Provincial and Territorial Zero-Emission Vehicle Scorecard

Tracking Canadian Sub-national Leadership in ZEV Strategies, Policies & Investments

ELECTRIC MOBILITY CANADA
ACCELERATING ELECTRIC TRANSPORTATION

MOBILITÉ ÉLECTRIQUE CANADA
ACCÉLÉRER L'ÉLECTRIFICATION DES TRANSPORTS

2021-22

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Electric Mobility Canada is a national membership-based not-for-profit organization dedicated exclusively to the advancement of e-mobility as an exciting and promising opportunity to fight climate change and stimulate and support the Canadian economy. Its mission is to strategically accelerate the transition to electric mobility across Canada.

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SCORECARD RESEARCH AND DEVELOPMENT LED BY:

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Navigating the Scoreboard

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List of Acronyms

BEV – Battery electric vehicles

DCFC – Direct current fast charger

EV – Electric vehicle

FCEV – Fuel cell electric vehicle

GHG – Greenhouse gas

ICE – Internal combustion engine

LDV – Light-duty vehicles

MHDV – Medium- and heavy-duty vehicle

PHEV – Plug-in hybrid electric vehicle

ZEV – Zero-emission vehicle

The Big Picture

Canadians are increasingly eager to use electric mobility. Zero-emission vehicles (ZEVs) will be an important part of Canada's low-carbon transportation system of the future, alongside electrified public transit, active transport, compact land use planning and complete communities.

ZEV adoption is taking off. Globally, ZEV car sales reached a record high of 6.6 million cars in 2021 (9% of global sales) despite the pandemic and supply chain constraints. China and Europe accounted for over 85% of all electric cars sold. While a fast-growing number of Canadians are adopting ZEVs, sales in Canada have not yet reached the levels seen in the leading jurisdictions. In 2021, 6.6% of cars sold in Canada were electric vehicles (EVs)[1] , compared to 86% in Norway, 16% in China and 12% in California.[2] The trendlines look promising, however: Canadian sales grew in the first quarter of 2022 to 8.3%.[3] To catch up to its peers, Canadian jurisdictions need to take sustained and expanded action.

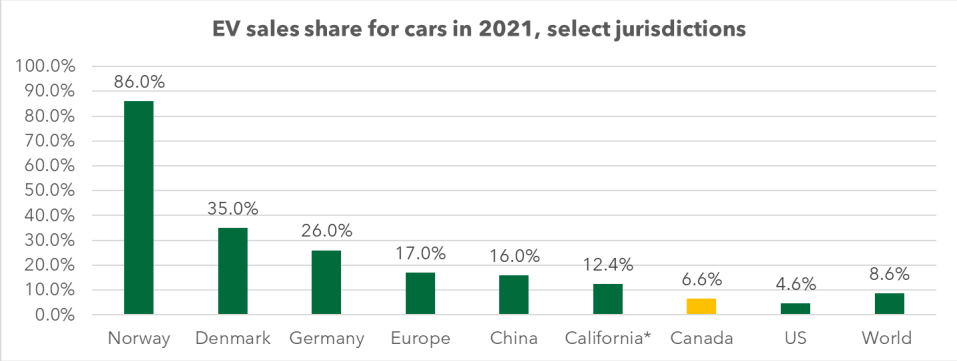


Figure 1. Global EV sales. Source: IEA Global EV Outlook 2022. *California source: California Energy Commission.

Provinces and territories have a key role to play to make electric mobility an option for everyone. This ZEV Scorecard focuses on strategies, policies, regulations, investments, and other actions that must be taken specifically by provinces and territories, while recognizing that these actions require coordinated action with the federal and municipal governments for success.

The ZEV Scorecard shows that **exciting action is already underway**, from charging infrastructure investment in Newfoundland and Labrador, to support for businesses in BC, to purchase incentives for e-snowmobiles in the Yukon. With the supports in place and the market trends, **zero-emission vehicles are the clear choice for consumers and businesses in many parts of the country**.

At the same time, **provinces and territories still have a lot of work to do**. Only one Canadian jurisdiction (BC) has landed in the Global Leader scorecard category. Given that transportation emits a quarter of Canada's GHG emissions, **mitigating the worst of the climate crisis** cannot happen without shifting to electrified transportation at a much faster rate. Further, as the global economy shifts to electrified transport, provinces and territories have an opportunity to harness the **economic development opportunities** for their workers and businesses.

1 EVs includes battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs)
2 *https://www.iea.org/reports/global-ev-outlook-2022/trends-in-electric-light-duty-vehicles*
3 *https://electricautonomy.ca/2022/05/27/q1-2022-ihs-how-many-zev-registrations-canada/*

A UNIQUE ROLE FOR PROVINCES AND TERRITORIES

Provinces and territories are a key player in the transition to electric transportation, since they have jurisdiction over road transportation, energy, economic development, and the municipal regulatory context. Across the globe, sub-national action continues to prove a key tool to enable ZEV adoption.

In particular, three key roles for provinces and territories include:

1. Complementing federal programs to ensure mobility equity in the local context
2. Working with utilities and regulators to harness beneficial electrification through ZEV adoption and support
3. Creating the legislative and financial context that enables local governments to act

Action on these three cross-cutting themes is explored in the Results by Action Area section of this report.

What We Found

The ZEV Scorecard tracks actions taken or already in place in the **2021–22 fiscal year** (April 1, 2021 to March 31, 2022). A total of **100 points** is available across six action areas. The points system sets the bar at the **highest level of action seen across the globe** and requires provinces and territories to design their policies and programs to meet the needs of equity-deserving groups and work with Indigenous Nations and Peoples to earn full points.

One province, **BC**, emerged as a **Global Leader** in the Scorecard. BC has taken the most comprehensive approach to enabling ZEV adoption. It has taken the core steps of adopting purchase incentives, investing in infrastructure and enacting a strong mandate for minimum ZEV sales. In addition, it has taken meaningful steps to train its workforce and orient its economy to respond to the transition. Next steps for BC should include explicitly prioritizing equitable outcomes in investments (the province has taken steps in this direction in the 2022 – 23 fiscal year), taking further steps to disincentivize internal combustion engine vehicles, and ensuring safe and sustainable processes for battery disposal.

Quebec emerged as a **Canadian Leader** and can aspire to join the Global Leader category. Like BC, Quebec has adopted a ZEV mandate, offers comprehensive funding to individuals and businesses to adopt ZEVs, and is taking action to grow the ZEV workforce and economy. A clear mandate to the utility (Hydro Quebec) has helped the province develop a widespread charging network. Important next steps for Quebec include explicitly prioritizing equitable outcomes in investments including measures to support remote communities, deepening investments in off-road ZEVs, taking further steps to disincentivize internal combustion engine vehicles, and ensuring safe and sustainable processes for battery disposal. Notably, Quebec's anticipated move to strengthen its mandate for minimum ZEV sales will help to drive supply and uptake.

Nova Scotia, the Yukon, Prince Edward Island and New Brunswick fall firmly in the **Building Momentum** category. These jurisdictions have recently brought in purchase incentives to bolster ZEV adoption while also investing in the public charging network. Nova Scotia stood out for its comprehensive public education campaign and investments in industry development, including battery recycling. The Yukon has made strong advances in the public fast charging network along its key highways. PEI is investing in electric

buses for its education and transit systems. To move into the Canadian Leader category, these jurisdictions can adopt further measures to support medium- and heavy-duty vehicle electrification, continue investing in charging infrastructure, and (except for Nova Scotia) take action to develop their workforce.

The Provinces and territories in the **Getting Started** category (**Newfoundland and Labrador, Ontario, Alberta, the Northwest Territories, Saskatchewan, Manitoba and Nunavut**) have different strengths. New Brunswick and Newfoundland and Labrador have also adopted purchase incentives and are accelerating investment in charging infrastructure. Ontario is the Canadian leader in economic development in ZEV manufacturing thanks to its existing automotive industry. Alberta has focused on financial support for municipal action. The Northwest Territories offers ZEV purchase incentives to consumers and businesses. Investments in Saskatchewan have been led by its utility. Manitoba's green grid and actions being taken in Nunavut to build more sources of renewable energy provide a good starting point for transportation electrification.

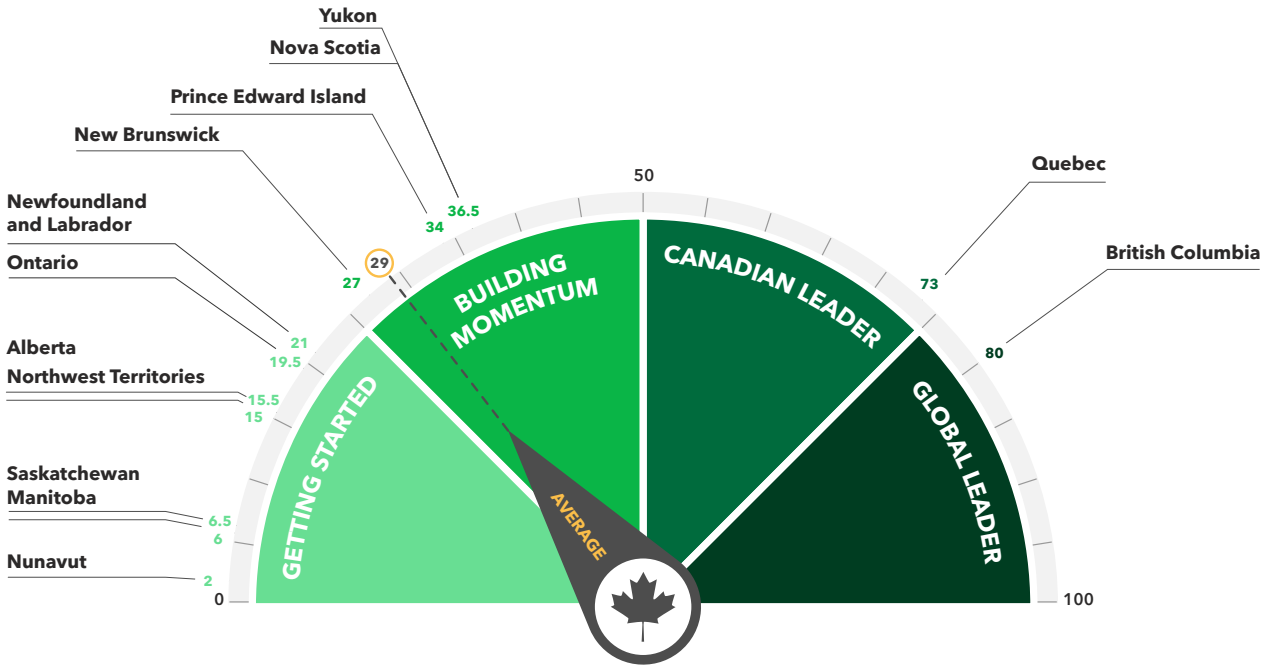


Figure 2. Overall results

LOCAL CONTEXT

Each jurisdiction has different geographies, economies, and communities. The Scorecard includes actions that can generally be adopted by every Province and Territory to achieve the transition to ZEVs in a way that responds to local realities. For example, the Yukon implemented its building code changes only in its major city, which is appropriate for jurisdictions that have communities without road access.

Despite their differences, Provinces and Territories can learn from each other and from other leading jurisdictions around the world. The Scorecard provides a library of actions that governments have taken or can take, with recommendations for policy and program design.

The Work Ahead

There's more to be done everywhere. Regardless of their scores for 2021-22, each jurisdiction can advance to higher categories in the coming years. The following are key actions that are absent in most jurisdictions and represent important areas to focus future efforts at the provincial and territorial level:

- **Embed equity in every incentive, investment, and regulation.** Racialized, low-income, Indigenous Peoples and rural people are currently underserved by ZEV programs. Taking a targeted approach to program design and public outreach is needed to ensure that everyone can access electric mobility.
- **Penalize the purchase of fossil fuel-powered vehicles** to pay for continued ZEV incentives (sometimes referred to as a "feebate" system). This approach would make incentive programs more financially sustainable while closing the cost differential more quickly.
- **Advance zero-emissions MHDVs** by adopting purchase incentives and implementing sales mandates for appropriate segments. Jurisdictions can look to California, where the California Air Resources Board is developing a medium and heavy-duty zero-emission fleet regulation with the goal of achieving a zero-emission truck and bus California fleet by 2045 everywhere feasible and significantly earlier for certain market segments such as last mile delivery and drayage applications.
- **Make 100% EV-ready buildings** a reality by adopting 100% EV-ready requirements for new residential buildings in provincial building codes or regulations and investing significantly in 100% EV-ready retrofits of existing multi-unit residential buildings.
- **Make sure workers are ready to participate in the transition** by fast-tracking ZEV technician training and helping colleges and other educational institutions prepare the ZEV workforce, while investing in new economic activity around battery recycling.
- **Work with utilities and regulators to prepare the electricity regime** to harness the benefits of vehicle electrification. This includes clarifying the role of utilities in deploying infrastructure, setting rate structures to improve the charging business case, facilitating upgrades for major high-power charging investments, and developing load management systems.

