

Building Retrofit Strategy

DRAFT: May 1, 2023

PLACEHOLDER PHOTO
IMAGE



Territory Acknowledgement

The District of Saanich lies within the traditional territories of the **Lekwungen** peoples known today as **Songhees** and **Esquimalt** Nations and the **WSÁNEĆ** peoples known today as **WJOLÉLP** (Tsartlip), **BOKÉĆEN** (Pauquachin), **STÁUTW** (Tsawout), **WSIKEM** (Tseycum) and **MÁLEXEŁ** (Malahat) Nations.

As we build formal government-to-government relationships with neighbouring First Nations governments, the District will look for opportunities to collaborate on actions and issues of mutual interest, including actions related to climate change. The District respectfully acknowledges the First Nations' long history of land stewardship and knowledge of the land and will look for opportunities to learn from and collaborate with First Nations to help us improve our community's resilience to a changing climate.

Acknowledgements

Thank you to those who contributed to the development of the Building Retrofit Strategy, including: Introba for providing data analysis, modelling and stakeholder engagement support; other District of Saanich departmental staff, partners and stakeholders who provided insights, expertise and feedback in the development of the Strategy; the Community Energy Association, who co-hosted our stakeholder workshop and continues to support local governments across BC in this critical work; BC Hydro who provided funding to support data gathering, analysis and modelling; and staff from the Capital Regional District and local governments across BC who continue to collaborate so we may all achieve our goals faster.

Executive Summary

The Climate Emergency is upon us, and accelerated action is needed across all sectors to achieve ambitious climate targets and avoid the most devastating of climate impacts. Retrofitting existing buildings to create resilient, zero-carbon buildings represents one of the largest opportunities for meaningful climate action in Saanich, while also improving comfort, health and affordability for residents. Despite considerable efforts over the past several years, Saanich is not on track to achieve our targets and must redouble our efforts towards electrifying our building stock and moving away from fossil fuels such as natural gas and oil. The Building Retrofit Strategy is intended to set detailed direction on how Saanich can achieve GHG reduction and resilience targets for existing buildings. It outlines 45 actions in the following five strategy areas:

1. Municipal Policy and Regulation
2. Policy and Regulatory Advocacy
3. Incentives and Support
4. Research, Partnerships and Collaboration
5. Demonstrating Leadership

Modelling completed for this strategy suggests that Provincial commitments must be enacted and complemented by early and ambitious action at the municipal level in order to meet both Saanich and Provincial sectoral targets for buildings and communities. While all actions are critical to achieving our goals. The following “High Impact Actions” have been identified as achieving direct emissions and resilience benefits and will be the highest priority efforts in the coming three years.

High Impact Actions:

- **Action PR1:** Implement mandatory building energy benchmarking and disclosure for large Part 3 buildings.
- **Action PR2:** Require the removal of oil heating systems by 2030.
- **Action PR8:** Support the Province’s Highest Efficiency Equipment Standard, and implement the early adoption pathway for local governments.
- **Action IN1:** Launch a Strata Energy Advisor Program in collaboration with regional partners.
- **Action IN2:** Scale up the Heat Pump Financing Program for Part 9 homes.
- **Action IN3:** Implement a low-income direct install program for fossil-fuel to heat pump conversions, subject to the findings of a feasibility study.
- **Action IN4:** Incentivize electrification through a Revitalization Tax Exemption (RTE) program for Part 3 Buildings.
- **Action LD1:** Upgrade all existing District facilities to be Zero Carbon and 100% renewably fueled, prioritizing electrification first.
- **Action LD2:** Upgrade District facilities to incorporate cooling and air filtration.
- **Monitoring and Reporting:** Develop and report on new resilience metric: Number and percentage of MURBs (buildings and units) at risk of overheating.

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1.0 Introduction

Our planet is in a state of climate emergency, and the devastating impacts of climate change are now being dealt with by British Columbians every year as we face increasing heat waves, floods, wildfires and more. The homes and buildings we live, work and play in are contributing to climate change, and are simultaneously unprepared for the “new normal” of extreme weather we are already experiencing. A shift away from fossil fuels to electrification and improvements to energy efficiency in our existing buildings have tremendous potential to not only reduce GHG emissions, but improve resilience, equity and affordability. Without the tools to require building retrofits, local governments must activate a range of actions and collaborate with all levels of government and diverse stakeholders to achieve a climate-ready building stock.

The purpose of the Community Building Retrofit Strategy is to:

- Improve our baseline building data, including more detailed analysis on building sector emissions;
- Determine whether current and planned building retrofit actions are sufficient to meet Saanich’s Climate Plan targets for mitigation and adaptation;
- Identify any gaps, necessary amendments, acceleration or additional actions needed to meet these targets;
- Provide information to higher levels of government regarding the impact of their building retrofit policies and programs, including any shortcomings or alternatives that would enable local governments to more effectively reduce emissions;
- Apply an equity lens to the development and prioritization of building retrofit actions to ensure implementation is addressing systemic inequities, improving housing outcomes and realizing other community co-benefits; and

- Develop a comprehensive action plan to achieve our building climate targets, including cost estimates and funding opportunities for implementation.

The Community Building Retrofit Strategy outlines 45 actions in five strategy areas required to achieve our 2030 and 2050 climate targets:

1. Municipal Policy and Regulation
2. Advocacy for Provincial Policy and Regulation
3. Incentives and Support
4. Research, Partnerships and Collaboration
5. Demonstrating Leadership

This document delivers on Climate Plan Action B2.6: Develop a comprehensive building retrofit strategy.



2.0 Towards a Climate Ready Building Stock

Accelerating retrofits in buildings across the community is critical to achieve Saanich's climate targets and ensure our buildings are resilient in the face of a changing climate. The Climate Plan established targets to reduce our community's greenhouse gas (GHG) emissions by 50% by 2030 (below 2007 levels) and achieve net-zero emissions by 2050, transition to 100% renewable energy by 2050 and prepare for a changing climate (Figure 1).

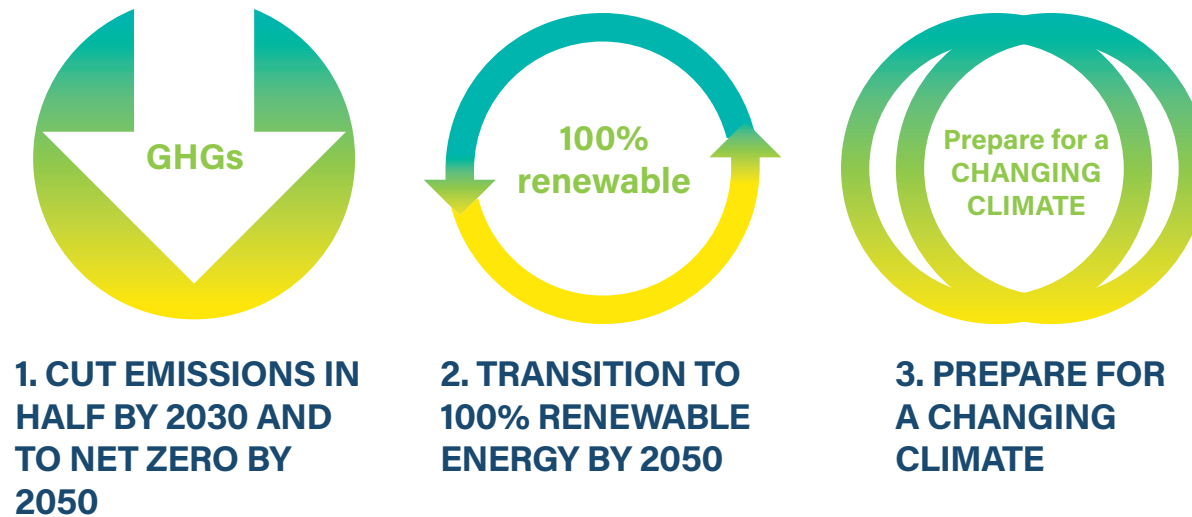
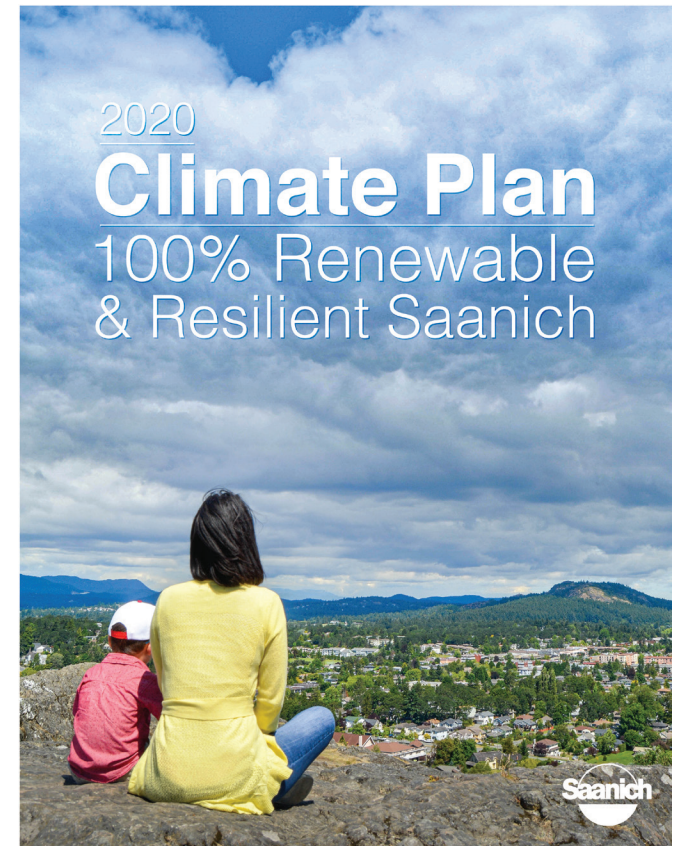


Figure 1: Climate Plan Goals

However, there are many other benefits to these investments. Improving the efficiency of buildings and shifting from fossil fuel space and water heating systems to electric heat pumps make buildings healthier and more comfortable for occupants, provides cooling, and reduces monthly energy costs, improving affordability. Investments in retrofits support the longevity of buildings and Saanich's housing stock, preserves the benefits of the embodied carbon they contain, and provide well-paying local jobs that help to stimulate the local economy.



2.1 Climate Resilience

Through the development of the Climate Plan, a high-level risk assessment was undertaken to assess how climate projections were likely to impact the community and inform the development of appropriate actions and responses. Hotter, drier summers are projected under climate change scenarios, with both the frequency and severity of heat events likely to increase significantly in the Capital Region¹ as illustrated in Figure 2. Given these projections, the health impacts from severe heat and wildfire smoke were identified as an area of high risk for Saanich. The fatal heat dome of June 2021 confirmed the severity of this risk, and the B.C. Coroner's Report on the event reported that 98% of deaths occurred indoors, revealing that overheating in buildings is an urgent area of vulnerability for our building stock². In addition, poor air quality

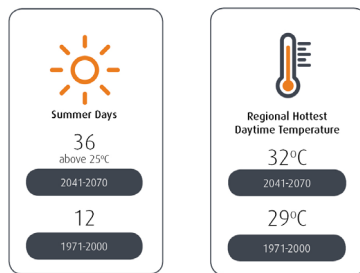


Figure 2: Climate Projections for the Capital Region (CRD, 2017)

Other vulnerabilities related to buildings are being addressed through other plans and strategies; for instance, wildland-urban interface fire risk and coastal flood risk have been or will be more deeply addressed through associated Climate Plan Actions including Action B6.3: Develop a Coastal Adaptation Strategy and Action C1.4: Update Wildfire Protection Plan and Interface Fire Hazard Development Permit Area.

events due to wildfire smoke has been common in recent years. Passive and mechanical cooling and ventilation systems are no longer considered a luxury to improve comfort but must be seen as essential to public health during these events.

Given the high risk score and the recent impacts of extreme heat and air quality in existing buildings, improving resilience in these areas is a core focus of this Strategy. Fortunately, there are many synergies between GHG reduction and improving resilience for buildings. For instance, improved envelopes and building efficiency help to maintain indoor temperatures during extreme weather events, while a shift towards electric heat pumps introduces an efficient cooling system that can accommodate increased air filtration while nearly eliminating GHG emissions.

Improving climate resilience is about more than just improving buildings or infrastructure; there is a social dimension to these issues, and a need to recognize that climate change does not impact everyone equally. Some populations have lower capacity to adapt, or may have higher exposure to a climate hazard, greater vulnerabilities, or consequence to the risk. The unequal burden and unjust risk and consequence of climate change on vulnerable populations was highlighted in the Coroner's analysis of the 619 heat-related deaths that occurred during the 2021 heat dome: the risk of heat-related death increased with chronic mental or physical illness or disability, age, social isolation, social or material deprivation, and lack of access to adequate cooling systems such as heat pumps and air conditioners. Certain demographics were more at-risk, including persons who are racialized, recent immigrants and Indigenous populations.

1. Capital Regional District. (2017, April). *Climate Projections for the Capital Region*. Available at crd.bc.ca/data
2. BC Coroners Service. (2022, June 7). *Extreme Heat and Human Mortality: A Review of Heat-Related Deaths in B.C. in Summer 2021*.

2.2 GHG Emission Reduction

Buildings are the second-largest source of Saanich’s community-wide GHG emissions after transportation, directly accounting for 146,000 tCO₂e in 2021, representing 31% of Saanich’s total community-wide emissions (Figure 3).

Of these building emissions, 43% are from single family homes (attached and detached), 13% are from multi-unit residential buildings (MURBs), 26% are from the commercial sector, and 18% are from the institutional sector (Figure 4).

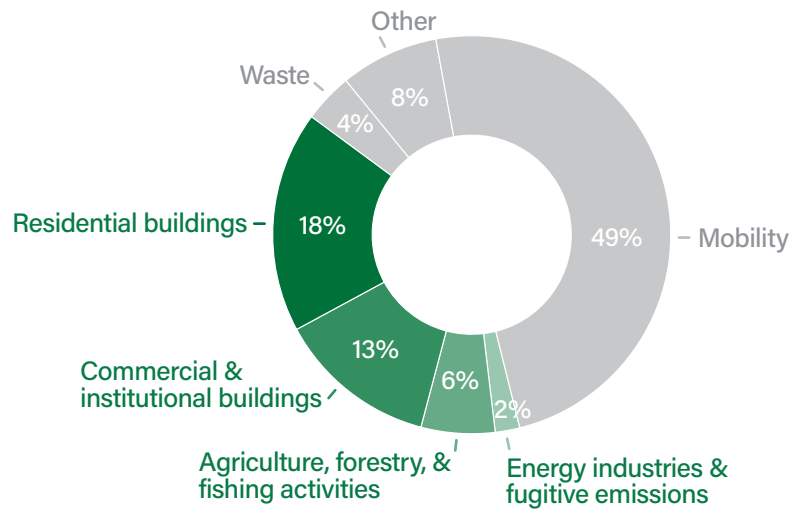


Figure 3: Community GHG Inventory, 2021

The use of fossil fuels, primarily for space and water heating represents 93% of emissions from the building sector. Natural gas contributes to 70% of our building emissions, while oil heating contributes another 19%.

Transitioning away from fossil fuels and improving building efficiency through retrofits is one of the most important strategy areas to achieve our climate targets and has the potential to reduce emissions by 18% as illustrated in Figure 5.

