse gas emissions – companion clauses that specify a degree of energy efficient design are needed to encourage the use energy efficient or passive cooling and heating systems. Including performance-based requirements into the Residential Tenancy Act regarding cooling mechanisms could be an effective way of incorporating multiple types of cooling technologies. The clause could mandate that landlords need to provide adequate and energy efficient cooling systems as a vital service, and that these cooling systems (either singular or combined) should be able maintain a maximum indoor air requirement of 26°C during

43. Federation of Metro Tenants' Association, “Heat/vital services”.

44. Ontario Human Rights Commission, “OHRC statement on human rights”.

extreme heat events within a set number of air changes per hour (or other level of performance standard).

Interview Findings

Three people were interviewed during this research project:

- Abhilash Kantamneni, Efficiency Canada
- David Hutniak, LandlordBC
- Leila Ghaffari, McGill University, Balanced Supply of Housing (BHS) researcher

Abhilash Kantamneni provided context on research Efficiency Canada is doing on improving tenants' rights to energy efficient housing. His research emphasized the need to provide no-cost upgrades- energy efficiency upgrade programs that are designed so that implementation does not cause any extra financial burden on either the landlord or the tenant. This suggestion is paired with affordability covenants - in order to take part in the no-cost upgrades, the property owner would need to agree to maintain their rental housing at affordable levels and protect their tenant against sale of property and evictions. These suggestions have been incorporated into the pathways outlined in the [Recommendations](#) section of this document.

David Hutniak provided context regarding current landlord practices, and how existing policies and practices are impacting the private rental housing industry. His suggestions included:

- implementing broader policies that apply to all types of housing- not just targeting rental housing
- distributing the burden of maintaining affordable and energy efficient housing amongst the broader taxpayer base
- that policies and regulations should not overburden landlords with onerous regulations which will disincentivize them from providing rental housing
- that energy labelling needs to be done with care; to perhaps not make it public right away as it will take time for landlords to improve efficiency, and that these ratings and related legislation should consider the operational life cycle of existing gas boilers (a 20–30-year timeline) in requirements to retrofit/meet energy standards

He also noted that LandlordBC has been doing outreach with its members and regional health organizations to provide resources and strategies for checking on tenants in advance of and during extreme heat situations. David's suggestions were taken into consideration in the final recommendations of this report.

Leila Ghaffari provided information on her affordable housing policy research, and some of the initiatives that she promotes in her research align with the findings and recommendations in this document. She provided some additional context as to the potential parties that would support or oppose certain policies and regulations, and her own thoughts on the feasibility of implementing some of these policies in Canada. She also noted that her research has found concerns about landlords leaving the rental housing industry because of legislation are largely unrealized. This information aided in analysis of the initiatives and in crafting recommendations.

Summary of Findings

Over 70 different types of policies, regulations, and programs related to energy efficiency, climate resilience, safety, and tenants' rights were reviewed in this project (see [Appendix A](#) for the complete list). They were categorized by type of initiative and reviewed for applicability to tenants' rights before being analyzed on their ability to improve equity; effectiveness on improving energy efficiency, housing stability, safety, and climate resilience; and feasibility (to the BC context). Three interviews helped provide further context to the feasibility of these initiatives.

Existing initiatives in BC include existing policy and regulations, upcoming policy and regulations, incentives, and information resources. These largely focused on improvements that benefit landlords, and except for select Residential Tenancy Act clauses limiting renovations and downloading of renovation costs, largely do not involve the tenant at all except where information is provided to provoke energy efficient/climate resilient habits. There are some promising upcoming initiatives, like the Alterations Code, which could have significant impact on improving energy efficiency, climate resiliency, and safety of rental housing, however on its own it could impact tenant equity by provoking increases in rental rates.

Existing initiatives in other jurisdictions fell into five categories: minimum housing quality standards; prescriptive standards; performance standards; cost sharing, funding, and grant programs; and programs that increase tenants' rights. Of these initiatives, select prescriptive standards, performance standards (involving energy labelling), and cost sharing mechanisms were shown to be the most effective at improving energy efficiency and climate resilience.

The two initiatives that gave tenants rights to use clotheslines and to install limited energy efficiency measures had limited effectiveness with greenhouse gas emissions due to their scale, however they provide examples of how procedural equity could be integrated into the other types of initiatives through involving tenants in the selection and scheduling of energy efficient renovations. The most applicable promising initiatives also included tenant involvement in

renovation processes and highlighted the growing popularity of including maximum indoor temperature standards in Residential Tenancy Acts.

No one initiative addressed all aspects of equity, effectiveness, and feasibility, however, combinations of initiatives show promise in addressing most of these dimensions. This information was used to help craft recommendations for policymakers.

Recommendations for BC Policymakers

The following recommendations aim to improve tenants' rights to energy efficient, climate resilient, and healthy housing. These recommendations consider existing work being done on energy efficiency and retrofit programs, and CleanBC goals. They have been formulated to apply to both the private and secondary rental markets, and to consider the current rental housing context in BC.

Foundational Initiatives

The BC rental housing market faces multiple challenges when it comes to energy efficiency, climate resilience, affordable and safe housing – the split incentive dilemma, a housing affordability and availability crisis, and a lack of data on the rental market.

Understanding the rental housing market – both in numbers and in quality – is foundational to the implementation and enforcement of policies, regulations, and programs that target improving rental unit quality without increasing unaffordability. To address the lack of data on the rental housing market, these four foundational initiatives should be implemented:

1. Establish a provincial rental housing registry

Creating a BC Provincial Government database of rental housing, involving municipality coordination, will enable better tracking and coordination of landlords and rental housing across the province. A mandatory registry would be especially helpful in more accurately quantifying the secondary rental market. It can also serve as the basis for tracking multiple dimensions of rental housing – including information on energy efficiency and rental prices – and aid in creating a more unified provincial communication system for landlord programs, incentives, and education.

A similar type of initiative was present in BC in the form of an industry-led landlord registry, which tracks housing providers. LandlordBC launched their Landlord Registry™ in 2017 (no longer publicly accessible), and the Investment Property Owners Association of Nova Scotia

followed suit with their own, which is still publicly accessible on their [website](#). Both registries provide details on landlords that have I Rent It Right™ certification; in BC this is a free educational program for landlords that provides information on the fundamentals of operating a rental housing business⁴⁵.

In February 2022, Montreal implemented a mandatory housing registry for landlords with more than eight units⁴⁶, which includes a requirement to submit information on rental rates and vacancy, as well as prove that their building is in good condition and has had required inspections. The latter regulation was designed to help improve rental housing and shift the burden of proof of unit quality to landlords, however, it is a useful tool that BC can implement to track rental housing stock.

Enrolment in the BC Rental Housing Registry can be a pre-condition to receiving a rental housing business license, and an additional online reporting system could be implemented to help fill in gaps by allowing tenants to request new additions to the registry. Regardless of if this registry is made public or private, having a BC Rental Housing Registry is a key step to better understanding the BC rental market. Making a public registry or a selectively public tool that provides additional information (such as an energy efficiency rating) by property address would increase the equitable accessibility of this information for all prospective tenants.

2. Add a rental energy disclosure requirement to the Residential Tenancy Act

The requirements for tenancy agreements (Section 13 of the Residential Tenancy Act) should be amended to include wording that gives prospective tenants the right to obtain a 12-month history of energy consumption and the cost of that consumption before signing a tenancy agreement. The wording could include the requirement that the landlord provide this information, that the prospective tenant can obtain this from the utility provider, or both.

The advantage of involving the utility provider in sharing information about energy use and cost is that this improves distributional justice of energy information; utilities have the capacity to create a system that all prospective housing occupants (tenants or owners) can use to inform themselves on the cost and energy efficiency of their prospective homes.

45. LandlordBC, “I Rent It Right”.

46. MacLellan, “Montreal launches rental price registry”.

Additionally, BC utility providers already have the capability of sharing this information via an online portal – as this is how account owners look up their own usage. Enabling prospective housing occupants to check on energy usage and costs at the source gives them more agency and can largely remove issues with energy disclosure non-compliance.

The state of Maine, USA works with utilities (through a Memorandum of Understanding) to provide tenants with a 12-month history of energy usage and links this information for Multiple Listing Service (MLS) listings. This right to information is embedded in [Maine's State Statute on rental properties](#). Alaska, Connecticut, Hawaii, Kansas, Massachusetts, and South Dakota also have energy disclosure requirements that require landlords to provide utility usage and cost information if requested⁴⁷.

