

CLIMATE ACTION PLAN

Committee Membership¹

Chair: Damon Matthews (Professor, Geography, Planning and Environment; Concordia Research Chair, Climate Science and Sustainability)

Coordinator: Cassandra Lamontagne (Sustainability Coordinator, Office of Sustainability)

Membership:

- Amr Addas (Lecturer, JMSB Sustainable Investment Professional Certificate program)
 - Andreas Athienitis (Professor, Building, Civil and Environmental Engineering; Director, Concordia Centre for Zero Energy Building Studies)
 - Craig Townsend (Associate Professor, Geography, Planning and Environment)
 - Dan Gauthier (Building Performance Coordinator, Facilities Management)
 - Faisal Shennib (Environmental Specialist, Facilities Management)
 - Hilary Asaba (Buyer, Procurement Services)
 - Kevin Gould (Associate Professor, Geography, Planning and Environment)
 - Lucy Szablak (Senior Engineer, Facilities Management)
 - Marc Gauthier (Treasurer and Investment Officer, Office of Treasurer)
 - Mark Underwood (CEO, Sustainability Action Fund)
 - Nicolas Chevalier (Member, Divest Concordia)
 - Olivier Bemmann (Energy Management Coordinator, Properties Management)
 - Vanessa Macri (General Coordinator, Sustainable Concordia)
- As of January 2019: Emily Carson-Apstein (External Coordinator, Sustainable Concordia)*

Our Vision for 2040

This climate action plan is built on the premise that climate change is an urgent crisis that requires ambitious action on all fronts to decrease and ultimately eliminate our institutional carbon footprint. Our long-term goals and short-term targets are set with the aim of taking a leadership role in the climate mitigation challenge, enabling us to eliminate direct (**Scope 1**) greenhouse gas emissions and achieve climate neutrality with respect to our indirect (**Scope 3**) emissions within twenty years.

The climate action plan committee agreed on the following 20-year (2040) targets:

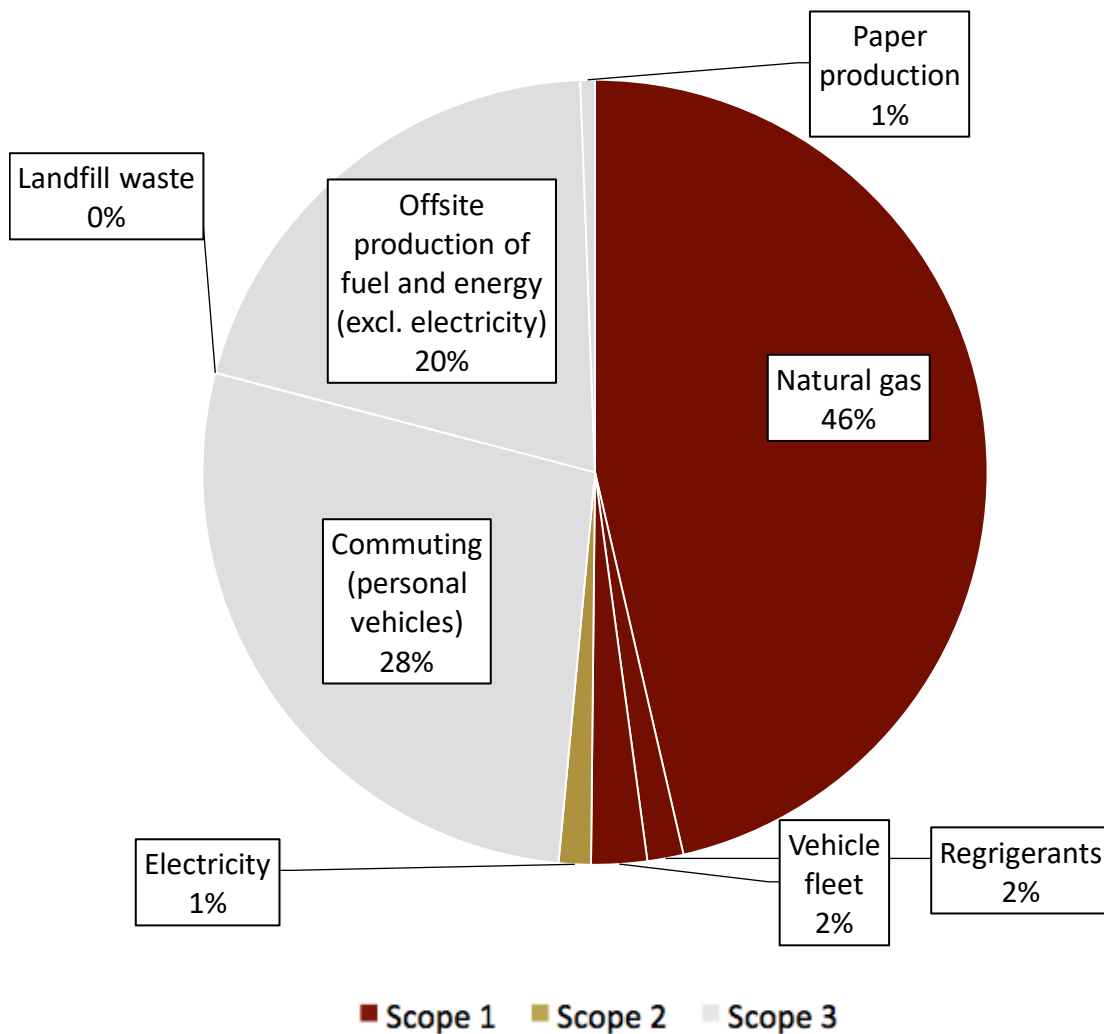
- 1) Elimination of CO₂ and other greenhouse gas emissions from all sources controlled and operated by Concordia University, including all building energy use and transportation operations
- 2) Full electrification of all transportation infrastructure at Concordia, including both vehicle fleets and university parking facilities
- 3) Carbon neutrality across all remaining sources of emissions

