

Submission for the Pre-Budget Consultations in Advance of the 2022 Federal Budget

List of Recommendations

Recommendation 1: \$1.5 billion over five years in additional funding for the Incentives for Zero-Emission Vehicles Program to extend the program and expand the eligibility criteria to include SUVs, pickup trucks, and used vehicles. This will allow more Canadians to enjoy the benefits that zero-emission vehicles provide and better position our auto industry for the future.

Recommendation 2: \$1 billion over five years to the Zero-Emission Vehicle Incentive Program and Electric Vehicle and Alternative Fuel Infrastructure Deployment Program. This will support the build out of 50,000 public charging stations and electrify 500,000 residential parking spots—addressing one of the top barriers to EV uptake and supporting jobs across the country.

Recommendation 3: \$1 billion over three years to create a Voucher Incentive Program for zero-emission medium- and heavy duty vehicles. This will reduce the upfront cost of these vehicles and help unlock operational savings for Canadian fleets.

Recommendation 4: \$1 billion over three years in additional funds to the Zero-Emission Vehicle Infrastructure Program, earmarked for medium- and heavy duty vehicle charging infrastructure. Modify the program to make it more accessible for fleets operators, covering a greater variety of the costs needed to support their transition to zero-emission vehicles.

Recommendation 5: \$5 billion in additional funding to the Net-Zero Accelerator Initiative earmarked for the electric vehicle and battery supply chain to help Canada compete on batteries.

Recommendation 6: \$500 million over three years for a Clean Infrastructure Demonstration Fund to support public infrastructure projects that showcase and test low-carbon building materials. This will build comfort and expertise in using innovative materials, and help position Canada's industries through the net-zero transition.

Recommendation 7: Provide additional staffing and resources to the Centre for Greening Government and the National Research Council's LCA² Initiative to accelerate the development and implementation of a Buy Clean approach to public procurement..

Recommendation 8: \$25 million over three years to the National Research Council to support the development of environmental product declarations for key materials and products. This will provide necessary data to support a Buy Clean strategy and improve competitiveness for low-carbon export industries.

Canada's ambition to build a clean economy is a defining opportunity for our generation—an opportunity made even more poignant by our experience with the COVID-19 pandemic. Canada has many advantages to harness, and Clean Energy Canada believes that a sound economic recovery plan must prioritize climate action to place the country on a trajectory toward a resilient recovery—one that results in lower carbon pollution, enhances global competitiveness, creates sustainable jobs, supports reconciliation with First Nations, and leads to more affordable lives for Canadians.

We are starting from a position of strength. As our closest trading partners and many of the world's largest companies and investors demand cleaner goods, Canada's mineral resource wealth, clean electricity grid, and low-carbon products give it a competitive advantage. The country now also has a strengthened climate plan, *A Healthy Environment and a Healthy Economy*, which, combined with measures in Budget 2021, significantly closes the gap between climate ambition and climate action.

The focus of Budget 2022 should be to build on that solid foundation and increase the pace and scale of action to enable Canada to leverage its strengths and capture promising clean energy opportunities at home and abroad. Doing so will improve energy security and affordability for Canadians while creating secure, lasting jobs in industries that will thrive well into the future.

Making Zero-Emission Passenger Vehicles Accessible to All Canadians

Getting more people in zero-emission cars will make life more affordable for Canadians and help support a world-class ZEV industry. Zero-emission vehicles cost less to fuel and maintain, saving the average Canadian driver \$800-\$2,000 or more per year compared to owning a gas-powered car, according to a 2020 Clean Energy Canada analysis.¹ Today, these savings are even more pronounced as gas prices reach record highs with no end in sight.² Because zero-emission vehicles produce no tailpipe pollution, increasing their uptake would result in less carbon pollution and cleaner air in Canadian communities. Finally, boosting local demand will strengthen Canada's zero-emission vehicle industry—and make our auto sector more competitive globally.

Recognizing these benefits, the federal government has set a target to sell 100% zero-emission vehicles by 2035.³ But at the end of 2021, Canada's ZEV market share reached only 5.6%—far below the market share of other countries that are using recovery spending to accelerate the transition to zero-emission vehicles and help their automakers capture a greater share of the global market.⁴

¹ Clean Energy Canada. *Taking the Wheel*. <https://cleanenergycanada.org/report/taking-the-wheel/>. (2020).

² Lavery, I. Canadian Gas Prices Hit Record High With No End in Sight, Experts Say. *Global News*. <https://globalnews.ca/news/8618906/record-high-gas-prices-canada/>. (2022).

