

CONNECTIVITY: CLIMATE POLICY IN 2024 AND BEYOND

B.C. Climate Solutions Council
Annual Report for 2023

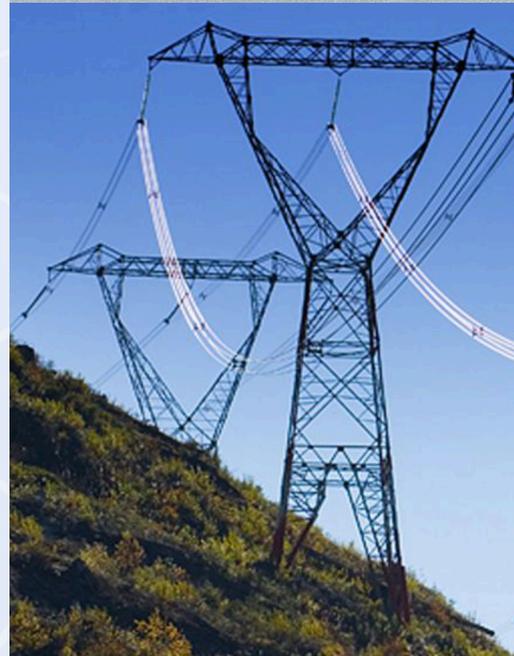


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EXECUTIVE SUMMARY

British Columbia's climate goal is bold and easily stated: to achieve net-zero greenhouse gas emissions by 2050, and to pursue this goal as quickly and affordably as possible. This is the ultimate target of the CleanBC Roadmap to 2030, providing the province with policies that help put B.C. on the path to net zero 2050 and positioning it as a leading actor in the global pursuit of the same aim—to end the climate crisis worldwide.

The mission of the Climate Solutions Council (CSC) is to help the province chart a path to that goal and hold it accountable for its commitments. And the tumultuous climate of 2023 further underscored the urgency of the task. Reaching net zero at the lowest cost to British Columbians requires bold action now. The job only grows larger and more costly the longer we wait to act.

This report examines where the province's efforts stand today, what has been accomplished, and where more action is most needed. More than that, this report—as a major part of the CSC's mission—is about recommending policies and actions to the Minister of the Environment and Climate Change Solutions that help identify British Columbia's greatest opportunities in pursuit of net zero. Seizing these opportunities now will drive a more efficient and affordable energy transition in the years to come.

For the CSC, the path to net zero is more likely to succeed if connectivity is one of the guiding principles. This is true in terms of literal connectivity—the province needs a bigger and more robust grid as it transitions to clean electricity as the main source of energy, which offers the cheapest and most efficient way to decarbonise B.C.'s economy. But connectivity is also central to this effort in a broader sense.

The climate crisis is global in scale, and B.C.'s efforts are intimately connected to similar decarbonization efforts and net-zero goals around the world as the energy transition continues to expand and accelerate. At the same time, communities and businesses across B.C. are addressing significant challenges on other fronts, particularly regarding the rising cost of living and the availability and affordability of housing for a growing province. Pursuing the path to net zero can build connections between climate solutions and these economic and social challenges, providing opportunities not just to cut emissions but to enhance the vibrancy and resiliency of communities across the province and provide a strong foundation for B.C.'s economy into the future. Investing in energy efficiency, for example, not only cuts emissions, it also reduces energy costs for B.C. households, businesses and communities.

Above all, the challenges British Columbia faced in 2023—particularly on the climate front, as wildfires ravaged more than 3 million hectares of forest across the province during an overheated summer that shattered temperature records worldwide—provided a powerful reminder of the vital necessity of accelerating the B.C. government’s pursuit of its net-zero goal through its sectoral targets. The CleanBC Roadmap to 2030 offers a credible path forward—changing course away from the government’s commitments now would chart a catastrophic path leading nowhere. Every action taken now reduces the cost of this inevitable transition down the road.

It has never been more important to recognize the connections between climate change and the other challenges facing the province. And a crucial component of B.C.’s journey to greater connectivity is electrification. In every successful net-zero scenario—not just in British Columbia but across Canada and around the world—electricity must provide a much larger share of energy use than it does today.

Fortunately, B.C. has more than ample resources to expand electrification across the province at the scale required. The province’s existing hydroelectric power plants are an established bounty of emissions-free power, provide enviable levels of reliability and flexibility to complement new wind and solar production—fast becoming the cheapest sources of new power in B.C. and beyond. And although our hydroelectric resources have served B.C. well, the province will need additional means of generating electricity to meet the coming demand and to adapt to a changing climate that is affecting snowpack, reservoir levels, and the existing system’s generation capacity throughout the year.

B.C. Hydro has already identified untapped wind and solar resources amounting to nearly 75,000 GWh per year, and the province’s embrace of these opportunities is now in its early stages with work needed to be done that includes Indigenous participation and protection of biodiversity and critical habitats. As other new technologies emerge in the years to come—from under-utilized renewable energy sources such as geothermal to new forms of energy storage and next-generation smart grids—the smart, strategic investments the province makes today will pay dividends for British Columbians for generations to come.

British Columbia is in a position to lead—to serve as a model of the connectivity needed to address current social and economic challenges even as the province races toward the clean-powered future. But leadership requires bold action now. We applaud the creation of the BC Hydro Task Force and the development of the Climate Aligned Energy Framework begun in 2023 and look forward to outcomes associated with each. In 2024, the province must continue to address the challenges of the climate crisis head on and intensify its commitment to building the foundations of a net zero and resilient economy and communities. Doing so will also help address future affordability and reliability and ensure that British Columbia’s infrastructure and economy are built to the needs of the clean energy future now unfolding.

British Columbia takes its next steps down the path laid out by the CleanBC Roadmap from an enviable position, with a clear target, some solid policies in place, and impressive natural and

human resources to draw upon. But the urgency of the climate crisis continues to grow, and the Roadmap's 2030 target is fast approaching. The CSC has clear recommendations for meeting these challenges in parts 2 and 3 of this report, but the Council is also deeply concerned both by the number of policies that remain in the early stages of development at the end of 2023 and by those established targets for which measures to achieve them have not yet been proposed at all. Part 3 of our report covers these areas in more detail.

Climate adaptation represents a fundamental and growing challenge for all British Columbians—not just in the future but right now. Significant climate impacts are part of the province's everyday reality now regardless of the speed and scope of its other climate mitigation actions and must be addressed fully in its climate planning. Insured catastrophic losses in Canada now routinely exceed \$3 billion per year and will only increase in the years to come, and B.C. is frequently among the worst disaster sites (wildfires in the Kelowna region, for example, were among the costliest Canadian disasters of 2023). Strong action on climate adaptation is needed now to begin to reduce these costs, which in addition to their acute impacts also act as accelerants on other crises such as affordability and housing.



PART ONE: **Connectivity in the Year Ended and the Year Ahead**

The many challenges facing British Columbia in the year just passed and the one that lies ahead are considerable. British Columbians are facing significant disruption on numerous fronts, including rising living costs and an acute and growing scarcity of affordable housing. The climate crisis represents an even greater threat, deepening these current problems even as it promises more profound disruptions in the years to come. It cannot be ignored, no matter the scale and urgency of other crises, and the province's response to climate change offers opportunities to address all of these challenges. There is also a danger that the current concerns about affordability could see the province lock in housing and other infrastructure that is poorly designed, energy inefficient, and not resilient to climate change; all of which undermine its efforts to pursue its climate goals. This is why the CSC has identified connectivity as the crucial theme of B.C.'s response to the climate crisis.

For 15 years now, provincial and local governments in B.C. have taken important steps to address the climate crisis, beginning with policies to begin reducing greenhouse gas emissions and expanding more recently with assistance for communities already experiencing the powerful toll of climate disaster through emergency management and investments to reduce climate risks. And the CleanBC Roadmap, first introduced in 2018, which commits the province to a 40 percent reduction of greenhouse gas emissions by 2030 on a path to net zero by 2050, offers a blueprint for the expansion of the province's response. CleanBC provides concrete tools to accelerate the pursuit of net zero and guide the province to a leadership role in the energy transition as it continues to accelerate rapidly in 2024 and beyond.

For British Columbia, the energy transition represents a powerful leadership opportunity. The province has the resources at hand to chart a path to the front ranks of the global clean energy economy.

Over the past year, the CSC has advised the B.C. government to deepen its commitment to accelerating the energy transition and seize this opportunity on several critical fronts. The CSC's letters of recommendation in 2023 included calls for a transport plan to address potential shortfalls in CleanBC's goal for vehicle-kilometres-travelled reductions, a new zero-emissions vehicle mandate for medium- and heavy-duty vehicles, and stronger policies to make the switch from natural gas to electricity for space heating.

The Council also continues to support the many measures contained in the CleanBC Roadmap. Together these measures have established a solid foundation for climate action in B.C. But bolder steps are still needed urgently. The concurrent and overlapping challenges facing British Columbians can be best addressed by pursuing greater connectivity.

The driving force of greater connectivity in B.C. is electrification. As the Canadian Climate Institute has pointed out, "Electrification is core to every conceivable pathway to Canada's emissions reduction targets." And electrification at the scale required—enough to power buildings, transportation systems, and industrial users across the province—will require significant expansion of the province's clean electricity generation capacity. The Energy Transitions Commission, an international think tank, estimates that full electrification on this scale would see electricity meeting at least 70 percent of final energy demand by 2050, compared to 20 percent on average today. Electricity currently provides approximately 16 percent of British Columbia's final energy demand.

Boosting connectivity in B.C. through electrification will require a major expansion of the province's generation capacity and its distribution network—a daunting task, but also an opportunity the province is uniquely positioned to seize. The province has a mix of energy resources well-suited to expanding clean electricity generation at the scale required, with established hydroelectric assets providing reliable power, while allowing ample flexibility to complement wind and solar generation. Hydroelectric reservoirs can fill when solar and wind electricity is being generated, creating stored energy that can be tapped to meet demand when needed. Not only is this a highly reliable approach, but it is also cost-effective—B.C.'s power system can adjust the use of more expensive large-scale hydro to when it's needed most, while making the most of less expensive sources when they are plentiful. And the province's new renewable energy resources are surely plentiful—BC Hydro's 2021 Integrated Resource Plan found almost 50,000 GWh per year of wind generation potential and 24,000 GWh per year of solar waiting to be harvested.