¹ Note that titles reflect members' designated roles at the time of their work on the committee.

Current Situation at Concordia

Greenhouse gas emissions and energy use

- In 2014-2015, Concordia’s total emissions were 18,767 tonnes CO₂e
 - **Scope 1:** Emissions from direct (on-site) sources equalled 9,412 tonnes CO₂e (-7.2% compared to 2010-2011)
 - **Scope 2:** Emissions from electricity equalled 248 tonnes CO₂e (+16.8% compared to 2010-2011)
 - **Scope 3:** Emissions from indirect sources equalled 9,107 tonnes CO₂e (-23.1% compared to 2010-2011). Note that we currently don’t measure all of our **Scope 3** emissions.
- Energy use in 2014-2015 was 536,000 GJ (+15% compared to 2010-2011)
 - Our energy use increase can be attributed to the addition of new buildings; our energy use per m² did not change over this time period



Buildings and energy

Context

- Buildings were responsible for 8,953.9 tonnes CO₂e in 2014-2015 (approximately 48% of overall GHG emissions)
- Concordia currently operates its buildings to achieve lowest lifecycle cost and optimised occupant satisfaction
- Given the low cost per unit of energy, natural gas and heating oil are often used for heating and domestic hot water production in our buildings
- Electricity generated by Hydro Quebec is a relatively low-carbon energy source and accounts for only 1% of our total GHG emissions
- There is one full-time staff position within the University's Facilities Management department dedicated to the evaluation and improvement of building and energy performance

Energy efficiency

- Concordia has been ranked the most energy efficient of Quebec's six major universities for 21 consecutive years
- Concordia makes use of energy-efficient design and innovative technologies to reduce our energy use and increase campus awareness
 - The Richard J. Renaud Science Complex (LOY) earned recognition from Natural Resources Canada for its energy-efficient design in 2003
 - The Engineering, Computer Science and Visual Arts Integrated Complex (SGW), constructed in 2005, incorporates economical heating and heat-recovery systems and a natural ventilation system
 - The John Molson School of Business (SGW) was certified **LEED** Silver in 2012 and includes a green roof as well as a solar wall--the first of its kind in the world
 - The PERFORM centre (LOY) was certified **LEED** Gold in 2012
 - The Centre for Structural and Functional Genomics (LOY) was certified **LEED** Gold in 2013
 - The new Applied Science Hub will be entered for **LEED** Gold certification

Transport

Context

- Direct emissions from Concordia's University-operated fleet of vehicles contributed less than 3% of Concordia's total emissions in 2014-2015
 - Our shuttle buses were responsible for the majority of these emissions
 - The University does not own our shuttle buses; we have a rental contract with Skyport wherein we pay to lease and operate the buses while Skyport owns, houses, and maintains them
 - The University also owns 30 different vehicles for transport, grounds maintenance, research, and athletics
- Indirect emissions from commuting to and from campus among Concordia students, faculty and staff contributed 28% of Concordia's total emissions in 2014-2015

