Making the Grade

Provinces hold the wheel on big energy, investment, and infrastructure decisions, but are they taking the right steps to build more sustainable economies? Our scorecard reveals a Canada of provincial leaders and laggards

CLEAN ENERGY CANADA

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Making the Grade

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The True North A to D

As federal and provincial politicians pile into the debate over carbon pricing, a more pressing question has emerged: if certain provinces reject federal climate action, what would they do instead? Or better yet, what are they doing right now to build more sustainable economies?

While every level of government bears responsibility for climate issues, **there are few subnational jurisdictions around the world with as much authority over their economic and environmental futures as Canadian provinces.** As a result, Canada's success through the energy transition depends on their leadership. However, since 2016, the federal government has covered 80% of the cost of Canadian climate action, despite holding the purse strings on only 20% of public spending.[1,2]

In a world where countries are pouring trillions into clean industries and household climate solutions (most notably, President Joe Biden's Inflation Reduction Act), decisions made today by provinces will have implications for their industries, local businesses, and residents for decades to come. **In short, the energy transition is no longer just about emissions—it's about economics and affordability too.**

But in this low-carbon horse race, some provinces are further along than others. And while Canada would undoubtedly benefit most if provinces led the field together, divergent approaches can drive both competition and learning opportunities between neighbours.

Clean Energy Canada graded each province between A+ and D on its progress toward building a sustainable economy, illuminating Canada's leaders and laggards. We assessed the provinces in four areas: clean energy, clean buildings, clean transportation, and clean industry. Each of these categories encompasses a spectrum of actions, from macro-level policies like electricity planning to household-level measures like rebates for EVs and heat pumps that enable residents to save money as well as emissions. While there are a number of ways that provinces can build sustainable economies, this scorecard focuses on areas where provinces should be helping citizens and businesses benefit from the energy transition.

Quebec topped the rankings with a near straight-A scorecard, thanks to its clean electricity ambitions and investments in clean industries like EV batteries. In fact, buildings was the only category where the province received a B, in part due to its lack of action on low-carbon construction. British Columbia came in second with an unsurprising A in transportation—it is a North American leader in EV adoption, after all—and another in the clean buildings category. Its C in clean energy was the product of a lack of electricity planning to underpin its world-leading climate policies and future economic growth.

At the other end of the rankings, certain prairie provinces are failing to live up to their potential. In a world that reaches net zero by 2050, Alberta and Saskatchewan could have the fastest growing clean energy sectors in the country in terms of jobs, with gains in clean energy far outpacing fossil fuel losses.[3] Alberta's D grade reflects its lack of action to seize this opportunity. Indeed, despite being the wind and solar capital of Canada, the province received the lowest possible score for its clean energy efforts after the government imposed restrictions on renewable development. Saskatchewan also received poor scores on transportation and industrial strategy, with the province failing to put its abundant renewable power potential to use.

There were bright spots across the provinces that made up the middle of the scorecard. Ontario received good grades for its industrial strategy after making big moves to expand its EV supply chain. New Brunswick saw A grades for its electricity system after the province released an energy strategy heavily featuring renewables, and Prince Edward Island's exceptional heat pump program boosted its clean buildings score. Meanwhile, Manitoba's new EV rebate improved its clean transportation rank.

Recommendations

While there are examples of national and international leadership in Canada, every province needs to make the most of the clean economic opportunity. At a high level, they need to:

1 **Transform existing and new housing** stock by moving off fossil fuels and reducing energy waste and costs.

2 **Plan and build clean electricity** to reduce energy bills and support clean industries.

3 **Modernize industrial strategies** by identifying competitive advantages, setting targets to guide sustainable growth, and preparing the workforce for the energy transition.

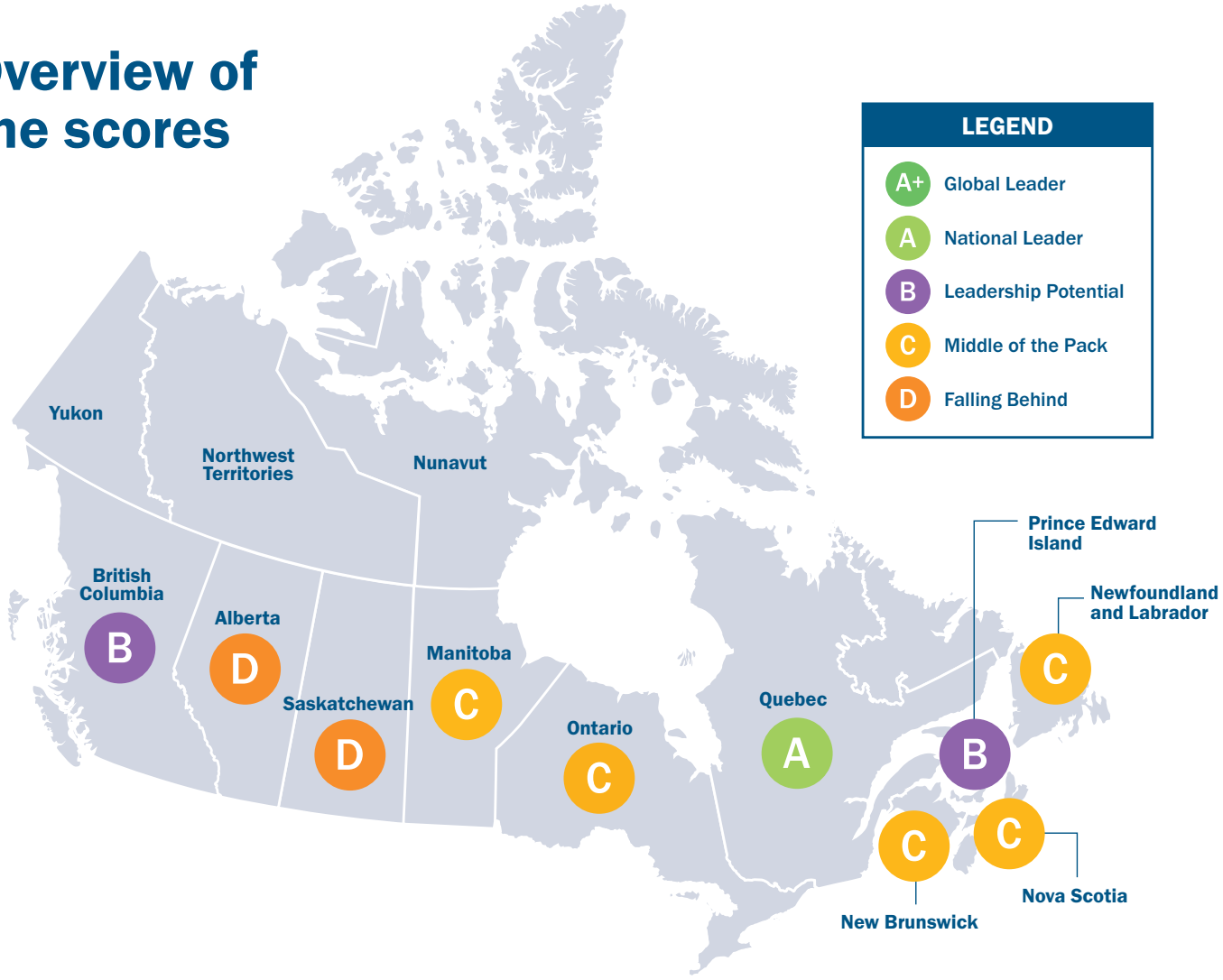
4 **Help Canadian drivers and businesses switch to zero-emission vehicles and public transit,** cutting dependence on volatile fossil fuel prices and unlocking cost savings.