Connectivity isn't just good for the planet—it's good for B.C.'s bottom line. Electrification is a smart investment not just in reducing use of fossil fuels, but in much more efficient energy use, which is why transitioning to clean electricity as the main source of energy is the cheapest and most efficient way to decarbonise the economy. Consider the efficiency gains from electrifying transportation. Conventional gasoline-powered cars use only about 30 percent of the energy they consume to propel the vehicle, with much of the rest wasted as heat. All-electric cars harness about 80 percent of their energy consumption for propulsion—a huge efficiency boost.

Furthermore, while the price of fossil fuel inputs is affected by global markets and geopolitical events, electricity prices are much more predictable and subject to scrutiny by the BCUC.

Electrification is not just a climate necessity but an economic imperative and major enticement for new investment in B.C. Businesses around the world are already flocking to regions with ample clean energy supply to reduce their carbon footprints, and 92 percent of global GDP is now in countries with net zero targets and each year, more companies are developing net zero targets and plans. Global corporate clean energy procurements hit an all time high in 2022, with more than 51 GW of deals announced, a 60 percent increase from the year before. (Figures are not yet available for 2023 but are expected to be larger still, showing strong continuing growth.) Jurisdictions across Canada—including Ontario, Quebec and Manitoba—are already struggling to meet this unprecedented demand for clean energy, and BC Hydro has received significant interest from industrial customers in the North Coast region wanting to harness the benefits of clean electricity.

This once-in-a-lifetime opportunity to offer affordable clean electricity to corporate and industrial customers promises substantial investment, job creation, and clean economic growth for B.C. The recent announcement of E-One Moli's new battery cell production plant is a case in point, creating 450 high-quality, permanent jobs in the province.

The City of New Westminster provides another strong example. City Council in New Westminster is currently working with community groups to develop an electrification plan that will expand electricity capacity and reliability to meet future demand (expected to double within 20 years in the city) while cutting costs for users and raising city revenue. Among the options New Westminster is considering is a distributed-energy model based on a highly successful program in the state of Vermont called Green Mountain Power BYOD (Bring Your Own Device). The Vermont program uses distributed energy resources—including residential solar panels, smart meters, batteries and bypass collars—to produce and store energy for distribution during peak hours, increasing capacity without having to buy more power.

Initiatives like these attest to the fact that the opportunities for B.C. are substantial and growing. And the province is in the ideal position to capture them—but they won't wait forever. Action is needed now to meet the booming demand for clean electricity and secure the associated benefits for British Columbians. And taking action now has the added benefit of reducing the overall costs of the energy transition for the province, even if it requires trade-offs with other funding priorities or available opportunities. In much the same way investing in a child's future education or a worker's future retirement today yields compound interest and shrinks the future financial burden, investing in the pursuit of net zero as soon as possible will save British Columbia substantial future costs. By making significant investments today in reducing emissions and guarding against climate impacts, the overall costs of the transition and the damage and financial burden of future climate disasters will be reduced. And these near-term costs must be applied to every sector of B.C.'s economy to share the costs fairly.



As B.C. moves forward along the net-zero path laid out in the CleanBC Roadmap, the investments in electrification and other clean energy policies must take into account the mounting challenges of affordability across the province. The burdens of the climate crisis and the energy transition weigh unequally upon B.C.'s people and communities, those whose lives have already been disproportionately disrupted due to the growing unaffordability of basic needs—including shelter, food, and energy. Most of the factors driving this affordability crisis (such as inflation, the pandemic, and international conflict that among other things has driven up fossil fuel prices) are not due to climate policies, but those policies must nevertheless adopt the goal of protecting those most affected through targeted mechanisms. This includes supporting workers in sectors that will need to transition to new roles in a net zero economy.

At the same time, good climate policies can also be powerful tools for improving affordability, especially in the long run. The overarching logic of climate policies such as CleanBC is that the enormous long-term costs of greenhouse gas emissions are unacceptable and must be priced into the economy so that clean choices are also the most economical ones. Continuing to burn fossil fuels at the same or greater rates will lead to a much less affordable future. That's why climate policies aim to make fossil fuels more expensive and clean energy choices more affordable. Where this is not yet the case for cost savings in the near term, targeted mechanisms can reduce the cost of the transition to clean energy for disproportionately affected communities and lower income households. For these mechanisms to be effective, however, they must make certain that they apply to populations facing larger and more systemic barriers to reaching net zero and are progressive. Ideally, they also employ delivery mechanisms to keep costs and barriers to access low. B.C. has already demonstrated this approach by reducing the maximum purchase price of an electric vehicle that qualifies for the subsidies.

PART TWO:

Making New Connections – Next Steps for B.C.: **A Summary of Council's Recommendations**

British Columbia takes its next steps down the path laid out by the CleanBC Roadmap with advantages: a clear target, some solid policies in place, and impressive natural and human resources to draw upon. But the urgency of the climate crisis continues to grow, and the Roadmap's 2030 target is fast approaching. Critical next steps are needed to implement policies that accelerate adaptation to a changing climate and reduce greenhouse gas emissions. The CSC has clear recommendations for meeting these goals, but the Council is also deeply concerned both by the number of policies that remain in the early stages of development at the end of 2023 and by those established targets for which measures to achieve them have not yet been proposed at all. This section provides an overview and summary of the Council's recommendations. Part 3 provides more depth of detail on recommendations to meet emission reduction targets.

Clear and stronger policies are needed urgently. As the B.C. government addresses these shortcomings this year, the CSC urges the government to adhere to some overarching criteria for all new policies. First and foremost, amid the mounting affordability challenge, new policies should be targeted, predictable and supportive, acknowledging the connectivity between affordability challenges and the province's climate goals. Good policies should take particular care to address constraints on the ability to participate fully in the net-zero transition—whether these constraints stem from income, location, current job and skills transferability, or other factors—while also reducing complexity and reflecting regional differences. They should also avoid being overly specific in their incentives for low-carbon technologies because the associated costs and innovations can sometimes introduce new and cheaper alternatives. This approach also prevents locking in carbon-intensive technology and reduces the risk of investing in stranded assets.

The CSC’s recommendations below also urge greater transparency in all aspects of the government’s work in pursuit of its net-zero goals via the CleanBC Roadmap. Both the Council and British Columbians in general require not only timely emissions reporting but also clarity with respect to the basis for future emissions projections. In addition to specific policy recommendations, the Council therefore calls on the province to “show its work” by releasing a modelling report concurrent with the annual Climate Accountability Report. This is consistent with best practice in climate accountability legislation as identified by the Canadian Climate Institute and with the recent first federal implementation report as mandated by the Canadian Net Zero Emissions Accountability Act.

Beyond this, the CSC urges the government to enhance the connectivity of its policies by communicating more clearly with the public on the actions it is taking to accelerate the energy transition and the public benefits these actions will generate. Evaluating the success or failure of a policy initiative and determining whether it meets its intended emissions reduction goals requires both greater transparency and clear, timely communication to the public. Furthermore, better communication will enable the government to connect with more B.C. residents about the actions it is already taking to provide new opportunities and reduce the costs of the energy transition, particularly for those most affected by related issues of energy affordability.

On **building climate resilience**, the CSC first recommends that the government recognize that climate adaptation represents a fundamental and growing challenge to affordability for all British Columbians—not just in the future but right now. Significant climate impacts are part of the province’s everyday reality now regardless of the speed and scope of its other climate mitigation actions and must be addressed fully in its climate planning. Insured catastrophic losses in Canada now routinely exceed \$3 billion per year and will only increase in the years to come, and B.C. is frequently among the worst disaster sites (wildfires in the Kelowna region, for example, were among the costliest Canadian disasters of 2023). Strong action on climate adaptation is needed now to begin to reduce these costs, which in addition to their acute impacts also act as accelerants on other crises such as affordability and housing.

The CSC therefore recommends that **to address climate adaptation** the government move forward on the four recommendations provided to the Minister in a 2023 letter:

- *Accelerate the implementation of the actions recommended in CPAS 2022-2025 with budgets and timelines adequate to address the climate risks enumerated in the next Climate Change Accountability Report.*
- *Develop climate adaptation targets that are cross-sector, take a whole-of-government approach, and align with Indigenous values, worldviews, and priorities.*
- *Continue the enhancement of the Disaster and Climate Risk and Resilience Assessment process, with clear and regular communication with communities of the risks identified, prioritization of funding, planned investments, and policy development, and the inclusion of local and Indigenous knowledge in the assessment process.*

- *Align mandates, policies, regulations, and budgets to leverage the expertise at all levels of government in advancing resilience for the province's greatest risks.*

The CSC further recommends *that the government ensure that all climate risks (including ocean acidification and human population displacement) are part of its resilience planning, to ensure that acute catastrophes do not overshadow long-term resilience planning.*

In support of these recommendations, the CSC recommends that the provincial government continue its Indigenous Climate Resilience Forums and ongoing support for the First Nations Leadership Council's Climate Change Technical Working Group and Indigenous Climate Adaptation Working Group. As well, future mandate letters for each ministry should explain how they will incorporate adaptation measures into decision-making and future actions, and that the Ministry of Environment and Climate Change Strategy and the Ministry of Emergency Management and Climate Readiness *develop clear accountability measures together on non-crisis adaptation.* Finally, the government should ensure, *through process and adaptation targets, that upcoming policy and legislation include a climate resilience lens as they are developed.*

On meeting climate emission targets. The success of the CleanBC Roadmap to 2030 will depend on implementation of policies, many of which are still in development. The government's implementation schedule as reported in its Accountability report is shown in the Appendix to this report. The CSC has a range of specific policy recommendations for the provincial government in 2024 to help reach its emission targets. The highlights are summarized below. Part 3 provides a more in-depth discussion of the specific policies in the four sectors covered in the 2023 Climate Change Accountability Report and for two economy-wide policy measures.