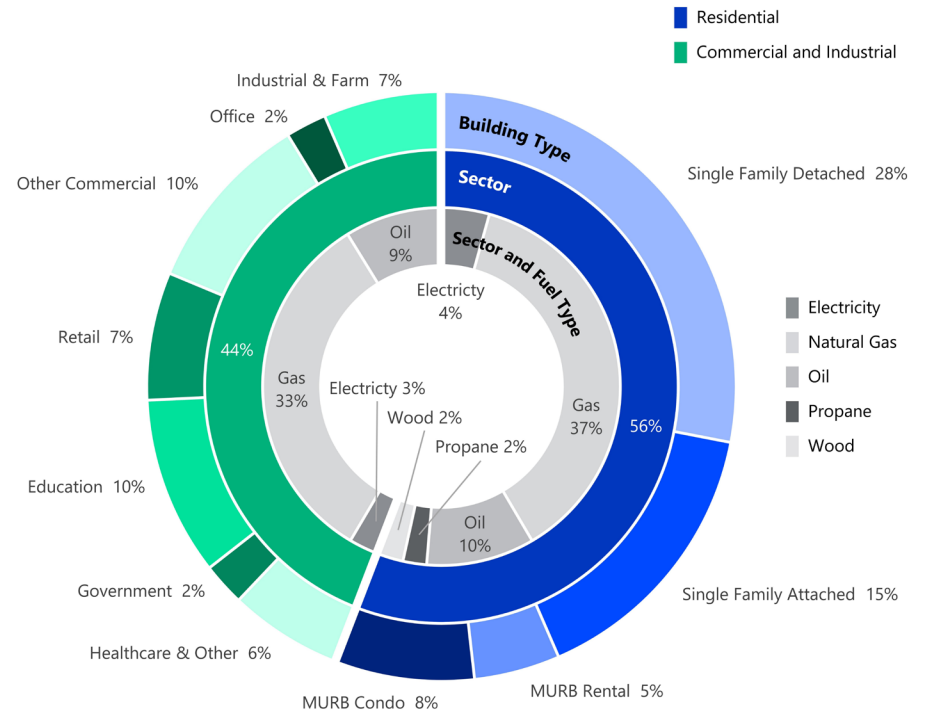


Figure 4: GHG emissions in Saanich by Building Type and Fuel Source, 2021

To realize this potential requires we achieve the following objectives, as outlined in the Climate Plan:

- 100% of oil heating replaced by heat pumps by 2030;

- 40% of natural gas space and hot water systems replaced with renewable sources by 2030 (100% by 2050), and
- 40% of all building envelopes upgraded by 2030 (80% by 2050).

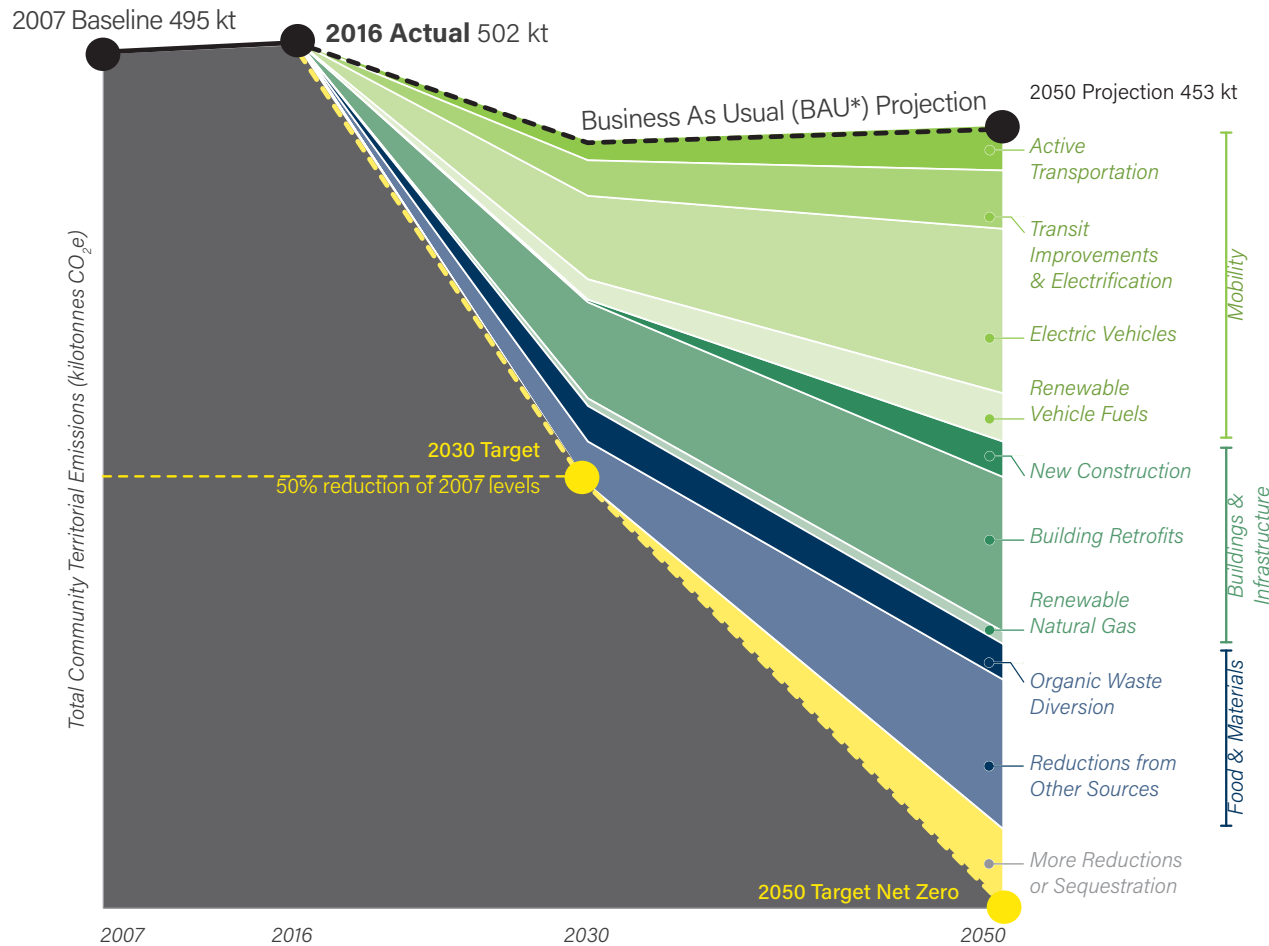


Figure 5: Saanich Climate Plan’s modelled pathway to reach net-zero GHG emissions by 2050

Embodied Carbon: A Case for Building Retrofits

A tremendous amount of energy and emissions is invested in buildings over the course of their lifecycle. The emissions associated with a building's ongoing heating, cooling, lighting and appliances is referred to as the operational carbon, whereas embodied carbon refers to the emissions that are invested in the materials and construction of the building itself, including during retrofits and the eventual deconstruction or demolition at the building's end-of-life (Figure 6). By far the largest contribution to embodied carbon is at the construction phase, where the emissions associated with harvesting, manufacturing, transporting and installing construction materials can represent 70-90% of a building's total embodied carbon footprint³.

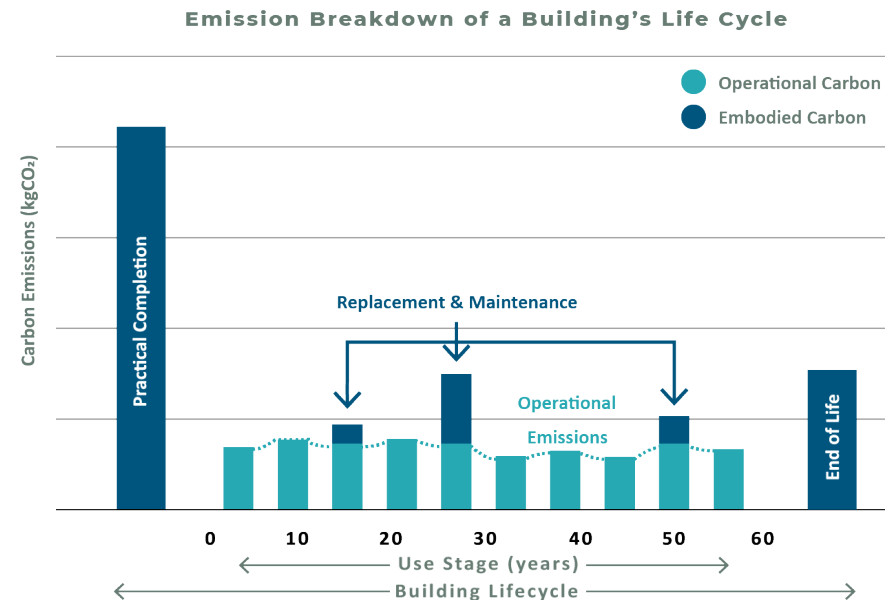
Given the large carbon investment that has already been made in the buildings that are standing today, encouraging building maintenance and retrofits to extend the life of these buildings represents an important strategy to steward and make best use of the embodied carbon they contain.

Governments at all levels are now turning their attention to policies that can reduce the upfront embodied carbon in new construction, which will have a significant impact in curbing the climate impact of buildings.

While it represents a smaller proportion of lifecycle emissions, there are opportunities to reduce embodied carbon when considering different approaches to retrofits. For instance:

- First improve building efficiency to support smaller sizing for carbon-intensive mechanical equipment;

- Select materials with low, or where feasible, negative embodied carbon such as bio-based materials that contain sequestered carbon (e.g. wood products or insulation made of recycled fabrics, hemp or cellulose); and,
- Consider end-of-life and choose materials that can easily be deconstructed and re-used, such as insulation batts rather than spray foam.



Original infographic source: LETI, 2017

Figure 6: Emission Breakdown of a Building's Life Cycle
(from Community Energy Association's Local Government Guide)

3. Community Energy Association. (2022, December). *A Local Government Guide: Policies, Programs, and Incentives to reduce Embodied Emissions in the Built Environment*.

Powered by Water: BC's renewable energy advantage

British Columbia is well positioned to achieve rapid decarbonization due to our abundant source of clean and renewable hydroelectricity. Today, BC's electricity is, on average, 98% from renewable sources and the Province of BC has committed to phasing out the purchase or generation of remaining gas-fired facilities to achieve a 100% Clean Electricity Delivery Standard by 2030. With electricity readily available as the most abundant renewable energy source in BC, building electrification is a key solution and a major thrust of the District of Saanich's efforts to achieve a 50% reduction in GHG emissions by 2030.

Moreover, highly efficient, market-ready technologies have evolved considerably in the past decade and are now available to enable most buildings to electrify today. Heat pumps are critical in this shift towards electrification because they are powered by electricity, their extremely high efficiency ratings (ranging from 200% to 540%) mean energy costs are much lower than a standard electric boiler or electric resistance baseboard heater, and they have the critical benefit of adding cooling in most applications. Building envelope and efficiency upgrades are important and complementary measures that should be undertaken to use renewable energy sources more efficiently and improve affordability by further reducing energy costs.

Renewable Natural Gas (RNG) is biogas (primarily methane) that is produced from decomposing organic waste (from landfills, agricultural waste and wastewater from treatment facilities) and then purified to be used as an energy source. While this is an important form of renewable energy for meeting our overall community-wide climate targets, there is very limited supply, and it does not offer the high efficiency and cooling benefits of a heat pump. The estimated commercially feasible RNG supply in all of Canada is only 70 PJ⁴, which compares to a natural gas demand of 228PJ for BC alone in 2021⁵. In the face of these supply constraints, it is important to conserve this limited RNG resource for the most difficult-to-decarbonize sectors which includes industry and

some hard-to-electrify existing buildings that rely on backup or supplemental RNG, for instance, in recreation centres with pools that have high peak energy demand.

Other sources of what has been termed 'Renewable Gas', such as hydrogen, lignin and synthetic methane were not considered as part of this strategy due to considerable risks, limitations, costs, and unknowns related to commercialization, emissions factors and whether these fuel types can be considered renewable energy at this time.

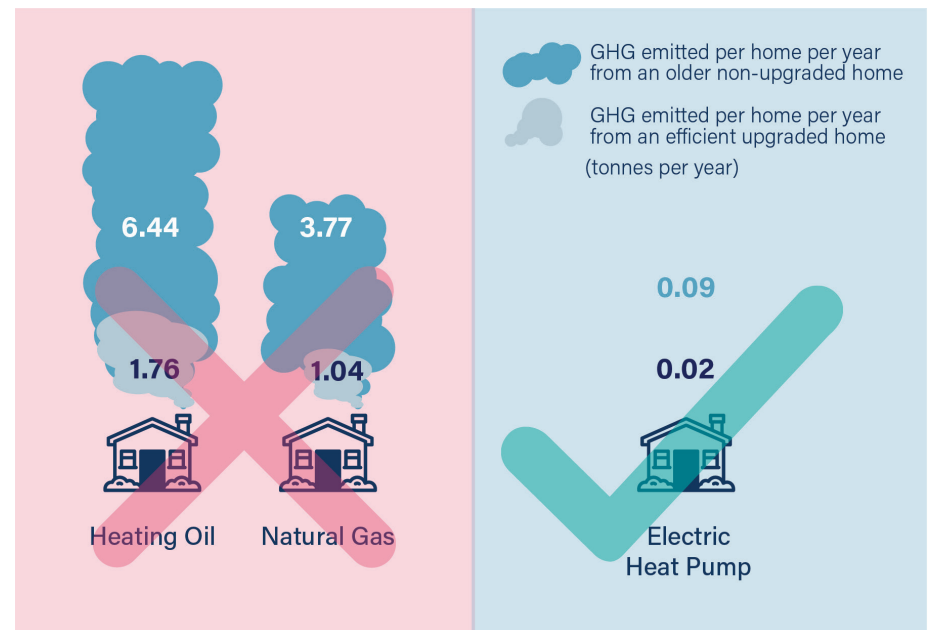
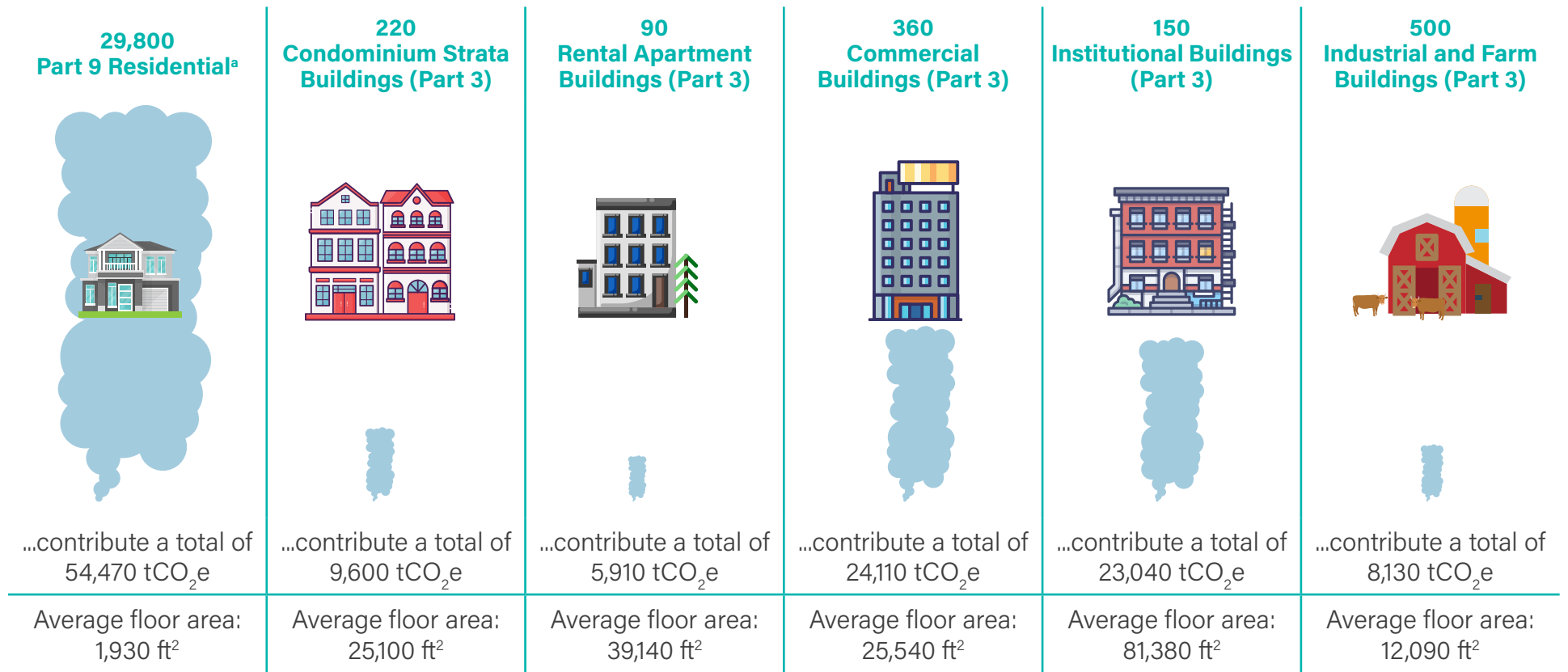


Figure 7: Emissions associated with different fuel sources in a single-family home

4. TorchLight Bioresources Inc. (2020, March). *Renewable Natural Gas (Biomethane) Feedstock Potential in Canada*.
5. FortisBC Energy Inc. (2022, May 9). *2022 Long Term Gas Resource Plan*.