All of the above must also serve to enhance Indigenous participation in the clean economy whether through loan guarantees, equity partnerships on major projects, dedicated skills and training, or targeted energy efficiency programming that can help advance community leadership, ownership, and economic development.

The energy transition is a pan-Canadian opportunity, but federal action can only go so far.

It's time for all provinces to make the grade.

Overview of the scores



	CLEAN BUILDINGS	CLEAN ENERGY	CLEAN INDUSTRY	CLEAN TRANSPORTATION
British Columbia	A	C	B	A
Alberta	D	D	C	D
Saskatchewan	D	D	D	D
Manitoba	C	C	B	C
Ontario	C	B	B	C
Quebec	B	A	A	A
New Brunswick	B	B	C	C
Nova Scotia	C	B	C	C
Prince Edward Island	B	B	B	C
Newfoundland and Labrador	C	C	C	D

Building provincial prosperity

Canada is the most devolved country in the Organisation for Economic Co-operation and Development, with subnational governments responsible for 80% of public spending.[2] The result is a complex web of national and regional responsibilities through which Canada must navigate the energy transition.

Around the world, jurisdictions are pouring trillions into building sustainable economies. South of the border, the U.S.'s multi-billion-dollar Inflation Reduction Act is supercharging its clean industries, already hoovering up nearly $100 billion in new clean investment and adding more than 80,000 jobs.[4] Across the Atlantic, the EU's Green Deal is set to transform Europe "into a modern, resource-efficient and competitive economy."[5]

The energy transition is no longer just about cutting carbon—it's the new economic reality. A reality that Canada's federal government has recognized with supply chains from critical minerals to battery manufacturing, alongside a number of economy-shifting climate measures and support for energy-saving household solutions like heat pumps—but Canada's system of federalism means that Canadians may still have vastly different experiences of this opportunity depending on the decisions of their provincial governments.

Indeed, studies have shown that Canadian households will spend less on energy when they no longer depend on fossil fuels to power their everyday lives.[6] Already, a household that adopts a few clean energy solutions like driving an EV or installing a heat pump can save as much as $10,000 per year.[7] But neighbours on alternate sides of provincial boundaries will have differing abilities to access these cost savings, with some provinces supporting the uptake of these clean energy solutions by offering help with upfront costs, while others offer nothing.

The reality is that provinces have jurisdiction over many issues that will define their success through the energy transition, from electricity grids to natural resources to transit. Without provincial leadership, businesses will lose out on investment opportunities, just as residents will be unable to realize the cost savings of more efficient modern technologies.

In this context, we assessed each province's efforts to support a sustainable economy. This is defined as:

- **attracting and supporting businesses and supply chains in the clean economy to ensure future prosperity; and**
- **helping households transition off volatile and polluting fossil fuels to enjoy long-term savings and energy security.**

With this in mind, we selected a set of criteria drawn from successes in other jurisdictions and peer-reviewed approaches. These are not intended to be comprehensive. However, our criteria can serve as a helpful framework to assess action in four key areas of the energy transition.

The energy transition is no longer just about cutting carbon—it's the new economic reality.

The four pillars of a sustainable economy

There are many factors that define a province's clean economic success. To better assess each province's progress, we divided these factors into four pillars, each covering areas of work necessary for building a sustainable economy.

1 CLEAN BUILDINGS

Buildings are central to our lives, from our homes to our workplaces to our community spaces. With emissions from buildings still rising, they are also central to the energy transition.[8] Because low-carbon buildings are typically better insulated with more efficient heating and cooling systems, they offer many advantages beyond just emissions, from lower bills to more comfortable living environments.

A good first step in improving a building's performance is to seal the building envelope. The less energy wasted, the more money saved. In fact, a Canadian study found that if the government introduced best-in-class energy efficiency policies, the average family would save more than $150 annually. Across the Canadian economy, the measures would add up to $1.8 billion in net residential savings, and $4.9 billion in commercial and industrial savings.[9] What's more, installing a heat pump is already the most cost-effective option for heating and cooling in most Canadian households over the lifetime of the system, according to a study by the Canadian Climate Institute.[10]

The assessment criteria

- **Provide heat pump rebates:** Heat pumps are three to five times more efficient than traditional heating systems and can also serve as a cooling system.[11] Globally, heat pumps covered around 10% of heating needs in 2021, while only around 7% of Canadian households used heat pumps in 2023.[12,13] Heat pumps can provide significant energy cost savings over the long term, but require a higher upfront investment. Rebates are key to helping Canadians access this cost-saving technology. To grade this category, we considered the presence and size of rebates offered by provinces to households (commercial buildings were not included).

- **Offer energy efficiency and retrofit programs:** To help Canadians save money on their energy bills and contribute to our clean energy goals by avoiding waste, provincial governments can support home retrofit programs. We graded each province based on the type and level of provincial support for energy efficiency and retrofit programs. As above, support for commercial buildings was not included.

- **Update building codes:** It is cheaper to build efficiently the first time than to have to retrofit or rebuild that same building later on.[14] All provinces have committed to adopt their own version of the national model building codes, choosing among tiers of ambition for energy efficiency requirements.[15] In addition, provinces can adopt regulations preventing the installation of new fossil fuel heating to avoid having to replace those systems down the line. Any such regulations were included in this assessment category.