Sustainability initiatives for vehicles

- The shuttle buses run on B20 biodiesel fuel (at 2-4% biodiesel) which produces fewer emissions than conventional diesel
- The University currently has four 120v electric parking spots available (two spots at each campus)
 - Concordia owns a total of 858 parking spaces distributed over 13 separate parking lots
- As Loyola faculty and staff are responsible for a high proportion of single-occupancy vehicle travel, Hospitality Concordia launched a staff / faculty carpooling program at Loyola in 2019

Cycling initiatives

- In 2020, Concordia obtained Vélosympathique Silver certification for the SGW and LOY campuses
- At SGW, Concordia members can register for access to the Secure Indoor Bike Parking Facility located in the LB basement parking lot
- We have a partnership with BIXI to ensure adequate access on both campuses as well as affordable rates
 - There are a total of twenty-seven BIXI stations located on Concordia property
 - Each year we offer a 15 per cent rebate on an annual BIXI membership to our community
- We have outdoor bike parking at both campuses

Business/research travel initiatives

- Under the Travel and Conference Policy (CFO-3), travelers are reimbursed for business class train travel to nearby cities (Ottawa, Toronto, and Quebec City) regardless of comparative cost with airline travel

Investments

- In 2014, the Concordia University Foundation (CUF) transferred \$5 million (3%) from its long-term investment pool to a newly-created sustainable investment fund
- In 2016, the CUF formed the Joint Sustainable Investment Advisement Committee (JSIAC), whose mandate is to provide a forum for members of the university community to make recommendations to their respective governing bodies with respect to socially and environmentally responsible investment opportunities
- In 2018, the CUF became a signatory to the **UN Principles for Responsible Investment (UNPRI)** with a fully integrated **Environmental, Social, Governance (ESG)** investment policy, to be applied to all investments managed by the Foundation
- In 2018, The CUF created an impact investment policy. They allocated the 2014 sustainable investment fund into impact investing, with a commitment to increase the fund to 5% of the long-term investment pool. The aim of impact investing is to promote social and environmental benefits aligned with the UN Sustainable Development Goals in addition to a financial return.
- In 2019, Concordia became the first Canadian University to issue a Sustainable Bond, providing \$25 million to finance the new Science Hub over 20 years
- In 2019, Concordia announced its commitment to full divestment from coal, oil and gas as well as to achieve 100% sustainable investments by 2025

Five-year Targets and Strategies

2020-2025 | INSTITUTIONALIZE CLIMATE ACTION

Incorporate climate planning into University governance and operations

Strategy 1	Encourage academic units to adopt policies, plans and procedures that further support campus emissions reductions; provide support and guidelines to do so
Strategy 2	Develop policy integrating green certification and renewable energy into new building construction and major renovation projects. Evaluate the incorporation of green building Operations and Maintenance criteria into the renovation plans for one or more non-certified buildings on campus, while considering ways to enhance the indoor comfort and environmental quality of indoor spaces (Appendix C) (Waste Strategies 7, 14)
Strategy 3	Develop official energy management program and incorporate GHG emissions considerations
Strategy 4	Include a sustainability clause within the new Procurement Policy and develop procedures that encourage end-users to seek suppliers who report on and minimize the life cycle emissions of their products and services (Waste Strategy 3)
Strategy 5	Include a sustainability clause within the new Travel Policy and develop procedures that encourage University members travelling for business and research to favour sustainable modes of transportation (Research Strategy 15)

2020-2025 | BUILDINGS & ENERGY

Reduce Concordia's emissions from buildings by 25% compared to 2014-2015 (Appendix D)

Strategy 6	Assess which natural gas heating systems are approaching end-of-life stage and develop a framework for conversion to electric heating systems
Strategy 7	Pilot the use of renewable and low-emissions fuels such as renewable natural gas at Concordia
Strategy 8	Launch ESCO (energy efficiency) project to reduce energy use of Concordia's most inefficient buildings, while considering ways to enhance the indoor comfort and environmental quality of indoor spaces
Strategy 9	Develop and launch a campaign to engage and educate the campus in energy reduction (Waste Strategy 9)

2020-2025 | TRANSPORT

Attain Vélosympathique Gold rating at both campuses

Increase electric transport infrastructure (vehicles and parking) to 10% of total infrastructure (Appendix E)