On transportation, the CSC recommends the following policy measures:

- *Continue to accelerate the build out of charging infrastructure across all parts of the province.*
- *Prioritize and increase support for lower income households to purchase new and used ZEVs.*
- *Align medium and heavy-duty vehicle standards with California's requirements and confirm the sales requirements for new MHDVs as soon as possible with shorter timelines for vehicle classes that contribute the highest emissions and have mature technology.*
- *Move urgently to bring forward for consultation the Clean Transportation Action Plan (CTAP) that contains policies with proposed schedules for adoption and implementation, identifies forecasted emissions reductions, and contains measures to address affordability issues. If CTAP cannot deliver the targeted emission reductions from the transportation sector, alternative policies in other sectors will need to fill the gap.*

- *Work with federal and local governments to ensure sustainable means of funding public transit.*

On buildings. Implementation of existing policies and development of proposed ones is urgently needed to increase emission reductions this decade. The CSC strongly supports the Zero Carbon Step Code (ZCSC) and High Efficiency Equipment Standards (HEES) development and is encouraged to see that some local governments have begun adopting it ahead of the province-wide schedule. To further encourage the accelerated decarbonization of buildings in B.C. and to address affordability the CSC recommends:

- *Adoption of the ZCSC province wide ahead of schedule.*
- *Provide support to households that cannot afford to pay upfront the full capital cost of zero carbon technologies such as heat pumps.*
- *Development of a simple-to-use on-line calculator that allows building owners to explore operating cost savings and other benefits from zero carbon technologies.*
- *Alignment of federal and provincial eligibility lists for rebates with simplification and coordination of rebate process to help accelerate uptake of zero carbon technologies.*
- *Support for local governments by providing accessible data that illustrates [cost savings](#) and other benefits from adopting the ZCSC.*
- *Adoption and implementation of HEES for building heating sooner than 2030, ideally province wide.*

On the oil and gas sector. The CSC supports the requirement that all proposed LNG projects in or entering the environmental assessment process have a credible plan showing how they would achieve net zero emissions by 2030. We note however that this does not apply to LNG projects that are already approved. The Council supports the government's announcement of a cap on oil and gas emissions. Two recommendations are that:

- *B.C. harmonize with the anticipated federal oil and gas cap to the degree feasible but be prepared to step in with its own backstop should federal policy yield a shortfall to the provincial sectoral target.*
- *The proposed oil and gas cap plan in its targets and policies for the possibility that LNG or other major projects in this sector may proceed.*

On other industrial sectors. There are four policy areas related to industrial sectors: Net Zero New Industry consultation and plan development; the output-based pricing system (OBPS); use of offsets for compliance obligations; and the proposed cap on emissions from gas utilities. The Council has one recommendation for each area.

Net Zero New Industry: Recognizing that new facilities coming onstream that are not already net zero will add additional emissions, the Council recommends:

- *The government accounts for anticipated new industrial facilities in setting targets for existing emitters.*

OBPS: B.C. and the federal government have been developing systems to address competitiveness issues faced by the trade-exposed and emission intensive industrial sectors resulting from variability in policy stringency internationally. The Council recommends:

- *B.C. be transparent in the setting of sectoral performance standards, the design benchmarks, tightening rate, and future carbon prices to drive continued emissions reductions that meet sectoral targets for 2030 and later years.*

Offsets: Several of B.C.'s policies currently under development anticipate growing reliance on offsets to meet compliance obligations. Members of the current Council have diverse perspectives about whether use of offsets is on net positive or not. At minimum, the Council recommends:

- *The government provide evidence that a credible supply of high-quality offsets is available to meet potential demand associated with the policies that allow them as compliance mechanisms.*

Cap on Gas Utility Emissions: Under a Greenhouse Gas Reduction Standard (GHGRS) the government is proposing a GHG cap on natural gas utilities to assist in meeting targets in buildings and industrial sectors. In a letter from the CSC in September 2023, we advised that:

- *The GHGRS framework should not proceed as envisioned. New natural gas connections for space and water heating should be disallowed, replaced by High Efficiency Equipment Standards to not only help meet targets but protect affordability for British Columbians.*

On economy-wide policies.

B.C. Carbon Tax: As reflected in our 2022 carbon pricing letter, the Council recommends:

- *Government communicates clearly to British Columbians the role the carbon tax plays in reducing emissions, addresses misinformation about the tax, and is transparent in reporting on the programs and policies into which revenues are being deployed.*

Climate-Aligned Energy Framework: The Council recommends:

- *The planning goal should be a zero-carbon/zero-emissions energy system not simply "low-carbon".*
- *It is crucial that the provincial regulatory structure for energy and climate be aligned.*

PART THREE:

Recommendations on Plans and Actions to Reduce GHG Emissions and Achieve Climate Targets

The Council’s mandate under the B.C. *Climate Change Accountability Act* includes provision of advice to the Minister of Environment and Climate Change Strategy on plans and actions designed to reduce GHG emissions and achieve climate targets. This section assesses specific policies in the four sectors covered in the [2023 Climate Change Accountability Report](#) that have targets in the [CleanBC Roadmap to 2030](#): transportation, buildings and communities, oil and gas, and other industrial sectors plus two economy wide policies. Each policy receives a colour code (green, orange, red) based on two criteria: (1) confidence in, or concerns with the feasibility and ambition of the policy; and (2) stage of policy development.

The state of policy development is critical because even the best imaginable policy will not achieve results if it is not finalized and implemented. Given the growing urgency of the climate crisis and the rapid approach of the 2030 targets in the [CleanBC Roadmap to 2030](#), we focus particularly on policies that are still at early stages of development in 2023 and where targets have been announced but measures to achieve them have yet to be proposed. To that end, we highlight the stage of development at the outset of each section (target only, policy under development, policy adopted). The Council is concerned that a number of policies critical to delivering significant shares of 2030 emissions reductions remain at the aspirational target stage or in early policy development. Our advice to the Minister for each policy area is bolded.

An underlying theme in our recommendations is the need to ensure transparency in reporting on climate and related policy development, implementation, and expected effectiveness in meeting targets. While all models simulating the impact of policies have limitations, it is important for government to communicate clearly and fully how well the climate policy package is projected to meet emission reduction targets across the sectors, and if not on track, what actions are being taken to address gaps. **The Council calls on the government to “show its work” going forward by releasing a modelling report concurrent with the annual Climate Accountability Report.**

This is consistent with best practice in climate accountability legislation as identified by the Canadian Climate Institute and with the recently released first federal implementation report mandated by the *Canadian Net Zero Emissions Accountability Act*.

The annual “Accountability Reports” rely on emissions data that are more than one-year old. The 2023 report for example, presents 2021 data. We appreciate that it takes time to collect accurate and verifiable data from many sources but urge the government to **find ways to report on more contemporary emissions data, even if provisional**. As we get closer to 2030 and as recent policies begin to take effect, it will be crucial to have more contemporary data to identify progress to targets and where policies need to be adapted to achieve required emission reductions.

Transportation Sector

Transportation is the largest sectoral source of GHG emissions in British Columbia, comprising 41% of the total in 2021. The CleanBC Roadmap to 2030 committed to a reduction in GHG emissions from transportation of 27 to 32% by 2030 compared to 2007. The 2023 Accountability report notes that policies are projected to lead to emissions within that range, but we are concerned that transportation emissions have increased by 8% relative to 2007 and, in some cases, strategies to achieve the reductions are not yet developed. We assess four major components of transportation policy.

Low Carbon Fuel Standard (LCFS) (adopted)

The [LCFS](#) has been an effective policy in helping to reduce B.C.’s GHG emissions. A reduction of at least 15.7 million tonnes of GHGs from 2010 to 2021 is attributed to the LCFS. The regulation sets increasingly stringent requirements to reduce annual carbon intensity of transportation fuels and sets a 5% annual average reduction renewable content in gasoline; 4% in diesel. *Amendments to the Low Carbon Fuels Act*, effective January 1, 2023, increased the 2030 reduction target from 20 to 30% and increased penalties for non-compliance from \$200 to \$600 per tonne. Amendments in December 2023 brought jet fuel under the standard, the first jurisdiction in North America to do so.

Zero-Emission Vehicles (ZEVs) Sales Requirements for New Light Duty Vehicles (adopted)

The Council is very encouraged to see the enthusiastic uptake of ZEVs in B.C. (ZEVs were approximately 21% of all new vehicle sales in 2023) and the introduction of the [Zero-Emission Vehicles Amendment Act, 2023](#) which, if passed, escalates the automakers’ target sales of EVs from 10% of all new vehicle sales in 2025 to 26% by 2026, from 30% in 2030 to 90%, and from 100% in 2040 to 100% in 2035. The recent adoption of the Canada-wide EV sales requirement by the federal government should strengthen incentives for automakers and create greater momentum and investment in charging infrastructure country wide.

We recognize however that new vehicles are expensive and while the EV sales mandates should help create economies in production that lower the price of vehicles, many households will find it challenging to afford one. **We recommend the government continue to prioritize and increase support for lower-income households to purchase new and used ZEVs.** EV charging infrastructure access and cost can also be a barrier to purchasing a vehicle. This is particularly important in more rural parts of the province and for renters and those living in existing multi-unit buildings. The 2023 Accountability Report noted that by the end of 2022, 70% of the core fast-charging sites were completed for BC's Electric Highway. **We recommend continuing to accelerate the build out of charging infrastructure across all parts of the province.** Definite plans for and accelerated implementation of charging infrastructure will bolster consumer confidence and help ensure we hit our targets.

The costs of operating a ZEV are dependent on many factors. These costs include the price of electricity, insurance, and maintenance. Electricity and insurance rates are areas where government can continue to work with its Crown Corporations, BC Hydro and ICBC, in aligning affordability and climate goals more closely. BC Hydro for example is [exploring changes in its rate design](#) with consultations and proposals to the BC Utilities Commission underway.

ZEV Sales Requirements for Medium and Heavy Duty Vehicles (MHDVs) (under development)

Freight emissions contribute approximately half of all GHG emissions from the transportation sector and were 8.5% of total B.C. GHGs in 2021. MHDV emissions need to decrease, or they could outpace the reductions B.C. is making in the light duty sector.