3. Mandate the use of future climate files for energy audits

A building that is energy efficient today is not necessarily future climate suitable or safe, as the future efficacy of the design depends on the type of climate files that are used by energy auditors when creating energy efficiency recommendations (e.g., early Vancouver Passive Houses were energy efficient, but overheated in the summer). It is not yet required to use future climate files in energy auditing processes; the standard modeling software uses historical climate files. This means that this housing may be climate suitable today, but not in 20 years' time.

To ensure that an energy efficient home is not only safe now, but also in a future climate, the BC provincial government should work with the federal government to codify that energy auditors need to use future climate files in their analysis. This will also involve updating energy auditor tools and systems, such as HOT2000 (owned by National Resources Canada) and the EnerGuide system, to incorporate future climate considerations. The BC government can also insert requirements that future climate files be used in energy analyses into the BC Building Code and the new Alterations Code.

4. Enable the creation of a labelling system for residential energy efficiency & climate adaptation

Energy disclosure requirements provide important energy efficiency information to prospective tenants but (depending on the information provided) may not provide an

47. See the [ACEEE Energy Equity for Renters Policy Tracker](#) for more information on these programs.

intuitive or easy way to compare the energy efficiency or future climate suitability of different units. Creating an energy efficiency standard with corresponding energy efficiency labelling system provides tenants (and homeowners) with information that enables easy comparison between types of housing. BC's Roadmap to 2030 includes plans to create an energy efficiency rating or label along with an online home energy rating tool⁴⁸. While current plans appear to be aimed at home buyers, this labelling system and tool could and should be extended to rental units as well.

However, there are additional elements to consider when evaluating whether a home will be climate resilient and healthy in the long term. Using future climate files in energy efficiency analyses, installing exterior shading on buildings (either structural or via vegetation), and having filters in active cooling systems and HVAC systems that address poor air quality are all ways to adapt housing to be more resilient to current and future climate impacts. These are not included in a traditional energy efficiency labelling system.

Creating an energy efficiency & adaptation labelling standard that tracks not only energy efficiency, but also a building's resilience to future climate, will help increase distributional equity of energy efficiency and climate resiliency information to all prospective and current housing occupants. It could have two types of ratings – one for energy efficiency, and one for adaptation (climate resiliency), with an energy efficient building that was designed with future climate files gaining points in both ratings.

Formulation and implementation of the BC energy efficiency labelling system should involve reviewing existing labelling systems in Europe. The adaptation labelling system could start in a stepwise fashion by climate hazard type, starting with extreme heat and poor air quality, with other climate hazards being added later. The adaptation labelling system would have a requirement for thermal comfort testing to help quantify how resilient a unit is to extreme heat, while resilience to poor air quality would be based on the existence of air filtration systems.

Ideally, this labelling system would be unified across the province. However, creating a workplan or legislation that enables BC local municipalities to implement voluntary labelling standards would be a good first step towards creating these standards and regulations. Once

48. Government of British Columbia, *CleanBC Roadmap to 2030*, 42.

the labelling system has been implemented, the ratings can be listed on a public version of the BC Rental Housing Registry, used in in MLS listings, and be required information for all property sales.

Sharing energy labelling information in these ways would enable more informed decision making for prospective tenants and homeowners. A labelling system would also help track progress towards Net Zero housing goals in existing buildings and would help quantify how much housing will be negatively impacted by future extreme heat and poor air quality scenarios. A potential name for this labelling system would be the Residential Energy Efficiency & Adaptation Labelling System (REEALS).

These foundational initiatives should be implemented regardless of the following policy-program mixes that are chosen. However, these initiatives themselves are not a solution – they support the implementation and enforcement of the following regulation pathways.

Regulation Pathways

The policy-program mixes below aim to address improving energy efficiency, climate resilience, and safety without causing downloading of costs to the tenant and keeping in mind a need to minimize costs to the landlord to prevent landlord loss. They each include an energy efficiency retrofit support program and a regulation or policy suggestion that help enable cost neutrality with energy efficiency/climate resilience upgrades. Full retrofit cost neutrality will also need to include possible funding mechanisms, which were outside of the scope of this research.

Energy efficiency retrofit support program

Each policy-program pathway involves the implementation of an energy efficiency retrofit support program, which helps the landlord achieve low or no cost retrofits to comply with new policy changes, while maintaining rental affordability and increasing procedural equity by including the tenant in the retrofit process. This program does this through its three key elements:

1. supportive funding in the form of grants, subsidies, free services and/or low interest loans;
2. a mandatory affordability covenant, where the landlord maintains current pre-retrofit rents at a stable level for at least 10 years; and
3. a tenant involvement requirement, where the tenant collaborates with the landlord in the retrofit option decision-making process.

These three elements work together to incentivize retrofits without placing undue financial burden on the landlord, while maintaining rental affordability and increasing tenant agency over the energy efficiency and climate resilience of their home. The tenant involvement requirement ensures that tenants are involved in choosing what retrofits happen when, and that their lived experience of the space can better inform what technology is installed, where it is installed, and when it is installed.

Specific details on the supportive funding component have not been outlined, as it was beyond the scope of this research, but examples of the types of funding mechanisms that have been used by other municipalities are listed. This funding would be made available to landlords who are retrofitting their properties to increase energy efficiency and climate resiliency and would ideally cover all scales of retrofits. Currently, BC landlords do have access to public funds (in the form of rebates) without any requirement to maintain rents or involve tenants in the retrofit process – this situation should change to increase tenants’ rights and maintain housing stability.

While each pathway includes this energy efficiency retrofit support program, they differ in the types of policy changes that they recommend.

Pathway 1: Regulation through the BC Existing Building Renewal Strategy

This pathway aligns with already existing work to create a new existing buildings code (Alterations Code) by 2024– documented by the BC Existing Buildings Renewal Strategy. The Existing Buildings Renewal Strategy is a provincial process which started in 2019; it aims to develop regulations to help make existing buildings more energy efficient, safe, and climate resilient⁴⁹.

Pathway 1 is a mix of strategies that are actionable on the provincial level.

It would include:

- An energy efficiency retrofit support program with affordability covenant
- Including specific prescriptive mandatory design and performance analysis criteria in the Alterations Code with an adherence timeline or date of mandatory compliance
 - o Adding external shading as a design option for improving energy efficiency and increasing resilience to extreme heat
 - Operable or fixed external shading can significantly reduce (up to 30%) the amount of heat coming through windows in the summer
 - o Embedding air filtration requirements in the design strategies to address for ventilation and cooling – to address adapting to poor air quality

49. [Government of British Columbia, Existing buildings renewal strategy.](#)

- Mandate that energy efficiency and indoor temperature analysis happen on a per unit basis rather than a per building basis
- Include provision on minimum and maximum indoor temperatures

This pathway can also incorporate the energy efficiency and future climate labelling systems in its requirements.

Strengths of Pathway

Policy amendment

- Increases distributional equity of benefits to tenants and burdens to landlords in its blanket approach across the province.
- Addresses climate resilience, energy efficiency, housing stability, and safety.
- Mandatory requirements tied to dates will help encourage compliance.

Energy efficiency retrofit program

- Affordability covenant helps keep rents down, while the energy efficiency program aids landlords to retrofit for low or no cost.
- Increases procedural equity through mandating tenant involvement in the renovation planning process.

Weaknesses of the Pathway

- While the targeted completion of the Alterations Code is sometime in 2024, implementation of the code could take years.
- May require significant resourcing for municipal property inspectors.

Pathway 2: Regulation through amending the Residential Tenancy Act

Unlike Ontario's Act, the BC Residential Tenancy Act does not mention requirements for indoor temperature levels; they are optional standards that are set by municipalities in their [Rental Housing] Standards of Maintenance Bylaws.

To increase distributional and structural equity in accessing adequate heating and cooling systems, the BC Residential Tenancy Act should be amended to include clauses that state both a maximum and minimum indoor temperature for dwelling units. This will ensure that all tenants, no matter their location, have the right to be provided with adequate heating or cooling. These clauses should not involve set dates that determine a "heating season" or a "cooling season," system switch on times should depend on interior temperature readings.

To help landlords be able to meet this minimum and maximum temperature standard, this pathway suggests implementing the policy change with a supportive retrofit program.