Optimize and support the use of web conferencing software at Concordia

Strategy 10	Favour electric vehicles when purchasing new vehicles for our campus fleet (Appendix C)
Strategy 11	Equip new rooms with web conferencing hardware and software and launch a campaign around the use of web conferencing at Concordia (Research Strategy 15). Encourage options for our staff to work remotely in recognizing the benefits to our carbon footprint as well as to public health, employee wellness, and accessibility.
Strategy 12	Install additional electric parking spots on both campuses and create incentives to use electric vehicles (Appendix E)
Strategy 13	Evaluate demand for, and increase as needed, secure bike parking, outdoor bike parking, and free-service bike repair stations on both campuses
Strategy 14	Provide twice-annual bicycle awareness and training events on both campuses and promote safe cycling practices and resources through regular communications

2020-2025 | INVESTMENTS

End all investments in the coal, oil and gas sectors for the Concordia University Foundation (CUF)

Achieve 100% sustainable investments

Achieve 10% in social or environmental impact investments

Strategy 15	Review the Investment Policy to align our activities with our newly adopted targets. Integrate sustainability and social impact into the decision making process for each investment presented to the Foundation Investment Committee for approval
Strategy 16	Participate in conferences, benchmarking activities, and partnerships that align with our targets and offer us opportunities to discuss best practices with other institutions
Strategy 17	Commit to full and open communication and transparency regarding the deployment of the sustainable investment strategies and our exposure to oil, coal and gas industries

2020-2025 | CLIMATE CHANGE OFFSETS AND ADAPTATION

Develop comprehensive plan for offsetting our **Scope 3** (indirect) greenhouse gas emissions

Increase Concordia's resilience in the context of a changing climate

Strategy 18	Research and assess local options for offsetting our indirect emissions in the near and long term (Research Strategy 15)
Strategy 19	In collaboration with community, increase on-campus and off-campus greening efforts and educate about the importance of vegetation in sequestering carbon and reducing urban heat island effect (Food Strategy 9)
Strategy 20	Develop an exposure, resilience and vulnerability assessment outlining the susceptibility of Concordia and our community to climate change impacts

2020-2025 | PROGRESS MEASUREMENT PLAN

Measure progress of climate change indicators and initiatives

A	Perform and publish an bi-annual GHG inventory of our Scope 1, 2 and 3 emissions ; begin to include more detailed Scope 3 emissions as more of these data become available
B	Create new paperless online system for travel expense claims and begin calculating GHGs from business and research travel
C	Continue to monitor overall energy consumption, and explore options for installing meters in strategic locations
D	Conduct bi-annual Concordia Commuter Habits survey, and partner with ARTM's origin-destination survey every five years
E	Apply for Vélosympathique certification in 2023
F	Develop, measure, and report on indicators of our carbon footprint from investments

Appendix A. Information table

Category of strategies		Strategy	Unit(s) Responsible	Status	Project start year
Institutionalize Climate Action	1	Encourage academic units to adopt policies, plans and procedures that further support campus emissions reductions; provide support and guidelines to do so	Office of Sustainability; Faculties	Not started	2021-2022
	2	Develop policy integrating green certification and renewable energy into new building construction and major renovations. Evaluate the incorporation of green building Operations and Maintenance criteria into the renovation plans for one or more non-certified buildings on campus	Facilities Management	Not started	2020-2021
	3	Develop official energy management program and incorporate GHG emissions considerations	Facilities Management	Ongoing	2020-2021
	4	Include a sustainability clause within the new Procurement Policy and develop procedures that encourage end-users to seek suppliers who report on and minimize the life cycle emissions of their products and services	Procurement Services (CFO); Office of Sustainability	Ongoing	2020-2021
	5	Include a sustainability clause within the new Travel Policy and develop procedures that encourage University members travelling for business and research to favour sustainable modes of transportation	Accounts Payable (CFO); Office of Sustainability	Ongoing	2020-2021
Buildings & Energy	6	Assess which natural gas heating systems are approaching end-of-life stage and develop a framework for conversion to electric heating systems	Facilities Management	Not started	2020-2021
	7	Pilot the use of renewable and low-emissions fuels such as renewable natural gas at Concordia	Facilities Management	Not started	2020-2021 to 2024- 2025
	8	Launch ESCO (energy efficiency) project to reduce energy use of Concordia's most inefficient	Facilities Management	Not started	2021-2022