Table 1. Key actions by each jurisdiction

Province/ Territory	Action highlights	Opportunity areas	Points
Global Leaders			
British Columbia	▸ ZEV mandate in place for several years ▸ Comprehensive ZEV incentives including LDVs, MHDVs, airport and specialty vehicles, electric school buses, cargo e-bikes, and off-road vehicles ▸ Support for 100% EV-ready retrofits of multi-unit residential buildings ▸ Clarity from the regulator on the ability of utilities to invest in the charging network ▸ Targeted support for research and development of BC-based product services or technology in the ZEV sector ▸ Training program to help prepare BCès workforce	▸ Income-tested purchase incentives (forthcoming) ▸ ZEV mandate for MHDV (forthcoming) ▸ Creating a separate stream of LDV purchase incentives for shared fleets ▸ Implementing disincentives for the purchase and use of ICE vehicles ▸ Supporting recycling of ZEVs and their batteries	**80**
Canadian Leaders			
Quebec	▸ ZEV mandate in place for several years ▸ Highest LDV & MHDV purchase incentives ▸ Strong mandate for infrastructure investment and favourable rate structures to improve the economics ▸ Workforce training and business education and investment in an industry cluster for Electric and Smart Transportation	▸ Incorporating equity considerations into its incentives and investments ▸ ZEV mandate for MHDV (forthcoming) ▸ Implementing disincentives for the purchase and use of ICE vehicles ▸ Requiring smart charging through home charging incentives ▸ Strengthening support for 100% EV-ready retrofits of multi-unit residential buildings ▸ Supporting recycling of ZEVs and their batteries	**73**
Building Momentum			
Yukon	▸ LDV and off-road purchase incentives (including e-snowmobiles) ▸ Formal ZEV infrastructure target and significant progress ▸ EV-ready requirements in Whitehorse developments (provincial policy)	▸ Expand pilot MHDV rebate ▸ Invest in technician training and workforce development	**36.5**
Nova Scotia	▸ Recent LDV purchase incentive program ▸ Funding for transit electrification ▸ Utility-led smart home charging trials ▸ Commitments to greener grid ▸ Comprehensive public education programs with technical advisory services for businesses to transition fleets	▸ ZEV mandate (forthcoming) ▸ Equity-oriented education program (forthcoming) ▸ Funding for 100% EV-ready retrofits of multi-unit residential buildings (forthcoming) ▸ Support for MHDV electrification ▸ Setting targets for ZEV infrastructure ▸ Work with municipalities to adopt 100% EV-ready building code	**36.5**

Province/ Territory	Action highlights	Opportunity areas	Points
Prince Edward Island	▸ Recent LDV purchase incentives ▸ Investment in 35 electric school buses ▸ Strong investment in ZEV charging infrastructure. ▸ Transportation sector emissions reduction target ▸ EV test drives for parliamentarians and government staff	▸ E-bike and bicycle purchase incentive program (forthcoming) ▸ Develop ZEV infrastructure targets ▸ Provide longer-term clarity on the role of utilities in infrastructure investment from electricity regulator	**34**
New Brunswick	▸ Recent LDV purchase incentives ▸ Home charging incentives require smart charging capabilities ▸ Program specifically to support business investment in charging infrastructure	▸ Update infrastructure targets ▸ Fund electrification of school and transit buses ▸ Explore options to require 100% EV-ready new construction	**27**
Getting Started			
Newfoundland and Labrador	▸ Recent LDV purchase incentives ▸ Recent investments in EV charging infrastructure along key highways	▸ Transit bus electrification (forthcoming) ▸ Shifting incentive program to be point-of-sale ▸ Infrastructure target setting and planning ▸ Explore options to require 100% EV-ready new construction	**21**
Ontario	▸ Several recent announcements of financial support for new automobile and battery manufacturing plants ▸ Workforce development (general automotive sector)	▸ Favourable overnight electricity rates (forthcoming) ▸ ZEV mandate to ensure supply ▸ ZEV purchase incentives ▸ MHDV electrification support ▸ Provincial infrastructure investment & favourable charging rates ▸ Ensure workforce development efforts include carve-outs focused on ZEV ▸ Public education program ▸ Government fleet procurement targets	**19.5**
Alberta	▸ Financial support to municipalities for ZEV and infrastructure ▸ Investments in BEV and FCEV transit buses ▸ Demonstration hydrogen refuelling projects for trucks ▸ Utility-led infrastructure investment and pilot projects	▸ ZEV mandate to ensure supply ▸ ZEV purchase incentives ▸ Infrastructure target setting and planning, and coordinating actors ▸ ZEV-related workforce development and training ▸ Government fleet procurement targets	**15.5**
Northwest Territories	▸ Recent LDV purchase incentives ▸ Grants for businesses and non-profits to electrify operations	▸ Investment in EV charging infrastructure along key highway (forthcoming) ▸ Off-road and used electric vehicle incentives ▸ Infrastructure target setting and planning	**15**

Province/ Territory	Action highlights	Opportunity areas	Points
Saskatchewan	▸ Utility-led funding for fast charging based on a priority map ▸ Pilot program to collect data on EV driving and charging ▸ Coal phase-out commitment	▸ ZEV purchase incentives, including for off-road vehicles ▸ Infrastructure target setting and planning, and coordinating actors ▸ Expanding public education to in-person outreach and test drive opportunities ▸ Financial support to municipalities ▸ Government fleet procurement targets	**6.5**
Manitoba	▸ Funding for municipalities and Northern Affairs/Indigenous communities that covers EV projects ▸ Green electricity supply	▸ Transit bus electrification (forthcoming) ▸ ZEV sales targets ▸ Charging network investment ▸ ZEV purchase incentives ▸ Government fleet procurement targets	**6**
Nunavut	▸ Net metring ▸ Investment in a solar hybrid energy plant	▸ Continued investment in renewable energy ▸ Leveraging advances in ZEV off-road vehicles, including snowmobiles ▸ Leveraging advances in ZEV aviation, over time	**2**

About the Scorecard

What is the Scorecard?

- A **tracker** showing the state of action in all Canadian provinces and territories in 2021
- A **library of actions** that provinces and territories can take to increase adoption of ZEVs
- **Case studies** of ambitious and creative efforts already in place

How was the Scorecard made?

1. We established the Scorecard **categories and metrics** based primarily on the priorities in *Electric Mobility Canada's 2030 ZEV Action Plan*. These categories and metrics were refined based on professional judgement and input from stakeholders.
2. We **contacted staff** at all 13 provinces and territories, as well as select utilities and non-profit organizations, to present the Scorecard concept and receive high-level feedback.
3. We established detailed **scoring criteria** based on global best practice and progress in Canadian jurisdictions.
4. We **collected information** on actions taken or in place in each Province and Territory between April 1, 2021 and March 31, 2022 (the 2021 fiscal year), and sent summaries of this information to staff, for validation and review. Staff in 11 Provinces/Territories responded to the data validation request.
5. We **tabulated the results** based on the validated inputs and the scoring criteria.
6. We **circulated the draft results** for peer review and review by Provinces & Territories.

What is in Scope?

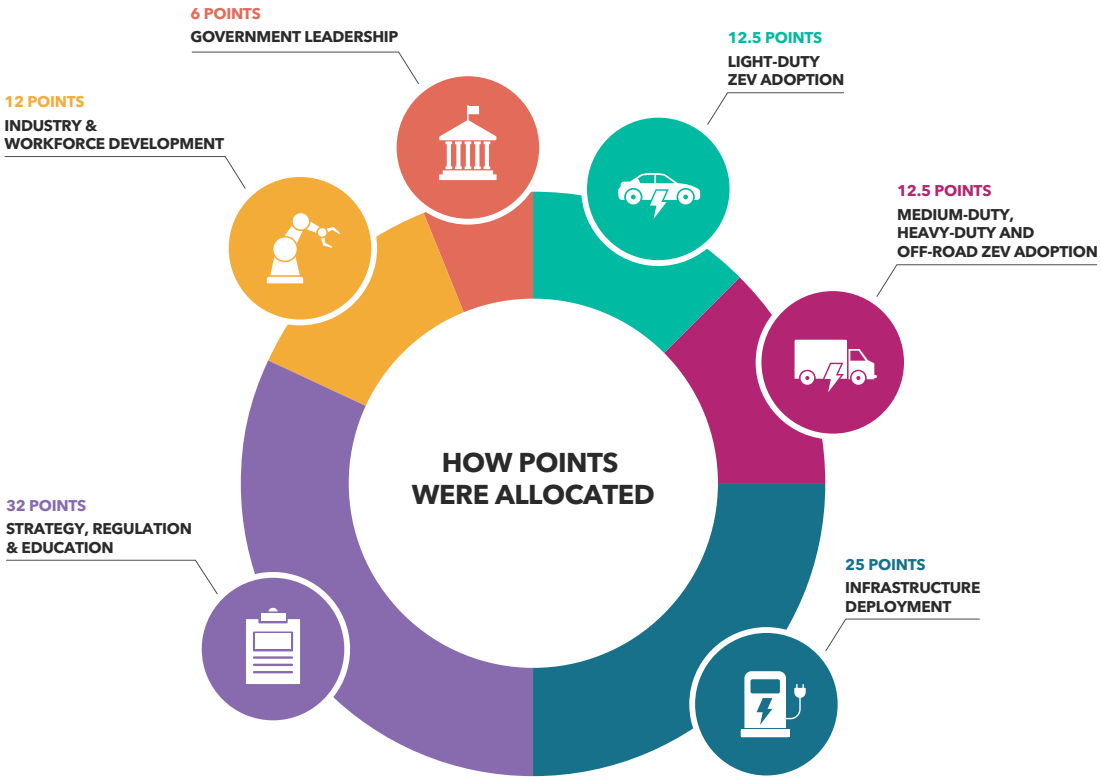
	In Scope	Out of Scope
Technology	Battery electric vehicles (BEV), plug-in hybrid electric vehicles (PHEV), fuel cell electric vehicles (FCEV)	-
Actors	Actions taken by provinces and territories. Actions taken by electrical utilities.	Actions taken by the Federal Government, municipalities, and transit agencies are generally out of scope except where Provinces/Territories are providing direct financial or other support for action.
Actions	Strategies, policies, regulations, and investments.	ZEV sales and registration data (current supply chain constraints in several jurisdictions limit the extent to which real-world uptake represents the current policy context). ZEV sales and registration data is presented on page 35 but is not included in the scoring.
Timeframe	Actions taken or already in place in the 2021 – 22 fiscal year (April 1, 2021 – March 31, 2022).	Announcements made during the 2021 – 22 fiscal year will be counted in a future year, once they are implemented.

We note that the COVID-19 pandemic may have impacted budget priorities, program feasibility, and implementation timelines, especially for in-person outreach and events.

For more details on the scoring, metrics, and weighting, please see the accompanying Methodology Report.

How were Points Allocated?

Points in the Scorecard are allocated under six action areas: (1) light-duty ZEV adoption; (2) medium-duty, heavy-duty and off-road ZEV adoption; (3) infrastructure deployment; (4) strategy, regulation, and education; (5) industry & workforce development; and (6) government leadership.



The relative weighting of action areas reflects the priority actions at this stage of ZEV adoption in Canada. In our view, the key actions that need to be in place in most jurisdictions are **purchase incentives, charging infrastructure investment, ZEV mandates, and public education.** These are weighted more heavily as a result. Developing the Canadian workforce and industry, and government leadership in procurement and municipal support, are also critical to preparing for the ZEV transition and inspiring widespread action. A list of the metrics and sub-metrics under each action area is provided in the Results by Action Area Section of this Scorecard.

As provinces and territories make progress and adoption accelerates, it becomes appropriate to focus on different actions. For example, after several years of offering LDV purchase incentives, B.C. and Quebec are

beginning to gradually reduce purchase incentive amounts as the market becomes more established. In the coming years, we will evolve the scoring metrics and weighting to incorporate emerging best practices and the impact of federal-level policies and international action. This will help ensure that the Scorecard reflects overall progress on the ZEV transition while remaining ambitious.

The Role of Other Actors

This Scorecard focuses specifically on actions that need to be taken by **provinces, territories, and utilities**. These actors operate in an ecosystem and their actions enable, and are enabled by, the federal government, municipalities, First Nations governments, transit agencies and the private and non-profit sectors.

For example, some key roles for the **federal government** in are to set regulations that ensure national ZEV supply (e.g. ZEV mandate) and provide base funding for incentive programs and infrastructure, and support national R&D and economic development. Provinces & Territories can also take the lead on these actions and/or build funding to complement federal programs, orienting those programs to meet their regional needs and realities.

Provinces and territories also have a key role to play in enabling, requiring, and funding action at the **municipal and First Nations** level. Provincial and territorial funds enable municipalities and **transit agencies** to adopt ZEV at scale. Provinces and territories can also ensure consistent action (and therefore consistent business environments) across cities through regulation, for example requiring 100% EV-ready construction in the provincial building code. Cities, for their part, take the lead on regulating the use of public rights of way in ways that incentivize ZEVs.

UNDERSERVED COMMUNITIES

The transition to low-carbon mobility must acknowledge, disrupt, and overcome decades of systemic racism and classism that have created inequitable transportation policies, systems, and infrastructure in Canada and North America. These society-wide trends have, to date, been largely replicated in ZEV policies.

Indeed, EV owners today are disproportionately wealthy, male, middle-aged, and living in detached homes in urban areas, according to the International Council on Clean Transportation. This means that poor, racialized, Indigenous and rural and remote populations are missing out on both the the economic (e.g., lower fuel and maintenance costs) and environmental (e.g., better local air quality) benefits of electric mobility.

In this report, we use the term underserved communities to refer to these groups that are specifically underserved by ZEV policies and programs. Provinces and Territories have a key role to play in ensuring equitable participation and outcomes through ZEV policies and programs.

Results by Province and Territory

There are some key actions that each province and territory should take to accelerate ZEV adoption. However, jurisdictions can also design their policies and programs in a way that meets their local needs and realities. As shown in Figure 3, different jurisdictions have different strengths. The Yukon gains many of its points from its strong recent investments in ZEV infrastructure, while Ontario gains most of its points from actions in industry & workforce development. Alberta scores well in Government Leadership because of its focus on transferring funds to municipalities for action. Jurisdictions with the highest scores are making strides in each action area.

