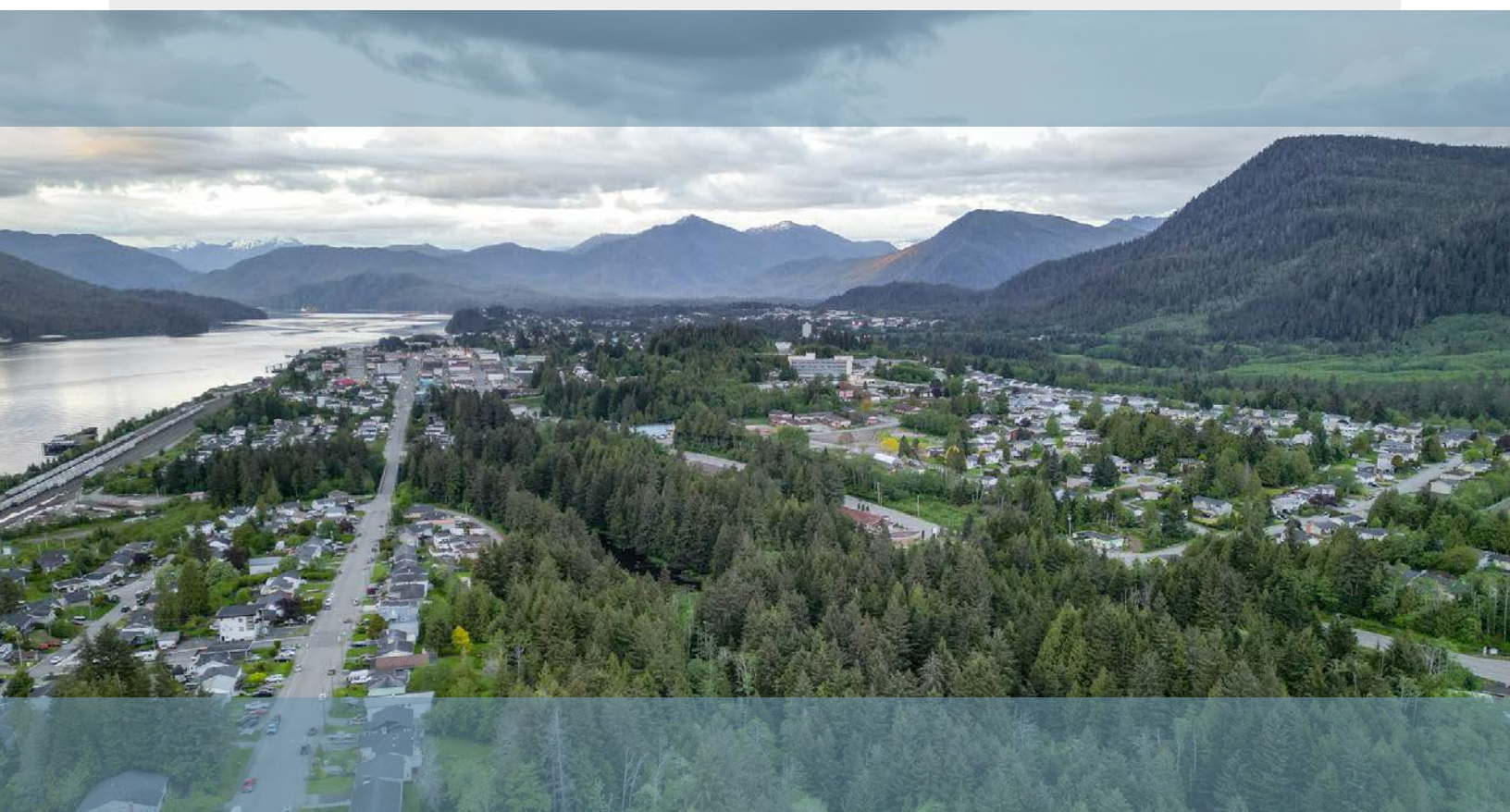




Advancing tenants' rights to retrofits and energy efficiency

Research Report



COMMUNITY ENERGY INITIATIVE

Josephine Schrott, Analyst, Ecotrust Canada

June 2024

Contents

Acknowledgements	3
Executive summary	4
Introduction	8
Context	9
Housing crisis	9
Data gaps	10
Key issues	11
Energy efficiency and climate change mitigation	11
Health and safety	12
Climate change adaptation and resilience	14
Overheating and extreme heat events	16
Affordability	17
Policy options	20
Temperature requirements	20
Cooling rights	22
Energy efficiency labelling	24
Retrofit incentives	26
Building owner payment of utility bills	28
Recommendations	29
1) Temperature requirements and cooling rights	29
2) Energy efficiency rating & disclosure of utility costs	30
3) Financial support	30
Housing considerations	31
Conclusion	33
References	34

Acknowledgements

Ecotrust Canada thanks the nine tenants who took the time to share their insights and experiences with us. Their names are not listed as most wished to remain anonymous. We also thank the staff from the following organizations who generously shared their ideas and considerations on the policy options and tenants' energy rights issues: Aboriginal Housing Management Association, ACORN Canada, BC Non-Profit Housing Association, BC Poverty Reduction Coalition, City of North Vancouver,

Co-operative Housing Federation of BC, First United, Pembina Institute, Tenant Resource & Advisory Centre, Together Against Poverty Society, UBC Centre for Climate Justice. This list does not represent an endorsement of this report or its recommendations by these organizations.

This work was completed largely on the traditional, unceded territory of the xʷməθkʷəy̓əm (Musqueam), skwxwú7mesh (Squamish), and səlilwətał (Tsleil-Waututh) Nations.



Photos by Shannon Lough and Gavin Magnusson, Ecotrust Canada



Executive Summary

Tenants, who make up one-third of households in British Columbia (BC), typically have very little agency over matters that influence their energy bills or the health and comfort of their homes. Currently, it is much easier for a homeowner to improve the energy efficiency of their living space, or to add cooling, compared to tenants. Most BC buildings were not originally designed for extreme weather, and an increase in extreme heat and poor air quality events precipitated by climate change, combined with rising pressure on housing and affordability, threaten to reverse rather than advance progress on energy rights for tenants.

The goal of this research was to gather real stories from BC renters to communicate the home energy issues tenants are facing, and to identify the most promising policy options to enhance tenant protection from extreme heat, cold, and poor air quality. We believe that everyone deserves to live in a comfortable home with clean air, and nobody should have to choose between paying their utility bills and feeding their family.

We interviewed practitioners in relevant fields, as well as tenants with lived experience of energy poverty and energy inefficient housing, to receive their input on the following policy options with a view to ensuring the public health and safety of tenants in a changing climate. In the context of an ever-intensifying housing crisis, we also considered the likelihood of these policy options to lead to increased rents, evictions, or removal of housing from the rental market.

The policies we considered included:

1. Minimum and maximum temperature requirements
2. Cooling rights
3. Energy efficiency labelling
4. Retrofit incentives
5. Building owner payment of utility bills

Findings

Interviews for this research included nine lived-experience interviews with tenants, and 10 interviews with housing providers, tenant advocacy organizations, and poverty reduction organizations.

As of Canada's 2021 census, 38% of tenant households in BC lived in unaffordable units – spending over 30% of their pre-tax household income on their housing. Fully 25% of tenants were in housing that did not meet their needs but would be unable to afford the median rent for an alternative unit. If evicted, these tenants and their families may face homelessness. This situation greatly complicates the energy-related issues of extreme heat, cold, and poor air quality, as tenants often fear losing their housing if they request improvements to their units, and may therefore choose not to pursue complaints.

Unfortunately, a lack of health, safety, and basic maintenance was noted by all tenants as well as many professionals we spoke to. These included underheating, overheating, inadequate ventilation and poor air quality, mould, electrical problems, water quality issues, broken systems that were repaired with

significant delay or not at all, pests, security issues, etc. In many cases, tenants reported a lack of accountability of building owners and managers, and little to no action by authorities. While many of the health and safety issues

reported by tenants are interconnected, in this report, we focus on those most related to energy efficiency and health, and most significantly affected by the changing climate.

Tenants we spoke to described some of these issues and how they are affected by and deal with them in their daily lives:

- The need for air conditioning due to a lack of passive measures, such as insulation or shading
- The time and cost burdens of researching, buying, and operating supplemental heating and cooling
- Using their oven to heat their unit due to lack of central heating (no heat because the system turned off or is broken, or, more frequently, insufficient level of heat)
- Lack of ability to regulate heating in their units, resulting, among other issues, in overheating from the building heat, forcing them to open windows to cool even in winter
- Noise impacts of single pane windows, walls with minimal or no insulation, and open windows required for airflow or window/portable air conditioners disrupting sleep
- Health issues they or their doctor attributed to building issues (temperature, moisture, mould), including respiratory issues, headaches, nausea, coughs, and rashes; and aggravation of existing health issues, including arthritis, asthma, and chronic pain

Recommendations

Everyone needs a safe, healthy home to shelter from heat, cold, and air pollution. Based on the findings of our research and interviews, we call on all levels of government to adopt the following recommendations to most effectively address concerns of health and safety, low-carbon resilience, and affordability. All should include stipulations that protect tenants' rights, security of tenure, and health. Adopted together, the following proposals would serve to improve

tenants' health by mitigating temperature extremes, improving energy efficiency and information available on energy performance, and addressing cost barriers for building owners who cannot afford upgrades.

1) Temperature requirements and cooling rights

We recommend the adoption of maximum temperature standards as a flexible, performance-based solution to the public

health threat of extreme heat. We encourage all municipal governments to adopt a standards of maintenance bylaw requiring a 21-26 °C temperature range in rental units. Applicable provincial legislation, including the Residential Tenancy Act (RTA) and the Strata Property Act, should be updated in tandem to provide consistency across the province and support municipalities' legal rights to regulate their rental housing stock in this manner.

Additionally, since the 21-26 °C temperature range may not sufficiently protect all people, standards should also include the right for tenants to add their own additional cooling to their units, even if the unit is within the regulated range. Any temperature measures should ensure that they do not negatively affect indoor air quality.

2) Energy efficiency rating & disclosure of utility costs

We recommend mandatory energy assessment and labelling of all rental units and mandatory disclosure of this label along with utility costs at the time of listing any unit for rent or sale. This would serve to address data and information gaps faced by all parties, including policy makers, tenants, as well as property owners, managers, and buyers.

The development of home energy labels, which both the BC and federal governments have committed to, should be extended to all new and existing housing units regardless of tenure. This will also enable future minimum efficiency rating requirements as needed to reduce building stock emissions. Such requirements could be included in the RTA as well as the forthcoming BC Existing Buildings Renewal Strategy and federal renters'

bill of rights.

3) Financial support

To address the concern regarding the affordability of new temperature and energy efficiency requirements, we recommend the provision of financial incentives supported by all levels of government, focused on rental buildings, and attached to tenant protections, including tenure and affordability covenants. Non-profit and cooperative housing will need funding to comply with building and alteration codes, equipment regulations, energy efficiency standards, and temperature requirements.

A financing program that streamlines processes for deep low-income market rental retrofits, such as a tax incentive or a combined mortgage and grant program, could provide the needed stimulus and administrative support for building owners, while protecting affordability and tenure, and ensuring tenant participation and benefits.

We recommend that BC Hydro consider the option to create a building-level on-bill financing or tariff specifically to enable retrofits in multi-unit residential buildings (MURBs). Existing and forthcoming residential retrofit programs aimed at renters, including the CleanBC Better Homes Energy Savings Program and the forthcoming Canada Greener Homes Affordability Program, should clearly stipulate affordability covenants, health and well-being requirements, and methods of enforcement.