While technical innovation is increasing the range of MHDVs and more models are being produced, the Council recognizes the cost of vehicles and recharge time are challenges to the sector. Trucks suitable for local and regional routes face fewer of these barriers. The Council broadly supports the government's proposals that are out for consultation in its 2023 [discussion paper](#). These proposals are designed to meet Roadmap targets and include sales and fleet requirements by class and type of vehicle and align with California's MHDV regulations. **We recommend alignment with California's requirements and confirmation of the sales requirements for new MHDVs as soon as possible with shorter timelines for vehicle classes that contribute the highest emissions and have mature technology.** The announcement of timelines and requirements provides incentives for industry to adjust as existing stocks of vehicles reach the end of their economic lives. Integrated federal/provincial support programs and vehicle approvals would further facilitate transition as would Canada-wide alignment with other North American jurisdictions to enhance ZEV vehicle production.

Public transit is a key component of climate policy by providing alternatives to private vehicles. The Council is encouraged by the commitment of TransLink and BC Transit to have zero emission bus fleets by 2040 (if not sooner) and provision of funding support from the provincial and federal governments for vehicle purchases. The ZEV transition involves capital costs for the new vehicles as well as for bus depot alterations and other infrastructure costs. New sources of

funding are required to offset declines in transit operators' revenues from fuel taxes and parking taxes as ZEVs replace light and MHD vehicles and as transit ridership increases. Transit fare increases to cover the increased costs are not the solution. **We urge the provincial government to work with federal and local governments to ensure sustainable means of funding public transit.**

Clean Transportation Action Plan (CTAP) (targets only)

The CleanBC Roadmap to 2030 establishes targets for a CTAP that in addition to the ZEV mandates and Low Carbon Fuel Standard would reduce vehicle kilometres traveled by 25% by 2030, increase the share of walking, cycling, and transit, and reduce the energy intensity of personal travel and goods movement. The Roadmap is counting on CTAP for a significant emissions reduction, 4.5 million tonnes per year in 2030.

The Council's April 2023 [letter of advice](#) strongly recommended taking action on CTAP. We remain concerned that while the government included the CTAP target in the 2021 Roadmap, and in the spring of 2023 asked for input from stakeholders on priority measures they wished to see included in the CTAP, specific policies have yet to be proposed. If reductions in transportation beyond those already forecast from ZEV and LCFS policies are to be credible, policies need to be designed and vetted with the public and stakeholders so they can be implemented in time to meet 2030 targets. Investments in transit infrastructure and implementation of other, complementary policies to reduce reliance on passenger vehicles such as passing the legislation introduced in 2023 to help speed up housing development near transit hubs, while critical and valuable contributions to emissions reductions, require long lead times to achieve results. This alone makes a reduction of 25% in vehicle kilometres traveled by 2030 highly doubtful. Additional policies such as distance-based pricing are complex to design, let alone implement. **The Council recommends the government move urgently to bring forward for consultation a CTAP plan that contains policies with proposed schedules for adoption and implementation, identifies forecasted emissions reductions, and contains measures to address affordability issues. If CTAP cannot deliver the targeted emission reductions from the transportation sector, alternative policies in other sectors will need to fill the gap.**

Buildings Sector

Buildings (residential and commercial) made up 7.5 million tonnes of emissions in 2021 (12.1% of the total). The sector's 2030 target is to reduce emissions between 59 and 64% from their 2007 levels. However, the projected decrease by 2030 is forecast to be 36%, significantly short of the target. **Implementation of existing policies, and development and strengthening of proposed ones is urgently needed to increase emission reductions this decade.** With appropriate policy design, the government can align CleanBC with policies to increase the supply of affordable housing. Alignment of climate and housing policy objectives in new building construction can reduce lifetime costs for building owners, reduce GHG emissions, and increase resiliency to adverse climate impacts through regulations covering building codes and

standards and the use of zero carbon high efficiency equipment – the policies under review here.

Addressing affordability is critical to the success of climate policy. Provincial [data shows](#) there are lifetime savings to moving to electric heating and even more so for combined heating and cooling via heat pumps, even in northern climates. But while there are lifetime savings, households may lack the funds to pay for these systems upfront. We urge the government to consider policies to address this barrier by **providing additional support to households that cannot afford to pay the full capital cost upfront by, for example, providing upfront zero interest loans with payments aligned to savings in energy bills**, as is being done in some local governments in Canada and the United States. Another barrier for all building owners is insufficient information about cost savings and technology options as well as complexity in applying for existing incentives. **We recommend the government develop a simple-to-use on-line calculator that allows building owners to explore operating cost savings and other benefits from zero carbon technologies.** In addition, **alignment of federal and provincial eligibility lists for rebates and simplifying and coordinating rebate processes can accelerate uptake of zero carbon technologies.**

Two factors are highly pertinent to B.C.'s building sector but not unique to it: labour market readiness and transitioning away from natural gas. Decarbonization of buildings requires a workforce with the capacity, knowledge, and skills to tackle installation and operation of zero carbon energy systems. We encourage the government to work with unions, training institutions, and the private sector to ensure labour market readiness for the transition. We also advise that the B.C. government have a plan to implement measures to address financial impacts on workers and their families stemming from B.C.'s decarbonization policies that include training and other supports so workers can take advantage of new jobs in a net zero economy. As an increasing share of homes and buildings switch to electricity, fossil gas system costs will be borne by a smaller number of customers, thus increasing costs for households remaining on gas. We call on the government to plan for this eventuality as its policies take effect. One means of supporting these households is implementation of a rebate for higher gas costs to households that declines over time, giving households time to switch to zero carbon technologies.

Zero Carbon Step Code (ZCSC) (adopted)

The Council strongly supports the Zero Carbon Step Code. We are encouraged to see some local governments are adopting it ahead of the province-wide schedule. **The provincial government can support local governments by providing accessible data that illustrates [cost savings](#) and other benefits from adopting the ZCSC.** As noted in Part 1 of this report, assurance that zero carbon electricity supply will be available is crucial to implementation of the ZCSC as well as many other components of CleanBC. With these supports in place, **the Council strongly encourages adoption of the ZCSC province wide ahead of the current schedule.**

Highest Efficiency Equipment Standards (HEES) for New Space and Water Heating (in development)

In December 2023, the government released a [consultation document](#) that outlines development of policy to implement HEES following up on its commitment in the CleanBC Roadmap to 2030. Space and water heating are the major sources of GHGs from buildings. Standards requiring greater efficiency of equipment that utilizes clean electricity help meet the sector's emission targets and can increase the resilience of households, businesses, and communities to the impacts of a changing climate. HEES will apply to new and existing residential and small-to-medium commercial and institutional buildings. For existing buildings, the policy will apply when heating equipment requires replacement. Modeling indicates this will affect about 4%-5% of buildings per year, and thus take approximately 20-25 years to affect the entire building stock. To align with the government's goal of fast tracking affordable housing, address the lags in impacts, and realize sooner the impressive efficiency gains, **the Council strongly supports rapid adoption and implementation of HEES for building heating sooner than 2030, ideally province wide.** Provincial data shows net benefits for HEES installations in residential buildings province wide, but especially in the Southern Interior and North where savings are greater because of higher energy use due to climate conditions.

We encourage caution when considering gas heat pumps or dual fuel (hybrid) systems. The improved efficiency of gas heat pumps compared to gas furnaces is minimal. While dual fuel systems may provide a transitional solution in the coldest climates, proper sizing and reliable controls are essential to ensure the gas is not the primary heating source. To address peak load issues, we suggest focusing on efficiency and load management to help shave peaks.

Oil and Gas Sector

The oil and gas sector released 11.9 million tonnes of GHGs in 2021, 19% of the provincial total. Fugitive emissions comprise 3.4 million tonnes and fuel combustion the balance. The sector's 2030 target is a reduction of between 33 and 38% relative to 2007. The sector is projected to fall short of that at a reduction of 29%. Emissions have declined 13% relative to 2007. We focus on two policies: Net Zero LNG and the Oil and Gas Cap. A policy that affects natural gas distribution, the *Greenhouse Gas Reduction Act*, is covered under the Other Industry sectors.

Net Zero LNG as part of the Energy Action Framework (adopted)

In March 2023, the government announced an Energy Action Framework that included the requirement that all proposed LNG projects "in or entering the environmental assessment process" must pass an emissions test and have a credible plan showing how they would achieve net zero emissions by 2030. We applaud this decision. Note however that this does not apply to LNG projects that are already approved.

Oil and Gas Emission Cap (under development)

The Council strongly supports the statement in the 2023 Climate Change Accountability Report that meeting B.C.'s climate target relies on successful policy development and deployment. A regulatory emission cap to meet the 2030 target for oil and gas was announced in the Energy Action Framework.

Specific details of the mechanism for implementing the cap are forthcoming, however, no target date has yet been set for this policy. The government released a discussion paper in July 2023, outlining its intention to meet the target via enhanced carbon pricing for the oil and gas sector. The discussion paper does not provide sufficient detail for us to assess the effectiveness of the proposed approach in a number of areas. We would like to see more information on: (a) how the regulatory cap will achieve the sectoral target; (b) how the government will track progress and respond if reporting indicates B.C. is not on track to the sectoral emissions goal; (c) how the cap will interact with the proposed B.C. output-based pricing system for all large emitters; (d) whether oil and gas emitters can trade with other sectors under this system; and (e) detail on its coverage of an anticipated price schedule.

Complicating policy development of B.C.'s oil and gas emissions cap is the federal government's recent announcement of its framework for a cap-and-trade program for oil and gas sector emissions, with critical details to follow in 2024. We do not yet know what emissions reductions within B.C. are expected from the federal program, the timelines for implementation, and whether there will be a provincial equivalency option, particularly given the different approach advanced in B.C.'s discussion paper. The provincial government will need to develop additional oil and gas sectoral policies if the emission reductions forecast from the federal oil and gas cap fall short of achieving B.C.'s oil and gas sectoral target. **We recommend B.C. harmonize with the anticipated federal oil and gas cap to the degree feasible but be prepared to step in with its own backstop should federal policy yield a shortfall to the provincial sectoral target.**

As noted in our 2022 Annual Report, we remain concerned that the CleanBC Roadmap neither acknowledges nor plans for potentially significant additional emissions from LNG projects, either from the terminals themselves or from the additional natural gas production and processing upstream that are likely to arise if the projects that have been approved by the province (LNG Canada phase 2, Woodfibre, and Cedar LNG) proceed to construction/operation. **It is critical that the proposed oil and gas cap plan for the possibility that any or all of these projects will proceed.**

Other Industrial Sectors

Net Zero New Industry (under development)

In July 2023 the government released the [Net-Zero New Industry Intentions Paper](#) outlining its proposal to amend the *Greenhouse Gas Industrial Reporting and Control Act* (GGIRCA) and introduce regulations that will require new large industrial facilities to supply plans for achieving net-zero emissions in 2050 (2030 for LNG facilities that have not yet been approved) and align with 2030 and 2040 targets. Approval by the Climate Action Secretariat is required before the facility is permitted to proceed.

