

# Building a zero-emission goods-movement system

## Technical appendix

December 2020



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# Building a zero-emission goods-movement system: Technical appendix

## Contents

Introduction .....	1
Government of Canada strategies and policies.....	2
British Columbia ZEV policies.....	6
Provincial strategies and policies .....	6
Municipal strategies and policies .....	8
Quebec ZEV policies .....	14
Provincial strategies and policies .....	14
Municipal strategies and policies .....	17
Ontario ZEV policies .....	21
Provincial strategies and policies .....	21
Municipal strategies and policies .....	22
Alberta ZEV policies .....	27
Provincial strategies and policies .....	27
Municipal strategies and policies .....	28
Nova Scotia ZEV policies .....	33
Provincial strategies and policies .....	33
Municipal strategies and policies .....	35

# Introduction

This Technical Appendix includes a review of the policy landscape for zero-emission goods-movement vehicles within some of the largest Canadian municipalities (Vancouver, Calgary, Edmonton, Toronto, Montreal, and Halifax), their respective provincial governments, and the federal government. The zero-emission vehicle policies examined have been grouped into four main categories: strategic planning and regulations, incentives for deployment, charging infrastructure, and fleet capacity.

Existing ZEV policies are often relevant to both passenger and goods movement and are applicable across multiple classes of light-, medium-, and heavy-duty vehicles. When relevant and information is available, this scan will indicate the applicability of policies to different vehicle types.

References are found at the end of each section.

# Government of Canada strategies and policies

Policy category	Policies
<b>Strategic planning and regulations</b>	
ZEV and climate change related plans and strategies	<p>The Pan-Canadian Framework on Clean Growth and Climate Change is a national plan aiming to reduce GHG emissions, induce economic growth, and increase climate-change resilience.<sup>1</sup> The transportation pillar of the plan includes a commitment toward “putting more zero-emission vehicles on the road.”<sup>2</sup></p> <p>The federal government is a pledge partner to CALSTART’s Global Commercial Vehicle Drive to Zero program.<sup>3</sup> The pledge requires partners to recognize the importance of reducing GHG emissions in <b>medium- and heavy-duty vehicles</b>, recognize the importance of focusing on ‘beachhead’ applications in which zero-emission medium- and heavy-duty vehicles have the most immediate potential, and commit to actions including information sharing, identifying best practices, and co-ordinating globally.<sup>4</sup> In September 2020, CALSTART announced that Canada, along with eight other countries, had “agreed to work collaboratively to grow zero-emission, commercial-vehicle manufacturing, infrastructure and deployment at home and globally.”<sup>5</sup></p> <p>The federal government is a member of the International ZEV Alliance, a group of jurisdictions seeking to collaborate to increase the international ZEV market and increase policy cooperation.<sup>6</sup></p> <p>Canada’s Clean Fuel Standard is expected to encourage electrification of goods-movement fleets through mechanisms including the allocation of credits to fleets for the provision of electricity to their own vehicles at a depot.<sup>7</sup></p>
ZEV sales targets/mandates	<p>Target for ZEVs to make up 10% of <b>light-duty vehicle</b> sales annually by 2025, 30% by 2030, and 100% by 2040.<sup>8</sup></p> <p>Budget 2019 allocates \$5 million over five years, beginning in 2019-20, for Transport Canada to work with manufacturers to encourage sufficient ZEV supply to meet targets.<sup>9</sup></p>
<b>Incentives for deployment</b>	
Financial incentives	<p>iZEV Program: incentives for the purchase or lease of eligible zero-emission vehicles. Currently targeted at passenger <b>light-duty vehicles</b>. \$5,000 for BEV, FCEV, and longer-range PHEV vehicles, \$2,500 for shorter-range PHEV vehicles. Vehicles with manufacturer suggested retail prices up to \$60,000 are eligible.<sup>10</sup> The 2020 fall economic statement proposed a \$54 million top-up to the iZEV program for 2020-21 and \$232 million for 2021-22.<sup>11</sup></p> <p>100% tax write-off for zero-emission <b>light-, medium- and heavy-duty vehicles</b> purchased by businesses.<sup>12</sup> Allocated \$265 million in Budget 2019.<sup>13</sup></p>

Policy category	Policies
	<p>Canada's <b>heavy-duty vehicle</b> emissions regulations will introduce standards to reduce greenhouse gas emissions from on-road heavy-duty vehicles, trailers, and engines. Standards for vehicles and engines will increase in stringency from model year 2021 to 2027. The regulations will also create incentives for electric and hybrid HDV manufacturers.<sup>14</sup></p> <p>Canada's <b>passenger automobile and light truck</b> greenhouse gas emission regulations create standards for new, on-road LDVs for sale in Canada. The regulations took effect with model year 2011. Manufacturers and importers are required to meet average GHG standards. The regulations become more stringent over time.<sup>15</sup></p>
<b>Charging infrastructure</b>	
Charging infrastructure incentives	<p>Zero Emission Vehicle Infrastructure Program (ZEVIP): \$130 million over five years (2019-2024) for ZEV charging and refuelling stations. Two of the targeted infrastructure streams include <b>light-duty vehicle fleets</b> and <b>medium- and heavy-duty vehicle fleets</b>. Medium- and heavy-duty vehicle fleets are defined as including areas such as last-mile delivery.<sup>16</sup></p> <p>Full expensing for clean energy investments: In the 2018 federal fall economic statement, a mechanism was introduced for full expensing of eligible property in Classes 43.1 and 43.2. This would include electric vehicle charging stations.<sup>17</sup> Property that comes into use in 2023 or earlier will receive a 100% deduction; the deduction is then phased out over time.<sup>18,19</sup></p> <p>The federal 2020 fall economic statement proposed an additional \$150 million investment in zero-emission vehicle infrastructure. This investment would be over three years and would begin in 2021-22.<sup>20</sup></p>
Charging infrastructure projects	<p>Electric Vehicle and Alternative Fuel Infrastructure Deployment Initiative (EVAFIDI): \$96.4 over six years (2016-2022) for highway fast-charging stations, freight-corridor natural gas refuelling stations, and metropolitan-area hydrogen refuelling stations. EVAFIDI has resulted in 837 EV fast chargers, eight hydrogen refuelling stations, and 23 natural gas refuelling stations selected as of March 2020.<sup>21</sup></p> <p>Electric Vehicle Infrastructure Demonstration (EVID): \$30 million over four years (2018-2022) for demonstrations of electric vehicle charging infrastructure.<sup>22</sup> EVID currently has 16 projects, largely concentrated in British Columbia and Ontario, funded as of April 2020.<sup>23</sup></p>
<b>Fleet capacity</b>	
ZEV awareness and education	<p>EnerGuide is a mark used by the federal government to rate and label energy performance for consumer items including <b>light-duty vehicles</b>.<sup>24</sup> EnerGuide labels exist for traditional vehicle types as well as EVs.<sup>25</sup></p> <p>The 2020 Fuel Consumption Guide provides information on 2020 model year <b>light-duty vehicle</b> fuel consumption.<sup>26</sup> Information is given on vehicle types including plug-in hybrid electric vehicles and battery-electric vehicles.<sup>27</sup></p> <p>The Zero-Emission Vehicle Awareness Initiative provides support to projects that aim to increase ZEV awareness through mechanisms including education, outreach, and advancing knowledge. The RFP, now closed, committed to paying up to 50% of total project costs, to a maximum of \$50,000, with an expected six to 10 projects to be funded.<sup>28</sup></p>

Policy category	Policies
Public sector procurement <sup>29</sup>	<p>The federal government’s Greening Government Strategy includes a number of commitments related to mobility and fleets. Prominent among them are commitments on ZEVs. These include:</p> <ul style="list-style-type: none"> <li>• 100% of new <b>executive vehicle</b> purchases will be ZEVs or hybrids by FY 2018-19.</li> <li>• 75% of new <b>administrative unmodified light-duty fleet vehicle</b> purchases will be either ZEVs or hybrids by FY 2019-20, with priority placed on ZEVs. Objective of 80% ZEVs in the administrative fleet by 2030.</li> <li>• Examination of potential use of alternative energy in national security/safety options to be examined.<sup>30</sup></li> </ul>

<sup>1</sup> Government of Canada, “Pan-Canadian Framework on Clean Growth and Climate Change.”

<https://www.canada.ca/en/services/environment/weather/climatechange/pan-canadian-framework.html>

<sup>2</sup> Government of Canada, “Complementary actions to reduce emissions.” [https://www.canada.ca/en/services/environment/weather/climatechange/pan-canadian-framework/complementary-actions-reduce-emissions.html#3\\_3](https://www.canada.ca/en/services/environment/weather/climatechange/pan-canadian-framework/complementary-actions-reduce-emissions.html#3_3)

<sup>3</sup> Global Commercial Vehicle Drive to Zero, “Pledge Partners.” <https://globaldrivetozero.org/about/pledge-partners/>

<sup>4</sup> Global Commercial Vehicle Drive to Zero, “The Pledge.” <https://globaldrivetozero.org/about/pledge/>

<sup>5</sup> CALSTART, “Canada, China, Chile, Finland, Germany, Japan, Netherlands, Norway, Sweden to collaboratively grow zero-emission commercial vehicle manufacturing, infrastructure and deployment,” September 16, 2020. <https://calstart.org/canada-china-chile-finland-germany-japan-netherlands-norway-sweden-to-collaboratively-grow-zero-emission-commercial-vehicle-manufacturing-infrastructure-and-deployment/>

<sup>6</sup> International ZEV Alliance, “Members.” <http://www.zevalliance.org/members/>

<sup>7</sup> Environment and Climate Change Canada, *Proposed Regulatory Approach: Clean Fuel Standard*, webinar, July 10, 2019, 30.

<sup>8</sup> Natural Resources Canada, “Zero Emission Vehicle Infrastructure Program.” <https://www.nrcan.gc.ca/energy-efficiency/energy-efficiency-transportation/zero-emission-vehicle-infrastructure-program/21876>

<sup>9</sup> Department of Finance Canada, *Investing in the Middle Class: Budget 2019* (2019), 82. <https://www.budget.gc.ca/2019/docs/plan/toc-tdm-en.html>

<sup>10</sup> Transport Canada, “Zero-emission vehicles.” <https://www.tc.gc.ca/en/services/road/innovative-technologies/zero-emission-vehicles.html>

<sup>11</sup> Government of Canada, *Supporting Canadians and Fighting COVID-19: Fall Economic Statement 2020* (2020), 96. <https://www.budget.gc.ca/fes-eea/2020/home-accueil-en.html>

<sup>12</sup> “Zero-emission vehicles.”

<sup>13</sup> Joe Homsy, “Federal ZEV Policies: June 12, 2019 Workshop – Ottawa,” presented at Sustainable Pathways for Canada’s Onroad Transportation Sector, Ottawa, June 12, 2019, 5. Available at [https://theicct.org/sites/default/files/Jo%20Homsy\\_Federal%20ZEV%20Policies%20-%20Workshop\\_19jun12.pdf](https://theicct.org/sites/default/files/Jo%20Homsy_Federal%20ZEV%20Policies%20-%20Workshop_19jun12.pdf)