Financial support for basic utility costs for low-income households along with disconnection bans for high-energy burden households, are also recommended as a measure to increase public health and safety.

Conclusions

This report has focused on tenants' challenges at the intersections of energy efficiency and health, and the intensifying needs as a result of climate change. Practical solutions can be implemented now and improved over time. Setting safe temperature standards requiring all rental units to be able to maintain 21-26°C in provincial law and municipal bylaws, including the right to cooling, assessing and labelling the

energy efficiency and utility costs of every home, and providing targeted financial incentives to support upgrades, represent, in combination, a way forward that can prevent needless human suffering and drastically improve the lives and health of tenants in BC. Approaches will be most effective if they integrate energy efficiency, emissions reductions, climate resilience, health, poverty reduction, and housing objectives as much as possible.





Introduction

Access to energy and effective home energy systems is crucial for essential activities of life, including sleeping, cooking, and working – in short, surviving – and significantly impacts a person’s health. Both Canadian and international law establishes a right to life and security of the person (which includes mental and physical health and bodily integrity).¹ Yet, in practice, varying levels of deprivation are common.

Increasingly hot and extreme weather precipitated by climate change, combined with rising pressure on housing and affordability, threatens to reverse rather than advance progress on the progressive realization of these basic rights, resulting in severe health consequences and limiting the human potential of many of our fellow citizens. Most buildings in British Columbia (BC) were not originally designed for extreme weather, meaning they now fail to adequately protect their occupants.² Effective and ecologically sustainable solutions are urgently required, and provide the opportunity to dramatically improve levels of health and well-being.

Tenants, who make up one-third of BC households, typically have very little agency over matters that influence their energy bills, or the health and comfort of their homes.³ Currently, it is much easier for a homeowner to improve the energy efficiency of their living space, or to add cooling, compared to tenants. This is not just due to property rights – incentive programs also tend to be aimed at homeowners. Tenants in BC require enhanced protection from extreme heat, cold, and poor air quality as climate change worsens. It is also important that these protections do not lead

to increased rents, evictions, or removal of housing from the rental market. Everyone deserves to live in a comfortable home with clean air, and nobody should have to choose between paying their utility bills and feeding their family.

This research follows up on [The Missing Third report](#) on tenants’ rights to energy efficient, climate resilient, and safe housing presented at Ecotrust Canada’s [2023 Energy Justice Forum](#).

The discussion brought up considerations that we have investigated further to examine the practical implications (for tenants) of different policy options that seek to advance retrofits in existing rental units and protect tenants from extreme temperatures and poor air quality. We interviewed practitioners in relevant fields, as well as tenants with lived experience of energy poverty and energy inefficient housing, to receive their input on the following policy options with a view to **ensuring the public health and safety of BC tenants in a changing climate**:

1. Minimum and maximum temperature requirements
2. Cooling rights
3. Energy efficiency labelling
4. Retrofit incentives
5. Building owner payment of utility bills

The discussions with interviewees clarified the impacts of the status quo in the absence of significant efforts to improve tenants’ energy rights, the advantages and disadvantages of the five options, and identified additional problems and solutions, all detailed in this report.

Context

In BC, 669,450 (33%) of two million households are tenants.⁴ The majority – 41% – live in small multi-unit residential buildings (MURBs) that have less than five storeys, while 17% live in large MURBs (5+ storeys), 18% live in single-detached homes (including moveable dwellings), and a quarter live in other types of homes (semi-detached, row, and other single-attached homes; duplexes).⁵ This means well over half of tenants live in MURBs, a building type that tends to be underserved by energy efficiency retrofit incentive programs.

There is a lack of comprehensive data regarding building owners, and the number of units in each of the primary (purpose-built) and secondary rental markets (condominiums, houses, secondary suites, laneway homes). The census found one fifth (21%) of tenant households were in condominiums in 2021 in BC.⁶ However, in November 2022, BC strata legislation changed to prohibit rental restrictions, so it is possible this proportion has increased since. Given their sizeable share in the rental market, policies applicable to stratas, and challenges, such as stratas prohibiting heat pumps, are relevant to tenants as well.⁷

Housing crisis

Retrofits must be considered in the context of the financialization of housing and extraction of profit from rental housing, a collective failure to uphold basic human and housing rights that has cascading effects on poverty, climate mitigation and adaptation, and health. As of Canada's 2021 census, 38% of tenant households in BC lived in unaffordable units – spending over 30% of their pre-tax household income on their housing. Twenty-



“Management uses intimidation tactics and people fear eviction.”

– Tenant participant

five percent of tenants were in housing that did not meet their needs, but would be unable to afford the median rent for an alternative unit, a state that Statistics Canada defines as being in core housing need.⁸ If evicted, these tenants and their families may face homelessness.

Even those tenants not in core housing need to contend with a severe power imbalance, where many feel trapped in unaffordable or unsafe units with few rights and even fewer avenues for enforcing those rights. Tenants often fear losing their housing if they ask for repairs or pursue their rights and may, therefore, choose not to pursue complaints. They also face significant rent increases or quality downgrades when they need to move because market rents are much higher than existing rents limited by the BC rent increase limit.

⁹ Vacancy rates are at a record-low (1.5%) and rent



growth at a record-high (8.0%), and the latter has been outpacing wage growth for decades.¹⁰ This trend is likely to worsen as Canada is losing over twice as many affordable units than are being built annually.¹¹ As one of our respondents said, there is an urgent need to “create affordable housing, co-ops, rent-to-own for immigrants and everyone who cannot afford housing. Provide choices.”

Canada’s housing rights record has been critiqued in detail by the United Nations Human Rights Council’s Universal Periodic Review and the National Housing Council.¹² Research and news reports have illustrated the added challenges some groups of tenants experience, including overt and covert discrimination at all stages of tenancy based on factors such as race,¹³ age, religion, disability, or income; being 2SLGBTQI+, an immigrant¹⁴ or single woman; or having children.¹⁵ Barriers are particularly acute when multiple of these factors overlap.¹⁶ Racism and discrimination were also issues reported by our respondents in their current rental situation, to the detriment of their psychological well-being and safety. As one tenant said, “You live with a feeling of anger and like you don’t belong.”

Data gaps

Policies and programs need to be designed with awareness of the diversity of buildings, tenure systems (including those on reserves and treaty lands, co-ops), ownership types (e.g. public, individual private investor, and corporate), how

many buildings are owned and/or managed by each entity, rent prices and profits, and occupant groups (incl. groups facing high energy burdens, living with disabilities or chronic health conditions, in core housing need, or facing discrimination). To create effective policies that create the highest impact, there is a need for better dataⁱ on these different segments of the rental market, especially for rural and remote communities with populations less than 10,000, and with changes tracked over time to allow the evaluation of trends and impacts of policy changes.

Linking data on building type and energy source, consumption, and cost with information on ownership, rental status, housing-related adverse health impacts, and data collected through the Canadian Housing Survey and Rental Market Surveys would clarify how many and what kinds of units are rented by whom, where, for how much, and with what outcomes for tenants. While some municipalities, including Vancouver and New Westminster, explicitly require business licenses for long-term rentals, federally collected data, as well as a provincial rental building and owner registry, could provide more comprehensive information. For instance, 25% of properties in BC, and 37% in rural areas are investor-owned, and an additional 9% are owner-occupied investment properties, but it is not clear what proportion of these are rented.¹⁷ Current data on the number of “illegal” suites, which were last estimated at 15% of all rental suites in 2017, is also needed.¹⁸

i See Introba (2023). Low-income and social housing electrification roadmap, p. iv. <https://www.bchousing.org/sites/default/files/media/research/Low-Income-and-Social-Housing-Electrification-Roadmap.pdf>: “For the low-income housing stock, one of the biggest challenges is the lack of data and transparency to identify these units. Monitoring the impacts electrification has on this building stock will require better insights on rental rates, vacancy, and basic building conditions.”

Key Issues

Energy efficiency and climate change mitigation

BC's climate mitigation goal is to achieve a 59-64% reduction in greenhouse gases (GHGs) from buildings and communities by 2030, but current projections show the province is not on track to meet this target.¹⁹ At the national level, Canada aims to achieve net-zero emissions by 2050, and will address how buildings can align with this objective in the Canada Green Buildings Strategy. It is certain that a significant acceleration of building electrification will be needed to meet either target. In BC, this means a doubling of the projected rate of heat pump sales, and a 56x increase in heat pump water heater sales between 2024 and 2026.²⁰

To drastically scale up efforts to increase the energy efficiency of our homes and decarbonize residential energy sources, rental units need to be part of the strategy, and tenant households need to be included. The issue of energy efficiency in rental units is often investigated with a focus on designing retrofit programming to include tenants, who are still explicitly or de facto excluded from many incentive programs. While this is an important goal, less attention has been paid to the practical implications retrofits may have for tenants, including benefits and risks to health in a changing climate.

Without increased protections, efforts to reduce carbon pollution from existing housing may be exploited by building owners to undertake energy

renovations so they can evict tenants (sometimes called renovictions or “decarboventions”) or raise rents, which can contribute to gentrification.²¹

The problem of evictions is detailed by First United in their Eviction Crisis report, and ACORN has pointed to the lack of tenant protections attached to Canada Mortgage and Housing Corporation (CMHC) and Canada Infrastructure Bank retrofit funding.²² Regardless of the building owner's intent, upgrades could adversely impact health, comfort, affordability, and agency for tenants depending on what renovations are done and how they are implemented. More broadly, where climate justice concerns are not incorporated in program design, climate mitigation and adaptation investments like retrofits, as well as the cost burdens of climate impacts, can exclude and displace vulnerable groups, a process termed climate gentrification.²³

Retrofit programs have generally been focused on reducing energy consumption and/or decreasing GHGs. However, there is increasing recognition of the non-energy impacts of retrofits, to both prevent adverse unanticipated consequences and to maximize potential synergies between energy efficiency, health, cost savings, and other factors. Potential co-benefits that can be achieved by retrofits include relieving energy poverty, improving air quality, reducing health issues and healthcare costs, and creating jobs.²⁴ These are important to address for rental-focused policy, where building owners may not be aware of, or motivated by, the non-energy impacts of efficiency interventions.

Health and safety

Given that Canadians spend almost 90% of their time indoors, the quality of indoor environments has a significant impact on people's health and well-being.²⁵ The impact of peoples' homes on their health are significant, with potential negative impacts including increased inflammation,²⁶ cardiovascular illness, and reduced mental health and well-being.²⁷ Jessel et al. have created a comprehensive [overview of the connections between home energy insecurity and health](#) based on a review of 162 publications. Housing hazards in England have been found to create healthcare cost burdens similar to smoking or alcohol,²⁸ and studies have estimated both the staggering loss of healthy life expectancy (disability-adjusted life years) from building hazards,²⁹ as well as the health savings payback of specific housing repair investments³⁰ and the positive impact retrofits have on low-to-moderate households in particular.³¹

Unfortunately, a lack of health, safety, and

basic maintenance was noted by all tenants as well as many professionals we spoke to. These included underheating, overheating, inadequate ventilation and poor air quality, mould, electrical problems, water quality issues, broken systems that were repaired with significant delay or not at all, pests, security issues, etc. In many cases, tenants reported a lack of accountability of building owners and managers, and little to no action by authorities. While many of the health and safety issues reported by tenants are interconnected, this report focuses on those most related to energy efficiency and health, and most significantly affected by the changing climate.

Tenants are resourceful in finding whatever means are available to them to create some safety or comfort, but this often involves incurring additional unforeseen costs, and requires substantial time and effort on an ongoing basis. Notably, many of the health and safety issues tenants identified also had negative energy efficiency impacts.