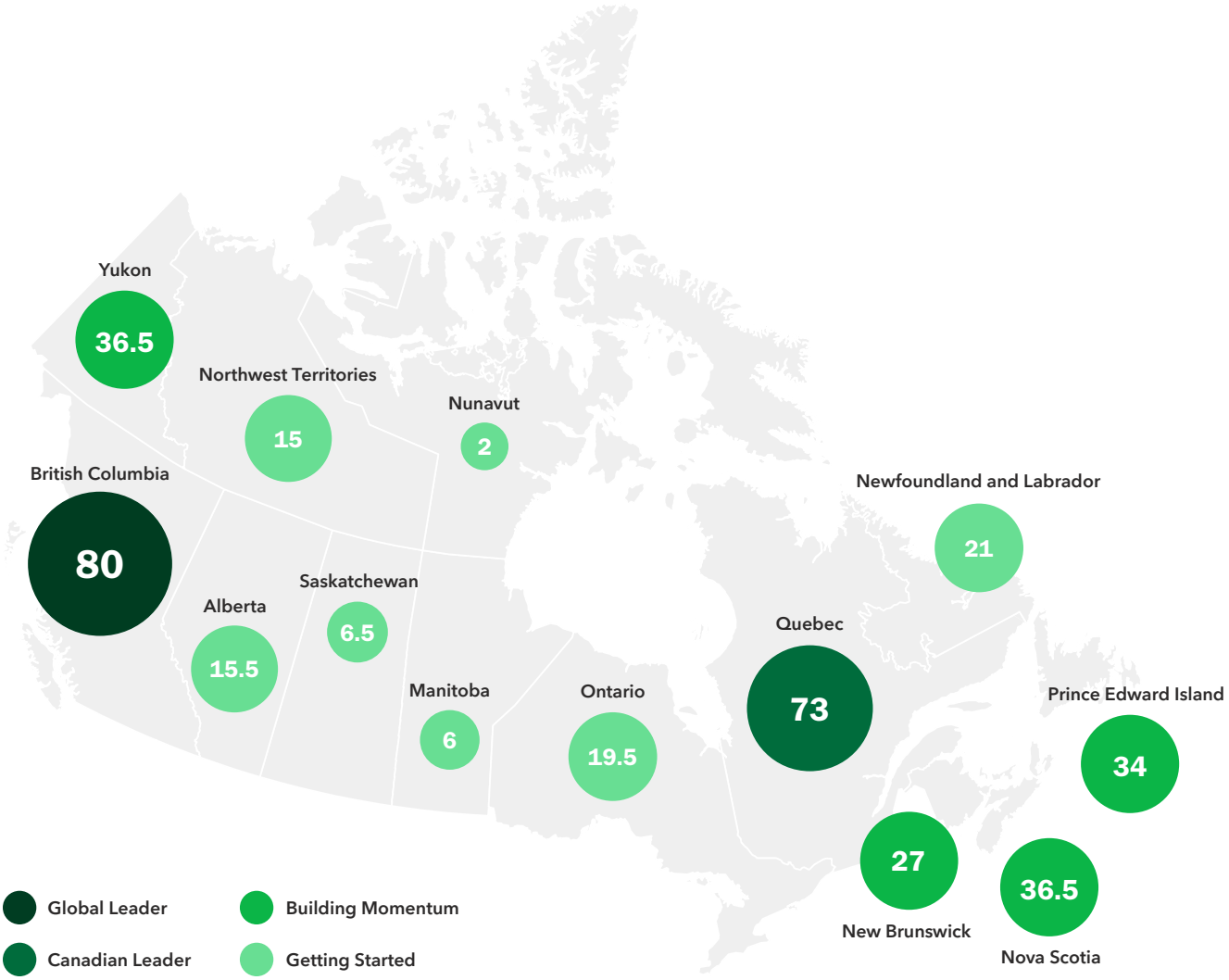


Figure 3. Results by province and territory

In the sections below, we highlight key actions taken by each jurisdiction. For more details about those actions, and other developments in each jurisdiction, please refer to the Methodolgy.

GLOBAL LEADERS (76-100 POINTS)

British Columbia 80

	SCORING CATEGORY	SCORE	POINTS AVAILABLE
1	Light-duty ZEV adoption	10	12.5
2	Medium-duty, heavy-duty and off-road ZEV adoption	11.5	12.5
3	Infrastructure Deployment	19.5	25
4	Strategy, Regulation & Education	23	32
5	Industry & Workforce Development	10	12
6	Government Leadership	6	6
	TOTAL SCORE	80	100

Action highlights

- The Province of B.C. has a ZEV mandate of 100% ZEV sales by 2035 with aligned interim targets (26% by 2026, 90% by 2030). This policy has helped to rapidly accelerate ZEV sales growth.
- Along with LDV purchase incentives, B.C. offers several programs to fund the electrification of a comprehensive range of vehicles including MHDVs, airport and specialty vehicles, electric school buses, cargo e-bikes, and off-road vehicles.
- Building on leadership from local municipalities in requiring 100% EV-ready new residential buildings, B.C.'s first of its kind EV-ready Rebate Program provides support for comprehensive 100% EV-ready retrofits of multi-unit residential buildings. This Provincial program provides property owners with funding for EV-ready planning ($3,000 per building), electrical installations ($120,000 per buildings that are made 100% EV-ready), and EV chargers.
- The deployment of public EV charging in B.C. has been accelerated by clarity from the regulator on the ability of utilities to invest in the charging network along with EV-supportive electricity rates and financial credits available through the provincial low-carbon fuel standard.
- The Go Electric Advanced Research and Commercialization (ARC) program supports B.C.'s ZEV sector by providing reliable and targeted support for pre-commercial research and development of a B.C.-based product, service or technology; commercialization of a B.C.-based product, service or technology including investments in manufacturing facilities or processes; and use or demonstration of a B.C.-based product, service or technology.

- The Go Electric Training program helps prepare B.C.'s workforce to be leaders in the transition to ZEVs. Go Electric funding supports Red Seal Electricians in B.C. to complete the Electric Vehicle Infrastructure Training Program (EVITP) delivered by the Electrical Joint Training Committee (EJTC). This program provides training and certification for electricians installing EV charging infrastructure. In 2021, updated educational resources for B.C. electricians installing EV charging infrastructure were developed.

On the horizon

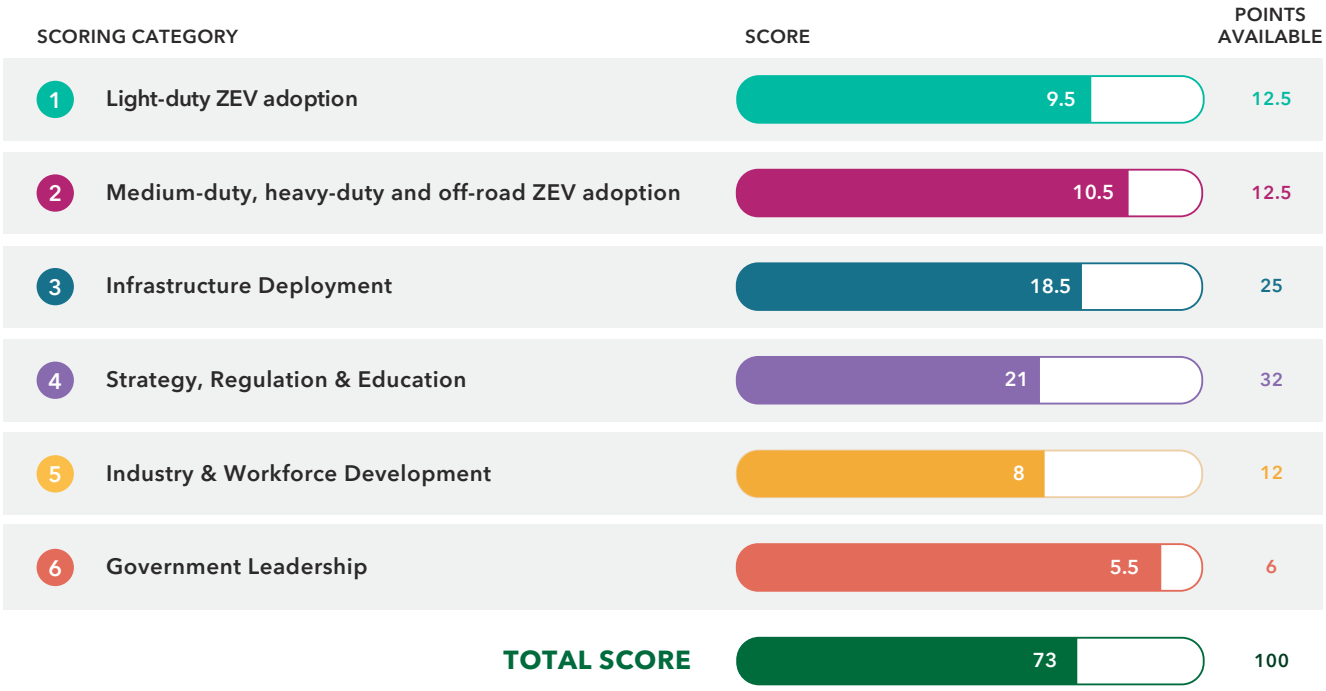
- In August 2022, the B.C. Government announced an increase to its ZEV passenger vehicle rebates along with new household income-tiered eligibility criteria. This means that higher rebates will go to lower-income consumers. While common in the US, this is the first time this important equity-oriented approach will be taken in Canada.
- In the CleanBC Roadmap, the Province signalled its intention to create a ZEV mandate for MHDV in the next year, in alignment with California.
- The B.C. Government has announced its intention to include its Recycling Regulation and Extended Producer Responsibility strategy to cover EV batteries and chargers.

Opportunity areas

- Incorporating equity considerations into its incentives and investments. This could include directing specific incentives to equity deserving communities, setting specific targets for infrastructure deployment in these areas, as well as offering culturally appropriate education initiatives in a wide range of languages. It also involves continuing to engage with Indigenous Nations to explore funding and infrastructure ownership models for these communities.
- Creating a separate stream of LDV purchase incentives for shared fleets (e.g. taxis, carsharing fleets) would increase or remove the limit on the number of incentives one organization can access, to enable the faster turnover of these high-mileage fleets.
- Implementing greater disincentives for the purchase and use of ICE vehicles (e.g. sales taxes, vehicle registration fees, road tolls, etc.).
- Implementing its commitment to Extended Producer Responsibility and supporting the growth of economic activity around recycling ZEVs and their batteries.

CANADIAN LEADERS (51 – 75 POINTS)

Quebec 73



Action highlights

- ZEV mandate requiring that 16% of vehicles sales are ZEV by 2026, with legislated interim targets.
- The province of Quebec provides the highest LDV purchase incentive in Canada, at $8,000 for new BEV[4] and $4,000 for used BEVs in the 2021-22 fiscal year (the period of analysis).
- It also offers the most generous purchase incentive for MHDVs, where Class 3-6 fully electric vehicles are eligible for an incentive of up to $125,000 and Class 7 to 8 vehicles are eligible for up to $175,000. In early 2022, Quebec announced an expansion of its program to cover low-speed vehicles, cargo e-bikes, and commercial light trucks and vans.
- The province has a strong existing EV charging network, thanks to the strong mandate given to Hydro Quebec to build the network, including the use of ratepayer dollars to invest in the network while also offering alternate rate structures to improve the economics for other actors investing in charging infrastructure.
- The province is also investing in ZEV knowledge and capacity across the economy, offering training and accompaniment for businesses to electrify and investing in ZEV training programs for students and existing workers and mechanics.

4 Quebec's incentive for new BEV was dropped down to $7,000 as of April 1, 2022, reflecting the decreasing price differential between EVs and internal combustion engine vehicles in the province.

- Quebec's comprehensive approach to public education includes using ZEV in driving schools, public surveys, and test drives.

On the horizon

- Quebec has signalled its intention to adopt a ZEV mandate for MHDVs, within its *Plan pour une Économie Verte*.
- Quebec is leading an update to its ZEV mandate to legislate that 100% of vehicle sales must be ZEV by 2035.

Opportunity areas

- Incorporating equity considerations into its incentives and investments. This could include directing specific incentives to equity deserving communities and Indigenous Nations and setting specific targets for infrastructure deployment in these areas, as well as offering culturally-appropriate education initiatives in a wide range of languages.
- Implementing greater disincentives for the purchase and use of ICE vehicles (e.g. sales taxes, vehicle registration fees, road tools, etc.), building on Quebec's existing higher registration fees for large ICE vehicles.
- Requiring smart charging through the structure of funding for home charging, to support load management across the electricity system as demand grows.
- Strengthening its support for EV-ready retrofits of multi-unit residential buildings by structuring the program to require or encourage 100% EV-ready installations, thereby reaping the economies of scale that are possible through this approach.
- Supporting the growth of economic activity around recycling ZEVs and their batteries and moving toward extended producer responsibility on these products.

BUILDING MOMENTUM (26 – 50 POINTS)

Nova Scotia 36.5

	SCORING CATEGORY	SCORE	POINTS AVAILABLE
1	Light-duty ZEV adoption	8	12.5
2	Medium-duty, heavy-duty and off-road ZEV adoption	3	12.5
3	Infrastructure Deployment	4.5	25
4	Strategy, Regulation & Education	11	32
5	Industry & Workforce Development	6.5	12
6	Government Leadership	3.5	6
	TOTAL SCORE	36.5	100

Action highlights

- Nova Scotia's LDV purchase incentive program, covering both new and used ZEVs, was launched in 2021.
- The province has funded Halifax Transit for battery electric buses, associated facilities, and a zero-carbon ferry route and Cape Breton Transit for transit electrification planning and other projects.
- The EV Smart Charging Program from Nova Scotia Power invites EV owners to participate in various smart charging trials. Results are expected in 2022.
- The province has set caps on electricity sector emissions to 2030 and committed to 80% renewable electricity by 2030; greening Nova Scotia's grid is crucial to increasing the benefits of transportation electrification.
- Through NextRide, Nova Scotia offers Comprehensive public education programs with technical advisory services for businesses to transition fleets. This business education model should be replicated in other jurisdictions.
- Nova Scotia is a leader in supporting economic activity around EV batteries. The province works with Dalhousie University to support research initiatives at the Renewable Energy Storage Laboratory (RESL), which is testing grid scale storage options for used EV batteries. Further, through its Crown Corporation NSBI, the province is supporting Nova Scotia's battery technology ecosystem, including through the NSBI Payroll Rebate.