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- <sup>14</sup> Environment and Climate Change Canada, “Canada’s heavy-duty vehicle regulations.” <https://www.canada.ca/en/environment-climate-change/news/2018/06/canadas-heavy-duty-vehicle-regulations.html>
- <sup>15</sup> Environment and Climate Change Canada, *2018 Discussion paper on the mid-term evaluation of the Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations* (2017), 1-2. <https://www.canada.ca/content/dam/eccc/documents/pdf/cepa/DiscussionPaperAutomobilesLightTrucksGHG2018-eng.pdf>
- <sup>16</sup> “Zero Emission Vehicle Infrastructure Program.”
- <sup>17</sup> Government of Canada, “CCA classes.” <https://www.canada.ca/en/revenue-agency/services/tax/businesses/topics/sole-proprietorships-partnerships/report-business-income-expenses/claiming-capital-cost-allowance/classes.html>
- <sup>18</sup> Department of Finance Canada, *Investing in Middle Class Jobs: Fall Economic Statement 2018* (2018), 156. <https://www.budget.gc.ca/fes-eea/2018/docs/statement-enonce/fes-eea-2018-eng.pdf>
- <sup>19</sup> Government of Canada, “Accelerated Investment Incentive.” <https://www.canada.ca/en/revenue-agency/services/tax/businesses/topics/sole-proprietorships-partnerships/report-business-income-expenses/claiming-capital-cost-allowance/accelerated-investment-incentive.html>
- <sup>20</sup> *Supporting Canadians and Fighting COVID-19: Fall Economic Statement 2020*, 88.
- <sup>21</sup> Natural Resources Canada, “Electric Vehicle and Alternative Fuel Infrastructure Deployment Initiative.” <https://www.nrcan.gc.ca/energy-efficiency/energy-efficiency-transportation-and-alternative-fuels/electric-vehicle-and-alternative-fuel-infrastructure-deployment-initiative/18352>
- <sup>22</sup> Natural Resources Canada, “Electric Vehicle Infrastructure Demonstration (EVID) Program.” <https://www.nrcan.gc.ca/climate-change/green-infrastructure-programs/electric-vehicle-infrastructure-demonstration-evid-program/20467>
- <sup>23</sup> Natural Resources Canada, “Current Investments.” <https://www.nrcan.gc.ca/science-data/funding-partnerships/funding-opportunities/current-investments/21146>
- <sup>24</sup> Natural Resources Canada, “EnerGuide in Canada.” <https://www.nrcan.gc.ca/energy-efficiency/energuide/12523>
- <sup>25</sup> Natural Resources Canada, “EnerGuide labels for other vehicles.” <https://www.nrcan.gc.ca/energy-efficiency/energy-efficiency-transportation-and-alternative-fuels/choosing-right-vehicle/tips-buying-fuel-efficient-vehicle/energuide-vehicles/energuide-labels-other-vehicles/21381>
- <sup>26</sup> Natural Resources Canada, “2020 Fuel Consumption Guide.” <https://www.nrcan.gc.ca/energy-efficiency/energy-efficiency-transportation/fuel-consumption-guide/21002>
- <sup>27</sup> Natural Resources Canada, *2020 Fuel Consumption Guide* (2020), 35,37 <https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/oeef/pdf/transportation/tools/fuelratings/2020%20Fuel%20Consumption%20Guide.pdf>
- <sup>28</sup> Natural Resources Canada, “Zero-Emission Vehicle Awareness Initiative.” <https://www.nrcan.gc.ca/energy-efficiency/energy-efficiency-transportation/resource-library/zero-emission-vehicle-awareness-initiative/22209>
- <sup>29</sup> Note that, while examples of public sector procurement are given in this Technical Appendix, the main ZEV report does not contain a procurement recommendation.
- <sup>30</sup> Treasury Board of Canada Secretariat, “Greening Government Strategy.” <https://www.canada.ca/en/treasury-board-secretariat/services/innovation/greening-government/strategy.html>

# British Columbia ZEV policies

## Provincial strategies and policies

Policy categories	Policies
<b>Strategic planning and regulations</b>	
ZEV and climate change related plans and strategies	<p>British Columbia's CleanBC plan outlines actions to reduce greenhouse-gas emissions and build a clean economy, with the goal of a 25.4 Mt GHG emission reduction by 2030, relative to a 2007 baseline.<sup>31</sup> The plan envisions 1.6 Mt in reductions from actions related to ZEV incentives, ZEV charging and refuelling, and a ZEV standard.<sup>32</sup></p> <p>British Columbia is a pledge partner to CALSTART's Global Commercial Vehicle Drive to Zero program.<sup>33</sup> See the federal section, above, for more details on the program.</p> <p>British Columbia is a member of the International ZEV Alliance, a group of jurisdictions seeking to collaborate to increase the international ZEV market and increase policy cooperation.<sup>34</sup></p> <p>British Columbia's Renewable and Low Carbon Fuel Requirements Regulation requires fuel suppliers to meet established carbon intensity reductions.<sup>35</sup> Fuel suppliers can generate credits by supplying fuels that fall below the set carbon intensity threshold. These credits can then be invested in clean fuels and vehicles, such as ZEVs and their supporting charging or refuelling infrastructure.</p>
ZEV sales targets/mandates	Zero-Emission Vehicles Act mandates that ZEV sales and leases make up 10% of <b>light-duty vehicle</b> sales by 2025, 30% by 2030, and 100% by 2040. <sup>36,37</sup>
<b>Incentives for deployment</b>	
Financial incentives	Go Electric commercial vehicle program supports adoption of electric and hydrogen <b>specialty-use vehicles</b> including <b>low-speed utility trucks, heavy duty transport trucks, and motorcycles</b> . <sup>38</sup>
Non-financial incentives	<p>Go Electric Fleet Program assists in the adoption of ZEVs in <b>private and public fleet operations</b> through the provision of information, staff training, business case development support, and assistance related to EV charging.<sup>39</sup></p> <p>British Columbia's decal program provides <b>zero-emission vehicles weighing below 6,000 kg</b> with privileged access to high-occupancy vehicle (HOV) lanes.<sup>40</sup> The vast majority of eligible vehicles are passenger vehicles.<sup>41</sup></p>



Policy categories	Policies
<b>Charging infrastructure</b>	
Charging infrastructure incentives	Go Electric Home and Workplace Charger Rebates program provides rebates for EV chargers for workplaces and homes. For workplaces, the rebates pay up to 50% of costs, up to \$4,000. Advisory services are also available. <sup>42</sup>
Charging infrastructure projects	Public Fast Charger Network is being built out by the Government of British Columbia in partnership with organizations including BC Hydro and local governments. <sup>43</sup> The Go Electric Public Charger Program, meanwhile, provides funding for the installation of fast charging stations as well as co-located Level 2 chargers. <sup>44</sup> Go Electric Hydrogen Fuelling Infrastructure Program seeks to expand the B.C. hydrogen fuelling network, providing funding for station upgrades and construction. <sup>45</sup>
<b>Fleet capacity</b>	
ZEV awareness and education	British Columbia's 2019 Budget and Fiscal Plan allocated \$6 million for ZEV sector automotive electrician and technician training programs, as well as research and commercialization. <sup>46</sup> In late 2019, the British Columbia Institute of Technology announced an <b>EV Maintenance Training Program</b> . This program, supported by \$325,000 through CleanBC, will "make sure the province's workforce has the skills and training needed to support more electric vehicles on the road." <sup>47</sup> The Emotive campaign seeks to increase EV awareness in B.C. Its partners include EV owners and businesses. <sup>48</sup>
Public sector procurement	Commitment to make 10% of <b>light-duty vehicle</b> purchases zero-emission as of 2020, when ZEV models suitable to operational needs should be available. <sup>49</sup> B.C. also supports the West Coast Electric Fleets initiative, in which member organizations pledge to "take action to expand the use of zero-emission vehicles." <sup>50</sup>

## Municipal strategies and policies

### City of Vancouver

Policy Pillar	Policies
<b>Strategic planning and regulations</b>	
ZEV and climate change related plans and strategies	<p>The City of Vancouver's Climate Emergency Action Plan will build on the successes of its Greenest City Action Plan.<sup>51</sup> In 2019, Vancouver City Council declared a climate emergency<sup>52,53</sup> and approved a Climate Emergency Response report.<sup>54</sup> This report included one target of carbon neutrality by 2050 and another that says zero-emission vehicles will account for 50% of kilometres driven on Vancouver roads by 2030.<sup>55</sup> The report recommended that staff create a strategy to meet the latter target by fall 2020.<sup>56</sup> The report also recommended the creation of an urban freight and fleets strategy which would include language on the transition to zero-emission <b>light-, medium-, and heavy-duty vehicles</b>.<sup>57</sup></p> <p>The Climate Emergency Action Plan was approved by Council in November 2020<sup>58</sup> and provided a guide to achieving climate-related Big Move targets in areas including zero-emission vehicles. This included 19 actions to support said targets.<sup>59</sup></p> <p>The Climate Emergency Action Plan also builds on the 2017 Renewable City Action Plan and the 2016 Electric Vehicle Ecosystem Strategy.<sup>60</sup> The Renewable City Action Plan includes a goal of 100% of energy coming from renewable sources as of 2050<sup>61</sup> and is focused on buildings, transportation, and "waste and cross-cutting opportunities."<sup>62</sup> The goals of the Electric Vehicle Ecosystem Strategy<sup>63</sup> include increased access to charging infrastructure and reduced cost barriers to the uptake of electric vehicles.<sup>64</sup></p> <p>The City of Vancouver will be developing a new Comprehensive Environmental Plan, which will build on its Greenest City Action Plan and will incorporate actions of the Climate Emergency Action Plan.<sup>65</sup></p> <p>The City of Vancouver is a pledge partner to CALSTART's Global Commercial Vehicle Drive to Zero program.<sup>66</sup> See the federal section above for more details on the program.</p>
<b>Incentives for deployment</b>	
Financial incentives	The City of Vancouver's Climate Emergency Response report recommended the exploration of transportation pricing, in part to support "zero emissions mobility." <sup>67</sup> As of July 2020, this action was labelled as being 'on track'. <sup>68</sup>
Non-financial incentives	The City provides additional benefits to the participants of the B.C. decal program, including dedicated ZEV parking stalls. <sup>69</sup> The Climate Emergency Response report recommended engagement on zero emissions areas, which would deter or restrict access by combustion engine vehicles with a goal of encouraging ZEV adoption, including in goods movement. <sup>70</sup> As of July 2020, this action was labelled as being 'complete'. <sup>71</sup>

Policy Pillar	Policies
	<p>The Climate Emergency Response report recommended updating the management of on-street curbside zones, which would “encourage the transition to zero emissions commercial vehicles,” noting that ZEVs could be offered preferential access.<sup>72</sup> As of July 2020, this action was labelled as ‘delayed’.<sup>73</sup></p> <p>Vancouver’s Climate Emergency Action Plan included the action “Implement transport pricing in the metro core.” It was noted that gas tax funding would decrease with increased adoption of EVs.<sup>74</sup></p> <p>Vancouver’s Climate Emergency Action Plan included the action “Establish carbon pollution surcharge on parking permits.” This surcharge would be for “new, higher-priced gas and diesel vehicles” with the aim of increasing ZEV uptake. It noted that this would complement efforts to encourage zero-emission freight.<sup>75</sup></p>
<b>Charging infrastructure</b>	
Charging infrastructure projects	<p>The City of Vancouver manages 79 Level 2 public charging points and nine DC fast chargers. It is estimated that an additional 175 charging points are available in Vancouver. The City has stated that DC fast charging hubs will be available within a 10-minute drive of any location in Vancouver. The City also has several dedicated parking locations for zero-emission vehicles.<sup>76,77</sup></p> <p>The City of Vancouver’s Climate Emergency Response report recommended acceleration of phase 1 of its DC-fast charging network for EVs.<sup>78</sup> As of July 2020, this action was labelled as ‘on track’.<sup>79</sup></p> <p>The City of Vancouver’s Curbside Electric Vehicle Pilot Program, now ended, allowed for applications for EV charging station installation on City boulevards in front of businesses or homes. It was intended to result in 15 stations for residential applicants and five stations for non-residential applicants.<sup>80</sup></p> <p>The Climate Emergency Response report included a recommendation to develop a neighborhood charging strategy for electric bikes and vehicles, with a focus on areas in which residents lack access to off-street home charging.<sup>81</sup> As of July 2020, this action was labelled as ‘on track’.<sup>82</sup></p> <p>Vancouver’s Climate Emergency Action Plan included the action “Expand the public charging network.” This included a commitment to an additional 24 fast-charging and 35 Level 2 stations as of 2025.<sup>83</sup></p> <p>Vancouver’s Climate Emergency Action Plan included the action “Support EV charging for passenger fleets.” This included a commitment to home charging for passenger-fleet drivers and increased fleet-targeted public charging.<sup>84</sup> It was noted that this action could be beneficial to urban freight as well.<sup>85</sup></p>
EV readiness <sup>86</sup>	<p>As of April 2019, the City of Vancouver’s Parking By-law and Building By-law included requirements for EV readiness at the standard of “energized electrical outlets”<sup>87</sup> for building types including ground-oriented residential garages (100%), multi-unit residential buildings (100% and 20%, respectively) and/or commercial buildings (10%).<sup>88</sup></p>

Policy Pillar	Policies
	<p>The City of Vancouver’s Climate Emergency Response report recommended that EV-readiness requirements for new commercial buildings be updated “to close a gap for workplace charging and other commercial uses.”<sup>89</sup> As of July 2020, this action was labelled as ‘on track’.<sup>90</sup></p> <p>Vancouver’s Climate Emergency Action Plan included the action “Increase EV charging on private property,” which included commitments for increased EV-readiness requirements for new non-residential buildings, requiring fast-charging hub additions during large site rezoning development and adjusting business licensing to incentivize the addition of EV charging to parking lots and gas stations.<sup>91</sup></p>
<b>Fleet capacity</b>	
ZEV awareness and education	The City of Vancouver has helped develop and deliver the Emotive campaign, as described in the British Columbia section above. <sup>92</sup>
Public sector procurement	<p>The City of Vancouver has committed to targeted emissions reductions in its own fleet of vehicles, including a target of 100% renewable energy use as of 2050. The City currently has over 100 electric vehicles and over 50 hybrid or plug-in hybrid vehicles in its fleet. This includes 32 <b>heavy-duty electric vehicles</b> (Zambonis, utility vehicles, forklifts) and two <b>medium-duty HEV/PHEV refuse trucks</b>.<sup>93</sup></p> <p>The City plans to own over 200 electric vehicles as of 2021, <b>including medium- and heavy-duty trucks</b> such as tractor trailers, delivery vans, and refuse trucks.<sup>94</sup></p> <p>The Climate Emergency Response report included a recommendation to transition <b>non-emergency City fleet sedans</b> to ZEVs by 2023 and to replace an unspecified number of <b>heavy-duty trucks</b> with EVs. It also included a recommendation to develop an infrastructure strategy to support this accelerated transition.<sup>95</sup> As of July 2020, these actions were both labelled as ‘on track’.<sup>96</sup></p> <p>Vancouver’s Climate Emergency Action Plan noted that it had set a target through its Green Operations Plan that, “by 2030, 50% of the kilometres driven by on-road City vehicles will be by zero emission vehicles.” It committed to considering electric or low-carbon options for <b>medium- and heavy-duty vehicle</b> purchases. It also noted that fleet replacements examine and consider total cost of ownership.<sup>97</sup></p>

<sup>51</sup> Government of British Columbia, *CleanBC: Our nature. Our power. Our future.* (2019), 8-9.