³ Building a Green Economy: Government of Canada to Require 100% of Car and Passenger Truck Sales be Zero-Emission by 2035 in Canada. *Transport Canada*.

<https://www.canada.ca/en/transport-canada/news/2021/06/building-a-green-economy-government-of-canada-to-require-100-of-car-and-passenger-truck-sales-be-zero-emission-by-2035-in-canada.html>. (2021).

⁴ IHS Markit. *Automotive Insights: Q4 2021 - End of Year Report*.

https://cdn.ihsmarket.com/www/prot/pdf/0222/Canada-EV-Newsletter-Q4-2021.pdf?utm_campaign=PC021797-Auto-Canadian%20EV%20Quarterly%20Insights-Q1FY22&utm_medium=email&utm_source=Eloqua&elqTrackId=5028b87c598e4b3a878daeddbfec6a99&elq=9ee4c3c467ca469db7126947efe6ae5b&elqaid=153150&elqat=1&elqCampaignId=64510. (2022). For comparison, Germany, France, and the U.K. saw EV sales shares of 16-24% in 2021. Clean Energy Canada. *Submission: Achieving a Zero-Emission Future for Light-Duty Vehicles*.

https://cleanenergycanada.org/wp-content/uploads/2022/01/CECSUBMISSION_ZeroEmissionLDVFuture_20220121_FINAL-148.pdf. (2022).

Budget 2022 offers an opportunity to help more Canadians enjoy the benefits that zero-emission cars provide and better position our auto industry for the future.

The federal government should fund the Incentives for Zero-Emission Vehicles (iZEV) program with an additional \$1.5 billion over five years. The iZEV program was “topped up” in December 2021 with an additional \$73 million as part of the federal government’s Economic and Fiscal Update, but this funding will only extend the program until March 2022.⁵ If Canada wants to see widespread adoption of ZEVs and meet its target of 100% zero-emission vehicle sales by 2035, Canadians will need government support beyond 2022. The iZEV program should also be modified to make zero-emission SUVs, pickup trucks, and used vehicles eligible for incentives to reflect what most Canadians are choosing to buy.⁶ A well-funded, expanded, and durable federal iZEV program will make ZEVs more affordable until they become competitively priced with gas cars, and will ensure continued demand after national ZEV standard requirements kick in.⁷

The federal government must also accelerate the installation of charging stations across Canada to address one of the top barriers to ZEV uptake and support jobs across the country. President Biden’s recent *Infrastructure Investment and Jobs Act* commits \$7.5 billion USD to building out a 500,000 charging station network.⁸ California alone has allocated \$1.2 billion USD in the last two fiscal years toward light-duty vehicle charging infrastructure.⁹ To keep pace with these investments on a per capita basis, **Canada should add \$1 billion to NRCan’s existing funding programs (Zero-Emission Vehicle Incentive Program and Electric Vehicle and Alternative Fuel Infrastructure Deployment program) over five years** to support the build out of 50,000 public ZEV charging stations and electrify 500,000 parking spots in new and existing residential buildings.¹⁰ An extensive, reliable charging network will ensure Canadians have a place to charge, also supporting continued consumer demand for ZEVs. These investments will also support Canadian jobs across the charging station supply chain—from Canadian mining and aluminum production, to the charging technology itself, to the electricians installing the chargers at locations in every province and territory.

⁵ Government of Canada. *Economic and fiscal update 2021*. <https://budget.gc.ca/efu-meb/2021/report-rapport/EFU-MEB-2021-EN.pdf>. (2021).

⁶ New Motor Vehicle Registrations Data Visualization Tool. *Statistics Canada*.

<https://www150.statcan.gc.ca/n1/pub/71-607-x/71-607-x2019028-eng.htm>. (2020).; Nowak, P. First-Time Buyers Boosting Car Sales as Coronavirus Changes the Mobility Landscape. *The Globe and Mail*.

<https://www.theglobeandmail.com/drive/mobility/article-first-time-buyers-boosting-car-sales-as-coronavirus-changes-the/>. (2020).

⁷ Bloomberg NEF expects zero-emission vehicles for all passenger vehicle segments to become cost-competitive to make and buy without subsidies in the U.S. by 2023 or 2024. We assume price parity will be reached in a similar timeframe in Canada. BloombergNEF. *Zero-Emission Vehicles Factbook: A BloombergNEF special report prepared for COP26*.

https://assets.bbhub.io/professional/sites/24/BNEF-Zero-Emission-Vehicles-Factbook_FINAL.pdf. (2021).; Environment Minister Steven Guilbeault has indicated that he would like a national zero-emission vehicle mandate in place by 2023, meaning the first sales requirements would likely kick in in 2024 or 2025. Rabson, M. Mandate to Enforce EV Sales Quotas Needed by End of Next Year: Environment Minister. *The Canadian Press*. <https://www.ctvnews.ca/climate-and-environment/mandate-to-enforce-ev-sales-quotas-needed-by-end-of-next-year-environment-minister-1.5701813>. (2021).