- **Require home energy labelling:** By ensuring a building's energy efficiency information is accessible, governments can protect buyers and incentivize sellers to make efficiency upgrades. Our assessment considered the presence and efficacy of home energy labelling requirements.

- **Commit to low-carbon construction:** Construction materials (such as steel and concrete) cause significant carbon emissions. The cement and concrete sector, for example, is responsible for almost 2% of Canada's emissions.[16] While our low-carbon construction industry is still in its early stages, it represents a key growth opportunity for provinces.[17] We graded provinces on measures to support low-carbon construction, including government procurement and support for innovation in low-carbon materials or standards on embodied carbon that apply to new construction.

2 CLEAN ENERGY

The oversight and operation of electricity grids falls within provincial jurisdiction, except for specific federal functions.[21] With electricity demand expected to roughly double by 2050 as we shift to electricity to heat our homes, power our cars, and fuel our economies, proper planning is essential.[22]

Renewables have been breaking records and exceeding expectations around the world for many years now. With the cost of solar power falling by 90% since 2010 and the cost of wind power by 70%, new renewable power now costs significantly less than the cheapest fossil-fuel-powered options.[23] This picture holds here in Canada. Wind power is set to be 40% cheaper than gas-fired-power in Alberta and Ontario by 2030. Solar power, meanwhile, is already cheaper than natural gas power in Alberta and is on track to be 16% less expensive by the end of the decade.[24]

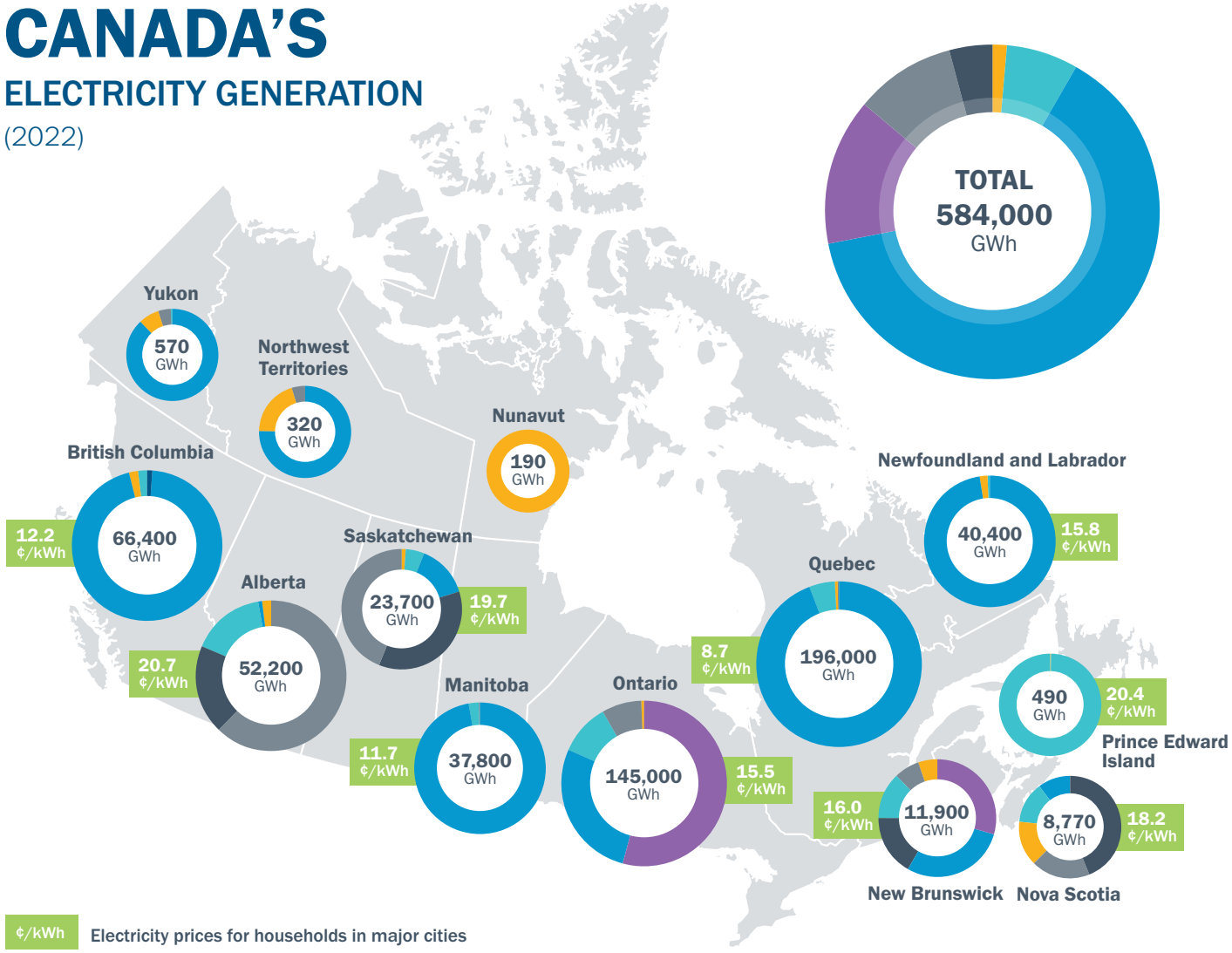
Even when the costs of battery storage are included, wind and solar are still cost competitive options.[24] A recent U.S. study anticipates that the costs of four-hour battery storage will decline by 32% by 2030 and 51% by 2050.[25] Hydropower can also complement variable renewables by providing clean and flexible power when needed.

Therefore, it is vital that provinces are planning their power grids around this electrified future. While the federal government's proposed Clean Electricity Investment Tax Credits and Clean Electricity Regulations will help them get on track to achieve net-zero electricity by 2035, it's ultimately up to the provinces to make it a reality.[26]

The assessment criteria

- **Prepare for clean electricity demand:** Meeting the future demand for clean power will require extensive planning to procure and build the necessary clean electricity capacity. No matter where provincial grids are starting, from entirely clean to fossil-fuel dependent, we considered whether they are planning to meet this greater demand.
- **Complete net-zero modelling of energy pathways:** Planning for the future requires high-quality data and transparent engagement with stakeholders about available options. In this category, we considered whether provinces have commissioned or completed a comprehensive study of all credible energy pathways to achieve net-zero objectives (known as a pathways assessment) that corresponds with best practices.[27]
- **Create an energy strategy:** A comprehensive energy strategy is the province's playbook for action. It typically provides a nonbinding vision and policy direction to inform decision making while translating government priorities into actionable guidance for utilities and system-operators. We assessed whether provinces have undertaken energy planning or are engaged in this process, and whether the plan meets best practices.
- **Build grid flexibility:** Building an affordable clean grid will require more local planning to manage and distribute our energy needs from sharp peaks into predictable flows. This necessitates specific local and regional plans, along with a greater use of distributed energy resources, like smart meters, battery storage, or rooftop solar panels (which also offer cost savings and energy security to households and businesses). We considered all plans, pilot projects, and funding to support grid flexibility.