[https://blog.gov.bc.ca/app/uploads/sites/436/2019/02/CleanBC\\_Full\\_Report\\_Updated\\_Mar2019.pdf](https://blog.gov.bc.ca/app/uploads/sites/436/2019/02/CleanBC_Full_Report_Updated_Mar2019.pdf)

<sup>52</sup> *CleanBC*, 8.

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- <sup>33</sup> Global Commercial Vehicle Drive to Zero, “Pledge Partners.” <https://globaldrivetozero.org/about/pledge-partners/>
- <sup>34</sup> International ZEV Alliance, “Members.” <http://www.zevalliance.org/members/>
- <sup>35</sup> Government of British Columbia, “Renewable and Low Carbon Fuel Requirements Regulation.” <https://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/transportation-energies/renewable-low-carbon-fuels>
- <sup>36</sup> Government of British Columbia, “Zero-Emission Vehicles Act.” <https://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/transportation-energies/clean-transportation-policies-programs/zero-emission-vehicles-act>
- <sup>37</sup> The ZEV Act provides the province with the ability to set targets for other vehicle classes as well. *Source:* CleanTechnica, “All New British Columbia Light-Duty Vehicles Will Be Zero Emissions By 2040,” June 6, 2019. <https://cleantechnica.com/2019/06/06/all-new-british-columbia-light-duty-vehicles-will-be-zero-emissions-by-2040/>
- <sup>38</sup> Government of British Columbia, “Go Electric Vehicle Incentive Program.” <https://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/transportation-energies/clean-transportation-policies-programs/clean-energy-vehicle-program/commercial-vehicles>
- <sup>39</sup> Government of British Columbia, “Go Electric Fleet Support Program.” <https://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/transportation-energies/clean-transportation-policies-programs/clean-energy-vehicle-program/go-electric-fleet-program>
- <sup>40</sup> Government of British Columbia, “Apply for Electric Vehicles in HOV Lanes on B.C. Highways.” <https://www2.gov.bc.ca/gov/content/transportation/driving-and-cycling/traveller-information/routes-and-driving-conditions/hov-lanes/electric>
- <sup>41</sup> Government of British Columbia, “Electric Vehicle HOV Lane Eligibility.” <https://www2.gov.bc.ca/assets/gov/driving-and-transportation/driving/hov/-pdfs/hov-eligible-vehicles.pdf>
- <sup>42</sup> Government of British Columbia, “Go Electric Charging Infrastructure Program.” <https://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/transportation-energies/clean-transportation-policies-programs/clean-energy-vehicle-program/charging-infrastructure>
- <sup>43</sup> Government of British Columbia, “Public Fast Charger Network.” <https://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/transportation-energies/clean-transportation-policies-programs/clean-energy-vehicle-program/charging-infrastructure/dcfc-program>
- <sup>44</sup> British Columbia, “Go Electric Public Charger Program.” <https://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/transportation-energies/clean-transportation-policies-programs/clean-energy-vehicle-program/dcfc-program/hydrogen-fuelling-52518>
- <sup>45</sup> Government of British Columbia, “Go Electric Hydrogen Fuelling Infrastructure.” <https://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/transportation-energies/clean-transportation-policies-programs/clean-energy-vehicle-program/dcfc-program/hydrogen-fuelling>
- <sup>46</sup> Government of British Columbia, *Budget and Fiscal Plan 2019/20 – 2021/22* (2019), 16. [https://www.bcbudget.gov.bc.ca/2019/pdf/2019\\_budget\\_and\\_fiscal\\_plan.pdf](https://www.bcbudget.gov.bc.ca/2019/pdf/2019_budget_and_fiscal_plan.pdf)
- <sup>47</sup> British Columbia Institute of Technology, “BCIT Electric Vehicle Maintenance Training program to launch in early 2020,” media release, December 4, 2019. <https://commons.bcit.ca/news/2019/12/ev-maintenance-training/>
- <sup>48</sup> Government of British Columbia, “Go Electric Education & Outreach.” <https://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/transportation-energies/clean-transportation-policies-programs/clean-energy-vehicle-program/emotive>
- <sup>49</sup> *CleanBC*, 21.

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- <sup>53</sup> “Climate Emergency Action Plan.”
- <sup>54</sup> City of Vancouver, “Climate Emergency Response.” <https://vancouver.ca/green-vancouver/climate-emergency-response.aspx>
- <sup>55</sup> *Report – Climate Emergency Response*, 1.
- <sup>56</sup> *Report – Climate Emergency Response*, 1.
- <sup>57</sup> *Report – Climate Emergency Response*, 34.
- <sup>58</sup> “Climate Emergency Action Plan.”
- <sup>59</sup> City of Vancouver, *Climate Emergency Action Plan* (2020), 5-6. <https://council.vancouver.ca/20201103/documents/p1.pdf>
- <sup>60</sup> *Report – Climate Emergency Response*, 4.
- <sup>61</sup> City of Vancouver, “Renewable City Action Plan.” <https://vancouver.ca/green-vancouver/renewable-city.aspx>
- <sup>62</sup> City of Vancouver, “Targets and Actions.” <https://vancouver.ca/green-vancouver/goals-and-target.aspx>
- <sup>63</sup> City of Vancouver, “Electric Vehicles (EVs).” <https://vancouver.ca/streets-transportation/electric-vehicles.aspx>
- <sup>64</sup> City of Vancouver, *Vancouver’s EV Ecosystem Strategy* (2016), ii. <https://vancouver.ca/files/cov/EV-Ecosystem-Strategy.pdf>
- <sup>65</sup> *Climate Emergency Action Plan*, 71.
- <sup>66</sup> Global Commercial Vehicle Drive to Zero, “Pledge Partners.” <https://globaldrivetozero.org/about/pledge-partners/>
- <sup>67</sup> *Report – Climate Emergency Response*, 32.
- <sup>68</sup> City of Vancouver, “Climate Emergency Accelerated Action Dashboard: As of July 2020.” <https://vancouver.ca/files/cov/climate-emergency-accelerated-action-dashboard.pdf>
- <sup>69</sup> “Electric Vehicles (EVs).”
- <sup>70</sup> *Report – Climate Emergency Response*, 25
- <sup>71</sup> “Climate Emergency Accelerated Action Dashboard: As of July 2020.”
- <sup>72</sup> *Report – Climate Emergency Response*, 34
- <sup>73</sup> “Climate Emergency Accelerated Action Dashboard: As of July 2020.”
- <sup>74</sup> *Climate Emergency Action Plan*, 6, 31.
- <sup>75</sup> *Climate Emergency Action Plan*, 36-37.
- <sup>76</sup> “Electric Vehicles (EVs).”

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- <sup>77</sup> The City of Vancouver has engaged in partnerships with BC Hydro for the installation of DC fast chargers. *Source*: City of Vancouver, *Electric Vehicle Ecosystem Program Update* (2018), 8. <https://council.vancouver.ca/20180314/documents/cfsc3.pdf>
- <sup>78</sup> *Report – Climate Emergency Response*, 36
- <sup>79</sup> “Climate Emergency Accelerated Action Dashboard: As of July 2020.”
- <sup>80</sup> City of Vancouver, “Curbside Electric Vehicle Pilot Program.” <https://vancouver.ca/streets-transportation/curbside-electric-vehicle-pilot-program.aspx>
- <sup>81</sup> *Report – Climate Emergency Response*, 35
- <sup>82</sup> “Climate Emergency Accelerated Action Dashboard: As of July 2020.”
- <sup>83</sup> *Climate Emergency Action Plan*, 35-36.
- <sup>84</sup> *Climate Emergency Action Plan*, 36.
- <sup>85</sup> City of Vancouver, *Climate Emergency Action Plan – RTS 13199: Final Motion As Approved: Regular Council Meeting on November 3, 5 and 17, 2020* (2020), 3. <https://vancouver.ca/files/cov/climate-emergency-action-plan-approved-motion.pdf>
- <sup>86</sup> While definitions vary, the term ‘electric vehicle readiness’ generally refers to minimum requirements for electric vehicle charging infrastructure in buildings. Nevertheless, this appendix will, at times, under the banner of ‘EV readiness’, include policies or programs that, similar to EV readiness, can be viewed as ‘laying the groundwork’ for electric vehicle infrastructure. Examples include utility process streamlining efforts and regulations on the use of EV-capable parking spots. *Source*: Brendan McEwen, “*EV Readiness*” *Requirements Framework*, prepared by McEwan Climate and Energy for the Natural Resources Canada Office of Energy Efficiency (2019), 4. <https://cleanairpartnership.org/cac/wp-content/uploads/2019/10/NRCAN-EV-Readiness-Requirements-Framework-Final-Report-4-11-2019-McEwen-Climate-and-Energy.pdf>
- <sup>87</sup> Energized electrical outlets at parking spaces have a “complete electrical circuit terminating in an electrical outlet” for electric vehicle charging but do not require electric vehicle supply equipment. *Source*: “*EV Readiness*” *Requirements Framework*, 3-4.
- <sup>88</sup> “*EV Readiness*” *Requirements Framework*, 23.
- <sup>89</sup> *Report – Climate Emergency Response*, 35
- <sup>90</sup> “Climate Emergency Accelerated Action Dashboard: As of July 2020.”
- <sup>91</sup> *Climate Emergency Action Plan*, 36.
- <sup>92</sup> *Vancouver’s EV Ecosystem Strategy*, 8.
- <sup>93</sup> City of Vancouver, “Greening the City’s fleet.” <https://vancouver.ca/green-vancouver/green-fleets.aspx>
- <sup>94</sup> “Greening the City’s fleet.”
- <sup>95</sup> *Report – Climate Emergency Response*, 39
- <sup>96</sup> “Climate Emergency Accelerated Action Dashboard: As of July 2020.”
- <sup>97</sup> *Climate Emergency Action Plan*, 38.