On the horizon

- In the Fall of 2021, the Province committed to developing and implementing a ZEV mandate that ensures at least 30% ZEV sales by 2030. Nova Scotia can work to integrate this provincial goal with the forthcoming federal ZEV mandate of 100% ZEV sales by 2035.
- In March 2022, Nova Scotia announced a provincial contribution of $1M to support charging stations in multi-unit residential buildings (both retrofit and new build).
- Setting a strong example for all of Canada, Next Ride, the province's EV outreach program, is focussing on developing information for Acadians (French documentation) and hiring an African Nova Scotian outreach staff to identify barriers to EV adoption and provide test drive opportunities for African Nova Scotian communities.
- Work is underway to set government ZEV fleet procurement targets.

Opportunity areas

- Aside from the transit sector, Nova Scotia does not yet offer funding for MHDV electrification, including trucks and school buses. There are also opportunities to support electrification in the off-road, marine, and port sectors, building on the recently announced federal iMHZEV program.
- Building on its initial investments, the province has commissioned work to strategically plan its EV charging network, including underserved areas. Setting clear infrastructure targets would help the province to plan and track progress.
- Nova Scotia can build on early discussions to adopt, or support municipalities in adopting, EV-ready building code criteria. This would complement the recently announced funding for multi-unit residential building retrofits.

BUILDING MOMENTUM (26 – 50 POINTS)

Yukon 36.5

	SCORING CATEGORY	SCORE	POINTS AVAILABLE
1	Light-duty ZEV adoption	8.5	12.5
2	Medium-duty, heavy-duty and off-road ZEV adoption	4	12.5
3	Infrastructure Deployment	16	25
4	Strategy, Regulation & Education	6	32
5	Industry & Workforce Development	0	12
6	Government Leadership	2	6
	TOTAL SCORE	36.5	100

Action highlights

- The Yukon Government has offered purchase incentives for ZEVs since 2020. It also covers shipping costs (up to $1,500) for used vehicles and a purchase incentive of $2,000 for e-snowmobiles, some ZEV aircraft/watercraft, regular and cargo e-bikes.
- The Yukon Government is one of only a few Canadian jurisdictions to have announced a formal ZEV infrastructure target. It announced in 2021 a target of 200 Level 2 chargers installed throughout the territory by March 2024 and has installed public fast and Level 2 chargers. Direct government investment in infrastructure has been complemented by rebates for the installation of Level 2 chargers at personal residences, commercial or multi-residential buildings, and municipal or First Nation government-owned buildings. Together, these efforts have resulted in the Yukon having the highest ratio of fast chargers to registered vehicles from among Canadian jurisdictions, at 34 fast charging ports per 100,000 registered vehicles.
- In 2021, the Yukon Government made a policy change to require that new residential buildings in Whitehorse (not other communities) be built with a conduit between the panel and the designated parking space (e.g., EV-ready).

On the horizon:

- In Fall 2022, the Yukon government will be proposing a new Clean Energy Act that will formalize carbon reductions and set ZEV sales targets. It will require annual government reporting on progress towards those targets.
- In 2022-2023 the Yukon government will be completing the installation of additional DC fast charging stations. It is expected that with these installations, all Yukon road-accessible communities will be able to be accessed by an EV.

Opportunity areas

- The Yukon Government offers a pilot rebate for MHDV, covering up to 80% of costs with no upper limit, but with a limit of 1 rebate per organization. This program should be expanded in the coming years, building on the recently announced federal iMHZEV program.
- There is an opportunity to invest in technician training and ZEV-related workforce development in the territory to ensure that ZEVs can be serviced, and ZEV infrastructure can be installed using local labour.

BUILDING MOMENTUM (26 – 50 POINTS)

Prince Edward Island 34

	SCORING CATEGORY	SCORE	POINTS AVAILABLE
1	Light-duty ZEV adoption	8	12.5
2	Medium-duty, heavy-duty and off-road ZEV adoption	4.5	12.5
3	Infrastructure Deployment	6.5	25
4	Strategy, Regulation & Education	11	32
5	Industry & Workforce Development	1	12
6	Government Leadership	3	6
	TOTAL SCORE	34	100

Action highlights

- PEI's LDV purchase incentive program, for new and used ZEVs, was launched in 2021.
- In 2020-21, the Government of P.E.I. invested $6.3 million in the purchase of 35 electric school buses.
- The Government of PEI has invested significantly in EV charging infrastructure.
- Unlike many jurisdictions, PEI has an emissions reduction target specific to the transportation sector: (25-30% reduction by 2030 and 55-65% reduction by 2040, from the 2015 baseline). These targets are not legislated.
- PEI leads the pack on parliamentarian EV education: the EV Swing Vehicle Program allows government staff to use a ZEV to travel to work related functions, helping to educate staff and get them familiar with ZEVs.

On the horizon

- In early 2022, PEI implemented a new purchase incentive program for e-bikes ($500) and regular bicycles ($100). The inclusion of regular bicycles is a novel and exciting approach.

Opportunity areas

- PEI's Net Zero Framework for 2040 sets a non-legislated target that greater than 60% of PEI's registered vehicles will be ZEV by 2040, that 100% of sales will be ZEV by 2035, and that 40% or more of registered MHDV will be ZEV by 2040. PEI can work to integrate these provincial goals with the forthcoming federal ZEV mandate of 100% ZEV sales by 2035.
- PEI can strengthen its infrastructure investments by developing targets for infrastructure to enable planning and tracking.
- PEI's electricity regulator has approved the utility building or investing in EV infrastructure on a pilot basis. Making this action available over a longer term would support infrastructure investment on the island, along with EV-supportive electricity rates.

BUILDING MOMENTUM (26 – 50 POINTS)

New Brunswick 27

	SCORING CATEGORY	SCORE	POINTS AVAILABLE
1	Light-duty ZEV adoption	7.5	12.5
2	Medium-duty, heavy-duty and off-road ZEV adoption	0	12.5
3	Infrastructure Deployment	7.5	25
4	Strategy, Regulation & Education	8	32
5	Industry & Workforce Development	0	12
6	Government Leadership	4	6
	TOTAL SCORE	27	100

Action highlights

- NB Power deployed a province-wide network of DCFC and Level 2 chargers, in partnership with Natural Resources Canada, the Provincial Government, local governments and private businesses. EV users can now travel across the province reliably, a big step for New Brunswick.
- New Brunswick's LDV purchase incentive programs for new and used ZEVs was launched in 2021.
- Unlike most jurisdictions, New Brunswick's home charging incentive, which covers 50% of the cost to purchase and install a Level 2 charger up to a maximum of $740, wisely requires that the charger be network capable. This means that the infrastructure can contribute to load management, helping to prepare the electrical grid for a ZEV future.
- In March 2022 New Brunswick launched Plug-In NB Charging Rebates for Businesses, which covered up to 50% of eligible costs up to $5,000 for Level 2 and $50,000 for DCFC of 50kW and above, managed by New Brunswick Power with funding from the federal government. NB Power temporarily closed the program in June 2022 to process registrations received and allocate the remaining funding. Infrastructure investment in the province has been recently accelerating.

On the horizon

- NB Power is partnering with the non-profit organization Plug'N'Drive to offer a test drive tour over summer 2022.

- In September 2022 New Brunswick released its updated Climate Change Action Plan in which the province commits to a number of expanded initiatives to support ZEV adoption, including a zero-emission freight incentive program and strategy.

Opportunity areas

- New Brunswick has announced a target of having 20,000 EVs on the road by 2030. The province can work to update this target and make it more ambitious, and integrate its provincial goal with the forthcoming federal ZEV mandate of 100% ZEV sales by 2035.
- New Brunswick does not yet offer funding for MHDV electrification. The province could start with transit and/or school buses, building on the recently announced federal iMHZEV program. A commitment in this direction was made in the September 2022 updated Climate Change Action Plan.
- New Brunswick can begin discussions with municipalities to explore mechanisms for EV-ready building requirements, while developing funding programs for EV-ready retrofits to multi-unit residential buildings.

GETTING STARTED (1 – 25 POINTS)

Newfoundland and Labrador 21

	SCORING CATEGORY	SCORE	POINTS AVAILABLE
1	Light-duty ZEV adoption	5.5	12.5
2	Medium-duty, heavy-duty and off-road ZEV adoption	1.5	12.5
3	Infrastructure Deployment	4	25
4	Strategy, Regulation & Education	5	32
5	Industry & Workforce Development	5	12
6	Government Leadership	0	6
	TOTAL SCORE	21	100

Action highlights

- Newfoundland and Labrador's LDV purchase incentive program was launched in 2021, initially only covering BEVs, but later expanded to cover PHEVs.
- Newfoundland and Labrador Hydro completed the installation of 14 fast and 14 Level 2 chargers across the Trans-Canada Highway in partnership with the Provincial Government and Natural Resources Canada. Additionally, Newfoundland Power and Newfoundland and Labrador Hydro received approval to install additional chargers in late 2021.

On the horizon

- Two municipalities have plans to access provincial and federal funding to electrify part of their transit bus fleets.
- Recently, the City of St. John's announced a plan for its EV charging network.

Opportunity areas

- Newfoundland and Labrador can make its LDV purchase incentive program more accessible by making the rebates available at point of sale—meaning that consumers do not have to initially pay the rebate cost out of pocket.

- Newfoundland and Labrador can take its charging infrastructure investment to the next level by setting clear targets and assessing needs for different areas of the province.
- Newfoundland and Labrador should explore opportunities to require that new developments be EV-ready.
- Expand the takeCHARGE public education program to include more in-person outreach and events. (in April 2022, the Province announced financial support to fund an EV Resource and Learning Centre to help raise awareness and outreach for EVs).
- Set government ZEV fleet procurement targets.

GETTING STARTED (1 – 25 POINTS)

Ontario 19.5

SCORING CATEGORY	SCORE	POINTS AVAILABLE
1 Light-duty ZEV adoption	0	12.5
2 Medium-duty, heavy-duty and off-road ZEV adoption	4	12.5
3 Infrastructure Deployment	5	25
4 Strategy, Regulation & Education	3	32
5 Industry & Workforce Development	7	12
6 Government Leadership	0.5	6
TOTAL SCORE	19.5	100

Action highlights

- With several recent announcements of financial support for new automobile and battery manufacturing plants, Ontario leads the pack in terms of economic investment in the ZEV industry.
- Ontario is investing in workforce development through Phase 2 of its Driving Prosperity plan. It is promoting career pathways in the automotive sector, providing internship programs and investing in R&D.

On the horizon

- Ontario announced provincial funding of $91 million for EV charging infrastructure in March 2022.
- In 2021, the Minister of Energy's mandate letter to the OEB stated that "the OEB must take steps to facilitate their efficient integration into the provincial electricity system, including providing guidance to Local Distribution Companies (LDCs) on system investments to prepare for EV adoption." It is important that the regulator clarify the ability of utilities to build or fund EV infrastructure using their rate bases.
- Ontario has announced that it will implement an "ultra-low" overnight electricity rate which would be favourable to EV charging.

Opportunity areas

- Reinstating ZEV purchase incentives and investing in public education is important to make sure that Ontarians are informed and can afford the ZEVs that will increasingly be manufactured in the province.

Incentives could be funded through a feebate system, which would be revenue neutral.

- Set provincial ZEV sales targets and work to incorporate these targets with the forthcoming federal ZEV mandate. A provincial mandate would ensure supply and choice of ZEV models for consumers.
- With the goods movement industry comprising a significant part of southern Ontario's economy, Ontario has a unique opportunity to facilitate MHDV ZEV adoption.
- Provincial investments would help the network develop at the pace needed to keep up with demand. Further, building on the implementation of favourable EV charging rates, the province and regulator should explore demand charge reform to improve the business case for EV charging.
- Develop a public education program.
- The province should ensure that a dedicated portion of its automotive workforce development funding is allocated to ZEV-specific training.
- Set government ZEV fleet procurement targets.

GETTING STARTED (1 – 25 POINTS)

Alberta 15.5

	SCORING CATEGORY	SCORE	POINTS AVAILABLE
1	Light-duty ZEV adoption	0	12.5
2	Medium-duty, heavy-duty and off-road ZEV adoption	3.5	12.5
3	Infrastructure Deployment	3	25
4	Strategy, Regulation & Education	4	32
5	Industry & Workforce Development	1.5	12
6	Government Leadership	3.5	6
	TOTAL SCORE	15.5	100

Action highlights

- The Government of Alberta provides financial support for municipalities to undertake ZEV projects, including funds for municipalities to purchase ZEVs of all types (including off-road vehicles, which are particularly relevant for municipalities' operations). The province also funds municipalities to invest in public EV charging infrastructure. These programs are managed by the Municipal Climate Change Action Centre (a collaborative initiative of Alberta Municipalities, Rural Municipalities of Alberta and the Government of Alberta).
- Alberta has also provided funding for the purchase of FCEV buses for the Edmonton transit system and BEV buses and on-route rapid charging infrastructure for the Calgary transit system, both on a pilot project basis.
- The Alberta Zero-Emissions Truck Electrification Collaboration (AZTEC) project, partially funded by the province, includes a demonstration hydrogen fuelling station and two fuel cell electric trucks.
- The utility ATCO led the deployment of a 20-charger network called Peaks to Prairies that was completed in 2020.
- Enmax, a utility in Calgary, has also led pilot projects to explore EV driver charging behaviour.