CANADA'S
ELECTRICITY GENERATION
(2022)



Sources: Government of Canada https://publications.gc.ca/site/eng/9.506002/publication.html
Hydro-Québec https://www.hydroquebec.com/data/documents-donnees/pdf/comparison-electricity-prices-2022.pdf

What about transmission?

Transmission lines will play a critical role in helping provinces navigate the energy transition. Intra-provincial transmission, which is built inside a province, connects generation capacity with consumers, including helping to unlock renewable energy supply. Inter-provincial transmission, which is built across multiple provinces, provides an opportunity for Canadian provinces to leverage each other's resources. For example, a hydro-rich province can backstop one that is more reliant on renewables while taking advantage of cheap renewables production when conditions are right. Transmission will be a key part of how Canada decarbonizes its economy.

However, for reasons of scope, chose to not grade provinces specifically on transmission, although we did consider whether utillities had proposed capital spending on transmission as part of our category on "preparing for clean electricity demand."

3 CLEAN INDUSTRY

Provinces have a big role to play in future-proofing their economies and ensuring their citizens have the skills and training to benefit from the huge clean industrial opportunity offered by the energy transition.

In a decarbonizing world, industrial strategies—that is, a government's approach to supporting a jurisdiction's industries and economic prosperity—are changing. Making the most of the energy transition requires a strategic approach to identify opportunities and build industries. After all, the supply chains that will drive the global economy in the decades to come are being forged today. With each province being home to its own set of unique advantages—from natural resources to workforces—provincial governments have a key role to play in turning these into economic opportunities.[28]

In the face of the U.S.'s huge Inflation Reduction Act, Canada has had to work harder to lure businesses and spur domestic innovation.

The federal government has introduced a number of measures to achieve this, including a slate of investment tax credits, public financing, and targeted support. It has also launched a series of regional energy and resource tables to identify and accelerate shared economic priorities for a low-carbon future, plus a sustainable jobs plan to support workers through the energy transition.[29,30]

The assessment criteria

- **Build a clean industrial strategy:** Provinces should develop a strategic, goal-oriented approach to the clean economy that identifies key opportunities. This involves surveying their competitive advantages—be they existing supply chains, industries, or natural resources—and working with industry, experts, and Indigenous partners to build a plan to realize them. We assessed each province's industrial strategy (where available), as well as its success identifying and supporting sectors in the clean economy.
- **Establish targets:** Provinces should establish clear and measurable economic targets in strategic sectors (which could include production targets for key inputs or infrastructure). These should be iterative and developed in conjunction with industry and other stakeholders in order to best orient programs, policy, and investment. We graded provinces on the existence of targets as well as any processes to ensure targets are flexible and iterative.
- **Support skills and training in emerging industries:** To succeed in preparing the workforce, provinces should develop skills and training in clean growth areas with specific support for workers and students. We assessed the size and availability of support for specific skills and training programs aimed at the clean economy.
- **Develop a workforce strategy:** A province's workforce is key to its competitiveness in securing investments, but also ensuring communities can benefit from emerging industries and opportunities. We analyzed each province's workforce strategies, considering alignment with strategic clean economic opportunities and graded accordingly.
- **Support cleantech and decarbonization:** Provinces support their economies and businesses in many ways, including through tax credits, direct investment, and support for research and development. Investments in decarbonizing existing industries can have long-term economic benefits as the world increasingly favours low-carbon materials and goods. Investments to support homegrown innovation in the cleantech space can help keep good jobs and value-add in Canada. In assigning grades, we focussed on those investments that specifically target the clean economy rather than the general support available to all businesses in a province.

4 CLEAN TRANSPORTATION

Clean transportation represents one of the biggest cost-saving opportunities for households and businesses. Canadian drivers can save $33,000 over a 10-year ownership period by choosing a Chevrolet Bolt instead of a Toyota Corolla Hatchback.[7] Perhaps unsurprisingly, EV sales have taken off around the world, making up 18% of all new cars sold and reaching adoption "tipping points" in 31 countries, Canada included.[31,32]

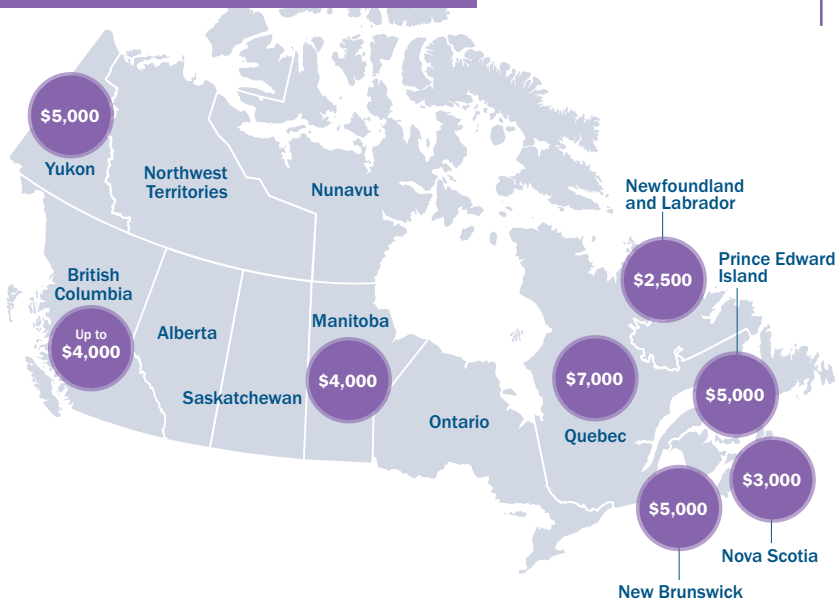
Here in Canada, EVs now make up more than 10% of new car sales, representing a doubling of sales in just the last year. In B.C. and Quebec, the two provinces with strong EV policies, it's 23% and 20%, respectively—the highest in the country. Ontario, which has no provincial policies in place to encourage adoption, has the fourth-highest proportion of EV sales at 7%, just behind the Yukon.[33] If there's one story to tell from these numbers, it's that provincial action works.