# Quebec ZEV policies

## Provincial strategies and policies

Policy categories	Policies
<b>Strategic planning and regulations</b>	
ZEV and climate change related plans and strategies	<p>Quebec released its 2015-2020 Plan d'action en électrification des transports 2015-2020 in October 2015.<sup>98</sup> The plan, the result of collaboration among twelve ministries and agencies, included 37 separate measures under three strategic directions: promote electric transportation, develop the industry, and create a favorable environment.<sup>99</sup></p> <p>Quebec's 2013-2020 Climate Change Action Plan has been "Quebec's main tool for fighting climate change" and includes 30 priorities and over 150 actions. It is funded through the Green Fund which, in turn, derives its revenues largely from the market for carbon.<sup>100</sup></p> <p>In November 2020, Quebec announced the 2030 Plan for a Green Economy. The plan is accompanied by a 2021-2026 implementation plan and has a budget of \$6.7 billion over five years. The plan was accompanied by targets of GHG emission reductions of 37.5% below 1990 levels as of 2030 and language in favor of carbon neutrality as of 2050.<sup>101</sup> The plan has placed priority on electrification and set a target of 1.5 million electric vehicles on the road as of 2030.<sup>102 103</sup></p> <p>Quebec is a pledge partner to CALSTART's Global Commercial Vehicle Drive to Zero program.<sup>104</sup> See the federal section, above, for more details on the program.</p> <p>Quebec is a member of the International ZEV Alliance, a group of jurisdictions seeking to collaborate to increase the international ZEV market and increase policy cooperation.<sup>105</sup></p> <p>Quebec is currently one of four co-chairs on the New England Governors and Eastern Canadian Premiers Transportation and Air Quality Committee.<sup>106</sup></p>
ZEV sales targets/mandates	<p>The Quebec zero-emission vehicle standard seeks to increase supply of ZEVs and low-emission vehicles. It requires subject automakers to accumulate credits, reaching a target which is set as a ratio of the total number of <b>light-duty vehicles</b> they sell in Quebec.<sup>107</sup> 100% compliance was achieved by the ZEV standard in the first compliance period (reporting deadline September 1, 2019).<sup>108,109</sup> Between 2016 and 2019, the percentage of models available in California that are also available in Quebec increased from 66% to 92%.<sup>110</sup></p> <p>The Plan for a Green Economy noted a desire for zero-emission vehicles to make up 100% of motor vehicle sales as of 2035 and supported a prohibition on gasoline-powered vehicles. It committed to strengthening its zero-emission vehicle standard.<sup>111</sup></p>



Policy categories	Policies
	A resolution adopted at the 37 <sup>th</sup> Annual Conference of New England Governors and Eastern Canadian Premiers, of which Quebec is a member, included a goal stating that 5% of the region's fleet market would be alternative-fuel vehicles, as of 2020. <sup>112</sup>
<b>Incentives for deployment</b>	
Financial incentives	<p>The Ecocamionnage program (2017-2020), which aims to promote technologies to increase efficiency and reduce GHG emissions in <b>goods transportation</b>, provides grants of up to \$75,000 (50% of eligible expenses) for acquisitions of HEVs and EVs.<sup>113,114</sup> The Plan for a Green Economy committed to assisting with the purchase price of electric trucks.<sup>115</sup> The 2021-2026 implementation plan has set aside \$265 million for the electrification of truck, maritime and rail transport.<sup>116</sup></p> <p>The Roulez vert program encourages the purchase of new and used EVs and the installation of charging stations. The 2020-2021 Quebec budget funded the program with \$1.38 billion, with a timeline extension to March 2026.<sup>117</sup> The Plan for a Green Economy also committed to maintaining purchase incentives for electric vehicles.<sup>118</sup> Businesses and municipalities may be eligible for:</p> <ul style="list-style-type: none"> <li>• rebates of up to \$8,000 for the purchase or lease of new EVs<sup>119</sup></li> <li>• rebates of up to \$4,000 for the purchase of all-electric used vehicles<sup>120</sup></li> </ul> <p>Quebec exempts EVs, PHEVs, and FCEV vehicles from the additional registration fee for luxury vehicles for the part of their value in the range of \$40,000 and \$75,000.<sup>121</sup></p>
Non-financial incentives	Quebec requires that EVs, PHEVs, and FCEV vehicles have a green licence plate, which provides benefits including privileged access to reserved lanes, free access to a number of ferries, free parking in specific municipalities, and free access to certain tolled highway sections. <sup>122</sup>
<b>Charging infrastructure</b>	
Charging infrastructure incentives	<p>The Transportez Vert program provides financial assistance for the purchase of DC fast charging stations by vehicle fleets. 50% of eligible expenses are covered, to a maximum of \$15,000 for stations with power outputs of 20-49.9 kW and \$60,000 for stations with outputs of 50 kW and above.<sup>123</sup></p> <p>The charging station at work program provides organizations, including businesses and municipalities, with financial assistance for the purchase or rental of charging stations for employee or corporate vehicles (up to \$5,000 per station).<sup>124</sup></p>
Charging infrastructure projects	<p>The Electric Circuit is a public charging network for EVs with 240-volt and 400-volt stations located across Quebec and Eastern Ontario.<sup>125</sup> The network contains over 2,500 charging stations, including 300 fast charging stations.<sup>126</sup> Quebec has committed to accelerating Hydro-Quebec's deployment of standard and fast-charging stations.<sup>127</sup></p> <p>Quebec's 2015-2020 Plan d'action en électrification des transports allocated \$2.5 million to "support the installation of fast charging stations along main roads." Under this measure, MTQ would work with the Electric Circuit to implement a fast</p>

Policy categories	Policies
	<p>charging station network along major roadways and to create corridors with neighboring jurisdictions including Ontario, Vermont, New Brunswick, and Maine.<sup>128</sup> All relevant “relay towns” will have a fast charging station as of March 31, 2021. The charging station corridors are planned for completion by end of year 2020.</p> <p>The Plan for a Green Economy committed to increasing efforts for the establishment of EV charging stations.<sup>129</sup> The 2021-2026 implementation plan has set aside \$1.4 billion for “other support measures for public, active and shared transportation.”<sup>130</sup></p>
EV readiness	<p>Article 388.1 of Quebec’s Highway Safety Code states that only electric and plug-in-hybrid-electric road vehicles are allowed to stop in spaces that have been reserved for EV recharging — and only when they are plugged in. The Code states that the rule applies beyond public highways, and also affects private roads and land open to public traffic.<sup>131</sup></p> <p>Quebec’s Construction Code has been modified to require that new single dwellings with parking areas, garages, or carports must have cables/conduits installed in anticipation of electric vehicle supply equipment.<sup>132</sup></p>
<b>Fleet capacity</b>	
ZEV awareness and education	<p>Running electric is an information campaign launched and co-ordinated by Equiterre and supported by Quebec. Content includes an electric vehicle guide, webinars, and a catalogue of vehicle models.<sup>133</sup></p> <p>The Fondation québécoise d’éducation en sécurité routière will receive up to \$4.5 million for 2019-20 to 2021-22 for a pilot project related to electrification of driving schools.<sup>134</sup></p> <p>Quebec’s Transportation Electrification Action Plan included two measures related to skills training, mostly in the policy direction of “Develop the industry.” The two measures were “Introduce a certificate of college studies (AEC) in transportation electrification” and “Introduce a Master’s degree of 15 credits.” The master’s degree would be in transportation electrification.<sup>135</sup></p>
Public sector procurement	<p>Quebec is seeking to electrify its fleet of vehicles, including those of its health and education bodies. It set a target of 1,000 EVs by December 2020; this target was reached in spring 2019.</p> <p>The Centre de gestion de l’équipement roulant has been mandated with the management of the electric portion of the government’s fleet. The Centre has become the largest electric vehicle fleet manager in Canada.<sup>136</sup></p> <p>Quebec’s 2015-2020 Plan d’action en électrification des transports included a planned measure to “install public charging stations in government buildings.”<sup>137</sup> As of December 2019, over 190 public chargers and over 1,000 government fleet-specific chargers were installed.</p> <p>The Plan for a Green Economy committed to 100% of automobiles and 25% of vans in the government fleet being electric as of 2030. It also committed to installing charging stations in government buildings and to electrifying its heavy-duty vehicle fleet.<sup>138</sup> The 2021-2026 implementation plan has set aside \$1.4 billion for “other support measures for public, active and shared transportation.”<sup>139</sup></p>

## Municipal strategies and policies

### City of Montreal

Policy categories	Policies
<b>Strategic planning and regulations</b>	
ZEV and climate change related plans and strategies	<p>Electrifying Montreal: Transportation Electrification Strategy 2016-2020 seeks to facilitate “the gradual electrification of private and public vehicles” through 10 strategic goals, including municipal-fleet conversion and a network of charging stations.</p> <p>Montreal’s 2013-2020 Montreal Community GHG Emissions Reduction Plan has a GHG reduction target of 30% below 1990 levels by 2020.<sup>140</sup></p>
<b>Charging infrastructure</b>	
Charging infrastructure projects	<p>There are 1,258 public charging station ports, including Level 2 and Level 3 ports, within 15 kilometres of the City of Montreal.<sup>141</sup></p> <p>The City of Montreal’s electrification strategy included the strategic goal to “roll out a network of charging stations to support the desired gradual conversion of Montreal’s automobile stock.” It had a goal of 1,000 stations by 2020. This would include on-street and off-street stations. As of December 2018, 556 on-street charging stations had been installed (480 of which were operational), and 82 off-street charging stations had been installed (78 operational).<sup>142</sup></p>
EV readiness	<p>The City of Montreal’s electrification strategy includes the strategic goal to “incorporate transportation electrification needs into the planning and management of the City’s housing stock.” This included planning for new charging stations for real-estate projects and installations around existing buildings. The City also planned to set implementation criteria for the installation of equipment for transportation electrification.<sup>143</sup></p> <p>The electrification strategy includes the goal of implementing the electrification measures set out in the Parking Policy adopted in 2016, such as on-street parking places with electric charging stations, and evaluation of the feasibility of an urban distribution centre that would use small EVs in last-kilometre delivery.<sup>144</sup></p>
<b>Fleet capacity</b>	
Public sector procurement	<p>The City of Montreal’s electrification strategy includes the strategic goal to “convert the municipal fleet of combustion engine vehicles to electric vehicles.”<sup>145</sup> This will involve the purchase of 230 to 250 EVs by 2020. As of December 2018, 210 EVs had been purchased, 168 of which had been put into service.<sup>146</sup></p>

	The Service de la Gestion et Planification Immobilière (SGPI) will be responsible for installing at least 225 charging stations in municipal buildings to support the charging of these city-owned EVs. As of December 2018, 32 charging stations had been installed with a further 127 in preparation. 45 additional chargers will be installed for City employees' personal vehicles. However, as of December 2018, none had been installed. <sup>147</sup>
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<sup>98</sup> Transports Quebec, “Electrification des transports.” [https://www.transports.gouv.qc.ca/fr/ministere/role\\_ministere/electrification/Pages/electrification.aspx](https://www.transports.gouv.qc.ca/fr/ministere/role_ministere/electrification/Pages/electrification.aspx)

<sup>99</sup> Arthur Billette, “Transportation Electrification in Quebec: Overcoming barriers to cleaner cars,” presented at Sustainable Pathways for Canada’s Onroad Transportation Sector, Ottawa, June 12, 2019, 4.8. Available at [https://theicct.org/sites/default/files/Arthur%20Billette\\_Pre%CC%81sentation\\_E%CC%81lectr\\_anglais\\_ICCT\\_Ottawa\\_12-06-2019.pdf](https://theicct.org/sites/default/files/Arthur%20Billette_Pre%CC%81sentation_E%CC%81lectr_anglais_ICCT_Ottawa_12-06-2019.pdf)

<sup>100</sup> Environnement et Lutte contre les changements climatiques Quebec, “2013-2020 Climate Change Action Plan.” <http://www.environnement.gouv.qc.ca/changementsclimatiques/plan-action-fonds-vert-en.asp>

<sup>101</sup> Quebec Ministere de l’Environnement et de la Lutte contre les changements climatiques, “Press release: Quebec Government Launches its 2030 Plan for a Green Economy,” media release, November 16, 2020. [http://www.environnement.gouv.qc.ca/infuseur/communiqu\\_e\\_en.asp?no=4427](http://www.environnement.gouv.qc.ca/infuseur/communiqu_e_en.asp?no=4427)

<sup>102</sup> Government of Quebec, *2030 Plan for a Green Economy: Electrification and Climate Change Policy Framework – Summary* (2020), 3, 4. <https://cdn-contenu.quebec.ca/cdn-contenu/adm/min/environnement/publications-adm/plan-economie-verte/plan-summary.pdf?1605531461>

<sup>103</sup> *2030 Plan for a Green Economy: Electrification and Climate Change Policy Framework – Summary*, 7.

<sup>104</sup> Global Commercial Vehicle Drive to Zero, “Pledge Partners.” <https://globaldrivetozero.org/about/pledge-partners/>

<sup>105</sup> International ZEV Alliance, “Members.” <http://www.zevalliance.org/members/>

<sup>106</sup> Coalition of Northeastern Governors, “Committees.” <https://www.coneg.org/neg-ecp/committees/>

<sup>107</sup> Environnement et Lutte contre les changements climatiques Quebec, “Zero-Emission Vehicle (ZEV) Standard.” <http://www.environnement.gouv.qc.ca/changementsclimatiques/vze/liste-vehicules-admis-en.htm>

<sup>108</sup> “Zero-Emission Vehicle (ZEV) Standard.”