This pathway would include:

- An energy efficiency retrofit program with an affordability covenant that links landlords with cooling and heating equipment.
 - o Involves access to low-carbon heating and cooling systems, access to air purifiers
- Amend the Residential Tenancy Act to include wording on minimum and maximum internal temperatures allowed in rental housing, and a requirement for landlords to install a functional thermometer in the unit 1.5m above the floor to allow for monitoring of interior thermal comfort.
- Amend the Residential Tenancy Act to include wording on requiring filters that have a Minimum Efficiency Reporting Value (MERV) of 13 (MERV 13 filter) on HVAC and active cooling systems during poor air quality events
- Includes adherence timelines and a set date when 100% mandatory compliance will be required

Strengths of the Pathway

Policy Amendment

- There is already some prepared wording from Canadian Environmental Law Association on including maximum temperature in Standard of Maintenance Bylaws, which can be amended for use in the Residential Tenancy Act.
- Addresses climate resilience and safety in some ways, and addresses housing stability, energy efficiency, and safety.
- Is a more equitable implementation of these standards; application across the province is evenly distributed, unlike relying on updating Standards of Maintenance/"Good Neighbour" bylaws.
- Thermometer installation will aid in assessing compliance.
- Stating set adherence timelines and mandatory compliance dates will help with uptake.

Energy efficiency retrofit program

- Affordability covenant helps keep rents down, while the energy efficiency program helps landlords retrofit for low or no cost.
- Increases procedural equity through mandating tenant involvement in the renovation planning process.

Weaknesses of the Pathway

- A sudden regulation change may be too onerous on existing rental units and encourage the use of GHG intensive air conditioners while waiting to partake in the retrofit program and receive energy efficient equipment – timing needs to be considered.
- May have some technical feasibility issues regarding resourcing of inspectors and equipment to document and deal with summertime complaints of not meeting new maximum temperature requirements.
- May put additional burden on the Residential Tenancy Board to deal with non-compliance cases, which could increase the backlog of cases.

Pathway 3: Incentive through Utility Cost Splitting

Utility cost splitting for residential rental buildings is a system where the costs of utilities are not paid by a single party, but instead are split between the landlord and tenant. In the context of incentivising improved energy efficiency, utility cost splitting can be organized so that in energy efficient buildings, tenants bear the cost of utilities, while in an energy inefficient building, the landlords bear the cost of utilities. This addresses the split incentive; providing landlords with an incentive to do energy efficient retrofits, while still incentivizing tenants to practice energy efficient habits to save money. This is a preferable practice over shifting all utility costs to the landlord, an initiative that does provide an incentive to retrofit, but tends to increase tenant energy use and emissions because of a reduced motivation to practice energy efficient habits.

This pathway involves strategies that are operational on the provincial level. It would include:

- An energy efficiency program with affordability covenant
- Amending the Residential Tenancy Act to include a utility splitting scheme based on a desired minimum energy efficiency score
 - o Below (less efficient than) the desired score: the landlord is responsible for paying utilities
 - o Above (more efficient than) the desired score: the tenant is responsible for paying utilities

Strengths of Pathway

Policy amendment

- Helps address the split incentive dilemma and provides landlords with motivation to make energy efficiency improvements to rental housing.

- Takes a performance-based approach to improving energy efficiency, which helps prevent meeting targets by prescriptive target loopholes or by using inefficient technology.
- Can address resiliency to extreme heat in an indirect way through improved building envelopes if future climate data is used in energy audit.

Energy efficiency retrofit program

- Affordability covenant helps keep rents down, while the energy efficiency program helps landlords retrofit for low or no cost
- Increases procedural equity through mandating tenant involvement in the renovation planning process.

Weaknesses of Pathway

- Requires an energy scoring/labelling system that has been fully implemented, which will take time.
- Does not address climate resilience to poor air quality events; may not address resiliency to extreme heat in an indirect way if future climate is not considered in retrofits.
- Will require coordination with utility companies on changing the way that some rental housing is billed for energy use.
- May not be a significant incentive in areas with already low energy costs per kWh

In combination with work already taking place in BC, and the four foundational initiatives mentioned above, Pathway 1 serves as a good way to address energy efficiency and climate resilience in rental housing while improving housing safety, maintaining housing stability, and having greater procedural equity by involving tenants in decision making process regarding energy efficient retrofits. It is also likely to be the most feasible and effective, as it involves the least amount of change to existing utility structures and does not trigger unintended consequences that may, in the short term, increase greenhouse gas emissions.

Both Pathway 1 and Pathway 2 involve codifying minimum and maximum indoor temperatures province-wide, a step that increases transgenerational equity (ensuring that future generations benefit from improved indoor conditions) and distributive equity (making the benefits and burdens of this issue equal across the province). Pathway 3 increases distributional equity through better distributing the burdens and benefits of energy efficiency between tenant and landlord and can increase transgenerational equity by generating cheaper utility costs for future generations.

Next Steps

All programs mentioned in the three pathway recommendations require financial support – future research needs to be conducted to determine exactly how these programs will be funded (whether through taxation or other mechanisms). More research could also be done to evaluate the predicted effectiveness of each of the three pathways in meeting energy efficiency retrofit goals – which will require joint consultation with governments, landlord organizations, tenant organizations, and other key stakeholders to enhance procedural equity and gain the context necessary for a complete analysis.

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Appendices

Appendix A: List of Initiatives Reviewed

This appendix contains a table of all the initiatives reviewed, including links and context information. The [ACEEE policy tracker](#) was instrumental in helping identify and categorize different initiatives in the United States.

Appendix B: Initiative Analysis Matrix

This appendix contains a table of all the initiative categories, and information on how these initiative categories were analyzed based on equity (procedural, structural, distributional, and transgenerational), effectiveness, and feasibility. Please see the [Analysis Criteria, Definitions, and Assumptions](#) section for more details on the definition of these terms and what metrics were used in the analyses.

Appendix A: List of Initiatives Reviewed

Location	Title of Initiative	Type of Initiative	Summary of Relevance/relevant clauses re: energy efficiency/climate resilience
Vancouver, BC	Vancouver Charter	Governance Policy	Lists the powers that Council must regulate, prohibit, and impose bylaws related to housing and other matters, including the right to purchase land for development. Has more powers than other municipalities under their Community Charter.
All other BC municipalities	Community Charter	Governance Policy	Gives Council power to regulate, prohibit and impose requirements via bylaw in relation to: (g) the health, safety or protection of persons or property in relation to matters referred to in section 63 [protection of persons and property] - this includes (f) rental units and residential property, as those are defined in the Residential Tenancy Act, that are subject to a tenancy agreement, as defined in that Act. (l) buildings and other structures; Same powers as listed under the LGA below
BC Regional Districts and Improvement Districts	The Local Government Act	Governance Policy	Can create development permit areas for: (b) protection of development from hazardous conditions; (h) establishment of objectives to promote energy conservation; (j) establishment of objectives to promote the reduction of greenhouse gas emissions.
BC Regional Districts and Improvement Districts	The Local Government Act	Governance Policy	Regional district (only if provides service related to building inspection) may (a) regulate the construction, alteration, repair, or demolition of buildings or other structures Part 14 gives Council powers; (b) regulate the installation, alteration or repair of plumbing including septic tanks and sewer connections, heating, air conditioning, electrical wiring and equipment, gas or oil piping and fittings, appliances and accessories of every kind; (d) require that, before occupancy of a building or part of it after construction, wrecking or alteration, or a change in class of occupancy of a building or part of it, an occupancy permit be obtained from the board or the authorized official; and can exercise those powers for the following purposes: (b) the conservation of energy or water; (c) the reduction of greenhouse gas emissions; (d) the health, safety or protection of persons or property.
British Columbia	Public Health Act	Governance Policy	A local government must do all of the following: (a) if the local government becomes aware of a health hazard or health impediment within its jurisdiction, take an action required by a regulation made under section 120 (1) (a) [regulations respecting local governments], or, if no regulation applies, either (i) report the health hazard or health impediment to a health officer, or (ii) take an action the local government has authority to take under this or another enactment to respond to the health hazard or health impediment; 123 The Lieutenant Governor in Council may make regulations respecting rental accommodations as follows: (a) defining "rental accommodation" for the purposes of a regulation made under this section; (b) prescribing health and safety standards that must be met by landlords of rental accommodations.
British Columbia	Residential Tenancy Act	Governance Policy	1) A landlord must provide and maintain residential property in a state of decoration and repair that (a) complies with the health, safety and housing standards required by law, and (b) having regard to the age, character and location of the rental unit, makes it suitable for occupation by a tenant. 33 (1) In this section, "emergency repairs" means repairs that are (a) urgent, (b) necessary for the health or safety of anyone or for the preservation or use of residential property, and (c) made for the purpose of repairing (i) major leaks in pipes or the roof, (iii) the primary heating system, (v) the electrical systems, or (vi) in prescribed circumstances, a rental unit or residential property.