Sustainability Action Plan 2020-2025 | Climate



Category of strategies		Strategy	Unit(s) Responsible	Status	Project start year
		buildings, while considering ways to enhance the indoor comfort and environmental quality of indoor spaces			
	9	Develop and launch a campaign to engage and educate the campus in energy reduction	Facilities Management; Office of Sustainability	Not started	2021-2022
Transport	10	Favour electric vehicles when purchasing new vehicles for our campus fleet	Facilities Management	Not started	2021-2022
	11	Equip new rooms with web conferencing hardware and software and launch a campaign around the use of web conferencing at Concordia. Encourage options for our staff to work remotely in recognizing the benefits to our carbon footprint as well as to public health, employee wellness, and accessibility.	IITS; Sector administration, with support from Human Resources	Ongoing	2021-2022 to 2024-2025
	12	Install additional electric parking spots on both campuses and creative incentives to use electric vehicles	Office of VP Services; Hospitality Concordia; Facilities Management	Not started	2021-2022 to 2024-2025
	13	Evaluate demand for, and increase as needed, secure bike parking, outdoor bike parking, and free-service bike repair stations on both campuses	Office of Sustainability; Facilities Management	Not started	2022-2023
	14	Provide twice-annual bicycle awareness and training events on both campuses	Office of Sustainability	Ongoing	2021-2022 to 2024-2025
Investments	15	Review the Investment Policy to align with sustainable investment targets and integrate sustainability and social impact into decision making	Office of the Treasurer (CFO)	Ongoing	2020-2021
	16	Participate in conferences, benchmarking activities, and partnerships that align with our sustainable investing targets	Office of the Treasurer (CFO)	Ongoing	2020-2021
	17	Commit to full and open communication and transparency regarding the deployment of the sustainable investment strategies	Office of the Treasurer (CFO)	Not started	2020-2021

Category of strategies		Strategy	Unit(s) Responsible	Status	Project start year
Climate Change Offsets and Adaptation	18	Research and assess local options for offsetting our indirect emissions in the near and long term	Office of Sustainability	Not started	2020-2021
	19	In collaboration with community, increase on-campus and off-campus greening efforts and educate about the importance of vegetation in sequestering carbon and reducing urban heat island effect	Facilities Management; Office of Sustainability; Loyola College for Diversity and Sustainability; Department of Biology	Ongoing	2020-2021
	20	Develop an exposure, resilience and vulnerability assessment outlining the susceptibility of Concordia and our community to current and future climate change impacts	Office of Sustainability; Facilities Management	Not started	2024-2025
Progress Measurement Plan	A	Perform and publish an bi-annual GHG inventory of our Scope 1, 2 and 3 emissions; begin to include more detailed Scope 3 emissions as more of these data become available	Office of Sustainability; Facilities Management	Ongoing	2020-2021
	B	Create new paperless online system for travel expense claims and begin calculating GHGs from business and research travel	Accounts Payable (CFO)	Ongoing	2020-2021
	C	Continue to monitor overall energy consumption, and explore options for installing meters in strategic locations	Facilities Management	Ongoing	2020-2021
	D	Conduct bi-annual Concordia Commuter Habits survey, and partner with ARTM's origin-destination survey every five years	Office of Sustainability	Ongoing	2021-2022 and 2023-2024
	E	Apply for Vélosympathique certification in 2023	Office of Sustainability	Not started	2023-2024
	F	Develop, measure, and report on indicators of our carbon footprint from investments	Office of the Treasurer (CFO)	Not started	2020-2021

Appendix B. Glossary of terms

Scope 1 emissions: Direct emissions from owned or controlled sources (Greenhouse Gas Protocol, 2019)

Scope 2 emissions: Indirect emissions from the generation of purchased energy (GHG Protocol, 2019)

Scope 3 emissions: All indirect emissions (not included in Scope 2) that occur in the value chain of the reporting company, including upstream and downstream emissions (GHG Protocol, 2019)

LEED: Leadership in Energy and Environmental Design (see Appendix D)

BOMA BEST: Building Owners and Managers Association (BOMA) Building Environmental Standards (BEST) (see Appendix D)

Portfolio decarbonization: This refers to action by investors to align their investment portfolio with the goals of a low carbon economy (ScienceDirect, 2019)

Energy Service Companies (ESCO): Energy Service Companies (ESCOs) are an experienced and effective delivery mechanism to provide the maximum amount of energy efficiency resources. ESCOs have extensive design and implementation experience in integrating multiple efficiency measures, mitigating technical and performance risks, and providing a financial guarantee to project lenders that the energy savings generated will cover the debt service. The main differentiator between ESCOs and other energy efficiency contractors is the guarantee of energy savings which is specified as part of the terms of an energy savings performance contract (ESPC).