<sup>109</sup> Environnement et Lutte contre les changements climatiques, *Zero Emission Vehicle (ZEV) Standard: Report on the Results of the First Compliance Period* (2020), 1. [www.environnement.gouv.qc.ca/changementsclimatiques/vze/bilan-norme-vze-periode-1-en.pdf](http://www.environnement.gouv.qc.ca/changementsclimatiques/vze/bilan-norme-vze-periode-1-en.pdf)

<sup>110</sup> *Zero Emission Vehicle (ZEV) Standard: Report on the Results of the First Compliance Period*, 7

<sup>111</sup> *2030 Plan for a Green Economy: Electrification and Climate Change Policy Framework – Summary*, 7.

<sup>112</sup> The Council of Atlantic Premiers, *Resolution 37-3: Resolution Concerning Transportation* (2013), 1. <https://immediac.blob.core.windows.net/cap-cmha/images/ECP%20Documents/NEG-ECP%20Resolution%2037-3%20Transportation%20EN.PDF>

<sup>113</sup> Transports Quebec, “Programme d’aide Ecocamionnage.” <https://www.transports.gouv.qc.ca/fr/aide-finan/entreprises-camionnage/aide-ecocamionnage/Pages/aide-ecocamionnage.aspx>

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- <sup>114</sup> Transports Quebec, *Programme Ecocamionnage* (2019), 14. <https://www.transports.gouv.qc.ca/fr/aide-finan/entreprises-camionnage/aide-ecocamionnage/Documents/liste-technologies-admissibles-francais.pdf>
- <sup>115</sup> *2030 Plan for a Green Economy: Electrification and Climate Change Policy Framework – Summary*, 7.
- <sup>116</sup> Government of Quebec, *2030 Plan for a Green Economy fact sheet: A win-win for Quebec and the Planet*, 1. <https://cdn-contenu.quebec.ca/cdn-contenu/adm/min/environnement/publications-adm/plan-economie-verte/fiche-synthese-pev2030-en.pdf>
- <sup>117</sup> Transition energetique Quebec, “Discover Electric Vehicles.” <https://vehiculeselectriques.gouv.qc.ca/english/>
- <sup>118</sup> *2030 Plan for a Green Economy: Electrification and Climate Change Policy Framework – Summary*, 7.
- <sup>119</sup> Transition energetique Quebec, “New vehicle rebate.” <https://vehiculeselectriques.gouv.qc.ca/english/rabais/ve-neuf/programme-rabais-vehicule-neuf.asp>
- <sup>120</sup> Transition energetique Quebec, “Used vehicle rebate.” <https://vehiculeselectriques.gouv.qc.ca/english/rabais/ve-occasion/programme-rabais-vehicule-occasion.asp>
- <sup>121</sup> Societe de l’assurance automobile Quebec, “Registering a vehicle.” <https://saaq.gouv.qc.ca/en/vehicule-registrations/registering-vehicle/electric-or-plug-in-hybrid-vehicle/>
- <sup>122</sup> Societe de l’assurance automobile Quebec, “Registering a vehicle.”
- <sup>123</sup> Transition energetique Quebec, “Transportez vert.” <https://transitionenergetique.gouv.qc.ca/transport/programmes/transportez-vert/volet-borne-de-recharge-rapide-en-courant-continu>
- <sup>124</sup> Transition energetique Quebec, “Remboursement pour une borne au travail.” <https://vehiculeselectriques.gouv.qc.ca/rabais/travail/programme-remboursement-borne-recharge-travail.asp>
- <sup>125</sup> Electric Circuit, “About.” <https://lecircuitelectrique.com/about>
- <sup>126</sup> Circuit électrique, “Find a station.” <https://lecircuitelectrique.com/en/find-a-station/>
- <sup>127</sup> Environnement et de la Lutte contre les changements climatiques, “Québec Government Launches its 2030 Plan for a Green Economy,” media release, November 16, 2020. [http://www.environnement.gouv.qc.ca/infuseur/communiqu\\_e\\_en.asp?no=4427](http://www.environnement.gouv.qc.ca/infuseur/communiqu_e_en.asp?no=4427)
- <sup>128</sup> Government of Quebec, *Propelling Quebec Forward with Electricity* (2015), 24-25. <http://medias.mtq.fabrique3.net.s3.amazonaws.com/wp-content/uploads/2015/10/CIAO-047-MTQ-LGS-RapportENv3.pdf>
- <sup>129</sup> *2030 Plan for a Green Economy: Electrification and Climate Change Policy Framework – Summary*, 7.
- <sup>130</sup> *2030 Plan for a Green Economy fact sheet*, 1.
- <sup>131</sup> Government of Quebec, *Highway Safety Code C-24.2*. <http://legisquebec.gouv.qc.ca/en/showdoc/cs/C-24.2>
- <sup>132</sup> Government of Quebec, *Construction Code*, Rule 86-202 Branch circuits for single dwellings. <http://legisquebec.gouv.qc.ca/en/showdoc/cr/B-1.1,%20r.%202>
- <sup>133</sup> Running electric, “For the pleasure of driving electric.” <https://www.roulonselectrique.ca/en/>
- <sup>134</sup> Government of Quebec, *Gazette Officielle Du Quebec* 2019, 1305-2019. <http://www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=1&file=71817.pdf>

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<sup>135</sup> *Propelling Quebec Forward with Electricity*, 39-40.

<sup>136</sup> Transports Quebec, “Electrification des transports.” [https://www.transports.gouv.qc.ca/fr/ministere/role\\_ministere/electrification/Pages/electrification.aspx](https://www.transports.gouv.qc.ca/fr/ministere/role_ministere/electrification/Pages/electrification.aspx)

<sup>137</sup> *Propelling Quebec Forward with Electricity*, 62.

<sup>138</sup> *2030 Plan for a Green Economy: Electrification and Climate Change Policy Framework – Summary*, 7.

<sup>139</sup> *2030 Plan for a Green Economy fact sheet*, 1.

<sup>140</sup> Montreal, *Electrifying Montreal: Transportation Electrification Strategy 2016-2020* (2016), 6, 9.

[http://ville.montreal.qc.ca/pls/portal/docs/PAGE/PROJ\\_URBAINS\\_FR/MEDIA/DOCUMENTS/TRANSPORTATION\\_ELECTRIFICATION\\_STRATEGY\\_2016\\_2020\\_.PDF](http://ville.montreal.qc.ca/pls/portal/docs/PAGE/PROJ_URBAINS_FR/MEDIA/DOCUMENTS/TRANSPORTATION_ELECTRIFICATION_STRATEGY_2016_2020_.PDF)

<sup>141</sup> ChargeHub, “Montreal, Quebec EV Charging Station Info.” <https://chargehub.com/en/countries/canada/quebec/montreal.html>

<sup>142</sup> Verificateur general de la Ville de Montreal, *2018 Annual Report: 4.3. Transportation Electrification Strategy* (2019), 162, 163. [http://www.bvgmtl.ca/wp-content/uploads/2019/06/AR2018\\_En\\_Section4\\_3-1.pdf](http://www.bvgmtl.ca/wp-content/uploads/2019/06/AR2018_En_Section4_3-1.pdf)

<sup>143</sup> *Electrifying Montreal*, 11.

<sup>144</sup> *Electrifying Montreal*, 22-23.

<sup>145</sup> *Electrifying Montreal*, 12.

<sup>146</sup> *2018 Annual Report: 4.3. Transportation Electrification Strategy*, 162.

<sup>147</sup> *2018 Annual Report: 4.3. Transportation Electrification Strategy*, 141, 162.

# Ontario ZEV policies

## Provincial strategies and policies

In recent years, the Ontario government has cancelled a number of ZEV-supportive policies and programs. In 2018, for example, the Ontario provincial government cancelled programs including the Electric and Hydrogen Vehicle Incentive Program and the Electric Vehicle Charging Incentive Program as it pulled out of cap-and-trade.<sup>148</sup> The Ontario Building Code was also amended and now does not require that new residential construction be EV-ready.<sup>149</sup>

Policy categories	Policies
<b>Strategic planning and regulations</b>	
ZEV and climate change related plans and strategies	Ontario's main environmental policy document is the 2018 Made-in-Ontario Environment Plan, which includes themes such as "protecting our air, lakes and rivers," "addressing climate change," and "conserving land and greenspace." It seeks to "balance a healthy environment with a healthy economy." <sup>150</sup>
<b>Incentives for deployment</b>	
Financial and non-financial incentives	The Green Vehicle Licence Plate Program provides organizations including businesses and fleets with benefits including privileged access to high occupancy vehicle and high occupancy toll lanes on certain highways. <b>Eligible vehicles</b> include BEVs, PHEVs and FCEVs <b>operated by fleets, businesses, and individuals. Commercial vehicles are eligible only up to weights of 3,000 kg.</b> <sup>151</sup>
<b>Charging infrastructure</b>	
Charging infrastructure incentives	In its 2019 budget, the Ontario government proposed the Ontario Job Creation Investment Incentive which would parallel the immediate write-off measures and the Accelerated Investment Incentive announced in the federal government's 2018 fall economic statement under which "specified clean energy equipment can be immediately written off." The measure would be in place for assets purchased after November 20, 2018 and would be phased out between 2024 and 2027. <sup>152</sup>
Charging infrastructure projects	Ontario currently has more than 1,200 publicly available charging stations at levels 2 and 3 and more than 3,200 charging outlets. <sup>153</sup> In its Made-in-Ontario Environment Plan, the Ontario government committed to adjusting rules and regulations to make it easier for the private sector to deploy low-carbon refuelling infrastructure. <sup>154</sup>

Policy categories	Policies
	Ontario's Bill 123, Reserved Parking for Electric Vehicle Charging Act, 2019 created an additional Part III.1 to the Highway Traffic Act. It provides that "no person shall park a vehicle in an electric vehicle charging station that is identified by a sign that satisfies the requirements prescribed by regulation, unless the vehicle is an electric vehicle and it is attached to the station's charging equipment" and sets out a penalty for any contravention. The bill has received royal assent. <sup>155</sup>
<b>Fleet capacity</b>	
Public sector procurement	In its 2018 Made-in-Ontario Environment Plan, the province stated it is "greening the government's fleet of vehicles," noting that "the Ontario Public Service currently has 1,632 hybrid, plug-in hybrid and full battery electric vehicles." <sup>156</sup>

## Municipal strategies and policies

### City of Toronto

Policy categories	Policies
<b>Strategic planning and regulations</b>	
ZEV and climate change related plans and strategies	<p>The City of Toronto's Electric Vehicle (EV) Strategy identifies actions needed to prepare for the transition to electric mobility. The focus is on BEV and PHEV passenger vehicles.<sup>157</sup> The EV Strategy is closely tied to the City of Toronto's TransformTO climate strategy and seeks to help meet the strategy's goal of transportation using 100% zero-carbon energy sources as of 2050.<sup>158</sup></p> <p>TransformTO is the City of Toronto's overarching climate strategy, which includes the target of an 80% reduction in GHG emissions relative to 1990 levels by 2050. The TransformTO plan also outlines short-term strategies that may support ZEV adoption in the near-term:<sup>159</sup></p> <ul style="list-style-type: none"> <li>• Develop a community-wide low-carbon freight strategy</li> <li>• Enable EVs by catalyzing EV infrastructure and support for EV sales.</li> </ul> <p>In October 2020, Council approved a Freight and Goods Movement Strategy for the City of Toronto. The intention of the strategy is to make goods movement safer, more sustainable and more reliable. The strategy gives 24 strategic actions for the City to take in the near, medium and long term.<sup>160,161</sup></p> <p>One strategic action identified in the Freight and Goods Movement Strategy was to work with partners in the public and private sectors to encourage ZEV and LEV (low-emission vehicle) adoption in freight. This included overcoming barriers including</p>



