Navigating the road ahead – rebuilding Canada’s powerhouse auto sector

Toward a stronger, sustainable auto sector

Canada is an auto-making nation.

For more than 100 years, Canada has built a reputation as an innovator and pioneer of automotive technology – from steam buggies to high performance gas-powered engines to highly sophisticated emissions-free self-driving vehicles.

The auto sector has grown to dominate Canada’s industrial landscape, particularly in the manufacturing power centre of Ontario. It is also very important to the industrial economy of Quebec. Its influence is felt both economically, as a leading employment sector and income generator, and culturally, as a stimulator of local communities, cityscapes and urban planning). For Canada’s working class, auto factories were a primary battleground to form unions, challenge corporate power and build solidarity to bargain fairer wages and safer working conditions – inspiring others to do the same. The contribution of Canada’s auto sector to the economic and social fabric of the country is incalculable.

Today, the sector is at an inflection point – a time of significant and uncertain change facing the industry and its workers

Climate change threatens the health, safety and well-being of all people on Earth. An over-reliance on non-renewable energy sources, such as gasoline, contributes significantly to the problem. Surviving this crisis and mitigating some of its now irreversible effects requires a rethink of how we do things – from what we eat, to where we work, to how we travel.

The global auto industry certainly contributed to this crisis. Mass-producing internal-combustion engines for more than a century meant freely emitting harmful carbon, methane and other pollutants. However profitable for shareholders and supportive of local economies this industry has been, it has also taken a drastic toll on the environment. Countries all over the world are designing plans to curb emissions with an eye to carbon neutrality. The auto sector is a focus of this change. How the industry reinvents itself in the face of this massive shift is a critical question facing the industry’s 14 million workers globally.[[1]](#footnote-1)

At the same time, climate change is not the only problem the auto sector and autoworkers face. This inflection point is also compelling governments and employers to assess jobs and domestic production capacity.

In 1999, Canada ranked among the top five auto-producing countries of the world. By the turn of the century, worker fortunes began to fade. In fact, since 2001 Canada’s auto sector shed one-fifth of its workforce, or about 35,000 good-paying largely unionized jobs, due to capacity reductions, layoffs and plant closures.

The turn of the century proved a watershed moment for the domestic industry as autoworkers faced new global competitive threats and shifting supply chains. Following the dismantling of the Canada-US Auto Pact in 2001 and the rise of free trade agreements and changes to global production processes, the absence of an active government-led industrial development strategy left Canada in the lurch. Virtually every other auto-producing nation committed to drive sector development through major state-led supports, favourable trade rules and competitive investment policies. Canada’s hands-off approach was an exception not the norm.

This period marked the beginning of China’s ascent as a low-cost automotive superpower. It further drove state-supported, export-driven growth of Japan and South Korea’s auto industries. Mexico too was on the cusp of massive investment inflows and production growth. Then the global financial collapse of 2009 hit and subsequently brought about the restructuring of the auto sector, punctuated by the bankruptcy filings of General Motors (GM) and Chrysler, plunging the Canadian auto industry to unseen depths.

The intervening years saw wage restraint, benefit reductions, pension attacks and the undermining of collective bargaining as common features of labour relations. Young workers, including apprentices, turned away from a sector that appeared dated, old-fashioned, and in inevitable decline.

Today, at this inflection point, there is a once-in-a-lifetime opportunity to write a new narrative for the auto sector – one that benefits workers and communities across the country. Canada has the skills, experience and natural wealth to lead the world in automotive production, innovation and supply chain stability. This can be a story of industrial rebirth and renewal – a story of inclusive economic growth and shared prosperity – a story of sustainability and environmental stewardship.

*Navigating the Road Ahead* – *Rebuilding Canada’s Powerhouse Auto Sector,* offers a comprehensive strategy on how Canada can seize this opportunity and form that narrative – one defined by active, coordinated and government-driven economic development through a series of concrete policy recommendations that benefit all stakeholders, including workers.

This vision sets out five core pillars for sector development.

1. Growing the domestic industry
2. Managing the transition to net zero
3. Enhancing the skills needed to succeed
4. Creating high quality, union jobs
5. Advancing equity and inclusion

Each of these pillars corresponds to a series of ambitious recommendations, developed by **Unifor’s Auto Policy Working Group** comprised of local union leadership, Auto Council and Independent Parts Supplier Council executive board members, members of the Unifor National Executive Board as well as national staff. In this approach, the goal is to map a path toward a sustainable auto industry, one that de-risks the future for autoworkers, buffering them against the pitfalls of vulnerable global supply chains, free trade and unregulated capital.

If done right, the rebirth of Canada’s powerhouse auto sector will provide a blueprint on how to bridge efforts at environmental stewardship with economic empowerment and inclusive growth for others to follow.

## **1. Growing the domestic industry**

### 1.1 Establish a national, auto industry strategy

Canada has the potential to develop itself as an automotive superpower on the world stage. Expanded production capacity in vehicle assembly and parts production can fuel growth in creating good union jobs, expanding workers’ skills as well as securing investments in technological advancements and innovations. More than that, Canada can strategically position itself as a global leader at every stage of the supply chain. This leadership includes capitalizing on internal combustion engine (ICE) vehicles that still dominate the market as well as rapidly rising alternative propulsion zero emission vehicles (ZEV) – from the mining and refining of critical minerals, of which Canada maintains significant stores, all the way through to recycling. From an economic development perspective, Canada is the envy of the world.

However, this expansion, and the economic benefits that go along with it, will not come to Canada by chance. Governments cannot simply cheerlead their way to product commitments, industrial expansion efforts and job creation by blaring the ideological trumpets of “low taxes” and “flexible labour standards.” Instead, countries the world over, such as the United States, China, Germany, France, Japan, Korea, Brazil and others, approach auto sector development as a strategic priority by using a range of trade, investment and economic oversight tools to achieve broader national objectives in areas of job creation or decarbonization.

Canada’s federal and provincial governments clearly understand the strategic potential of auto sector growth. Investment attraction tools, particularly the federal Strategic Innovation Fund and its associated Net Zero Accelerator Fund, are proving effective. For instance, SIF monies, that were matched dollar-for-dollar by the Ontario government helped leverage nearly $2 billion for retooling Ford’s Oakville Assembly Plant as well as financial supports for GM plants in Oshawa and Ingersoll as well as Stellantis facilities in Windsor and Brampton. The bulk of these commitments were negotiated in conjunction with Unifor-Detroit 3 collective bargaining in 2020.[[2]](#footnote-2)[[3]](#footnote-3) Additionally, governments continue to assign internal resources to lead strategy tables, stakeholder dialogue and other initiatives to better understand and activate this shift.

However, solidifying and growing the auto sector and its associated supply chain requires more than subsidy commitments. It also requires a more cohesive whole-of-government approach to sector development, underpinned by a comprehensive and goal-oriented industrial strategy.

**Recommendation 1. Establish a comprehensive national automotive industrial strategy and program.** Growing the auto sector and maximizing the benefit of Canada’s powerhouse position along the supply chain requires coordination and clearly articulated objectives, including plant and production capacity targets. Absent such a plan, sector development is at risk of taking place along a more politicized timescale that treats investment as a tool for political competitiveness rather than a strategic economic building block. A comprehensive auto industrial strategy can usefully serve as a framework through which government officials, in various departments, and at federal, provincial, territorial and municipal levels, must understand and craft other related policy measures, including vehicle efficiency mandates, cross-border trade policy, regional development and infrastructure priorities as well as skills training, adjustment and fiscal incentives, among others.

**Recommendation 2.** **Allocate responsibility for Canada’s auto sector strategy to a dedicated Ministry**. Efforts to coordinate a comprehensive and national industrial strategy across various federal ministries and agencies (including Innovation, Science and Economic Development; Natural Resources Canada; Employment and Social Development Canada; among others) without a dedicated oversight body is both challenging and an inefficient use of government resources. The same is true for provincial governments, notably Ontario. Allocating responsibility for this work to a dedicated office is critical. An adequately resourced government body responsible for Canada’s auto sector strategy could function as a standalone Ministry of Automotive Supply Chain Development with dedicated staff resources, decision-making powers and a specific mandate. Also critical is establishing a permanent federal-provincial body to coordinate these efforts.