Opportunity areas

- The Province of Alberta currently offers no ZEV purchase subsidies to consumers or businesses. Financial support of this kind can help to accelerate uptake in the province.
- Set provincial ZEV sales targets and work to incorporate these targets with the forthcoming federal ZEV mandate. A provincial mandate would ensure supply and choice of ZEV models for consumers.
- The province has an opportunity to convene utilities, municipalities, and other actors to strategically plan ZEV infrastructure investment.
- There are currently no ZEV-related workforce development and training programs in the province. Alberta can seize this economic opportunity by investing in technical training in colleges and other institutions.
- Set government ZEV fleet procurement targets.

GETTING STARTED (1 – 25 POINTS)

Northwest Territories 15

SCORING CATEGORY	SCORE	POINTS AVAILABLE
1 Light-duty ZEV adoption	4	12.5
2 Medium-duty, heavy-duty and off-road ZEV adoption	0	12.5
3 Infrastructure Deployment	4	25
4 Strategy, Regulation & Education	7	32
5 Industry & Workforce Development	0	12
6 Government Leadership	0	6
TOTAL SCORE	15	100

Action highlights

- The Northwest Territories has offered a purchase incentive for new ZEVs since 2020.
- The Northwest Territories offers the GHG Grant Program for Buildings and Industry which can be used by businesses and non-profits to cover fuel switching projects. Projects must cost over $100,000. Grants for smaller projects are also available through the Arctic Energy Alliance.
- The Northwest Territories is a region with several communities without road access and with diesel-generated electricity. Recognizing the different needs of these communities, the government is integrating renewable energy sources in these areas.
- The Arctic Energy Alliance conducts in-person ZEV outreach and events.

On the horizon

- The Northwest Territories are aiming to deploy enough fast chargers on the corridor from Yellowknife to the Alberta border to allow for EV drivers to safely travel from Alberta to Yellowknife.
- In Fall 2022, the Northwest Territories will launch an application-based grant program to support deployment of charging infrastructure in public places, on street, in multi-unit residential buildings, and workplaces, funded through the NRCan ZEVIP program.

Opportunity areas

- The Northwest Territories could follow the lead of the Yukon by offering a rebate for electric snowmobiles and other off-road vehicles and covering the shipping costs of used ZEVs.
- There is also an opportunity to translate the Territory's infrastructure commitment to quantified, regional charging infrastructure plans.
- Set government ZEV fleet procurement targets.

GETTING STARTED (1 – 25 POINTS)

Saskatchewan 6.5

	SCORING CATEGORY	SCORE	POINTS AVAILABLE
1	Light-duty ZEV adoption	0	12.5
2	Medium-duty, heavy-duty and off-road ZEV adoption	0	12.5
3	Infrastructure Deployment	3.5	25
4	Strategy, Regulation & Education	3	32
5	Industry & Workforce Development	0	12
6	Government Leadership	0	6
	TOTAL SCORE	6.5	100

Action highlights

- SaskPower, with partial funding from the federal government, offers funding for fast charging projects with at least 2 ports each (covers the lesser of 75% of the project cost or $200,000). A priority map has been developed based on traffic volumes and infrastructure gaps; projects that serve these areas are prioritized.
- SmartCharge Saskatchewan, offered by SaskPower, is a pilot program that collects data on driving and charging behaviours to determine the grid impacts of EVs.
- SaskPower has committed to phase out all conventional coal-fired power generation and achieve 50% reduction in GHG emissions (from 2005 levels) by 2030.

Opportunity areas

- Saskatchewan could include off-road vehicles as a focus of an initial ZEV purchase incentive program.
- Online public education currently offered by SaskPower should be expanded to in-person outreach and test drive opportunities.
- The Government should bring together utilities, municipalities, and ZEV network providers to plan and coordinate infrastructure deployment.
- Saskatchewan should begin providing financial support to municipalities for ZEV fleet conversion and infrastructure.
- Set government ZEV fleet procurement targets.

GETTING STARTED (1 – 25 POINTS)

Manitoba 6

	SCORING CATEGORY	SCORE	POINTS AVAILABLE
1	Light-duty ZEV adoption	0	12.5
2	Medium-duty, heavy-duty and off-road ZEV adoption	0	12.5
3	Infrastructure Deployment	2.5	25
4	Strategy, Regulation & Education	2	32
5	Industry & Workforce Development	0	12
6	Government Leadership	1.5	6
	TOTAL SCORE	6	100

Action highlights:

- The Manitoba Conservation and Climate Fund provides grants of up to $150,000 per year to non-profit and academic organizations, municipalities, Northern Affairs and Indigenous communities for projects that address the effects of climate change and reduce greenhouse gas emissions. The 2021-22 grantee list included ZEV projects.
- Manitoba's low carbon intensity grid provides an excellent opportunity for transportation electrification.

On the horizon:

- The City of Winnipeg is developing a project to improve rider experience, including purchasing 110 ZEV buses. In July 2022 funding from the province and other orders of government was confirmed.

Opportunity areas:

- Set provincial ZEV sales targets and work to incorporate these targets with the forthcoming federal ZEV mandate.
- Building on the leadership by the Manitoba Motor Dealers' Association, plan for and invest in a charging network for the province.
- Offer provincial ZEV purchase incentives. Incentives could be funded through a feebate system, which would be revenue neutral.
- Set government ZEV fleet procurement targets.

GETTING STARTED (1 – 25 POINTS)

Nunavut 2

	SCORING CATEGORY	SCORE	POINTS AVAILABLE
1	Light-duty ZEV adoption	0	12.5
2	Medium-duty, heavy-duty and off-road ZEV adoption	0	12.5
3	Infrastructure Deployment	0	25
4	Strategy, Regulation & Education	2	32
5	Industry & Workforce Development	0	12
6	Government Leadership	0	6
	TOTAL SCORE	2	100

Action highlights

- A net metring program was made available in 2018, and grants are available to assist homeowners in installing a net metring system.

On the horizon

- The Kugluktuk Hybrid Solar/Diesel Project is underway. It will replace a diesel power plant with Nunavut's first hybrid solar energy system. Financial support is provided by the Qulliq Energy Corporation and the federal government.

Opportunity areas

- As Nunavut's communities rely on diesel for electricity, renewable energy and distributed generation projects will be very important in laying the groundwork for transportation electrification, including of off-road vehicles.
- Most of Nunavut's transportation emissions are from airplanes, as the 25 communities are fly-in. Advances in low-carbon air travel will be important for electrifying transportation in the Territory.

ZEV Sales

Sales of EVs have been accelerating in Canada as shown in Figure 4. According to Statistics Canada, in the first quarter of 2022, 7.7% of LDV sales were EVs[5], a record rate.

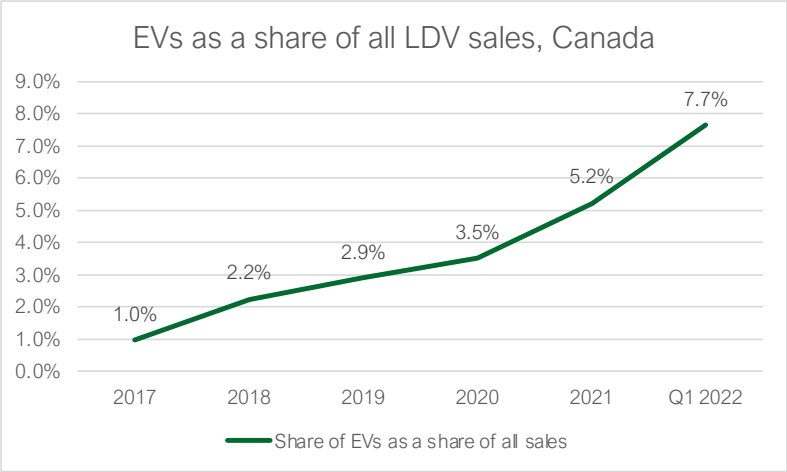


Figure 4. Growth in electric car sales in Canada. Source: IEA Global EV Outlook 2022. *Q1 2022 source: IHS Markit via Electric Autonomy Canada

These shares vary significantly from one province and territory to the next: in 2021, 93.4% of new ZEVs were registered in Canada's three largest provinces; 42.8% of new ZEVs registered were in Quebec, 27.7% in British Columbia, and 22.9% in Ontario.[6]

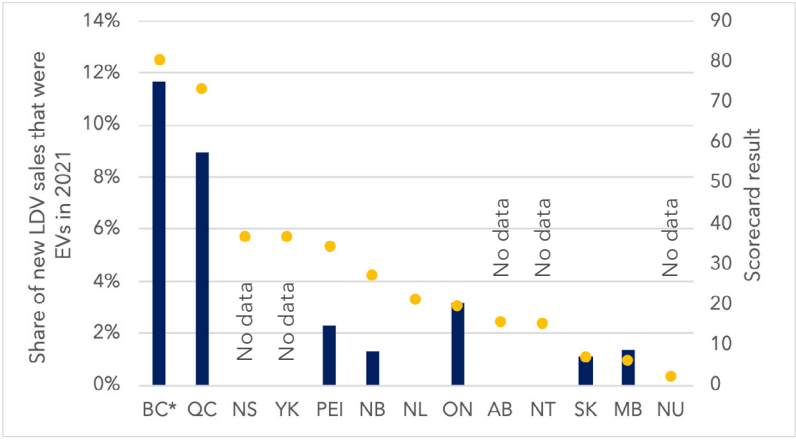


Figure 5. Share of new sales that were EVs in 2021 versus Scorecard results. Source: Statistics Canada, New motor vehicle registrations. *YK Source: Yukon government, via IHS Markit

We did not include sales and uptake of ZEVs as a scored metric in the Scorecard because this tool is focused on policy and programmatic actions that provinces, territories and utilities can take. In some cases,

5 The data available for new LDV registrations from Statistics Canada includes Class 2B vehicles, which are not counted in the LDV data from other sources.

6 *https://www.statcan.gc.ca/en/topics-start/automotive*

supply chain constraints (particularly during the COVID-19 pandemic) have limited the near-term impact of policies on measured ZEV uptake. Nonetheless, as shown in Figure 5 there is a notable correlation between the share of sales and the scorecard result in BC and Quebec, demonstrating the impact that provincial and territorial actions can have on sales, and therefore adoption. Provinces in the Building Momentum category, including several Atlantic provinces, have not yet seen the full impact of their actions in EV sales, in part due to supply constraints in these regions.

Results by Action Area

The average scores across all 13 provinces and territories are below 50% for each action area.

Collectively, jurisdictions have made the most progress on introducing purchase incentives and other actions to accelerate light-duty ZEV adoption, with an average score of 4.7 out of a possible 12.5 points (38%). That this has been the area of focus is unsurprising, given the relatively mature market for light-duty EVs and longstanding complementary federal incentives. Many of these incentive programs have been implemented in the last 1-2 years.

Government Leadership is the next most common Action area, where jurisdictions scored on average 2.3 out of a possible 6.0 points (38%). These actions include commitments to government fleet greening, and financial support to municipalities.

Key action areas for future focus include medium- and heavy-duty ZEV adoption; infrastructure deployment; strategy, regulation and education; and industry and workforce development.

SCORING CATEGORY	SCORE	POINTS AVAILABLE
1 Light-duty ZEV adoption	4.7	12.5
2 Medium-duty, heavy-duty and off-road ZEV adoption	3.3	12.5
3 Infrastructure Deployment	7.3	25
4 Strategy, Regulation & Education	8.2	32
5 Industry & Workforce Development	3	12
6 Government Leadership	2.3	6
TOTAL SCORE	28.7	100

We also examined three cross-cutting themes: **equity, utilities and beneficial electrification, and support to municipalities and engagement with Indigenous Nations.** Those results are presented in the section Key Roles for Provinces & Territories on page 50.

1. Light-duty Consumer ZEV Adoption (12.5 points available)

As public interest grows, are Provinces & Territories helping to make passenger ZEVs and other e-mobility options – such as e-bikes and electric car-share fleets – affordable for consumers?

What we looked for:

1.1 ZEV Incentives & ICE Disincentives (12.5 points)

- Purchase incentives for new light-duty ZEVs
- Purchase incentives for used light-duty ZEVs
- Purchase incentives for e-bikes and e-cargo bikes
- Specific incentives for taxi, ride hailing, carshare, and other shared fleets
- Scrappage program to replace ICE vehicles for alternatives
- Financial disincentives for the purchase of ICE vehicles
- Targeted benefits/mitigation of impact on underserved communities and Indigenous communities

Global benchmarks:

- Since 2016, consumers in Germany have had access to an "innovation premium" (purchase incentive) of € 9,000 for EVs/FCEVs and € 6,750 for PHEVs with a purchase price of less than € 40,000. The program has been extended to 2025. Notably, the incentive is paid for equally by the national government and the manufacturer. Germany also offers a purchase incentive of € 5,000 for used EV and FCEVs and € 3,750 for used PHEVs. [7]
- California's Clean Vehicle Rebate includes a top-up for low-income consumers, and eligibility includes a cap on household income.[8] Through partnerships with financial institutions, eligible residents can also receive buy-down grants and loans up to $20,000 for ZEV purchases. The Clean Cars 4 All Scrappage program takes a similar approach.
- The United Kingdom offers taxi drivers incentives of £7,500 towards the purchase of a new EV.[9]
- In the Netherlands, high-emitting vehicles older than 12 years old must pay an extra 15% tax on top of the existing ownership tax.[10]

Scorecard highlights:

- Quebec's Roulez vert program provides a purchase incentive of $8,000 for new BEV and FCEV and $500 – $8,000 for new PHEV, depending on the battery capacity. This incentive can be combined with the federal incentive. A purchase incentive of $4,000 is available for used BEVs. Since 2014, owners of large vehicles pay additional registration fees.