The Council provided [advice](#) on the Net Zero New Industry intentions paper in 2023 that noted some critical issues. New facilities coming onstream that are not already net zero will add additional emissions. As stated in our letter, **we recommended that the government account**

for anticipated new industrial facilities in setting targets for existing emitters. This has not happened to date, even for facilities already receiving provincial government approval. As noted in Part 1 (above), the Climate Aligned Energy Framework expected in Spring 2024 needs to identify plans for sufficient generation and transmission capacity to support electrification of industry operations that are needed for the transition to net zero.

Output Based Pricing System (OBPS) (under development)

A [technical background paper](#) outlining a B.C. OBPS for large industrial emitters was released in 2023 and vetted with industry and other stakeholders. The goals are to support the competitiveness of emission-intensive and trade-exposed industrial sectors and ensure B.C.'s carbon pricing system meets federal stringency requirements. The planned implementation date for the B.C. OBPS is April 1, 2024. We reiterate that availability of clean electricity is critical for many sectors to be able to respond to a carbon price by reducing emissions rather than paying the carbon tax. We continue to recommend as we did in our 2022 letter on [carbon pricing](#) – **to be transparent in the setting of sectoral performance standards, the design benchmarks, tightening rate, and future carbon prices to drive continued emissions reductions that meet sectoral targets for 2030 and later years.**

Offsets (under development)

BC has an offset system managed by the government, but it has not played a major role in climate policy to date. As offsets emerge as a compliance option – for OBPS, the oil and gas emissions cap, net zero new industry, and net zero LNG, uncertainty with regard to offset permanence and/or validity will have greater implications for meeting BC's emission targets. The ability of offsets to meet required criteria (e.g., additional, real reduction, verifiable and quantifiable, permanent, enforceable, etc.) is inherently uncertain. That is because certification of an offset is predicated on predictions of the future, specifically what would happen absent the offset -- in a world where technology, public policies, and climate conditions are rapidly changing.¹ **We need evidence that a credible supply of high-quality offsets is available to meet potential demand associated with the policies that allow them as compliance mechanisms.**

Members of the Council have diverse perspectives on how to weigh the risks and benefits of offsets and arrive at different conclusions about incorporating them as compliance mechanisms in various policies. Offsets can reduce compliance costs and facilitate competitiveness,

¹ In a regulatory or cap and trade system, buyers and sellers are both covered by emissions mandates. As such, there is confidence about what their emissions would have been absent the exchange, and it is straightforward to avoid double counting. In contrast, the distinguishing feature of an offset is that the seller is not covered by a legal mandate. As such, a critical question is what the seller's future emissions would be absent the offset sale – a question that, by definition, is unknowable at the time of the sale. If the seller's emissions would not have decreased without payment for the offset, the offset is legitimate. However, if the seller's emissions would have decreased anyway in response to other forces (i.e., changing policies, supply/demand conditions, or technology), or if future benefits disappear (e.g., from carbon conserved in forests) the offset is not real and requires verifiable equivalent replacement at that time. In a regulatory context, the offset without replacement gives a false assurance of regulatory compliance.

especially absent access to clean electricity and commercial scale CCS and other carbon reducing technologies. Offset protocols build in contingencies in an effort to address uncertainty, for instance with respect to forest losses due to advancing climate change. However, there are significant concerns expressed by some Council members whether the criteria noted above can be met in the present and over time. The greater the dependence on offsets as a compliance mechanism, the more critical it is to have a system that takes into account, for example, climate change impacts and other factors that can invalidate the offset.

Cap on Gas Utility Emissions/Greenhouse Gas Reduction Standard (GHGRS) (under development)

The government has pledged to introduce a GHG cap on natural gas utilities to assist in meeting targets in buildings and industrial sectors under the title of a Greenhouse Gas Reduction Standard. The Council has been briefed on the proposals and offered letters of advice in [May](#) and [September](#) of 2023. **Our September letter advised that the GHGRS framework should not proceed as envisioned. New natural gas connections for space and water heating should be disallowed, replaced by HEES to not only help meet targets but protect affordability for British Columbians.** The policy framework on which the Council was briefed would entail a complex regulatory system that relies in the first instance on gas utilities to propose a compliance pathway. Given the government’s own determination of the cost-effectiveness of a significant shift in space heating from natural gas to electricity, this approach delays emission reductions, increases uncertainty for the natural gas sector, households, and businesses, and raises significant doubt that utilities can meet the reduction target. The GHGRS framework and CleanBC Roadmap also anticipate reliance on renewable natural gas (RNG) for space heating, rather than recognising it as a strategic resource for protecting competitiveness in BC’s hard-to-abate industries.

Economy-wide Measures

B.C. Carbon Tax (adopted)

Carbon pricing plays a critical role in driving emission reductions and amplifying other policies. The Council applauds the government for resisting calls for a “carve out” for certain heating fuels. Carbon pricing helps protect affordability and security for BC families, especially in combination with rebates for low- and middle-income households and those in areas where reliable electricity isn’t available, along with support for investments in zero emissions vehicles and home retrofits. We reiterate advice to government provided in a 2022 letter from the CSC **to communicate clearly to British Columbians the role of the carbon tax in reducing emissions, to address misinformation, and be transparent on the programs and policies into which revenues are being deployed, including, for example, how much is returned to each category of taxpayer and in what form (including the original, lasting tax cuts), and enabling investments that reduce their emissions.**

Climate-Aligned Energy Framework (under development)

The Council supports this initiative as a foundational step in developing a province-wide energy plan to help meet our climate targets. Integrated energy planning that gives households, businesses, and local governments more certainty that zero-carbon energy supply will be available enables earlier adoption of policies such as the zero carbon step code and high efficiency equipment standards than currently mandated province-wide. It will also attract private-sector investment.

We understand that the timeframe for the framework and the subsequent energy plan will lay out B.C.'s energy system through 2050. **We therefore recommend that the goal of planning should be a net zero-carbon/zero-emissions energy system not simply "low-carbon".**

A new integrated approach to energy planning will require more detailed information than we currently have regarding the supply of and demand for electricity and other zero-carbon energy to meet the needs of the various sectors across B.C.'s economy. For example, current electricity modelling for CleanBC does not account for meeting oil and gas emissions targets, nor for net zero requirements of new industrial facilities, including LNG (e.g., through electrification).

It is crucial that the provincial regulatory structure for energy and climate be aligned. This will require amendment of the *Utilities Commission Act* to update the role of the energy regulator. The Council anticipates providing further advice on this issue as more information on the Climate Aligned Energy Framework becomes available.

Appendix 1: Council Members as of December 31, 2023

The Climate Solutions Council provides strategic advice to government on climate action and clean economic growth. It includes members from First Nations, environmental organizations, industry, academia, youth, labour, and local government.

Colleen Giroux-Schmidt (Co-Chair), Vice President, Corporate Relations, Innergex Renewable Energy

Nancy Olewiler (Co-Chair), Professor, School of Public Policy, Simon Fraser University

George Benson, Managing Director, Climate Displacement Planning Initiative

David Black, Past President, MoveUP

Tom Green, Senior Climate Policy Advisor, David Suzuki Foundation

Kathryn Harrison, Professor, Political Science, University of British Columbia

Eden Luymes, Masters Student, University of British Columbia

Scott Maloney, Vice President, Environment, Teck Resources

Skye McConnell, Manager of Policy and Advocacy, Shell Canada

Patrick Michell, Community Leader

Kurt Niquidet, Vice President, Council of Forest Industries

Danielle (DJ) Pohl, Provincial Executive Member for B.C. General Employees' Union and Treasurer,
Fraser Valley Labour Council

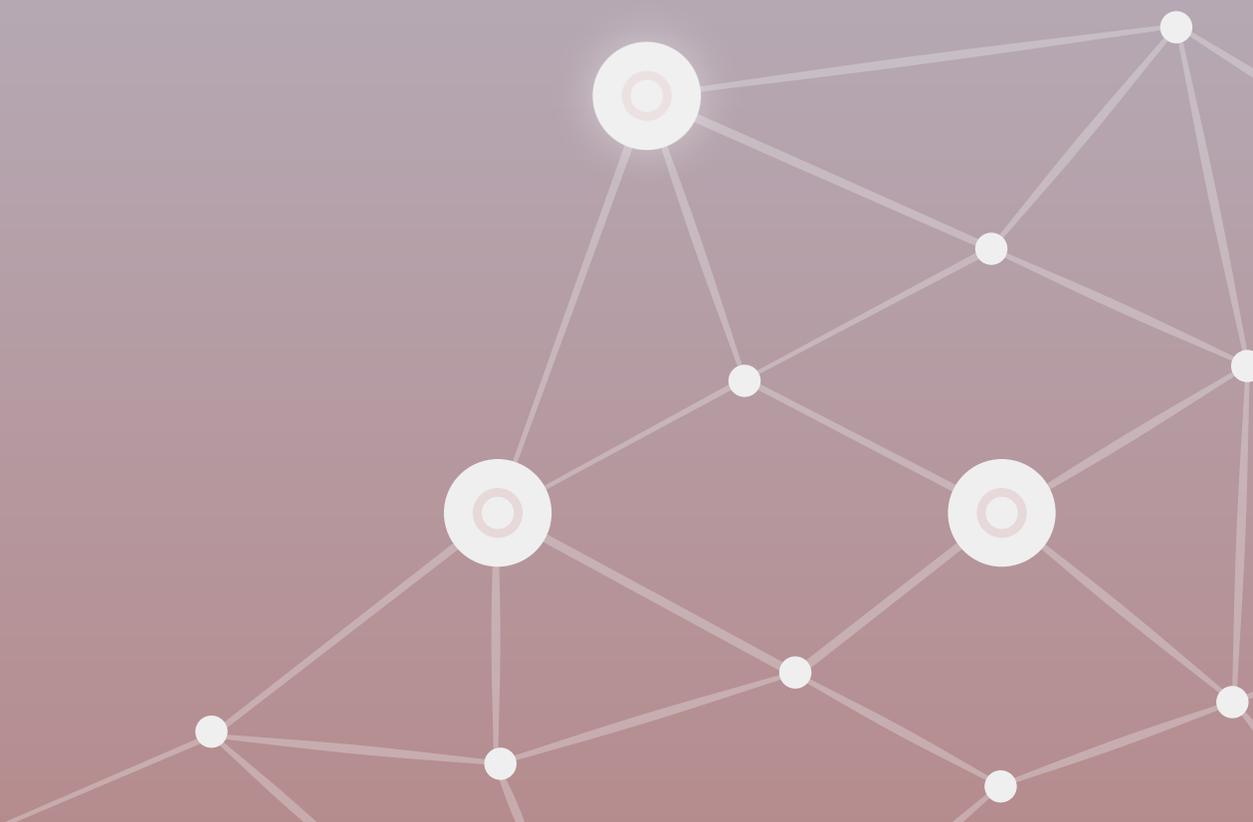
Andrea Reimer, Community Organizer and Director, TransLink