⁸ President Biden’s Bipartisan Infrastructure Law. *The White House*. <https://www.whitehouse.gov/bipartisan-infrastructure-law/>. (2021).

⁹ State of California. *Governor’s budget summary 2022-23 - Climate change* <https://www.ebudget.ca.gov/budget/2022-23/#/BudgetSummary>. (2022).

¹⁰ 30% of Canadians lack access to a garage or parking lot. These drivers must have access to a home charging solution. Pollution Probe. *Guide to Electric Vehicle Charging in Multi-Unit Residential Buildings*.

<https://www.pollutionprobe.org/wp-content/uploads/Guide-to-EV-Charging-in-MURBS-PDF.pdf>. (2020).

Despite some improvements in EV supply between 2020 and 2021, a majority of dealerships across the country still do not have a single EV in stock.¹¹ Supply is also unevenly distributed across provinces and territories, with 71% of Canada's total zero-emission vehicle inventory located in Quebec and British Columbia—the two provinces with sales requirements in place.¹² The federal government should develop and phase in a national zero-emission vehicle standard starting in 2024. A ZEV standard would make clean cars available to Canadians across the country and enable Canada to meet its sales targets in an effective, low-cost way, without being too restrictive on automakers. It would also support a globally competitive EV industry by providing market certainty so industry stakeholders such as raw material suppliers, charging stations providers, and electric utilities can plan and invest accordingly.

Accelerating the Uptake and Production of Zero-Emission Medium- and Heavy-Duty Vehicles

Transitioning to zero-emission buses and trucks offers a range of benefits for Canadian business and communities. Similar to passenger vehicles, zero emission medium- and heavy-duty vehicles are less expensive than diesel vehicles to fuel and maintain, offering significant cost savings—particularly for fleet vehicles that are in frequent operation and travel greater distances than passenger vehicles. For instance, both Metro Vancouver's TransLink and the City of Halifax estimate that each electric bus saves an estimated \$20,000 to \$30,000 per year in fuel and maintenance costs when compared to a diesel bus, with the potential for millions of dollars in annual savings as those fleets are fully electrified.¹³ Similarly, the University of California Berkeley found that existing Class 8 long-haul electric trucks have a 13% ownership cost advantage over Class 8 diesels—and this advantage is expected to rise to 50% by 2030, as the cost of batteries comes down.¹⁴

Replacing diesel vehicles with non-emitting ones not only helps Canada reach its climate goals, it also reduces harmful tailpipe pollution in our communities. Health Canada estimates air pollution contributes to 15,300 premature deaths per year, carrying a socio-economic cost of \$120 billion annually.¹⁵ A 2019 study by the University of Toronto and the Southern Ontario Centre for Atmospheric Aerosol Research found that diesel trucks are responsible for a disproportionate amount of pollutants and are a major source of nitrogen oxides and black carbon.¹⁶ Getting more zero-emission buses and trucks on Canadian roads will cut local air pollutants, reduce health-care costs, and save lives.

Finally, accelerating deployment of zero-emission medium- and heavy-duty vehicles provides manufacturing opportunities for Canadian workers. Already, Canada is home to leading electric bus

¹¹ Dunsky Energy and Climate Advisors. *Zero Emission Vehicle Availability: Estimating Inventories in Canada: 2020/2021 Update*. https://www.dunsky.com/wp-content/uploads/2021/12/DunskyZEVAvailabilityReport_2021-04-1.pdf. (2021).

¹² Ibid.

¹³ Halifax Regional Municipality. *Strategic Transit Projects – Rapid Transit Strategy and Electric Buses Council Report*. <https://www.halifax.ca/sites/default/files/documents/city-hall/regional-council/200526rc917.pdf>. (2020).; M.J. Bradley & Associates LLC. *Low Carbon Fleet Transition Plan: Final Report*. <https://www.mjbradley.com/sites/default/files/TransLinkLCFSPHase2FINALREPORTFeb24.pdf>. (2020).