Environmental, Social and Governance (ESG): Environmental, social and governance (ESG) criteria are a set of standards for a company's operations that socially conscious investors use to screen potential investments. Environmental criteria consider how a company performs as a steward of nature. Social criteria examine how it manages relationships with employees, suppliers, customers, and the communities where it operates. Governance deals with a company's leadership, executive pay, audits, internal controls, and shareholder rights. (Investopedia, 2019)

UN Principles for Responsible Investment (UNPRI): The United Nations-supported Principles for Responsible Investment works to understand the investment implications of environmental, social and governance (ESG) factors and to support its international network of investor signatories in incorporating these factors into their investment and ownership decisions (UNPRI, 2019). The six principles are:

Principle 1: We will incorporate ESG issues into investment analysis and decision-making processes.

Principle 2: We will be active owners and incorporate ESG issues into our ownership policies and practices.

Principle 3: We will seek appropriate disclosure on ESG issues by the entities in which we invest.

Principle 4: We will promote acceptance and implementation of the Principles within the investment industry.

Principle 5: We will work together to enhance our effectiveness in implementing the Principles.

Principle 6: We will each report on our activities and progress towards implementing the Principles.

Appendix C. Green building certifications

Context

Green building certification is a way for building owners to demonstrate adherence to strictly defined standards of building management in these and other areas:

- Client Service
- Indoor Environmental Quality (comfort)
- Waste Management
- Water Use
- Transport
- Consumables Purchasing
- Energy Use and Greenhouse Gases
- Cleaning Products and Practices
- Preventive Maintenance
- Hazardous Chemicals/Materials Management
- Occupant Engagement

Each of these domains requires proper documentation, regular auditing and measureable results. Furthermore, certification typically expires within 5 years, making constant improvement necessary to maintain certification. Using such a framework, Concordia can have a solid foundation on which to build and improve in its buildings' sustainability.

GHG emissions

Many certification systems exist, with some being more focussed on certain aspects than others. Some of the more popular ones include:

- LEED Operations and Maintenance v4.1
- LEED Building Design and Construction v4.1
- BOMA BEST
- Energy Star
- Green Key Eco-Rating Program
- Green Globes
- Living Future

The above-mentioned certification systems all require a GHG emissions goal to be set and for a plan be created and regularly updated to meet this goal.

Engagement

A popular practice after obtaining certification is to advertise to occupants and visitors (through branding and signage) that the building in question is green certified. Concordia could take this further by emphasizing what practices are in place rather than focussing on the certifications themselves; it is widely recognized on the committee that this would be more meaningful and engaging to our community.

Appendix D. Plan for reducing emissions from natural gas

According to the master plan of the *Transition Énergetique Québec*, all public institutions will be required to shift their primary heating systems from fossil-fuel based to electric systems at the end-of-life stage beginning in 2020-2021. Already, it is prohibited to construct new buildings whose primary heating system is non-renewable.²

Concordia cannot develop a framework for the conversion of our natural gas infrastructure to electric without first conducting a thorough study of our heating systems.

Therefore, we have developed a dual approach to reach our commitment of 25% reduction of emissions from building by 2025-2026.

1) Conduct a full assessment of our heating systems

We will work to determine the cost of replacing our natural gas boilers with electric ones as well as the cost of purchasing electricity instead of natural gas. At the same time, we will outline the infrastructure updates and electrical capacity required for the conversion.

Once we have this information, we will develop a prioritized list of each of our boilers that includes the anticipated year of replacement, the cost of replacement, and the GHG emissions associated.

This strategy would target approximately 64 natural gas boilers and 33 gas-fired domestic hot water tanks over a twenty-year time span. This strategy would also imply a moratorium on the purchase of devices whose fuel is non-renewable.

2) Begin purchasing renewable natural gas (RNG) to meet our targets in the short-term

Renewable natural gas is methane gas that, rather than being extracted from non-renewable reservoirs, is captured from organic materials that decompose in landfills, sewage treatment plants, and biodigesters.

In this way, emissions that would have been released to the atmosphere are given a second “life” by being injected into the natural gas pipeline networks and displacing conventional natural gas that would have been burned in its stead. It is therefore considered to be both renewable and carbon neutral.