British Columbia	BC Building Code	Minimum Housing Quality Standards	States construction standards and some operational standards for building equipment/systems.
British Columbia	Clean BC Better Homes Rebates	Incentive Program	Rebates of \$100 and up to \$9000 to retrofit home (from changing windows and water heaters, to installing a heat pump, to fuel switching)
BC rental units in Fortis service area	Energy efficiency for rental apartments and accommodations	Incentive Program	This program provides qualifying buildings with a free energy assessment and installation of products in each suite to help you and your guests and tenants save energy, water, and money. Plus, you can access ongoing support for bigger upgrades.
BC multi-family rental units that undergo energy efficiency changes	Clean Buildings Tax Credit	Incentive Program	The clean buildings tax credit is a refundable income tax credit for qualifying retrofits that improve the energy efficiency of eligible commercial and multi-unit residential buildings with four or more units. The retrofit must improve the energy efficiency of an eligible building and meet energy-use targets. The credit amount is 5 percent of qualifying expenditures paid on the retrofit.
BC multi-family rental units that undergo energy efficiency changes	Clean BC Custom-Lite Program	Incentive Program	Offers free energy coaching services, and capital incentives for heat pump roof top units (up to \$72,000 per customer), other measures (up to \$48,000 per customer), and funding for an Energy Study (up to \$2000) - with extra incentives for Northern customers. Available for multi-unit residential buildings, commercial, or industrial buildings.
Vancouver existing buildings undergoing upgrades	Vancouver Building Bylaw Part 11	Minimum Housing Quality Standards	Outlines conditions for when existing buildings need to have energy retrofits, and what type of retrofits are required based on the type of work being done on the building
BC Existing Buildings	Existing Buildings Renewal Strategy/BC Retrofits Code	Minimum Housing Quality Standards	Outlines research and policy intentions for outlining conditions for when existing buildings need to have energy retrofits, and what type of retrofits are required based on the type of work being done on the building
Vancouver existing large multi-family buildings	Greenhouse Gas and Energy Limits By-law	Minimum Housing Quality Standards	Outlines the proposed plans to implement energy and carbon reporting requirements, GHG intensity limits, and Heat energy limits for large commercial and MURBs
BC SFH, secondary suites, mobile home, duplex/triplex/townhome/rowhome	CleanBC Income Qualified Program	Incentive Program	Can apply for enhanced rebates to cover 60-95% of home upgrade costs. If you are a tenant, you need your landlord's permission with the application.
Vancouver, existing buildings	STANDARDS OF MAINTENANCE BY-LAW NO. 5462	Minimum Housing Quality Standards	Lists operational and maintenance standards for rental buildings, including that: Heating systems shall be maintained in a safe and good working condition so as to be capable of safely attaining and maintaining an adequate temperature standard, free from fire and accident hazards and in all residential accommodation capable of maintaining every room at a temperature of 72E Fahrenheit (22 degrees Celsius) measured at a point 5 feet (1.52 m) from the floor.
Victoria, existing buildings	Rental Standards of Maintenance By-law	Minimum Housing Quality Standards	Lists operational and maintenance standards for rental buildings, including that: Heating facilities provided in a rental unit shall be capable of maintaining a minimum indoor air temperature in the rental unit of at least 21 degrees Celsius (70 degrees F).
British Columbia	UBCM Clothesline Act	Policy that increases tenants' rights	An act to ensure that no law, by-law, covenant, or agreement prevents, prohibits, or unreasonably restricts the installation or use of a clothesline outdoors at a single-family dwelling; or on the ground floor of a multi-unit residential building; or clothes drying racks on any outdoor balconies.
City of Toronto	Tools for Overheating	Building Regulation	If a building has air conditioning, must be on between June 2 and Sept 12 and maintain an indoor air temperature or not more than 26 degrees C. If apartment is hotter than 26 degrees C, can report to Municipal Licensing and Standards. Otherwise, tenants have to file a claim to the RTA for "interference of reasonable enjoyment".
City of Toronto	Low or No Heat/Other Vital Services in Rental Units	Minimum Housing Quality Standards	Required minimum indoor temperature in winter of 21 degrees C

City of Boulder	SmartRegs policy	Performance Standard	All long-term licensed rental properties are required to meet or exceed the minimum efficiency standards before they receive their rental licenses. If a rental property does not meet the requisite efficiency standards by December 31, 2018, the property owner will not receive his or her rental license or their existing rental license will expire until efficiency upgrades are performed that make the rental property SmartRegs compliant. Implemented via a Rental Energy Efficiency Inspector doing an assessment of rental property, or a property owner hires their own Home Energy Rater to perform energy inspection. City also offers technical assistance and incentives (above the energy utility incentives)
UK (England, Wales)	Minimum Energy Efficiency Standards (MEES)	Performance Standard	MEES are government regulate standards aim to improve the overall energy efficiency of rental buildings. They work with previously defined energy efficiency building ratings, and state that buildings that are rated F or G (the lowest) can no longer be rented out - rentals must meet a rating of an E or higher. If landlords do not comply and do energy efficiency improvements, they are subject to financial penalties to a maximum of £5,000 per property.
UK (England, Wales)	Energy Efficiency Obligation	Subsidy	Funding provided to low-income households to help pay for renovations, limited to high-cost measures
UK (England, Wales)	Green Deal Finance	Incentive Program	Was supposed to help (with other subsidies) building owners be able to do renovations at no upfront cost to the owner - was not successful. Ran from 2013-2015.
UK (England, Wales)	Energy Performance Certificate (EPC)	Performance Standard Certification	Document that provides landlords with information on a property's energy efficiency. They are required for any building that is built, sold, and/or rented, and require an assessment by an accredited energy evaluator. Landlords must provide tenants with a copy of the EPC before move-in date.
Australia	Australian National Construction Code (NCC) vol. One	Performance Standard	Includes design strategies regarding orientation on a building scale, but not on a resident scale. It also favours strategies for detached housing and does not consider how the construction of Australian apartments contribute to increased cooling needs in the summer. Some states have introduced SEPP 65 and the Apartment Design Guide to help address this gap. Focus on full building design and using passive design to minimize energy use.
London	London's Housing Supplementary Planning Guide (LHSPG)	Performance Standard	Defined energy sustainability at the individual apartment scale - regulated against single aspect apartments in the North Orientation or the west orientation to reduce energy use in both the winter and the summer.
Netherlands	Environmental Management Activities Decree	Performance Standard	All office buildings (including buildings with rental units) need to have an energy label of C or better. Applies to buildings with an electricity consumption $\geq 50,000\text{kWh/year}$ or gas consumption $\geq 25000\text{ m}^3$. Will impact up to 38% of all registered office buildings, which will need to be upgraded by 2023. Compliance not required until 2023.
Scotland	Energy Efficiency Standards	Performance Standard	Standards aimed to improve the overall energy efficiency of rental buildings. They work with previously defined energy efficiency building ratings, and state that in 2022 all rental buildings/homes must have a minimum standard of D at change in tenancy. Applies to all privately owned residences starting in 2025.
Berkeley, CA, USA	Residential Energy Conservation Ordinance (RECO) - REPEALED	Prescriptive Standard	At time of sale or at time of renovation $>\$50,000$, triggers installation requirements for 11 basic energy and water saving measures. Has a cost cap, owners do not have to spend more than 0.75% of final property sales price, \$0.50 per sqft when any one structure is sold, 1% of renovation costs when a property is undergoing renovations
Berkeley, CA, USA	Building Energy Savings Ordinance	Performance Standard	Requires completion of energy assessments and public disclosure of energy reports for all buildings (not just rental buildings)
Burlington, Vermont, USA	Minimum Housing Code Weatherization Ordinance	Minimum Housing Quality Standards	Mandates that rental properties are properly weatherized by increasing insulation levels, reducing excessive air infiltration, and addressing other thermal performance issues. Only applicable to high energy use buildings. Implemented in stages based on energy usage, starting with buildings that use 90,000 BTU/SF/YR, and then progressively applying to other buildings until the 50,000 BTU/SF/YR mark