**Recommendation 3. Establish a ‘one-stop shop’ investment attraction framework.** Through the office of the Ministry of Auto Supply Chain Development, governments must establish a single streamlined investment attraction division that can champion new investment opportunities and help navigate applications through various federal and provincial funding as well as municipal support programs. Such an approach would assist in securing new vehicle and component part production mandates as well as related supply chain investments in Canada. A “one-stop shop” can accelerate applications and review procedures, bring greater government expertise to the application process and help avoid unnecessary lag times. Governments must also ensure investment supports for major auto sector projects are on par or better than competing jurisdictions.

**Recommendation 4: Advance trade policies that support job stability and promote ‘fair trade’ principles.** Of all manufactured goods in Canada, cars and car parts are the country’s most valuable export commodity. Even in its early days, the auto industry has always relied heavily on cross-border trade, mostly in North America. Unfortunately, Canada’s relentless pursuit of so-called free trade agreements, including with low-wage, low-cost and import-resistant jurisdictions, contributes to a competitive imbalance for the domestic auto sector. Consider that Canada for much of its history exported more vehicles and parts to the world than it imported. In 2005, Canada reported its last annual trade *surplus* in automotive trade of $4.5 billion. Since then, Canada’s automotive trade *deficit* has risen to more than $37 billion in 2021, a new record.[[4]](#footnote-4) For many years, Canada dangled access to its vehicle market and, by extension, the North American market, as a carrot to secure new free trade agreements including with Mexico, Korea and the European Union, among others. This approach has put added pressure on Canadian autoworkers to have wages cut and other costs, under threat of offshoring and job loss. Stronger auto trade and labour provisions in the new North American trade agreement that replaced NAFTA, the Canada-US-Mexico Agreement (CUSMA), are a shift in the right direction, but leaves room to do more. Canada must advocate for trade policies that expand, not harm, the domestic auto industry and its workers, by renegotiating or withdrawing from trade treaties that fail to meet this objective.

### 1.2 Adopt a ‘whole-of-supply chain’ approach to investment attraction

Securing new product programs in passenger vehicle assembly is certainly a critical measuring stick of Canada’s powerhouse prowess. Since 2000, the closure of major Canadian assembly facilities dealt devastating blows to workers and to local communities in: Sainte-Thérèse, Quebec (GM car plant); Windsor, Ontario (Chrysler truck plant); Talbotville, Ontario (Ford car plant); Oakville, Ontario (Ford truck plant); and Oshawa, Ontario (GM truck plant). The resultant loss of production capacity also significantly affected jobs across the supplier base and elsewhere in the economy. Locating new product programs, as was done following the restart of truck production at the Oshawa Assembly Complex, has major spillover benefits, including the restart of parts supplier facilities and re-employment for thousands of workers.

However, new vehicle assembly programs are not the only measure of auto sector success. The opportunities for Canada today require a “whole-of-supply chain” assessment of the industry’s growth potential. This value-chain strategy includes major investments in needed upstream component parts production, including those related to future electric vehicle (EV) production, such as battery cells and related modules,[[5]](#footnote-5) electric powertrain and drivetrain systems, power electronics, thermal heating systems and others.

Connected with this value-chain approach, Canada must expand its capacity in mining and refining critical minerals needed to feed the broader industry, including lightweight metals and battery grade precursor materials. In fact, Canada is the only country in the world with significant mineral deposits needed for advanced battery production, including nickel, graphite, lithium and cobalt. Recognizing the strategic importance of this upstream development to the Canadian auto sector’s growth will provide Canada a unique advantage and a foundation upon which an industrial strategy can be built. Canadian officials must not squander this advantage by allowing the export of raw materials for refining and upgrading outside of Canada.

**Recommendation 5. Focus investment in domestic manufacturing of component parts.** The Canadian auto sector benefits from a deep pool of nearly 1,000 component parts suppliers,[[6]](#footnote-6) employing approximately 75,000 workers. The shift toward vehicle electrification will significantly affect the parts supply base. In some cases, the viability of some parts suppliers will be threatened by a decline in demand for certain existing component parts, particularly those connected to gasoline-based powertrain, fuel and exhaust systems as well as components not incorporated in electric vehicles. In other cases, transferrable parts must adapt to the specifications of ZEVs for suppliers to secure future contracts. Most importantly, Canada must identify new high-value, in-demand parts for ZEVs and focus investment attraction efforts on them, building production capacity right here in Canada.[[7]](#footnote-7) Electric motor systems, e-axles, power electronics and battery cells are some of the lucrative component parts powering electric cars. Securing production of these parts creates new job opportunities and, in some cases, pathways for existing Canadian powertrain (i.e. engine and transmission) facilities to diversify production and steadily transition to an all-electric future. Stellantis and LG Energy’s $5 billion battery cell manufacturing investment in Windsor-Essex in March 2022 shows that, with the right mix of supports, Canada can attract these critical EV component parts and the thousands of jobs that come with them.[[8]](#footnote-8) Canada must also focus resources to secure lucrative supplier parts contracts for both existing ICE vehicles while securing future product commitments for parts in ZEVs at the same time.

**Recommendation 6. Actively support domestic battery-grade material production.** Nothing in the Strategic Innovation Fund nor provincial investment funds precludes support for the development of important precursor materials needed to feed Canada’s growing battery supply chain. However, Canada currently produces virtually no battery-grade materials derived from nickel, cobalt, manganese, graphite or lithium despite storehouses of these critical minerals.[[9]](#footnote-9) Given the strategic importance of such production, it is imperative that government officials calibrate investment attraction efforts toward these areas. Investment announcements by both GM[[10]](#footnote-10) and BASF[[11]](#footnote-11) show that Canada can grow this strategic segment of the battery supply chain with active government support. This growth includes the expansion of smelting and refining capacity in Canada. Government must also ensure that development is conditional on and guided by strict principles of environmental stewardship and sustainability.

**Recommendation 7. Build Canada’s critical mineral processing sector to maximize domestic economic benefits.** Canada has identified a list of critical minerals[[12]](#footnote-12) considered vital to the nation’s low-carbon economic growth plan. Under its Minerals and Metals Plan, Canada is positioning itself as a leading mining nation, recognizing these materials as key to the economic security of Canada and its allies. In the context of auto sector development, access to these minerals presents significant industrial benefits. It is imperative that Canada maximize the value of such assets to meet its economic, job-growth and sustainability objectives. Budget 2022, and the earmarking of $3.8 billion in funds to accelerate production and processing of critical minerals, takes an important first step.[[13]](#footnote-13) Government officials may consider domestic processing opportunities and arrangements prior to awarding permits for mineral exploration and mining development. This process can involve mining firms demonstrating efforts to seek offtake agreements or other supplier arrangements with Canadian-based processors and refineries. Governments may also consider purchasing and stockpiling critical minerals and redirecting those materials to processors with incentives to set up shop in Canada. To achieve these goals, Canada must undertake strong oversight to guard against foreign ownership and control of critical minerals and processing capacity, including through the Investment Canada Act.

**Recommendation 8. Attract domestic semiconductor production to Canada.** The severe supply-chain disruptions that stalled auto production around the world in recent years, illustrates the industry’s heavy reliance on computer chips. Recent events also raised flags over the heavy concentration of semiconductor manufacturing in specific parts of the world. In fact, South Korea and Taiwan account for virtually all advanced semiconductor production[[14]](#footnote-14) led by major corporate players Samsung and TSMC.[[15]](#footnote-15) The United States and China are developing noteworthy plans to expand semiconductor production as a matter of national security. Canada’s microscopic footprint in this growing sector hurts our industrial development ambitions. The federal government would be wise to incubate a domestic semiconductor industry to supply strategic growth sectors. Canada should follow the strategic advice of the Canada Semiconductor Council[[16]](#footnote-16) and foster a domestic semiconductor ecosystem around Canada’s domestic EV strategy.