7 *https://alternative-fuels-observatory.ec.europa.eu/transport-mode/road/germany/incentives-legislations*
8 *https://cleanvehiclerebate.org/en/income-eligibility*
9 *https://theicct.org/sites/default/files/publications/Ride-hailing-cities-guide-mar2021.pdf* (page 11)
10 *https://blog.wallbox.com/ev-incentives-europe-guide/*

- BC, NL, NB, NS, PEI, YK, and NT now all offer purchase incentives as well, including incentives for e-snowmobiles in the Yukon.

Who to watch:

- In August 2022, the B.C. Government announced an increase to its ZEV passenger vehicle rebates along with new household income-tiered eligibility criteria. This means that higher rebates will go to lower-income consumers. While common in the US, this is the first time this important equity-oriented approach will be taken in Canada.
- In early 2022, PEI implemented a new purchase incentive program for e-bikes ($500) and regular bicycles ($100). The inclusion of regular bicycles is a novel and exciting approach.

2. Medium-duty, Heavy-duty and Off-road ZEV Adoption (12.5 points available)

With medium- and heavy-duty, and off-road, ZEVs becoming increasingly available, are Provinces & Territories helping businesses and other users to overcome cost barriers and adopt ZEVs in their fleets?

What we looked for:

2.1 ZEV Incentives & ICE Disincentives (12.5 points)

- Purchase incentives for medium- and heavy-duty ZEVs
- Financing options for businesses
- Funding for zero-emission school buses
- Funding and support for public transit fleet electrification
- Off-road EV purchase incentives

Global benchmarks:

- California's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project offers purchase incentives for all MHDV classes, with higher incentives for higher weight classes. Fleets may request up to 30 vouchers per year (drayage fleets may request up to 50). A top-up is available for fleets operating predominantly in disadvantaged communities.[11]
- The New York Green Bank, established with state funding, provides financing for businesses and municipalities for fleet transitions by financing against the value of the contracted lease payments or loan and incentive payments. The Bank invested $54 million in clean transportation in the 2021-22 fiscal year.[12]

Scorecard highlights:

- B.C.'s CleanBC GoElectric Commercial Vehicle Pilots Program provides up to one-third of project funding to support B.C.-based businesses, non-profits, local governments, Indigenous communities, and eligible public entities looking to deploy ZEV technology in commercial applications along with supporting infrastructure. The program supports on-road medium and heavy-duty applications, as well as projects in the marine, rail, air, or off-road categories.
- Under Quebec's Écocamionnage program, Class 3-6 fully electric vehicles are eligible for an incentive of up to $125,000 and Class 7 to 8 vehicles are eligible for up to $175,000. In early 2022, Quebec announced an expansion of its program to cover low-speed vehicles, cargo e-bikes, and commercial light trucks and vans.
- The Government of P.E.I. invested $6.3 million in the purchase of 35 Electric School Buses in 2020-21.

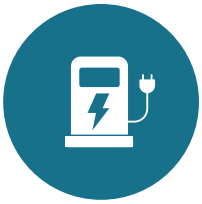
11 *https://californiahvip.org/*
12 *https://greenbank.ny.gov/-/media/Project/Greenbank/files/news-2019-12-NYGB-New-York-Lead-Robert-Gurman.ashx*

- The Province of Nova Scotia made a $37 million contribution to Halifax Transit for battery electric buses and associated facilities as well as a zero-carbon ferry route. It also provided funding to Cape Breton Transit for transit system electrification planning and other projects.
- Through its Super Green Credit rebate, the Government of Yukon provides a purchase incentive of $2,000 for e-snowmobiles; some ZEV aircraft/watercraft are also eligible.

Who to watch:

- In July 2022, the Government of Canada announced new incentives for MHD ZEVs, (iMHZEV Program) that will offer purchase incentives worth approximately 50% of the price difference between a ZEV and an ICE vehicle. Provinces and territories will have the opportunity to offer strategically stacked incentives, and apply for the incentives to support electrification of government fleets.
- The City of Winnipeg is developing a project to improve rider experience, including purchasing 110 ZEV buses. In July 2022 funding from the province and other orders of government was confirmed.

3. Infrastructure Deployment (25 points available)



Are provinces and territories building out the public and private EV charging and hydrogen refuelling infrastructure networks necessary to spur ZEV adoption?

What we looked for:

3.1 Targets for public infrastructure (8 points)

- Infrastructure targets and tracking
- Infrastructure targets specific to underserved communities & Indigenous communities
- Deployment of public & workplace infrastructure (DCFC)
- Deployment of in public & workplace infrastructure (L2)

3.2 Purchase incentives for home charging (2 points)

3.3 Funding for infrastructure for commercial fleets (2 points)

3.4 Requirements for 100% EV-ready buildings (8 points)

- EV-ready building code
- Funding for EV-ready building retrofits for multi-unit residential buildings (MURBs)

3.5 Grid optimization and utility regulation (5 points)

- Regulating utilities to allow/require infrastructure deployment
- EV-specific charging rates
- Grid optimization pilots/programs

Global benchmarks:

- Several municipal B.C. governments, such as Vancouver, have adopted 100% EV-ready requirements for residential parking, meaning that all (100%) of residential parking spaces feature an energized outlet capable of providing Level 2 EV charging. Some of these local governments also include requirements for commercial parking, typically 10-20% Level 2. BC local governments have established these parking requirements in their zoning bylaws' parking sections, or separate parking bylaws. The Government of B.C. clarified that provincial legislation did not prevent municipalities from taking this action but did not incorporate EV-ready requirements into the provincial building code.[13]
- Through B.C. Hydro and Fortis BC, the Government of B.C. offers rebates for EV-ready retrofits in apartments and condos. This program covers up to 75% of the cost to create an EV-ready plan (to a maximum of $3,000) and up to 50% of the electrical infrastructure and installation costs (to a maximum of $600 per parking stall and a project maximum of $120,000). While typically charger rebates are capped at 50% up to $2,000 per charger (and $14,000 per application), for a limited time the program subsidized

13 *https://cleanairpartnership.org/cac/wp-content/uploads/2019/10/NRCan-EV-Readiness-Requirements-Framework-Final-Report-4-11-2019-McEwen-Climate-and-Energy.pdf* (page 11)

75% of the costs up to a maximum of $5,000 per charger and $25,000 per condo to install eligible EV chargers.[14,15,16]

Scorecard highlights:

- The Yukon Government is one of only a few Canadian jurisdictions to have announced a formal EV infrastructure target (200 Level 2 chargers installed throughout the territory by March 2024).
- The Quebec Building Code was amended to require all new houses with a parking space to be EV-ready. The Yukon Building code was amended to require that all new residential buildings in Whitehorse be EV-ready (other communities were excluded, as many are non-road access communities).
- The Newfoundland Board of Commissioners of Public Utilities issued an order in 2020 determining that rates, charges, tolls related to public EV charging services do not require Board approval or regulation. Among other things, the order allows flexibility in how cost recovery models are approached, potentially making the environment more conducive for future private sector involvement in offering EV charging services.
- Building on leadership from local municipalities, B.C. is supporting EV-ready retrofits of multi-unit residential buildings, providing property owners with funding for EV-ready planning, electrical installations, and equipment, at scale.
- The deployment of public EV charging in B.C. has been accelerated by clarity from the regulator on the ability of utilities to invest in the charging network along with EV-supportive electricity rates and financial credits available through the provincial low-carbon fuel standard.
- A provincial law has authorized Hydro-Quebec to finance the installation of EV charging infrastructure using revenues generated by the increase in electricity sales resulting from EV charging. The utilty's plan to install approximately 2,500 chargers has been approved.
- Unlike most jurisdictions, New Brunswick's home charging incentive, which covers 50% of the cost to purchase and install a Level 2 charger up to a maximum of $740, wisely requires that the charger be network capable. This means that the infrastructure can contribute to load management, helping to prepare the electrical grid for a ZEV future.
- The EV Smart Charging Program from Nova Scotia Power invites EV owners to participate in various smart charging trials. Results are expected in 2022.

Who to watch:

- In March 2022, the Government of Nova Scotia announced a provincial contribution of $1M to support charging stations in new and retrofit multi-unit residential buildings.

14 *https://goelectricbc.gov.bc.ca/personal-rebate-offers/ev-charging/*
15 *https://electricvehicles.bchydro.com/incentives/charger-rebates/apartment*
16 *https://www.fortisbc.com/rebates/business/ev-charging-solutions-for-multi-unit-residential-buildings-and-workplaces*

4. Strategy, Regulation and Education (32 points available)

Are provinces and territories developing plans, using regulatory tools, and ensuring public know-how to encourage ZEV availability and adoption?

What we looked for:

4.1 Light-duty ZEV mandate (10 points)

4.2 Medium- and heavy-duty ZEV mandate (10 points)

4.3 Sectoral GHG reduction targets (2 points)

- Transportation sector
- Electricity sector

4.4 Other price signals and incentives (3 points)

- Low carbon fuel standard
- Carbon tax
- Non-financial incentives

4.5 Public education (7 points)

- Public outreach and information
- Targeted education for underserved communities and Indigenous communities
- Business education

Global benchmarks:

- The UK, Ireland and Denmark each have legislated sales mandates of 100% LD ZEV sales by 2030.[17]
- California has a legislated mandate of 100% MHD ZEV sales by 2045.[18]

Scorecard highlights:

- BC and Quebec both have legislated ZEV mandates, which has helped to ensure consistent supply of ZEVs in both provinces. Other provinces have taken the first step by announcing sales targets, including New Brunswick, PEI, Nova Scotia and the Yukon. In many cases, these targets need to be updated to match growth in the market and the pending federal ZEV mandate.
- Through NextRide, Nova Scotia offers Comprehensive public education programs with technical advisory services for businesses to transition fleets. This business education model should be replicated in other jurisdictions.

17 *https://www.iea.org/articles/global-ev-policy-explorer*
18 *https://ww2.arb.ca.gov/our-work/programs/advanced-clean-trucks*

- BC's Emotive education program provides stories, documents, and events in various languages to educate the public on EVs. It also offers ZEV test drives and demonstrations. Resources offered include the Emotive Campaigns Network, EV Ambassadors program, links to procurement and analysis tools, and a list of EV dealerships.

Who to watch:

- Both BC and Quebec have announced plans to adopt a sales mandate for MHD ZEV, in line with what is already in place in California. These actions would be a significant contributor to MHD ZEV availability, uptake and know-how in Canada.
- The federal government has announced its intention to adopt a federal ZEV mandate requiring that 100% of LDV sales be ZEVs by 2035. There is work to be done by provinces and territories to harness the potential of this policy regionally.
- The Clean Fuel Standard will encourage the uptake of EVs by allowing credits for residential EV charging to be created by network operators. In June 2020, ECCC presented a proposal for residential EV credit creation to stakeholders, which included a proposal to phase out residential EV charging credits by 2030. In response to feedback over spring 2020, credits for residential charging of electric vehicles will be phased out by 2035 for charging stations installed by the end of 2030. Any residential charging station installed after the end of 2030 will not be eligible for credits after 2030.
- In June 2022 the federal government published the Clean Fuel Regulations, which will require producers and importers to drive down the emissions intensity of liquid fuels over time. It will also create a credit market in which operators of EV charging could generate credits. This regulation will improve the business case for investment in charging and help spur further investment in infrastructure.
- The federal government is currently developing the Clean Electricity Regulations which will aim for a net-zero emissions electricity grid by 2035.

5. Industry and Workforce Development (12 points available)

Are provinces and territories creating opportunities to grow jobs and economic activity around the emerging ZEV market?

What we looked for:

5.1 Workforce development & training (5 points)

5.2 EV Battery reuse & recycling (4 points)

5.3 Other economic development action (3 points)

Global benchmarks:

- The US-based Zero-Emission Transportation Association named the State of Tennessee as the top US state for ZEV investment[19], citing a total of $18.1 billion USD in investments and 85,000 jobs created in EVs and EV technology. The State assembles all North American market-bound Nissan Leafs and has recently seen major investments in EV and battery manufacturing from major automakers and, recently, a fast charger manufacturer.[20]
- The State of Tennessee and automakers fund education and workforce training initiatives led by the community and technical college system. These programs are building a pool of skilled workers that will enable the state to continue attracting these major investments. For example, with Ford's investment in Blue Oval City, which will produce trucks and lithium-ion batteries, includes a new Tennessee College of Applied Technology which will train employees for the new plant as well as provide skills training for those looking to enter the automotive workforce elsewhere, or skill up.[21]
- According to an ICCT report,[22] economic developments around battery recycling capacity are strongest in Europe and China, which represent about 50% and 33% of global capacity, respectively. The European Union is proposing an update to its Battery Directive (legal regulatory framework) that includes sustainability and end of life requirements for EV batteries. A draft report adopted in March 2022 proposes actions including battery CO2 footprint labeling, minimum levels of recycled minerals (e.g., cobalt, lithium), increasing collection targets for certain classes of batteries (light transport), and collecting 100% of EV battery waste.[23]

Scorecard highlights:

- Ontario is investing in industry & workforce development through Phase 2 of its Driving Prosperity plan. This plan sets the goal of building 400,000 electric and hybrid vehicles by 2030 by partnering with the auto sector to invest in battery assembly and a supply chain, innovation, and worker training. It is promoting career pathways in the automotive sector, providing internship programs and investing in R&D.