Merran Smith, President, New Economy Canada and Fellow, Centre for Dialogue, Simon Fraser University

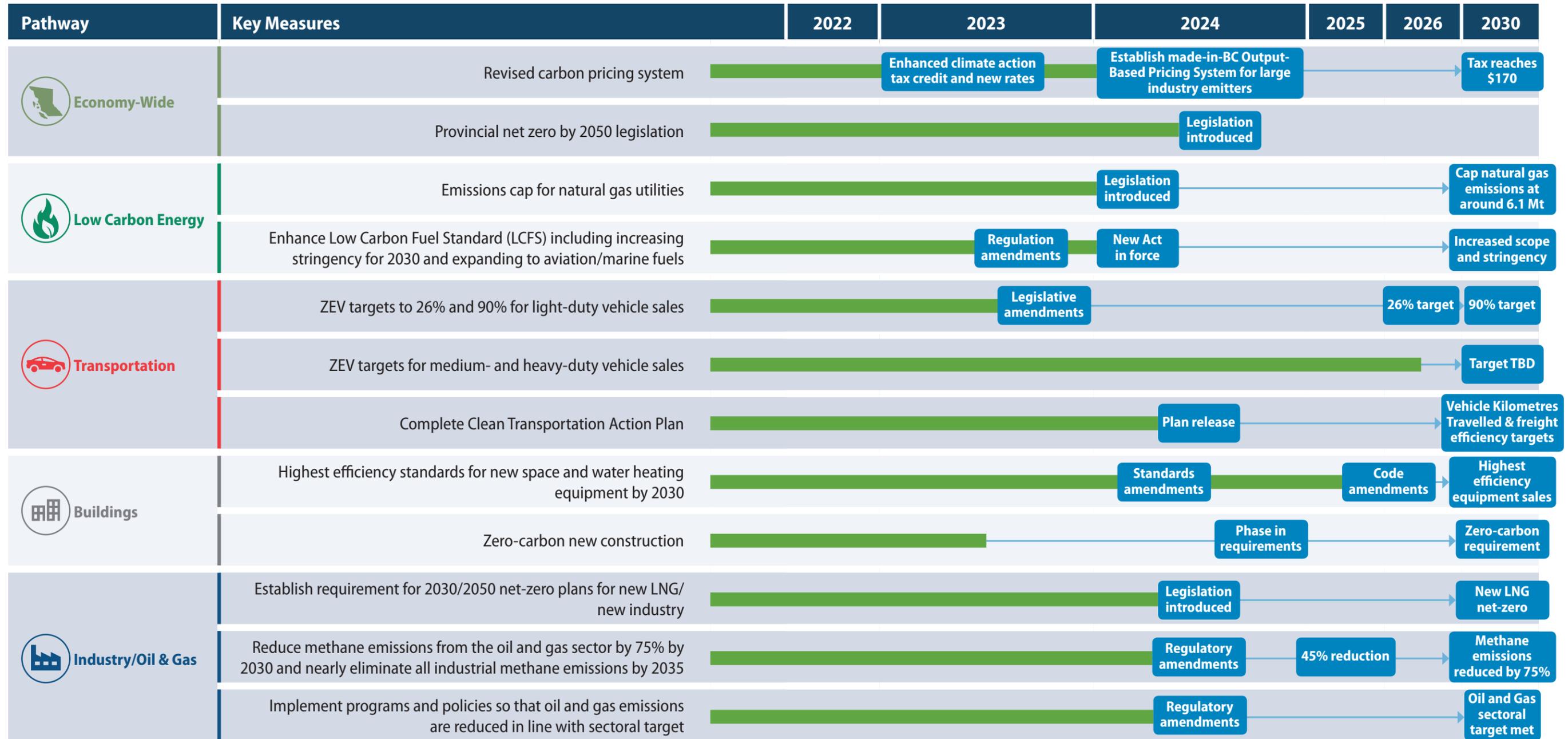
Michelle Staples, Mayor of Duncan

Karen Tam Wu, Climate Policy Advisor

Jill Tipping, President and Chief Executive Officer, BC Tech Association



Appendix 2: CleanBC Roadmap to 2030 Implementation Plan



Timing for introduction of legislation and regulatory amendments is anticipated and subject to Cabinet decision and legislative timetable.



Appendix 3: Council Letters in 2023

B.C. Climate Solutions Council

To: Minister of Environment and Climate Change Strategy, Honourable George Heyman

cc: Deputy Minister, Kevin Jardine; Assistant Deputy Minister, Jeremy Hewitt

September 15, 2023

Dear Minister Heyman,

Re: Greenhouse Gas Reduction Standard

The Climate Solutions Council (CSC) strongly supports policies that reduce emissions from BC's gas utilities. Our [May 2023 letter](#) provided advice on the GHGRS as then proposed. Our briefing at the CSC meeting on September 5th on the status of the GHGRS indicates that the framework now envisioned will entail a regulatory system that delays emission reductions, adds complexity, and increases uncertainty for the natural gas sector, households, and businesses. It significantly reduces the likelihood that BC will meet its 2030 climate targets. As presented, the framework also continues to over-rely on RNG (both real and notional), rather than recognising it as a strategic resource for protecting competitiveness in BC's hard-to-abate industries.

The CSC advises that the GHGRS framework should not proceed as currently envisioned. The CSC recommends that, to protect affordability for British Columbians and create greater regulatory certainty, **BC join close to 100 US jurisdictions and announce a ban on new connections for space and water-heating to the gas network with near term implementation that aligns with GHG targets for the building sector.**

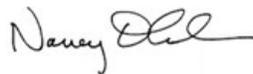
We offer this advice to help protect affordability for British Columbians and to help reduce the risk of stranded assets. It would provide a clear signal to the market on what energy infrastructure is needed to enable BC to reach Net Zero by 2050. As an example, current modelling from the BC Government on the Zero Carbon Step Code suggests that approximately **90% of British Columbians live in climate zones where electrification of new homes would result in cost savings.** We recommend measures be put in place to protect affordability and equity for those who live in colder climates.

It is critical to advance building decarbonization as fast as possible. We need to ensure that the pathway to net zero reduces dependence on gaseous fuels in our energy system while protecting affordability and health for British Columbians. A complex regulatory structure that threatens our 2030 targets and beyond and does not promote climate resilience is not in the interests of the province and its communities. The CSC recognises that our recommendation only covers new buildings and **will provide further advice on the High-Efficiency Equipment Standard (HEES) to effectively ensure coverage for existing buildings.**

Thank you for the opportunity to provide advice on this important topic and we'd be pleased to discuss any aspect of it further with you.



Colleen Giroux-Schmidt
Vice President, Corporate Relations Innergex
Renewable Energy
Co-Chair, B.C. Climate Solutions Council



Nancy Olewiler
Professor, School of Public Policy Simon Fraser
University
Co-Chair, B.C. Climate Solutions Council

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Eden Luymes, Masters student, University of British Columbia

Scott Maloney, VP Environment, Teck Resources

Skye McConnell, Manager of Policy and Advocacy, Shell Canada

Patrick Michell, Community Leader

Kurt Niquidet, Vice President, Council of Forest Industries

DJ Pohl, President, Fraser Valley Labour Council

Andrea Reimer, Public Servant, Organizer, Change Maker

Merran Smith, Fellow, Centre for Dialogue, Simon Fraser University

Michelle Staples, Mayor, City of Duncan

Karen Tam Wu, Climate Policy Advisor

Jill Tipping, President & Chief Executive Officer, BC Tech Association

To: Minister of Environment and Climate Change Strategy, Honourable George Heyman

cc: Minister of Energy, Mines and Low Carbon Innovation, Honourable Josie Osborne, Deputy Minister, Kevin Jardine; Deputy Minister Shannon Baskerville; Assistant Deputy Minister, Jeremy Hewitt

May 11, 2023

Dear Minister Heyman,

Re: Greenhouse Gas Reduction Standard

The Council was briefed on and examined the proposed new Greenhouse Gas Reduction Standard (GHGRS) prior to the province's announcement of a new climate aligned energy action framework on March 14 and 15, 2023. The Council looks forward to the further development of these vital actions. This letter addresses the information the Council has to date on the GHGRS.

We reiterate our advice provided in the [Council's 2022 Annual Report](#) augmented in this letter to reflect recent announcements. We highlight *in italics* comments and recommendations added to the advice in the Annual Report.

The Greenhouse Gas Reduction Standard (GHGRS) has been delayed to 2023 to allow for more consultation. *The Council awaits a briefing on the outcomes of these consultations.* Modelling by both the province and the [Canadian Climate Institute](#) anticipates that meeting B.C.'s 2030 emissions target cost-effectively and getting the province on a path to net zero in 2050 will entail a significant shift *in space heating* from gas to electricity *in the majority of buildings*.¹ The Council's [2020 report](#) emphasized "In addition to the 2030 target, reduction requirements should be set to align with the provincial government's 2040 and 2050 targets, including the overarching CleanBC objective of transitioning away from fossil fuels toward clean energy." However, the proposed GHGRS is at risk of implementation pitfalls. It relies in the first instance on gas utilities—whose core business is most directly threatened by that transition—to propose a compliance pathway.