2.3 By the Numbers: A look at Saanich's Building Stock



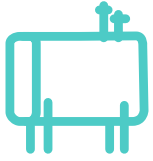
Note: Numbers above have been rounded

^aPart 9 Residential includes detached and attached ground-oriented housing forms, including single-family homes, duplexes, triplexes and townhouses.

Building type definitions:

Part 9 - Houses and small buildings that are three storeys or less and with a footprint of 600m² homes or less. Most commonly single family homes, duplexes and some townhomes.

Part 3 - Buildings that have a building area over 600m² or are greater than three storeys. Typically apartment buildings, condos, commercial, institutional or industrial uses.



2,533 homes are oil-heated



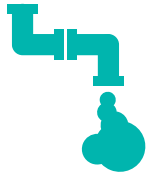
31% of households are renters overall



24% of Part 9 homes are rented



57% of Part 3 residential units are rented



16,558 gas connections in single family homes

- +1,909 net new gas connections between 2018 and 2021
- 965 gas connections in Part 3 Buildings
- +35 net new gas connections between 2018 and 2021



44 units per rental apartment building, on average

27 units per condominium strata building, on average



23% of dwellings need minor repairs

5% of dwellings need major repairs



15% of Saanich residents live in energy poverty

(pay more than 6% of after-tax income on energy needs)

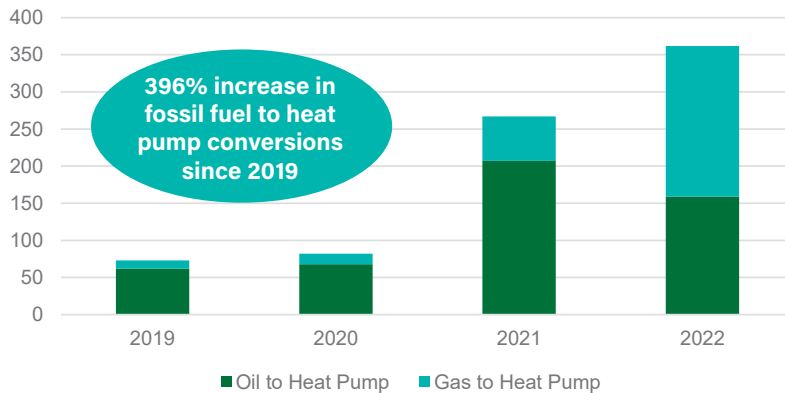


Figure 8: Fossil fuel to heat pump conversions

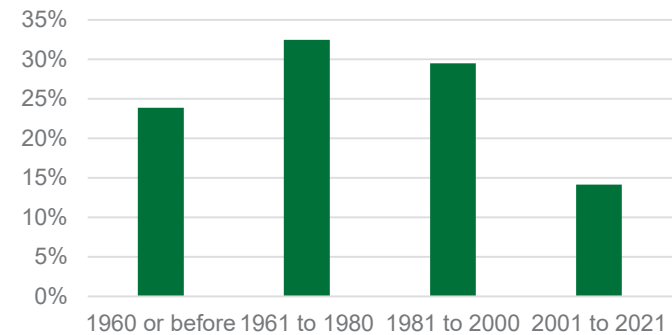


Figure 9: Occupied dwellings by period of construction

3.0 Current State of Retrofit Programs and Policy

Significant programs and policy commitments have been introduced in recent years to help achieve climate targets at all levels of government. The following sections provide an overview of key successes and progress to date in support of building retrofits.

3.1 District of Saanich Programs and Policy

- **Fossil fuel to heat pump incentives:** Between 2015 and the end of 2022, the District of Saanich provided 943 fossil fuel to heat pump top-up rebates through the Province's [CleanBC Better Homes](#) and other programs. These incentives have provided valuable data on trends and uptake of heat pumps in single family homes. Rates have been accelerating rapidly in the past few years; 2022 saw a four-fold increase in fossil fuel to heat pump conversions from 2020. The proportion of conversions from gas versus oil has also been shifting, as illustrated in Figure 8; in 2020, gas conversions represented only 17% of the fuel switching projects, whereas in 2022 they represented 55%. Unfortunately, the number of new natural gas connections continues to outweigh the number of fossil fuel to heat pump retrofits each year, undermining efforts to achieve our climate targets.
- **Greater Victoria 2030 District:** In 2019, the District of Saanich worked with the Building Owners and Managers Association (BOMA) and City of Victoria to co-found the [2030 District](#) to help building managers set and achieve energy, GHG and water reduction targets, improve resilience, and learn from each other as part of a facilitated network. There are currently 21 buildings in Saanich participating, representing 1.1 million square feet.
- **Building Benchmark BC (BBBC):** Since 2020, the District of Saanich has been working with OPEN Green Building Society and other local governments across the province to launch, promote, and use [Building Benchmark BC](#), a voluntary energy and carbon benchmarking platform. Benchmarking enables owners of large buildings to better assess their energy use and emissions in comparison to similar buildings and is a foundational policy tool for supporting and regulating retrofits. There are currently 86 buildings in the District of Saanich participating, representing over 9.5 million square feet.
- **Oil to Heat Pump Financing Program:** In April 2022, the District of Saanich launched the [Oil to Heat Pump Financing Program](#) to reduce the capital cost barrier of installing heat pumps in single family homes. The innovative pilot is based upon a Property-Assessed Clean Energy (PACE) financing model and offered up to \$12,000 in interest-free financing to 50 households, which is repaid with property taxes over 10 years. The program included an income-qualified stream and is now fully subscribed, and showing positive results in helping participants' make the decision to retrofit their home. Staff have recommended expanding the program through the establishment of a revolving green fund and enabling gas-heated homes to participate. Saanich has been calling on the Province to create enabling PACE legislation to enable a much larger program and reduce administrative barriers.
- **Regional Retrofit Service:** The Capital Regional District, in partnership with Saanich and other member municipalities launched a retrofit concierge service in November 2022. The service, called the [Home Energy Navigator](#), provides start-to-finish expert advice and personalized support for residents

undertaking retrofits in their homes. The program makes it easier to implement upgrades that reduce emissions, improve efficiency, and prepare homes for the future climate. This program builds upon previous successes (such as the Bring it Home 4 Climate Program, which it replaced) and will continue to iterate and improve over time.

- **Zero Carbon Step Code:** In April, 2023, Saanich Council endorsed moving ahead with accelerated implementation of BC's the newly enabled Zero Carbon Step Code, which sets carbon performance standards for new construction within the BC Building Code. Under Saanich's new requirement, zero carbon performance will be required on the following schedule:
 - Part 9 construction: November 1, 2023;
 - Part 3 MURBs, 6 storeys or fewer: July 1, 2024; and
 - Part 3 Commercial and MURBs over 6 storeys: November 1, 2024.

While this policy is focused on new construction, its implementation supports the Building Retrofit Strategy by ensuring that these buildings will not lock in fossil fuel equipment and avoid the need for retrofits in future years.

- **Education and Awareness Efforts:** For well over a decade, the District of Saanich has provided climate education and literacy campaigns and programs in the community. Recently this has included:
 - [Climate Action Workshop Series](#) (hosted bi-annually), a seven-part series that supports residents in applying climate action in their own lives using the [Residents' Climate Action Guidebook](#);

- [One Planet Saanich](#), which supports businesses, community organizations and schools to create their own One Planet Action Plans and put sustainability into action in our community;
- Supporting delivery of the [BC Sustainable Energy Association's Cool It! Leadership Training Program](#) to provide climate education in elementary and high schools;
- The launch of the [Neighbour to Neighbour \(N2N\) Resilience Initiative](#), designed to bring neighbours together to learn about and take collective action on emergency preparedness, climate action and caring for nature;
- The [Climate Friendly Homes](#) Campaign, providing fun and engaging messages to residents about what a climate-friendly home is (and isn't) through print materials, videos, radio ads and more; and,
- Widespread promotional activities, including utility bill inserts and newspaper ads that highlight climate-action priorities (e.g. heat pumps), strategies for staying cool during extreme heat events, and information on programs and incentives for all buildings types.

DUCTLESS HEAT PUMP

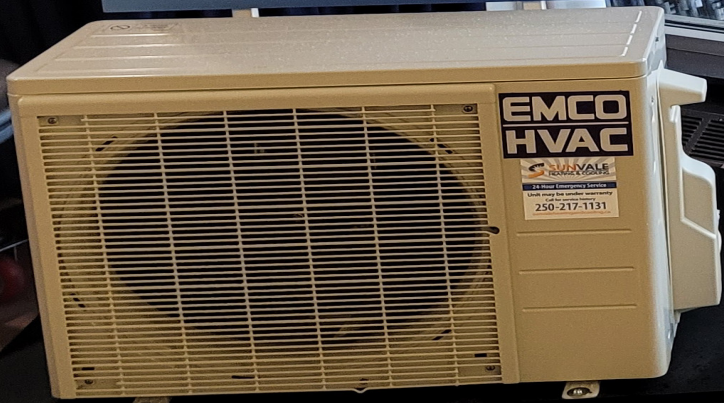
COME HOME TO YEAR-ROUND COMFORT

HEATING, COOLING, AIR FILTERING & DEHUMIDIFYING - A DUCTLESS AIR SOURCE HEAT PUMP CAN DO IT ALL!

Quiet, stylish, and compact, a ductless heat pump is the most energy efficient and most climate friendly form of home heating and cooling currently available.

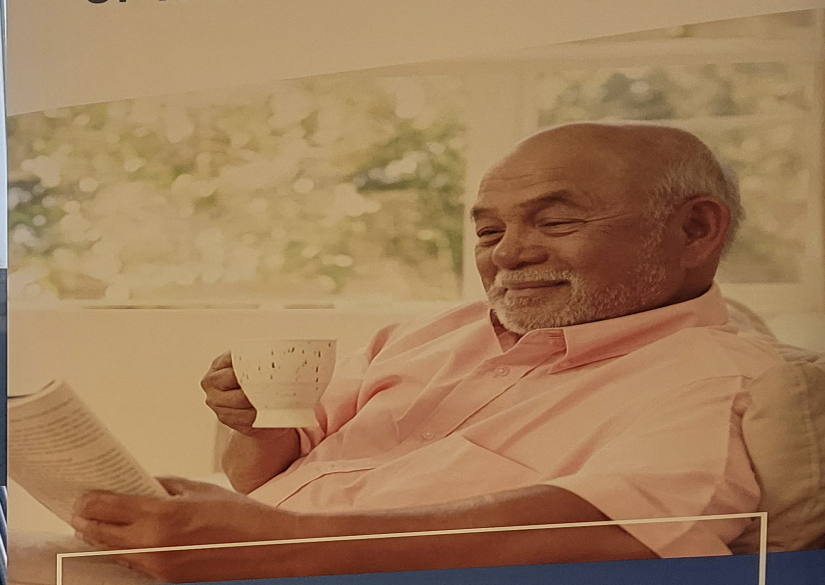
- 3 times as efficient as natural gas or electric baseboard heating
- Affordable installation and operation
- Options to heat and cool different parts of your home to different temperatures

FCM FEDERATION OF CANADIAN MUNICIPALITIES / FÉDÉRATION CANADIENNE DES MUNICIPALITÉS
The Transition 2050 Residential Retrofit Acceleration Project is supported through the Municipalities for Climate Innovation Program, delivered by the Federation of Canadian Municipalities and funded by the Government of Canada.



CLIMATE FRIENDLY HEATING & COOLING

EXPERIENCE THE BENEFITS OF A HEAT PUMP



Winter heating, summer cooling, filtering indoor air and dehumidifying - a heat pump can do it all.

Heat pumps are the most energy efficient and climate friendly heating and cooling systems available today.

FCM FEDERATION OF CANADIAN MUNICIPALITIES / FÉDÉRATION CANADIENNE DES MUNICIPALITÉS

The Transition 2050 Residential Retrofit Acceleration Project is supported through the Municipalities for Climate Innovation Program, delivered by the Federation of Canadian Municipalities and funded by the Government of Canada.

Demonstrating Leadership

The District of Saanich is committed to achieving its corporate emissions targets of 50% GHG reduction by 2025 and achieving net-zero emissions by 2040. The 2020 Climate plan highlighted the need for efficient, renewably-powered municipal buildings as a priority, and the Municipal Facilities Division is leading the way towards reaching these targets through effective planning and implementation.

Energy audits were conducted for all key facilities to identify pathways towards achieving net-zero emissions, and further feasibility studies provided detailed costing for major replacement projects. Retro commissioning work, as well as comprehensive asset management and preventative maintenance scheduling, were carried out to ensure existing systems are working efficiently.

To support major retrofit projects, the District explores grant funding opportunities, where feasible. One notable example is the G.R. Pearkes ice arena, which secured provincial and federal grant funding for a major mechanical retrofit. The project will capture waste heat generated during the ice-making process and redistribute it to the building's space heating systems. An additional benefit to the project is that the new system can provide air conditioning during the summer months and extreme heat events.