**Recommendation 9. Encourage end-of-life vehicle and battery recycling.** Canada has a patchwork of rules and procedures governing the disassembly of vehicles, the proper disposal of hazardous materials and the recovery of reusable parts. The rise of battery electric vehicles (BEV) brings with it a host of new challenges, and opportunities, to advance Canada’s vehicle recycling programs and secondary use for critical parts. Provincial Extended Producer Responsibility (EPR) programs that place responsibility on automakers to track materials and properly manage hazardous components[[17]](#footnote-17) are positive initiatives that must extend across the country. These initiatives should also include growing Canada’s capacity to recycle and repurpose lithium-ion batteries. Expanding the scope of component parts in EPR programs can also encourage automakers to better utilize existing in-house networks of Parts Distribution Centres to store parts and manage after-market logistics.

### 1.3 Leverage government procurement to encourage Canadian-built vehicles

As purchasers of goods and services, governments certainly have a role to play in supporting and growing domestic industries. Altogether, federal, provincial and municipal governments as well as government-run agencies, procure approximately $200 billion each year. If used strategically, this procurement would act as a sizeable amount of economic stimulus that can bolster industrial development, incubate new technologies and innovations and create jobs.[[18]](#footnote-18) To accomplish these goals, government agencies programmed to seek out lowest-cost suppliers must recalibrate their thinking and look more broadly at the value of contracts to the domestic economy.

In recent years, Canada committed to lowering emissions through its vehicle fleet. In 2016, at a tri-nation summit, Canada, Mexico and the United States agreed to deploy more ZEVs across government-run agencies.[[19]](#footnote-19) Canada is also a signatory to the 2016 Government Fleet Declaration that commits to accelerating low-emission and electric vehicles into the fleet mix and encourage other provincial and municipal governments to do the same.[[20]](#footnote-20) Following this commitment, the federal government announced its intent to ensure ZEVs or hybrids comprise 100 per cent of all new light-duty administrative fleet purchases by 2030.[[21]](#footnote-21) [[22]](#footnote-22) Natural Resource Canada operationalizes this fleet commitment through its Greening Government Fleet guideline released in 2018.

Despite this noble effort, the government’s approach is not coordinated with Canada’s industrial development objectives. In fairness, at the time in which Canada first made these commitments there were few, if any, Canadian-made products available to meet the government’s demand. Only some Plug-in Hybrid Electric Vehicle (PHEV) models, including the Windsor-built Chrysler Pacifica, were viable options, a fact that on its own should have sent alarm bells ringing throughout the halls of government. Thankfully, the landscape is beginning to change. Production of EVs is coming to Canada with investments in GM Ingersoll, Stellantis’ Windsor Assembly Plant and Ford Oakville in the near future. Further, it is the government’s own stated objective to advance and expand this industrial footprint of EV and battery production domestically. However, government procurement policy and the ambitions of fleet emissions reduction must compliment Canada’s industrial policy. Public dollars must support domestic investment wherever possible.

**Recommendation 10. Establish** **made-in-Canada guidance for government fleet vehicle purchasing.** Natural Resources Canada must amend its Greening Government Fleet guidance to identify low-and zero emission vehicles assembled in Canada, including those that contain significant levels of Canadian parts content, for provinces and municipalities. Federal, provincial and municipal governments can undertake an assessment of existing vehicle fleets and their specifications and issue guidance to relevant agencies requiring them to include, where possible, Canadian-made vehicles in any requests for procurement. Canadian governments may also consider establishing price preferences for domestic-built EVs in procurement orders, similar to the rules set by the State of Illinois in November 2021.[[23]](#footnote-23)

**Recommendation 11. Develop a joint federal-provincial fleet renewal funding program**. Further extending the objectives of the Greening Government Fleet program, federal and provincial governments shall establish a joint fund that provides provincial and municipal procuring agencies the financial support to renew existing vehicle fleets with low-emission or ZEVs. Requirements that procurement bids include vehicles assembled in Canada or that contain significant levels of Canadian parts content shall apply wherever possible.

### 1.4 Support leading-edge research and development

## Part of what makes Canada’s automotive sector such a lucrative part of the industrial landscape is its significant contribution to research, development and innovation. Canada has become a global hub for engineers, developers and innovators as well as a leader in ground-breaking advances in electric vehicle technology, battery development, lightweight materials, secure communications and artificial intelligence.

The Canadian Automobility Hub[[24]](#footnote-24) in Windsor, Ontario is the latest innovation project funded in part through an array of federal and provincial support programs. These programs aim to solidify Canada as a global automotive technology “accelerator,” attracting teams of engineers, designers and developers to support and commercialize new technologies. Ontario is not alone. Quebec is also home to a burgeoning battery supply chain and is home to the country’s largest automotive testing and research centre funded through Transport Canada.[[25]](#footnote-25) Domestic auto- and parts-makers also engage in direct research, development and testing at various facilities across the country, including Stellantis’ Automotive Research and Development Centre in Windsor, Ford’s Research and Engineering Centre in Ottawa[[26]](#footnote-26) and General Motos’ autonomous vehicle test track in Oshawa.[[27]](#footnote-27)

While encouraging, more research and development support on its own will not fix Canada’s automotive challenges. Global companies often take advanced technologies and put them to work in low-cost foreign jurisdictions. Assisting Canadian-based companies to upgrade their technical and engineering capacities and develop and produce new products can generate some clear economic benefits here at home.

**Recommendation 12. Ensure R&D funding supports Canadian production and employment.** Governments in Canada offer a range of investment supports for sector-wide research and development, including through the Strategic Innovation Fund and the Scientific Research and Experimental Development Tax Incentive Program. Provincial government programs make sizeable contributions like Ontario’s Autonomous Vehicle Research and Development Partnership Fund and Quebec’s capital financing arm *Investissement Québec*. It is critical that public investments provided to auto industry players, from larger Original Equipment Manufacturers (OEMs) to small start-up technology firms help grow Canada’s production footprint and employment in Canada’s auto industry.

## **2. Managing the transition to net zero**

### 2.1 Supporting at-risk firms

The shift to electrification brings major opportunities that Canada can harness but also poses notable risks. Addressing these risks is crucial in order to both sustain and grow the domestic industrial footprint, including among the auto parts supplier base.

It is widely understood that ZEVs, specifically electric vehicles, contain far fewer complex powertrain parts than traditional gas-powered cars. Conversely, EVs contain more electrical and electronic components than gas-powered cars.[[28]](#footnote-28) In a study published through the Future of Canadian Labourforce (FOCAL) initiative, researchers examined 303 component parts connected to gas-powered vehicle engines, drivetrains, exhaust systems, fuel systems, as well as the steering and suspension systems, more than half of them were identified as non-transferrable to BEVs.[[29]](#footnote-29) The FOCAL report also identified roughly 16,000 Canadian auto parts jobs in “high impact” workplaces (i.e. those producing parts not transferrable to EVs) accounting for approximately one-fifth of all parts employment in Canada.

Expanding the footprint of electric vehicle and parts production in Canada is crucial. The greater the scale of new production capacity, the greater the opportunity for workers to continue plying their skills in this growth industry. However, governments cannot ignore the disruptive effects this transition may have on workers. Adequate protections must be in place to help workers adjust to this changing industry, upgrade skills and secure high-quality auto jobs for years to come.

**Recommendation 13.** **Launch an auto parts supplier transition support program**. The federal government must dedicate resources to undertake a comprehensive risk assessment of Canada’s auto parts industry. This work must be done in partnership with provincial governments and under the oversight of the proposed Ministry of Automotive Supply Chain Development, It is critical for government to understand the country’s supplier vulnerabilities, where these firms are located and develop strategies to support them. Proactively identifying at-risk suppliers and coordinating directly with them around future product plans, advising them of government supports and linking them with new customers as the EV industry grows, will enable governments to manage this transition in a constructive way. By working with unions, governments can also determine the most appropriate training and transitional supports workers need. It is also necessary to make transition supports conditional on firms maintaining both collective bargaining agreements and production in Canada.