The approach puts the onus on the B.C. Utilities Commission (BCUC) to evaluate the credibility of gas utilities' plans to meet their emissions obligations at a reasonable cost, presumably via renewable natural gas (RNG) and other low carbon gases (e.g., hydrogen). This is a very different role from the BCUC's historical mandate to regulate price and supply. Our concern is with delays in ramping up the capacity of the BCUC to acquire the personnel, experience, and expertise to take this on, and the absence of a clear mandate to the BCUC to align its decision-making with the province's legislated climate targets. Preparing to do so will entail a fundamental transformation of the Commission. *Alternatively, responsibility could be designated to a division within government as is done for other aspects of energy and GHG regulation. Our concern is that overconfidence in gas utilities' own emissions projections will either result in failure to meet our emissions targets or stranded fossil-fuel infrastructure and equipment, with higher costs as a result for households and businesses.*

We are also concerned that reliance on purchasing "notional RNG" (credits for RNG produced and/or used outside B.C.) will not have sufficiently robust accounting to guarantee a concomitant decrease in natural gas and GHG reduction in the other jurisdiction. Domestic production of RNG is also an important opportunity to create clean energy jobs and foster a circular economy, notably within the forest and agriculture sectors. Any reliance on international credits to meet these requirements would represent a significant shift in provincial policy without acknowledgement or public discussion. *Moreover, purchase of international notional RNG as envisioned in the proposal presented to the Council will not count*

¹ We recognize that in large buildings with complex heating equipment and infrastructure as well as homes and buildings in the coldest climate zones in B.C. that electrification may be technologically difficult and expensive. In these instances, affordable combustible fuels not derived from fossil fuels (e.g., biomethane, green hydrogen) may be a temporary alternative to electricity.

toward Canada's emissions target under the Paris Agreement.

We expect to see the GHGRS proposal modified in light of the energy action framework to expand and strengthen B.C.'s existing expertise in renewable electricity and provide more economic development opportunities across the province and support Reconciliation. BC Hydro, many First Nations, and renewable energy companies would benefit from a greater emphasis on producing more clean electricity in B.C, which includes a range of co-benefits. For example, small-scale hydro can produce co-benefits in the form of flood control. We would like to see as part of the BC Hydro task force announced in March 2023 specification of a clear role for BC Hydro in advancing affordable electrification of space heating in the GHGRS.

Our advice reiterates and builds upon the previous Council's [advice](#) on the predecessor policy proposal: the Clean Portfolio Standard.

Recommendations to the Province:

- a) The current Greenhouse Gas Reduction Regulation should be updated immediately to enable utilities to procure up to 30% RNG; this should not be delayed until the GHGRS is finalized.
- b) The government needs to establish clear targets for minimum RNG content requirements and specific measures to achieve these targets, so that the BCUC or a designated government agency can fulfill its current responsibility for determining a cost-effective means to achieve climate targets.
- c) Renewable gas credits from other provinces (i.e., "notional RNG") to meet compliance obligations should be limited in time and amount and only if there is a rigorous carbon accounting system in place that clearly demonstrates a concomitant decrease in natural gas consumption in the exporting province.
- d) As stressed in the previous Council's [letter](#) of November 2020, any other domestic offsets/credits toward GHGRS compliance must be real, additional, permanent, verifiable, quantifiable, enforceable, and provide co-benefits, and should be limited to ensure that the focus is on reducing emissions from transportation, buildings, and industry. Quebec's framework serves as a useful example.² While all these criteria are crucial, in a rapidly changing climate the requirement for permanency may make a number of the options challenging.
- e) Credits in B.C. for out-of-country notional RNG should not be accepted unless there is clarity that the credits will apply to Canada's reduction commitment under the Paris Agreement, and that there will not be double counting.
- f) We reiterate the recommendation in 2022 carbon pricing letter that the province create a tool to help households and businesses make informed choices based on anticipated changes in prices of different forms of energy when they make major equipment purchases. Affordability will be top of mind for households and communities, especially those with more limited means to help cover capital costs.
- g) We would like to reiterate council advice from 2021 on the Clean Portfolio Standard (CPS – predecessor to GHGRS): Work commissioned by the provincial government to support the development of the hydrogen strategy showed a wide range of carbon intensities for hydrogen derived from fossil fuels. Whether there is a role for hydrogen derived from fossil fuels within the CPS that is aligned with CleanBC targets will depend on maximum carbon intensity thresholds for hydrogen and the accounting methodologies used to estimate those carbon intensities.

The Council would welcome updated information from the government regarding the carbon intensity of hydrogen, which reflects the latest information regarding CCUS technology and rates of capture, the oil and gas emission caps, and methane emissions.

² [Carbon Markets: Offset Credits](#). Québec Ministère de l' Environnement de la Lutte contre les changements climatiques, de la Faune et des Parcs.



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DJ Pohl, President, Fraser Valley Labour Council

Chief Lynda Price, Chief of Unlatch First Nation

Merran Smith, Chief Innovation Officer, Clean Energy Canada

Karen Tam Wu, Climate Policy Advisor

Jill Tipping, President & Chief Executive Officer, BC Tech Association

Tamara Vrooman, President & Chief Executive Officer, Vancouver Airport Authority

To: Minister of Environment and Climate Change Strategy, Honourable George Heyman

cc: Deputy Minister, Kevin Jardine; Assistant Deputy Minister, Jeremy Hewitt

April 4, 2023

Dear Minister Heyman,

Re: Clean Transportation Action Plan (CTAP)

The CleanBC Roadmap to 2030 assumes a 4.5 MT emissions reduction will be achieved as a result of a 25 percent reduction in vehicle kilometres travelled (VKT). However, the plausibility of achieving that goal via specific policies has not been modelled nor examined critically given the complexity of transportation planning and past failures in moving from promises to concrete actions. While we would welcome policies that have the co-benefits accruing from a reduction in VKTs (e.g., congestion in major metropolitan areas), our concern is that the large list of policy instruments under consideration has historically been challenging to implement given the complexity of jurisdictional governance frameworks and the reliance on behavioural changes, which take time and are difficult to predict. Measures such as investments in transit and rail infrastructure, and urban planning to transition to more compact communities encouraging active transportation, are laudable and will undoubtedly be critical in achieving longer term goals, but we are skeptical that they will deliver the projected reductions in VKT and associated emission reductions by 2030.

Recommendations to the Province

1. Rapidly identify and focus scarce resources on a limited number of policies that are administratively feasible and, based on other jurisdictions' experience, likely to deliver highest impact by 2030. We urge the province to rigorously assess the emissions reduction potential of such actions as soon as possible and if modeling indicates insufficient emission reductions to meet the sector's 2030 target, other measures need to be identified to make up any shortfall.
2. Work through and with the Union of BC Municipalities, and other pertinent parties—such as the BC Municipal Climate Leadership Council and the First Nations Leadership Council—to interface with and advance additional funding for planning and coordination for infrastructure and land-use decisions that are multi-region in nature.
3. Continue and accelerate actions that support smart growth principles for local government decision making over local land-use and transportation.
4. Medium and heavy-duty vehicles (MHDV) are an important and growing contributor to GHG emissions in the transportation sector, and we urge government to fund work to decarbonize this subsector immediately. We recommend a medium and heavy-duty ZEV mandate be actioned as soon as possible with funding to support the transition to zero emission MHDVs.
5. Although attention to cities is essential as that is where most people live and move around, clean transportation options need to exist across the province. It will be important also to ensure there are inter-community options other than by private vehicle and accessible to youth and vulnerable populations.



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Tamara Vrooman, President & Chief Executive Officer, Vancouver Airport Authority

To: Minister of Environment and Climate Change Strategy, Honourable George Heyman

cc: Deputy Minister, Kevin Jardine; Assistant Deputy Minister, Jeremy Hewitt

April 4, 2023

Dear Minister Heyman,

Re: Zero Emission Vehicles (ZEV)

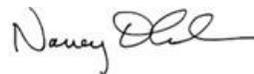
The Council is supportive of proposed ZEV standards for light duty vehicles, to be aligned with California, Quebec, and expected federal standards. However, continued growth of freight emissions from medium and heavy-duty vehicles will eclipse the gains made from passenger/light duty vehicles. Action in the freight sector is needed quickly, but data to inform action is currently lacking.

Recommendations to the Province

1. The government should consider accelerating ZEV targets for 2026 if consumer trends indicate such a possibility, especially if needed to address an emission reduction shortfall should the Vehicle Kilometres Travelled (VKT) target prove unfeasible.
2. It will be critical to take into account that a rapid transition of the vehicle stock to ZEVs, which is essential for the reasons we have provided above, will reduce the GHG benefits of VKT reduction policies.
3. A medium- and heavy-duty ZEV mandate should be actioned as soon as possible and increased effort to decarbonize the existing fleet of MHDVs undertaken. We understand that the level of funding to support MHDV decarbonization has been identified in modelling but has not yet been approved. This is an urgent area for action.
4. As highlighted in previous Council's advice, it is critical to ensure sufficient charging infrastructure across the province, including in more remote/rural communities, to ensure public confidence in ZEV purchases.
5. Electricity pricing for households must not deter electrification of transportation, which will require a shift away from the current two-tiered rate structure.
6. We urge the government to work with ICBC to consider adopting preferred insurance rates for ZEVs.
7. We encourage the government to engage with industry to understand how other tools, such as depreciation tax credits, supportive refinancing programs, and bulk-buying can be used to further enhance the turnover in existing commercial fleets to ZEVs.



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To: Minister of Environment and Climate Change Strategy, Honourable George Heyman

cc: Minister of Emergency Management and Climate Resilience, Honourable Bowinn Ma;
Deputy Minister, Kevin Jardine; Assistant Deputy Minister, Jeremy Hewitt

March 27, 2023

Dear Minister Heyman,

Re: Advice on 2023 Implementation of the BC Climate Preparedness Strategy

The Council is encouraged by the government's increased focus on adaptation as reflected in mandate letters, Budget 2023, and formation of the new ministry of Emergency Management and Climate Readiness, but more needs to be done. The paradigm needs to shift from disaster relief after the climate-related damages occur to a whole-of-government approach that increases the resilience of families, companies, and communities with actions and investments that reduce the likelihood of damage. Investment in climate resilience is more cost effective than disaster relief.