Lower cost retrofit projects have included installing sensors in Fire Hall 1 bay doors to disable space heating when the doors are open and upgrading Fire Hall 3's natural gas furnace to an air-source heat pump, which not only saves energy but also provides air conditioning during hot weather. These projects are just a few examples of the significant steps taken by the District towards efficient, renewably-powered buildings.



3.2 Provincial and Federal Programs and Policy

The Province of BC has committed to reduce emissions from Buildings and Communities by 59-64% by 2030 (2007 baseline) and has outlined the actions to achieve these goals through the CleanBC Roadmap to 2030. However, while many of these actions will have a transformative impact, it will not be in the timeline required to achieve the targets as explored in Section 6.1.

The Federal Government has committed to reducing overall emissions by 37% from 2005 levels by 2030, and achieve net-zero emissions and climate-resilient buildings by 2050. The Canada Green Buildings Strategy is expected to be released in 2023 and will provide more details on how the buildings sector will achieve these targets.

Modelling completed to inform this strategy indicates that the committed policies from the Provincial government will achieve significant emissions reductions, but will miss the 2030 and 2050 targets. Therefore, early and concerted actions are required at the municipal level to complement Provincial efforts and achieve sufficient reductions by 2030, in addition to ensuring that 2050 climate targets are met. The impact of these commitments are further explored in section 6. The following is a summary of the key commitments, opportunities and needs at higher levels of government.

Incentives and Support Programs

The Provincial and Federal governments have introduced a suite of crucial programs and incentives to support building retrofits in recent years, and in single family homes these programs have successfully spurred an increase in fuel switching projects. Despite the successes, there are outstanding gaps that need to be addressed to provide support across different building types and address equity. In the residential sector, these gaps include:

- A lack of incentives to address underlying health and safety issues such as asbestos, particularly for lower-income households where these issues are more common and must be resolved before the retrofit or to qualify for programs;
- Insufficient incentives and supports for lower-income households, where there is still a considerable gap between the incentive amount and the capital cost;
- Eligibility restrictions for renter households, who are currently not able to access the Canada Greener Homes programs;
- A lack of specialized support programs and insufficient incentives for multi-family buildings;
- Inadequate incentives for households that do not use fossil fuels as their primary heating source, but would like to add a heat pump for affordability and cooling benefits.

Commercial building owners have several incentive streams available to them through the CleanBC Better Buildings suite of programs, but there has been limited private sector participation to date, signaling that the incentives available are not sufficiently large to drive the market towards electrification. Some building types or uses (e.g. churches, senior centres, non-profits or daycares operating out of converted homes) seem to fall through the cracks and are ineligible for any programs. A lack of incentives for envelope improvements in Part 3 buildings is also a major gap that will make it difficult for full electrification, particularly in older Part 3 residential buildings.

Getting support throughout the retrofit journey is another gap in Provincial and Federal Programs, and one that local governments have started to fill with programs such as the [Home Energy Navigator](#). While the Province's Energy Coach programs provide information on the rebates available, "concierge" services are

needed to more actively guide and support participants through the retrofit from beginning to end. This includes an assessment of what is feasible in the building, through to the selection of contractors and equipment, installation, and help with rebate applications. Lower income households, households that have computer literacy barriers, and small commercial building owners need a greater level of support, and there is currently a complete omission for multi-family buildings. Stratas in particular, need tailored technical and decision-making support to help them build understanding and consensus amongst the owners and vote to move ahead with the upgrade.

Lastly, while there is a Provincial commitment to update the Demand-Side Measures Regulation to restrict utilities from offering incentives for natural gas furnaces and boilers, there continues to be an increase in natural gas connections in Saanich each year, greatly subsidized by these rebates.

Filling the gaps and increasing the incentives and supports available is critical to achieving climate targets and supporting market transformation, though the high cost of this approach must be complemented by signalling and implementing regulation to complete the transition.

CleanBC Highest Efficiency Equipment Standards

The most impactful of the Provincial commitments is B.C.'s Highest Efficiency Equipment Standards, which will require all new space and water heating equipment sold and installed in B.C. to be at least 100% efficient after 2030. Under this proposed regulation, heat pumps, electric resistance, dual-fuel and hybrid systems would be eligible and will be regulated either at time of sale or installation through a permitting process. The Province is proposing that there be a municipal pathway for local governments to implement the requirement as early as 2027 for all building

types, which would require a permitting process. A key concern is how compliance is set and enforced for dual-fuel and hybrid systems, and the potential risk of natural gas heat pump incentives being introduced which could shift the business case and lock in more fossil fuel infrastructure, jeopardizing climate targets.

BC Existing Building Renewal Strategy and Alterations Code

As part of the development of an Existing Buildings Renewal Strategy, the Province is committed to introducing an Alterations Code for existing buildings to address climate change mitigation and adaptation. It is anticipated that the new code will be energy efficiency-based (not carbon-based), will focus on time of replacement prescriptive requirements, may include provisions for resilience measures such as to address overheating, and will likely exempt many "like-for-like" replacements.

The Province has signalled their intent to align with the Federal code requirements for alterations, which are expected to be introduced in 2025. The current assessment of the anticipated code is that it will require significant staff capacity to implement but will lead to minimal GHG reductions. Further assessment will be conducted when more information is available to determine if there are sufficient benefits to supporting implementation.

BC Property Assessed Clean Energy (PACE) Financing

PACE is a unique financing tool for energy-related upgrades that is secured by the property and re-paid with the owners' property taxes. Enabling PACE legislation in BC would help address the capital cost barriers to electrification in commercial and Part 9 residential buildings. PACE legislation is required at the Provincial level in order to streamline administration and eliminate the barriers that local governments in BC currently face with accessing capital for this purpose. With funding now available from the

Federal Government and administered by the Federation of Canadian Municipalities (FCM), municipalities across Canada have begun delivering successful PACE programs in recent years. The Province of BC has committed to PACE legislation, but has indicated it is low priority at this time.



CleanBC Home Energy Labelling Program and Requirements

Just like the energy rating of an appliance or the fuel-efficiency rating of a car, a home energy label is an important tool to help homeowners and tenants evaluate the efficiency of their home, estimate what their energy bills will cost, and plan for energy upgrades that may be needed. The Province has committed to a mandatory energy label at time-of-listing for home sales so prospective buyers know what they're getting when it comes to the home's energy and carbon performance.

The Province is also planning to roll out a web-based, virtual home-energy rating tool called the Virtual Energy Rating System (VERS), that would be available to all residents in Part 9 residential homes, and would deepen understanding of their home's performance, help them identify energy and GHG reduction opportunities, and connect them with resources. The planned approach with VERS will be to generate a virtual label for all homes, and provide homeowners the ability to verify the AI-generated label by updating information such as recent energy upgrades they have completed, information on their heating or hot-water equipment, or other details. The Province is still considering the detailed design, and hasn't committed to key elements such as public disclosure, integration of resilience or whether owner verification would be required at the time-of-listing.

To maximize the effectiveness of the tool and time-of-listing requirement, the Province should create a public disclosure dashboard for key information, such as the overall energy rating, so residents can better understand how their home performs relative to others, and to motivate more people to undertake the verification process. The development of the tool is also an opportunity to integrate resilience and improve our understanding of vulnerability across the community, by including fields for the presence of cooling in the home. Lastly, the time-of-listing sales

requirement should be extended to time-of-listing for rentals to improve equity, and owner verification of the automated label should be required to safeguard consumer protections and improve the accuracy of the virtual labelling tool over time.

CleanBC GHG Emissions Cap for Natural Gas Utilities

The Province has committed to establish a GHG emissions cap for natural gas utilities that will set a hard limit, or “cap” on the total emissions they can emit. The proposed cap is approximately 6 million tCO₂e per year in 2030 and will reduce natural gas emissions by about 47% below 2007 levels. Ensuring this regulation is effectively designed to guarantee real GHG reductions in BC will be critical to achieving local and provincial GHG reductions. Municipal efforts supporting efficiency improvements and fuel switching and considering the highest and best use of limited renewable gas supply, as discussed in section 6.1, will align with this policy.

Other Provincial Actions Needed to Achieve Targets

In addition to the committed policies listed above, Provincial policy changes are needed to ensure better alignment across all levels of government and utilities, as discussed further in section 4.3. This includes an update to the BC Utilities Commission’s mandate to align with CleanBC objectives, establishing processes to proactively address BC Hydro capacity constraints and other electrification barriers, and providing better energy and program participation data to local governments. Further work is also needed to support resilience in existing buildings, such as a requirement to use future weather files in energy models, and supporting access to cooling as life saving measures, particularly in rental and strata buildings.



4.0 Opportunities, Challenges and Risks

Taking climate action is an opportunity to make our buildings healthier, more affordable, and more comfortable for everyone, but realizing this potential requires identifying and addressing barriers. This includes systemic social inequities and barriers to retrofits, industry capacity and public demand, and a need to be better aligned across all levels of government and sectors. The following sections outline some of the key barriers, opportunities and risks as we aim to accelerate retrofits in the years ahead.

4.1 Equity and Affordability

The following are key factors that affect equitable access to low carbon and resilient housing, and have been considered in the development and prioritizations of actions.



Building Tenure

Renters have less control over upgrades undertaken in their homes and face particular barriers in relation to retrofits. While landlords are responsible for capital upgrades such as furnace or window replacements, lease arrangements are often structured such that tenants pay utility bills. This “split-incentive” means that landlords

have no mechanism to realize the energy cost savings from the retrofit and are more likely to defer investments or choose “like-for-like” replacements rather than improving efficiency. In Saanich, 31% of households are renters, with multi-unit residential buildings (MURBs) housing a greater proportion of renters (57%) than single family homes (24%). Other issues to consider include tenant protections against “renovictions”, and ensuring retrofit programs are inclusive of (and designed for) participation by renter households.



Building Type

More complex upgrades and decision-making processes as well as greater costs pose additional challenges for MURBs. In Saanich, 22% of households live in MURBs (rental apartments or stratas) and 78% live in single family (attached or detached) homes. Stratas must comply with the Strata Property Act in relation to governance and decisions about upgrades to the property, and it can be challenging to navigate these processes and build support for costly and complex upgrades. Investing in retrofits in Saanich's MURBs will help to retain our existing housing stock and address affordability challenges, but there are currently fewer incentives and a lack of customized supports for these critical building types.

PLACEHOLDER PHOTO
IMAGE

Operating Costs

High energy costs put pressure on many residents already grappling with affordability. The average annual energy expenditure is \$1,857 in Saanich and 15% of residents are defined as living in energy poverty, or spending more than 6% of after-tax income on energy needs⁶. Certain demographic groups, including low-income households, lone parents, visible minorities, recent immigrants and seniors are more likely to be living in energy poverty.

In most cases, shifting from fossil fuel-based heating systems to efficient electric heat pumps will achieve energy cost savings and improve affordability^{7,8}. These benefits can be further enhanced by supporting efficiency upgrades such as insulation and air sealing. Fossil fuels like natural gas will become increasingly costly as utilities need to meet the legislated emissions cap and as the carbon tax increases to \$170/tonne by the end of the decade. It will be critical to support marginalized communities in the transition to electrification to ensure they realize the affordability and resilience benefits and are not left behind in the transition.

PLACEHOLDER PHOTO
IMAGE

Capital Costs

Higher up-front costs for the installation of heat pumps and the electrical service upgrades that are sometimes required continues to be a major barrier for building electrification. Even with the substantial rebates available today, the remaining cost, cash-flow issues (e.g. waiting several months to receive rebates), or high borrowing costs can prevent some households from undertaking retrofits. Over the past couple years inflation, supply chain issues and high demand has pushed costs even higher, making it more challenging for low and moderate income households to access. Supporting the growth of the industry to relieve some of the demand pressures, as well as developing programs such as rebates, low-interest financing and direct-install programs for low-income households can help to reduce this barrier.

6. McNaughton, Mark (2020, August). *District of Saanich Energy Poverty Community Profile*.
7. BC Hydro Power Smart (2022, September). *Bringing the Heat: British Columbia concerned over energy costs, unaware that going all in on gas does not make dollars or sense*.
8. City Green Solutions (2023, February). *Make the Switch Study Report*.

PLACEHOLDER PHOTO
IMAGE

Cultural, Language and Access Barriers

The retrofit journey can be confusing and time-consuming for anyone, but for many marginalized groups, more systemic barriers stand in the way of participating in programs or undertaking retrofits. Inflexible processes or requirements, time constraints, a lack of computer literacy, or cultural barriers such as language or a lack of trust in government can inhibit participation. In addition, low-income homes may require costly health and safety upgrades such as addressing mould or asbestos prior to undertaking retrofits, posing a barrier to accessing programs. A human-focused, equity-centred design that seeks to address these barriers and remove the burden of participation to the extent possible is important in programs and policy to improve equitable access to low carbon, resilient buildings.



4.2 Market Readiness and Capacity

Although building electrification technologies are already viable and rapidly improving for all building segments, there continues to be market barriers to adoption. These barriers range from public perception and demand, through to trades shortages and supply chain constraints. The BC Building Electrification Road Map (2021) completed detailed market readiness assessments for different building types. Aside from the cost-related challenges, the primary cross-market barriers identified were:

1. A low level of awareness by consumers and industry alike of the benefits and opportunities of building electrification in BC.
2. The perception among tradespeople and building professionals that installing high-efficiency electric systems brings higher risk and lower return than conventional gas-powered systems; and,
3. The need for whole building energy efficiency upgrades in older buildings to allow for the cost-effective deployment of high-efficiency electric space heating equipment.

9. Open Technologies (2022, June). *Stuck: Why home electrification is lagging in British Columbia and what must be done to break the deadlock on residential carbon retrofits.*

10. BC Hydro Power Smart (2022, September). *Bringing the Heat: British Columbians concerned over energy costs, unaware that going all in on gas does not make dollars or sense.*

11. City Green Solutions (2023, February). *Make the Switch Study Report.*

Public Awareness and Perception

For years, natural gas has been heavily marketed as an environmentally friendly option for home heating, and improvements to energy efficiency has been communicated as the primary strategy to combat climate change. To drive market uptake, disinformation from the fossil fuel lobby needs to be combated with positive information addressing common myths and increasing consumer awareness that meaningful climate action means replacing harmful fossil fuels such as natural gas and oil with electrification measures such as electric heat pumps in our buildings.

Homeowners tend to conflate “energy efficient” with “low carbon”, and although the cooling benefits of heat pumps are more generally well known now⁹, 45% of British Columbians believe it is more expensive to heat a home with an electric heat pump than with a natural gas furnace, when in fact most gas to heat pump conversions will achieve cost savings. These misconceptions can persist, even for homeowners that have switched to a heat pump and realized energy cost savings^{10,11}. This may stem in part from the fact that BC Hydro bill cycles cover two months of usage which makes it more difficult to compare total before and after energy costs, and costs look high compared to a monthly natural gas bill.

Another myth that persists is that a secondary or back-up heat supply is needed during cold snaps, when in fact Saanich’s mild climate is perfectly suited for all types of modern heat pumps, and cold climate heat pumps that operate efficiently in temperatures as low as -25°C are readily available. Just as electric vehicles are widely known to be the climate-friendly choice in the automotive world, heat pumps need to be understood as the climate solution for our homes and buildings and significant work to combat disinformation and common misconceptions is still needed.