Overall EV uptake in Canada has been largely supported by federal government action, including a nationwide rebate for new purchases of battery electric or plug-in hybrid passenger vehicles and, most recently, a national Electric Vehicle Availability Standard that will require automakers to make an increasing proportion of electric vehicles available for sale across the country.[34] Provinces, however, can also can do a lot to help Canadian drivers go electric.

While passenger EVs are great for both planet and pocketbook, they are just one piece of the transportation puzzle. Investments in public transit and shifting to zero-emission buses and trucks are also crucial components.

In addition to fuel and maintenance cost-savings, zero-emission vehicles also offer health-related benefits for our communities. Fossil-fuel-powered vehicles–especially heavy duty trucks–release air pollutants that harm human health.[35] Nearly 30% of Canadians live within 250 metres of a major roadway where traffic-related air pollutants can be 40% to almost 300% higher.[36] Poor air quality contributes to more than 15,000 premature deaths in Canada each year.[37] Provinces that support the shift to non-emitting cars, buses, and trucks will improve local air quality and spend less on healthcare.

Provincial EV Rebates



Province	% EV sales	EVs per public charging port
British Columbia	23%	25
Quebec	20%	22
Yukon	9%	10
Ontario	8%	15
Prince Edward Island	7%	4
New Brunswick	2%	8
Nova Scotia	4%	8
Alberta	4%	11
Manitoba	4%	11
Newfoundland	3%	5
Saskatchewan	3%	7
Northwest Territories	2%	19

Sources: Canadian Automotive Insights, S&P Global Mobility, https://cdn.ihsmarkit.com/www/prot/pdf/0224/EV-Canadian-Newsletter-Q4-2023.pdf (2024) Transportation, RBC Climate Institute https://www.rbc.com/climate-action-institute/climate-action-24/transportation.html

The assessment criteria

- **Provide provincial EV rebates:** Purchase incentives reduce the near-term price gap with conventional vehicles as the sticker price of EVs comes down, allowing more drivers to unlock savings that come with EV ownership. While the federal government has administered its rebate since 2019, provincial rebates (which can be stacked with the federal one) are being used by the majority of provinces with significant success. We graded provinces based on the presence, amount, and duration of rebates offered for both new and used EVs.

- **Plan and fund charging infrastructure:** While charging infrastructure is not the sole responsibility of provinces, province-level investment and planning is necessary to ensure a comprehensive network that best serves drivers. Already across the country, private charging providers, retail outlets, vehicle manufacturers, and the federal government are rolling out tens of thousands of EV chargers.[38] It's important that provincial actions support and complement this build out. To this end, we assessed provincial efforts to support public and private charging, including funding programs, innovative electricity pricing, and the development of comprehensive charging plans.

- **Ensure EV supply:** While the federal government has announced a Canada-wide Electric Vehicle Availability Standard, provinces that took this approach early on (namely B.C. and Quebec) are home to the majority of the country's EV inventory and sales.[39,40] Taking an additional provincial-level approach to supply will ensure drivers who want to buy EVs will have continued access to the most models and inventory. As such, we graded provinces on the presence and use of sales targets and regulations to ensure EV supply in their provinces.

- **Ensure all EV drivers can charge at home:** On average, EV drivers do 80% of their charging at home.[41] Accessing home charging is easy for those living in single-family housing with designated parking.[41] But as EV adoption increases, it's vital that the third of Canadians living in buildings with shared parking can charge at home, too. Provinces have an important role in ensuring buildings are equipped with EV charging options through building code requirements or allowing tenants to install their own through "right to charge" legislation. Several states and many cities south of the border have already implemented provisions to this end. We graded provinces on the presence and efficacy of such requirements.[42,43]

- **Support public transportation:** Accessible and reliable public transit can reduce traffic and make travel even more affordable and accessible, and a truly sustainable economy will rely on more than just electrifying personal car use to cut emissions from transport. Overall service levels (revenue vehicle hours per capita) and ridership per capita were measured across transit agencies that reported to the Canadian Urban Transit Association's annual factbook.[44] This was coupled with additional metrics assessing capital and operating investments.[45]

- **Incentivize and ensure supply of zero-emission commercial vehicles:** On- and off-road medium- and heavy-duty vehicles—like buses, yard tractors, or semis—are responsible for more than 11% of Canada's total national emissions.[46] While there is significant global momentum to electrify personal vehicles, progress on decarbonizing commercial vehicles is farther behind.[46] However, like passenger EVs, low-carbon options offer a win-win for a businesses' balance sheets and sustainability goals. Provinces were graded on the level of support provided, from rebates to charging support to advisory services, as well as progress toward supply availability standards.

The scores

OVERALL SCORE

B

Leadership potential

British Columbia

B.C.'s history of strong climate action sees it ranking highly in transportation and buildings. Thanks to a solid suite of policies, the province is a North American leader in passenger EV sales, while all new buildings in the province are required to be zero-carbon by the end of the decade.

B.C. falls short, however, in the clean energy category. With a history of abundant clean hydropower, B.C. starts from a place of strength, but is only now beginning to take steps to put this competitive advantage to use and plan for future demand.

On the clean industrial side, B.C. has as many as 50 companies in different parts of the critical minerals supply chain, from exploration and extraction to manufacturing and recycling.[47] The province also has a hydrogen strategy with one estimate suggesting the resource has an export potential of $15 billion annually by 2050.[48] However, it is not preparing for these opportunities in a strategic way.

British Columbia

CLEAN BUILDINGS

A

National leader

A+	A	A	B	B
Provide heat pump rebates	Offer energy efficiency and retrofit programs	Update building codes	Require home energy labelling	Commit to low-carbon construction

Scorecard notes

B.C. is a leader on clean buildings and provides generous rebates for heat pumps, especially for low-income, northern, and Indigenous communities.[49]

The province also has strong efficiency policies, including the BC Energy Step Code and Zero Carbon Step Code, which set increasingly ambitious performance levels that local authorities can require from builders. Ultimately, B.C. will require all new construction to be zero-carbon by 2030. As of May 1, 2023, the BC Building Code requires a 20% improvement in energy efficiency for most new buildings in B.C.[50]

Recommendations and opportunities

The province should finalize its action plan for low-carbon construction and finalize efficiency standards for home heating in new builds, as well as requirements for energy labelling.

