

COMMITTEE REPORT

TO: CHAIR AND MEMBERS
ENVIRONMENT AND SOCIAL PLANNING
COMMITTEE

DATE: 2019 August 21

FROM: DIRECTOR CORPORATE SERVICES
DIRECTOR PLANNING AND BUILDING

FILE: 33000 02

SUBJECT: CLIMATE CHANGE

PURPOSE: To respond to the resolution on climate change.

RECOMMENDATION:

1. **THAT** the Committee recommend Council to:
 - a) Declare Climate Emergency to demonstrate understanding of and commitment towards the climate crisis and the necessity of an energy transition;
 - b) Update City's community carbon pollution reduction targets, including interim targets that demonstrate the commitment to accelerate climate action as outlined in Section 6.3 of this report; and
 - c) Direct staff to bring forward a separate report on Climate Action Framework which would outline 'Big Moves and Fast Track Actions' to ensure that climate action continues to progress within the City across all sectors at a pace commensurate with the City's updated community carbon pollution reduction targets.

REPORT**1.0 INTRODUCTION**

Under the New Business portion of the May 6, 2019 Environment and Social Planning Committee Agenda, a resolution was introduced regarding taking action on Climate Change. Arising from the discussion, a motion was passed requesting staff to report back to the Committee within 90 days on the advisability and feasibility of implementing the actions outlined in the resolution and embarking on such a plan.

The purpose of this report is to respond to the resolution on Climate Change and propose a recommended path forward for the Committee and Council's consideration.

2.0 POLICY SECTION

Climate Change and proposed recommended path forward is aligned with the City of Burnaby's Corporate Strategic Plan by supporting the following goals and sub-goals of the Plan.

Goal

- A Connected Community
 - Partnership –
Work collaboratively with businesses, educational institutions, associations, other communities and governments.
- A Healthy Community
 - Healthy environment –
Enhance our environmental health, resilience and sustainability.
- A Dynamic Community
 - Economic opportunity –
Foster an environment that attracts new and supports existing jobs, businesses and industries.
 - Community development –
Manage change by balancing economic development with environmental protection and maintaining a sense of belonging.
 - City facilities and infrastructure –
Build and maintain infrastructure that meets the needs of our growing community.
- A Thriving Organization
 - Financial viability –
Maintain a financially sustainable City for the provision, renewal and enhancement of City services, facilities and assets.
 - Reliable services, technology and information.
 - Technology and innovation –
Support technology development and innovation to empower staff and to advance community objectives.

Burnaby's Environmental Sustainability Strategy (ESS) and Community Energy and Emissions Plan (CEEP) include the following goals and strategies of relevance to climate change.

- Breathe – a community resilient to climate change, with clean air and low carbon emissions.
 - 3.1. Reduce community GHG emissions, including in the areas of transportation, buildings, district energy and waste.

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- 3.4 Reduce dependence on fossil fuels such as oil and gas.
- Build – Buildings and infrastructure that have a positive impact on the environment.
 - 6.6 Encourage a shift to renewable energy for buildings where possible.
 - CEEP C3.5 Investigate district and energy sharing opportunities and encourage their development in appropriate locations.

3.0 BACKGROUND

The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body that provides the global community with regulatory assessments of the scientific basis of climate change, its impacts and future risks, as well as options for adaptation and mitigation.

The October 2018 IPCC Special Report on Global Warming of 1.5°C highlights the importance of maintaining global temperature rise to a maximum of 1.5°C in order to avoid worst climate change impacts. To achieve this, the report indicates that global net carbon pollution (i.e., greenhouse gases – CO₂, methane and nitrous oxide – as well as other climate forcers such as black carbon) needs to be reduced 40% to 60% by 2030 – only one decade away. Furthermore, full transition to net zero carbon must be achieved by 2050, followed by net negative carbon (atmospheric and oceanic carbon withdrawals) in the second half of this century.