Complexity of Retrofit Journey

Undertaking a retrofit can be a daunting task, from assessing the building's current state and the upgrade options available, through to coordinating estimates and comparing quotes, selecting a contractor and managing the installation process. If there are multiple upgrades, the time required to coordinate the various tradespeople and make all the decisions can be overwhelming. Navigating the various incentive programs, many of which have differing eligibility requirements adds to the confusion and frustration.

It is the complexity of this journey that has prompted many local governments to play a larger role in delivering "concierge" style programs, that provide support to participants at each stage of their retrofit. Programs such as the Capital Region's [Home Energy Navigator](#) are a great start, but to achieve the scale needed these programs must be reaching more homes, providing deeper supports, and similar programs are needed for Part 3 building types as well.

Industry Readiness and Capacity

Market transformation at the scale and timelines needed will require an industry with sufficient workforce and the skills and knowledge required to properly design, install and operate these systems.

For Part 9 residential homes, the Capital Region enjoys a relatively mature heat pump market in comparison to other parts of the province due to our mild climate and the fact that Vancouver Island was connected to the natural gas network relatively recently, in the early 1990s. Local industry capacity, however, is still struggling to keep up with accelerating demand, and more training opportunities and recruitment is needed to increase the number of

qualified energy advisors and heat pumps installers in the Capital Region. Contractors are wary of investing in new staff given the "boom and bust" history of retrofit incentive programs in the past, so must be given confidence that this trend is here to stay.

For Part 3 buildings, there has been very limited uptake of electrification retrofits despite the fact that technologies are quickly maturing, and many are readily available today (Figure 10). The higher capital costs, a lack of familiarity or precedents with electrification technologies, as well as the additional effort of not choosing the like-for-like replacement are all issues at play.

Building owners need to feel confident that the business case can be made, and their consultants and contractors need the experience and expertise to recommend, and then design and install what can sometimes be more complex mechanical systems. Other considerations should be evaluated as part of the design, such as reducing heating load through envelope improvements, particularly in older buildings where a leaky, inefficient building may be challenged to meet large electricity demand or where a costly electrical service upgrade may be triggered. An early objective for market transformation in this sector is to provide financial incentives and work with leading building owners and managers to support more local examples and case studies that can be shared.

Technology		Ground-oriented Residential	Apartment Style Residential	Small-Medium Commercial	Larger Commercial & Institutional
SPACE HEATING	Air Source Heat Pumps	●	●	●	●
	Hydronic Space & Water Heating	●	●	●	●
	Cold Climate ("Low-Ambient") Heat Pumps	●	●	●	●
	Rooftop Air Source Heat Pump	N/A	●	●	●
	Variable Refrigerant Flow (VRF)	●	●	●	●
	Ground Source Heat Pumps	●	●	●	●
DOMESTIC HOT WATER	Heat Pump Water Heater (240V)	●	●	●	N/A
	Heat Pump Water Heater (120V)	●	●	N/A	N/A
	Central Heat Pump Water Heater	N/A	●	●	●
	Commercial Heat Pump Water Heater	N/A	N/A	●	●
	Ground Source Heat Pump with Desuperheater	N/A	N/A	N/A	●

Figure 10: Market Readiness of leading high-efficiency electric technologies
(source: BC Building Electrification Road Map)

- Market ready with multiple models available
- Market evolving. Limited models available
- N/A Technology is not applicable for this building type



At a smaller scale, many homeowners enter into contracts with heating oil companies for the regular and automatic replacement of oil tanks. Homeowners must proactively intervene in these asset replacement cycles and need support to initiate a different pathway. For all households looking to switch to new technologies and navigating the complex retrofit journey, concierge-type services are increasingly recognized as imperative to meet our retrofit targets. This begins by understanding a household's unique needs and desires, providing information on the types of upgrades that may meet those needs, considering options for timing and phasing of upgrades, and then provides support on the selection of contractors and equipment and installation process through to the application of incentives.

Approach to Asset Replacement

Shifting to electrification means a departure from “business as usual” and building owners and industry need tools to support a new approach to asset replacement. This approach is more proactive and holistic in nature and involves developing longer term electrification or decarbonization plans to guide decision-making. For instance, having an HVAC design in place can help to avoid reactionary replacements if equipment fails; evaluating the interplay between different building components such as envelope and HVAC can help to optimize the building's performance; and considering the phasing of upgrades can help manage capital costs while moving towards a defined outcome for the building. This holistic design approach can incorporate other elements that will benefit climate outcomes and building occupants, such as considering electric vehicle charging infrastructure needs and planning for the electrical capacity or infrastructure in tandem with a building's mechanical systems.

4.3 Aligned and Coordinated Action

Achieving low-carbon, climate-resilient buildings at the scale required means that everyone – governments at all levels, utilities, industry, and the public – need to be taking significant and coordinated action.

Although nearly a third of the emissions at the community-level are generated by existing buildings, the ability for local governments to directly regulate or influence these emissions is severely limited. Regulatory tools such as building codes are within the jurisdiction of the Federal and Provincial Governments to design, and to date have not had purview over existing buildings or climate adaptation measures. Municipalities have had to rely on education, incentives and retrofit support programs to drive energy and emission reductions. While there have been many successes and innovations, the scale of change is simply insufficient to meet our targets using these approaches alone. Some of the issues that are posing barriers to better alignment are discussed below.



Aligned Energy Plan to a Zero Carbon Economy

Despite adoption of a common target to achieve net-zero emissions in BC by 2050, there is misalignment between the Provincial Government and the two energy utilities, BC Hydro and FortisBC, on what the energy mix will be to get there. The Province needs to establish a common energy pathway that is founded on the precautionary principle and considers lifecycle emissions, commercialization, costs, and physical limitations of the energy network. The mandate of the BC Utilities Commission (BCUC), which governs policy and program decisions of the utilities, must be updated to explicitly align with the CleanBC targets and the government's common energy pathway.

Electrical Capacity and Supply

Rapid electrification across all areas of the economy is needed to drive down emissions, but electrical capacity, supply, and network constraints can pose challenges for many building electrification retrofits. High upfront costs for some electrical upgrades, an unfair fee structure for service extensions, space constraints in urban centres, and a lack of transparency on BC Hydro timelines and approvals are some of the underlying issues. Until recently, BC Hydro's mandate was focused on efficiency, not climate action and electrification, so some of these issues are embedded in outdated regulatory requirements that must be updated through the BCUC, while others require organizational change to address.

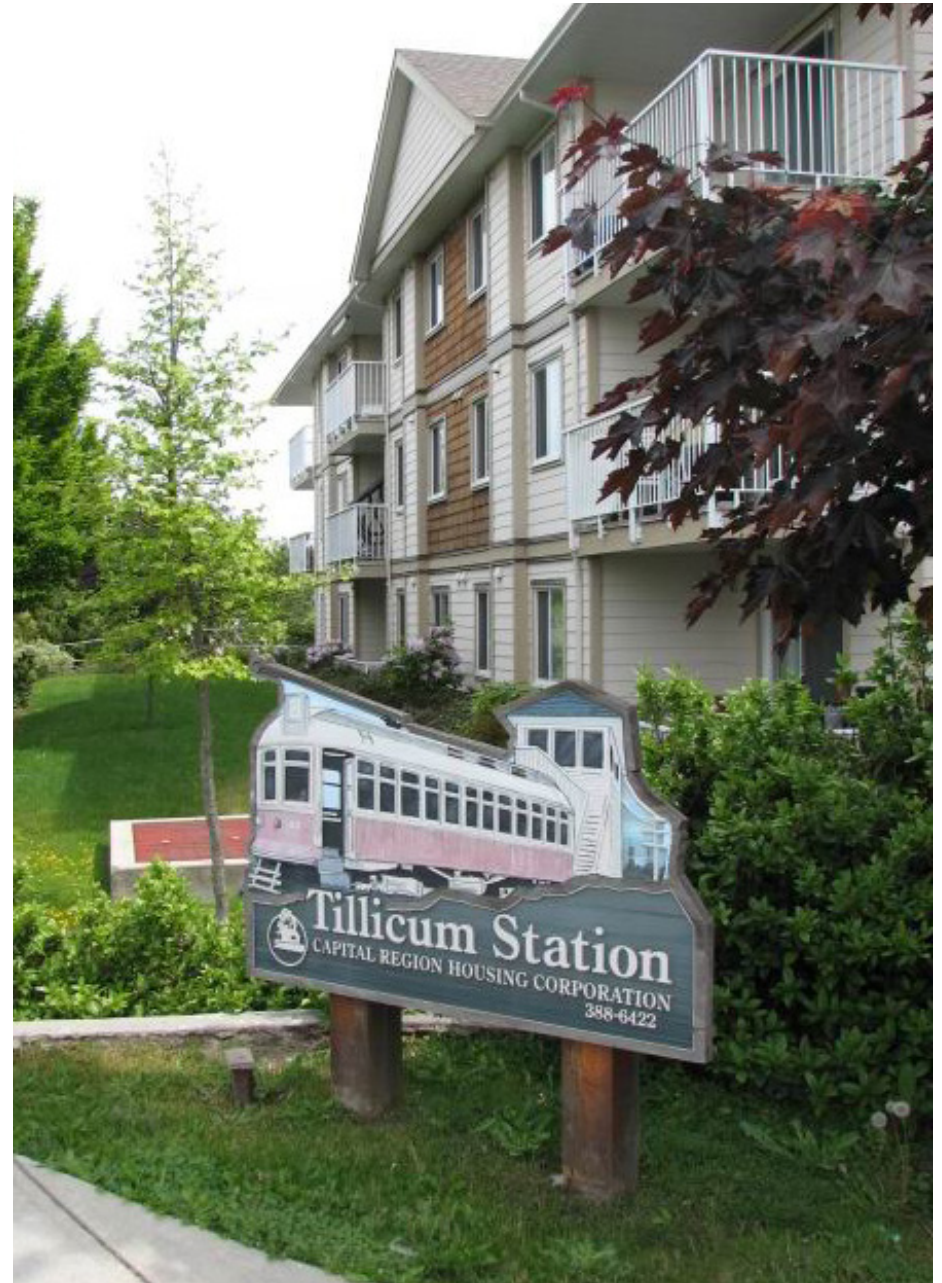
Fossil Fuel Subsidization and Lobbying

The Province of BC continues to provide significant subsidies to the fossil fuel industry, with a recent investigation reporting that BC handed out \$1.3 billion in subsidies between April 2020 and December 2022¹², undermining the efficacy of climate investments. To date, Provincial policy such as the Zero Carbon Step Code has been fuel-agnostic, often making it more difficult to achieve desired outcomes through direct and effective local policy. This, combined with ongoing lobbying by the fossil fuel industry poses a significant risk for the forthcoming legislation committed to by the Province, such as the Highest Efficiency Equipment Standard and the GHG Emissions Cap for Natural Gas Utilities. It is essential these pieces of legislation be developed in a strong and timely manner, free from interference by fossil fuel industries.

Access to Data

Access to detailed data on fuel type, energy use and retrofit program participation is currently insufficient at the local level, but is greatly needed to support accurate tracking towards our targets and better program and policy development and targeting. Commitments from utilities and higher levels of government to provide this data at the municipal level, and data sharing agreements to ensure the timely and consistent provision of data, while respecting privacy legislation is critical.

12. The Tyee (2022, February 17). *BC's Fossil Fuel Subsidies Are Second Highest in Canada*.



5.0 How the Building Retrofit Strategy was developed

The Building Retrofit Strategy was developed in a 5-phase process, as shown in Figure 11 below.

Phase 1:

- The scope of the strategy was defined, and the strategy development process was created.

Phase 2:

- Saanich staff analyzed existing programs, policies and regulations; conducted research on leading practices from other organizations and local governments; and reviewed findings from previous engagement activities.
- Potential actions (existing, amended or new) to support building retrofits in Saanich were identified.
- A building stock assessment and refined GHG inventory for existing buildings was completed.

Phase 3:

- Assumptions were refined with stakeholder consultation and modelling was undertaken to assess the relative impact of the identified actions.
- An equity lens was applied to assess gaps and prioritize actions, and the Strategy was drafted.

Phase 4:

- A workshop was hosted to solicit feedback on proposed actions from a broad spectrum of stakeholders.

Phase 5:

- The Building Retrofit Strategy was revised to incorporate feedback and then finalized.

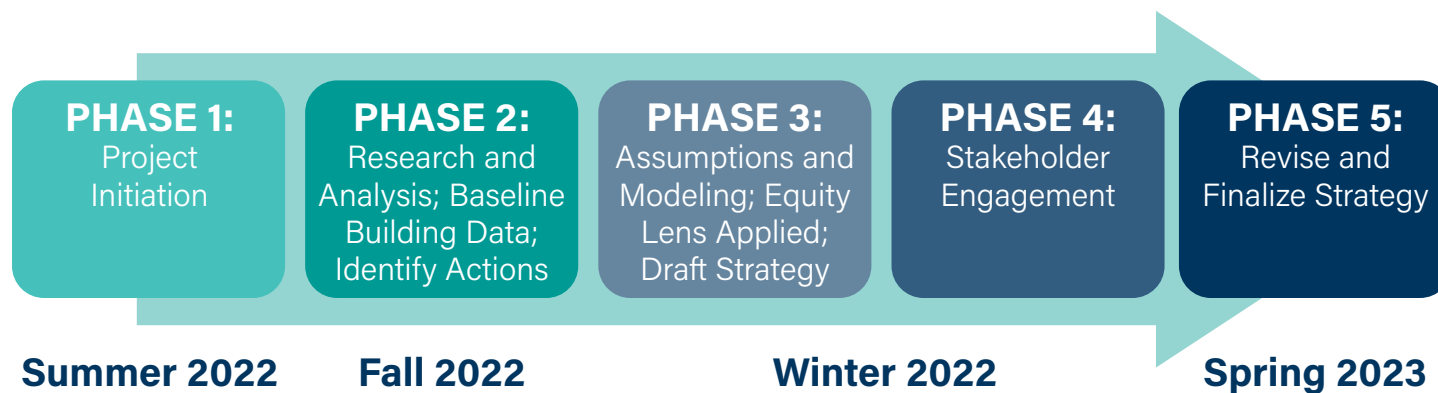


Figure 11: Process for Building Retrofit Strategy Development

5.1 Stakeholder Engagement Summary

Building on Previous Programs and Engagement on Retrofits

The Building Retrofit Strategy builds upon extensive public and stakeholder engagement in Saanich and the Capital Region, as well as three years of implementation since the 2020 Climate Plan was adopted. Surveys, interviews, focus groups, workshops, open houses, tabling events and other engagement strategies have been employed to develop plans and programs, including the Saanich Climate Plan, the Home Energy Navigator Program (and its predecessor, the Bring it Home for Climate program), the Greater Victoria 2030 District, Building Benchmark BC, the Oil to Heat Pump Financing Program, and the proposed Revitalization Tax Exemption for Climate Action.

While the breadth of information gathered throughout these engagements is extensive, some of the key learnings that have informed the development of this strategy are summarized below.