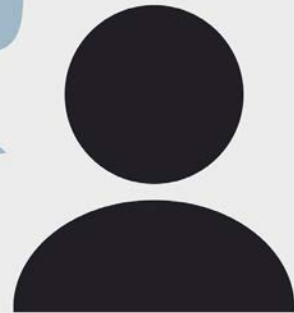


Tenants we spoke to described some of these issues that affect them in their daily lives.

- Cleaning ongoing mould growth daily or very frequently
- Needing to buy and use rodent/pest control products on an ongoing basis
- Noise impacts of single pane windows, walls with minimal or no insulation, and open windows required for airflow or window/portable air conditioners disrupting their sleep
- Health issues they or their doctor attributed to building issues (temperature, moisture, mould), including respiratory issues, headaches, nausea, coughs, and rashes; and aggravation of existing health issues, including arthritis, asthma, and chronic pain

We clean every day to prevent mould. If you only clean once a week you get mould.”

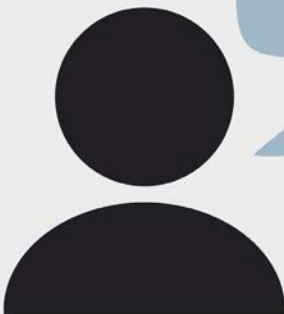
– Tenant participant



- The need for air conditioning due to a lack of passive measures such as insulation or shading
- The time and cost burdens of researching, buying, running supplemental heating and cooling
- Using their oven to heat their unit due to lack of central heating (e.g., no heat because the system turned off or broken, or, more frequently, an insufficient level of heat)
- Lack of ability to regulate heating in their units, resulting, among other issues, in overheating from the building heat, forcing them to open windows to cool even in winter

“My thermostat is not working, so I can either have the heat at 30 C or turned off.”

– Tenant participant



Under- and overheating, in particular, are both very common and negatively impact health, including preventing people from getting sufficient sleep and making existing health conditions worse. It should be noted that deaths from underheating still far outnumber those from overheating,³² though this may not continue to hold true in an increasingly hotter future.³³ In ACORN's survey of 120 Calgary households, "60% reported having cold apartments in the winter" (resulting in the use of space heaters and ovens to heat), and 84% reported overheating in summer.³⁴ One tenant we spoke to reported only being able to sleep around 4am once the unit had cooled down from the previous day's heat during the warmest part of summer.

Another reported not being able to sleep at all when it is too hot at night. Many rarely experience comfortable temperatures in their units at all. As one tenant reported in our interview, "When it's cold outside, it's too cold. When it's hot, it's so hot you can't stay inside."

The Residential Tenancy Board (RTB) is a key avenue available to tenants contending with *Residential Tenancy Act* (RTA) violations, but as noted by Ecotrust Canada's Home Energy Justice Forum participants and one of the tenants we spoke to who had engaged with the RTB, the process is burdensome and inaccessible to many. It exposes the tenant to

building owner retribution, obstructs tenant collective action, and favours those with legal professionals at their disposal (e.g. corporate building owners). Even RTB repair orders do not always move owners to action.

While the BC *Public Health Act* allows for the prescription of "health and safety standards that must be met by landlords of rental accommodations," no specific province-wide standards exist. Nothing proactively

holds rental owners accountable when their business puts their tenants' health and lives at risk. Food safety, fire safety, and liquor licensing are examples of much more proactive enforcement of health and safety regulations, including inspections (in some cases under cover), and public

online complaints mechanisms. Beyond fire alarm checks, generally no such enforcement is applied to rental units.

Climate change adaptation and resilience

As demonstrated by the historical fires, floods, and extreme weather BC has experienced just in the past few years, climate change is already significantly affecting tenants, and will intensify in the future. The City of Vancouver, for instance, estimates that by the 2040s there will be "three times as many days over 25°C and nine times as many over 30°C" and that heatwaves will be four times



"If you go to restaurant, there are so many regulations to ensure that health regulations are followed, and if you call to complain they will inspect. Why is it not the same for rentals?"

– Tenant participant



more common and last longer (six days on average).³⁵ Housing is critical infrastructure³⁶ for the health and resilience of all people, but buildings in many parts of the province are not adapted to deal with such climate threats. Better preparation for the impacts of climate change is urgently needed to prevent large-scale suffering, and it is also far more cost-effective than dealing with unchecked consequences, with every \$1 invested saving up to \$15 in future costs.³⁷

With more frequent and severe heat and wildfires, adverse health impacts such as heat exhaustion, heat stroke, mental distress and disorders, and excess heat-related deaths will increase.³⁸ Climate change is also adding unpredictability with shifting seasonal weather patterns, which is an issue for the many multi-unit buildings in BC where the central heating is turned on at the beginning of the heating season, usually in October, and turned off at its presumed end, usually in April or May. These challenges create major health and safety concerns for those who cannot access or afford additional heating, cooling or air filtration systems, and it is resulting in an unknown number of units increasingly becoming unsuitable for occupation for

extended periods of time.

It is very important that tenants, lower-income tenants in particular, are able to access the benefits of energy-efficient, climate-resilient homes. Yet, researchers have found that “the poorest populations will be disproportionately affected by climate change, in large part because of access, quality, and preparedness of housing.”³⁹ Lower-income households are particularly at risk of being pushed into low-quality housing that has poor energy efficiency and high energy costs, which makes these households more vulnerable to energy price increases, extreme temperatures, and low air quality resulting from climate change.⁴⁰

In addition, these buildings will be less likely to maintain comfortable conditions without their systems actively using energy (thermal autonomy) or to remain habitable during an outage in extreme weather (passive habitability or survivability).⁴¹ In both summer and winter, energy-efficient buildings will maintain more habitable conditions in the event of a blackout.⁴² Unfortunately, even without outages or weather emergencies, the tenants we spoke to reported living in near-permanent situations of thermal discomfort.

Overheating and extreme heat events

BC's [Climate Preparedness and Adaptation Strategy](#) does not address buildings comprehensively but does identify extreme heat preparedness as a priority. Many of the actions listed in response, such as heat alert systems and cooling centres, address heat emergencies rather than longer-term sustainable adaptation of buildings, such as the permanent addition of energy-efficient active and passive cooling systems. At the federal level, Canada's [National Adaptation Strategy](#) aims to protect people from climate-related health risks, including eliminating deaths due to extreme heatwaves by 2040, but it is unclear how this goal will be achieved.

Tenants are limited in what they can do in their rental units to reduce temperatures, since they generally cannot improve insulation or exterior shading, or even regulate their heating in many buildings. In some cases, tenants face building owner prohibitions on life-saving mitigation measures such as installing air conditioning in their units, or putting aluminum foil in their windows. Many units do not have sufficient electrical capacity to support portable air conditioners. This results in many tenants struggling with overheating in the summer, creating everything from thermal discomfort to extreme overheating that forces tenants to vacate their units and temporarily live or sleep elsewhere (including outdoors) to survive. Those who, for reasons such as disability, age, mental illness, and lack of social support, cannot respond in time, and are left to face mental and physical suffering or even death.⁴³

ACORN Canada's 2023 [Extreme Heat & Climate Justice Report](#) found that a majority (79%) of



tenants were impacted by extreme heat, and affordability was the top barrier preventing tenants from having access to cooling.⁴⁴

Overheating restricts essential life activities that are required for people's health, well-being and economic survival, including working, cooking, socializing, exercise, and sleep.⁴⁵ It also requires a whole range of added efforts, such as frequent cold showers, freezing towels and ice packs for keeping cool, strategically moving around fans, and opening, closing, and covering windows as the sun moves and temperatures change throughout the day. It becomes a part-time occupation just to mitigate the heat. Despite these efforts, and due to the lack of proper solutions at the building level, conditions can become unsurvivable. Some populations are particularly vulnerable to extreme heat due to being more exposed (e.g., working in the heat, living in urban heat islands, facing mobility challenges), more sensitive (e.g., due to age, chronic or mental illness, taking certain medications/drugs), or having limited resources or information.⁴⁶

With overheating likely to increase in frequency and duration due to climate change, cooling centres are a useful emergency support for some, but not a lasting or equitable solution.

In addition to not being available at night for sleeping, not necessarily being accessible (e.g. to disabled or elderly people and anyone unable to travel through outdoor heat to get there) or safe (e.g. to immunocompromised people), it is also unreasonable to expect that people can put all of their life on hold for extended periods of time (such as a six-day heat wave) in order to wait in a cooling centre every day.⁴⁷ While extreme weather events are more noticeable and dramatic, policymakers also need to think beyond emergency events, because a larger proportion of deaths has been found to result from “more frequent warm and hot days, rather than occasional heatwaves.”⁴⁸

A key health consideration concerns the interactions between overheating, air quality, and energy efficiency.ⁱⁱ Most obviously, active cooling and air filtration systems may increase energy consumption. Retrofit programs thus far have not included passive cooling measures that would reduce cooling energy use, avoid further exacerbating the urban heat island effect, and increase thermal resilience of buildings. Tightening the building envelope without the presence of adequate ventilation systems can result in indoor air quality (IAQ) reductions, and extremely energy-efficient homes designed for cooler climates can overheat in some cases. On the other hand, research has found that roof insulation significantly reduces overheating; that reductions in underheating likely outweigh any possible negative health impacts of energy efficiency-related overheating; and that shading and ventilation play a key role.⁴⁹ Tenants intuitively understand this, as one tenant noted: “When it’s so hot and there is no ventilation, it’s hard to breathe.”

Heat also makes poor air quality more likely due to an increased risk of wildfires and sunlight increasing the ground-level concentration of ozone.⁵⁰ These interactions can increase illness and mortality,⁵¹ but are only starting to receive attention, with heat and poor air quality events often still treated as if they were separately occurring events only. In fact, for tenants who do not have the benefit of building-level cooling, ventilation, and filtration systems, the increasing likelihood of overlapping high heat with poor air quality presents difficult trade-offs between circulating outdoor air to mitigate overheating, or keeping windows closed to limit the amount of outdoor air pollution coming in. As with heat, ensuring cleaner indoor air on an ongoing basis, not just during emergencies, is needed for climate resilience, as more frequent lower-level exposure to PM2.5 causes more harm than occasional extreme highs from wildfire smoke events.⁵²

Affordability

Household energy insecurity or energy poverty refers to “the inability to adequately meet (through inaccessibility or unaffordability) household energy needs and maintain healthy indoor air temperatures.”⁵³ By the commonly used metric of a household spending over 6% of their income on energy costs, 15% of BC households are affected, including 30% of low-income households.⁵⁴ Energy insecurity is especially likely to affect certain groups, including renters⁵⁵ and households in buildings that are older and/or in need of repairs.⁵⁶ High energy burdens are not limited to low-income households, but research recently completed

ii See overview of considerations in Taylor, J. et al. (2023), p. 4 (Question 4).

in the United States found that “extremely low-income groups are ~6 times more burdened by energy than high-income groups.”⁵⁷ An estimated 6% of BC households are both low-income and experiencing energy poverty.⁵⁸

Already financially vulnerable households also have less capacity to absorb increased cost pressures. They are “~6 times more adversely affected by temperature than high-income groups, implying that temperature may put already marginalized

groups at higher risk of falling into an energy poverty trap.”⁵⁹ This presents an opportunity to create multiple positive impacts with these groups by prioritizing retrofits

that reduce costs and energy efficiency, as well as health and quality of life. High energy costs and climate impacts were highlighted in BC’s [Poverty Reduction Strategy engagement report](#), which included a recommendation to provide no-cost retrofit programs to low- and moderate-income households.⁶⁰ An investment of \$7.7 billion over the next 25 years⁶¹ would ensure all low-income households in BC who are experiencing energy poverty can receive retrofits, and would save these households an average of \$500-\$1,610 annually on their utility bills.⁶²

One major issue affecting tenants is that information on energy costs and systems are not normally provided in rental listings. Tenants are not able to weigh energy costs of different units, nor any health risks the existing systems might pose, what (if any) level of temperature control

is available, and whether they may be allowed to install air conditioning. This can result in tenants facing unexpected costs and health challenges. There is also no cap on increases to utility costs, which can be especially opaque in shared homes without submeters. Inability to pay can result in eviction, as well as significant financial stress when a household is faced with trade-offs between paying rent, utilities, food, medication, and other essentials.