Burlington, Vermont, USA	Residential Rental Housing Time of Sale Energy Efficiency Ordinance	Prescriptive Standard	Policy applies to apartments where the tenants are responsible for directly paying the heating costs, need for renovations triggered at time of sale. Requires certain energy upgrade measures (e.g., insulated exterior walls, attics and other areas, multiple-glazed windows, storm windows and sealing of gaps). Cost must not exceed 3% of sale price or \$1300 per unit, what ever is less. Only mandates installation of measures with a simple payback of 7 years or less.
Ann Arbor, MI, USA	Basic Weatherization Requirements	Minimum Housing Quality Standards	Basic weatherization requirements introduced into existing rental certification policy to reduce high energy costs and environmental impact of high energy consumption.
New Zealand	National Healthy Homes Guarantee Act	Minimum Housing Quality Standards	Basis for a range of new regulations to set a minimum standard for heating, ceiling and underfloor insulation, ventilation, draft-stopping, and moisture/drainage control. First deadline, landlords must ensure that rental properties have proper ceiling and underfloor insulation by July 2019. Starting July 2021, private landlords must ensure that rental properties comply with all aspects of the HHS within 90 days of new tenancy, and by 2024 all homes must comply.
Flanders, Belgium	Minimum Roof and Floor Insulation Requirements	Minimum Housing Quality Standards	Minimum roof and floor insulation requirements for all dwellings, including rental properties. Phased implementation over 5 years, first buildings impacted in 2020.
Victoria, Australia	Residential Tenancy Regulations	Minimum Housing Quality Standards	Set minimum standards to improve utility and appliance standards in rental units to improve tenant comfort and reduce energy costs. First phase, require owners to install compliant heaters that meet a minimum standard in home with no fixed heating. Second phase require that all installed heaters be compliant with the minimum standard. By 2023, almost all Victorian homes required to have a minimum of two-star energy rated heater.
NSW, Australia	Minimum Standards for Rental Homes	Minimum Housing Quality Standards	States mandatory requirements for rental properties in Rental Tenancy Laws, including building has to be structurally sound, have adequate ventilation, be supplied with enough electricity or gas for lighting, heating, and appliances
ACT, Australia	Rental Energy Disclosure Requirement	Minimum Housing Quality Standards	Buildings that have an energy efficiency star rating must disclose it to tenants before they move in.
Boston	Building Emissions Reduction and Disclosure Ordinance	Performance Standard and Energy Efficiency Reporting Requirement	Requires affordable housing sector to comply with building emissions reduction standards and establishes investment fund to support policy compliance.
New York	Rental Energy Performance Standard	Prescriptive Standard	Requires buildings with >35% units that are rent controlled to comply with prescriptive energy conservation measures.
Minneapolis, USA	Rental Mandatory Benchmarking and Disclosure	Energy Efficiency Reporting Requirement	Large building owners (including multi-family residential buildings) must submit their energy benchmarking annually by June 1, are fined if they miss the deadline - each subsequent missed deadline the fine doubles.
Minneapolis, USA	Green Cost Share 4D Energy Efficiency Program	Energy Efficiency Reporting Requirement	Offers matching fund for qualifying properties undertaking an energy efficiency or other clean energy project.
Minneapolis, USA	Minneapolis Green Zones	Incentive Program	A green zone is a group of neighbourhoods that have been identified as having high levels of environmental pollution, and racial, political, and economic marginalization. The city works with residents of the green zone neighbourhoods to achieve environmental justice by addressing environmental issues and energizing the economy. Each Green Zone has a Council that hold the city accountable for implementation of the work plan set out.
Sweden	Temperature-based rents	Cost sharing program	Using an exception clause in the Energy Efficiency Directive (EED), Sweden has used temperature-based rents to incentivize tenant energy efficient behaviour, where tenants only pay the heating cost above an ambient threshold.
Lund, Sweden	Temperature-based rents	Cost sharing program	A public housing company uses temperature-based rents, tenants only pay for heating/cooling above/below a mandated/agreed upon temperature and get reimbursed for using less energy than that temperature

Sweden	All Inclusive rents paid by landlord	Cost sharing program	Significant strides towards reducing green house gas emissions were achieved through all inclusive rents and an aggressive carbon tax (114 Euros/tonne)
Amsterdam, Netherlands	Energy Grants & Safety net scheme	Grant Program	Grants to help pay energy consumption for minimum income households to compensate for part of the increased energy costs in 2022. Safety net scheme is available for those that face problems due to high energy costs - consists of energy supplier monitoring to ID when people are having trouble paying bills, budget and energy saving advice and annual payment plans.
Lille Metropole, France	Amelio	Grant Program	A municipal project that supports low-income households in renovating homes to avoid energy insecurity and poverty in the long term. Multi-disciplinary teams of professional work together to provide free information, advice, and support to help residents' renovation projects. Offers activities, energy information centres, and personalised home support on request. Offers advice on sustainable activities, mediation, and financing for small renovations, advise on a larger renovation programme.
European Union	The Energy Performance of Buildings Directive (EPBD)	Performance Standards	Sets targets for EU member countries for their housing stock to meet specific energy efficiency targets.
European Union	Communication on energy prices	Supportive Funding Program	EU countries told that they can mitigate impact of higher prices by slashing taxes, extending help to industries that are suffering. Low-income households can be given vouchers financed with EU Emissions Trading System (ETS) revenues, and countries can let consumers temporarily defer electricity payments.
Brussels, Belgium	Rent Freeze	Performance Standard + Rent Freeze Policy	Forbids landlords from raising rents until energy efficiency is achieved, aims to better protect tenants against inflation and energy prices. Effective August 2022 for 1 year. Landlords with better energy ratings will be allowed to raise rents with indexation pegged to inflation (A-D ratings), E rating can be increased by 1/2 of indexation, and ratings of F and G will not be permitted to raise rents at all.
International Tenant Union	Housing Cost Neutrality	Retrofit Program Specifications	Housing cost neutrality should be the main principle of the EU Green Deal. Strive for affordability in renovation so that rent increases are fully balanced by energy savings so that renovation costs are not passed down to tenants and cause displacement. Model of housing cost neutrality combines social and climate goals in an ideal way and prevents renovations.
International Tenant Union	Changing funding for private rental housing	Retrofit Program + Affordability Covenant	Public funding for renovations of private rental housing should be combined with rent caps, and this funding should be based on projects where through participation of tenants in planning and execution have been guaranteed.
International Tenant Union	Link energy ranking of building to ability to increase rents	Rent Freeze Policy	Ban on rent increases for homes that do not meet a minimum energy efficiency standard.
International Tenant Union	Incorporate low-carbon, de-carbonization (on a building a neighbourhood level), and circular strategies when retrofitting buildings.	Prescriptive Standard	Incorporates minimum energy efficiency design and construction strategies in residential retrofits.
Gainesville, FL, USA	Rental Energy Performance Standard (sec 14.5-4)	Prescriptive Standard	Incorporates minimum energy efficiency design and operational criteria in residential rental permits.
Gainesville, FL, USA	Rental Housing Ordinance (sec 14.5-3)	Energy Information Transparency Policy	Requires landlords to provide energy information on the rental unit to potential tenants
Austin, TX, USA	Energy Conservation and Audit Disclosure Ordinance	Retrofit Program + Affordability Covenant	Requires owners of multi-family buildings to disclose the energy guide rating to prospective tenants
Dallas, TX, USA	Comprehensive Housing Policy - Rental Rehabilitation Program	Retrofit Program + Affordability Covenant	Requires rental units that use Rental Rehabilitation Program funds for energy efficiency projects to maintain affordability for 10 years.
Maine, USA	Rental Energy Disclosure Policy	Energy Information Transparency Policy	Grants tenants the right to obtain a record of the unit's energy consumption and costs from the energy supplier for the prior 12-month period.