	purchase price and infrastructure and exploring the introduction of EV charging stations in the city to support goods-movement vehicles. <sup>162</sup>
ZEV sales targets/mandates	The EV strategy recommended advocating for EV support policies from higher orders of government, including a potential ZEV mandate. <sup>163</sup>
<b>Incentives for deployment</b>	
Financial and non-financial incentives	<p>The EV strategy recommended action to “explore regulatory changes and pilots to reduce congestion and promote EV adoption.” Recommended activities under this action included:<sup>164</sup></p> <ul style="list-style-type: none"> <li>• Piloting low-emission-vehicle or zero-emission-vehicle zones.</li> <li>• Potentially exempting electric vehicles from congestion charges or road tolls that may be implemented in the future.</li> <li>• Potentially exempting EV deliveries from restrictive regulations such as the Noise Bylaw.</li> </ul> <p>One strategic action identified in the Freight and Goods Movement Strategy was to “examine the feasibility of implementing commercial vehicle low-emission zones.” This included conducting a feasibility study, identification of policy options (e.g. incentives, regulations) and stakeholder engagement.<sup>165</sup></p>
<b>Charging infrastructure</b>	
Charging infrastructure incentives	<p>The EV strategy included a recommendation to “leverage and explore funding opportunities to expand charging infrastructure.” Recommended activities under this action included:<sup>166</sup></p> <ul style="list-style-type: none"> <li>• Exploring the use of charging infrastructure incentives (e.g. tax incentives, rebates) in settings including the public, fleets (including delivery and corporate fleets), and the workplace.</li> </ul> <p>The City of Toronto recently included EV charging station (Level 2) installation in home and building improvement loan programs. The strategy recommended building on this through expanding eligibility beyond the residential sector and setting aside funds specifically for EV charging.</p> <ul style="list-style-type: none"> <li>• Exploring the generation of carbon offset credits from City assets, with revenues being used to encourage EV ownership and EV infrastructure.</li> </ul>
Charging infrastructure projects	<p>Residential On-street EV Charging Station Pilot: pilot project to install on-street public charging infrastructure in residential permit parking areas. 13 planned stations.<sup>167</sup></p> <p>Downtown On-street EV Charging Station Pilot: pilot project to install on-street public charging infrastructure in downtown Toronto. Three planned stations.<sup>168</sup></p> <p>Parking Garage Charge Station Pilot Project: pilot project for charging infrastructure in parking facilities operated by the Toronto Parking Authority.<sup>169</sup></p>

	<p>The EV strategy recommended action to “develop policies and regulations and explore partnerships to expand charging infrastructure.” Recommended activities under this action included:<sup>170</sup></p> <ul style="list-style-type: none"> <li>• Increasing public EV infrastructure through actions including a) identifying high-priority areas, b) exploring partnerships for infrastructure delivery, c) establishing a preferred roll-out approach and d) reducing barriers to public charging infrastructure (e.g. exploring roadside lamp conversion to charging).</li> <li>• Exploring making municipal private charging infrastructure available for public use during certain times (e.g. Fleet Services, Toronto Parking Authority).</li> </ul>
EV readiness	<p>Toronto’s Green Standard includes mandatory charging infrastructure installation and mandatory EV capability for parking spots in new city-owned and private developments.<sup>171</sup></p> <p>According to the EV Strategy, Toronto Hydro is “continually examining the impacts of EV charging on the grid and accommodating within its infrastructure planning activities.”<sup>172</sup> Toronto Hydro receives notifications for charging infrastructure requirements for large new developments.<sup>173</sup></p> <p>The Waterfront Toronto initiative includes requirements for 2% of building parking spaces to be equipped with L2 charging infrastructure and for remaining parking spaces to be EV-ready.<sup>174</sup></p> <p>The EV strategy included a charging-related recommendation to “explore options to integrate technologies and streamline installations.”<sup>175</sup> The recommended activity for this action was the integration of EV-related technologies into the electrical grid. These technologies included EV fast charging infrastructure, EV charging tracking, and bi-directional charging. The intended outcome was to increase the medium-term capacity of the grid to accommodate EV adoption.<sup>176</sup></p> <p>The EV strategy included a recommendation to “develop policies and regulations and explore partnerships to expand charging infrastructure.” Recommended activities under this action included:<sup>177</sup></p> <ul style="list-style-type: none"> <li>• Expanding on the Toronto Green Standard through a) mandating that 100% of parking spaces be EV-ready, b) mandating that parking spaces for low-rise residential buildings have EV ready charging infrastructure, and c) supporting developers in meeting Green Standard requirements.</li> <li>• Exploring opportunities for programs and regulations to increase charging infrastructure in existing buildings.</li> </ul> <p>The EV strategy recommended advocating that the province reinstate EV-readiness requirements for new residential construction.<sup>178</sup></p>
<b>Fleet capacity</b>	
ZEV awareness and education	<p>The EV strategy included a recommendation to “communicate social, environmental and economic impacts of EVs.” Recommended activities under this area included:<sup>179</sup></p> <ul style="list-style-type: none"> <li>• The development of communication tools including an informational website, toolkits for stakeholders (e.g. developers, building operators and vehicle sellers) and EV infrastructure signage requirements.</li> <li>• The creation of an EV Community Champions network.</li> </ul>

Public sector procurement	<p>The Sustainable Fleets Plan set a goal of 45% of City fleet composed of low-carbon vehicles by 2030.<sup>180</sup> There is also a goal of 100% low-carbon vehicles by 2040.<sup>181</sup></p> <p>The EV Strategy included a recommendation to “continue to add EVs to the City’s corporate fleet and engage organizations to share best practices.” Recommended activities included:<sup>182</sup></p> <ul style="list-style-type: none"> <li>• Continuing fleet conversion activities and sharing best practices and lessons learned.</li> <li>• Creating standardized EV-charging-infrastructure technical requirements for the City.</li> </ul> <p>The City identified outcomes for medium- and heavy-duty vehicles as well as light-duty ones. Short-term outcomes for medium- and heavy-duty vehicles included “study of replacement options for City’s <b>medium- and heavy-duty fleet vehicles.</b>” Medium-term outcomes included “replacement of City’s <b>medium- and heavy-duty fleet vehicles.</b>”<sup>183</sup></p>
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<sup>148</sup> Emma Foehringer Merchant, “Ontario’s Clean Energy Rollback Continues as It Cuts EV Program,” *Green Tech Media*, July 13, 2018.

<https://www.greentechmedia.com/articles/read/ontarios-clean-energy-rollback-continues-as-it-cuts-ev-program>

<sup>149</sup> City of Toronto, *City of Toronto Electric Vehicle Strategy: Supporting the City in achieving its TransformTO transportation goals*, prepared by Dunskey Energy Consulting (2019), 40. <https://www.toronto.ca/wp-content/uploads/2020/02/8c46-City-of-Toronto-Electric-Vehicle-Strategy.pdf>

<sup>150</sup> Ontario Ministry of the Environment, Conservation and Parks, *Preserving and Protecting our Environment for Future Generations: A Made-in-Ontario Environment Plan* (2018), 3-4. <https://prod-environmental-registry.s3.amazonaws.com/2018-11/EnvironmentPlan.pdf>

<sup>151</sup> Ontario Ministry of Transportation, “Ontario’s Green Vehicle License Plate Program.” <http://www.mto.gov.on.ca/english/vehicles/electric/green-licence-plate.shtml>

<sup>152</sup> Government of Ontario, *2019 Ontario Budget: Protecting What Matters Most* (2019), 337. <https://budget.ontario.ca/2019/contents.html>

<sup>153</sup> Ontario Ministry of Transportation, “Charging electric vehicles.” <http://www.mto.gov.on.ca/english/vehicles/electric/charging-electric-vehicle.shtml>

<sup>154</sup> *Preserving and Protecting our Environment for Future Generations*, 33.

<sup>155</sup> Government of Ontario, *Bill 123, Reserved Parking for Electric Vehicle Charging Act, 2019* Bill 123 2019 iii.1 <https://www.ola.org/en/legislative-business/bills/parliament-42/session-1/bill-123>

<sup>156</sup> *Preserving and Protecting our Environment for Future Generations*, 38.

<sup>157</sup> City of Toronto, “Electric Vehicles.” <https://www.toronto.ca/services-payments/water-environment/environmentally-friendly-city-initiatives/reports-plans-policies-research/electric-vehicles/>

<sup>158</sup> City of Toronto, “Electric Vehicles.”

<sup>159</sup> City of Toronto, *Transform TO: Climate Action for a Healthy, Equitable, and Prosperous Toronto - Report 1: Short-term Strategies - Highlights* (2016), 11-12. [https://www.toronto.ca/wp-content/uploads/2018/02/9488-TransformTO\\_Report1-Highlights.pdf](https://www.toronto.ca/wp-content/uploads/2018/02/9488-TransformTO_Report1-Highlights.pdf)

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- <sup>160</sup> City of Toronto, "City Council approves first strategy to improve how freight and goods are moved in Toronto," news release, October 27, 2020. <https://www.toronto.ca/news/city-council-approves-first-strategy-to-improve-how-freight-and-goods-are-moved-in-toronto/>
- <sup>161</sup> City of Toronto, *Freight and Goods Movement Strategy* (2020), 13-20. <https://www.toronto.ca/legdocs/mmis/2020/ie/bgrd/backgroundfile-157033.pdf>
- <sup>162</sup> *Freight and Goods Movement Strategy*, 17.
- <sup>163</sup> *City of Toronto Electric Vehicle Strategy*, 40.
- <sup>164</sup> *City of Toronto Electric Vehicle Strategy*, 37.
- <sup>165</sup> *Freight and Goods Movement Strategy*, 20.
- <sup>166</sup> *City of Toronto Electric Vehicle Strategy*, 24, 25.
- <sup>167</sup> *City of Toronto Electric Vehicle Strategy*, 7.
- <sup>168</sup> *City of Toronto Electric Vehicle Strategy*, 7.
- <sup>169</sup> *City of Toronto Electric Vehicle Strategy*, 7.
- <sup>170</sup> *City of Toronto Electric Vehicle Strategy*, 22, 30.
- <sup>171</sup> *City of Toronto Electric Vehicle Strategy*, 8.
- <sup>172</sup> *City of Toronto Electric Vehicle Strategy*, 8.
- <sup>173</sup> *City of Toronto Electric Vehicle Strategy*, 32.
- <sup>174</sup> *City of Toronto Electric Vehicle Strategy*, 8.
- <sup>175</sup> *City of Toronto Electric Vehicle Strategy*, 22.
- <sup>176</sup> *City of Toronto Electric Vehicle Strategy*, 32.
- <sup>177</sup> *City of Toronto Electric Vehicle Strategy*, 22, 28.
- <sup>178</sup> *City of Toronto Electric Vehicle Strategy*, 40.
- <sup>179</sup> *City of Toronto Electric Vehicle Strategy*, 42-43.
- <sup>180</sup> *City of Toronto Electric Vehicle Strategy*, 8.
- <sup>181</sup> *City of Toronto Electric Vehicle Strategy*, 44.
- <sup>182</sup> *City of Toronto Electric Vehicle Strategy*, 44, 45.
- <sup>183</sup> *City of Toronto Electric Vehicle Strategy*, 45.