Numerous such experiences were reported by our participants and in other research.⁶³

One of our respondents was a recipient of a small free air conditioner distributed by BC Hydro in 2023.

Just two weeks of using this portable

unit increased her electricity bill by over \$100, which was more than she could afford. As a result of paying this higher utility bill, she had to go into credit card debt to buy groceries. This intensified the financial stress she is constantly under, and her blood pressure subsequently worsened to the point of needing medication. This experience illustrates how an energy-inefficient unit can increase tenant costs, and for tenants on low and/or fixed incomes, even small increases can have significant negative financial and health impacts, trapping them in cycles of stress and ill health that might be entirely preventable with a combination of energy retrofits and utility bill supports.

Inefficient building systems cause tenants to incur needless costs, including spending on utilities, as well as time and money spent on makeshift mitigation strategies to make



“Having to choose between paying your hydro bill, food, and internet affects your overall well-being.”

– Tenant participant

the unit more comfortable within the limited agency they have. For instance, running an air conditioner in a building with a poor envelope that has little or no insulation will be expensive and extremely inefficient. Tenants bear the cost burden, but have no ability to improve the envelope to reduce cooling required. Portable A/Cs, which are more frequently allowed than window units, are unfortunately also generally more inefficient, lower capacity, and high maintenance.⁶⁴ Single-hose portable A/Cs expel hot air but thereby create negative air pressure in the space that pulls potentially even hotter air into the unit. Those who cannot afford to purchase or operate A/C are left to suffer the health consequences without recourse.

It should be evident that the issue is far more

complex than the infamous split-incentive problem, which generally assumes the benefits of retrofits accrue to tenants, while the costs fall to building owners. Energy efficiency upgrades certainly have the potential to significantly decrease costs, but in the case of private building owners whose prime motivation is to maximize profits, such decreases cannot necessarily be assumed to materialize for tenants. Factors impacting cost outcomes for tenants include whether the retrofit results in changes such as who pays for utility costs, impacts on total energy use, fuel source, upgrade type, interaction with other components of the building, and quality of work and products.



Policy Options

In addition to delving into the energy-related challenges and circumstances faced by tenants, we examined five policy options to better understand their benefits, drawbacks, and potential for synergies between energy efficiency, GHG reductions, health, and climate resilience:

- Temperature requirements
- Cooling rights
- Energy efficiency rating
- Retrofit incentives
- Building owner payment of utility bills.

Temperature requirements

Mandating a safe and comfortable temperature range inside rental homes

Just as it is unacceptable for people to lack heating and suffer the associated health consequences, it is also unacceptable for housing units to be so hot that people are forced to seek shelter elsewhere to survive. While both situations continue to be serious and, at times, deadly health issues, the latter is becoming increasingly long-lasting and severe and has not been considered in the design of most existing buildings.

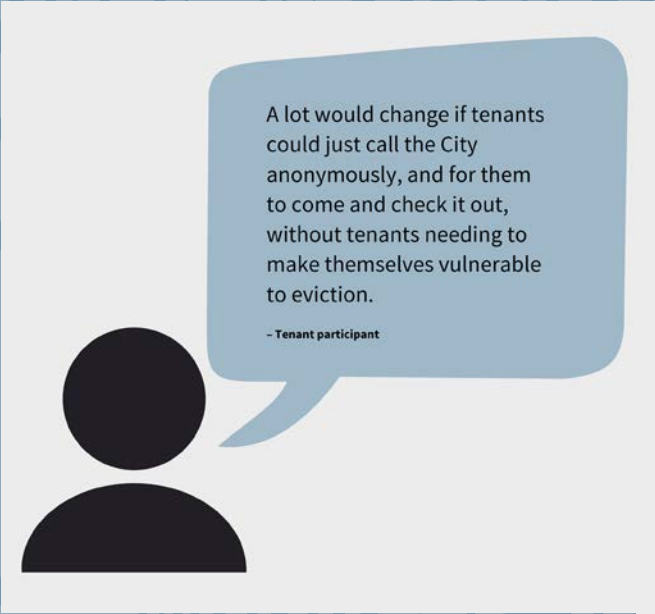
Minimum temperature requirements have been specified for rental units in the standards of maintenance bylaws of many municipalities. The increasingly urgent issue of extreme heat in rental units could be partly addressed by adding a maximum temperature requirement to these bylaws; this number is often proposed as 26°C. This has been identified as a solution in the Lived Experience of Extreme Heat in B.C.

report,⁶⁵ by the Chief Public Health Officer of Canada,⁶⁶ and advocacy organizations like ACORN Canada,⁶⁷ among others.

Advantages: A key advantage of this approach is that it is agnostic regarding what technology is used to regulate temperatures, creating flexibility for a variety of solutions, including heat pumps or air conditioning, shading, window film, reflective paint, insulation or better windows. If implemented widely by municipalities through standards of maintenance bylaws, or at the provincial level through the *RTA*, it promises to have a broad impact on the thermal safety of tenants.

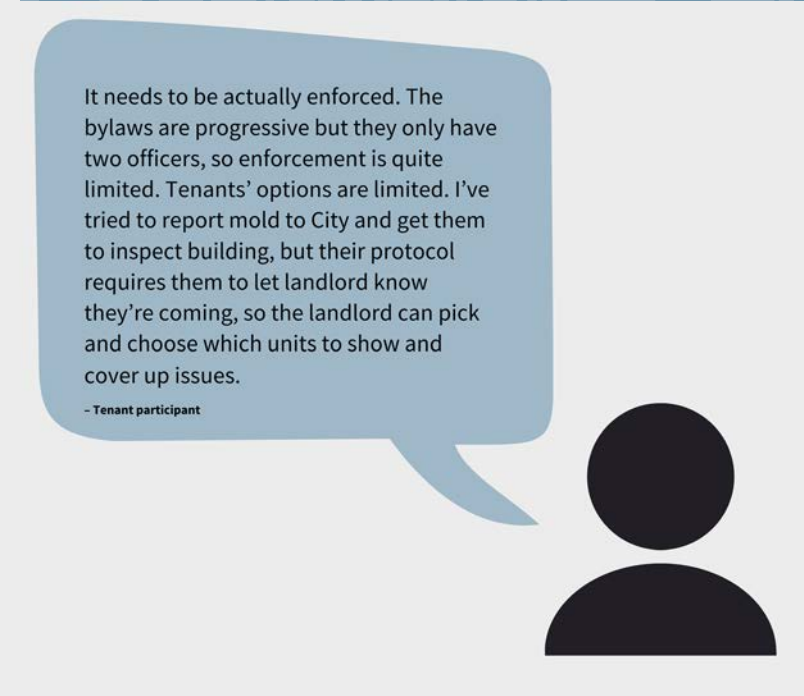
Disadvantages: A drawback is that a temperature requirement does not address building energy efficiency, adequate ventilation or indoor air quality. Temperature readings at a single point in a room are a useful data point, but do not give a full picture of the thermal comfort of an indoor space. Additionally, it was noted by multiple respondents that a 21 to 26°C temperature range may not be sufficient to protect all populations, such as those with certain health conditions, or in units where there is little to no ventilation. If in-unit air conditioners or space heaters are used as the solution, this could significantly increase energy bills for tenants, especially in poorly insulated buildings. Upgrade costs can also currently be passed on to tenants in BC via an additional rent increase (ARI) for capital expenditures. For lower-income tenants, this could create severe burdens and negative consequences.

Implementation: There is already some



A lot would change if tenants could just call the City anonymously, and for them to come and check it out, without tenants needing to make themselves vulnerable to eviction.

– Tenant participant



It needs to be actually enforced. The bylaws are progressive but they only have two officers, so enforcement is quite limited. Tenants' options are limited. I've tried to report mold to City and get them to inspect building, but their protocol requires them to let landlord know they're coming, so the landlord can pick and choose which units to show and cover up issues.

– Tenant participant

momentum toward this option. Twenty-two of BC's 161 municipalities have standards of maintenance bylaws which require that rental units maintain a minimum temperature, a mechanism to which two BC cities, New Westminster and View Royal, as well as the City of Hamilton, Ontario are considering adding a maximum limit. A model bylaw is also available from the Canadian Environmental Law Association.⁶⁸ Hamilton has also created bylaws along with expanded funding to require the registration and regulation of apartment building conditions.ⁱⁱⁱ Larger municipalities

could provide a menu of recommended solutions for common building types within their area that are suited to the local climate and context to facilitate implementation for building owners. This should also include passive cooling strategies applied to both buildings and surrounding public spaces.

In BC, the RTA could also include such requirements in order to create a common standard for the whole province, enable municipal action, and cover units that do not fall under a local government bylaw. BC could consider adopting temperature requirements

iii See City of Hamilton Safe Apartment Buildings By-Law and Renovation License and Relocation By-Law overview at: City of Hamilton (2024, January 26). 2024 Proposed Operating and Capital Budget Presentation: Planning and Economic Development, p. 21. <https://pub-hamilton.escribemeetings.com/filestream.ashx?DocumentId=393845>

as part of a broader set of health and safety standards. For instance, the Province of Alberta has housing and health standards for rental units,⁶⁹ as does the United Kingdom, whose Housing Health and Safety Rating System details 29 hazards, their causes and possible health effects, as well as preventative measures.⁷⁰ This would create a more integrated approach to improving housing and health outcomes and could prevent heat mitigation strategies that adversely affect other elements, such as indoor air quality.

Enforcement: Municipal bylaw enforcement is generally complaints-based, but tenant education, anonymous complaint options, and more proactive and effective enforcement mechanisms would improve the effectiveness of this policy. However, bylaws will not help tenants in “illegal” suites, which were estimated in 2017 to make up 15% of all rental suites in detached houses.⁷¹ The RTA has the advantage of including such suites, but enforcement options are more limited as it requires going through a relatively inaccessible process with the Residential Tenancy Board. It would therefore likely be most effective to implement standards both at the municipal and provincial levels, and better resource enforcement in both.

Cooling Rights

Allowing tenants to install lifesaving cooling devices in their homes

Vancouver Coastal Health (VCH) has identified the need for mechanical cooling, and warns of continued preventable illness and deaths, disproportionately among those without means to obtain air conditioning, if no policy interventions supporting cooling are

introduced and enforced.⁷² VCH’s jurisdictional scan of “[policy tools to create and support cooler, safer indoor living spaces](#)” outlines different mechanical cooling options and applicable legislation, and also notes the importance of passive cooling measures.⁷³ A requirement of cooling features was among the recommendations of the VCH Chief Medical Health Officer’s 2023 report, [Protecting Population Health in a Climate Emergency](#). An “obligation to provide cooling” would go one step further by requiring that owners, not tenants, pay for the purchase and installation of cooling equipment.

In May 2024, the BC Residential Tenancy Branch (RTB) released new guidance stating that “a ban on A/C units could be considered unconscionable (which means it is unenforceable) if it grossly impacted the health and quality of life of the tenant” unless there are “safety or building issues.”⁷⁴ While this measure could benefit some tenant households, it stops short of voiding A/C bans. Instead, it relies on tenants to make a case that a ban they face is unconscionable without providing a clear definition of the issues that might allow a ban to remain.