British Columbia

CLEAN ENERGY

C
Middle of the pack

C	D	C	C
Prepare for clean electricity demand	Complete net-zero modelling of energy pathways	Create an energy strategy	Build grid flexibility

Scorecard notes

Starting from a strong position with a 98% clean grid, B.C. has excelled at introducing policies that would drive the demand for clean electricity.

The current government has rightly centered the importance of clean electricity for economic (and increasingly affordability) related policies. Crown utility BC Hydro is an early adopter of smart meters and recently updated its capital plan to double its investments in generation.[51]

However, there is a disconnect between its climate policy and its energy system planning. At present, BC Hydro's energy planning provides insufficient detail on how we plan to meet the power demands of existing climate policies, let alone those of a net-zero 2050.[52] The province has been slow to procure new resources and embrace innovative approaches, such as distributed energy resources, virtual power plants, and non-hydro renewables. With no pathways assessment there is also little transparency and public dialogue about the different net-zero pathways the province might pursue.

Recommendations and opportunities

The forthcoming Climate-Aligned Energy Framework promised by the B.C. government presents an important opportunity for the province to catch up, aligning its current climate leadership with a clearer plan for delivering the needed clean energy.

The province should commission a pathways assessment, commit to long-term energy planning, and help key energy actors by committing to a net-zero goal for the energy system and building plans to deliver on it.

B.C. should also take steps to better assess the role of distributed energy resources by commissioning and publicly releasing a study, mirroring the work undertaken in Ontario by the Independent Electricity System Operator.

British Columbia

CLEAN INDUSTRY

B
Leadership potential

C	C	A	A	A
Build a clean industrial strategy	Establish targets	Develop a workforce strategy	Support skills and training in emerging industries	Support cleantech and decarbonization

Scorecard notes

B.C. has a history of clean economic policy, with existing action delivered via its climate plan, CleanBC, including reinvesting a portion of carbon tax revenue into low-carbon technologies to support emissions reductions and competitiveness in industry.[53] It has also developed a Future Workforce Framework as part of CleanBC that offers grants for training in climate-relevant sectors.

The province has been working with the federal government to identify clean economic priorities through the regional energy and resource tables.[47] Additionally, B.C., Canada, and the First Nations Leadership Council have agreed to accelerate progress in six areas of opportunity that will significantly enhance B.C.'s competitive advantage in clean energy and the natural resource sectors.

The province also supports homegrown innovation and cleantech via Innovate B.C. and the Innovative Clean Energy Fund, which assists with research, development, and commercialization of new clean energy technologies.[54]

Recommendations and opportunities

B.C. needs to develop a clean industrial strategy that works with industry, labour, and Indigenous partners to clearly identify areas of opportunity, set targets, and hone strategies to secure investment and build up the domestic clean economy. This approach has been promised but is currently missing.

British Columbia

CLEAN TRANSPORTATION

A
National leader

B	A	A+	B	B	A
Provide provincial EV rebates	Plan and fund charging infrastructure	Ensure EV supply	Ensure all EV drivers can charge at home	Support public transportation	Incentivize and supply zero-emission commercial vehicles

Scorecard notes

The province has a passenger EV rebate with eligibility now limited to lower- and middle-income drivers.[55,56] It also has charging targets and significant funding for all types of charging infrastructure resulting in a more developed public network than most provinces.[55,57]

B.C. is also home to one of the most ambitious EV sales regulations in the world, legislating a 90% sales target by 2030 and 100% by 2035.[58] Additionally, it is one of the only provinces with "right to charge" provisions in place to ensure that occupants of multi-unit buildings have the right to install EV charging.[59]

B.C. has targeted programs for the adoption of medium- and heavy-duty vehicles, including assessments and advisory services for fleets and infrastructure, and has begun consultations for a zero-emissions medium- and heavy-duty vehicle regulation.

Recommendations and opportunities

The province could improve its score by adopting EV-readiness requirements in its building code. At present, these are left up to municipalities to enact. B.C. should also work toward a comprehensive EV charging strategy like Quebec has adopted.

Finally, B.C. should offer innovative financing mechanisms to better support small- and medium-sized fleets.

Leading the charge

B.C.'s approach to commercial clean transportation offers a good model for other ambitious jurisdictions:

- B.C.'s CleanBC Go Electric incentive program offers up to a third off the cost of certain new electric commercial vehicles and the required charging infrastructure.[60,61]
- It also offers up to $8,000 off the sticker price of a hydrogen-powered vehicle.[62–64] The province is home to several world-leading fuel cell manufacturers including Ballard Electric, and Metro Vancouver has been described as the "Silicon Valley of fuel cell technology."
- Its Go Electric Fleet Charging Program offers up to $20,000 in rebates for electrical infrastructure upgrades to support fleet EV charging and up to $115,000 per charger (depending on the rated power output). It also offers fleet advisory services, training sessions, and webinars, along with extra rebates for telematics and facility planning assessments.[61]
- Utility BC Hydro offers an EV Ready Fleet Plan with a rebate up to $15,000 (depending on fleet size) for fleet and electrical infrastructure needs.
- BC Hydro also has an Electrical Infrastructure Incentive to offset some of the cost of installing electrical infrastructure. Its EV Fleet Pilot Project Initiative funds short-term trials of commercial battery electric vehicles. The utility also offers fleet electrification rates to reduce demand charges and incentivize overnight charging.[65]
- The province launched the first vehicle-to-grid (V2G) pilot in Canada to help pave the way for medium- and heavy-duty electric vehicles with large batteries to contribute power back to the grid when required.[66]
- B.C. is also the first province in Canada to begin formal consultations for supply-side policies including zero-emission vehicle sales and fleet targets for MHDVs.

OVERALL SCORE

D

Falling behind

Alberta

In 2023, Alberta was the undisputed wind and solar capital of Canada, accounting for more than 92% of Canada's overall growth in renewable energy and energy storage capacity thanks to its liberalized market structure and excellent natural resources.[60] However, this positive momentum has been frustrated by a recent moratorium on new renewable power and restrictions on future development, creating significant uncertainty about the future of the renewables industry in Alberta.[67]

While the province has previously supported energy efficiency and other measures to cut carbon from buildings, there are currently no provincial efforts to help Albertans waste less energy and money. The province similarly has no measures to support passenger EV adoption and limited help for commercial fleets.

Alberta has huge clean industrial potential, with a recent Clean Energy Canada report finding that jobs in its clean energy sector would grow 10% per year out to a net-zero 2050, the fastest of any province or territory and significantly more than the job decline expected in fossil fuels.[3] But to date, the province's industrial strategy remains focussed on oil and gas, and any efforts to grow a sustainable economy are generally tied to its fossil fuel industry.