San Francisco, CA, USA	Residential Energy Conservation Ordinance	Prescriptive Standard	Requires owners of residential buildings to complete energy efficiency upgrades when selling or renovating a property.
Hartford, RI, USA	Code of Ordinances Section 18-51.M.	Policy that increases tenants' rights	Grants tenants the right to make certain energy-saving home improvements without obtaining property owner consent. These upgrades are limited to those that do not change the building's structure of equipment and involved alterations that are easily removable or reversible.
Cincinnati, OH, USA	Home Weatherization Assistance Program	Incentive Program	Offers tenants and landlords free or discounted energy audits and weatherization and promotes existing state and utility energy efficiency programs.
Chicago, IL	Rental Energy Disclosure Policy	Energy Information Transparency Policy	Disclose one year of energy use data at the time of sale or rental for residential single-family buildings and individual units. Enable easier compliance by linking energy use data with the local MLS home listing service
Montreal	Landlord Registry and responsible landlord certification	Rental Housing Registry Program	A mandatory registry for buildings with eight units or more, that needs to be renewed every 5 years. Registry will show proof of inspections, show whether the building is up to code, and rental rates. Landlords that do not comply are faced with accruable fines that are charged per unit.
Germany	Kohlendioxidkostenaufteilungsgesetz Carbon Cost Allocation Law	Cost sharing program	Splitting the costs of the Carbon tax between landlords and tenants - with landlord having to pay the majority of the utility costs for buildings that have outdated systems, and the tenant paying the majority of costs in buildings with updated systems
Denmark and Sweden	Climate Resilience Labelling	Climate Resiliency Labelling	Researchers are developing a building climate resilience labelling system

Appendix B: Initiative Analysis Matrix

Category	Initiative	Description	Procedural Equity	Distributional Equity	Structural Equity	Transgenerational Equity	Energy Efficiency	Housing Stability	Safety	Climate Resilience	Political Feasibility	Technical Feasibility
Existing BC	Requiring Energy Upgrades during major renovations	Part 11 of Vancouver's Building Bylaw lists trigger mechanisms and requirements for upgrading the energy efficiency of homes.	No: Does not increase or include tenants' involvement in the process -initiative only involves landlord/owner in the decision-making and implementation process	Yes: Shifts the burden of providing energy efficient housing to building owners - benefitting the tenants (the party with the higher need)	Partly: This law institutionalizes the building owner's accountability for providing energy efficient buildings, but does not specifically address historical, cultural, and institutional dynamics and structures that have routinely disadvantaged tenants.	Partly: By passing this permanent legislation, it relieves future generations of the burden of having to deal with energy inefficient housing. However, it may burden future generations with higher costs of housing or disincentivize landlords from making upgrades, which provides poorer quality housing for future generations	Partly: This policy does increase energy efficiency of buildings that meet the requirements for being upgraded, however, these requirements are restrictive and thus only apply to a select number of buildings.	No: Does not prevent costs from being downloaded onto tenants nor prevent displacement	No: This policy does not address maintaining or improving the safety of rental housing.	Partly: This policy increases climate resilience through increasing the use of energy efficiency heat pumps and improving the building envelope. However, unless it specifies using future temperature, this increase in climate resilience may be limited.	High: Is already being implemented, has sufficient public and political party support.	High: Is currently implemented in BC
Existing BC	Minimum required temperature in Standards of Maintenance Regulations	In many BC municipalities, there are stated requirements in the Standards of Maintenance Regulations that make landlords responsible for maintaining heating systems that can maintain every room at a temperature of 72E Fahrenheit (22E Celsius) measured at a point five feet (1.52 m) from the floor.	No: Does not increase or include tenants' involvement in the process -initiative only involves landlord/owner in the decision-making and implementation process	Yes: Shifts the burden of providing adequate heating to landlords - benefitting the tenants (the party with the higher need)	Yes: This institutionalizes the landlord's accountability for providing adequate heating and addresses the institutional structures (lax regulations) that routinely disadvantage tenants.	Yes: By passing this permanent regulation, it gives future generations the right to have adequate heating in their homes.	No: Does not consider energy efficiency, in fact, it may be a motivator to install GHG intensive heating systems to meet the standard.	No: Does not prevent costs from being downloaded onto tenants nor prevent displacement	Yes: By mandating a minimum indoor temperature, this policy does address increasing or maintaining tenant safety in extreme cold events	No: This policy does not address maintaining or improving climate resilience of rental housing.	High: Is already being implemented, has sufficient public and political party support.	High: Is currently implemented in BC
Existing BC	Rebates on Energy Efficient Home Renovation costs	There are multiple CleanBC incentives that offer rebates on energy efficiency home retrofits, and a tax credit when completing retrofits that meet certain targets.	No: Does not increase or include tenants' involvement in the process -initiative only involves landlord/owner in the decision-making and implementation process	Partly: The benefits of the program enjoyed by the landlord/owner (reduced cost of renovations), and the tenant (improved living environment). However, it does have the potential to disproportionately burden the tenant if costs are passed down via increased rent.	No: This program works within the existing structures and systems and does not attempt to change them	Partly: Does consider the needs of future tenants by incentivizing increasing energy efficiency of rental units.	Yes: If taken advantage of, this program does increase the energy efficiency of homes	No: Does not prevent costs from being downloaded onto tenants nor prevent displacement	No: This rebate does not address maintaining or improving the safety of rental housing.	Partly: This program can increase climate resilience through motivating the use of energy efficiency heat pumps and improving the building envelope. However, unless it specifies using future temperature, this increase in climate resilience may be limited.	High: Is already being implemented, has sufficient public and political party support.	High: Is currently implemented in BC

Existing BC	Free services or funding for MURB rental units undergoing energy efficiency renovations	The CleanBC Custom Lite Program Offers free energy coaching services, and capital incentives for heat pump roof top units (up to \$72,000 per customer), other measures (up to \$48,000 per customer), and funding for an Energy Study (up to \$2000)	No: Does not increase or include tenants' involvement in the process -initiative only involves landlord/owner in the decision-making and implementation process	Partly: The benefits of the program enjoyed by the landlord/owner (reduced cost of renovations), and the tenant (improved living environment). However, it does have the potential to disproportionately burden the tenant if costs are passed down via increased rent.	No: This program works within the existing structures and systems and does not attempt to change them	Partly: Does consider the needs of future tenants by helping increasing energy efficiency of rental units.	Yes: If taken advantage of, this program does facilitate increasing the energy efficiency of homes.	No: This program does not address preventing downloading of energy costs to the tenant or preventing displacement .	No: This program does not address maintaining or improving the safety of rental housing.	Partly: This program can increase climate resilience through motivating the use of energy efficiency heat pumps and improving the building envelope. However, unless it specifies using future temperature, this increase in climate resilience may be limited.	High: Is already being implemented, has sufficient public and political party support.	High: Is currently implemented in BC
Proposed BC	Energy Efficiency and Climate Resilience Measures in Alterations Code	Through the Existing Buildings Renewal strategy, BC is developing regulations to make existing buildings energy and water efficient, cleaner, and safer during extreme weather events. This code in 2019 Engagement materials was called the Alterations Code.	No: Does not increase or include tenants' involvement in the process -initiative only involves landlord/owner in the decision-making and implementation process	Yes: Shifts the burden of providing energy efficient housing to building owners - benefiting the tenants (the party with the higher need)	Partly: This institutionalizes the building owner's accountability for providing energy efficient and climate resilient buildings, but does not specifically address historical, cultural, and institutional dynamics and structures that have routinely disadvantaged tenants.	Partly: By passing this permanent regulation, it will future generations greater access to adequately energy efficient and climate resilience homes. However, it may increase the burden on future generations on paying for these changes with increased rent.	Yes: This will increase energy efficiency in existing buildings.	No: Does not prevent costs from being downloaded onto tenants nor prevent displacement .	Partly: Depends how it is applied - by including requirements for energy efficient cooling and air filtering, this could increase tenant safety during extreme heat events or poor AQ events	Yes: This will increase climate resilience in existing buildings.	High: Is already being implemented, has sufficient public and political party support.	High: Is in the process of being passed/implemented
Proposed BC	Vancouver Greenhouse Gas & Energy Bylaw	Outlines the proposed plans to implement energy and carbon reporting requirements, GHG intensity limits, and heat energy limits for large commercial and MURBs.	No: Does not increase or include tenants' involvement in the process -initiative only involves landlord/owner in the decision-making and implementation process	Yes: Shifts the burden of providing energy efficient housing to building owners - benefiting the tenants (the party with the higher need)	Partly: This law institutionalizes the building owner's accountability for reporting GHG emissions and providing energy efficient buildings, but does not specifically address historical, cultural, and institutional dynamics and structures that have routinely disadvantaged tenants.	Partly: By passing this permanent regulation, it will future generations greater access to adequately energy efficient and climate resilience homes. However, it may increase the burden on future generations on paying for these changes with increased rent.	Yes: This will increase energy efficiency in existing buildings.	No: Does not prevent costs from being downloaded onto tenants nor prevent displacement .	No: This policy does not address maintaining or improving the safety of rental housing.	Yes: This will increase climate resilience in existing buildings through providing motivation to install heat pumps and improve building envelopes, thus improving resilience to temperature extremes.	High: Is already being implemented, has sufficient public and political party support.	High: Is in the process of being passed/implemented