“It’s unbearably hot in the unit. I was not allowed A/C, neither window nor portable.”

– Tenant participant

Advantages: While most tenants are allowed to install window or portable air conditioners, those who are not can be forced to remove their cooling devices or face repercussions, including eviction. A “right to cooling” policy would prevent building owners from prohibiting the installation of air conditioners or heat pumps in their suites. Removal of cooling restrictions can enable the relatively quick solution of installing A/C for those who can afford it, and who have suitable windows, sufficient space, and are not concerned about break-ins (through windows open to allow A/C installation). Making A/C bans illegal as the standard would reduce the need for RTB arbitration and place the onus of making the case for an exemption to the A/Cs-allowed standard on the building owner.

Disadvantages: A right to cooling still requires tenants to buy, install, and maintain the equipment, and these costs appear to be a much more frequent barrier than prohibition from building owners. For instance, 44% of tenants in ACORN’s extreme heat survey indicated cost as the reason for not having A/C, as opposed to 11% citing lease prohibition and 8% citing building owner or manager threats of fees/eviction.⁷⁵ Interviews conducted with tenants in Vancouver low-income rental units found the majority could not afford A/C.⁷⁶ Cost was also a top barrier to cooling in our interviews. Especially in homes that overheat easily, are energy inefficient, and lack passive cooling measures, cooling costs create significantly increased energy bills, along with increased grid loads and total electrical consumption. A lack of building or unit electrical capacity may also practically prevent tenants from installing sufficient cooling. As with temperature requirements, cooling rights do not



address building energy efficiency, adequate ventilation, or air quality.

Implementation and enforcement: Language preventing unreasonable prohibitions of cooling installations by tenants could be added to the RTA, as well as to the Strata Property Act (just as rental restrictions were prohibited in 2022). As with temperature requirements, enforcement of the RTA relies on tenants having the capacity and time to go through the RTB process, potentially exposing themselves to reprisals from building owners or management. This is a fundamental issue applicable to all tenants’ rights and complaints that could be addressed with proactive monitoring and more equitable processes. The recent RTB A/C guidance does specify that “local governments can establish and enforce standards of maintenance bylaws for existing buildings. This may include provisions to ensure that rental units have adequate cooling systems in place or allow A/C units.” However, unreasonable restrictions on cooling systems remain in place in many stratas.^{77 78}

Energy efficiency labelling

Requiring that energy usage and costs of a rental suite be disclosed to prospective tenants

The many positive health impacts of energy-efficient building upgrades have been widely documented⁷⁹ and include lower mortality, “reduced symptoms of respiratory and cardiovascular conditions, rheumatism, arthritis and allergies,” and improved mental health.⁸⁰ Studies have “found benefit-cost ratios as high as 4:1 when health and well-being impacts were included, with health benefits representing up to 75% of overall benefits,” and as much as half of these stemming from a reduction in chronic stress and depression.⁸¹

A rental energy efficiency labelling policy would have rental suites evaluated and given an energy efficiency rating. This would ensure prospective tenants have some basic information available to choose between units if they are in a position where they have options. The policy could also require that a unit achieve a minimum rating to be legally rented, either through the issuance of a rental licence, or at the point of listing. A cost disclosure system should be added, especially where utility data transfer processes are already in place for energy use data.

Virtual home energy rating systems are in development in BC, but it is unclear when and for which building types they might become available. Voluntary programs such as [Benchmark BC](#), which utilizes [ENERGY STAR Portfolio Manager](#), are generally more suited for large buildings and owners with multi-building portfolio asset management strategies. This leaves a gap for smaller multi-unit residential buildings (MURBs) and small-scale building owners, as well as for rental units in general.

An example of rental energy rating requirements is the City of Boulder’s [Smart Regs](#) system, which requires efficiency ratings in order for building owners to obtain rental licenses. Similarly, [Hydro Québec](#) offers an online tool to estimate the expected electricity costs in a unit by entering its address.

Advantages: This policy option, being directly focused on energy efficiency, would create much-needed transparency and information on the energy performance of existing buildings that could benefit all building and housing stakeholders, including tenants and homeowners. It would enable better tracking of emissions and efficiency improvements, and help identify retrofits that can lower energy bills and improve health without prescribing any particular technology. It could be broadly applicable to renters and owners, as well as stratas, co-ops, non-profit housing, and varying housing tenures on First Nations reserve and treaty lands. Another strength is in the systemic and proactive nature of such a system.

Disadvantages: A key risk of this option is that an exclusive focus on energy efficiency could miss opportunities to improve health outcomes, especially with regard to air quality and temperature range. Temperatures present a major health threat as explored above, and a lack of ventilation was reported by many tenants as an ongoing issue. Certain efficiency upgrades, such as a tightened building envelope, could inadvertently worsen overheating, or decrease indoor air quality if adequate ventilation is not ensured.⁸² This could be addressed by requiring basic safety and indoor air quality considerations to be included in the efficiency assessment and reporting. Requiring tenants’ consent for any upgrades

causing utility costs or rent increases could support consideration of co-benefits of energy efficiency retrofits.

Another risk involves applying an assessment at the building level only, which would obscure the varying efficiency of different units within one building. These can differ significantly, and not only based on the building's orientation and sun exposure. As reported by tenants, proximity to the building heating system and piping, differing window types, prevailing winds, being on the top or ground floor, on a corner compared to the middle, and other unit idiosyncrasies all impact efficiency as well as thermal safety. Requiring all, or at least a certain proportion of units to be assessed for their individual performance and reported on, would provide more practically useful information for tenants. As with temperature requirements, upgrade costs can currently be passed on to tenants.

Implementation and enforcement: Energy assessments and labelling at the time of sale are part of [Canada's Housing Plan](#), and details are expected in the Canada Green Buildings Strategy.⁸³ In BC, the government is exploring the feasibility of energy labels for homes for both buyers and renters, a virtual home energy rating system, a requirement for realtors to provide energy efficiency information in home sale listings, and the nature of enabling legislation needed.⁸⁴ Focusing engagement and enforcement on industry actors such as realtors, building owners, and property managers would likely be required, as individual buyers or renters would not be likely to report non-compliance. Once a system is in place, minimum standards and compliance with them could be incentivized by restricting or prohibiting rent increases for those who fail to comply.⁸⁵



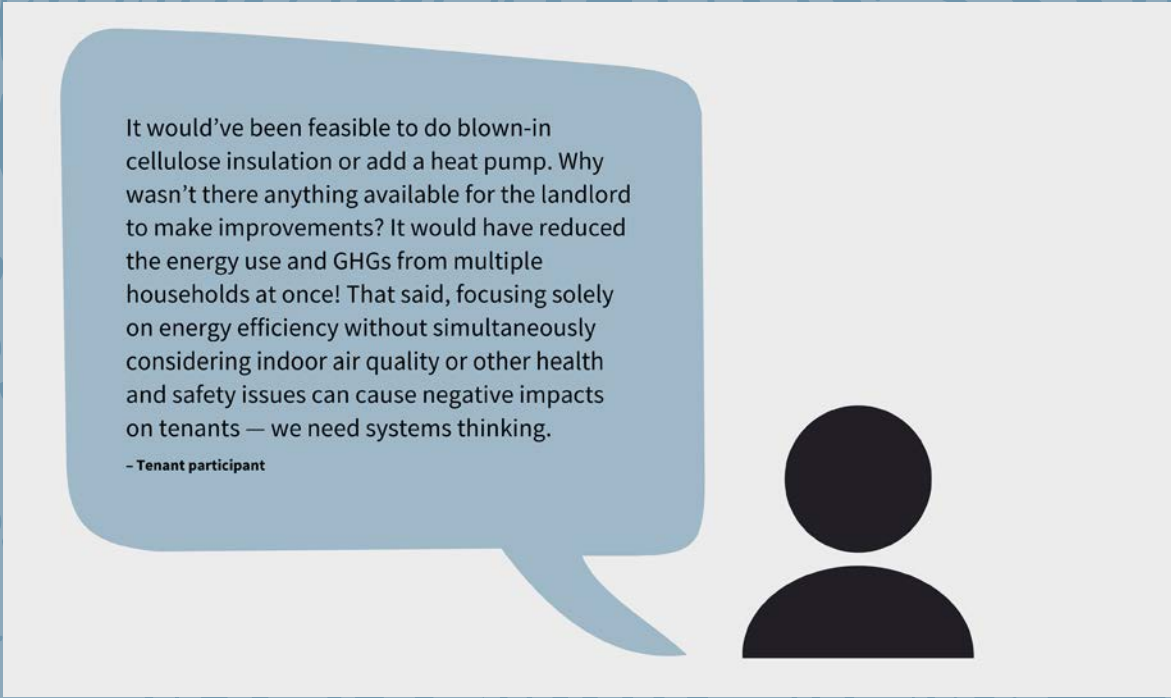
Retrofit incentives

Providing the needed financial resources to improve rental housing stock

This policy is based on the idea of providing subsidies to building owners to improve the energy efficiency of their suites, or to provide cooling or air filtration. It would fill the current gap between individual household incentives and large commercial incentives. This could include grants, loans, tax exemptions/credits, and practical support for implementation.^{iv} Any subsidies offered to owners should be balanced by a rental covenant and include specific stipulations to ensure tenants are engaged, their rights upheld, and no undue disruptions or

displacements caused. For example, a building owner receiving a grant to install a heat pump could be required to maintain the suite as a rental property for the lifetime of the equipment (e.g. 15 years).

Advantages: A key advantage of this option is that it provides a financial incentive for building owners to offset upfront upgrade costs. A suite of affordability requirements could be included in exchange for the free capital and improvement of asset value. Owners would be required to maintain rents at a certain level, even with a change in tenancy (an affordability covenant), in order to receive subsidies, and would be prohibited from passing on costs to



It would've been feasible to do blown-in cellulose insulation or add a heat pump. Why wasn't there anything available for the landlord to make improvements? It would have reduced the energy use and GHGs from multiple households at once! That said, focusing solely on energy efficiency without simultaneously considering indoor air quality or other health and safety issues can cause negative impacts on tenants — we need systems thinking.

– Tenant participant

^{iv} The Rental Apartment Retrofit Accelerator piloted in the City of Vancouver and now available in the cities of Saanich and Victoria, BC is an example. See LandlordBC (2024). Expanded Rental Apartment Retrofit Accelerator Program (RARA). <https://landlordbc.ca/rara/>

Affordability Covenants

Affordability covenants prohibit rent increases for a specific number of years or limit rents to locally defined affordable amounts. They usually also limit evictions, and ideally also require maintenance of affordability across tenancies using vacancy control (rent increase rules tied to the unit, not tenancy), tying rent to an affordability threshold, or requiring new tenants' income to be below a maximum.

tenants.⁸⁶ Upgrades could also be required to be at minimum utility cost neutral to tenants and provide other co-benefits to tenants.

This approach is also far more efficient than incentivizing individual tenant upgrades, which require significant efforts on the part of a tenant who does not have the security of tenure to know that they will be able to enjoy the fruits of their labour. Instead of applying fixes to a single unit, it considers the whole building system in multi-unit buildings. It could also cover electrical or seismic upgrades, rain screening, asbestos abatement, and other concurrent health and safety improvements as needed to maximize energy-health synergies.

