

# Rebuilding a Resilient B.C.

Across Canada and elsewhere, British Columbia is being commended for its deft navigation of the COVID-19 pandemic. Now B.C. has another opportunity to show leadership — by rebuilding the economy to ensure our province's future resilience.

The biggest threat to the recovery of our economy is stalling — or worse, going backwards — where important gains have been made in the province. B.C.'s leadership on climate action is one of our crowning achievements.

We see much opportunity in complementing and accelerating the goals of the CleanBC climate plan while investing in jobs and better health and well-being for British Columbians affected by the crisis.

"The recovery is going to be a tough task, and we need to be open to new ideas and new approaches. At the same time, core B.C. values like equity, taking care of each other, sustainability and reconciliation have not changed. In practice, those values will take the form of more good-paying jobs, advancing reconciliation and meeting climate goals, and growing an innovative, resilient economy that works for people."

— Carole James, Minister of Finance



# Four principles for a resilient recovery in B.C.

- Support employment opportunities resilient to future economic shocks and disruption as the world seeks to limit warming to 1.5 degrees Celsius
- Prioritize investment in industries and businesses producing low- and zero-carbon goods and services to grow the clean economy
- Incentivize decarbonization efforts that go beyond existing regulatory requirements
- Ensure decisions on economic relief and stimulus programs complement, enhance, and accelerate progress toward CleanBC's vision and goals

In *Rebuilding a Resilient B.C.*, the Pembina Institute provides recommendations on how to secure a resilient economy through stimulus, and sustain progress toward a prosperous, clean, low-carbon future.



"Sooner or later we will find a vaccine for the coronavirus. But there is no vaccine for climate change. Therefore [we] need a recovery plan designed for the future."

— Ursula von der Leyen, president,  
European Commission

Photo: Province of British Columbia



# Low-carbon homes and buildings

From 2009 to 2012, B.C.'s retrofit industry boomed due to an influx of incentives following the 2008 recession. After these incentives were cancelled or fully allocated, the retrofit industry declined sharply and still hasn't recovered. Economic stimulus is an opportunity to rebuild the retrofit industry in a sustainable manner — by combining incentives and workforce development with systemic measures to support the retrofit economy beyond this stimulus period. Investing in B.C.-based manufacturing of building components will contribute to economic recovery and the achievement of CleanBC goals.



## Facts and figures

10%

Portion of B.C.'s carbon pollution arising from space and water heating in homes and buildings<sup>1</sup>

60%

Portion of buildings standing today that will still be around in 2050<sup>2</sup>

30,000 houses,  
20,000 apartment  
units, and 3 million  
square metres of  
commercial space

Number of retrofits needed every year in B.C. to cut carbon pollution from buildings by at least 80% by 2050<sup>3</sup>

\$10 billion in  
economic activity and  
20,000 jobs

Benefits of a scaled-up retrofit industry in B.C.<sup>4</sup>



Photo: Stephen Hui, Pembina Institute

# Low-carbon homes and buildings

## Recommendations

### Raise incentive caps to deepen retrofits of homes and buildings

Economic uncertainty and reluctance to bring contractors into residential spaces will slow down demand for retrofit services. Increasing the cap on retrofit incentives offered through CleanBC's Better Homes and Better Buildings programs would counter these impacts and maximize economic opportunity at each renovation site. This would ensure we get maximum benefit from multiple measures that minimize energy use, encourage fuel switching, and improve climate resilience.

### Boost funding to accelerate retrofits and construction of social and Indigenous housing

Initiatives that make existing affordable housing more energy efficient, resilient, and low-carbon provide an excellent opportunity to support the province's CleanBC, housing, and affordability goals. To support construction of new social housing, B.C. can increase the amounts allocated under the Community Housing Fund, Indigenous Housing Fund, Supportive Housing Fund, and Women's Transition Housing Fund.

### Invest in deeper retrofits of public buildings

Increasing funding for the Carbon Neutral Capital Program to improve energy efficiency, fuel switch, and upgrade ventilation and air filtration systems in care facilities, schools, universities, and recreation centres will increase the resilience of communities and support social services that facilitate health, well-being, and education.