A UN Human Rights Report, published in June 2019, strongly suggests that democratic breakdown will be one of the unintended consequences of runaway climate change: *“the enjoyment of all human rights by vast numbers of people is gravely threatened”*.¹ Without urgent action, the report author states:

*“Maintaining the current course is a recipe for economic catastrophe. Economic prosperity and environmental sustainability are fully compatible but require decoupling economic well-being and poverty reduction from fossil fuel emissions... Studies have found it is possible to rely on wind, water, and solar for all new energy projects by 2030 and transition the entire energy system to renewable energy by 2050—with current technology and at similar costs as fossil fuels.”*²

¹ *Climate Change and Poverty: Report of the Rapporteur on Extreme Poverty and Human Rights*. United Nations Human Rights Council, 41st Session, Paragraph 19. Report summary [here](#); full text [here](#). The report also notes that: *The essential elements of climate change were understood in the 1970s, and scientists and advocates have been ringing alarm bells for decades. Yet States have marched past every scientific warning and threshold, and what was once considered catastrophic warming now seems like a best-case scenario* (paragraph 29).

² *Ibid*, paragraphs 39 and 43.

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Historically slow action on carbon pollution and the climate breakdown have led to the need for this accelerated transition timeline. We now require an urgent conversion from fossil fuels to zero emissions energy sources within 30 years.

4.0 CLIMATE EMERGENCY DECLARATION

Recognizing the urgent need to keep the global temperature rise below 1.5°C, many national, state/provincial and local governments around the world are declaring climate emergencies and adjusting carbon pollution targets to drive accelerated actions to reduce carbon emissions. In Canada, more than 250 local governments have declared climate emergencies. A number of local governments in Metro Vancouver and across British Columbia have also taken similar steps.

Climate Emergency declaration is symbolic, as the global climate emergency does not, technically, meet the criteria for a "local emergency" as defined under BC's *Emergency Program Act*.³

A Climate Emergency declaration, however, does signal that the City cannot "go it alone" – action is required from the community as a whole, along with other local governments, the regional government, the provincial and federal governments, and the business community. Such commitments are now evident.

Given this, staff recommend that the Committee recommend Council to declare Climate Emergency to demonstrate understanding of and commitment towards the climate crisis and the necessity of an energy transition.

5.0 SUPPORTIVE FEDERAL, PROVINCIAL AND METRO VANCOUVER COMMITMENTS

As noted elsewhere in this report, Climate Emergency declaration signals that the City cannot "go it alone" and that action is required from others, including senior levels of government and the regional district.

5.1 Federal Government

While criticism and opposition continues on the Trans Mountain Expansion Project purchase decision and approval of the Project, the current Federal government has recently declared a Climate Emergency. As part of its Paris Accord commitments, it has committed to reduce emissions nationally by 30% by 2030 from 2005 levels, with supporting policies and programs worth, by one estimate, \$70 billion.⁴ In addition to regulating methane from oil and gas industry and implementing a national carbon tax,

³ http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96111_01

⁴ <https://www.nationalobserver.com/2019/06/21/opinion/serious-70-billion-climate-plan-youve-heard-nothing-about>

several of the Federal government's policies and programs directly support local government carbon pollution action, including development of a clean fuel standard, Research & Development for clean technology, grants for clean vehicle infrastructure, and subsidies for electric vehicle purchases.

5.2 Provincial Government

In May 2018, the province updated its interim legislated climate targets through the *Climate Change Accountability Act*,⁵ to at least 40% below 2007 by 2030 and 60% by 2040; the existing target of 80% by 2050 was left in place. These targets were set prior to release of the Fall 2018 IPCC report; however, the interim targets are in line with the IPCC report findings. In late 2018, the province released an updated climate action plan, *Clean BC*, which set out the provincial transition pathway. Provincial measures by which overall provincial emissions will be reduced include:

- 100% ZEV (zero emissions) new cars & light trucks by 2040, such that 15% of all passenger vehicles are all-electric and 37% are hybrid by 2040;
- Increase the low carbon fuel standard to 20% by 2030;
- Pilot ZEV freight trucks;
- Net-zero energy ready new buildings by 2032 (based on the Energy Step Code); and
- 15% renewable natural gas requirement.