Proposed BC	UBCM Clothesline Act	In September 2022, the Union of BC Municipalities (UBCM) passed a resolution supporting a Clothesline Act , which would enable tenants and other types of residents be able to use outdoor clotheslines, despite existing restrictive bylaws	Yes: Involved tenants in advocacy to try and pass this act	Yes: More evenly distributes the ability to take part in energy efficient actions by enabling tenants to take this action	Yes: This legislation acknowledges the power imbalance in the tenant-landlord relationship and how legislation/covenants that forbid, e.g., clotheslines, disadvantage tenants and attempts to rectify the situation.	Yes: By passing this permanent legislation, it gives future generations rights to practice energy-saving behaviour and removes the burden of having to follow laws that do not allow energy efficient behaviour.	Yes: By allowing energy saving behaviour, this initiative does increase energy efficiency.	Partly: In the long term this could help reduce housing costs re: reducing energy costs.	No: This policy does not address maintaining or improving the safety of rental housing.	No: This policy does not address maintaining or improving climate resilience of rental housing.	High: Is already being implemented, has sufficient public and wide political support.	High: Is in the process of being passed/implemented
Existing Other	Maximum indoor temperature for buildings with air conditioners	In Toronto: If a building has air conditioning, must be on between June 2 and Sept 12 and maintain an indoor air temperature or not more than 26 degrees C. If apartment is hotter than 26 degrees C, can report to Municipal Licensing and Standards. Otherwise, tenants have to file a claim to the RTA for "interference of reasonable enjoyment".	No: Does not increase or include tenants' involvement in the process -initiative only involves landlord/owner in the decision-making and implementation process	Partly: Shifts the burden of providing adequate cooling to landlords - benefiting the tenants (the party with the higher need), but only in buildings that already have air conditioning. This may exacerbate inequities.	Yes: This institutionalizes the landlord's accountability for providing adequate cooling	Yes: By passing this permanent regulation, it gives future generations the right to have adequate cooling in their homes.	No: Does not consider energy efficiency, in fact, it may be a motivator to install GHG intensive cooling systems to meet the standard.	No: Does not prevent costs from being downloaded onto tenants.	Yes: By mandating a maximum indoor temperature, this policy does address increasing or maintaining tenant safety in extreme heat events	Yes: This increases resilience to extreme heat by providing active cooling.	High: Is already being implemented, has sufficient public and political party support.	High: Is already being implemented in Toronto - is very possible.
Existing Other	Minimum Energy Efficiency levels as a precondition for rental licensing/being able to rent out unit	The SmartRegs program in Boulder, CO; part of the Minimum Energy Efficiencies Standard system in the UK; new legislation in the Netherlands - all essentially say that properties are required to meet or exceed the minimum efficiency standards before they receive their rental license and/or are able to rent out their housing.	No: Does not increase or include tenants' involvement in the process -initiative only involves landlord/owner in the decision-making and implementation process	Yes: Shifts the burden of providing energy efficient housing to landlords	Yes: This requirement institutionalizes the landlord's accountability for providing energy efficient housing	No: Has the potential to greatly reduce the amount of rental stock as non-conforming units are taken out of the rental pool - burdening future generations with the problem of scarcity and increased rental prices	Yes: This has been demonstrated to be effective at increasing energy efficiency and decreasing GHG emissions in the rental building sectors	No: Does not prevent costs from being downloaded onto tenants nor prevent displacement - in fact it may encourage displacement as non-conforming units are taken off the rental market.	No: This policy does not address maintaining or improving the safety of rental housing.	Partly: This program can increase climate resilience through motivating the use of energy efficiency heat pumps and improving the building envelope. However, unless it specifies using future temperature, this increase in climate resilience may be limited.	Medium: There is support from tenants, some professional staff, and some politicians - however there is significant opposition from landlords.	Low: In BC's current housing climate, I think this is not very technically feasible, as it would likely further intensify the housing crisis, and relies on significant testing, tracking, and property inspection processes that do not exist.

Existing Other	Energy labelling or disclosure - mandatory	Many states in the US, and many countries in Europe require mandatory sharing of energy efficiency information - either through displaying a certificate or rating on their building/ads, or through giving tenants the right to access 12 months of energy use and cost data from the landlord/utility.	No: Does not increase or include tenants' involvement in the process -initiative only involves landlord/owner in the decision-making and implementation process	Yes: This initiative closes the informational deficit on rental housing that serves to disadvantage the tenant	Yes: By making energy labelling mandatory, this program considers the unequal dynamics between landlord and tenant re: information on unit and attempts to rectify the situation.	Yes: By codifying this mandatory disclosure, this program considers future generations and benefits them by increasing their access to energy information on rental stock.	Partly: When combined with performance standards, this has the potential to increase energy efficiency of rental stock through compelling owners to renovate	No: This program does not address preventing downloading of energy costs to the tenant or preventing displacement .	No: This initiative does not address maintaining or improving the safety of rental housing.	No: This program does not address maintaining or improving climate resilience of rental housing.	High: Appears to be support from tenants, politicians, technical professionals, and landlords (gradual labelling)	Medium: Requires creating an energy labelling system that does not currently exist - or apply the Step Code labelling system.
Existing Other	Energy labelling or disclosure - voluntary	Australia's ACTS region encouraged voluntary require mandatory sharing of energy efficiency information through sharing/displaying Energy Star ratings.	No: Does not increase or include tenants' involvement in the process -initiative only involves landlord/owner in the decision-making and implementation process	Yes: This initiative closes the informational deficit on rental housing that serves to disadvantage the tenant	No: By having labelling as voluntary, there is no institutionalization of accountability, and it upholds existing unequal dynamics where landlords have the power to share or not share information, to the detriment of the tenant	No: By making this voluntary, this essentially maintains the status quo re: future generations having reliable access to information about rental stock energy efficiency - in that it is not reliable or even available	No: The problems associated with having disclosure be voluntary means that this is unlikely to effectively increase energy efficiency of rental stock	No: This program does not address preventing downloading of energy costs to the tenant or preventing displacement .	No: This initiative does not address maintaining or improving the safety of rental housing.	No: This program does not address maintaining or improving climate resilience of rental housing.	High: Appears to be support from tenants, politicians, technical professionals, and landlords (gradual labelling)	Medium: Requires picking and implementing a labeling system - or apply the Step Code labelling system. Is more feasible that creating a unified BC labelling system but could lead to confusion when comparing between cities.
Existing Other	Cost-splitting carbon tax	Germany's Kohlendioxidkostenaufteilungs-gesetz law makes landlords responsible for most of the carbon tax in energy inefficient buildings, and tenants responsible for most of the tax in efficient buildings.	No: Does not increase or include tenants' involvement in the process -initiative only involves landlord/owner in the decision-making and implementation process	Yes: This initiative specifically distributes the burden of GHG emission taxes between the landlord and the tenant.	Yes: This initiative institutionalizes accountability for this initiative by codifying it, and also considers that landlords are in positions of privilege in situations where tenants pay all of a service tax in a situation that they have limited ability to change	Yes: By codifying cost-splitting of the carbon tax, this program considers future generations, and its results will benefit future generations through providing a motivation for landlords to improve housing.	Partly: This initiative can increase energy efficiency by encouraging landlords to make energy efficient upgrades to avoid paying the carbon tax. However, whether the incentive (price of carbon) is enough remains to be seen.	No: Does not prevent costs from being downloaded onto tenants.	No: This initiative does not address maintaining or improving the safety of rental housing.	Partly: This initiative does partially address climate resilience in that it does provide a motivation for landlords to decrease GHG emissions to reduce their share of tax, but the tax is still minimal, so may not shift much.	Medium: I could see there being strong tenant support, and some political and professional support, but significant landlord opposition	Medium: A carbon tax is already being charged on gas heating bills, but it would require revising the bill charging payment systems in place to accommodate this cost-splitting between landlord and tenant. Does not address inefficient hydro electricity use.