### Grow and train the workforce and develop the supply chain

The construction slowdown caused by the pandemic offers an opportunity to upskill and grow the workforce needed to build and retrofit low-carbon homes and buildings. Increasing grants and caps through the CleanBC Building Innovation Fund to stimulate local supply and manufacturing of low-carbon building components would grow the number of B.C. suppliers to domestic markets and beyond.

## Sustaining a retrofit economy

Leveraging limited public dollars to mobilize private capital is critical to funding retrofits at the scale needed to achieve our climate targets and for ensuring the retrofit industry and the green building sector continue to thrive beyond the recovery phase. Property assessed clean energy (PACE) financing is an innovative tool that could boost investment in green building and energy efficiency projects.

Enacting specific requirements for energy efficiency and carbon intensity in existing homes and buildings is key to accelerating the decarbonization of the building sector.





## Facts and figures

- 27%** Portion of B.C.'s carbon pollution arising from road transportation<sup>7</sup>
- 46%** Share of road transportation emissions from medium- and heavy-duty trucks<sup>8</sup>
- 58%** Increase in online purchases by Canadians between 2016 and 2018<sup>9</sup>
- 30%** Reported increase in parcels delivered by Canada Post during the pandemic<sup>10</sup>
- 49%** Portion of Vancouver's population living within 250 metres of a major arterial road with high concentrations of air pollution.<sup>11</sup>

## Clean transportation

The pandemic has spurred growth in online shopping, resulting in an increase in urban freight volumes. On May 19, Canada Post delivered 2.1 million parcels — “roughly three times the norm for this time of year.”<sup>5</sup> Growth in e-commerce is outpacing brick and mortar retail, and this trend is likely to continue. As the delivery economy grows, so too will carbon pollution — unless we invest in sustainable options.

While urban deliveries are rapidly climbing, public transit ridership plummeted due to the pandemic. TransLink reported a more than 80% decrease in ridership in April.<sup>6</sup> However, transit remains an essential public good and will be important for B.C.'s economic recovery. Many essential workers continue to rely on public transit to get to work and to access basic needs. Vulnerable populations face challenges due to inadequate and inequitable access to transportation.

We have seen many people shift to active transportation, such as walking and cycling, for recreation but also to access basic needs. While cycling commuter traffic has decreased, cycling routes have seen an increase of up to 40%. Cycling infrastructure plays an important role in supporting goods movement by bike. Cargo bikes replacing conventional delivery trucks are becoming an increasingly common sight around Vancouver, contributing to a healthier city. Interest in testing cargo bike delivery options in Canadian cities is growing among large courier companies.

Photo: Roberta Franchuk, Pembina Institute

# Clean transportation

## Recommendations

### Provide operating and capital funding for transit systems

To ensure continuity of adequate and affordable transit service in B.C.'s municipalities, both emergency and long-term stable funding are needed. This will allow public transit agencies to continue to provide convenient and accessible service and avoid postponing investments in zero- and near-zero-emission vehicles and related infrastructure.

### Decarbonize last-mile urban freight deliveries

Local businesses have seen a spike in deliveries to consumers for daily essential items during the pandemic. To facilitate this shift, a trend which will likely continue, the province should collaborate with and provide support to municipalities and businesses to expand alternative zero-emission delivery modes (e.g. electric vehicles, cargo bikes) and support deployment of low-carbon alternative delivery models (e.g. off-peak deliveries, delivery microhubs, parcel lockers).

### Invest in active transportation infrastructure

The health and climate benefits arising from the growth in active transportation during the pandemic can be sustained through support for and collaboration with local governments to grow infrastructure. We recommend full implementation and funding of B.C.'s Active Transportation Strategy.

## Sustaining clean transportation

B.C.'s zero-emission vehicle policy framework should be expanded to include medium- and heavy-duty vehicles. The framework should include scaling up low-carbon hydrogen production and increasing distribution infrastructure; investing in hydrogen fuel-cell manufacturing and expansion of the hydrogen fuelling network; funding demonstration projects; and providing research and education through the Go Electric Hydrogen Fueling Infrastructure Program. Continuing funding for heavy-duty vehicle efficiency programs beyond 2022 should also be considered after the initial phase.