We have signed on to a contract with Energir to obtain a certain percentage of our natural gas as RNG starting in 2020-2021. We will continue to purchase RNG in parallel with our conversion to electric heating systems in order to meet our emissions reduction targets.

Appendix E. Electrification of transport

² Transition Énergetique Québec (2018). Joining forces for a sustainable energy future: 2018-2023 energy transition, innovation and efficiency master plan.

https://transitionenergetique.gouv.qc.ca/fileadmin/medias/pdf/plan-directeur/PAP_TEQ_PlanDirecteur_Web_ANG.pdf

The Climate Action Committee came to a consensus that Concordia should aim for the **full electrification of their on-campus transport infrastructure (vehicle fleets and parking lots) by the year 2040**, in order to minimize scope 3 emissions and contribute to our goal of carbon neutrality. Meeting this goal would effectively eliminate 25% of Concordia's total emissions from 2014-2015.

The committee concluded that this goal should be approached linearly, with a target of 25% electric infrastructure at Concordia by 2025. This target also requires that we prefer electric vehicles when purchasing new vehicles for our campus fleet.

The following is evidence that electric transport infrastructure will be well-supported at Concordia.

Government commitments

- In Quebec, organizations will be required to introduce a sustainable travel management plan for their employees by the year 2022-2023³
- The province of British Columbia, along with multiple national governments abroad, have passed a law stating all new cars and trucks sold in 2040 must be zero emission vehicles.⁴ It is possible that Quebec will pass a similar law in the future.
- Quebec has plans to triple the number of electric vehicles registered in the province between 2020 and 2025⁵
- Bill 104 states that by the year 2025, at least 22% of vehicles sold in Quebec must be either electric or plug-in hybrid vehicles⁵
- Federal and provincial governments are offering a combined \$13,000 in financial incentives for residents to purchase electric vehicles.⁶
- In May 2019, Canada became the first country to sign the Drive to Zero Pledge, an international initiative aimed at increasing the number of zero and low emissions vehicles in the medium and heavy-duty transportation sector.⁷ The province of Quebec signed in September 2019.⁸

³ Transition Énergetique Québec (2018). Joining forces for a sustainable energy future: 2018-2023 energy transition, innovation and efficiency master plan. https://transitionenergetique.gouv.qc.ca/fileadmin/medias/pdf/plan-directeur/PAP_TEQ_PlanDirecteur_Web_ANG.pdf

⁴ Government of British Columbia (2018). Legislation to guide move to electric vehicles, reduce pollution. https://news.gov.bc.ca/releases/2019EMPR0011-000608?utm_source=All+Media&utm_campaign=848fdcc868-EMAIL_CAMPAIGN_2019_02_07_09_26_COPY_01&utm_medium=email&utm_term=0_135bfb50a9-848fdcc868-347701273

⁵ Quebec National Assembly (2016). Bill 104: An Act to increase the number of zero-emissions motor vehicles in Quebec in order to reduce greenhouse gas and other pollutant emissions. <http://www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=5&file=2016C23A.PDF>

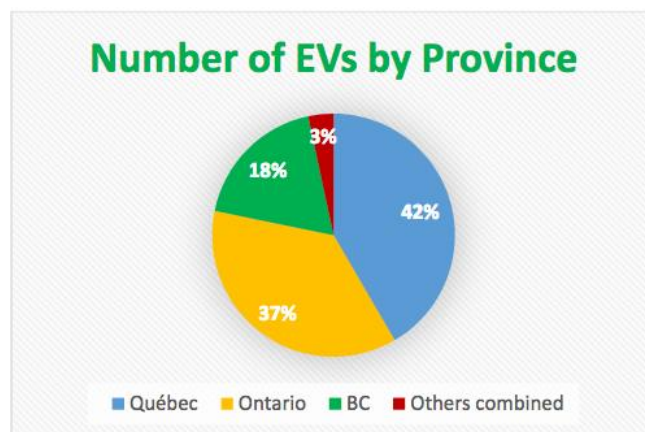
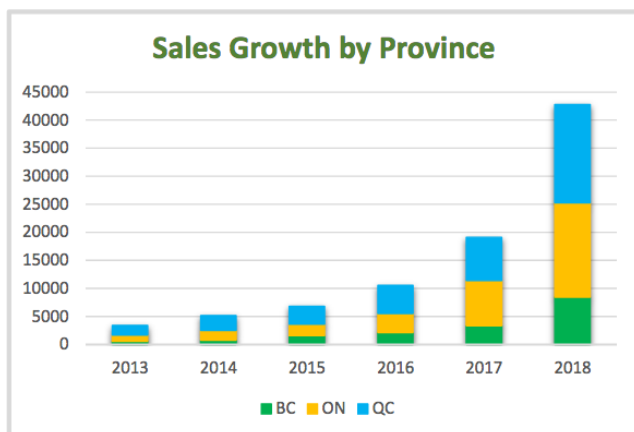
⁶ Transition Énergetique Québec. (2019). New vehicle rebate. <http://www.vehiculeselectriques.gouv.qc.ca/english/rabais/ve-neuf/programme-rabais-vehicule-neuf.asp>