Disadvantages: A challenge is the provision of incentives, as well as the verification of performance of installed work, and ongoing enforcement of affordability covenants. Some tenants expressed strong hesitation, because their experiences have led them to have very low trust in their building owners and/or property manager, and they feared this option would result in poor quality work with suboptimal outcomes at best, and at worst, fraudulent misuse of public funds that does not provide any energy efficiency or health and safety benefits. To mitigate this risk, incentive programs would need to require the use of

certified and qualified contractors, proof of completed work, and proof of performance of systems once. Further, incentives could be means-tested and restricted to building owners who can demonstrate financial need, requiring disclosure of both overall profit and profit of the specific building in question. Government grants could also be directed exclusively to non-profit providers or cooperatives to supplement current funding available to these buildings.

Implementation: There is an opportunity to explore innovative incentive provisions to reduce administrative burdens and simplify the process, particularly when working with the economies of scale available with MURBs.

⁸⁷ One way to target lower-income private market rentals is a combined retrofit mortgage and grant program, as detailed in the [ILEO Retrofit and Housing Security Advisory Group Summary Report](#).⁸⁸ Marketing incentives through contractors could help facilitate speedy deployment in replacement of failure scenarios. While BC Hydro is currently unwilling to revisit on-bill financing for individual homeowners, the utility could consider rental MURB on-bill financing or on-bill tariffs for rental building owners to cover the upfront cost of upgrades.

To address the range of retrofit needs for different building types and tenant populations,

incentive programs could integrate a menu of options, prioritizing those most vulnerable and taking care to consider the specific needs of Indigenous communities, rural, and remote communities, non-profit providers and cooperatives, and population groups including immigrants, those living with disabilities or health challenges, seniors, and other marginalized groups.⁸⁹

Enforcement: Grants or loans to building owners should specify covenant details in the grant or financing agreement, and require repayment and fines in the case of non-compliance. Other enforcement options include placing deed restrictions or conducting annual compliance checks.

Building owner payment of utility bills

Protecting tenants from unaffordable energy bills

This policy would require that all utility bills be paid by the owner of the rental, as is already the case in some units. A split where owners are paying for central heating and hot water while tenants are paying for electricity in their

units is currently quite common, in which case this change would move electricity bills to the owner.

Advantages: This approach would remove the financial aspect of the split incentive barrier, increasing the incentive for building owners to increase efficiency rather than freeriding on tenants using and paying for electricity-powered in-unit systems to supplement lacking building systems.

Disadvantages: A risk is that without standards regarding temperature, ventilation, air quality, and energy efficiency, it is not certain that any of those factors would improve or even be maintained. Tenants noted that this policy would require strong parameters and enforcement to avoid further reducing their agency, as it could result in increased building owner or management control over energy use in units.

Implementation and enforcement: The Residential Tenancy Act would need to specify building owners' responsibility for paying all utility costs. This would create an enforcement pathway via the RTB.





Recommendations

Everyone needs a safe and healthy home to shelter from heat, cold, and air pollution. Informed by the interviews and research conducted in developing this report, we call on all levels of government to:

- **Protect people from extreme weather by mandating safe temperature ranges in rental units**
- **Enable energy efficiency and cost transparency by mandating energy labelling for all buildings**
- **Support energy conservation, reduced pollution and healthy rental housing with targeted funding for upgrades to clean, safe, and efficient building energy systems**

These recommendations should be implemented concurrently to most effectively address concerns of health and safety, low-carbon resilience, and affordability. All should include stipulations that protect tenants' human rights, security of tenure, and health. Adopted together, the following proposals would serve to improve tenants' health by mitigating temperature extremes, improving energy efficiency, making energy performance data available, and addressing cost barriers for building owners who cannot afford upgrades.

1) Temperature requirements and cooling rights

We recommend the adoption of maximum temperature standards as a flexible, performance-based solution to the public

health threat of extreme heat. We encourage all municipal governments to adopt a standards of maintenance bylaw requiring a 21-26 °C temperature range in rental units. Applicable provincial legislation, including the Residential Tenancy Act and the Strata Property Act, should be updated in tandem to provide consistency across the province and support municipalities' legal rights to regulate their rental housing stock in this manner.

Additionally, since the 21-26 °C temperature range may not sufficiently protect all people, standards should also include the right for tenants to add additional cooling to their units, even if the unit is within the regulated range. Any temperature measures should ensure healthy indoor air quality. In many cases there may be synergies to improve temperatures, ventilation, and indoor air quality (e.g. via added air filtration) simultaneously.

Enforcement should not rely solely on tenants reporting noncompliance, which as explored above, is not an effective or equitable mechanism. Proactive monitoring and inspections, engagement to help owners come into compliance, as well as tenant education and anonymous reporting should be available. Particularly in cases where building owners are known to be negligent, compliance can be checked via in-unit monitors for temperature, humidity, and air quality, which can be placed in cooperation with tenants and deliver data remotely via a mobile app.⁹⁰

2) Energy efficiency rating & disclosure of utility costs

We recommend mandatory energy assessment and labelling of all rental units, and mandatory disclosure of this label along with utility costs at the time of listing any unit for rent or sale. This would serve to address data and information gaps faced by all parties, including policy makers, tenants, as well as property owners, managers, and buyers. The development of home energy labels, which both the BC and federal governments have committed to, should be extended to all new and existing housing units regardless of tenure.⁹¹ This will also enable future minimum efficiency rating requirements as needed to reduce building stock emissions.

Such requirements could be included in the RTA, the forthcoming BC Existing Buildings Renewal Strategy, and the federal renters' bill of rights.⁹² Existing energy efficiency assessment systems would provide a starting point, but differential impacts of units within a MURB are to be addressed. Additional exploration is also required on how energy efficiency rating systems could incorporate health and safety performance, as well as climate adaptation and resilience, including major climate hazards such as extreme heat and poor air quality in future climate scenarios.

3) Financial support

To address the concern regarding the affordability of new temperature and energy efficiency requirements, we recommend the provision of financial incentives supported by all levels of

government, focused on rental buildings, and attached to strong, actively enforced tenant protections, including tenure and affordability covenants. Non-profit and cooperative housing, in particular, will need funding to comply with building and alteration codes, equipment regulations, energy efficiency standards, and temperature requirements.^v

A financing program that streamlines processes for deep retrofits of rental buildings, such as a tax incentive or a combined mortgage and grant program, could provide the needed stimulus and administrative support for building owners, while protecting affordability and tenure, and ensuring tenant participation and benefits. We recommend that BC Hydro consider the option to create building-level on-bill financing or tariff specifically to enable retrofits in MURBs. Existing and forthcoming residential retrofit programs aimed at renters, including the CleanBC Better Homes Energy Savings Program and the forthcoming Canada Greener Homes Affordability Program, should clearly stipulate affordability covenants, health and well-being requirements, and methods of enforcement.

Financial support for basic utility costs for low-income households, along with disconnection bans for high-energy-burden households, are also recommended as a measure to increase public health and safety. Such supports could prevent illness caused by not being able to afford basic energy services and by the accompanying financial stress, and could also offset possible cost increases of health, safety and energy efficiency upgrades for tenants.

^v For case studies on affordable housing compliance with building performance standards, see Jarrah, A., Garfunkel, M. & Ribeiro, D. (2024). Nobody left behind: Preliminary review of strategies to support affordable housing compliance with building performance standards. American Council for an Energy-Efficient Economy [ACEEE]. www.aceee.org/research-report/b2401



Housing considerations

The home energy issues discussed in this report are unlikely to be resolved if wider housing injustices are not addressed. Many organizations have detailed recommendations for the progressive realization of the right to housing. For instance, the BC General Employee Union's **Affordable BC** campaign calls for public housing, inclusionary zoning, land value capture tax, and vacancy control.^{vi} First United's **Law Reform Platform**

proposes specific Residential Tenancy Act amendments to address evictions and other issues facing tenants.⁹³ The BC Poverty Reduction Coalition's **Blueprint for Justice** as well as ACORN Canada's **National Housing Platform** provide detailed recommendations on the intersections of housing, poverty, and climate justice.

Urgent action is required to reverse financialization and retain existing rental housing stock, which is being lost far more rapidly than new units are built.

vi Also see Aiello, D. (2023). Flipping the Script on Vacancy Control: A Critical (Re)evaluation of Rent Control Literature and Policy in the Struggle for Housing Security in B.C. <https://www.affordablebc.ca/vacancycontrolreport>

Continued and sufficient investment in rental protection funds is one way to counter this trend.^{vii} Examples of municipal action include residential rental tenure zoning and moratoria on strata conversions, both implemented in the City of New Westminster. More specific and proactively enforced healthy housing standards could ensure that these existing rental units do not put the health and lives of their occupants at risk.

The BC Rental Housing Coalition's **Affordable Housing Plan** for BC recommends building new non-profit housing and adequately funding existing units.⁹⁴ Participants in Ecotrust Canada's **2023 Home Energy Justice Forum** noted that "an increase in cooperative, non-profit and public housing would be a more effective pathway to ensuring energy rights for tenants than attempting to either incentivize or regulate building owners to improve rental suites."⁹⁵ The Coalition's plan makes the economic case for such investment and calls for a more integrated approach, considering housing as a social determinant of health. It also suggests the expansion of energy efficiency programs, and the development of a renter's grant to integrate rent assistance programs and ensure everyone has sufficient funds to cover essential housing costs.

The call for **health in all policies** applies to this issue, as does the need for equity and justice. The report **Preserving, Protecting,**

and Building Climate-Resilient Affordable Housing identifies benefits and examples of holistic approaches and provides guiding questions and other resources.⁹⁶ More broadly, the **Extreme Heat and Human Rights in the Context of Climate Change** report details the human rights impacts of heat on different populations in all aspects of life, and makes specific policy recommendations for all levels of governments, institutions, and companies.⁹⁷ Improved cross-sectoral and cross-ministerial collaboration is required to maximize the benefits of interventions.



vii BC established a \$500 million fund in 2023, see Rental Protection Fund (n.d.). The most affordable housing we have is the housing we've already got. Retrieved April 8, 2024, from <https://rentalprotectionfund.ca/>

The federal government announced a \$1.5 billion Canada Rental Protection Fund in April 2024. See Office of the Prime Minister (2024, April 4). Protecting and expanding affordable housing. <https://www.pm.gc.ca/en/news/news-releases/2024/04/04/protecting-and-expandingaffordablehousing>



Conclusion

Tenants who face high energy cost burdens and adverse health impacts due to energy inefficient and unsafe rental units currently have little recourse to sustainably improve their situation. However, multiple technologies and policy tools are available to address these challenges.^{viii} There are clear pathways to reduce GHGs from residential buildings, to adapt and increase resilience to the present and future impacts of climate change, and to improve tenants' health and well-being. Proactive intervention is key to reducing needless suffering, burdens on the health care system, economic losses, and overburdened physical and social infrastructure during extreme weather events. For too long, tenants have been underserved by retrofit initiatives, and the costs of this failure are high and intensifying. As overlapping climate, housing, and affordability crises intensify, we cannot afford to delay action any further.

This report has focused on tenants' challenges at the intersections of energy efficiency and health, and their intensifying needs as a result of climate change. Practical solutions can be implemented now and improved over time. Setting

safe temperature standards requiring all rental units to be able to maintain 21-26°C in provincial law and municipal bylaws, including the right to cooling, assessing and labelling the energy efficiency and utility costs of every home, and providing targeted financial incentives to support upgrades, represent a way forward. Safe temperature standards can prevent needless large-scale human suffering and drastically improve the lives and health of tenants in BC.