- Increasing energy efficiency and renewable energy use and production are the most commonly suggested and highly supported actions in relation to buildings¹³.
- Uncomfortably hot temperatures at home is among the most common climate impacts residents report experiencing¹³, and access to air conditioning is a common driver for installing a heat pump¹⁴.
- Affordability is a concern¹³ and a desire to reduce energy bills is a primary motivator for low to moderate income households¹⁵. Desire to take climate action is also an important motivator in our region^{14,16}.
- Capital costs are a primary barrier across building sectors^{14,15,17,18} and help with upfront costs to switch to renewable energy is the primary support that residents and businesses report needing^{13,17}.
- Common misconceptions are preventing electrification, such as the perception that natural gas is an efficient or clean energy source, electricity is expensive and inefficient for heating, or that our climate is too cold for the effective use of heat pumps^{14,15}.

- Residents report limited knowledge of retrofit measures such as heat pumps, a lack of familiarity with rebate programs¹⁵ and feeling disempowered and confused by the retrofit process¹⁹.
- Energy evaluations are important tools to help households understand their retrofit options, plan for the phasing of upgrades and generally lead to more energy upgrades being completed⁴. Better support with the audit and planning process is needed for all building types¹⁷.
- Residents are happy with their heat pumps and most (>93%) report it as being better than their previous heating system¹⁴.
- Rental buildings face significant and often unique challenges related to: common lease structures (landlord paying capital upgrades and tenant paying utility bills); renovating tenanted suites; high costs and uncertainty for electrical capacity upgrades; poor building envelope or other unknown deficiencies; and rent controls that limit ability for capital costs to be recovered¹⁷.
- Ability for the trades to attract and retain workers and supply chain issues are restraining the ability to scale up work and meet current demand¹⁹.
- Support for industry capacity building is needed, including apprenticeships and certification training, processes to ensure high quality equipment and installations, provision of resources to provide customers, and stable, long term rebate programs¹⁴.

13. District of Saanich (May 2019 to January 2020). *100% Renewable and Resilient Saanich Engagement Reports* (Phases 1,2 and 3)

14. City Green Solutions (2019, December). *Final Report: District of Saanich Retrofit Acceleration Design*.

15. City Green Solutions (2021, June). *Summary Report: CRD Retrofit Assessment (Focus Group) Initiative*.

16. City Green Solutions (2021, March). *Bring it Home 4 the Climate: Pilot Phase Analysis*.

17. District of Saanich (2022, November). *Revitalization Tax Exemption Program for Climate Action: Summary of Program Development and Stakeholder Engagement*.

18. City Green Solutions (2023, January). *Saanich Oil to Heat Pump Financing Program Interim Report*.

19. Introba (2023, February). *CRD Home Energy Navigator: Contractor Engagement and Archetype Analysis Phase 3 Memo*.

Retrofit Strategy Stakeholder Engagement

A stakeholder workshop was hosted on March 1, 2023 to solicit feedback on draft actions and hold a broad conversation on local government opportunities for supporting decarbonization in existing buildings. The workshop was co-hosted by the Community Energy Association (CEA) and was attended by 60 stakeholders including the Provincial and Federal Governments (8%), utilities and regulators (10%), industry organizations and non-profits (28%), other local governments (33%), housing providers and developers (5%), and other stakeholders (15%).

The issues and considerations raised by the stakeholder group were consistent with findings from previous engagements. Key themes that emerged that were specific to the proposed actions or additional to the previous findings are as follows:

- Ensure a coordinated approach with other local governments and key stakeholders at a regional and provincial scale when designing and implementing requirements and programs to reduce duplication and market confusion.
- Centre the experience of resident and building owners in the design of all programs, for example, not requiring “best in class” projects to qualify for an incentive, ensuring access for individuals with low computer literacy, language barriers, or no knowledge of building systems, etc., and working with key partners to reach all audiences.
- Increase efforts to support stratas in electrification and resilience projects, for example:
 - Providing guidance for strata councils to reform bylaws and enable heat pump and other retrofits in suites;
 - Ensuring a whole-building approach is taken, and integration with depreciation reports;
 - Requiring cooling rooms for vulnerable populations in buildings that do not have cooling;
 - Designing strata programs that fit with the strata governance model and working with strata associations to coordinate outreach and communications.
- Consider expansion of the strata energy advisor program to cover other Part 3 building types.
- Explore needs and opportunities with regards to permitting processes, for example:
 - Whether a new municipal HVAC/heating system permit will be required to enable early implementation of the Province’s Highest Efficiency Equipment Standard;
 - The extent to which a municipal (or Technical Safety BC) HVAC permit system could improve proper installation of heat pumps while making a more stringent process for natural gas equipment in the short term;
 - Evaluating opportunities to structure permit fees and requirements to incentivize deeper decarbonization when the Province’s alterations code is enabled; and/or
 - Assessing municipal staff capacity and improving integration and support for building inspectors.
- Addressing grid capacity constraints and extension fees to streamline and reduce costs and increase certainty will be critical to large scale building electrification.
- Consider how to balance redevelopment, retrofits and renewals with a lens to embodied emissions.

- Address current gaps in programs, such as:
 - Retrofits that address underlying health and safety issues such as asbestos;
 - Envelope-focused incentives to reduce energy costs and improve resilience;
 - Whole-retrofit funding for low-income housing and programs for renters;
 - Upgrades to add cooling for buildings that are already on electric heat.
- Explore demand response enabling equipment, energy management, batteries and storage and the local government’s role in requiring or incentivizing these technologies, as well as facilitating approvals and permitting.
- Industry capacity is constrained and limiting the rate of retrofits and some uncertainty about the best role for local governments in addressing this issue.
- Explore business license requirements, such as requiring eligible contractors participate in the Home Performance Stakeholder Council
- Increase education for residents on the indoor and outdoor air quality impacts of natural gas.

The top three barriers and three most critical roles for local governments to achieve the scale of low-carbon resilient retrofits needed by 2030 were identified by the stakeholder group as the following:

Top Barriers	Most Critical Roles for Local Governments
1. Financial constraints	1. Providing retrofit support services and resources to building owners
2. Knowledge and capacity building of local building industry	2. Seeking authority to regulate carbon in existing buildings
3. [Lack of] Local government authority to implement policies or requirements	3. Supporting provincial policies and programs

Table 1: Top Barriers and Local Government Roles (Stakeholder Workshop)

A full workshop summary can be found at saanich.ca/retrofitstrategy.

6.0 Building Retrofit Strategy Action Plan

This section presents actions for the District of Saanich to support the transition to a zero-carbon and resilient building stock across the community. These actions are intended to help achieve the following targets from Saanich's Climate Plan:

- 100% of oil heating systems are replaced by heat pumps by 2030;
- Heating demands have been reduced by 30% in at least 40% of all buildings by 2030 and at least 80% of all buildings by 2050; and,
- 40% of natural gas space and hot water heating systems are replaced by renewable energy systems by 2030 and 100% by 2050.

It is important to note that these targets, and those of the retrofit strategy are not reflective of a “Global Fair Share” and may need to be accelerated if Saanich were to adopt global equity as a guiding principle in its approach to climate action.

Section 6.1 provides an overview of the modelling methodology and results, and the proposed pathway to support retrofits in the building sector. In addition to the overarching targets for the building stock outlined above, the modelling conducted for the retrofit strategy provides insights into how these energy efficiency and fuel switching targets would be realized across different building sectors, recognizing there are varying opportunities and barriers, as explored in Section 4.

Section 6.2 outlines the High Impact Actions, or those actions that have direct emissions and resilience benefits, and will be the highest priority efforts for Saanich in achieving our buildings-related climate goals.

What is our Global Fair Share on Climate Action?

Saanich's climate targets are based on science from the Intergovernmental Panel on Climate Change (IPCC) that advised on the GHG reductions needed to stay below 1.5 degrees of warming globally in order to avoid catastrophic climate impacts.

However, this assumes all nations play an equal role in achieving those reductions and doesn't account for the global inequities and larger role that developed nations such as Canada has played in creating the problem.

Saanich will be exploring a “Global Fair Share” target as part of the 2025 Climate Plan review and update. While that target is not yet defined, aiming for greater than 50% reductions by 2030 as part of the Retrofit Strategy will position our community to play a more equitable role in the fight against climate change.

Section 6.3 outlines 45 Building Retrofit Strategy Actions, in the following five strategy areas:

- 1. A) Municipal Policy and Regulation:** includes policy and regulatory actions that are currently within local government jurisdiction to implement;
B) Municipal Policy and Regulation (Provincially enabled): includes policy and regulatory actions that must first be enabled by the Province, but will rely on local government implementation;
- 2. Advocacy for Provincial Policy and Regulation:** includes policy and regulation that will not heavily involve local governments in implementation, but have been deemed critical to achieve climate targets;
- 3. Municipal Incentives and Support:** includes the creation or expansion of incentive programs that are led by or heavily supported by Saanich;
- 4. Research, Partnerships and Collaboration:** includes a range of actions that are highly collaborative, and are beyond the capacity or jurisdiction for Saanich to implement on its own;
- 5. Demonstrating Leadership:** includes actions related to corporate operations for municipal buildings.

There is a heavy emphasis on the policy and regulatory tools that must be enabled at the local and provincial level to achieve Climate targets. Some municipal regulation must be enabled at the Provincial level in order to be put into effect, as noted in Strategy Area 1. B) above and the action tables below.

PLACEHOLDER PHOTO
IMAGE

6.1 Modelling Methodology and Results

A modelling tool was used to assess the impact of high-level strategies and assess the combination of policies and programs required to achieve both Saanich's GHG reduction targets as well as the Province's target to achieve a 59-64% reduction from the Buildings and Communities sector by 2030, relative to 2007.

Methodology

Introba was contracted to develop the baseline and conduct the modelling to inform the strategy development. To establish a baseline, a building stock assessment was completed to categorize different building types and associated floor areas using BC Assessment (BCA) data, and assign a primary heating type. Energy use was estimated by taking the average energy use intensity (EUI) of different fuels for each building type, and multiplying these by the floor areas derived using the BCA data. Due to a lack of utility data at a granular scale, various datasets were used to inform assumptions, including Victoria Real Estate Board home sale data (2021), Saanich's Oil Heating Survey (2022), Natural Resource Canada's (NRCan) Comprehensive Energy Use Database (CEUD), NRCan's EnerGuide data, Building Benchmark BC data, and more.

Introba utilized an excel-based GHG emissions model to explore various policy scenarios and options for existing buildings in the community. The building stock assessment described above was used, alongside estimated population growth to establish the baseline projections for GHG emissions. To account for the overlapping impact of policies, actions were bundled into strategy areas (e.g. Clean Electricity, Part 9 Building Fuel Switching, Part 3 Building Efficiency, etc.). Emission reductions were calculated by strategy area, and are not necessarily attributable to single actions.

Some actions, such as education campaigns and PACE financing, were not included in the model due to a lack of peer reviewed studies on their impact and an inability to quantify the additionality of the specific action.

Three scenarios were developed and modelled to assess their relative impact:

1. Business-as-usual (BAU) - includes GHG emissions reduction as a result of policies and programs that are already in place;
2. Planned Provincial and Federal Policies (PFP) - includes GHG emissions reductions that will result from the committed Provincial and Federal policies and programs being enacted and is layered on top of the BAU; and
3. Potential Local Policies (LP) - includes emissions reductions that can be achieved through District of Saanich initiated policy and programs, and is layered on top of the PFP scenario.

The modelling results provide valuable insights into the GHG emissions reduction that may be achieved if no further action is taken, the extent to which the planned Provincial and Federal policies will help us achieve our targets, and the impact of Saanich

Assumptions for Renewable Natural Gas (RNG)

RNG supply before 2032 is based upon projections from FortisBC and their current RNG supply contracts, many of which are with RNG suppliers outside of the Province. It is assumed that as demand for RNG increases, securing supply from other jurisdictions will be more difficult and therefore all RNG supply is assumed to be from within BC beyond 2032^{20,21}. As local governments have no direct control over how RNG is allocated throughout the gas network, it is assumed to be evenly spread across all natural gas customers in the Province.

However, as discussed in section 2, it is recognized that given the limited supply potential for RNG in BC (9.5 PJ by 2030 and 11.2 PJ by 2050 relative to natural gas demand of 228 PJ in 2021), this valuable renewable resource should be allocated to hard-to-electrify sectors, such as industry (e.g. cement production, and steel and aluminum smelting). For illustrative purposes, industry currently utilizes 51% of all natural gas supply in BC²². This sector alone would require the entire RNG potential across all of Canada if it were to rely on RNG as its decarbonization pathway²³.

It is assumed through the modelling and this strategy that some existing buildings will be harder to electrify and may partially rely on RNG, such as in some older, inefficient multi-family buildings with limited electrical capacity. However, this analysis underscores the importance of supporting electrification to the extent possible within the building sector, given the limited overall supply and competing uses amongst all sectors across the economy.

20. Envint Consulting et al. (2022). *B.C. Renewable and Low-Carbon Gas Supply Potential Study*.

21. FortisBC Energy Inc. (2022). *Revised Renewable Gas Program Application – Stage 2 (Application)*.

22. TorchLight Bioresources Inc. (2020). *Renewable Natural Gas (Biomethane) Feedstock Potential in Canada*.

23. Canada Energy Regulator. (2022). *Provincial and Territorial Energy Profiles – British Columbia*.

policies and programs in closing the gap to ensure our targets are met.

A full summary of the modelling process and assumptions used can be found at saanich.ca/retrofitstrategy.

Modelling Results

The results of the modelling demonstrates that local policies, in combination with the planned Provincial and Federal policies are essential to achieve our climate targets. The GHG reduction potential of each scenario is as follows:

- 1. Business-As-Usual (BAU)** achieves 36% GHG reduction by 2030 and 41% reduction by 2050 (below 2007 baseline). This scenario represents implementation of current policies and programs and demonstrates them to be insufficient. GHG reductions are primarily achieved through BC's *Clean Electricity Delivery Standard*; current fuel switching rates supported by existing Provincial and Federal incentive programs; and the *BC Energy Step Code* applied to redevelopment and major renovations.
- 2. Planned Provincial and Federal Policies** achieves 41% reduction in building sector emissions by 2030 and 90% reduction by 2050. This scenario includes the Province's *Highest Efficiency Equipment Standard* and the *Alterations Code*, though the GHG reductions are primarily the result of the former. However, this scenario is still inadequate to achieve either Provincial or Saanich targets.
- 3. Potential Local Policies**, when combined with the planned Provincial policies achieves a 58% reduction in building sector emissions by 2030 and a 99% reduction by 2050 (see figure 12). This pathway puts Saanich on track to meet its climate targets and aligns closely with the Province's 2030 sectoral targets as well. The increase in GHG reductions in this scenario is a result of:

- An increase in fuel switching in Part 3 and Part 9 buildings through early adoption of the *Highest Efficiency Equipment Standard* in 2027 (subject to the Province enabling an optional, accelerated roll-out similar to the current approach for the *BC Energy Step Code*);
- A further increase in fuel switching in Part 9 buildings, driven by the *proposed requirement to phase out oil heating by 2030* and the proposed continuation of the *Heat Pump Financing Program* in the interim;
- A further increase in fuel switching in Part 3 buildings, driven by Saanich's proposed *Revitalization Tax Exemption*;
- An increase in GHG emissions reduction associated with energy benchmarking, driven by the proposal to introduce a mandatory benchmarking program;
- Further energy efficiency and fuel switching in Part 3 buildings, triggered by Saanich's proposed Building Performance Standard and Strata Energy Advisor Program; and,
- Further efficiency and fuel switching in Part 9 buildings, encouraged by the expansion of the Home Energy Navigator.