Alberta

CLEAN BUILDINGS

D

Falling behind

Provide heat pump rebates	Offer energy efficiency and retrofit programs	Update building codes	Require home energy labelling	Commit to low-carbon construction
D	D	D	D	B

Scorecard notes

Alberta provides funding for innovation in low-carbon building materials through an initiative for sustainable materials under Alberta Innovates, a provincially-owned corporation dedicated to promoting innovation in the province.[68]

Previously, Energy Efficiency Alberta supported households to install energy efficient projects such as tankless water heaters, windows, and insulation. It assisted 50,000 households in its first year (2017) and ran until September 2020.[69]

As of today, however, there are no provincial efforts to help households increase energy efficiency or adopt heat pumps. The province has adopted the 2020 National Model Code, but only with the lowest tiers of energy efficiency.

Recommendations and opportunities

Alberta must support heat pump adoption and energy efficiency to help households save energy.

It also needs to adopt more ambitious energy efficiency requirements in its building code so structures built today won't require retrofitting in the future.

Alberta

CLEAN ENERGY

D
Falling behind

D	C	D	D
Prepare for clean electricity demand	Complete net-zero modelling of energy pathways	Create an energy strategy	Build grid flexibility

Scorecard notes

Alberta's systems operator released a net-zero emissions pathway assessment in 2022 that explored three different scenarios as well as options for the province to reach a net-zero electricity system by 2035.[70]

However, Alberta has no strategic approach to decarbonizing its electricity sector, lacking both a provincial energy strategy and a comprehensive pathways assessment that looks at achieving net-zero across the full economy by 2050.

What's more, in 2023, the government announced a moratorium on the approval of new renewable projects for six months, and the subsequent new framework significantly limits renewable development.[71]

At a distribution level, beyond battery storage, there is also a lack of technology and policy deployment for distributed energy resources, pilots, and other innovative approaches to grid transformation.

Recommendations and opportunities

Alberta should undertake a pathways assessment that considers scenarios for achieving economy wide net-zero by 2050.

This should be complemented by an energy strategy that is aligned with climate targets.

Finally, the province needs to recognize the potential for renewable development to drive economic growth and pair this with an innovative approach to exploring grid transformation, distributed energy resources, and local solutions.

Alberta

CLEAN INDUSTRY

C
Middle of the pack

C	C	D	D	B
Build a clean industrial strategy	Establish targets	Develop a workforce strategy	Support skills and training in emerging industries	Support cleantech and decarbonization

Scorecard notes

Alberta is a global leader in the development of carbon capture and storage and low-carbon hydrogen development.

The provincially-funded Alberta Innovates is a model for other provinces to support a strong innovation ecosystem that can link companies to venture capital and other sources of scaling finance.[72]

But in many aspects the province has stood in the way of its own success. Efforts are largely tied to existing fossil fuel developments, and the province's resistance to clean energy development has brought investment uncertainty for industries outside the oil-and-gas status quo.

While Alberta has created a Promoting Job Creation and Diversification Act, with a focus on increasing technology skills, there is no focus on jobs in emerging clean economy sectors.[73]

Recommendations and opportunities

Alberta should develop a comprehensive clean industrial strategy that helps it take advantage of emerging opportunities—not just status quo industries.

It must deliver workforce support to ensure flexibility to meet emerging opportunities.

The province should consider the impact of regulatory decisions on investment certainty.

Alberta

CLEAN TRANSPORTATION

D
Falling behind

Provide provincial EV rebates	Plan and fund charging infrastructure	Ensure EV supply	Ensure all EV drivers can charge at home	Support public transportation	Incentivize and supply zero-emission commercial vehicles
D	D	D	D	C	C

Scorecard notes

Alberta previously offered some funding for municipalities to install charging stations as well as some support for EV education and awareness.[74]

Of note, the province of Alberta and the city of Calgary are investing $6.5 billion to expand light rail transit in the city.[220]

Recommendations and opportunities

The province should introduce a package of policies and programs to help Albertans who want to access cost-saving EVs, including:

- rebates;
- support for charging infrastructure;
- requirements to ensure condo and apartment dwellers have access to home charging; and
- policies to ensure EV supply.

The province should focus on decarbonizing fleets by offering rebates or assisting with the installation of charging.

Carbon capture, utilization, and storage

Alberta has been leaning into the emerging carbon capture, utilization, and storage (CCUS) opportunity for over a decade, including investing nearly $1.8 billion to support projects, programs, and a centre to share knowledge.

Alberta has the world's largest CCUS system with carbon dioxide gathering and transportation infrastructure—the Carbon Trunk Line, which can sequester up to 14.6 million tonnes of CO_2 per year—although it currently only uses 11% of its capacity.[75] The captured carbon is used to produce blue hydrogen and for enhanced oil recovery. In late 2023, Alberta announced further support for carbon capture and storage expected to cost up to $5.3 billion by 2035.[76] Unfortunately, Alberta does not distinguish between permanent long-term storage and enhanced oil recovery, meaning that in practice, much of this investment is not supporting a sustainable net-zero aligned economy.[77] Going forward, Alberta could leverage its expertise to focus on permanent carbon capture and carbon removal.

OVERALL SCORE

D

Falling behind

Saskatchewan

Like its neighbour to the west, Saskatchewan boasts exceptional renewable energy resources. Recent studies of the province's power potential have found that, despite being well positioned to expand renewables, it was falling behind other provinces in doing so.[78] There is also no provincial support for Sakswatchans to go electric, with no rebates for EVs or heat pumps.

Like Alberta, Saskatchewan has plenty of clean economic potential, but it has so far failed to make the most of its opportunities. Saskatchewan receives high points for investment attractiveness overall and red tape reduction to streamline projects, but it has so far failed to apply these advantages to emerging opportunities.[77,79]

Saskatchewan

CLEAN BUILDINGS

D

Falling behind

D	C	C	D	D
Provide heat pump rebates	Offer energy efficiency and retrofit programs	Update building codes	Require home energy labelling	Commit to low-carbon construction

Scorecard notes

SaskEnergy and SaskPower provided a provincial top-up rebate for energy efficiency retrofits that were registered under the federal Greener Homes Grant before it closed in February 2024.

Saskatchewan has adopted the 2020 national model building codes requiring only low levels of energy efficiency (Tier 1 for larger buildings and Tier 2 for smaller buildings including homes).

Recommendations and opportunities

SaskEnergy should extend the Residential Equipment Replacement Rebate to heat pumps.