The commitment to net-zero ready new buildings, zero-emission vehicles, and EV purchase incentives and subsidies for EV charging infrastructure directly support local government climate action. However, achieving net zero building construction by 2032 means that new, fossil fuel-based building infrastructure can continue to increase community emissions over the next decade. The City has committed to move more rapidly to net zero emissions buildings; although, some challenges remain in doing so, and new emissions sources could be added until net zero is achieved. In *Clean BC*, the province acknowledges that some emissions are very challenging to reduce, particularly for industry. Therefore, some emissions will need to be reduced through new technology and innovation developed over the next 20 years.

5.3 Metro Vancouver

In July 2019, the Metro Vancouver Climate Action Committee and Metro Vancouver Board approved recommendations to amend the *Climate 2050 Strategic Framework* to update regional commitments and interim targets, in alignment with the IPCC Special Report (see [Table 1](#)). The updated targets will be supported by the development of *Climate 2050 Roadmaps* and the *Clean Air Plan* which will propose "specific goals,

⁵ Formerly the Greenhouse Gas Reduction Targets Act.

strategies and actions that define the path towards a carbon neutral region.”⁶ The *Climate 2050 Roadmaps* are expected to be completed in 2020.⁷

6.0 BURNABY'S CLIMATE ACTION RELATED WORK

6.1 Current Emissions

The City's community emissions were just under one million tonnes in 2010, as shown in Figure 1. On a business-as-usual pathway from 2010 to 2041, total community emissions, as projected for Burnaby's Community Energy and Emissions Plan (2016), were expected to increase to approximately 1.2 million tonnes by 2041, mainly due to population growth. Population growth, however, was expected to outpace carbon emissions: per person emissions trend downward, mainly due to improved vehicle efficiency standards and improved performance of new construction.

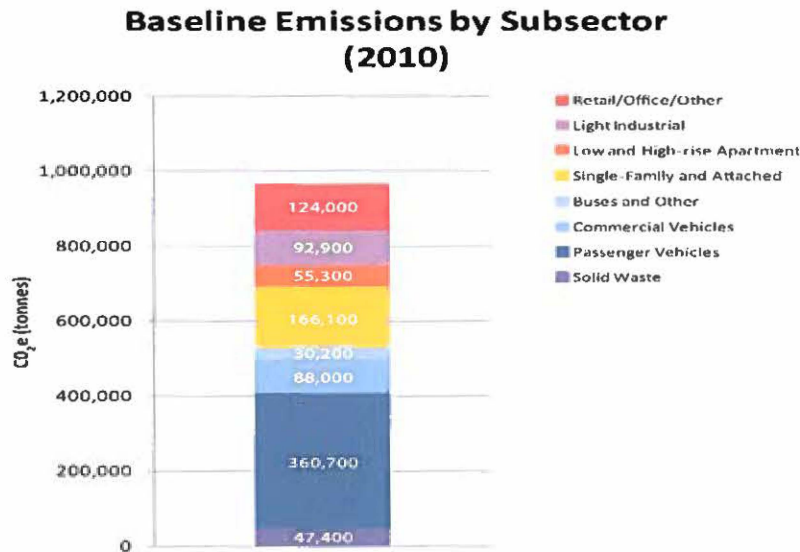


Figure 1. Baseline Burnaby community emissions by sub-sector, 2010.

6.2 Current Carbon Pollution Reduction Targets

The City's current Official Community Plan (OCP) has a climate target of 5% reduction. This target was confirmed through the City's first Community Energy and Emissions Plan (CEEP), based on actions the City alone could take. The CEEP also outlined a

⁶ Aligning Climate 2050 with the IPCC Special Report on Global Warming of 1.5°C. Report to the Metro Vancouver Regional District Climate Action Committee. http://www.metrovancouver.org/boards/ClimateAction/CAC_2019-Jul-12_AGE.pdf

⁷ http://www.metrovancouver.org/services/air-quality/AirQualityPublications/AQ_C2050-StrategicFramework.pdf

second target: a 30% reduction by 2041 based on actions by the City and other partners.