### 2.2 Improving worker adjustment supports

Periods of industrial restructuring without the active participation of unions, through collective bargaining, or government, through social programs, puts workers in a vulnerable position. It is in these periods of transition that deep-seated vulnerabilities of workers surface. Employers will look to wealthy investors, shareholders and governments to raise funds, allowing them to both retool operations and maintain healthy profits. On the other hand, workers rely on their savings, personal networks as well as other supports negotiated by unions and through established government programs. Oftentimes, employers will use these periods of transition to place new demands on workers – in effect, asking workers themselves to pay for this transition through lower wages, lesser benefits and weaker work standards. Without sufficient supports that empower workers, including through income security and skills training measures as well as union protection, these transition periods can severely curtail workers’ rights.

Autoworkers around the world are experiencing this tension. For instance, Tesla is butting heads with German autoworkers union IG Metall by refusing to accept industry standard wages and working conditions at its gigafactory in Berlin.[[30]](#footnote-30) In the United States, the United Auto Workers (UAW) union appeared headed for a collision course with GM following reports that its joint venture battery company, Ultium LLC, will decide workers’ wages, suggesting no role for the union or collective bargaining.[[31]](#footnote-31) GM later walked back those comments and supported the rights of Ultium workers to organize with UAW.[[32]](#footnote-32)

Maximizing the benefit of the EV shift means looking beyond the sustained profit margins of employers. It means developing strategies and financial supports for workers who are most vulnerable to industrial transitions. It also means preserving workers’ fundamental rights to collective bargaining, decent working conditions and fair wages.

**Recommendation 14.** **Create a dedicated auto industry labour market adjustment program**. The federal government must develop and coordinate, along with provinces, the delivery of a constellation of job transition supports for autoworkers affected by job displacement resulting from a shift to ZEV or other significant technological change. These supports would include tailored income maintenance, labour market readiness, skills upgrading, relocation assistance, early retirement bridging, and other supports necessary to successful labour market adjustment. Dedicated federal and provincial funding to create community-based, union-run unemployed worker help centres can support these efforts. These centres would serve as local job-skills transition hubs and recruitment platforms, built on a successful model of peer-to-peer learning and support. Building structural links between this broader adjustment program and the labour market skills assessment coordination is crucial.

### 2.3 Making electric vehicles more affordable

One of the biggest barriers to EV adoption in Canada is their relatively high purchase price relative to gas-powered cars.[[33]](#footnote-33) In 2021, the average transaction price for a new EV was more than 20 per cent higher than the average car or truck sold in the United States.[[34]](#footnote-34) The high cost and still limited supply of advanced batteries and other component parts can partly explain this price gap. Industry watchers agree that until automakers can build and profit on EVs at a level that is comparable to conventional vehicles, consumer prices will remain above average.[[35]](#footnote-35)

Governments eager to ratchet down greenhouse gas (GHG) emissions are seeking ways to encourage faster uptake of EVs. For instance, Canada has set its sights on implementing a national sales mandate requiring ZEVs to account for 20 per cent of all new light duty vehicle sales by 2026, 60 per cent of sales by 2030, reaching 100 per cent by 2035.[[36]](#footnote-36) Other jurisdictions have taken similar measures, such as the United Kingdom, California and China.

However, mandates alone will not encourage EV uptake. In a submission to federal consultation on ZEV mandates, Unifor argued for a “holistic” policy approach to spur EV adoption by marrying government sales mandates with major infrastructure upgrades and industrial development efforts.[[37]](#footnote-37) In fact, of all new light-duty vehicle registrations in Canada, less than 4 per cent are EVs. Virtually all are registered in either B.C. or Quebec owing to both provinces’ aggressive consumer purchase incentives.[[38]](#footnote-38)

Making this shift to electrification means addressing the affordability gap, acknowledging the price barriers and introducing meaningful supports to overcome it.

**Recommendation 15. Increase vehicle purchase incentives.** Doubling the iZEV rebate program to $10,000 is an immediate step the federal government can take. Provincial governments must also introduce similar and complementary consumer rebates where they are not currently in place. To ensure fair distribution of public funds, governments must also consider setting in place a dynamic income-tested rebate once market penetration for new light duty ZEV purchases crosses the 50 per cent threshold (i.e. eliminating subsidies to individuals with incomes above $200,000 and establishing a sliding scale subsidy for those below that amount).

**Recommendation 16.** **Introduce a temporary vehicle trade-in rebate program**. Heavily affected by production downtime and supply-chain disruptions, annual Canadian and U.S. auto industry sales continue to lag pre-pandemic levels by 15 per cent[[39]](#footnote-39) and 12 per cent[[40]](#footnote-40) respectively. Developing vehicle trade-in or “scrappage” programs can simultaneously boost demand for newer, more fuel-efficient vehicles, such as EVs, and reduce overall carbon emissions by pulling higher-polluting older vehicles off the road. Such a program can apply to vehicles aged 12 years or older, the average lifespan of a vehicle, and work in conjunction with dollar-for-dollar matching incentives provided by automakers.

### 2.4 Expanding electric vehicle charging stations in Canada

Governments in Canada and around the world continue to encourage greater consumer adoption of battery electric cars or those powered by alternative propulsion systems. Apart from consumer price, the biggest barriers to mass adoption of EVs are so-called “range anxiety” concerns – the fear of running out of battery power during a road trip, especially as Canada’s colder climate will deplete batteries faster – and the lack of access to charging infrastructure.[[41]](#footnote-41) To address these barriers, Canada must undertake a major expansion of its electric vehicle-charging network. As of 2021, Canada’s charging network included 15,000 public or semi-private chargers,[[42]](#footnote-42) at approximately 6,500 stations throughout the country.[[43]](#footnote-43) Analyst reports list Canada among the bottom tier of “EV readiness” due in part to slow moving efforts to expand needed infrastructure, notably chargers.[[44]](#footnote-44)

On the heels of the 2021 federal election, the Liberal government committed an additional $880 million to build 65,000 more chargers by 2026.[[45]](#footnote-45) This expansion is in addition to other commitments made by automakers, including GM, to develop 40,000 charging stations throughout North America.

As positive as these developments seem, access to charging infrastructure must be exponentially higher if Canada is to succeed in reaching its ZEV targets. For instance, benchmarks set by European Union agencies recommend a ratio of 10 charging stations for every electric vehicle on the road.[[46]](#footnote-46) Canada will have to significantly increase its planned infrastructure investments to meet this ratio. Specifically, the government will need to benchmark 4 million chargers to accommodate an expected on-road fleet of approximately 39 million electric vehicles based on current sales targets for ZEVs.[[47]](#footnote-47)

These concerns with infrastructure raise other considerations too. How EV owners who reside in multi-unit residential buildings or are otherwise without sufficient space to install chargers at home will access infrastructure must be addressed. Access to a variety of charging types, including levels one, two and DC (i.e. fast) charging stations, is also important and must cater to the needs of diverse communities across the country. Ensuring that sufficient investments and expansions are made for clean, emissions-free energy production added to provincial and territorial baseload capacity are also necessary to avoid the unintended consequence of offsetting more GHG-free vehicles with higher levels of GHG-intensive power generation.

**Recommendation 17. Establish a charging network benchmark of at least one charger for every ten on-road electric vehicles.** Establishing and communicating a national charging benchmark will provide direction for infrastructure planners as well as coordination efforts between various levels of government. A benchmark also sends a signal to prospective EV buyers to ease “range anxiety” expressed as one primary barrier to adoption. Regular monitoring is critical to ensure appropriate resource deployment and access points in various regions of the country, especially in remote communities.