19 *https://twitter.com/zeta_2030/status/1564264027576061957*
20 *https://tnecd.com/news/governor-lee-commissioner-rolfe-announce-tritium-to-establish-us-manufacturing-operations-in-wilson-county/*
21 *https://tnadvancedenergy.com/advanced-energy-workforce-development/*
22 *https://theicct.org/wp-content/uploads/2021/06/zev-supply-risks-dec2020.pdf*
23 *https://www.europarl.europa.eu/doceo/document/ENVI-PR-696435_EN.pdf.*

- With several recent announcements of attracting and investing in new automobile and battery manufacturing plants, Ontario leads the Canadian pack in terms of economic investment in the ZEV industry. This includes a recent investment by Stellantis (with funding from the provincial government) to retool existing plants to be ready to produce electric vehicles and create two R&D centres focusing on EVs and batteries. Since 2020, about $14 billion in investments have been made in Ontario's automotive sector, with about half of this going toward hybrid and EV production.[24]
- Nova Scotia is a leader in supporting economic activity around EV batteries. The province works with Dalhousie University to support research initiatives at the Renewable Energy Storage Laboratory (RESL), which is testing grid scale storage options for used EV batteries. Further, through its Crown Corporation NSBI, the province is supporting Nova Scotia's battery technology ecosystem, including through the NSBI Payroll Rebate.
- The Go Electric Advanced Research and Commercialization (ARC) program supports B.C.'s ZEV sector by providing reliable and targeted support for pre-commercial research and development of a B.C.-based product, service or technology; commercialization of a B.C.-based product, service or technology including investments in manufacturing facilities or processes; and use or demonstration of a B.C.-based product, service or technology.
- The Go Electric Training program helps prepare B.C.'s workforce to be leaders in the transition to ZEVs. Go Electric funding supports Red Seal Electricians in B.C. to complete the Electric Vehicle Infrastructure Training Program (EVITP) delivered by the Electrical Joint Training Committee (EJTC). This program provides training and certification for electricians installing EV charging infrastructure. In 2021, updated educational resources for B.C. electricians installing EV charging infrastructure were developed.
- Quebec is investing in ZEV knowledge and capacity across the economy, offering training and accompaniment for businesses to electrify and investing in EV training programs for students and existing workers and mechanics.

Who to watch:

- BC has announced plans to expand Extended Producer Responsibility program to include EV batteries and chargers. B.C. government has started to develop EV battery recycling programs, which would become operational in 2026.
- In August 2022, Ontario announced new funding to train autoworkers, recognizing the labour shortage in this industry. The funding is not specific to EV manufacturing,

24 *https://news.ontario.ca/en/release/1002141/major-investments-secure-automotive-manufacturing-futures-for-windsor-and-brampton*

6. Government Leadership (6 points available)

Are provinces and territories showing the way by investing in ZEVs in their own fleets and supporting municipalities to take action?

What we looked for:

6.1 Government procurement (2.5 points)

- Targets for zero-emission government fleets
- ZEV requirements in non-fleet government procurement
- Investment in infrastructure on government sites

6.2 Government & parliamentarian education (0.5 points)

6.3 Support to municipalities and work with with Indigenous nations (3 points)

Global benchmarks:

- The Chinese Government's Implementation Plan for the Purchase of New Energy Vehicles by Government Organizations and Public Institutions requires a minimum share of "new energy" vehicles in annual purchases and mandates minimum procurement shares by municipal and regional governments. From 2014 to 2016, 30% of new vehicles purchased by governments and public institutions were new energy vehicles.[25] The requirements increase each year.
- The European Union's Clean Vehicle Directive aggregates municipal vehicle purchases to national levels and establishes ZEV procurement targets for each member state.[26]

Scorecard highlights:

- Quebec has committed that 100% of the cars and vans and 25% of the pickup trucks and SUVs in provincial government fleets will be electric by 2030. It has also committed to 100% of the MHDV in its fleet being ZEVs by 2040, where possible.
- PEI leads the pack on parliamentarian EV education: the EV Swing Vehicle Program allows government staff to use a ZEV to travel to work related functions, helping to educate staff and get them familiar with ZEVs.
- The Government of Alberta provides financial support for municipalities to undertake ZEV projects, including funds for municipalities to purchase ZEVs of all types (including off-road vehicles, which are particularly relevant for municipalities' operations). The province also funds municipalities to invest in public EV charging infrastructure. These programs are managed by the Municipal Climate Change Action Centre (a collaborative initiative of Alberta Municipalities, Rural Municipalities of Alberta and the Government of Alberta).

25 *https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/pdf/transportation/NRCan_GreeningGovFleets_e.pdf*
26 *https://www.iea.org/reports/global-ev-outlook-2021/policies-to-promote-electric-vehicle-deployment*

- In B.C. 2020, 34% of applicable provincial government light-duty vehicle purchases were zero emission vehicles, exceeding the 10% ZEV purchase target in CleanBC. B.C. is making zero-emission vehicles the default option for B.C. public sector fleets, and the CleanBC Roadmap to 2030 committed to ZEVs accounting for 100% of light-duty vehicle acquisitions by 2027.

Who to watch:

- Nova Scotia has work underway to set government fleet electrification targets.

Key Roles for Provinces & Territories

Cross-cutting Theme: Equity

Provinces and territories must make sure that ZEV Policies, programs, and investments are prioritizing underserved populations and making zero-emissions mobility an option for everyone.[27]

MOBILITY EQUITY

The Greenlining Institute defines **mobility equity** as "a transportation system that increases access to high quality mobility options, reduces air pollution, and enhances economic opportunity in low-income communities of colour (and for the purposes of this Scorecard, this specifically includes Black and Indigenous communities)." The Institute states that to achieve mobility equity, we must prioritize:

1. **Social equity:** The fair and just distribution of societal benefits and burdens.
2. **Community power:** The ability of marginalized communities to influence decisions in a way that addresses their needs and concerns.

As such, the degree to which ZEV policies and programs support mobility equity depends not only on the extent to which they distribute resources fairly, but also the extent to which underserved communities have the opportunity to participate in their development.

Provincial and territorial governments have a key role to play in making sure electric mobility is an option for all of their residents, including communities that are currently underserved by ZEV policies and programs (racialized, Indigenous, poor, rural and remote populations, and people living in high-rise housing without parking). Within this Scorecard, ten metrics, across five action areas, are critical from an equity perspective.

Action Area	Metric	Number of jurisdictions taking action
1-Light-duty ZEV adoption	Incentives available to taxi, ridehailing, and carshare fleets	2
	Purchase incentives for used light-duty ZEVs	7
	Purchase incentives for e-bikes and cargo e-bikes	4
	Targeted incentives for underserved communities	0
2-Medium-duty, heavy-duty and off-road ZEV adoption	Funding for zero-emission school buses	3
	Funding and support for public transit fleet electrification	7
3-Infrastructure Deployment	Infrastructure targets specific to underserved communities	1
	Funding for EV-ready building retrofits for multi-unit residential buildings (MURBs)	3
4-Strategy, Regulation and Education	Targeted education for underserved communities	2
5-Industry & Workforce Development	Workforce development & training	6

27 *https://greenlining.org/wp-content/uploads/2019/01/MobilityEquityFramework_8.5x11_v_GLI_Print_Endnotes-march-2018.pdf*

The most progress on equity-related measures in Canada includes:

- Seven jurisdictions have introduced **purchase incentives for used light-duty ZEVs** and four jurisdictions have **purchase incentives e-bikes**. These are important initiatives to support lower-income populations, gig workers, and those without a driver's license or access to parking (see action area 1).
- Encouragingly, seven provinces across the country are already providing funding and support for the **electrification of their public transit fleets**. The benefits of these investments accrue disproportionately to low income and racialized people, who are more likely to ride transit and live in areas of high traffic pollution (see action area 2).

More action is needed particularly on the following equity-related measures:

- ZEV purchase incentives can perpetuate existing racial and socioeconomic inequalities if they are not designed intentionally because incentives tend to be used by groups who are already the most common buyers of ZEVs—these groups are disproportionately wealthy, male, middle-aged, and living in detached homes.[28] Moving forward, **ZEV incentives should be designed to prioritize access for underserved communities**. This can be done through measures like income-tested access to incentives (as in California), specific subsidy programs for taxi and ridehailing drivers (as in London, UK) and specific subsidy programs for underserved groups such as Indigenous communities. No Canadian jurisdictions had taken this step during the 2021-22 fiscal year, but BC launched the first such program in summer 2022, introducing eligibility criteria and tiered incentive levels based on individual and household income (see action area 1).
- In Canada, no jurisdiction has set a **ZEV infrastructure target specific to underserved communities**. Notably, BC has introduced higher rebates for Indigenous nations to purchase and install EV chargers. In general there is an urgent need across the country for jurisdictions to support lower-income, racialized, Indigenous, rural, and northern communities to build charging infrastructure. Provincial governments have a role to play in subsidizing and deploying charging infrastructure to areas where the business case is currently weaker. Investment targets and planning for infrastructure in underserved communities have become commonplace in the US, where federal funding requires it (see action area 3).
- Lower-income and racialized populations are more likely to live in multi-unit residential buildings and will need access to convenient, affordable public charging infrastructure as well as **comprehensive EV-ready retrofits for multi-unit residential buildings**. Three Canadian jurisdictions have begun creating dedicated funding streams for these important investments (see action area 3).
- Six jurisdictions have a good start on developing **workforce training programs** specific to ZEV skills. This represents an important opportunity to distribute the benefits of the ZEV transition to workers of all skill levels. Targeted training programs for underserved groups represent a so far untapped opportunity (see action area 5).

28 *https://theicct.org/sites/default/files/publications/Expanding-access-electric-mobility_ICCT-Briefing_06122017_vF.pdf*

Cross-cutting Theme: Utilities and beneficial electrification

Provinces and territories must work directly with the utilities and regulators in their jurisdiction to ensure that the grid is prepared to enable and benefit from the shift to electric mobility.

Enabling the shift to ZEVs requires coordinated actions across the electricity system alongside government programs and policies. Within this Scorecard, the nine measures that need to be taken by, or in coordination with, utilities, are related to infrastructure deployment and public education.

Action Area	Metric	Number of jurisdictions taking action
3-Infrastructure Deployment	Deployment of public & workplace infrastructure (DCFC)	11
	Deployment of in public & workplace infrastructure (L2)	11
	Purchase incentives for smart home charging	6
	Funding for infrastructure for commercial fleets	6
	Regulating utilities to allow/require infrastructure deployment	4
	EV-supportive electricity rates	2
	Grid optimization pilots/programs	6
6-Government Leadership	Public outreach and information	10
	Business education	3

The most progress on ZEV-related beneficial electrification in Canada includes:

- Most jurisdictions (11) have begun investing in the **deployment of public and workplace charging infrastructure,** to varying degrees. In some cases, such as in Saskatchewan, Ontario and several Atlantic provinces, this effort has been led by utilities (see action area 3).
- Several jurisdictions (6) have **purchase incentives for smart home charging**. Smart charging in particular will allow utilities to encourage load management, critical for the future of the grid (see action area 3).
- Most jurisdictions (10) have **public outreach and information campaigns**; utilities are often leading education efforts as they have a direct relationship with the public as customers and information about their needs and habits (see action area 4).

More action is needed particularly on the following measures:

- Jurisdictions must act quickly to **allow and/or require utilities to invest in infrastructure from their rate base.** While this may not be necessary in the long term, in the near term it is essential to ensure that infrastructure will be built even where the near-term business case is unsatisfactory. Only four jurisdictions have created clarity on this front, and most only on a pilot basis (see action area 3).
- Provinces, regulators and utilities must act to ensure that electricity rates do not prohibit infrastructure investment. This means **reforming demand charges** to enable fast charging and offering **attractive overnight charging rates** for consumers. Only one jurisdiction (BC) is currently experimenting with EV-specific rate structures, though others (including Ontario) have announced their interest (see action area 3).

Cross-cutting Theme: Support to municipalities and work with Indigenous nations

Provinces and territories must play a direct role in supporting municipalities and working with Indigenous nations to enable ZEV adoption.

As the order of government responsible for municipalities, provinces and territories have a significant impact on municipalities' ability and obligation to move quickly to enable electric mobility. Provinces and territories should send strong signals to local governments via clear enabling legislation, funding transfers designed to improve equity and lower barriers, and accessible resources and supports. In some cases, it may be appropriate for provinces and territories to lead local investments, such as ZEV infrastructure, taxi/ridehailing electrification, and multi-unit residential building retrofits.

First Nations, Inuit and Métis Peoples will have different priorities when it comes to ZEV access and infrastructure; Provinces and Territories should work with them to set a plan.

Action Area	Metric	Number of jurisdictions taking action
1-Light-duty ZEV adoption	Incentives available to taxi, ridehailing, and carshare fleets	2
2-Medium-duty, heavy-duty and off-road ZEV adoption	Funding and support for public transit fleet electrification	7
3-Infrastructure Deployment	Deployment of public & workplace infrastructure (DCFC)	11
	EV-ready building code	4
	Funding for EV-ready building retrofits for multi-unit residential buildings (MURBs)	3
6-Government Leadership	Support to municipalities & First Nations	6

The most progress on support to local governments in Canada includes:

- About half of jurisdictions (6) are providing some degree of **financial support to municipalities and Indigenous communities** by providing funding for public education, electrification of municipal and public transit fleets, and ZEV infrastructure. Infrastructure funding support could complement available federal funding by prioritizing neighbourhoods and rural regions less likely to be served by private infrastructure investment in the near term, including expanded funding opportunities to install local renewable energy and battery storage systems in remote diesel-powered communities (see action area 6).
- BC increased the amount of rebates that are available to Indigenous communities to build charging infrastructure.