Looking to 2023 and beyond, the Council offers the following as priority areas for accelerated action in line with the government's mandate letters and budget commitments.

- a) Accelerate the implementation of actions in CPAS 2022-2025 with attributed budgets, funding, and timelines that are **commensurate with BC's climate risks** to be publicly communicated in the next Climate Change Accountability Report.
- b) Develop an explicit, measurable, and ambitious series of **climate adaptation targets** that are cross-sector, take a whole-of-government approach, and that align with Indigenous values, worldviews, and priorities.
- c) Continue to enhance **the Disaster and Climate Risk and Resilience Assessment process** with clear and regular communication with communities of the risks identified, prioritization of funding, planned investments, and policy development. Incorporate local and Indigenous knowledge in the assessment process to enhance understanding of climate risks, how they are distributed in communities, and ways of increasing resilience.
- d) Align mandates, policies, regulations, and budgets at all levels of government (including with the National Adaptation Strategy) and relevant agencies to leverage their full insights, authorities, and capacities to **advance resilience for B.C.'s most salient hazards, risks, and vulnerabilities.**

The Council believes that targets are an effective tool in the delivery of smarter, swifter, and more comprehensive actions to support climate adaptation and resilience. Targets help in communicating actions and progress with the public. It is recognized though that targets, and their ongoing monitoring and evaluation, are challenging aspects of adaptation planning. As the Canadian Climate Institute has highlighted, targets help ensure that monitoring and evaluation of climate adaptation does not simply become a 'progress reporting' exercise on policy commitments, but rather a material and dynamic evaluation of the province's exposure and progress toward reducing climate-related hazards, risks, and vulnerabilities. We offer for consideration a set of principles and best practices to support the development explicit, measurable, and ambitious series of climate adaptation targets.

Principles for Setting Adaptation Targets

Effective targets must be well-thought out, aligned to budgets and resources, work cross-ministerially, and have a clear connection to the desired end-state of outcomes, not just outputs. For example, the percentage of communities with flood-plain mapping completed is an output. An outcome is the percentage of communities that have had flood risk reduced (and by what extent).

- Scenario planning is a useful tool in setting targets. It should be empirically grounded in climate impact projections scaled appropriately to B.C. and its regions. Scenarios need to encompass the expected range of climate impacts from worst to best cases and estimates of their likelihood.
- Align with and support the British Columbia Declaration on the Rights of Indigenous Peoples (BC DRIPA) incorporating “two-eyed seeing” to integrate different ways of knowing.
- Incorporate environmental, social, and governance (ESG) considerations along with the economic/financial assessments.
- Include systems-level, e.g., BC’s provincial and local government fiscal capacity to prepare for and respond to climate-related extreme events as well as community-and/or individual-level considerations (e.g., site-level resilience and adaptability to hazards).
- Direct and inform work across the whole of government with responsibilities integrated into Mandate Letters and Ministerial and agency-level service plans.
- Align with and support the National Adaptation Strategy.

Principles for Monitoring, Evaluation and Data Collection

The current monitoring and evaluation framework for CPAS breaks down the four key pathways into objectives, outcomes, indicators, targets, and metrics. Data collection relevant to adaptation is nascent in many respects and we encourage government to work with local governments and many businesses to leverage opportunities created by their growing capacity. Linkages with national data initiatives such as 440 Megatonnes and the Climate Atlas can link BC’s work with the rest of Canada. The province’s own recent work on ESG-related reporting may also be instructive.

Through their best practices research, the Canadian Climate Institute has recommended utilizing the following four building blocks in an integrated way for any effective adaptation monitoring and evaluation (M&E) system:

1. Context – clearly state the mandate, purpose, and scope of the M&E undertaken.
2. Content – clearly state the substance of what is being assessed.
3. Operationalization – create effective systems to collect and disseminate data within, across, and outside of government.
4. Communication – create audience-specific, well-timed, ongoing diffusion of climate adaptation to inform better decisions across the public and private sectors.

The Council suggests the **following principles for monitoring, measuring, and collecting data:**

- Measurement, evaluation, and data collection should be inherently collaborative and integrative. It should include *cross-government* coordination as well as structured, effective, and ongoing collaboration with First Nations, local governments (e.g., amalgamating local governments’ Hazard, Risk, and Vulnerability assessments), and businesses (e.g., financial climate risk disclosures).
- Measurement should strike a balance between short and long-term perspectives – for example, flood control-related infrastructure could include metrics related to annual infrastructure investment.

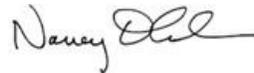
- Measurement and evaluation should take a whole-of-government approach and be integrated cross-ministerially (e.g., via an annual cross-government ‘stock take’ of adaptation metrics), with a particular emphasis on integration into budgetary considerations and Treasury Board submissions.
- Data-sharing and communication should be readily accessible and provide an avenue for data contributions from the public, local governments, and businesses with clear identification of the sources.

Conclusion

The Climate Solutions Council is supportive of British Columbia’s adaptation strategy that strives to increase the resilience of the people, plants, and animals inhabiting the province and the natural systems that support life and wellbeing today and into the future. The work ahead will not be easy; it involves difficult decisions and significantly larger investments than those made to date. As we rebuild and heal in light of the climate disasters of the past two years, we believe that all sectors of society in this province are ready to take on this generational challenge. The Council looks forward to supporting you and the government on as we move forward on this vital work.



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B.C. Climate Solutions Council

To: Minister of Environment and Climate Change Strategy, Honourable George Heyman

cc: Minister of Energy, Mines and Low Carbon Innovation, Honourable Josie Osborne; Deputy Minister, Kevin Jardine; Assistant Deputy Minister, Jeremy Hewitt

March 6, 2023

Dear Minister Heyman,

Re: Net zero new industry

The CleanBC Roadmap commits to a requirement for all large new industrial facilities to have plans to show how their emissions will align with B.C.'s 2030 and 2040 targets, and to achieve net zero by 2050. Given that industrial emissions made up over 40% of the province's emissions in 2019, and some industrial sectors are forecast to grow, ensuring that new facilities fit within BC's emissions targets will be critical to the success of the CleanBC climate plan.

That goal presents two distinct issues. First, what level of ambition should be expected from new facilities being planned and built with the knowledge of more stringent provincial emissions targets, ultimately including net zero. Second, how will B.C. deliver compensating reductions from existing emitters to guarantee that new facilities fit within B.C.'s emissions targets, rather than adding to emissions. Lacking the second part, the Net-Zero New Industry strategy presented to the Climate Solutions Council in late 2022 does not ensure that large new facilities align with B.C.'s 2030 and 2040 targets.

We are mindful of historical experience that more stringent new source standards had an unintended consequence of incentivizing continued operation of older, more emissions-intensive facilities. That is likely to be less problematic in a context where there are binding commitments to update standards, but nonetheless this is an issue that should guide provincial policies for existing facilities as well. Policies and regulations should be developed to ensure existing facilities are not inadvertently operating longer at high carbon intensity as a result of net-zero policies for new facilities.

Key areas of concern and recommendations:

We have five main concerns with recommended actions that require further consideration to ensure that this policy achieves the intended goals and that B.C. stays on track to meet our climate targets in 2030, 2040, and 2050.

1. Unlike older industrial facilities, new industrial facilities are being planned with the knowledge that operations must transition to net zero, in most cases during the expected life of the facility. They also may be able to take advantage of new and emerging technologies that were not available when older facilities were built. We thus encourage the government to consult with individual sectors to assess the feasibility of new facilities in that sector reaching net zero as soon as possible.
2. Government must take additional actions to ensure that new facilities fit within B.C.'s targets. The Council's 2022 annual report stressed the challenge of meeting B.C.'s 2030 target because of delays and gaps in policy development and potential for new projects approved yet not accounted for in the Roadmap to

significantly increase emissions. The resulting challenge we now face underscores the importance going forward of anticipating and accounting for new industrial facilities in setting targets for existing emitters.

New facilities that are not net zero will add additional emissions. Operators of those facilities do not have the authority to ensure compensating reductions from other facilities or sectors. We thus do not understand what is meant by the expectation for large new industrial facilities to align their operations with B.C.'s 2030 and 2040 targets, as stated in the Roadmap. It is the provincial government's responsibility to adopt additional policies as needed to deliver compensating emissions reductions.

There are multiple ways this goal could be achieved, including implementation of sectoral flexible regulations, incentives for low-emissions technologies, setting more specific targets for incumbent facilities, or seeking deeper cuts from non-industrial sectors. Without policies to deliver compensating reductions, however, new GHG-emitting facilities *will not* fit within existing targets and B.C. will fail to meet its emissions targets.

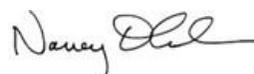
3. Enabling the transition to net zero demands planning for sufficient generation and transmission capacity to support electrification as needed in industry operations, as anticipated by the Minister of Energy, Mines and Low-Carbon Innovation's mandate to create a "climate-aligned energy framework for B.C." In addition, ensuring that new facilities can transition to net zero will require development of complementary policies, such as facilitating the use of negative emissions technologies and offsets (bearing in mind the Council's previous [advice](#) on the latter – see the Council's 2020 annual report, appendix 2).
4. We seek greater clarity on how the government proposes to include both upstream and downstream emissions in B.C. as part of the net zero facilities commitment. In some cases, those emissions could be greater than direct emissions from the project itself. Understanding the magnitude, distribution, and opportunities to control these emissions is important.
5. The CleanBC Roadmap acknowledges that government will need to strengthen policies to ensure that B.C. fills gaps and meets its emissions targets. If existing facilities do not have to meet the more stringent policies, achieving climate targets will be compromised, and it creates an unlevel playing field between existing and new facilities, affecting competitiveness. All project approvals must acknowledge B.C.'s climate goals and specify that as policies become more stringent, compliance will be required. Government thus needs to avoid locking in policy at the time of a project's approval. For example, B.C. has not exempted existing emitters from the escalating carbon tax as announced in the 2023 budget.

We understand it is the government's intention to bring forward legislation in 2023 and welcome the opportunity to comment further.

Regards,



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