¹⁴ Phadke, A., Khandekar, A., Abhyankar, N., Wooley, D. & Rajagopal, D. *Why Regional and Long-Haul Trucks are Primed for Electrification Now*. https://eta-publications.lbl.gov/sites/default/files/updated_5_final_ehdv_report_033121.pdf. (2021).

¹⁵ Outdoor air pollution and health: Overview. *Health Canada*.

https://www.canada.ca/en/health-canada/services/air-quality/outdoor-pollution-health.html#_Health_impacts. (2022).

¹⁶ Southern Ontario Centre for Atmospheric Aerosol Research. *Near-Road Air Pollution Pilot Study: Summary Report*.

<https://www.socaa.utoronto.ca/wp-content/uploads/2019/10/SOCAAR-Near-Road-Air-Pollution-Pilot-Study-Summary-Report-Fall-2019-web-Final.pdf>. (2019).

and truck makers such as New Flyer, Nova Bus, and Lion Electric, which are producing vehicles for large fleet owners like IKEA Canada, Amazon Canada, and the Canadian National Railway.¹⁷ General Motors will start producing EV600 electric delivery vans at its Ingersoll, Ontario plant in November 2022, serving customers like FedEx.¹⁸ Growing domestic demand for these vehicles can further bolster this industry, creating good jobs for Canadians.

Jurisdictions like California have recognized the air quality, fleet saving, and manufacturing opportunities zero-emission buses and trucks offer. The state is moving forward with an ambitious policy package and allocating nearly \$6 billion USD toward zero-emission medium- and heavy-duty vehicles over the two most recent fiscal years.¹⁹ Budget 2022 should include similar measures that help to unlock these benefits for Canadians.

The federal government should create a Voucher Incentive Program funded with \$1 billion over three years to reduce the upfront cost of zero-emission medium- and heavy-duty vehicles while they're still more expensive than diesel counterparts. Expert analysis has shown that by 2030, electric trucks will be cost-competitive with diesel trucks in nearly every class over their lifetime without incentives—if deployment is accelerated in the near term, which helps drive down the cost of batteries and fuel cell technology.²⁰ The federal government, therefore, has a short-term role to play in providing demand-side support to fleets. Existing federal tax write-offs are a good start but research indicates point-of-sale vouchers are more effective at helping fleets transition because they reduce upfront capital requirements, increasing the accessibility of the program, and minimize administrative burden through their simple program design.²¹ As a result, a range of U.S. states have implemented point-of-sale voucher programs for zero-emission medium- and heavy-duty vehicles.²² A Canadian federal program could be administered by Transport Canada, should seek to cover at least 75% of cost differential between a zero-emission vehicle and a comparable diesel model, and make all medium- and heavy-duty vehicles except transit buses eligible (as transit buses are already supported under a number of other existing federal programs).

The government should add \$1 billion to a dedicated medium- and heavy-duty vehicle infrastructure stream within the Zero-Emission Vehicle Incentive Program (ZEVIP). Having infrastructure in place is critical for commercial deployment of zero-emission trucks and buses;

¹⁷ IKEA Canada partners with Second Closet and Lion Electric for last mile delivery in several markets. *IKEA*. <https://www.ikea.com/ca/en/newsroom/corporate-news/ikea-canada-partners-with-second-closet-and-lion-electric-for-last-mile-delivery-in-several-markets-pub9fe6d8b7>. (2021).; Hampel, C. Huge order for Lion Electric trucks from Amazon. *Electrive.com*. <https://www.electrive.com/2021/01/11/huge-order-for-lion-electric-trucks-from-amazon/>. (2021).; Manthey, N. Amazon orders ten Lion Electric trucks. *Electrive.com*. <https://www.electrive.com/2020/09/20/amazon-orders-ten-lion-electric-trucks/>. (2020).; The Lion Electric Co. Receives Largest Order to Date. *CN*. <https://www.cn.ca/en/news/2020/08/the-lion-electric-co-receives-largest-order-to-date/>. (2020).

¹⁸ Trevithick, M. GM Canada to produce a second, smaller electric BrightDrop van at CAMI Ingersoll facility. *Global News*. <https://globalnews.ca/news/8230238/gm-canada-brightdrop-van-cami-ingersoll-facility/>. (2021)

¹⁹ 2022-23 Governor's Budget: Proposed Budget Summary, *State of California*. <https://www.ebudget.ca.gov/budget/2022-23/#/BudgetSummary>. (2022).

²⁰ Draft Advanced Clean Fleets Total Cost of Ownership Discussion Document. *California Air Resources Board*. https://ww2.arb.ca.gov/sites/default/files/2021-08/210909costdoc_ADA.pdf. (2021); ICF. *Comparison of Medium- and Heavy-Duty Technologies in California*. https://caletc.com/assets/files/ICF-Truck-Report_Final_December-2019.pdf. (2019).