Insufficient data are collected and monitored by cities to plan for the future of goods movement. The B.C. government could provide support and collaborate with municipalities to better understand the scale of change in overall goods movement patterns and enable consistent municipal freight and goods movement strategies. This data should be integrated with plans for land use, transportation, climate, and energy.





## Clean energy

As energy-intensive areas of B.C.'s economy rebound, B.C.'s rapidly growing clean fuel sector is poised to provide clean energy solutions, including low-carbon hydrogen, biofuels, and biomethane. Growing the supply chain for biofuels could provide further support to rural communities dependent on the agricultural and forestry sectors. Reducing emissions from waste (e.g. tallow, cow manure, wood waste from logging or sawmills, waste chemicals from pulp mills, sewage) and creating a local, diversified, circular economy are additional benefits. Ramping these feedstocks up requires further investment to advance technology and supply chains.

Sectors that are difficult to switch over from fossil fuels — in particular, medium- and heavy-duty transportation — could benefit from renewable fuels serving as a bridge to fully electric or fuel-cell electric vehicles as the economy decarbonizes.

While hydrogen can play a role, not all hydrogen is created equal. In fact, most hydrogen made today is not low-carbon. Production of low-carbon hydrogen can be costly (e.g. technologies for electrolysis or carbon capture and sequestration). Hydrogen could help B.C. meet its climate targets if we have a clear path that establishes milestones for decreasing the carbon intensity of low-carbon hydrogen to zero over time. This means investing in hydrogen made with renewable electricity — while tightening emissions limits for gas production and increasing carbon-capture rates for hydrogen created from fossil fuels.

### Facts and figures

**66%** Percentage of fossil fuels in overall mix of energy used in B.C.<sup>12</sup>

**62%** Estimated percentage of global hydrogen R&D dollars spent in B.C.<sup>13</sup>

**3,470** Number of homes that FortisBC can currently supply with renewable natural gas for a year<sup>14</sup>

**2,177** Jobs in Canada's hydrogen industry in 2017<sup>15</sup>

**\$207 million** Total revenue of Canada's hydrogen industry in 2017<sup>16</sup>



Photo: Province of British Columbia

# Clean energy

## Recommendations

### Position B.C. to be a leading supplier of renewable fuels

Providing support to producers to meet the growing demand for biofuels — while also affording opportunities for rural agriculture and forestry-based communities to supply feedstocks for renewable natural gas and other biofuels, or to become regional hubs for biofuel production — would create local jobs while reducing emissions from waste.

Recapitalizing the Innovative Clean Energy (ICE) Fund would spur development of clean energy and technology solutions during the recovery phase and beyond.

### Develop a strategy to set B.C. on a path to be a leading producer and consumer of zero-carbon and carbon-neutral hydrogen

To kick-start the hydrogen economy, the B.C. government should provide strategic incentives (e.g. through the ICE Fund) to advance the production, distribution, and use of low-carbon hydrogen. This can be achieved through investments in electrolysis and carbon capture and storage technology, and pilot projects, particularly in heavy-duty transportation and industry. Support for best-in-class carbon capture should be targeted and time-limited, with the private sector funding the balance.

## Sustaining clean energy

To power B.C.'s 2030 economy in line with our climate targets, and set the province up for long-term success beyond 2030, B.C. needs a clean energy plan. This plan should provide a detailed pathway for implementing the vision described in CleanBC.

The clean energy plan should confirm future energy demands and bring together the work and studies currently underway (e.g. BC Hydro Phase 2 comprehensive review, bioenergy strategy update, hydrogen roadmap). Such a plan would provide clear policy guidance for regulators, utilities, and energy developers, and certainty to communities, investors, and businesses about B.C.'s clean energy future.

A clear, long-term government commitment to targets for clean fuels provides a powerful investment signal to companies. Expanding the LCFS mandate and tightening requirements to 2030 and beyond will ensure these policies clear a path for future deep decarbonization. Maintaining credit prices for renewable natural gas to spur private investment will also provide long-term support.