Approaches will be most effective if they integrate energy efficiency, GHG reductions, climate resilience, health, poverty reduction, and housing objectives as much as possible. It was clear in each conversation with our tenant participants that their home energy struggles were inextricable from the wider housing crisis, which constricts their options and agency, trapping many in situations that negatively impact their health and well-being.

viii For examples and social impact lessons learned from European renovation initiatives, see: European Federation of National Organisations Working with the Homeless (2022). How to avoid a renovation wave: Report on the social impacts of the Renovation Wave. https://www.feantsa.org/public/user/Resources/reports/2022/1_How_to_avoid_a_Renoviction_wave.pdf

For a list of rental energy efficiency policies in Canada and around the world, see Kantamneni, A. & Haley, B. (2023). Energy efficiency in rental housing: Policy mixes for efficient, affordable and secure housing. Efficiency Canada, pp. 54-126. https://www.efficiencycanada.org/wp-content/uploads/2023/07/energy_efficiency_in_rental_housing-1.pdf

References

- 1 Government of Canada (2023, June 29). *Section 7 – Life, liberty and security of the person*. <https://www.justice.gc.ca/eng/csj-sjc/rfc-dlc/ccrf-ccd1/check/art7.html>
- 2 Schmunk, R. (2023, September 1). Vancouver's architecture, by design, was never meant to handle extreme heat. *CBC News*. <https://www.cbc.ca/news/canada/british-columbia/vancouver-architecture-never-designed-for-extreme-heat-1.6953003>
- 3 Statistics Canada (2023, November 15). *Census profile, 2021 census of population*. <https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E>
- 4 Ibid.
- 5 Statistics Canada (2022, July 21). *Table 46-10-0064-01: Housing indicators, by tenure including first-time homebuyer status*. <https://doi.org/10.25318/4610006401-eng>
- 6 Statistics Canada (2023). *2021 census of population*.
- 7 Statistics Canada (2022). *Housing indicators*.
- 8 Statistics Canada (2023). *2021 census of population*.
- 9 Statistics Canada (2023, October 4). *A tale of two renters: Housing affordability among recent and existing renters in Canada*. <https://www12.statcan.gc.ca/census-recensement/2021/as-sa/98-200-X/2021016/98-200-X2021016-eng.cfm>
- 10 Canada Mortgage and Housing Corporation (2024, January 31). *Rental market report*. <https://www.cmhc-schl.gc.ca/professionals/housing-markets-data-and-research/market-reports/rental-market-reports-major-centres>
- 11 Pomeroy, S. (2022). *Updating analysis on erosion of lower rent stock from 2021 census, p. 3*. <https://chec-ccrl.ca/wp-content/uploads/2022/10/Updated-Analysis-on-Housing-Erosion-from-2021-Census-Steve-Pomeroy.pdf>;
- National Housing Council (2023). *Renewing Canada's national housing strategy*. https://cms.nhc-cn1.ca/media/PDFs/NHS_Report-FINAL.pdf
- 12 Canadian Centre for Housing Rights (2024, March 27). *Canada is failing to tackle its housing and homelessness crisis, and the international community is watching*. <https://housingrightscanada.com/canada-is-failing-to-tackle-its-housing-and-homelessness-crisis-and-the-international-community-is-watching/>
- 13 Gupta, P. S. (2022). *Race and security of housing: Security of tenure in Canada*. The Office of the Federal Housing Advocate. https://publications.gc.ca/collections/collection_2023/ccdp-chrc/HR34-14-2023-eng.pdf
- 14 Canadian Centre for Housing Rights (2022). "Sorry, it's rented." *Measuring discrimination against newcomers in Toronto's Rental Housing Market*. <https://housingrightscanada.com/wp-content/uploads/2022/11/CCHR-Sorry-its-rented-Discrimination-Audit-2022.pdf>
- 15 Canada Mortgage and Housing Corporation (2023). *Denied renting: Lived experiences of rental discrimination*. <https://assets.cmhc-schl.gc.ca/sites/cmhc/professional/housing-markets-data-and-research/housing-research/research-reports/2023/denied-renting-lived-experiences-rental-discrimination-en.pdf>

16 Centre for Equality Rights in Accommodation, National Right to Housing Network & Social Rights Advocacy Centre (2021). *Housing discrimination & spatial segregation in Canada*. <https://www.ohchr.org/sites/default/files/Documents/Issues/Housing/SubmissionsCFIhousingdiscrim/CERA-NRHN-SRAC.pdf>

17 Statistics Canada (2023, October 18). *Table 46-10-0070-01: Investment status of residential properties*. <https://doi.org/10.25318/4610007001-eng>

18 Canadian Underwriter (2017, August 3). *17% of secondary rental suites in Ontario, Alberta and B.C. considered illegal: Square One Insurance survey*. <https://www.canadianunderwriter.ca/in-surance/17-secondary-rental-suites-ontario-alberta-b-c-considered-illegal-square-one-insurance-survey-1004118594/>

19 Government of British Columbia (2023). *Climate change accountability report*. https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/cleanbc/2023_climate_change_accountability_report.pdf

20 Vérin, A., Poirier, M. (2024). *Pace of Progress: Achieving the necessary momentum to meet Canada's 2050 climate goals in the residential building sector*. Building Decarbonization Alliance. <https://transitionaccelerator.ca/wp-content/uploads/2024/02/Pace-of-Progress-Report-EN%E2%80%9393V1.pdf>

21 Perucca, J., Freeman, S. & Farha, L. (2023). The true cost of financialization: Housing, human rights, and climate change. *Journal of City Climate Policy and Economy*, 2(1), University of Toronto Press. <https://doi.org/10.3138/jccpe-2023-0201;>

Shokry, G., Connolly, J. J. T., & Anguelovski, I. (2020). Understanding climate gentrification and shifting landscapes of protection and vulnerability in green resilient Philadelphia. *Urban Climate*, 31. <https://doi.org/10.1016/j.uclim.2019.100539>

22 ACORN Canada (2024). *Rent gouging & retrofits: Tenants' perspective of the CIB financing deal with Avenue Living*. <https://acorncanada.org/wp-content/uploads/2024/04/Retrofits-Rent-Gouging-Report.pdf>

23 Best, K. & Jouzi, Z. (2022). Climate gentrification: Methods, gaps, and framework for future research. *Frontiers in Climate*, 4. <https://doi.org/10.3389/fclim.2022.828067>

24 International Energy Agency (2019). *Multiple Benefits of Energy Efficiency*. <https://www.iea.org/reports/multiple-benefits-of-energy-efficiency>

25 Matz, C. J. et al. (2014). Effects of age, season, gender and urban-rural status on time-activity: Canadian Human Activity Pattern Survey 2 (CHAPS 2). *International Journal of Environmental Research and Public Health*, 11(2), p. 2109. <https://doi.org/10.3390/ijerph110202108>

26 Davillas, A., Burlinson, A. & Liu, H.-H. (2022). Getting warmer: Fuel poverty, objective and subjective health and well-being. *Energy Economics*, 106. <https://doi.org/10.1016/j.eneco.2021.105794>

27 Riva, M., Kingunza Makasi, S., O'Sullivan, K. C., Das, R. R., Dufresne, P., Kaiser, D., & Breau, S. (2023). Energy poverty: an overlooked determinant of health and climate resilience in Canada. *Canadian journal of public health*, 114(3), 422–431. <https://doi.org/10.17269/s41997-023-00741-0>

28 Nicol, S., Roys, M. & Garrett, H. (2015). *Briefing paper: The cost of poor housing to the NHS*. BRE Trust. <https://files.bregroup.com/bre-co-uk-file-library-copy/filelibrary/pdf/87741-Cost-of-Poor-Housing-Briefing-Paper-v3.pdf>

29 REHVA - Federation of European Heating, Ventilation and Air Conditioning Associations (2014). *HealthVent: Health-based ventilation guidelines for Europe*. <https://www.rehva.eu/eu-projects/project/healthvent;>

Hamilton, I., Milner, J., Chalabi, Z., Das, P., Jones, B., Shrubsole, C., Davies, M., & Wilkinson, P. (2015). Health effects of home energy efficiency interventions in England: A modelling study. *BMJ Open*, 5(4), 1-11. <https://doi.org/10.1136/bmjopen-2014-007298>

30 Nicol, Roys & Garrett, (2015);

Chatterjee, S. & Uerge-Vorsatz, D. (2021). Measuring the productivity impacts of energy-efficiency: The case of high-efficiency buildings. *Journal of Cleaner Production*, 318(10). <https://doi.org/10.1016/j.jclepro.2021.128535>

31 Grimes, A., Denne, T., Howden-Chapman, P., Arnold, R., Telfar-Barnard, L., Preval, N. & Young, C. (2011). *Cost benefit analysis of the Warm Up New Zealand: Heat Smart Programme*. Ministry of Economic Development. <https://www.aucklandcouncil.org.nz/media/2011/06/Warm-Up-New-Zealand-Heat-Smart-Programme-Final-Report.pdf>

govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/unitary-plan/history-unitary-plan/documentssection32reportproposedaup/appendix-3-8-5.pdf

32 Vicedo-Cabrera, A. M. et al. (2021). The burden of heat-related mortality attributable to recent human-induced climate change. *Nature Climate Change*, 11, pp. 492-500. <https://doi.org/10.1038/s41558-021-01058-x>

33 Zhao, Q. et al. (2021). Global, regional, and national burden of mortality associated with non-optimal ambient temperatures from 2000 to 2019: a three-stage modelling study. *The Lancet Planetary Health*, 5(7), E415-425. [https://doi.org/10.1016/S2542-5196\(21\)00081-4](https://doi.org/10.1016/S2542-5196(21)00081-4)

34 ACORN Canada (2023). *Tenant guide, Calgary ACORN: Housing justice, tenant union, eco justice*, pp. 9 & 11. <https://acorncanada.org/wp-content/uploads/2023/04/Calgary-ACORN-Tenant-Guide.pdf>

35 City of Vancouver (2023). *Climate change adaptation strategy: 2024-2025 update and action plan*. p. 13. <https://vancouver.ca/files/cov/vancouver-climate-change-adaptation-strategy-2024-25.pdf>

36 O'Sullivan, K. C., Olin, C. V., Pierse, N., Howden-Chapman, P. (2023). Housing: The key infrastructure to achieving health and wellbeing in urban environments. *Oxford Open Infrastructure and Health*, 1. <https://doi.org/10.1093/ooih/ouad001>

37 Environment and Climate Change Canada (2023, June 27). *Funding climate change adaptation*. <https://www.canada.ca/en/environment-climate-change/news/2023/06/funding-climate-change-adaptation.html>

38 Eyquem, J. L, and Feltmate, B. (2022). *Irreversible Extreme Heat: Protecting Canadians and Communities from a Lethal Future*. Intact Centre on Climate Adaptation, University of Waterloo, pp. 20-22. https://www.intactcentreclimateadaptation.ca/wp-content/uploads/2022/04/UoW_ICCA_2022_04-Irreversible-Extreme-Heat.pdf

39 Laboy, M. & Fannon, D. (2021). RHOnDA: An online tool to help homeowners and tenants increase resilience. In N.B. Rajkovich & S.H. Holmes (Eds.), *Climate adaptation and resilience across scales: From buildings to cities*, p. 74. Routledge. <https://doi.org/10.4324/9781003030720>

40 Jessel, S., Sawyer, S. & Hernández, D. (2019). Energy, poverty, and health in climate change: A comprehensive review of an emerging literature. *Frontiers in Public Health*, 7(357), p. 14. <https://doi.org/10.3389/fpubh.2019.00357>;

Sunderland & Cueto (2022, September). *Energy poverty handbook*. <https://extranet.greens-efa.eu/public/media/file/1/7858>