²¹ CALSTART. Welch, D. and Mandel, B. *Voucher Incentive Programs: A Tool for Clean Commercial Vehicle Deployment*. https://calstart.org/wp-content/uploads/2020/10/CALSTART_VIP_White_Paper.pdf. (2019).

²² CALSTART. *Speeding High Efficiency Truck Adoption: Recommended Policies, Incentives and Investments*. https://calstart.org/wp-content/uploads/2018/10/Speeding-High-Efficiency-Truck-Adoption_Recommended-Policies-Incentives-and-Investments.pdf. (2010).; CALSTART Drive to Zero. *Moving Zero-emission Freight Toward Commercialization*. <https://globaldrivetozero.org/site/wp-content/uploads/2020/12/Moving-Zero-Emission-Freight-Toward-Commercialization.pdf>. (2020).

however, federal funding will be required to bring down costs for fleet operators and support the initial roll-out. To ensure the ZEVIP works for medium- and heavy-duty vehicles, the program design must be modified to enhance flexibility and better meet the diverse needs of fleets (e.g. the diversity of vehicle usages, charging infrastructure needs, ownership models, etc). For instance, funding should be allocated on a project basis and not per charge point, and the list of eligible expenses must also be expanded to include a broader range of infrastructure and equipment needs such as charge management software and electrical panel upgrades. Finally, Natural Resources Canada should continue relying on third party administrators to distribute ZEVIP funding, and should consider allocating funding on a rolling, first-come, first-serve basis to accelerate infrastructure deployment.

In addition to these demand-side policies, the federal government must move forward with its commitment to enact a zero emission vehicle sales standard for zero-emission medium- and heavy-duty vehicles. The standard should be modeled after California's—which has also been adopted by five other states (Oregon, Washington, New York, New Jersey, and Massachusetts) accounting for 20% of the U.S. trucking fleet.²³ It should come into effect starting with model year 2025 and include ambitious long-term targets on a trajectory that allows Canada to reach its zero-emission medium- and heavy-duty vehicle sales goals of 30% by 2030 and 100% by 2040.²⁴ A national standard will send the long term market signal needed to accelerate innovation, provide regulatory certainty for industry planning and investments, and ensure manufacturers are prioritizing the Canadian market when selling their zero-emission medium- and heavy-duty vehicles.

Establishing Canada as a Major Player in the Booming Global Battery Market

As automakers race to go electric and countries around the world shift away from fossil fuels, batteries will increasingly power our vehicles, create thousands of jobs, and become the new engines of our economy. The global market for batteries is expected to reach over \$360 billion in the next decade.²⁵ By 2040, the International Energy Agency projects demand for critical minerals to grow by at least thirty times to meet rising demand for batteries for use in EVs and storage.²⁶

China continues to dominate the battery market with 80% of global cell manufacturing capacity and the majority of battery material processing and cathode production—but the EU and the U.S. are racing to catch up.²⁷ The EU plans to become self-sufficient on batteries by 2025 and has put forward

²³ Bliss, L. How Six States Could Transform the U.S. Trucking Industry. *Bloomberg*. <https://www.bloomberg.com/news/articles/2022-01-06/how-zero-emission-laws-will-reshape-u-s-trucking>. (2022).

²⁴ CALSTART Drive to Zero. Memorandum of Understanding on Zero-Emission Medium- and Heavy-Duty Vehicles. <https://globaldrivetozero.org/site/wp-content/uploads/2021/11/Global-MOU-ZE-MHDVs.pdf>. (2021).; Environment and Climate Change Canada. *Discussion paper for heavy-duty vehicles and engines in Canada: transitioning to a zero-emission future*. https://www.canada.ca/content/dam/eccc/documents/pdf/cepa/21199_HDV%20Discussion%20Document_Dec%2016_MinO%20Approved_Final_EN.pdf. (2021).

²⁵ Campagnol, N., Pfeiffer, A. & Tryggestad, C. Capturing the battery value-chain opportunity. *McKinsey & Company*. <https://www.mckinsey.com/industries/electric-power-and-natural-gas/our-insights/capturing-the-battery-value-chain-opportunity>. (2022).

²⁶ International Energy Agency. *The Role of Critical Minerals in Clean Energy Transitions*. <https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions/executive-summary>. (2021).