In implementing this scenario, Saanich should strive for the following rates of fuel switching from fossil fuels to electricity by 2030:

- 100% (2,530) Part 9 residential homes must switch from oil to electricity;
- 36% (3,400) Part 9 residential homes must switch from natural gas to electricity;

Note: estimates on the number of fuel switching retrofits required for commercial buildings is not provided due to a lack of primary heating fuel source data for this building sector.

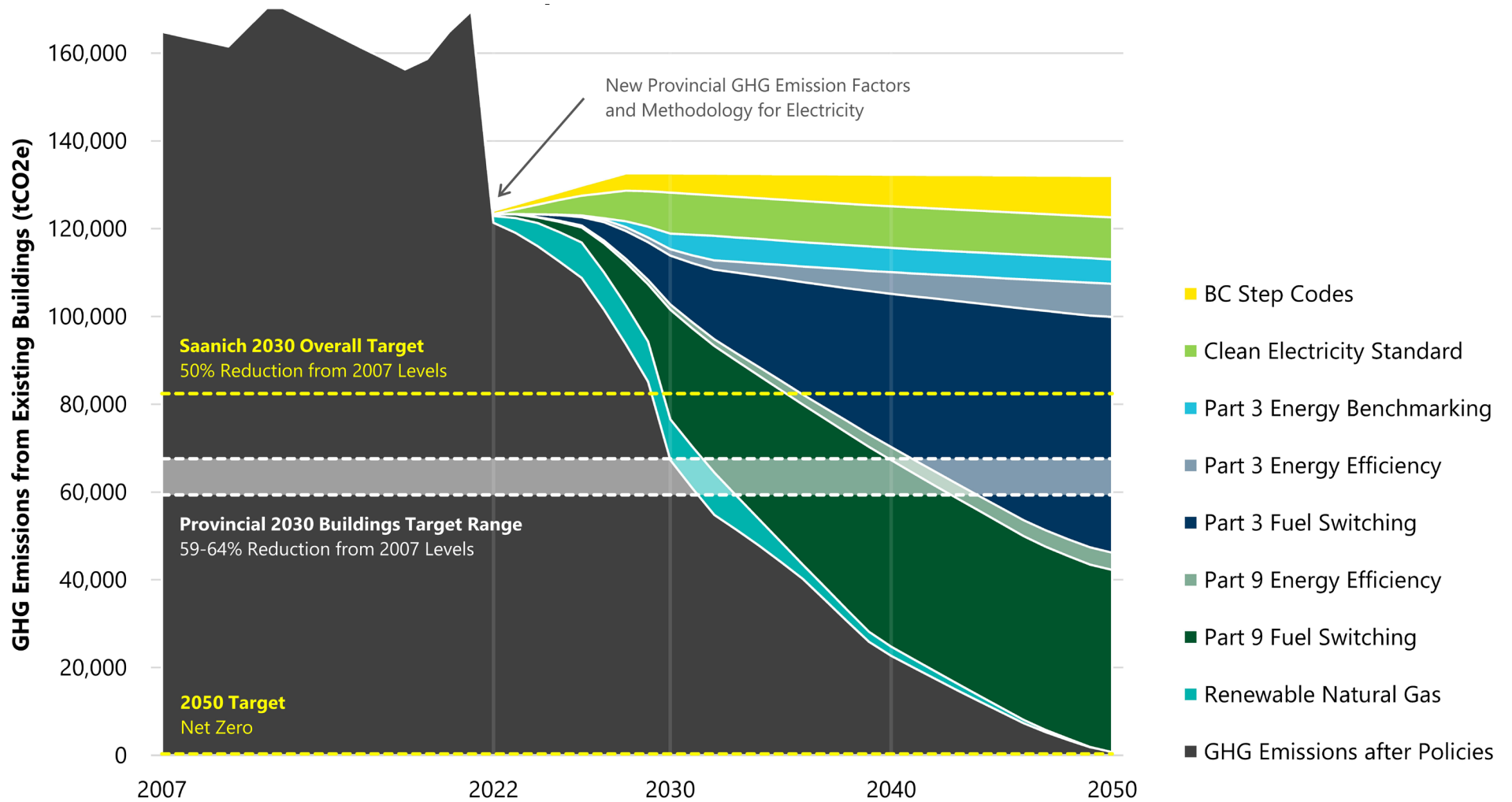


Figure 12: Modelled Pathway for GHG Emissions Reductions in Existing Buildings

- 27% (51,750m² or 623 units) of rental apartment buildings must fuel switch from natural gas to electricity; and,
- 15% (46,350m² or 526 units) of condominium strata buildings must fuel switch from natural gas to electricity.

While the key policy and programmatic actions have been included to understand their relative impact, foundational efforts that could not be modelled or that may not have a direct or widespread impact on emissions and resilience, such as financing programs or education campaigns, are still essential to drive demand and support market transformation. The actions are not necessarily additive to each other; in other words, the model accounts for overlap in the impact of various actions which is helpful in that it builds redundancy into the strategy and increases the likelihood that the combined impact of all actions will have the desired effect.

More details on the modelling outcomes and assumptions can be found at saanich.ca/retrofitstrategy.

6.2 High Impact Actions

The following high impact actions have been identified as having the greatest direct impact on GHG reduction, resilience, and market transformation and will be the highest priority actions for Saanich in the coming three years:

Action	Description
PR1	Implement mandatory building energy benchmarking and disclosure for large Part 3 buildings.
PR2	Require the removal of oil heating systems by 2030.
PR8	Support the Province's design and delivery of the Highest Efficiency Equipment Standard and implement the early adoption pathway for local governments.
IN1	Work with regional partners to implement a Strata Energy Advisor Program.
IN2	Scale up the Heat Pump Financing Program for Part 9 homes.
IN3	Implement a low-income direct install program for fossil-fuel to heat pump conversions, subject to the findings of the feasibility study.
IN4	Incentivize electrification through a Revitalization Tax Exemption (RTE) program for Part 3 Buildings.
LD1	Upgrade all existing District facilities to be Zero Carbon and 100% renewably fueled, prioritizing electrification first.
LD2	Upgrade District facilities to incorporate cooling and air filtration.
Monitoring and Reporting	Develop and report on new resilience metric: Number and percentage of MURBs (buildings and units) at risk of overheating.

6.3 Action Tables

Strategy 1.a) Municipal Policy and Regulation

#	Proposed Policy/action	Description	Initiation (Completion) Timeframe	Priority
PR1	Implement Mandatory Building Energy Benchmarking and Disclosure for large Part 3 buildings	Establish a requirement and supporting program for mandatory carbon and energy benchmarking and disclosure for Part 3 buildings, in collaboration and alignment with other local governments in BC. Explore opportunities to improve equity and housing outcomes through the program, for example, by promoting energy disclosure for rental properties.	2023 (2025)	High Impact Action
PR2	Require the removal of oil heating systems by 2030	Implement a legislative requirement for the removal of oil heating systems from all buildings by 2030 under the (joint) authority of environmental protection or other pathway, as determined. Ensure supportive programs are in place to aide with compliance.	2023 (2025)	High Impact Action
PR3	Implement a fuel source declaration for building owners, if needed	Assess the need to implement a fuel source declaration based on the delivery and efficacy of the Province's Virtual Energy Rating System and related labelling requirements (see actions AD3 and RPC2). Explore the legislative authority for this declaration to be mandatory, if needed.	2024 (2026)	High
PR4	Remove policy barriers to retrofits and high performance buildings	Review and update select bylaws such as the noise bylaw, building bylaw and zoning bylaw to remove barriers to passive cooling, electrification and high performance buildings. Seek delegated authority to approve minor retrofit upgrades to existing buildings.	2023 (2023)	High
PR5	Develop policy on the use of alternative renewable energy sources to guide development of programs, policies and regulations	Formalize a policy on the use of alternative renewable energy sources to guide the District's programs and decision-making, including but not limited to: hydrogen, lignan, RNG, wood and biomass. Account for various dimensions such as lifecycle emissions, resilience benefits, supply, commercialization, price volatility, First Nations' perspectives and more.	2024 (2026)	Medium
PR6	Develop policies or tools to minimize the carbon impact of redevelopment	Explore options and and implement the preferred policy approach to ensure zero carbon, resilient and low embodied emissions buildings are realized when rezoning, redevelopment or renewal is proposed for an existing building.	2025 (2026)	Medium
PR7	Investigate options to leverage business licensing to support retrofit objectives	Explore and implement impactful opportunities to use municipal business licensing as a tool to support or incentivize retrofit objectives such as data sharing, contractor accreditation or the implementation of low carbon heating systems.	2024 (2025)	Medium

Strategy 1.b) Municipal Policy and Regulation (Provincially Enabled)

#	Proposed Policy/action	Description	Initiation (Completion) Timeframe	Priority
PR8	Support the Province's Highest Efficiency Equipment Standard, and implement the early adoption pathway for local governments	Strongly support effective design and implementation of the Province's Highest Efficiency Equipment Standard, which will require all new space and water heating equipment sold and installed in B.C. to be at least 100% efficient after 2030. Implement the proposed early adoption pathway for local governments, advocating that this be enabled for a 2027 start date.	2023 (2027)	High Impact Action
PR9	Advocate for the timely implementation of property assessed clean energy (PACE) financing legislation and programs	Enabling PACE legislation in BC will help address the capital cost barriers to electrification in residential and commercial buildings. Legislative amendments will help simplify and streamline PACE administration and support larger scale programs by enabling municipalities to borrow for the purpose of offering PACE financing.	2023 (until legislation is enacted)	High
PR10	Advocate that the BC Building Code and Alterations Code address overheating and air quality issues in buildings	Advocate that the forthcoming alterations code impose clear indoor temperature standards based on future climate files and consider opportunities for incremental cooling and air filtration improvements for smaller alterations (e.g. an air conditioned common room).	2024 (until adopted)	High
PR11	Assess the impact of forthcoming Alterations Code when it is enabled by the Province to determine value of implementation	The Provincial building code expansion will require buildings undergoing certain alterations to meet select high-efficiency code requirements. Risks include significant staff capacity to implement with minimal GHG reductions, given the code's likely focus on energy efficiency rather than carbon emissions. Further assessment will be conducted when more information is available to determine if there are sufficient benefits to supporting implementation.	2024 (2025)	Medium
PR12	Seek municipal authority to implement a Carbon Performance Standard for existing buildings, as needed	A Carbon Performance Standard (CPS) would enable direct regulation of emissions in existing Part 3 buildings by setting a maximum carbon intensity that declines over time. The need for this policy will depend on the timeliness and strength of the Province's Highest Efficiency Equipment Standard. A CPS may be needed to achieve 2050 targets but will require the Province enables new local or regional government authorities.	2026 (2030)	Medium

Strategy 2. Advocacy for Provincial Policy and Regulation

#	Proposed Policy/action	Description	Initiation (Completion) Timeframe	Priority
AD1	Advocate for effective design and implementation of the Province's GHG emissions cap for Natural Gas Utilities	The Province's proposed GHG emissions cap for natural gas utilities will limit their total emissions to roughly 6 million tCO ₂ e/year in 2030 (47% below 2007 levels). Ensuring this regulation is effectively designed to guarantee real GHG reductions in BC is critical, and aligns with building efficiency and fuel switching policies, as well as consideration of the highest and best use of limited renewable natural gas (RNG) supply.	2023 (until adopted)	High
AD2	Advocate that the Province reform the BC Utilities Commission (BCUC) mandate and that the Province and utilities adopt an aligned energy plan	Call on the Province to reform the BC Utilities Commission (BCUC) mandate to explicitly support the CleanBC targets, and urge the Province and Utilities to adopt a common GHG reduction pathway and energy plan to 2050. Advocate for, and participate in as needed, amendments to policy under the purview of the BCUC (e.g, updating BC Hydro Distribution Extension Fee to reduce barriers to electrification).	2024 (until adopted)	High
AD3	Advocate for effective design and implementation of Province's labelling program and time-of-listing labelling requirement	BC's forthcoming Virtual Energy Rating System will provide an energy and carbon label for homes (see Action RPC1). Advocate for public disclosure of ratings, integration of resilience measures (e.g. presence of cooling), and for a legislated time-of-listing homeowner verification requirement (for rental and sale) to support consumer protection and increase virtual rating accuracy over time.	2023 (until adopted)	High
AD4	Advocate for better access to building energy, emissions and program participation data	Advocate for and work with the Province, Federal Government and Utilities to improve local government access to detailed data on energy and emissions in buildings and uptake on retrofit programs to better track progress and inform policy and program development.	2023 (until provided)	High
AD5	Advocate and support BC Hydro in removing barriers to electrification	Advocate and collaborate with BC Hydro to identify and remove barriers to electrification across the system, from grid capacity through to rate and fee structures, design processes and timelines, and more. Support efforts to increase transparency and collaboration with stakeholders.	2023 (ongoing)	High

Strategy 2: Advocacy for Provincial Policy and Regulation

#	Proposed Policy/action	Description	Initiation (Completion) Timeframe	Priority
AD6	Address current gaps in incentives through advocacy and/or development of local programs	<p>Continue to monitor and advocate for better coverage in Federal, Provincial and utility incentive programs, and seek to implement local programs to address gaps where feasible, including but not limited to:</p> <ul style="list-style-type: none"> Greater incentives to address underlying health and safety issues such as asbestos and mould; Specialized programs and large incentives for multi-family buildings, including in-suite measures; Envelope-focused incentives for Part 3 buildings; Greater funding for low-income housing and access to all programs for renters; Expanded incentive eligibility to cover broader range of uses and building types (e.g. part 9 homes that have been converted to businesses, non-profits, seniors centres, churches, etc.) Incentives for upgrades to add cooling for buildings that are already on electric heat; and, Incentives for enabling technologies such as demand response and energy management equipment, batteries and storage. 	2023 (ongoing)	High
AD7	Advocate for legislation that upholds the rights of renters and strata owners to add passive or mechanical cooling and air filtration in their suites.	<p>Call on the Province to create or amend legislation that upholds the rights of renters and strata owners to:</p> <ul style="list-style-type: none"> “Right to Cooling” legislation, preventing strata associations or landlords from prohibiting or unreasonably restricting residents from installing passive or mechanical cooling or ventilation measures; The establishment of a maximum indoor air temperature or requirement for cooling within the Residential Tenancy Act; and Changes to the Strata Property Act to reduce the voting threshold required to install heat pumps from 75% to 50%. 	2025 (until adopted)	Medium
AD8	Advocate that strata depreciation reports be required to consider the forthcoming Highest Efficiency Equipment Standards in their assessments	<p>BC's forthcoming Highest Efficiency Equipment Standards will limit like-for-like fossil fuel space and water heating equipment replacements at time of renewal. Advocate for this legislative requirement to be accounted for as part of depreciation reports to support proactive planning.</p>	2025 (until adopted)	Medium