Meeting this ambitious benchmark will require further investments by all levels of government, partially funded by automakers themselves, in accordance with anticipated uptake in EV ownership. Investments include the retrofitting of public spaces, including libraries and community centres, multi-unit residential dwellings and in conjunction with the existing network of fuel stations in communities and along highway corridors. Increased charging capacity must include a mixture of level two and DC fast charging stations.

**Recommendation 18. Expand clean power production to bolster provincial baseload capacity.** Convene a federal-provincial task force to assess existing capacity issues and opportunities for joint-investments in more GHG-free power generation, emphasizing the production of energy through renewable sources where possible.

## **3. Enhancing the skills needed to succeed**

### 3.1 Understanding labour force needs, investing in workers’ skills

Labour market skills are constantly evolving. Ensuring workers are equipped with the knowledge and tools needed to do their jobs is necessary to secure work, support sector development and create good jobs. Changes in workplace skills are constant. This reality is why workers, those utilizing the skills, must have a say in how jobs are designed and skills are defined, safeguarding against employer attempts to weaken work standards to save costs. Regular and barrier-free access to training and skills upgrading, including sustainable income supports, is necessary for all workers, including those displaced by new technologies and operational changes at the workplace.

In the auto sector and over time, unions negotiated significant protections for workers – from enhanced income replacement while undergoing training or on layoff, to work ownership language that aims to preserve the integrity of skilled trades. However, in times of transition more supports are necessary, including from government.

Electric vehicle production brings with it new skill demands on workers, especially among those in the supplier base as new components grow in demand, such as battery cells, power electronics and technologically-intensive parts. At the same time, the anticipated rise in automated production systems, artificial intelligence, advanced robotics and mass data processing – the elements of what some perceive as the next phase of advanced industrial manufacturing, or “Industry 4.0” – may affect and alter existing skillsets for autoworkers. Studies[[48]](#footnote-48) warn of potential job disruption, including the elimination of some job-associated duties among autoworkers, affecting production and skilled trades work to varying degrees. Those same studies also project that new skills will surface to offset some of the changes to job duties in areas such as 3D printing, scanning, virtual reality and simulation, cyber security, robotics and mechatronics.[[49]](#footnote-49)

Taking stock of this shifting landscape of skills for the future automotive industry and ensuring workers have access to any necessary training, is critical. This analysis is necessary not just for job retention but for investment attraction and productivity. Workers alone cannot bear the burden of navigating this shifting terrain. As a key pillar of any industrial policy, governments must lead on skills tracking and training supports in collaboration with employers, unions and community partners. The good news is that Canada has a head start thanks to a robust network of training institutions and trades bodies as well as previous experiences dealing with industrial transformation.

**Recommendation 19. Develop a comprehensive national skills assessment and inventory.** Mapping and assessing the shifting skills demands for autoworkers resulting from evolving work processes as well as the steady shift to electric vehicle and parts production is a critical tool to manage this transition to net zero. Building an inventory of skills can assist stakeholders in identifying projected needs and existing gaps, assessing capacity and access issues as well as promoting training opportunities to workers. Provincial ministries responsible for professional education and training, along with Employment and Social Development Canada, which oversees income assistance programs such as Employment Insurance, sector development funds and Canada’s Labour Market Information infrastructure, must take the lead in convening such a committee. This inventory may also assist in identifying and recruiting workers displaced from subsectors of the broader auto industry (e.g. parts distribution and vehicle dealerships), recruiting workers from other economic sectors facing transition pressures (e.g. oil and gas) and improving the delivery of relevant, high-quality technical and other essential skills training for workers.

## 3.2 Enhance Canada’s skilled trades

As technology advances and the tools needed to perform work change, it is more important than ever to ensure the qualifications and credentials that underpin Canada’s skilled trades evolve along with it.

Canada needs skilled workers. Labour market forecasts consistently predict severe trade shortages, both in the building and construction trades as well as within the auto sector. Campaigns led by industry groups and government that draw attention to the trades as a career choice for young people are underway in all parts of the country, but are met with at best mixed results. In fact, in the ten years between 2010 and 2020, the number of newly registered industrial millwright apprentices remained static, fluctuating from 1,400 to 2,100 per year, following a similar trend line for industrial electricians.[[50]](#footnote-50)

Employers demand skilled workers but generally want to hire them “ready-trained.” This reluctance to invest in apprentices and skills training is one part of the larger problem. Instead of opening up new spaces for apprentices, too often, employers will attempt to reconfigure and redefine the work that skilled tradespersons do. Rather than enhance their skillsets, the introduction of new technology can lead to disputes over jurisdiction, with employers claiming that new skills and work tasks fall outside a journeyperson’s responsibility. This approach threatens to erode the skill base of trades workers in the auto sector and undermines the quality of work in the long run.   
  
**Recommendation 20. Protect existing scopes of practice and ensure new skills fall within existing Red Seal certification framework in Canada.** As the shift toward electrification and new Industry 4.0 work processes takes place, the pre-existing challenges of trades, attraction, retention and preservation, will rise to the surface. Governments, including provincial trades oversight bodies, must calibrate new skills such as 3D printing and scanning, virtual reality, simulation and robotics through Canada’s Red Seal certification framework or include these skills within expanded scopes of practice across existing trades.   
 **Recommendation 21.** **Harness interest in vehicle electrification to attract new apprentices.** The speed at which Canada’s auto industry will transition to electric vehicle production and what that footprint looks like remains unclear. However, within a few years, the outlook on Canada’s auto industry future went from bleak[[51]](#footnote-51) to bright. A rapidly growing industry that is contributing to reduced GHG emissions and achieving Canada’s broader net zero ambitions, has a lot to offer a new generation of workers. Using this appeal as a launchpad to attract young workers into the skilled trades may greatly assist ongoing government and employer recruitment efforts.

## **4. Creating high quality union jobs**

### 4.1 Actively encourage union jobs and collective bargaining

Auto sector jobs are largely good jobs. Auto assembly workers in Canada, for instance, earn wages approximately 30 per cent above the national average for all workers.[[52]](#footnote-52) These above-average wages as well as access to additional group insurance, pensions, income maintenance programs and other benefits, are a result of collective bargaining advanced over decades by Unifor. These “union benefits” are so well established in the auto industry that all automakers, including Toyota and Honda, neither of which are yet certified as a union shop, provide comparable benefits. Non-union benefits, of course, come without the added value of union representation for workers. The positive effects of unionization have positioned the auto sector as a driver of good middle-income jobs generating significant spillover economic benefits for families, neighborhoods and communities. In 2019, for instance, autoworkers’ wages contributed $8.7 billion to the broader economy.[[53]](#footnote-53)

Frustratingly, rigid and imbalanced labour laws deny far too many workers the benefits of unionization. This phenomenon is as true in Canada as it is in jurisdictions around the world. Despite high levels of union density in auto assembly, where roughly two thirds of workers have collective bargaining coverage, unionization rates are lower among smaller supplier parts firms, approximately half the rate of the assembly sector, as well as in distribution, services and dealerships. Overall, private sector union density in Canada today hovers around 15 per cent of the workforce, falling from nearly 30 per cent in the early 1980s.[[54]](#footnote-54) Automakers, like other multinational enterprises, continue to take advantage of global trade agreements and expanded global supply chains to source goods from low-cost, non-union jurisdictions. Growing global competition for product mandates creates a more vicious environment that puts downward pressure on labour rights.

Changing course requires all levels of government to advocate actively for unionization and establish laws that improve workers’ access to unions and free collective bargaining – a fundamental right under the Canadian Constitution as well as international labour standards. Fair labour laws must protect workers’ rights to unionize against employer intimidation and threats. This need includes enabling quicker, more efficient ways of certifying unions, alternative and broad-based models for collective bargaining and stricter penalties for employers who break the law.

**Recommendation 22. Require all recipients of public investment supports to establish union neutrality covenants** **as a condition of funding.** The Strategic Innovation Fund has proven itself as a powerful tool to leverage public funds to drive investment and strategically develop key industries, including auto. Those receiving public funds from any level of government must commit to advancing Canada’s broader social objectives, ensuring that the constitutional rights of workers are advanced. Employers in this case, must commit to uphold fundamental union rights within their operations in Canada and commit to taking a neutral stance on unionization among employees, meaning that they will enable workers to certify a union without interference or intimidation.