²⁷ China is home to half of the world's capacity for processing and refining lithium and nickel, 80% for cobalt, 90% for manganese and 100% for graphite. It is also responsible for 65% of global cathode and 80% of global anode production. U.S. Narrows Gap With China In Race To Dominate Battery Value Chain. *BloombergNEF*. <https://about.bnef.com/blog/u-s-narrows-gap-with-china-in-race-to-dominate-battery-value-chain/>. (2021).; International Council on Clean

over €6 billion to build out Europe's battery supply chain.²⁸ With 38 battery plants planned or in construction, the EU is on track to capture 20% of global battery market share by 2025.²⁹ U.S. states are offering massive incentive packages to land battery cell manufacturing facilities.³⁰ These incentive packages have helped to attract at least \$20 billion USD in battery-related investments supporting nearly 15,000 jobs to-date.³¹ With President Biden's new *Infrastructure Investment and Jobs Act* allocating over \$6 billion USD to battery supply chain development and his Build Back Better Plan proposing \$50 billion USD more to help auto companies transition to EV production, the competition for battery investment will only increase.³²

Canada ranks 5th in the world for its battery supply chain potential.³³ The federal government has already taken some important steps to capitalize on this potential—for example, announcing a Critical Battery Minerals Centre of Excellence, creating the \$8-billion Net-Zero Accelerator Initiative (a portion of which will go to battery supply chain development), and investing in EV assembly in Ontario and battery module production in Quebec. But efforts to-date have been insufficient given the scale of the opportunity and the speed at which other countries are moving to capture it. Canada still has no significant activity at any part of the supply chain.³⁴

If Canada wants to compete on batteries, the **federal government should add \$5 billion more to the Net-Zero Accelerator Initiative and earmark this funding for the EV and battery supply chain.** This

Transportation. *How Technology, Recycling and Policy Can Mitigate Supply Risks to the Long-Term Transition to Zero-Emission Vehicles.* <https://theicct.org/publication/how-technology-recycling-and-policy-can-mitigate-supply-risks-to-the-long-term-transition-to-zero-emission-vehicles/>. (2020).

²⁸ Petrequin, S. EU Approves More State Aid to Boost Car Batteries Industry. *The Associated Press.* <https://www.ctvnews.ca/autos/eu-approves-more-state-aid-to-boost-car-batteries-industry-1.5283043>. (2021).

²⁹ Carey, N. & Lewis B. Running low on battery power: Brexit Britain faces an acid test. *Reuters.* <https://www.reuters.com/world/uk/running-low-battery-power-brex-britain-faces-an-acid-test-2021-07-20/>. (2021).; European Battery Alliance. *EBA250 Summer highlights.* <https://www.eba250.com/eba250-summer-highlights/>. (2021).

³⁰ LG Chem received \$325 million USD in federal and local tax incentives to build its 3 GWh battery factory in Michigan, creating 440 jobs. Tesla received \$1.3 billion USD in federal tax incentives to build its 20 GWh Gigafactory in Nevada, which is expected to support 6,500 jobs. LG Chem and GM were enticed by at least \$13.8 million USD in conditional state tax credits to build their \$2.3 billion USD factory in Lordstown, Ohio, which will produce Ultium battery cells and is expected to create 1,100 jobs.

³¹ Ford. *Ford to Lead America's Shift to Electric Vehicles with New Mega Campus in Tennessee and Twin Battery Plants in Kentucky; 11.4B Investment to Create 11,000 Jobs and Power New Lineup of Advanced EVs.* <https://media.ford.com/content/fordmedia/fna/us/en/news/2021/09/27/ford-to-lead-americas-shift-to-electric-vehicles.html>. (2021).; GM Accelerates its Drive to Lead the EV Industry with \$7 Billion Investment in Michigan, Creating 4,000 New Jobs and Retaining 1,000. <https://media.gm.com/media/us/en/gm/home.detail.html/content/Pages/news/us/en/2022/jan/0125-michigan-investment.html>. (2022).; Toyota. *Toyota Selects North Carolina for New U.S. Automotive Battery Plant.* <https://global.toyota/en/newsroom/corporate/36418723.html>. (2021).; Reuters. *S.Korea's LG Energy Solution plans U.S. battery JV with Honda -report.* <https://www.reuters.com/business/autos-transportation/skoreas-lg-energy-solution-plans-battery-jv-with-honda-us-media-report-2022-01-13/>. (2022).; Stellantis. *Stellantis and LG Energy Solution to Form Joint Venture for Lithium-Ion Battery Production in North America.* <https://www.stellantis.com/en/news/press-releases/2021/october/stellantis-and-lg-energy-solution-to-form-joint-venture>. (2021).; Stellantis. *Stellantis and Samsung SDI to Form Joint Venture for Lithium-Ion Battery Production in North America.* <https://www.stellantis.com/en/news/press-releases/2021/october/stellantis-and-samsung-sdi-to-form-joint-venture-for-lithium-ion-battery-production-in-north-america>. (2021).