Existing Other	Landlord pays for utilities	In Sweden, landlords/building owners pay for utilities and are subject to an aggressive carbon tax and thus are motivated to pay for energy efficiency upgrades to save themselves utility and tax costs. In some secondary market rental housing in BC, landlords do already pay for utilities.	No: Does not increase or include tenants' involvement in the process -initiative only involves landlord/owner in the decision-making and implementation process	Yes: This redistributes the burden of the cost of energy inefficient buildings to the people that cause/can change the situation - landlords and building owners.	Yes: If it is implemented to encourage the landlord/building owner to do energy efficiency upgrades on an existing building where tenants currently pay utilities, then it is removing a structure that disadvantages tenants (having to pay for inefficient housing they cannot change).	Yes: If it is implemented to encourage the landlord/building owner to do energy efficiency upgrades on an existing building where tenants currently pay utilities, then it is removing a burden (paying for inefficient housing) on future tenants.	Partly: For sufficiently energy inefficient buildings, this may provoke the landlord/building owner to do renovations/install systems to increase energy efficiency and save on energy costs. But if the cost of inefficiency is not high, this may not provoke calls to retrofit.	No: Does not prevent costs from being downloaded onto tenants and is likely to increase rents.	No: This initiative does not address maintaining or improving the safety of rental housing.	No: This initiative does not address maintaining or improving the safety of rental housing.	Medium: I could see there being strong tenant support, and some political and professional support, but significant landlord opposition	High: To a degree this already exists in Canada with some rental stock - and would be easily able to insert into the RTA. However, the cost might just be passed on to the tenant.
Existing Other	Energy Efficiency Design Measures in Minimum Standards for Rental Homes	(Many cities) Including minimum requirements for insulation, water/energy efficiency appliances, windows in building design standards for new and existing rental homes. Implementation of these standards usually involve additional complementary policy. The aim of these standards is to provide quality housing, not energy efficiency.	No: Does not increase or include tenants' involvement in the process -initiative only involves landlord/owner in the decision-making and implementation process	Yes: This theoretically shifts the burden of creating energy efficient housing to landlords/building owners.	Yes: This requirement institutionalizes the landlord's accountability for providing energy efficient housing	No: Because of ineffectiveness, it may saddle future generations with homes that appear on paper to be efficient, but in actuality are not - so it can worsen this category.	No: Multiple programs found that design measures alone (not performance standards) were easy to manipulate and thus were not effective in reducing GHGs. These standards do not target energy efficiency, instead they promote health and safety.	No: Does not prevent costs from being downloaded onto tenants nor prevent displacement .	Partly: Depending on the specific measure being implemented , this initiative could address maintaining or improving the safety of rental housing, from the perspective of creating a healthier place to live.	Partly: This program can increase climate resilience through mandating the use of energy efficiency heat pumps and improving the building envelope. However, unless it specifies using future temperature, this increase in climate resilience may be limited.	High: broad public, professional, landlord, and political support.	High: To a degree this already exists in BC, and is already being worked on with the BCBC revision

Existing Other	Performance standard - by unit, mandatory	London's Housing Supplementary Planning Guide defines energy sustainability at the individual apartment scale - regulates against single aspect units in the North Orientation or the west orientation to reduce too much energy use in both the winter and the summer. Applies to new developments.	No: Does not increase or include tenants' involvement in the process -initiative only involves landlord/owner in the decision-making and implementation process	Yes: This shifts the burden of creating energy efficient housing to landlords/building owners.	Yes: This requirement institutionalizes the landlord's accountability for providing energy efficient/climate resilient housing. It also acknowledges and attempts to fix the per unit disadvantages cause by looking at these topics on a building wide scale.	Partly: By passing this permanent regulation, it will future generations greater access to adequately energy efficient and climate resilience homes. However, it may increase the burden on future generations on paying for these changes with increased rent.	Yes: Has demonstrated proof of reducing energy use when looking at performance on a unit scale	No: Does not prevent costs from being downloaded onto tenants nor prevent displacement .	Partly: Depends how it is applied - by applying thermal comfort standard to all units in a building, it is effective at increasing all tenant's safety in extreme heat events.	Partly: Depends how it is applied - by applying an energy efficiency and thermal comfort standard to all units in a building, it is effective at increasing resilience to extreme heat.	High: broad public, professional, and political support. May be some landlord/owner opposition.	High: This could fit in with the Alterations Code creation process.
Existing Other	Performance standard- by building, mandatory	The Australian National Construction Code Includes focuses on full building design and using passive design to minimize energy use. Design strategies including regarding orientation on a building scale, but not on a resident scale.	No: Does not increase or include tenants' involvement in the process -initiative only involves landlord/owner in the decision-making and implementation process	Yes: This shifts the burden of creating energy efficient housing to landlords/building owners.	Yes: This requirement institutionalizes the landlord's accountability for providing energy efficiency/climate resilient housing	Partly: By passing this permanent regulation, it will future generations greater access to adequately energy efficient and climate resilience homes. However, it may increase the burden on future generations on paying for these changes with increased rent.	No: Has demonstrated proof of causing inefficient use of energy in some areas and units of the building, with other areas and units compensating - could be partly, but is No because some units are still not performing well when looking at a building wide scale	No: Does not prevent costs from being downloaded onto tenants nor prevent displacement .	Partly: Depends how it is applied - by applying thermal comfort standard to all units in a building, it is effective at improving SOME tenants safety in extreme heat events.	Partly: By applying an energy efficiency and thermal comfort standard to a building, it is effective at improving resilience to extreme heat in SOME units.	High: broad public, professional, and political support. May be some landlord/owner opposition.	High: This could fit in with the Alterations Code creation process.

Existing Other	Tenant right to make energy efficiency upgrades	Hartford, RI, USA Code of Ordinance grants tenants the right to make certain energy-saving home improvements without obtaining property owner consent. These upgrades are limited to those that do not change the building's structure or equipment and involve alterations that are easily removable or reversible.	Yes: Tenants are integrally involved in the decision-making process to make changes to their home - in fact they can be the primary party, depending on how the legislation is written and what types of changes can be made without landlord approval	Yes: This legislation allows tenants to do actions that reduce their energy use and costs - distributing some benefits to tenants	Yes: This legislation acknowledges the power imbalance in the tenant-landlord relationship regarding ability to make improvements to homes and aims to bring more equity to the situation by changing the system to allow tenants to make changes - sometimes without needing to tell the landlord.	Yes: By passing this permanent legislation, it gives future generations rights to change their own living environment to be more energy efficient and not be burdened to be stuck in an untenable situation with no available action on their part	Partly: By allowing tenant-led energy saving upgrades, this initiative does increase energy efficiency. However, these energy efficiency gains may be limited due to the non-structural limitations of the energy efficiency upgrades.	Partly: In the long term this could help reduce housing costs re: reducing energy costs, but this is highly dependent on how much money tenants must pay to do the energy efficient upgrades.	No: This initiative does not address maintaining or improving the safety of rental housing.	Partly: This policy can increase climate resilience through motivating the use of energy efficiency heat pumps and improving the building envelope. However, because of the non-structural nature of the changes, climate resilience may be limited.	Medium: There would be support from tenants, some professional staff, and some politicians - however there would likely be significant opposition from landlords.	Medium: Could be challenging to determine what types of upgrades are allowable under this renewed right - removable upgrades only? Can be easily included in Residential Tenancy Act.
Existing Other	Tenant right to practice energy saving behaviors	Nova Scotia Clothesline Act	Yes: Tenants are the primary party involved in making decisions to act in energy saving ways	Yes: This legislation allows tenants to do actions that reduce their energy use and costs - distributing some benefits to tenants	Yes: This legislation acknowledges the power imbalance in the tenant-landlord relationship and how legislation/covenants that forbid, e.g., clotheslines, disadvantage tenants and attempts to rectify the situation.	Yes: By passing this permanent legislation, it gives future generations rights to practice energy-saving behaviour and removes the burden of having to follow laws that do not allow energy efficient behaviour.	Yes: By allowing energy saving behaviour, this initiative does increase energy efficiency.	Yes: This helps in the sense that this action can reduce the cost of utility bills (which is part of shelter costs) through reducing energy usage	No: This initiative does not address maintaining or improving the safety of rental housing.	No: This policy does not address maintaining or improving climate resilience of rental housing.	High: broad public, professional, and political support. May be some landlord opposition.	High: Already is implemented in Canada and is being worked on by the UBCM for a specific use case.