**Recommendation 23. Establish card-based union certification in all jurisdictions.** In order to support workers’ right to unionization, the certification process must be fair for workers and free from employer intimidation. Automatically certifying a union once a majority of workers sign a union card eliminates the requirement to hold a second vote, often marred by employer counter-campaigns. It also creates a less confrontational, fairer path for workers, including autoworkers, to exercise their right to unionize and undertake collective bargaining.

**Recommendation 24.** **Require all trade agreements to include strong and enforceable labour provisions.** Canada is a trading nation. However, preferential trade arrangements, including free trade agreements, investment pacts and others, for the past 30 years have grown neither Canada’s auto industry nor improved autoworkers’ wages and working conditions. Instead, free trade-led globalization has emboldened multinational automakers to extend supply chains over longer distances and secure greater profits by shifting production to low-cost jurisdictions. For the most part, trade agreements provide workers with little to no recourse to combat these exploitative practices. However, changes to the NAFTA implemented in 2020 marked a significant shift in how labour protections can intersect with free trade. Under the new North American trade pact, CUSMA, employers face severe penalties if they deny workers’ right to free collective bargaining and union organizing, up to and including a ban on exports. Mexican workers at the GM truck plant in Silao successfully organized an independent union in February 2022,[[55]](#footnote-55) breaking from a decades-old protection agreement that trampled autoworkers’ rights. The independent union was organized after the United States government invoked the special labour protections and threatened sanctions under CUSMA. All trade arrangements entered into by Canada must include terms that obligate both governments and employers to adhere to international labour standards, including the right to free and fair collective bargaining, terms backed by fully enforceable conditions that are accessible to workers.

**Recommendation 25. Develop a sector-based bargaining framework for the automotive parts industry.** Standardized work conditions, such as wages and benefits across a targeted sector, provide a measure of stability and security for workers, particularly within a heavily pressurized and cost-competitive auto parts industry. Unlike in the auto assembly sector, comprised of a handful of original equipment manufacturers whose wages and benefits are generally aligned, and follow the terms of the “master” settlement negotiated by Unifor, the parts industry represents a range of large top tier firms and smaller second tier firms. As a result, hourly rates of pay are scattered, ranging from minimum wage to more than $30 per hour depending on the supplier, as are benefits, premium rates, and other employment terms. Following the lead of other automaking countries, including those in Europe, governments in Canada must explore the merits of a sector-wide collective bargaining framework intended to support workers, create cost certainty for suppliers and eliminate the incentive to cut labour costs as a means to attract investment.

## 5. Advancing equity and inclusion

### 5.1 Developing more equitable and inclusive workplaces

The auto sector in Canada continues to advance diversification efforts, including by providing new job opportunities for indigenous workers, workers of colour, women, LGBT persons and people living with disabilities. Recent federal $10 per day childcare agreements with provinces, as well as efforts to focus on gender equity in hiring practices at the restarted GM assembly plant in Oshawa, signal that important steps are taking place, and serve as a foundation upon which to build.[[56]](#footnote-56)

Despite these and other creative efforts championed by Unifor through collective bargaining, to make good auto sector jobs more accessible and inclusive, including the creation of a Racial Justice Advocate program[[57]](#footnote-57) across unionized auto plants in 2020, the auto sector continues to lag on diverse workforce representation. Women, for instance represent approximately one-quarter of workers in Canada’s auto industry (23 per cent in assembly plants; 25 per cent in parts facilities), which falls below the share of women in Canada’s manufacturing sector overall (28 per cent).[[58]](#footnote-58) Indigenous workers, who comprise roughly 4 per cent of the Canadian workforce, are under represented in auto jobs as well (2.5 per cent in auto assembly; 1.9 per cent in parts).[[59]](#footnote-59)

In the auto parts industry, black women and other women of colour represent 11 per cent of the workforce, which is slightly higher than their representation in the overall Canadian workforce (10 per cent). However, in higher wage auto assembly jobs, these workers represent only an estimated 4 per cent of the workforce.[[60]](#footnote-60) Further, women’s participation in the skilled trades remains very low, representing approximately 6.5 per cent of key auto-related trades occupations.

Compounding these diversity challenges is a persistent gender pay gap in Canada’s auto sector ($1.48 per hour in assembly; $3.82 per hour in parts). Likely due to above-average rates of unionization, this auto industry gap is narrower than the manufacturing sector as whole ($4.43 per hour).[[61]](#footnote-61)

Encouraging greater diversity in Canada’s auto sector across all under-represented groups must be an objective of employers, governments and unions alike. Expand­ing hiring practices and establishing strong workplace-based supports that are inclusive of women, Black workers and Indigenous workers, workers of colour, people who have immigrated to Canada and workers with disabilities, creates needed economic opportunities.

**Recommendation 26. Legislate employment equity in all jurisdictions.** Employment Equity laws act as a guideline through which employers must work proactively to establish barrier-free employment opportunities and working conditions for historically marginalized groups, specifically women, indigenous peoples, workers with disabilities and workers of colour. Systemic discrimination and deeply rooted social and cultural biases create artificial barriers that can exclude workers from job opportunities and career advancement, as evidenced by the labour market outcomes outlined above. These barriers, if not broken down, can divide workers, break lines of solidarity and limit collective bargaining power. Legislating Employment Equity in all jurisdictions is an important step governments can take. Requiring employers in both public and private sectors to identify workplace barriers, devise plans that ensure equal access, opportunity and greater worker representation, monitor job placements and promotions, and conduct regular systems reviews in collaboration with unions, will go a long way to address the historic underrepresentation of equity-seeking groups in the auto industry.

**Recommendation 27. Support employers and community organizations committed to hire, train and retain workers in underrepresented communities.** Creating opportunities for historically marginalized and under-represented groups to secure jobs in the auto sector requires collaboration among various industry stakeholders. Governments can assist by allocating funds to offset costs to employers that commit to hire, train and retain workers from marginalized groups, contingent on employment equity action plans and systems reviews in place. Such a program can operate in conjunction with the proposed national skills assessment and inventory and can build on efforts undertaken by the Automotive Parts Manufacturers Association through its Equity, Diversity and Inclusion Fund.[[62]](#footnote-62)

### 5.2 Building an auto industry through reconciliation

The shift to EV production is an opportunity to grow Canada’s auto industry, and secure good jobs across all areas of a burgeoning supply chain. Canada has all of the ingredients, from mines to manufacturing, to build a forward-looking powerhouse industry that grows the economy while reducing Canada’s carbon footprint at the same time. However, it is imperative that government strategists and policymakers understand the perils of this plan without a full and proper acknowledgement of Canada’s repressive colonial past and its obligations to Indigenous Peoples and their land.

As part of its truth and reconciliation commitments, the federal government passed into law the United Nations Declaration of Indigenous People in 2021.[[63]](#footnote-63) This legislation requires government to ensure all federal laws are consistent with the Declaration’s terms, including requirements that Indigenous Peoples have “free, prior and informed consent” before Canada can permit any mining project. Projected growth in EV production will require a significant expansion in nickel, lithium and copper demand[[64]](#footnote-64) by the auto industry, inevitably resulting in the construction of new mines. According to one estimate, Canada must build seven new nickel mines, two smelters and one refinery over the next 30 years simply to maintain its global share of nickel production.[[65]](#footnote-65) Assurances that such discussions over new mining projects happen in consultation and with the consent of Indigenous Peoples, in line with UNDRIP, is paramount. Mining firms must govern their projects under the strongest environmental standards, including the use of sustainable and energy inputs, maximize the economic benefit to Indigenous and Northern communities and commit to after-life land reclamation.