## Endnotes

- 1 Government of British Columbia, “Provincial Greenhouse Gas Emissions Inventory.” <https://www2.gov.bc.ca/gov/content/environment/climate-change/data/provincial-inventory>
- 2 Pembina Institute, *Building Energy Retrofit Potential in B.C.* (2016), 2. <https://www.pembina.org/docs/event/netzeroforum-backgrounder-2016.pdf>
- 3 Tom-Pierre Frappé-Sénéclauze, Dylan Heerema, Karen Tam Wu, *Deep emissions reduction in the existing building stock: Key elements of a retrofit strategy for B.C.* (The Pembina Institute, 2017), 71. <https://www.pembina.org/reports/retrofit-strategy-bc-report-2017.pdf>
- 4 Estimated economic impact based on GDP and jobs multipliers from: Dunskey Energy Consulting, *The Economic Impact of Improved Energy Efficiency in Canada* (Clean Energy Canada, 2018). [https://cleanenergycanada.org/wp-content/uploads/2018/05/TechnicalReport\\_EnergyEfficiency\\_20180403\\_FINAL.pdf](https://cleanenergycanada.org/wp-content/uploads/2018/05/TechnicalReport_EnergyEfficiency_20180403_FINAL.pdf); and Acadia Center, *Energy Efficiency: Engine of Economic Growth in Canada* (2014). <http://acadiacenter.org/document/energy-efficiency-engine-of-economic-growth-in-canada/>
- 5 Canada Post, “Parcel delays to continue as Canada Post delivers at record levels,” media release, May 26, 2020. <https://www.canadapost.ca/cpc/en/our-company/news-and-media/corporate-news/news-release-detail.page?article=2020/05/26/record>
- 6 TransLink, “TransLink COVID-19 Update: Service reductions beginning Monday and July fare increase deferred,” media release, April 04, 2020. <https://www.translink.ca/About-Us/Media/2020/April/Service-reductions-beginning-Monday-and-July-fare-increase-deferred.aspx>
- 7 “Provincial Greenhouse Gas Emissions Inventory.”
- 8 “Provincial Greenhouse Gas Emissions Inventory.”
- 9 Canada Post, *The 2019 Canadian E-Commerce Benchmark Report* (2019), 4. <https://www.canadapost.ca/cpo/mc/app/personal/miniforms/eshopperDownload.jsf?LOCALE=en>
- 10 Christopher Nardi, “Canada Post warns COVID-19 measures and ‘unprecedented’ volumes are causing delivery delays,” *National Post*, April 23, 2020. <https://nationalpost.com/news/canada-post-warns-covid-19-measures-and-unprecedented-volumes-are-causing-delivery-delays>
- 11 Southern Ontario Centre for Atmospheric Aerosol Research, *Near-Road Air Pollution Pilot Study* (2019), 21. <https://tspace.library.utoronto.ca/bitstream/1807/96917/4/Near%20Road%20Study%20Report.pdf>
- 12 Canada Energy Regulator, “Provincial and Territorial Energy Profiles – British Columbia,” Figure 7. <https://www.cer-rec.gc.ca/nrg/ntgrtd/mrkt/nrgsstmprfls/bc-eng.html>
- 13 Canadian Hydrogen and Fuel Cell Association, *Canadian Hydrogen and Fuel Cell Sector Profile* (2018). <http://www.chfca.ca/wp-content/uploads/2019/10/CHFC-Sector-Profile-2018-Final-Report.pdf>
- 14 “Provincial and Territorial Energy Profiles – British Columbia,” Natural Gas. <https://www.cer-rec.gc.ca/nrg/ntgrtd/mrkt/nrgsstmprfls/bc-eng.html>
- 15 Zen and the Art of Clean Energy Solutions, *British Columbia Hydrogen Study* (2019), 138. <https://www2.gov.bc.ca/assets/gov/government/ministries-organizations/zen-bc-bn-hydrogen-study-final-v6.pdf>
- 16 *British Columbia Hydrogen Study*, 138.

“The crisis has brought lower emissions but for all the wrong reasons. If we are to achieve a lasting reduction in global emissions, then we will need to see a rapid increase in clean energy investment. The response of policy makers — and the extent to which energy and sustainability concerns are integrated into their recovery strategies — will be critical.”

— Fatih Birol, executive director, International Energy Agency