Strategy 3. Municipal Incentives and Supports

#	Proposed Policy/action	Description	Initiation (Completion) Timeframe	Priority
IN1	Launch a Strata Energy Advisor Program in collaboration with regional partners	Work with regional municipal partners to launch a Strata Energy Advisor "concierge" style retrofit program to support strata buildings through the feasibility and decision-making process for low carbon retrofits.	2023 (2024)	High Impact Action
IN2	Scale up the Heat Pump Financing (PACE) Program for Part 9 homes , and seek program financing from the Federation of Canadian Municipalities (FCM) or other sources when Provincially enabled	Establish a revolving green fund to enable ongoing participation in Saanich's Heat Pump Financing Program while continuing to seek legislative changes to enable large-scale Property Assessed Clean Energy (PACE) financing programs in BC (see Action PR9). Expand eligible upgrades to include all fossil fuel to heat pump conversions (oil, gas and propane).	2023 (2023)	High Impact Action
IN3	Implement a low-income direct install program for fossil-fuel to heat pump conversions, subject to the findings of a feasibility study	Complete a feasibility study to deliver a direct-install heat pump program to eliminate the cost and streamline the process for low-income households in single family homes, leveraging available grants to maximize cost recovery. Deliver the program, as determined by the feasibility study.	2023 (2024)	High Impact Action
IN4	Incentivize electrification through a Revitalization Tax Exemption (RTE) program for Part 3 Buildings	Offer a revitalization tax exemption to waive or reduce property taxes for commercial and multi-family buildings that undertake electrification measures to increase industry capacity and prepare the market for BC's forthcoming Highest Efficiency Equipment Standard.	2023 (2023)	High Impact Action
IN5	Support ongoing implementation and expansion of the Home Energy Navigator	Continue to work with the CRD to implement, evaluate and continually improve upon the Home Energy Navigator, a concierge service that provides support for residents of single-family homes as they progress along their retrofit journey.	2023 (ongoing)	High
IN7	Deepen commercial building supports through the Greater Victoria 2030 District and other opportunities	Continue to work with BOMA BC and key partners to expand and deepen retrofit support services for commercial building owners and managers and seek to continually expand participation.	2023 (ongoing)	High

Strategy 3. Municipal Incentives and Supports

#	Proposed Policy/action	Description	Initiation (Completion) Timeframe	Priority
IN8	Develop resources, supports and outreach materials on key topics for tailored audiences	<p>Continue to research, develop and disseminate resources and materials on a range of topics (and in collaboration with community partners) to support education and capacity building for specific audiences, including but not limited to:</p> <ul style="list-style-type: none"> ▪ Neighbourly siting and installation processes for heat pumps (including bylaw reform for stratas); ▪ Building-scale energy resilience (e.g. energy generation, on-site energy storage, vehicle to grid technologies, and/or back up power during power outages); ▪ Reducing embodied carbon in retrofits, including material selection, waste reduction and planning for end of life; ▪ Passive strategies to improve energy performance and resilience; ▪ Increasing resilience through roof replacements (e.g. considerations for green roofs, insulation, solar panels, high-albedo roof materials, etc.); and ▪ Optimization and maintenance of building systems. 	2023 (ongoing)	High
IN9	Support demonstration projects to showcase successful implementation of electrification and/or resilience projects	Support the implementation of demonstration projects and case studies through partnerships with key stakeholders and/or financial support. Demonstration projects and case studies may include building electrification projects, innovative approaches or technologies for low-carbon resilient buildings, energy generation projects, and/or energy storage or back up power supply to improve resilience.	2024 (ongoing)	High
IN10	Provide top-up incentive funding that maximizes program uptake and fuel switching and addresses program gaps.	Prioritize top-up incentive funding to CleanBC or other programs that maximizes program uptake (i.e. where free ridership is minimized) and that addresses incentive gaps (e.g. electrical service upgrades). Consider ongoing access to data for any changes to top-up investments for effective monitoring of progress towards our climate goals (see Action AD6).	2023 (ongoing)	High

Strategy 3. Municipal Incentives and Supports

#	Proposed Policy/action	Description	Initiation (Completion) Timeframe	Priority
IN11	Explore opportunities to support or partner on localized, community-based renewable energy generation	Explore opportunities, including feasibility studies, pilot projects, incentives and partnerships to support local renewable energy generation such as solar, wind, and RNG (e.g. utilizing local agricultural waste).	2025 (ongoing)	Medium
IN12	Facilitate climate empowerment programs that support community members to take action in their buildings	Continue to increase and deepen the available programs to support and empower residents and businesses in taking collaborative or peer-supported climate action, including but not limited to: <ul style="list-style-type: none"> ▪ Neighbour to Neighbour Resilience Initiative; ▪ Saanich Residents' Climate Action Guidebook and Climate Action Workshop Series; ▪ One Planet Saanich; and ▪ Climate Friendly Homes Tour. 	2024 (ongoing)	Medium
IN13	Increase participation in Building Benchmark BC to bridge towards and build capacity for a mandatory program	Continue to work with Open Green Building Society to provide access to Building Benchmark BC, a free voluntary energy and carbon benchmarking program for Part 3 buildings. Support efforts to increase the services available through the program and expand participation numbers as the District seeks to transition to a mandatory Benchmarking requirement (see Action PR1).	2023 (2025)	Medium
IN14	Develop and disseminate broad public education materials and campaigns to improve climate literacy	Continue to develop and run communication campaigns for the public, with a particular focus on: <ul style="list-style-type: none"> ▪ Heat pumps and other building electrification measures as climate solutions; ▪ Climate preparedness and resilience measures; and, ▪ The negative climate, air quality and health impacts of natural gas. 	2023 (ongoing)	Medium
IN15	Develop a public dashboard for climate risk, energy and emissions	Create a public dashboard with building specific data on climate risk, adaptation measures, energy and carbon emissions, leveraging or integrating with existing platforms where feasible.	2026 (2027)	Low

Strategy 4. Research, Partnerships and Collaboration

#	Proposed Policy/action	Description	Initiation (Completion) Timeframe	Priority
RPC1	Pursue partnerships and opportunities to increase industry capacity	Support opportunities to increase industry capacity to plan for and deliver retrofits in all buildings and achieve the rate of retrofits required. This includes but is not limited to: <ul style="list-style-type: none"> ▪ Pursuing opportunities for inclusive workforce development for women, indigenous communities, people of colour, young people and those with barriers to employment; ▪ Supporting active recruitment of new people into the trades; ▪ Connecting contractors and builders to existing training programs and supporting expanded training offerings; and, ▪ Providing more industry education on low-carbon options and their benefits. 	2024 (ongoing)	High
RPC2	Support implementation of the Province's forthcoming home energy labelling program and requirements	BC's forthcoming Virtual Energy Rating System will provide an energy and carbon label for homes and help connect residents with relevant retrofit programs. Support the use of this labelling tool in the community, and advocate for effective implementation of the time-of-listing requirement (see Action AD3).	2024 (2025)	High
RPC3	Collaborate with the Provincial and Federal Governments, utilities and other actors to maximize program integration	Work with program funders and delivery agents at all levels to integrate programs and create a more streamlined retrofit journey and a positive experience for participants.	2023 (ongoing)	High
RPC4	Complete community-wide and building scale heat mapping	Work with regional partners to conduct heat mapping at both the community and building scale to better understand characteristics of health risks from heat, inform program and policy development, track risk and vulnerability to heat in our community, and better target communications and programs.	2023 (2024)	High
RPC5	Pilot Low-Carbon Resilience Audits in Part 3 buildings	Collaborate with BOMA and the Greater Victoria 2030 District to support the development, pilot, and scaling up of the climate risk assessment framework for existing buildings to help guide identification and implementation of resilience measures.	2023 (2024)	High

Strategy 4. Research, Partnerships and Collaboration

#	Proposed Policy/action	Description	Initiation (Completion) Timeframe	Priority
RPC6	Partner with health authorities to support access to cooling as a life-saving intervention	Collaborate with health authorities to support low-income households, individuals with disabilities or other vulnerable populations with installing heat pumps (or other cooling equipment in emergency situations) as a life-saving intervention.	2024 (ongoing)	Medium
RPC7	Collaborate with partners across BC to research, develop and implement large scale, transformative solutions to address retrofit barriers	<p>Continue to actively collaborate, support and lead on Province-wide efforts to remove barriers and accelerate building retrofits, including but not limited to:</p> <ul style="list-style-type: none"> Supporting the development of a BC-wide Retrofit Accelerator (e.g. audits, low carbon roadmaps, concierge/support services, etc.); Pursuing opportunities for Part 3 buildings to access capital (e.g., project bundling for Canada Infrastructure Bank funding; attracting full-service investment firms and private capital) Exploring ways to bundle design, production and/or installation of energy upgrades to reduce costs and accelerate pace of retrofits; and Participating in forums for ideas-exchange (e.g., co-chairing BC Local Government Retrofit Peer Network; Building to Electrification Coalition, etc.). 	2023 (ongoing)	Medium

Strategy 5. Demonstrating Leadership

#	Proposed Policy/action	Description	Initiation (Completion) Timeframe	Priority
LD1	Upgrade all existing District facilities to be Zero Carbon and 100% renewably fueled, prioritizing electrification first.	<p>Complete detailed design and costing, and complete upgrades to all District facilities to be zero carbon and 100% renewably fueled, prioritizing an electrification-first approach. This work should:</p> <ul style="list-style-type: none"> ▪ maximizing maximize energy efficiency and heat recovery; ▪ integrating integrate the need for full electrification of fleet and equipment at eachthat site; ▪ consider the embodied emissions and health of materials used; ▪ incorporate cooling and air filtration as required (see Action LD3); ▪ incorporate on-site renewable energy generation and storage where possible (see Action LD4); and, ▪ prioritize electrification first, considering other renewables where appropriate. 	2023 (2040)	High Impact Action
LD2	Upgrade District facilities to incorporate cooling and air filtration	Conduct an inventory of cooling and advanced air filtration spaces in District facilities and implement retrofits where needed to ensure access to cooling and clean air during extreme heat or air quality advisory events for municipal staff and the public and based upon the most recent climate projections.	2023 (2027)	High Impact Action
LD3	Design all new District facilities to be Zero Carbon and 100% renewably fueled, prioritizing electrification first. Incorporate cooling and air filtration.	Ensure that all new District facilities are designed to achieve the highest steps of the BC Energy and Zero Carbon Step Codes, use 100% renewable energy, and minimize embodied emissions. New buildings should integrate passive design, mechanical cooling, and full electrification of associated fleet and equipment.	2023 (ongoing)	High
LD4	Increase on-site renewable energy generation at District facilities and sites, including innovative solutions for energy back-up and storage.	Continue to explore existing and emerging technologies. Pilot innovative solutions for on-site renewable energy generation and energy back-up and storage in order toto increase resiliency and efficiencies (e.g., to reduce peak loads and to provide back- up power from renewable energy sources during power outages).	2023 (ongoing)	Medium
LD5	Showcase District facility retrofits and share learnings with industry	Actively share the successes, challenges and lessons learned in Saanich's own retrofit journey in order to build local knowledge and capacity with industry and raise awareness with the public. Efforts may include developing case studies, offering building tours, hosting workshop series or delivering presentations.	2023 (ongoing)	Medium

7.0 Implementation and Monitoring

Implementation will be led by Sustainability and Strategic Initiatives, working in collaboration with both internal staff and external organizations. Implementation will require resources and funding, as well as support from other divisions and departments including Planning, Transportation, Building, Bylaw, Licensing and Legal Services, Facility Operations, Police, Fire, and Finance and Communications. Information on funding requirements will be presented to Council alongside the Building Retrofit Strategy, and brought forward through annual budget requests and capital plans.

7.1 Monitoring & Reporting

Progress on implementation of the Building Retrofit Strategy will be reviewed annually as part of Saanich's Climate Plan Report Card reporting process, led by the Sustainability Division and supported by the internal Climate Working Group. The annual Climate Plan Report Card will be presented to Council and posted on the District website. The Building Retrofit Strategy will be reviewed every five years by the Sustainability Division to ensure it is still relevant and take advantage of new opportunities and technologies. Significant updates to the strategy will be presented to Council for approval.

Table 2 lists the metrics that will be used for monitoring and reporting, as well as the sources of information for those metrics. Many of these metrics are already being reported on annually, but new It is important to note that some data is reliant on provision by external organizations and are subject to the timely receipt of these metrics. These metrics may be adjusted as new data becomes available or as new actions require.

Strategy 5. Demonstrating Leadership

Metric	Data Source	New / Existing Metric
Existing Part 9 residential fossil fuel systems replaced with a heat pump: <ul style="list-style-type: none"> Oil to Heat Pump (annual total and cumulative %) Gas to Heat Pump (annual total and cumulative %) 	CleanBC program participation numbers	Existing
Fossil fuel use: <ul style="list-style-type: none"> Total natural gas connections (Residential and Commercial) Total natural gas consumption (Residential and Commercial) Renewable Natural Gas Use (as a % of all natural gas use) Number of oil heating systems in use 	FortisBC Saanich oil inventory and permit data, CleanBC program participation numbers	Existing
Building space heating demands	Saanich GHG Inventory; NRCan National Energy Use Database	Existing
Number and percentage of MURBs (buildings and units) at risk of overheating	Community heat mapping and surveys (methodology TBC)	New
Fuel switching trends in Part 3 Buildings: <ul style="list-style-type: none"> Number or m2 of Part 3 Residential (Strata and rental) Number or m2 of Commercial 	Program participation (e.g. SEA, RTE, CleanBC programs)	New
Local energy production <ul style="list-style-type: none"> Number of solar installations Local RNG Production (GJ) 	BC Hydro net metering numbers; Saanich solar hot water permit data; CRD RNG production	New

Table 2: Monitoring and reporting metrics and data sources

8.0 Glossary and Acronyms

8.1 Glossary

Adaptation	Actions taken to help our community cope with or adjust to a changing climate. Contrasted with mitigation, which is focused on reduction of GHG emissions.
Carbon Dioxide Equivalent	A unit that allows different greenhouse gases, which have different global warming potentials over a set amount of time, to be compared against each other.
Climate Projections	Anticipated changes in temperature, precipitation, extreme weather events, or other indices of weather, based on climate models.
Embodied Emissions	The greenhouse gas emissions produced in creating and delivering a particular material (e.g., infrastructure or consumable goods), including the energy used for extraction of raw materials, manufacturing and transportation of the end product.
Fossil Fuel	Fuels such as coal, gasoline, natural gas, oil, diesel, etc., that are sourced from organic materials formed over a long geological time period.
Part 9 Building	A definition from the BC Building Code used to describe houses and small buildings that are three storeys or less and have a building footprint less than 600 square metres. Most commonly single family homes, duplexes and some townhomes.
Part 3 Building	A definition from the BC Building Code used to describe buildings that have a building footprint 600 square metres or greater or are greater than three storeys. Typically apartment buildings, condos, commercial, institutional or industrial uses.
Resilience	Capacity to withstand and/or recover from hazards, risks and challenges associated with a changing climate.
Retrofit	Activities undertaken to improve an existing building's energy or carbon performance (including mechanical systems, such as space and water heating systems), and building envelope (including insulation, windows and doors, and air sealing).

8.2 Acronyms

BAU	Business as usual
BBBC	Building Benchmark BC
BOMA BC	Building Owners and Managers Association of BC
CEA	Community Energy Association
CO₂e	Carbon dioxide equivalent
CRD	Capital Regional District
FCM	Federation of Canadian Municipalities
GHG	Greenhouse gas
HVAC	Heating, ventilation and air conditioning
MURB	Multi-Unit Residential Building
PACE	Property Assessed Clean Energy (Financing)
RNG	Renewable Natural Gas



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