**Recommendation 28. Establish and facilitate a clear process for dialogue between developers and Indigenous Peoples prior to permitting mining activities.** The principles of free, prior and informed consent, as committed under UNDRIP legislation, must be operationalized by federal and provincial government officials to facilitate meaningful, respectful and constructive dialogue between Indigenous communities and developers. A January 2022 report producedbythe British Columbia First Nations Energy and Mining Council provides useful guidance for consent-based approval and regulation of new mining sites, from permitting to land reclamation and restoration, in a manner that upholds Indigenous self-determination, self-governance and human rights.[[66]](#footnote-66)

**Recommendation 29.** **Require fair share agreements between mining firms and Indigenous and Northern communities to localize the economic benefits of mining projects.** Governmentsmust draw links between significant upstream industrial development projects and local job growth, skills training, revenue sharing and community and infrastructure development in Indigenous and Northern communities. Promoting and brokering the negotiation of fair share agreements between developers and Indigenous and Northern communities is one tool to maximize local benefits and can work in tandem with incentive-based programs to promote new Indigenous-led start-ups and Indigenous ownership of local suppliers. Such agreements can contain revenue sharing commitments with Indigenous Band Councils and local governments along with local hiring requirements, contracts with local Indigenous businesses and suppliers.[[67]](#footnote-67) These may also include commitments to empower local and Indigenous community oversight of a project’s environmental standards as well as co-ownership through equity shares.

AD/klcope343

1. International Labour Organization, The Future of Work in the Automotive Industry: The need to invest in people’s capabilities and decent and sustainable work, Issues Paper (2020): <https://www.ilo.org/sector/Resources/publications/WCMS_741659/lang--en/index.htm> [↑](#footnote-ref-1)
2. See CBC News (October 8, 2020): <https://www.cbc.ca/news/business/ford-oakville-government-1.5754974> [↑](#footnote-ref-2)
3. See CBC News (April 4, 2022): <https://www.cbc.ca/news/canada/london/gm-plants-government-funding-1.6407621> [↑](#footnote-ref-3)
4. Statistics Canada, accessed through Government of Canada Trade Data Online portal, April 5, 2022. [↑](#footnote-ref-4)
5. For more information on Canada’s battery supply chain potential, see Clean Energy Canada, Turning Talk into Action: Building Canada’s Battery Supply Chain (May 2021): <https://cleanenergycanada.org/wp-content/uploads/2021/05/Turning-Talk-into-Action_Building-Canadas-Battery-Supply-Chain.pdf> [↑](#footnote-ref-5)
6. See Automotive Policy Research Centre Database: <https://automotivepolicy.ca/database/> [↑](#footnote-ref-6)
7. The Automotive Parts Manufacturers Association’s (APMA) Project Arrow initiative (an all-Canadian built ZEV concept car) presents a compelling case for growing the Canadian parts industry’s production footprint, see: <https://projectarrow.ca/> [↑](#footnote-ref-7)
8. Stellantis Press Release (March 23, 2022) <https://www.stellantis.com/en/news/press-releases/2022/march/stellantis-and-lg-energy-solution-to-invest-over-5-billion-cad-in-joint-venture-for-first-large-scale-lithium-Ion-battery-production-plant-in-canada> [↑](#footnote-ref-8)
9. See Brendan Marshall, Building Supply Chain Resiliency of Critical Minerals, published by the Canadian Global Affairs Institute (November 2021): <https://www.cgai.ca/building_supply_chain_resiliency_of_critical_minerals#Battery>. In this article, Marshall states: “Possessing battery minerals and metals… does not equate to having value-added battery-grade materials. To create battery-grade materials, a specified value-added manufacturing stage and process are required for nickel, cobalt, manganese, graphite and lithium. For example, nickel needs to be transformed into nickel sulfate; cobalt into cobalt sulfate; manganese into manganese sulfate; graphite into ultra-high-purity spherical graphite and lithium into lithium carbonate and lithium hydroxide. While Canada has a strong foundation of battery minerals and metals, and downstream smelting and refining capacity for nickel and cobalt, it does not produce battery-grade nickel, cobalt, manganese, graphite or lithium.” [↑](#footnote-ref-9)
10. Automotive News (Marcy 7, 2022) <https://www.autonews.com/automakers-suppliers/gm-build-393-million-ev-battery-materials-plant-quebec> [↑](#footnote-ref-10)
11. Electric Autonomy (March 4, 2022) <https://electricautonomy.ca/2022/03/04/basf-battery-cathode-quebec/> [↑](#footnote-ref-11)
12. Natural Resources Canada, Critical Minerals list, available at: <https://www.nrcan.gc.ca/our-natural-resources/minerals-mining/critical-minerals/23414> [↑](#footnote-ref-12)
13. Budget 2022 (p.65): <https://budget.gc.ca/2022/pdf/budget-2022-en.pdf> [↑](#footnote-ref-13)
14. Boston Consulting Group, April 1, 2021, Strengthening the Global Semiconductor Supply Chain in an Uncertain Era: <https://www.bcg.com/publications/2021/strengthening-the-global-semiconductor-supply-chain> [↑](#footnote-ref-14)
15. See Bloomberg News, May 6, 2021, The Chip Shortage Keeps Getting Worse. Why Can’t We Just Make More? <https://www.bloomberg.com/graphics/2021-chip-production-why-hard-to-make-semiconductors/> [↑](#footnote-ref-15)
16. See Canada Semiconductor Council report recommendations, <https://canadassemiconductorcouncil.com/wp-content/uploads/2021/11/Canadas-Semiconductor-Action-Plan.pdf> [↑](#footnote-ref-16)
17. For example, see B.C. Ministry of Environment and Climate Change Strategy, Extended Producer Responsibility Five-Year Action Plan 2021-2026: <https://www2.gov.bc.ca/assets/gov/environment/waste-management/recycling/recycle/extended_producer_five_year_action_plan.pdf> [↑](#footnote-ref-17)
18. Canadian Collaborative Procurement Initiative, <https://www.tpsgc-pwgsc.gc.ca/app-acq/app-collaborat-procur/index-eng.html> [↑](#footnote-ref-18)
19. Natural Resources Canada, Greening Government Fleets: <https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/pdf/buildings/NRCan_GreeningGovFleets_e.pdf> [↑](#footnote-ref-19)
20. Clean Energy Ministerial (2016), Government Fleet Declaration: Government Fleet Declaration: <https://iea.blob.core.windows.net/assets/e7dc869b-ca7b-4659-a7c4-1b8360189a5b/EVI_Government_Fleet_Declaration.pdf> [↑](#footnote-ref-20)
21. Natural Resources Canada, Greening Government Fleets. [↑](#footnote-ref-21)
22. Liberal Party 2021 Election Platform – Zero Emission Vehicles: <https://liberal.ca/our-platform/zero-emissions-vehicles/> [↑](#footnote-ref-22)
23. In its Reimagining Electric Vehicles in Illinois Act, the state passed laws allowing for a 20% price preference for project bidders, for locally built EVs. See: <https://khqa.com/news/local/pritzker-signs-bill-incentivizing-electric-vehicle-manufacturing> [↑](#footnote-ref-23)
24. See: <https://canadianautomobilityhub.com/> [↑](#footnote-ref-24)
25. The Quebec test facility is operated by PMG Technologies for Transport Canada: <http://www.pmgtest.com/about-us> [↑](#footnote-ref-25)
26. Canadian Vehicle and Manufacturers Association provides an overview of the various Detroit Three research and testing facilities here: <https://www.cvma.ca/priorities/innovation/research-and-development/> [↑](#footnote-ref-26)
27. See information on GM’s CTC McLaughlin Advanced Technology Track here: <https://www.gm.ca/en/home.detail.html/content/Pages/news/ca/en/2021/Feb/0217_canadian-engineers-can-now-test-vehicles.html> [↑](#footnote-ref-27)
28. Future of Canadian Automotive Labourforce (FOCAL) Trend Report, The Impact of EV Production on the Automotive Manufacturing Supply Chain: Sources, Methods and Findings (October, 2021): <https://www.futureautolabourforce.ca/wp-content/uploads/2021/10/EV-Report-Final-Oct-4.pdf> [↑](#footnote-ref-28)
29. *Ibid*, see pp. 19-20. [↑](#footnote-ref-29)
30. See Business Insider (April 3, 2021): <https://www.businessinsider.com/tesla-gigafactory-berlin-union-battle-ig-metall-2021-4> [↑](#footnote-ref-30)
31. See Associated Press (April 16, 2021): <https://apnews.com/article/business-technology-general-news-8924829d24cb054a4a997f14f1bd1d12> [↑](#footnote-ref-31)
32. See Detroit Free Press (May 25, 2021): <https://www.freep.com/story/money/cars/general-motors/2021/05/25/gm-battery-factories-uaw-ultium/7439602002/> [↑](#footnote-ref-32)
33. According to a November, 2020 PCO poll, 43% of respondents said they believed EVs were too expensive: <https://globalnews.ca/news/7632277/internal-government-poll-support-electric-vehicle-subsidy/> [↑](#footnote-ref-33)
34. See November 2021 Kelley Blue Book: <https://www.prnewswire.com/news-releases/eight-straight-new-vehicle-prices-mark-another-record-high-in-november-2021-according-to-kelley-blue-book-301442015.html> [↑](#footnote-ref-34)
35. Bloomberg Hyperdrive Daily benchmarks price parity once the cost of battery packs crosses the $80/kwh threshold. Preliminary estimates suggest that to happen in 2026: <https://www.bloomberg.com/news/newsletters/2021-05-25/hyperdrive-daily-the-ev-price-gap-narrows> [↑](#footnote-ref-35)
36. See Transport Canada: <https://tc.canada.ca/en/road-transportation/innovative-technologies/zero-emission-vehicles/canada-s-zero-emission-vehicle-zev-sales-targets> [↑](#footnote-ref-36)
37. Unifor submission to ECCC Consult on Possible Additional Measures Needed to Achieve a Mandatory ZEV Sales Target of 100% by 2035, available at: <https://www.unifor.org/resources/our-resources/eccc-consult-possible-additional-measures-needed-achieve-mandatory-zev> [↑](#footnote-ref-37)
38. Statistics Canada – Automotive Statistics: <https://www.statcan.gc.ca/en/topics-start/automotive> (accessed February 1, 2022). [↑](#footnote-ref-38)
39. See Automotive News Canada (January 5, 2022): https://canada.autonews.com/retail/2021-sales-nearly-7-remain-far-below-194m-sold-2019 [↑](#footnote-ref-39)
40. See Automotive News (January 8, 2022): <https://www.autonews.com/sales/2021-us-auto-sales-most-unusual-year> [↑](#footnote-ref-40)
41. Natural Resource Canada, citing Pollution Probe and Delphi Group study: <https://www.nrcan.gc.ca/energy-efficiency/transportation-alternative-fuels/resource-library/zero-emission-vehicle-charging-murb-and-garage-orphans/21825> [↑](#footnote-ref-41)
42. “Canada needs to build millions — not thousands — of EV charging stations, industry group says”, CBC News Report (December 21, 2021): https://www.cbc.ca/news/science/electric-vehicle-charging-stations-1.6293915 [↑](#footnote-ref-42)
43. Electric Vehicle Station Map, presented by EnergyHub: <https://www.energyhub.org/ev-map-canada/> [↑](#footnote-ref-43)
44. Ernst & Young (2021), China, Sweden and Germany lead the way on the EY Electric Vehicle Country Readiness Index: <https://www.ey.com/en_gl/news/2021/11/china-sweden-and-germany-lead-the-way-on-the-ey-electric-vehicle-country-readiness-index> [↑](#footnote-ref-44)
45. Liberal Party 2021 Election Platform – Zero Emission Vehicles: <https://liberal.ca/our-platform/zero-emissions-vehicles/> [↑](#footnote-ref-45)
46. See European Union’s Alternative Fuel Infrastructure Directive report (October, 2014): <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0094> [↑](#footnote-ref-46)
47. See CVMA report, Closing the electric vehicle charging infrastructure gap (May, 2022): <https://www.cvma.ca/wp-content/uploads/2022/05/Closing-the-electric-vehicle-charging-infrastructure-gap-May-11-2022-final.pdf> [↑](#footnote-ref-47)
48. Future of Canadian Automotive Labourforce (FOCAL) Trend Report, “Impact Of Industry 4.0 Technologies On Key Occupations In Automotive Manufacturing” (April, 2020): <https://www.futureautolabourforce.ca/wp-content/uploads/2021/06/Final-Impact-of-Industry-4.0-on-Automotive-Manufacturing-Occupations.pdf> [↑](#footnote-ref-48)
49. *Ibid*, see Appendix D for a projected list of new job titles associated with the adoption of Industry 4.0 in the automotive sector. [↑](#footnote-ref-49)
50. Statistics Canada, CANSIM table 37-10-0137-01. [↑](#footnote-ref-50)
51. John McElroy, “Why Young People Shun Auto Industry” (August 28, 2014). Ward’s Auto: <https://www.wardsauto.com/blog/why-young-people-shun-auto-industry> [↑](#footnote-ref-51)
52. See Unifor, Canada’s Auto Industry Fast Facts, 2020. [↑](#footnote-ref-52)
53. *Ibid.* [↑](#footnote-ref-53)
54. Union coverage data is available via Statistics Canada’s Labour Force Survey: <https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=1410007001> Historical data from the Survey of Work History. [↑](#footnote-ref-54)
55. See Reuters (February 3, 2022), “'Fed up' GM workers in Mexico pick new union in historic vote”: <https://www.reuters.com/business/autos-transportation/gm-workers-mexico-elect-independent-union-historic-labor-vote-2022-02-03/> [↑](#footnote-ref-55)
56. See Automotive News (January 21, 2022), How GM Oshawa scored a victory for gender equality: <https://canada.autonews.com/automakers/how-gm-oshawa-scored-victory-gender-equality> [↑](#footnote-ref-56)
57. Unifor, Racial Justice Advocate, <https://www.unifor.org/resources/human-rights/racial-justice-advocate> [↑](#footnote-ref-57)
58. Future of Canadian Automotive Labourforce (FOCAL), Women’s Participation in Canada’s Automotive