# Alberta ZEV policies

## Provincial strategies and policies

Policy categories	Policies
<b>Incentives for deployment</b>	
Financial incentives	<p>The Municipal Climate Change Action Centre, a joint initiative among the Government of Alberta, the Alberta Urban Municipalities Association, and Rural Municipalities of Alberta, administers the Electric Vehicles for Municipalities Program, which provides funding to Alberta municipalities to help them transition their municipal fleets to ZEVs. The program funds <b>passenger, MHD, and low-speed non-road BEVs and PHEVs</b>, including:</p> <ul style="list-style-type: none"> <li>• Funding of \$7,000–\$14,000 per eligible passenger vehicle</li> <li>• 30% off costs up to \$300,000 per vehicle for eligible MHD vehicles</li> <li>• 30% of costs up to \$50,000 per vehicle for eligible low-speed non-road vehicles.<sup>184</sup></li> </ul>
<b>Charging infrastructure</b>	
Charging infrastructure incentives	The Electric Vehicles for Municipalities Program provides funding for charging stations (50% of the total cost up to \$2,000). <sup>185</sup>
EV readiness	In March 2020, the strategic consulting firm ICF released the Electric Vehicle Home and Workplace Charging Study, which identified actions that local and provincial governments in Alberta can take to efficiently and cost-effectively deploy EV charging infrastructure in residential, commercial, and municipal buildings, as well as workplaces. The study was sponsored, in part, by Alberta Transportation and was submitted to the City of Calgary and the City of Edmonton. <sup>186</sup>

## Municipal strategies and policies

### City of Calgary

Policy categories	Policies
<b>Strategic planning and regulations</b>	
ZEV and climate change related plans and strategies	<p>Calgary's Electric and Low-Emissions Vehicles Strategy seeks to identify actions for the City of Calgary to prepare for electric vehicle technology.<sup>187</sup> This strategy has a section specifically devoted to commercial vehicle fleets including a commitment to advance research on GHG reduction in goods movement.<sup>188</sup></p> <p>The City of Calgary's Climate Resilience Plan is the City's overarching climate strategy, which aims to achieve an 80% reduction in GHG emissions by 2050 relative to 2005 levels.<sup>189</sup> As a part of the plan, the City has highlighted the priority of supporting and enabling the uptake of electric vehicles and low-emissions vehicles in commercial fleets, and has outlined a number of key actions that the City can take to support these goals.<sup>190</sup></p>
<b>Incentives for deployment</b>	
Non-financial incentives	The Calgary Parking Authority (CPA) provides EV owners with priority placement on its contract waitlist for lots. <sup>191</sup>
<b>Charging infrastructure</b>	
Charging infrastructure projects	<p>There are currently about 175 EV charging stations in Calgary.<sup>192</sup></p> <p>The City of Calgary and the CPA together launched over 40 new EV charging stations in CPA locations in May 2019.<sup>193</sup> The CPA currently has a total of 48 EV charging locations, including 20 universal chargers and 28 Tesla-only chargers.<sup>194</sup></p> <p>The City of Calgary is working with partners including SouthGrow Regional Initiative and the City of Lethbridge to set up the Peaks to Prairies EV Charging Network, a network of charging stations across southern Alberta. It will include fast charging and Level 2 stations and will be accessible by any EV type.<sup>195</sup> As of February 2020, the Peaks to Prairies EV Charging Network had a total of 16 charging station deployments.<sup>196</sup></p> <p>The City of Calgary's EV Strategy included a commitment to pilot publicly accessible community charging hubs in areas where home charging is not possible.<sup>197</sup></p>
EV readiness	The EV Strategy included a commitment to implement EV-readiness requirements for new single-family homes and multi-family residential and commercial buildings. <sup>198</sup>

Policy categories	Policies
	The EV Strategy included a commitment to streamline utility and municipal processes to support EV projects and reduce EV barriers. This included making it easier for businesses to install electric vehicle charging infrastructure (Level 2 and fast charging) and improving co-ordination and planning related to EV chargers. <sup>199</sup>
<b>Fleet capacity</b>	
ZEV awareness and education	<p>The EV Strategy included a commitment to develop educational materials/programs on EVs for businesses and the general public.<sup>200</sup> The City of Calgary has, at times, partnered with the Go Electric Vehicle Corporation to produce materials.<sup>201</sup></p> <p>The EV Strategy committed to exploring the establishment of an Electric Vehicle Showcase Centre, with a timeframe of 2023-2026.<sup>202</sup></p> <p>In October 2019, ENMAX and Plug'n Drive partnered to provide a Calgary Electric Vehicle Roadshow which offered educational opportunities including test drives and information about electric vehicle options and advantages of switching to electric vehicles.<sup>203,204</sup></p> <p>The EV Strategy committed to developing a program to help assess alternative fuel technologies for <b>commercial vehicle fleets</b> and share relevant information.<sup>205</sup></p>
Public sector procurement	The EV Strategy included a commitment to incorporate electric and other low-carbon vehicle technologies into City fleets, with a timeframe of 2018-2026. <sup>206</sup>

## City of Edmonton

Policy categories	Policies
<b>Strategic planning and regulations</b>	
ZEV and climate change related plans and strategies	<p>Edmonton's Electric Vehicle Strategy seeks to identify strategic actions the City can take to increase EV readiness and EV uptake. It focuses on light-duty PHEV and BEV vehicles. It identifies six main opportunity areas including charging infrastructures, incentives and regulations.<sup>207</sup></p> <p>Edmonton's Energy Transition strategy seeks to reduce community-based greenhouse gas emissions by 35% by 2035.<sup>208</sup> The City has identified advocating for "provincial programs that encourage citizens to purchase fuel efficient vehicles" as a focus area with one tactic being to "conduct a study to understand how Edmonton should prepare for electric vehicles in the community."<sup>209</sup></p> <p>In 2018, the City of Edmonton put forward the Edmonton Declaration which highlighted the necessity for cities to "consider their actions through a lens that would limit global average temperature increase to 1.5 degrees Celsius." In 2019 a report</p>

Policy categories	Policies
	named Getting to 1.5°C provided six ‘climate shifts’ that would allow for decreases in emissions consistent to “levels aligned with a global average temperature increase of 1.5°C.” <sup>210</sup>
ZEV sales targets/mandates	The EV Strategy identified supporting the federal and/or provincial government in the establishment of a ZEV mandate as a strategic objective. <sup>211</sup>
<b>Incentives for deployment</b>	
Financial and non-financial incentives	The EV Strategy included the objective of the provision of non-permanent financial incentives to residents in the form of free public charging at City-owned Level 2 stations. <sup>212</sup>
<b>Charging infrastructure</b>	
Charging infrastructure incentives	Edmonton’s EV strategy includes the objectives of improving opportunities for residential and workplace charging, and developing long-distance and local public charging networks. <sup>213</sup> Edmonton’s Change for Climate program includes rebates for EV chargers. Households or businesses installing Level 2 chargers can receive a rebate of 50% of the cost to a maximum of \$600 for existing residential properties, \$300 for new residential properties, and \$2,000 for existing commercial properties. <sup>214</sup>
Charging infrastructure projects	Edmonton currently has 49 public-access charger locations with 104 charging ports. These include Level 2 chargers, Level 3 chargers, and Tesla Destination chargers. <sup>215</sup> The City of Edmonton has been integrating EV charging stations into facility renovation projects to achieve LEED building certification. <sup>216</sup> The City owns four public access facilities with seven charging ports. <sup>217</sup> The City of Edmonton has partnered with ATCO to create a new public curbside EV charging service which is slated to result in up to five Level 2 curbside charging stations. <sup>218</sup>
EV readiness	The EV Strategy includes the objective of changing bylaws and approval processes to increase the availability of EV charging infrastructure at workplace and residential locations. <sup>219</sup> In March 2020, the strategic consulting firm ICF released the Electric Vehicle Home and Workplace Charging Study which identified actions that local and provincial governments in Alberta, including the City of Edmonton, can take to efficiently and cost-effectively deploy EV charging infrastructure in residential, commercial, and municipal buildings, as well as workplaces. <sup>220</sup>
<b>Fleet capacity</b>	
ZEV awareness and education	Edmonton is planning an EV Discovery Event in partnership with the Electric Vehicle Association of Alberta (EVAA). <sup>221</sup> Edmonton’s EV strategy identified a number of objectives related to consumer awareness. <sup>222</sup>



Policy categories	Policies
	<ul style="list-style-type: none"> <li>• To improve popular perceptions of EVs among the general population through marketing and education.</li> <li>• To change vehicle purchasing decisions through marketing and educational activities aimed at car dealership professionals.</li> <li>• To work with non-profits and the automobile industry to establish EV learning opportunities for Edmontonians.</li> <li>• To collaborate with shared mobility organizations (e.g. car sharing) to increase public support for EVs.</li> </ul>
Public sector procurement	<p>Edmonton has taken a number of actions to integrate ZEVs into its fleet. It has issued a tender for <b>light-duty vehicles</b> which includes an ask for EVs. In 2017, it purchased a PHEV vehicle for use by its police services. It has also purchased a <b>pick-up truck</b> for planned conversion to PHEV, and will use it as a test to inform future potential conversions and purchases.<sup>223</sup></p> <p>The EV Strategy identified strategic objectives including continued electrification of its municipal fleet.<sup>224</sup></p>

<sup>184</sup> Municipal Climate Change Action Centre, “Electric Vehicles for Municipalities Program.” <https://mccac.ca/programs/electric-vehicles-for-municipalities-program/>

<sup>185</sup> “Electric Vehicles for Municipalities Program.”

<sup>186</sup> ICF Canada, *Electric Vehicle Home and Workplace Charging Study* (2020), i, iv.

[https://www.edmonton.ca/city\\_government/documents/PDF/EVHomeAndWorkplaceChargingStudy-2020-03.pdf](https://www.edmonton.ca/city_government/documents/PDF/EVHomeAndWorkplaceChargingStudy-2020-03.pdf)

<sup>187</sup> City of Calgary, *Calgary’s Electric and Low-Emissions Vehicle Strategy* (2019), 3.

<https://www.calgary.ca/Transportation/TP/Documents/strategy/Electric%20Vehicle%20Strategy/Electric-Vehicle-Strategy-Report.pdf>

<sup>188</sup> *Calgary’s Electric and Low-Emissions Vehicle Strategy*, 23.

<sup>189</sup> City of Calgary, *Climate Resilience Strategy: Mitigation & Adaptation Action Plans* (2018), 18. [https://www.calgary.ca/UEP/ESM/Documents/ESM-Documents/Climate\\_Resilience\\_Plan.pdf](https://www.calgary.ca/UEP/ESM/Documents/ESM-Documents/Climate_Resilience_Plan.pdf)

<sup>190</sup> *Climate Resilience Strategy: Mitigation & Adaptation Action Plans*, 42.

<sup>191</sup> Calgary Parking Authority, “EV Charging Stations.” <https://www.calgaryparking.com/evcharging>

<sup>192</sup> City of Calgary, “Electric vehicle strategy.” <https://www.calgary.ca/Transportation/TP/Pages/Strategy/Electric-vehicle-strategy.aspx>

<sup>193</sup> “Electric vehicle strategy.”

<sup>194</sup> Calgary Parking Authority, “EV Charging Stations.” <https://www.calgaryparking.com/evcharging>

<sup>195</sup> “Electric vehicle strategy.”

<sup>196</sup> Peaks to Prairies, “Electric Vehicle Travel From Peaks to Prairies.” <https://peakstoprairies.ca/f/blairmore-taber-milk-river-online>

<sup>197</sup> *Calgary’s Electric and Low-Emissions Vehicle Strategy*, 20.

<sup>198</sup> *Calgary’s Electric and Low-Emissions Vehicle Strategy*, 20.

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- <sup>199</sup> *Calgary's Electric and Low-Emissions Vehicle Strategy*, 21.
- <sup>200</sup> *Calgary's Electric and Low-Emissions Vehicle Strategy*, 20-21.
- <sup>201</sup> Go Electric Vehicle Corporation, "Go Electric: Welcome to the Future." <https://goelectriccyc.com/>
- <sup>202</sup> *Calgary's Electric and Low-Emissions Vehicle Strategy*, 20-21.
- <sup>203</sup> PlugNDrive, "Calgary Electric Vehicle Roadshow – Presented by ENMAX." <https://www.plugndrive.ca/event/enmax-test-drive/>
- <sup>204</sup> The ENMAX Charge Up Pilot Program subsidized the cost of EV chargers for a certain number of homes and businesses in Calgary. The purpose of the program was to help "understand how Calgarians use EVs, and the potential impact they'll have on our electricity system." Source: ENMAX, "Charge Up: An EV Pilot Program." <https://www.enmax.com/ev>
- <sup>205</sup> *Calgary's Electric and Low-Emissions Vehicle Strategy*, 23-24.
- <sup>206</sup> *Calgary's Electric and Low-Emissions Vehicle Strategy*, 22-23.
- <sup>207</sup> City of Edmonton, *Edmonton's Electric Vehicle Strategy* (2018), iv-v. [https://www.edmonton.ca/city\\_government/documents/PDF/EdmontonElectricVehicleStrategy.pdf](https://www.edmonton.ca/city_government/documents/PDF/EdmontonElectricVehicleStrategy.pdf)
- <sup>208</sup> City of Edmonton, *Energy Transition Strategy*, 9. [https://www.edmonton.ca/city\\_government/documents/EnergyTransitionStrategy.pdf](https://www.edmonton.ca/city_government/documents/EnergyTransitionStrategy.pdf)
- <sup>209</sup> Edmonton, *Energy Transition Strategy*, 41.
- <sup>210</sup> City of Edmonton, *Getting to 1.5°C: Deriving a Local carbon Budget and Meeting the Ambition of Limiting Edmonton's Emissions to Levels that Align with a Global Average Temperature Increase of a Maximum of 1.5 Degrees Celsius* (2019), 1-2. [https://www.edmonton.ca/city\\_government/documents/PDF/GettingTo1-5DiscussionPaper.PDF](https://www.edmonton.ca/city_government/documents/PDF/GettingTo1-5DiscussionPaper.PDF)
- <sup>211</sup> *Edmonton's Electric Vehicle Strategy*, 55-56.
- <sup>212</sup> *Edmonton's Electric Vehicle Strategy*, 53-54.
- <sup>213</sup> *Edmonton's Electric Vehicle Strategy*, 51-52.
- <sup>214</sup> "Electric Vehicles."
- <sup>215</sup> City of Edmonton, "Electric Vehicles." [https://www.edmonton.ca/city\\_government/environmental\\_stewardship/electric-vehicles.aspx](https://www.edmonton.ca/city_government/environmental_stewardship/electric-vehicles.aspx)
- <sup>216</sup> *Edmonton's Electric Vehicle Strategy*, 17-18.
- <sup>217</sup> "Electric Vehicles."
- <sup>218</sup> ATCO, "Edmonton Curbside EV Charging." <https://www.atco.com/en-ca/projects/electric-curbside-ev-charging.html>
- <sup>219</sup> *Edmonton's Electric Vehicle Strategy*, 56.
- <sup>220</sup> *Electric Vehicle Home and Workplace Charging Study*.
- <sup>221</sup> EVAA, "City of Edmonton EV Discovery Event + Special Announcement." <http://albertaev.ca/events/city-of-edmonton-ev-discovery-event-special-announcement/>
- <sup>222</sup> *Edmonton's Electric Vehicle Strategy* (2018), 49-50, 60.
- <sup>223</sup> *Edmonton's Electric Vehicle Strategy*, 17-18.
- <sup>224</sup> *Edmonton's Electric Vehicle Strategy*, 57-58.