For Council's information, when the City adopted its current CEEP Green House Gas (GHG) emission reduction targets in 2016, the targets were set in recognition that action by local government alone was limited (i.e. the "City Only" target), and that co-ordination and co-operation with utilities, the private sector and other levels of government was critical to achieve more substantial reductions (i.e. the "City Plus Others" target). At the same time, CEEP recognized that positive change may happen in unexpected ways and suggested that the CEEP framework should be flexible and adjust to respond to new opportunities.

Over the past several years, new opportunities for action have been realized. Commitments are in place provincially and federally today that provide local government, business and individual resourcing towards the energy transition – commitments that were not in place when the City first developed a CEEP and committed to a target without additional support. In addition, market shifts, such as the rapidly increasing share of electric vehicles, provide additional opportunities for accelerated change. As these opportunities develop, it becomes clear that the City is now situated within a "City Plus Others" future; the associated target of a 30% reduction should be considered the more appropriate current target.

Given recent commitments by provincial and federal governments, updated provincial and regional targets, and successful City initiatives such as the adoption of the BC Energy Step Code through the Green Building Policy (2018, 2019) and the adoption of the Electric Vehicle (EV) Charging Bylaw (2018), the City is well-placed to update the City's carbon pollution reduction targets. Just a few years after the adoption of the City's current CEEP, accelerated action in BC and elsewhere suggest feasibility for increasingly ambitious targets, at a time when such intensified climate action is imperative.

6.3 Proposed Community Carbon Pollution Reduction Target

At the community scale, the energy transition needs to take place across buildings, transportation, waste, energy systems, and land use. Due to technical and jurisdictional challenges such as building and vehicle stock turnover, bottlenecks in supply, the need for infrastructure support, and restrictions on local government regulatory powers, staff would not be able to support the community carbon pollution targets proposed in the resolution to the Committee.

Such a target would require, for example, that all new construction be zero emissions immediately, 100% of vehicle purchases be electric by 2020 (including used vehicles and all commercial vehicles), and almost 10,000 households and hundreds of

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businesses retrofit with zero emissions heating systems every year for a decade. Such a scale of change is beyond the powers of a local government to regulate.

Although challenging to implement and achieve, the carbon pollution targets currently proposed by Metro Vancouver would be feasible; and, the region has already achieved a 12% emissions reduction for 2007-2015.⁸ By adopting similar targets, the City would be aligned with global and regional targets, enabling regional partnerships and action. Adopting these targets also publicly signals Burnaby's understanding of the climate crisis and necessity for urgent action to transition to a new energy economy.

Table 1. Targets Summary & Recommended Targets for Burnaby

	<10 years	2030 Target	Timeframe 2040 Target	2050 Target	Post-2050
Source	reduction from 2007 levels		reduction from 2010 levels		
IPCC targets (Summary for Policymakers, 2018)		40-60% depending on pathway		zero carbon	negative emissions
Province of BC (2018)		40%	60%	80%	
Metro Vancouver (previous)	33% (2020)			80%	
Metro Vancouver (current) ⁹		45%		carbon neutral	
City of Vancouver (2019) ¹⁰	33% (2020)	50% and 55% RE		carbon neutral and 100% RE before 2050	
Capital Regional District Communities		"work toward achieving carbon- neutrality [...] by 2030"			
City of Burnaby (current)			5% (City-Only) 30% (City Plus Others) by 2041		
Recommended Burnaby Target		45%	75%	Carbon neutral	

Note: Metro Vancouver states that "carbon neutral" is functionally the same as "net zero emissions," meaning that "on balance, a jurisdiction will emit no GHG emissions into the atmosphere" (page 3 of 6, *Aligning Climate 2050 with the IPCC Special Report on Global Warming of 1.5°C*).

⁸ Report to Metro Vancouver Climate Action Committee, March 15, 2019. Page 4.

⁹ Metro Vancouver Climate Action Committee Agenda, *Aligning Climate 2050 with the IPCC Special Report*. July 12, 2019. http://www.metrovancouver.org/boards/ClimateAction/CAC_2019-Jul-12_AGE.pdf.