³² United States Congress. *H.R.3684 - Infrastructure Investment and Jobs Act.* <https://www.congress.gov/bill/117th-congress/house-bill/3684>. (2021).; White, J & Shepardson, D. Retooling Auto Plants for EVs Will Cost Billions. Biden Wants to Help. *Reuters.* <https://www.reuters.com/business/autos-transportation/retooling-auto-plants-evs-will-cost-billions-biden-wants-help-2021-11-17/>. (2021).

³³ U.S. Narrows Gap With China In Race To Dominate Battery Value Chain. *BloombergNEF.* <https://about.bnef.com/blog/u-s-narrows-gap-with-china-in-race-to-dominate-battery-value-chain/>. (2021).

³⁴ Clean Energy Canada. *Turning Talk into Action: Building Canada's Battery Supply Chain.* https://cleanenergycanada.org/wp-content/uploads/2021/05/Turning-Talk-into-Action_Building-Canadas-Battery-Supply-Chain.pdf. (2021).

investment should be complemented by a national battery strategy co-developed by government and industry that picks winners based on where along the supply chain Canada is best positioned to compete, and focuses policy and funding decisions on building up those areas of the supply chain.

Using Buy Clean to Leverage Canada's Clean Construction Materials

As Canada plans its post-COVID-19 economic recovery, it should focus on the ways it can create jobs and enhance economic competitiveness while accelerating the transition to a net-zero economy. A Buy Clean approach—prioritizing the use of low-carbon construction materials in public and private infrastructure projects—is one of the best tools the government has to achieve these objectives. Fortunately, Canada has a low-carbon advantage. Thanks in part to our 83% emissions-free electricity grid, many made-in-Canada materials—from cement and concrete, to wood, steel, and aluminum—are lower carbon than international competitors. As a result, Canada is well-positioned to meet the demand for cleaner construction materials both at home and from trading partners as the global energy transition picks up pace.³⁵

Federal, provincial, territorial, and municipal governments in Canada spend about \$60 billion annually on public infrastructure.³⁶ The use of carbon-intensive construction materials (e.g. cement, concrete, and steel) results in significant GHG emissions.³⁷ Although opportunities exist to use cleaner materials at little or no extra cost, there are currently no regulatory requirements or incentives to support this outcome, with the result that carbon-intensive imports are used to build Canadian infrastructure, harming domestic manufacturers and resulting in more pollution.³⁸

The federal government has committed to developing a national Buy Clean Strategy.³⁹ The 2022 federal budget is an opportunity to turn this commitment into reality and ensure that Canada's next set of roads, highways, bridges, buildings, and other infrastructure are built using low-carbon materials. Requiring the use of cleaner materials in public infrastructure through a national Buy Clean program—as laid out in the mandate letters—will support Canadian manufacturers and provide a backstop for recent investments by government and industry to further reduce emissions.⁴⁰ Growing a market for cleaner products at home will also benefit export-oriented industries, as the global market for low-carbon products is expected to reach \$5 trillion USD annually by 2030.⁴¹ We urge the government to take the following budget measures to support its commitment to develop a Buy Clean program.

³⁵ Clean Energy Canada. *A Buy Clean Roadmap for Canada*.

https://cleanenergycanada.org/wp-content/uploads/2021/07/CEC-Buy-Clean-Roadmap_FINAL.pdf. (2021).

³⁶ Statistics Canada. *Infrastructure Statistics Hub - Investment*. <https://www150.statcan.gc.ca/n1/pub/71-607-x/2018013/ic2-eng.htm>. (2021).

³⁷ Statistics Canada. *Infrastructure Statistics Hub - Environmental Perspective*. <https://www150.statcan.gc.ca/n1/pub/71-607-x/2018013/ep-pe-eng.htm>. (2021).

³⁸ Esau, R., Jungclaus, M., Olgyay, V. & Rempfer, A. Reducing Embodied Carbon in Buildings: Low-Cost, High-Value Opportunities. *RMI*. <https://rmi.org/insight/reducing-embodied-carbon-in-buildings>. (2021); Friedman, G. Canada's steel industry has a secret weapon that could soon beat China's cheaper bids. *Financial Post*. <https://financialpost.com/commodities/energy/renewables/canadas-steel-industry-has-a-secret-weapon-that-could-soon-beat-chinas-cheaper-bids>. (2021).