⁷ National Observer (2019). Canada becomes the first country to sign pledge for zero emission commercial vehicles. <https://www.nationalobserver.com/2019/05/29/news/canada-becomes-first-country-sign-international-pledge-zero-emission-commercial>

⁸ National Observer (2019). Quebec follows Canada into electric vehicle pledge. <https://www.nationalobserver.com/2019/09/24/news/quebec-follows-canada-electric-vehicle-pledge>

Electric vehicle sales

- It is expected that globally, sales of electric vehicles will outstrip sales of conventional (gasoline-burning) vehicles by 2038 at the latest⁹
- In Canada, 2018 was a record-breaking year for the sales of plug-in electric vehicles, with sales increasing by 125% compared to 2017.¹⁰
- The trend in Canada is largely driven by Quebec, which has the highest proportion of EVs in Canada (42%).¹¹



Electric infrastructure plan

In consultation with University units, a five-year target of 10% was agreed upon. This would bring the total number of electric vehicle parking spots on campus from four in spring 2020 to a minimum of 86 in spring 2025.

After 2025, the installation of electric vehicle charging stations will be scaled up until we achieve 100% electric parking in 2040.

Preferential purchasing of electric vehicles for the campus fleet will begin in 2021-2022.

Appendix F. Linkages with other stream plans

⁹ BloombergNEF (2019). Electric vehicle outlook 2019. <https://about.bnef.com/electric-vehicle-outlook/>

¹⁰ Electric Mobility Canada (2019). Electric vehicle sales in Canada in 2018: A phenomenal record-breaking year. <https://emc-mec.ca/wp-content/uploads/EMC-Sales-Report-Rapport-de-ventes-M%C3%89C-2018.pdf>

¹¹ Electric Mobility Canada (2019). Electric vehicle sales in Canada in 2018: A phenomenal record-breaking year. <https://emc-mec.ca/wp-content/uploads/EMC-Sales-Report-Rapport-de-ventes-M%C3%89C-2018.pdf>

Food strategy 9: In collaboration with the community (including interested faculty and their students), develop protocol to integrate perennial native species, pollinator gardens, and edible landscapes in University's landscaping

Waste strategy 3: Zero Waste Purchasing: Encourage vendors with life cycle analysis assessments, take-back programs (Extended Producer Responsibility, EPR), equipment loan programs, low or no packaging, sustainable and local materials. Examine major university-wide or department procurements and investigate best practices for waste reduction relating to each. Provide education sessions to departments on best practices in zero waste procurement and customized recommendations based on their purchasing patterns. Restrict non-reusable, non-recyclable, and non-compostable materials

Waste strategy 7: Zero Waste Procedures: Create Property Management level procedures on waste management to align with Zero Waste objectives, LEED O+M, and BOMA Best requirements

Waste strategy 9: Zero Waste Offices: Continue standardization of Low Waste Office configuration (replacement of desk-side trash bins with personal sorting bins, providing access to compost) for all existing and new office spaces, and increase office waste education and engagement initiatives. Continue building on the momentum of the initiative to engage staff, faculty, and students in office spaces to further reduce / divert waste. Re-establish tie-in with the Sustainability Ambassadors program. Clarify procedures for waste with "Zero Waste Concordia Procedures" document and presentations to offices, including how to manage e-waste, recycling FAQs, how to sustainably dispose of furniture and other assets, etc.

Waste strategy 14: Zero Waste Renovation / Construction / Deconstruction: Assess integration of Zero Waste principles into general conditions of construction and renovation contracts, provide benefits to contractors who perform deconstruction, and require strict tracking of waste diversion. Create tie-in with local materials economy

Research strategy 15: Develop a protocol for encouraging carbon neutral research practices and travel