    Industry (April, 2020): <https://www.futureautolabourforce.ca/wp-content/uploads/2020/06/Trend-report-Diversity-Women-in-Auto-May27-2020-final.pdf> [↑](#footnote-ref-58)
59. *Ibid*, pp. 16. [↑](#footnote-ref-59)
60. *Ibid.* [↑](#footnote-ref-60)
61. *Ibid*, pp. 22. [↑](#footnote-ref-61)
62. See: <https://apma.ca/edi-fund/> [↑](#footnote-ref-62)
63. See Government of Canada, Implementing the United Nations Declaration on the Rights of Indigenous Peoples Act, <https://www.justice.gc.ca/eng/declaration/index.html> [↑](#footnote-ref-63)
64. See Mark Podlasly, What happens if Indigenous people say no to mining the minerals needed to run EVs? In Corporate Knights, <https://www.corporateknights.com/climate-and-carbon/ev-battery-mining-indigenous/> [↑](#footnote-ref-64)
65. See Brendan Marshall, Building Supply Chain Resiliency of Critical Minerals, published by Canadian Global Affairs Institute (November 2021): <https://www.cgai.ca/building_supply_chain_resiliency_of_critical_minerals> [↑](#footnote-ref-65)
66. BC First Nations Energy and Mining Council (January 2022): Indigenous Sovereignty: Consent for Mining on Indigenous Lands, see <http://fnemc.ca/wp-content/uploads/2022/01/FNEMC_mining_consent_FinalReport.pdf> [↑](#footnote-ref-66)
67. For example, see agreement between Generation Mining and Biigtigong Nishnaabeg First Nation in Ontario: <https://www.thestar.com/news/canada/2022/01/28/agreement-ensures-fair-share-for-first-nation.html> [↑](#footnote-ref-67)