More action is needed particularly on the following measures:

- Building codes should be updated to require that **100% of parking stalls in all new residential construction be EV-ready** to future-proof buildings for the ZEV transition and promote equitable access to EV charging. While no jurisdiction has yet fully made these changes, several interim steps have been taken, ranging from provincial clarification that enables municipalities to implement their own building code requirements (BC), code updates that require EV-ready buildings in key cities (Whitehorse in the Yukon), and code updates focused on a specific building sector (e.g., Part 9 buildings in Quebec) (see action area 3).

- **Taxi and ridehailing** represent a major opportunity for electrification because of their long duty cycles. Incentivizing the turnover would require an initial investment in fleet turnover that provinces and territories may be best placed to provide, in partnership with local governments. No jurisdictions in Canada have yet addressed this opportunity, although a few do not limit the number of purchase incentives per organization, which indirectly supports these fleets (see action area 1).
- Very few provinces and territories have introduced specific programs for **Indigenous communities**. The design of these programs, and related resources and supports, should be informed by meaningful consultation and customized to best serve the needs of the community. This could include making resources available in multiple languages, partnering with trusted community and advocacy organizations, considering cultural differences in program design and communication, and providing opportunities for community knowledge and skills acquisition (see all action areas).

The Road Ahead

The ZEV market has officially taken off. More EVs were sold each week in 2021 than in all of 2012, totalling a new record of 6.6 million EVs (almost 10% of global car sales).[29] This growth is being driven by the maturity of EV technologies, the diversification of available models, sustained policy support (especially incentives and targets to phase out ICE vehicles), and ambitious targets set by automakers themselves.

These trends will continue in the coming years, with new LDV and MHDV models expected to become increasingly available. Many ZEV and battery manufacturing commitments in the US and Canada will contribute to increasing supply.[30]

Canadian context

- Anticipated action from the Canadian federal government will continue to bolster the ability of provinces and territories to secure supply and adopt regionally-sensitive incentives, programs and regulations. Key federal actions on the horizon include:

MHD ZEV incentives

- In July 2022, the Minister of Transport announced the Incentives for Medium- and Heavy-Duty Zero Emission Vehicles (iMHZEV) program. Over the next four years, the government will provide $550 million in the form of purchase incentives to support businesses and communities in the transition to MHZEVs. At a maximum of $200,000 for some vehicles, and stackable with Provincial and Territorial incentives, this program will no doubt help to accelerate action in this sector – an action area with one of the lowest average scores in this year's Scorecard. Alongside the Budget 2022 announcement to extend and expand the existing federal iZEV program, Canada now has federal incentives in place for all key vehicle classes.

Federal ZEV mandate

- In Canada's 2030 Emissions Reduction Plan: Clean Air, Strong Economy, the Federal government announced its plan to develop a light-duty ZEV sales mandate for new vehicle purchases of 100% ZEV sales by 2035. The market share of light-duty ZEV sales has grown steadily over the past few years from 2.3% in 2018 to 5.6% in 2021. Under the proposed ZEV mandate, sales would grow to minimum targets of 20% by 2026 and 60% by 2030. Provinces and territories will need to engage closely in this process to ensure that these goals are translated regionally.

Low Carbon Fuel Regulations

- In June 2022 the federal government published the Clean Fuel Regulations, which will require producers and importers to drive down the emissions intensity of liquid fuels over time. It will also create a credit market in which operators of EV charging could generate credits. This regulation will improve the business case for investment in charging and help spur further investment in infrastructure.

29 *https://iea.blob.core.windows.net/assets/ad8fb04c-4f75-42fc-973a-6e54c8a4449a/GlobalElectricVehicleOutlook2022.pdf*
30 *https://theicct.org/us-ev-investment-jul22/*

Clean Electricity Regulations

- The federal government is currently developing the Clean Electricity Regulations which will aim for a net-zero emissions electricity grid by 2035.

Our neighbour to the south

On August 16, 2022, the US Inflation Reduction Act was signed into law. It includes historic levels of funding for climate action and the clean energy transition and could cut US emissions by roughly 40% by 2030 (relative to 2005 levels). The Act includes several provisions that will support the pace and sustainability of ZEV adoption, including:

- Tax credits for new and used ZEVs, the eligibility for which includes vehicles manufactured in Canada
- Production tax credits to facilitate investments in manufacturing batteries and domestic mining of minerals essential for ZEV batteries
- Government loans and grants for US automakers to upgrade existing facilities and set up ZEV factories
- Funding to support energy-efficient retrofits in low-income households, which can indirectly support planning and implementation of residential EV charging infrastructure

Next year's Scorecard

The ZEV Scorecard is intended to be updated and released annually, acting as a consistent reference point for progress and policy inspiration in the transition to ZEVs. Scoring metrics and weighting will evolve to consider emerging best practices and the impact of federal-level policies and international action. This will help ensure that the Scorecard reflects overall progress on the ZEV transition while remaining ambitious.

Appendix: Methodology and weighting for the Scorecard

1. Light-duty Consumer EV Adoption (12.5 points available)

1.1 ZEV Incentives & ICE Disincentives (12.5 points)

- Purchase incentives for new light-duty ZEVs
  - Purchase incentives will accelerate the move toward price parity between ZEV and ICE vehicles. Purchase incentives can be layered onto the existing Federal purchase incentive (iZEV Program) and reduced or phased out over time as the cost of ZEVs goes down and ownership increases.
- Purchase incentives for used light-duty ZEVs
  - Used vehicle purchases are more common than new vehicles.[31] As more used ZEVs enter the market, used ZEVs are a viable and important option for consumers. They are also critical for supporting equitable adoption of ZEVs and reducing overall vehicle life-cycle impacts.
- Purchase incentives for e-bikes and e-cargo bikes
  - E-bikes and e-cargo bikes make zero-emissions mobility an option for non-drivers and non-car owners. E-bikes help more users feel comfortable and capable in switching to active transportation and overcoming mobility and geographic barriers, while e-cargo bikes are an attractive alternative for urban, last-mile and local deliveries.
- Specific incentives for taxi, ridehailing, carshare and other shared fleets
  - Currently, most incentive programs restrict incentives to 10 or fewer vehicles per organization per year, limiting the extent to which shared fleets can benefit. Since they have higher mileage, these vehicles are excellent candidates for electrification. Specific provisions for shared fleets are required to promote the shared vehicle model and reduce vehicles per household.
- Scrappage program to replace ICE vehicles for alternatives
  - Scrappage programs can help to take the dirtiest ICE vehicles off the road while replacing them with zero-emission or non-car alternatives.
- Financial disincentives for the purchase of ICE vehicles
  - Jurisdictions that have moved the fastest have not only incentivized ZEV adoption, but disincentivized ICE purchases – for example, through additional taxes on the purchase of non-ZEV vehicles, as in Norway. Generated revenue can be used to cross-subsidize ZEV incentives, for example through a "feebate" system.
- Targeted benefits/mitigation of impact on underserved communities and Indigenous communities
  - Leading jurisdictions apply income caps on purchase incentives and/or higher incentives for equity deserving communities to ensure fair access to government investments.

31 *https://www.motortrader.com/motor-trader-news/automotive-news/majority-buy-consumers-opt-used-new-cars-28-10-2019#:~:text=According%20to%20research%20released%20by,purchase%20was%20a%20used%20car.*

2. Medium-duty, Heavy-duty and Off-road ZEV Adoption (12.5 points available)

2.1 ZEV Incentives & ICE Disincentives (12.5 points)

- Purchase incentives for medium- and heavy-duty ZEVs
  - Purchase incentives will accelerate the move toward price parity between ZEV and ICE vehicles.
- Financing options for businesses
  - Preferential depreciation rates are one example of a favourable financing mechanism.
- Funding for zero-emission school buses
  - Provincial and Territorial governments have relatively significant influence over school bus procurement, and can help overcome adoption barriers related to purchase price and charging infrastructure. Provinces and Territories may subsidize or directly purchase zero-emission school buses, depending on the structure of school bus ownership in the Province/Territory.
- Funding and support for public transit fleet electrification
  - The shift to sustainable transportation requires significant investment in public transport systems. Earmarking specific funding for zero-emissions transit helps transit agencies invest in electrification.
- Off-road EV purchase incentives
  - Off-road vehicles include consumer products like electric snowmobiles and ATVs, as well as industrial vehicles such as those used for mining and in ports. This area is growing in importance as electrification progresses in easier-to-electrify segments.

3. Infrastructure Deployment (25 points available)

3.1 Investment in public infrastructure (8 points)

- Infrastructure targets and tracking
- Infrastructure targets specific to underserved communities and Indigenous communities
  - Undertaking a target-setting exercise can help governments determine where and how to focus charging infrastructure investments and meet anticipated demand
- Investment in public & workplace infrastructure
  - At this stage of development, most charging stations are not expected to be profitable, so government investment is key. Governments may directly develop infrastructure or fund third parties to do so. Governments may also require certain landowners to install infrastructure by regulation.

3.2 Purchase incentives for home charging (2 points)

- Home charging incentives are sometimes packaged with ZEV purchase incentives. To support load management, programs should require that participants install smart-charging-enabled equipment.

3.3 Funding for infrastructure for commercial fleets (2 points)

- Fleet charging incentives are sometimes packaged with ZEV purchase incentives for businesses.

- Fleet owners often face major utility charges for the grid upgrades required to accommodate fleet charging (particularly for fleets with large batteries such as transit). These costs should be eligible under fleet electrification incentives and/or otherwise subsidized.

3.4 Requirements for 100% EV-ready buildings (8 points)

- EV-ready building code
- Funding for EV-ready building retrofits for multi-unit residential buildings (MURBs)
  - Ensuring charging infrastructure is available to people without garages requires new and existing residential buildings to have an energized outlet at every parking stall ("100% EV-ready"). Aiming for less than 100% in residential buildings means that owners will miss opportunities to reap economies of scale and future proof their assets. Provinces and territories can amend their building codes or their interpretation of the national model code to incorporate this requirement.

3.5 Grid optimization and utility regulation (5 points)

- Regulating utilities to allow/require infrastructure deployment
  - Utilities have a key role to play in infrastructure deployment, but in many cases the Government and/or regulator must clarify their ability to rate-base those investments. Some regulators have begun by authorizing charging infrastructure investments on a pilot basis.
- EV-specific charging rates
  - Utility rate reform can have a significant effect on the business case for charging infrastructure, particularly demand charge reform. Favourable overnight charging rates are another attractive option.
- Grid optimization pilots/programs
  - Grid optimization pilots/programs can include monitoring of EV charging, off-peak charging incentives/rates, smart/managed charging, or bi-directional charging

4. Strategy, Regulation and Education (32 points available)

4.1 Light-duty ZEV mandate (10 points)

- A ZEV mandate requires automotive retailers to sell a minimum percentage of ZEVs or pay financial penalties. Provinces with ZEV mandates in place have seen supply of ZEVs in dealerships, and sales, increase dramatically.

4.2 Medium- and heavy-duty ZEV mandate (10 points)

- As more MHD ZEVs become available and viable, a similar approach should be taken to accelerate sales.

4.3 Sectoral GHG reduction targets (2 points)

- Transportation sector
- Electricity sector
  - Translating economy-wide GHG reduction targets to sector-specific targets can help to match ZEV policy with the required reductions in overall emissions. Similarly, provinces with more carbon-intensive electricity grids must take steps to green the grid in order to harness the benefits of electrification.

4.4 Other price signals and incentives (3 points)

- Low carbon fuel standard
  - Jurisdictions with a low carbon fuel standard (or clean fuel standard) that provides credits to EV charging station operators have significantly improved the business case for EV charging.
- Carbon tax
  - Having a carbon tax improves the business case for ZEVs by increasing the cost of fuelling an ICE vehicle. Across Canada, all provinces now have carbon pricing regimes as a result of the federal backstop.
- Non-financial incentives
  - Other benefits to individual and business ZEV users include preferential rates or access to toll highways, parking, ferries, or other infrastructure/areas.

4.5 Public education (7 points)

- Public outreach and information
- Targeted education for underserved communities and Indigenous communities
- Business education

5. Industry and Workforce Development (12 points available)

5.1 Workforce development & training (5 points)

- The transition to ZEVs provides many opportunities for job creation across manufacturing, retailing, and auto repair and maintenance. Fast-tracking mechanic training/retraining is especially important to ensure that ZEV owners can conveniently have their vehicle serviced.

5.2 EV Battery Reuse & Recycling (4 points)

- Provinces and territories should drive economic development around the collection, reuse and repurposing of EV batteries. As uptake grows, proper management of this waste is not only important for the environment but also a significant opportunity for job creation.

5.3 Other economic development action (3 points)

- Other economic development actions include investment in R&D, manufacturing, upstream resource development, and more.

6. Government Leadership (6 points available)

6.1 Government procurement (3 points)

- Targets for zero-emission government fleets
  - Government fleets can act as precursors/catalysts.
- Investment in infrastructure on government sites
  - Since governments are a major purchaser of vehicles and fuel, electrifying government fleets sets the example, sends a clear market signal, and drives supply and the development of affiliated services.

6.2 Government & parliamentarian education (0.5 points)

- Elected officials and staff can be equipped with further information to make informed decisions about policies, programs and procurement concerning ZEVs.

6.3 Support to municipalities and work with Indigenous nations (3 points)

- Provinces and Territories have a unique role to play in supporting municipalities and Indigenous nations. This support can include direct financial transfers for ZEV-related programs, providing regulatory clarity for building code amendments and other regulatory frameworks, or supporting indirectly by investing in multi-unit residential building retrofits and more.