³⁹ Minister of Intergovernmental Affairs, Infrastructure and Communities. *Mandate Letter*. <https://pm.gc.ca/en/mandate-letters/2021/12/16/minister-intergovernmental-affairs-infrastructure-and-communities>. (2021).

⁴⁰ Ellmen, E. Steel giants sign up for carbon-cutting transformation. *Corporate Knights*. <https://www.corporateknights.com/climate-and-carbon/steel-giants-sign-up-for-carbon-cutting-transformation/>. (2021).

⁴¹ International Energy Agency. *Net-Zero by 2050*. <https://www.iea.org/reports/net-zero-by-2050>. (2021).

To showcase low-carbon materials in public infrastructure projects, the government should **create a \$500 million Clean Infrastructure Demonstration Fund over three years**. The funding would help cover the additional costs of sourcing low-carbon materials (where premiums exist), and support data gathering, materials testing, and dissemination of results and learnings. The Clean Infrastructure Demonstration Fund would be open to municipalities and applications must be assessed using several criteria to ensure deep lifecycle emissions reductions, geographic coverage, accessibility for small and medium-sized municipalities, and a broad selection of materials and infrastructure types. We recommend the fund be administered by Natural Resources Canada as part of its Low-Carbon Building Materials Innovation Hub,⁴² with support from Infrastructure Canada, the Centre for Greening Government at the Treasury Board Secretariat, Public Services and Procurement Canada (PSPC), and the National Research Council (NRC). The fund will help showcase low-carbon building materials in public projects, build comfort and expertise in using innovative materials, and help position Canada's industries for the future low-carbon global economy.

The federal government should provide additional resources—including staffing, training, and professional development—to key federal departments tasked with implementing Canada's Buy Clean approach to public procurement. These include the Centre for Greening Government, which is leading national efforts to set policies and standards in support of Buy Clean; the NRC's Low-Carbon Assets through Life Cycle Assessment (LCA²) Initiative, which is developing important datasets and toolkits to allow governments to adopt Buy Clean requirements in procurement decisions; and implementing departments including PSPC, Transport Canada, the Department of National Defence, and others. Funding should also support the development of training and professional development programs for procurement staff on embodied carbon and life cycle assessment through the Canada School of Public Service.

Finally, **the federal government should provide \$25 million over three years to the National Research Council for development of environmental product declarations (EPDs)**. EPDs are akin to “nutrition labels” that communicate a product's lifecycle environmental impacts. They are rapidly becoming the standard for low-carbon procurement, enabling comparisons of the embodied carbon footprint of various products.⁴³ EPDs require upfront costs to develop, which can be challenging for some manufacturers. The federal government should provide time-limited support—via grants or tax credits—via a cost-sharing approach with material producers. An investment of \$25 million would be comparable on a per capita basis to the \$250-million investment being proposed in the U.S. Build Back Better Act⁴⁴. This funding would support government efforts to gather data and set benchmarks, enabling smoother implementation of Buy Clean. It will also provide an opportunity to align Canadian Buy Clean criteria and standards with the emerging standards in the U.S., support competitiveness for exporters, and increase Canadian access to the \$650 billion U.S. federal procurement market.

⁴² Minister of Natural Resources. *Mandate Letter*. <https://pm.gc.ca/en/mandate-letters/2021/12/16/minister-natural-resources-mandate-letter>. (2021).

⁴³ Lewis, M., Huang, M., Waldman, B., Carlisle, S., and Simonen, K. Environmental Product Declaration Requirements in Procurement Policies. Carbon Leadership Forum, University of Washington. <https://carbonleadershipforum.org/epd-requirements-in-procurement-policies/>. (2021).

⁴⁴ Stashwick, S. Congress Can 'Build Back Better' With Low Carbon Materials. *National Resource Defence Council*. <https://www.nrdc.org/experts/sasha-stashwick/congress-can-build-back-better-low-carbon-materials>. (2021).

We thank the Honourable Chrystia Freeland, Deputy Prime Minister and Minister of Finance, and the Honourable Randy Boissonnault, Minister of Tourism and Associate Minister of Finance for inviting us to participate in this process. We would be pleased to discuss any of our recommendations with you in greater detail.

CONTACT

Merran Smith

Executive Director

merran@cleanenergycanada.org

250-858-5636

Joanna Kyriazis

Program Manager, Clean Transportation

joanna@cleanenergycanada.org

613-612-0912