# Nova Scotia ZEV policies

## Provincial strategies and policies

Policy categories	Policies
<b>Strategic planning and regulations</b>	
ZEV and climate change related plans and strategies	<p>Towards a Greener Future: Nova Scotia's Climate Change Action Plan, published in January 2009, outlined two goals: GHG emission reduction and climate-change adaptation. It had a target of reducing emissions by a minimum of 10% below 1990 levels as of 2020.<sup>225</sup> While the plan had a number of actions related to transportation, few were directly related to zero-emission vehicles.<sup>226</sup> The most recent progress report on the action plan was released in October 2019.<sup>227</sup></p> <p>Nova Scotia's Sustainable Transportation Strategy was released in April 2013.<sup>228</sup> This strategy was based on four guiding principles: "drive less distance", "move more efficiently and use cleaner energy," "provide access to essential services and employment," and "engage with communities in designing solutions."<sup>229</sup> It committed to 28 sustainable transportation actions, four of which were related to alternative vehicles and fleets and alternative fuels.<sup>230</sup></p> <p>Nova Scotia's Sustainable Development Goals Act, which received assent in October 2019, noted that "the long-term objective of the Province is to achieve sustainable prosperity" and that the government would raise awareness around sustainable prosperity, create necessary conditions for sustainable prosperity, and "adopt, support, and enable goals and initiatives that are aligned with the principles and focus areas in this Act and regulations." One of the focus areas noted was "the support of the transition to cleaner energy, more sustainable sources for electricity generation, improved energy efficiency, and cleaner transportation." The Act included a goal of net-zero greenhouse gas emissions by 2050.<sup>231</sup></p>
ZEV sales targets/mandates	A resolution adopted at the 37th Annual Conference of New England Governors and Eastern Canadian Premiers, of which Nova Scotia is a member, included a goal stating that 5% of the region's fleet market would be alternative-fuel vehicles, as of 2020. <sup>232</sup>
<b>Incentives for deployment</b>	
Financial incentives	The Low Carbon Communities and Connect2 programs provide support for projects that reduce emissions using a range of activities from community planning to public engagement sessions. The category Clean Fleets and Shared Mobility lists eligible projects as including zero-emission fleet pilot projects, with a maximum funding of \$15,000 per vehicle. The category

Policy categories	Policies
	also includes zero-emission vehicle strategies. Within the category, grants up to \$75,000 can be provided. <sup>233</sup> Eligible applicants include municipalities, universities, community groups, First Nations, and non-profit organizations. <sup>234</sup>
<b>Charging infrastructure</b>	
Charging infrastructure projects	Nova Scotia currently has over 100 public electric vehicle charging stations. <sup>235</sup> As of 2019, it also had a highway network of 14 EV fast-charging stations. <sup>236</sup> Nova Scotia Power has partnered with the Province of Nova Scotia and Natural Resources Canada in the creation of a network of Level 2 and Level 3 charging stations across Nova Scotia. <sup>237</sup>
<b>Fleet capacity</b>	
ZEV awareness and education	The Province of Nova Scotia is supporting consumer awareness programs including the EVAssist and NextRide campaigns of the Clean Foundation. <sup>238</sup> <ul style="list-style-type: none"> <li>• EVAssist is a “free, all-in-one resource for electric vehicles (EVs) in Nova Scotia.”<sup>239</sup></li> <li>• Next Ride is an initiative that “helps Nova Scotians discover electric vehicles (EVs).”<sup>240</sup></li> </ul> Nova Scotia Power has hosted EV awareness events such as Ride n Drive and Electric Avenue, where attendees can test drive electric vehicles. <sup>241</sup>
Public sector procurement	In 2017, Nova Scotia Power assessed 16 of their current fleet vehicles. It recommended the replacement of 11 vehicles with EVs. <sup>242</sup>

## Municipal strategies and policies

### Halifax Regional Municipality

Policy categories	Policies
<b>Strategic planning and regulations</b>	
ZEV and climate change related plans and strategies	<p>In September 2019 the Halifax Regional Municipality (HRM) Environment &amp; Sustainability Standing Committee submitted a report to the Halifax Regional Council on initiatives to increase the number of electric vehicles and charging stations in the municipality. The report recommended that an electric vehicle infrastructure strategy and a light-duty fleet strategy be developed.<sup>243</sup> Halifax Regional Council, in return, directed staff to report back with a light-duty fleet strategy, an electric vehicle infrastructure strategy, and recommendations for legislative amendments that would allow Halifax to require ZEV infrastructure in new developments.<sup>244</sup></p> <p>HalifACT 2050: Acting on Climate Together is Halifax Regional Municipality's long-term plan on climate action to increase community resilience and decrease emissions. The plan focuses on emissions reductions, transition to clean energy, and leadership by local government.<sup>245</sup> It is linked to the regional municipality's 2019 declaration of a climate emergency. Actions under HalifACT 2050 are grouped into the themes "decarbonized and resilient infrastructure," "governance and leadership," and "prepared and connected communities."<sup>246</sup></p>
ZEV sales targets/mandates	HalifACT 2050 included the objective of 100% of new-vehicle sales being electric as of 2030. Two actions to support this target were listed: the development of an EV strategy in collaboration with local organizations, and the use of planning and policy to "prepare for and catalyze electric vehicle uptake." <sup>247</sup>
<b>Charging infrastructure</b>	
Charging infrastructure incentives	In May 2019, HRM submitted an expression of interest to NRCan's ZEVIP program to help determine interest and readiness. <sup>248</sup>
Charging infrastructure projects	As of July 2019, HRM contained 41 electric vehicle charging stations, most Level 2. <sup>249</sup> Four recent HRM construction projects included installation of infrastructure required for future EV charging stations. <sup>250</sup>

Policy categories	Policies
<b>Fleet capacity</b>	
Public sector procurement	<p>HalifACT 2050 included a target of net-zero municipal operations as of 2030 and an action to be taken to develop an infrastructure plan and to finance the plan's implementation. A target of municipal fleet electrification by 2030 was included.<sup>251</sup></p> <p>In 2018 HRM Planning &amp; Development tested the performance of a PHEV SUV and compared it against 13 municipal-fleet light-duty ICE SUVs and trucks. The test found the PHEV SEV to have a more desirable fuel economy.<sup>252</sup></p>

<sup>225</sup> Government of Nova Scotia, *Toward a Greener Future: Nova Scotia's Climate Change Action Plan* (2009), i, 1.

[https://climatechange.novascotia.ca/sites/default/files/Climate\\_Change\\_Action\\_Plan\\_2009.pdf](https://climatechange.novascotia.ca/sites/default/files/Climate_Change_Action_Plan_2009.pdf)

<sup>226</sup> *Toward a Greener Future: Nova Scotia's Climate Change Action Plan*, 20-21.

<sup>227</sup> Government of Nova Scotia, *Climate Change: Progress Report October 2019* (2019), i. <https://climatechange.novascotia.ca/sites/default/files/Climate-Change-Progress-Report-October-2019.pdf>

<sup>228</sup> Government of Nova Scotia, *Choose how you move: Sustainable Transportation Strategy* (2013), iii. <https://novascotia.ca/sustainabletransportation/docs/Sustainable-Transportation-Strategy.pdf>

<sup>229</sup> Government of Nova Scotia, "Sustainable Transportation Strategy." <https://novascotia.ca/sustainabletransportation/sustainable-transportation-strategy.asp>

<sup>230</sup> *Choose how you move: Sustainable Transportation Strategy*, 16,23.

<sup>231</sup> Government of Nova Scotia, *An Act to Achieve Environmental Goals and Sustainable Prosperity* Bill No. 2013: Chapter 26: Acts of 2019, <https://nslegislature.ca/sites/default/files/legc/PDFs/annual%20statutes/2019%20Fall/c026.pdf>

<sup>232</sup> The Council of Atlantic Premiers, *Resolution 37-3: Resolution Concerning Transportation* (2013), 1. <https://immediac.blob.core.windows.net/cap-cmha/images/ECP%20Documents/NEG-ECP%20Resolution%2037-3%20Transportation%20EN.PDF>

<sup>233</sup> Government of Nova Scotia, "Low Carbon Communities and Connect2 program." <https://novascotia.ca/low-carbon-communities/>

<sup>234</sup> Department of Energy and Mines, *Low Carbon Communities & Connect2 2020-2-21* (2020), 5. <https://novascotia.ca/low-carbon-communities/LCC-C2-Program-Description.pdf>

<sup>235</sup> Nova Scotia Power, "Electric Vehicles." <https://www.nspower.ca/your-home/energy-products/electric-vehicles>

<sup>236</sup> *Climate Change: Progress Report October 2019*, 12

<sup>237</sup> Nova Scotia Power, "Charging Stations." <https://www.nspower.ca/your-home/energy-products/electric-vehicles/charging-stations>

<sup>238</sup> *Climate Change: Progress Report October 2019*, 12

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- <sup>239</sup> Clean Foundation Nova Scotia, “EVAssist.” <https://clean.ns.ca/wp-portfolio/ea-2/>
- <sup>240</sup> Clean Foundation Nova Scotia, “NextRide”. <https://clean.ns.ca/wp-portfolio/nr/>
- <sup>241</sup> Nova Scotia Power, “Electric Vehicles.”
- <sup>242</sup> Environment & Sustainability Standing Committee, *Initiatives to increase the number of electric vehicles and charging stations in the Municipality* (2019), 6. <https://www.halifax.ca/sites/default/files/documents/city-hall/regional-council/190917rc1532.pdf>
- <sup>243</sup> *Initiatives to increase the number of electric vehicles and charging stations in the Municipality*, 1-2.
- <sup>244</sup> Halifax Regional Municipality, *Request for Proposals for Consulting Services, Municipal Electric Vehicle Strategy* (2020), 14. <https://procurement.novascotia.ca/tender-details.aspx?id=HRM-20-036>
- <sup>245</sup> Halifax Regional Municipality, “HalifACT 2050: Acting on Climate Together.” <https://www.halifax.ca/about-halifax/energy-environment/halifact-2050-acting-climate-together>
- <sup>246</sup> Halifax Regional Municipality, *HalifACT 2050: Acting on Climate Together* (2020), 8, 34. [https://www.halifax.ca/sites/default/files/documents/about-the-city/energy-environment/HRM\\_HaliFACT\\_vIssued%20with%20Foreword.pdf](https://www.halifax.ca/sites/default/files/documents/about-the-city/energy-environment/HRM_HaliFACT_vIssued%20with%20Foreword.pdf)
- <sup>247</sup> *HalifACT 2050: Acting on Climate Together*, 38.
- <sup>248</sup> *Initiatives to increase the number of electric vehicles and charging stations in the Municipality*, 9.
- <sup>249</sup> *Initiatives to increase the number of electric vehicles and charging stations in the Municipality*, 8, 11-12.
- <sup>250</sup> *Initiatives to increase the number of electric vehicles and charging stations in the Municipality*, 8.
- <sup>251</sup> *HalifACT 2050: Acting on Climate Together*, 38.
- <sup>252</sup> *Initiatives to increase the number of electric vehicles and charging stations in the Municipality*, 6.