¹⁰ Vancouver's *Climate Emergency Response* notes: "Staff anticipate that transitioning to 100% renewable energy will result in carbon pollution being reduced by approximately 70% in 2040 and 95% in 2050." (page 7).

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The recommended targets are still very challenging to achieve, particularly the interim 2030 target, due to the policy and infrastructure frameworks that need to be in place. However, adopting the interim targets underscores the urgency and depth of action required, as every year of lost action makes the targets more difficult – and more expensive – to achieve. The 2030 target will ensure that critical measures are taken over the next 10 years to drive the energy transition pathway.

The 2040 interim target sets a feasible carbon pollution goal, as a 75% reduction is technically possible given current technology, the province's low-carbon hydro-electricity, and current supportive commitments from senior levels of government. It signals the pace of change required, as having a target for each decade to 2050 demonstrates and ensures Burnaby's long-term commitment to the energy transition, and enables closer tracking and monitoring. Furthermore, the 2040 target aligns with regional and City land use plans that currently project growth to 2040/2041, and follows the province in setting a 2040 target. The 2040 target therefore commits the City to transition all sectors that are currently feasible within 20 years, with a final decade to solve the last "hard to transition" sectors.

6.4 Current Climate Action Policy Work

Burnaby is well-placed to engage in Climate Action due to on-going planning and policy work and has made considerable progress on key CEEP and ESS actions, particularly in two critically important areas: building energy and electric vehicles.

In addition, the City is currently:

- developing a City Corporate Energy Strategy to reduce corporate climate pollution and energy use, and transition to the new energy economy (completion anticipated Spring 2020);
- starting public engagement on an Updated Transportation Plan in the Fall of 2019; the new Plan will help the City to meet and exceed regional transportation targets such as 50%+ walking, cycling and public transit trips;
- advancing the Community Housing Strategy, which could incorporate green buildings to ensure no net-new fossil fuel heating infrastructure and lower operational costs to residents and landlords;
- implementing Public Electric Vehicle Charging Stations Pilot Project; and
- working with Metro Vancouver on district energy system business analysis and ownership model using the heat source from Metro Vancouver Waste-to-Energy Facility to determine the potential to further reduce community emissions, improve energy efficiency, and provide stable energy costs through the smart utilization of the waste heat resource.

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6.5 Burnaby's Carbon Budget and Required Change of Pace

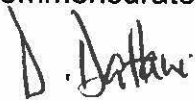
Burnaby's emissions were approximately 965,000 tonnes per year in 2010. The recommended carbon pollution reduction targets mean that Burnaby could only emit ~530,000 tonnes of carbon pollution *annually* by 2030, and ~193,000 tonnes *annually* by 2040, reaching net zero by 2050.

In order to achieve this reduction, accelerated action across all sectors of the community is required to achieve a comprehensive, balanced and strategic transition over and above the City's current climate action policy work. In addition, serious implementation of climate carbon pollution reduction targets will require additional resourcing and some actions will also require additional infrastructure that may have both capital and operational implications.

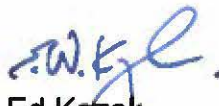
Subject to the Committee and Council's adoption of the carbon pollution reduction targets noted in this report, staff could bring forward a separate report on Climate Action Framework which would outline 'Big Moves and Fast Track Actions' to ensure that climate action continues to progress within the City across all sectors at a pace commensurate with the updated carbon pollution reduction targets.

7.0 CONCLUSION

The October 2018 IPCC Special Report on Global Warming of 1.5°C highlights the need to take immediate action to avoid worst climate change impacts. In recognizing this urgent need and the commitments now in place from senior levels of government, staff recommend Council to declare Climate Emergency and update community carbon pollution reduction targets that demonstrate understanding of and commitment towards the climate crisis and the necessity of an energy transition. Subject to the approval of recommendations, staff could bring forward a separate report on Climate Action Framework which would outline 'Big Moves and Fast Track Actions' to ensure that climate action continues to progress within the City across all sectors at a pace commensurate with the updated carbon pollution reduction targets.



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