41 Kesik, T., O'Brien, W. & Ozkan, A. (2020). *Towards a standardized framework for thermal resilience modeling and analysis*. 2020 building performance analysis conference and SimBuild co-organized by ASHRAE and IBPSA-USA, p. 61. https://publications.ibpsa.org/proceedings/simbuild/2020/papers/sim-build2020_C008.pdf

42 Wilson, A. (2021). Passive survivability: understanding and quantifying the thermal habitability of buildings during power outages. In N.B. Rajkovich & S.H. Holmes (Eds.), *Climate adaptation and resilience across scales: From buildings to cities*, p. 141-152. Routledge. <https://doi.org/10.4324/9781003030720>

43 Carman, T., Ward, L. & McMillan, D. (2023, September 13). No escape from the heat. *CBC News*. <https://www.cbc.ca/newsinteractives/features/no-escape-from-the-heat>

44 ACORN Canada (2023). *Extreme heat & climate justice report*, p. 2. <https://acorncanada.org/wp-content/uploads/2023/09/National-Extreme-Heat-Report-2023-1.pdf>

45 Middlemiss, L. (2022). Who is vulnerable to energy poverty in the Global North, and what is their experience? *WIREs Energy and Environment*, 11(6), pp. 7-9. <https://doi.org/10.1002/wene.455>

46 Eyquem, J. L, and Feltmate, B. (2022), p. 22.

47 Kenley, M. (2022). *Recommendations for Municipalities: Focus: Extreme Heat and Rental Housing*, p. 3. https://cela.ca/wp-content/uploads/2022/09/1488-Extreme_Heat_and_Rental_Housing_Recommendations-1.pdf

48 Taylor, J., McLeod, R., Petrou, G., Hopfe, c., Mavrogianni, A., Castaño-Rosa, R., Pelsmakers, S., Lomas, K. (2023). Ten questions concerning residential overheating in Central and Northern Europe. *Building and Environment*, 234, p. 4. <https://doi.org/10.1016/j.buildenv.2023.110154>.

- 49 Taylor, J. et al. (2023), p. 5.
- 50 United States Environmental Protection Agency (2023). *What is ozone?* <https://www.epa.gov/ozone-pollution-and-your-patients-health/what-ozone>
- 51 InterAcademy Partnership (2022). *Health in the climate emergency: A global perspective*, p. 25. <https://www.interacademies.org/publication/health-climate-emergency-global-perspective>
- 52 Henderson, S. B., Nguyen, P. D. M., Yao, J. A. & Lee, M. J. (2024). The public health paradox of wildfire smoke. *BC Medical Journal*, 66(3). <https://bcmj.org/bc-centre-disease-control/public-health-paradox-wildfire-smoke>
- 53 McIlroy, J., Agar, B., & Harris, E. (2024). *Better buildings for all: Relieving energy poverty through deep retrofits*, p. 6. The Pembina Institute. <https://www.pembina.org/pub/better-buildings-all>
- 54 Ibid., p. 26.
- 55 Riva, M., Kingunza Makasi, S., Dufresne, P., O'Sullivan, K., Toth, M. (2021). Energy poverty in Canada: Prevalence, social and spatial distribution, and implications for research and policy. *Energy Research & Social Science*, 81. <https://doi.org/10.1016/j.erss.2021.102237>
- 56 Das, R., Martiskainen, M. & Li, G. (2022). Quantifying the prevalence of energy poverty across Canada: Estimating domestic energy burden using an expenditures approach. *The Canadian Geographer*, 66(3), p. 14. <https://doi.org/10.1111/cag.12750>
- 57 Yu, Y. & Kittner, N. (2024). Hot or cold temperature disproportionately impacts U.S. energy burdens. *Environmental Research Letters*, 19(1), p. 10. <https://doi.org/10.1088/1748-9326/ad1724>
- 58 McIlroy, J. et al. (2024), p. 8.
- 59 Yu, Y. & Kittner, N. (2024), p. 10.
- 60 Government of British Columbia (2023). *What we heard: Engagement summary report updating TogetherBC: B.C.'s poverty reduction strategy*. <https://www2.gov.bc.ca/assets/gov/british-columbians-our-governments/initiatives-plans-strategies/poverty-reduction-strategy/what-we-heard.pdf>
- 61 McIlroy, J. et al. (2024), p. 29.
- 62 Ibid., p. 15.
- 63 Shapira, S. & Teschner, N. (2023). No heat, no eat: (Dis)entangling insecurities and their implications for health and well-being. *Social science & medicine*, 336. <https://doi.org/10.1016/j.socscimed.2023.116252>
- 64 Introba (2023). *Low-income and social housing electrification roadmap*, p. 16. <https://www.bchousing.org/sites/default/files/media/research/Low-Income-and-Social-Housing-Electrification-Roadmap.pdf>
- 65 Yumagulova, L. Okamoto, T., Crawford, E., & Klein, K. (2022). *Lived experience of extreme heat in B.C.: Final report to the Climate Action Secretariat*. https://www2.gov.bc.ca/assets/gov/environment/climate-change/adaptation/resources/lived_experience_of_extreme_heat_in_bc_final_report.pdf
- 66 Public Health Agency of Canada (2022). *Chief Public Health Officer of Canada's report on the state of public health in Canada 2022: Mobilizing public health action on climate change in Canada*, pp. 18-19. <https://www.canada.ca/en/public-health/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/state-public-health-canada-2022.html>
- 67 ACORN Canada (2023). *Extreme heat & climate justice report*.
- 68 Kenley, M. (2022), pp. 4-6.
- 69 Alberta Health (2012). *Minimum housing and health standards*. <https://open.alberta.ca/publications/minimum-housing-and-health-standards>
- 70 Department for Communities and Local Government (2006). *Housing Health and Safety Rating System: Guidance for landlords and property related professionals*. <https://assets.publishing.service.gov.uk/media/5a799834ed915d0422069a0a/150940.pdf>
- 71 Canadian Underwriter (2017, August 3).
- 72 Vancouver Coastal Health (2023). *Policy tools to create and support cooler, safer indoor living spaces*, p. 8. <https://www.vch.ca/en/media/19796>
- 73 Ibid.
- 74 Residential Tenancy Branch (n.d.). *Air conditioning (AC) units*, p. 1. <https://www2.gov.bc.ca/>

[assets/gov/housing-and-tenancy/residential-tenancies/information-sheets/rtb-acunits.pdf](#)

75 ACORN Canada (2023). *Extreme heat & climate justice report*.

76 DTES SRO Collaborative. (2022). *SRO extreme heat preparedness and response initiative*, p. 29. <https://srocollaborative.org/wp-content/uploads/2023/05/HeatEvaluationReport.pdf> –

77 Residential Tenancy Branch (n.d.), p. 2.

78 <https://www.cbc.ca/news/canada/british-columbia/strata-fine-heat-pump-richmond-1.7242968>

79 Ige, J., Pilkington, P., Orme, J., Williams, B., Prestwood, E., Black, D., Carmichael, L. & Scally, G. (2019). The relationship between buildings and health: A systematic review. *Journal of Public Health*, 41(2), 121-132. <https://doi.org/10.1093/pubmed/fty138>

Perrotta, K. (2023). *Climate change, population health and health equity: Public health strategies and five local climate solutions that produce health and health equity benefits*. Canadian Public Health Association (CPHA), Canadian Health Association for Sustainability and Equity (CHASE), Ontario Public Health Association (OPHA). https://www.cpha.ca/sites/default/files/uploads/resources/climateaction/2023-11-net-zero-final-report_e_final.pdf

80 International Energy Agency (2019). *Multiple Benefits of Energy Efficiency*. <https://www.iea.org/reports/multiple-benefits-of-energy-efficiency>

81 IEA (2014), p. 22.

82 Institute of Medicine (2011). *Climate Change, the Indoor Environment, and Health*. The National Academies Press. <https://doi.org/10.17226/13115>

83 Government of Canada (2024, May 3). *Solving the Housing Crisis: Canada's Housing Plan*, p. 18. <https://www.infrastructure.gc.ca/alt-format/pdf/housing-logement/housing-plan-logement-en.pdf>

84 Government of British Columbia (2022). *2022 Climate Change Accountability Report: Supporting Material*, p. 13. https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/clean-bc/2022-ccar/2022_accountability_report_supporting_materials.pdf

85 Brent, T. (2022, August 24). Rent prices in France frozen for least energy efficient properties. *The Connexion*. <https://www.connexionfrance.com/practical/rent-prices-in-france-frozen-for-least-energy-efficient-properties/228621>

86 Jarrah, A. & Tanabe, K. (2022). Toolkit: 1. Responding to renter challenges with integrated energy efficiency and anti-displacement strategies. In *Energy Equity for Renters: A Toolkit to Expand Energy Efficiency and Preserve Affordable Housing*. Washington, DC. American Council for an Energy-Efficient Economy. <https://www.aceee.org/toolkit/2022/11/energy-equity-renters-toolkit>

Puget Sound Regional Council (2020). *Affordability covenants*. <https://www.psrc.org/media/2025>

87 Introba (2023).

88 United Way Inclusive Local Economic Opportunity (ILEO) (2023). *Retrofit and housing security advisory group summary report*. https://www.united-waygt.org/wp-content/uploads/2023/06/ILEO_RetrofitAdvisoryReport_June2023.pdf

89 Aboriginal Housing Management Association (2023). *Lived experience & stories of extreme heat among Indigenous households in British Columbia*. <https://static1.squarespace.com/static/573e02ab62cd943531b23633/t/661da45b-6f2a044d1eab8f92/1713218677064/AHMA+Cooling+Needs+Assessment+-+Final.pdf>

90 Carman, T. & McMillan, D. (2023, September 13). How CBC measured heat in homes in 5 Canadian cities. *CBC News*. <https://www.cbc.ca/news/investigation/urban-heat-project-methodology-1.6963593>

91 Government of British Columbia (2021). *CleanBC Roadmap to 2030*, p. 42. https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/cleanbc/cleanbc_roadmap_2030.pdf

Government of Canada (2024, May 3), p. 18.

92 Government of British Columbia (2021). *Existing buildings renewal strategy engagement summary*. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/construction-industry/building-codes-and-standards/reports/existing_buildings_renewal_strategy_engagement_summary_september_december_2021_pdf.pdf

93 Marsden, S. (2024). *Everyone needs a home: Solutions for preventing homelessness, evictions, and*

displacement. *First United*, pp. 44-68. <https://firstunit-ed.ca/resources/law-reform-platform/>

94 BC Rental Housing Coalition (n.d.) *An affordable housing plan for BC*, p. 17. https://housingcentral.ca/SITES/HousingCentral/Advocacy/BC_s_Affordable_Housing_Plan/HousingCentral/Affordable_Rental_Housing_Plan.aspx?hkey=e2b2a8fc-486b-4a61-bd71-513f23c2990c

95 Ecotrust Canada (2023). *Home energy justice forum proceedings report*, p. 21. https://ecotrust.ca/wp-content/uploads/2023/08/EnergyProceedingsReport_EC_2023-WEB.pdf

96 Cohen, O., McTarnaghan, S. & Junod, A. (2024). *Preserving, Protecting, and Building Climate-Resilient Affordable Housing: A Framework for Local Action*. Urban Institute. <https://www.urban.org/research/publication/preserving-protecting-and-building-climate-resilient-affordable-housing>

97 Climate Rights International (2024). *'I can't cool': Extreme heat and human rights in the context of climate change*. <https://cri.org/wp-content/uploads/2024/05/CRI-Heat-Report-I-Cant-Cool-1.pdf>



Vancouver Office

225 West 8th Avenue, Suite #300
Vancouver, BC V5Y 1N3

Prince Rupert Office

425-309 Second Avenue West
Prince Rupert, BC V8J 3T1

ecotrust.ca