The province must also roll out provincial efficiency retrofit rebates beyond the now-closed federal Greener Homes Grant.

There are also great opportunities to move toward clean buildings by requiring home energy efficiency labels and adopting increasingly ambitious building codes.

Saskatchewan

CLEAN ENERGY

D
Falling behind

C	C	D	D
Prepare for clean electricity demand	Complete net-zero modelling of energy pathways	Create an energy strategy	Build grid flexibility

Scorecard notes

Led by SaskPower, the province is undergoing a public consultation on the future of its energy systems, including developing scenarios and possible net-zero pathways in 2035 and 2050. The utility has also signalled high-level plans to deploy more wind and solar, which would increase the size of its grid by 66% by 2035.

However, its 2023 capital plan earmarked $1.15 billion to maintain current facilities, upgrade transmission lines, and deploy new natural gas facilities.[80]

Additionally, Saskatachwan has not produced an energy strategy or a pathway assessment.

Despite the general commitment to build renewables, the government has been highlighting nuclear as the primary solution, with limited discussion of distribution-level solutions (though smart meters are in the process of being rolled out across the province).

Recommendations and opportunities

Saskatchewan should undertake a pathways assessment that considers scenarios for achieving economy-wide net-zero by 2050.

This should be complemented by an energy strategy that is aligned with climate targets.

Finally, the province needs to recognize the potential for renewable development to drive economic growth and pair this with an innovative approach to exploring grid transformation, distributed energy resources, and local solutions.

Saskatchewan

CLEAN INDUSTRY

D
Falling behind

D	D	D	D	C
Build a clean industrial strategy	Establish targets	Develop a workforce strategy	Support skills and training in emerging industries	Support cleantech and decarbonization

Scorecard notes

Saskatchewan has scattered opportunities emerging in alternative proteins, CCUS, small modular reactors, and renewable energy, but the province needs more focus.

Saskatchewan's Growth Plan for 2020 to 2030 does include climate targets as well as a goal to create 100,000 jobs. However, these two goals are not connected, and the strategy instead indicates ongoing support for the fossil fuel industry.[81]

Saskatchewan has specific critical mineral tax credits, including an exploration credit at 30% and an investment tax credit of 6% of the final installed cost of eligible capital expenditures.[82]

Saskatchewan has a few approaches to red tape reduction that other provinces could model including cost estimates for each new regulation and ten-yearly reviews of regulations.[83]

Recommendations and opportunities

Saskatchewan needs work in all areas of industrial strategy to capture emerging opportunities of the clean economy.

That includes narrowing its focus on a few strategic industries and developing clean industrial policy that targets its competitive advantage and spurs growth.

Overall, its industrial policy should include greater clean energy ambition, a more robust export strategy, and plans to reduce both red tape and tax burden in growth areas.

This should be supplemented by a focus on workforce training and support, backed up with a strategy.

Saskatchewan

CLEAN TRANSPORTATION

D
Falling behind

Provide provincial EV rebates	Plan and fund charging infrastructure	Ensure EV supply	Ensure all EV drivers can charge at home	Support public transportation	Incentivize and supply zero-emission commercial vehicles
D	D	D	D	C	D

Scorecard notes

SaskPower previously offered some pilot programs and limited funding for charging infrastructure.[84] While there are no EV charging targets, SaskPower has produced a map with priority sites for EV charging and offers educational materials on its website.[85,86]

However, the province has no EV supportive policies, including no rebates and no comprehensive incentive programs for fleets.

Recommendations and opportunities

The province should introduce a package of policies and programs to help people who want to access cost-saving EVs, including:

- rebates;
- support for charging infrastructure;
- requirements to ensure condo and apartment dwellers have access to home charging; and
- policies to ensure EV supply.

The province should focus on decarbonizing fleets by offering rebates or assisting with the installation of charging.

Small modular reactors

Small modular reactors (SMRs) are nuclear fission reactors that are small in both power and physical size, with a typical power output of no more than 300 megawatts.[87,88] They are also modular, meaning they are factory-constructed, portable, and scalable.[89] SMRs could be used to provide grid electricity, used in heavy industry, and in remote communities. This technology is novel, with none currently in use in Europe or North America, and the models proposed in Canada serving as demonstration projects globally. The provinces of Alberta, Saskatchewan, Ontario, and New Brunswick are exploring potential use of the technology.[87] Although nuclear—including SMRs—may be part of a net-zero energy mix, it is crucial that provinces considering their deployment are proactively taking steps to maximize the role of cheaper and more tested options, which rely on technology largely available today.[90] In short, the pursuit of SMRs should be undertaken alongside other critical actions, including technology-neutral resource procurements and deeper consideration of the role that distributed energy resources and broader non-wire alternatives may play.

OVERALL SCORE

C

Middle of the pack

Manitoba

With a 97% non-emitting grid, Manitoba boasts some of the cleanest electricity in the country thanks to its abundance of hydropower. However, Manitoba has only just begun to modernize its grid in line with clean economic opportunities and will need action, not just commitments, to maintain this clean power advantage.[91]

The province has also recently embraced EVs, now offering a $4,000 rebate toward the purchase of a new electric car. It also offers extensive support for Manitobans wanting to retrofit their homes to cut both costs and carbon.

Its new critical mineral strategy also stands it in good stead to make the most of its natural advantages, though more strategic planning and investments are needed to get its clean industries off the ground.

Manitoba

CLEAN BUILDINGS

C

Middle of the pack

B	A	D	D	C
Provide heat pump rebates	Offer energy efficiency and retrofit programs	Update building codes	Require home energy labelling	Commit to low-carbon construction

Scorecard notes

Efficiency Manitoba, a Crown corporation dedicated to energy efficiency, provides extensive financial support for clean energy retrofits including heat pumps, with rebates proportional to efficiency improvements. It also offers broad support for low-income households and First Nations communities, conducting free energy efficiency assessments and implementing appliance upgrades and insulation at no cost.[92,93]

Hydro Manitoba provides a Home Energy Efficiency Loan for retrofits.[94]

The province also has a long-standing Green Building Program that turns provincially-owned buildings into leading low-carbon examples.[95]

Recommendations and opportunities

The province should extend its Green Building Program to include embodied emissions to reduce carbon from construction.

Manitoba should implement province-wide home energy efficiency labels.

Finally, Manitoba should adopt a higher level of ambition in energy efficiency requirements in its building code.

Manitoba
CLEAN ENERGY

C
Middle of the pack

B	D	C	D
Prepare for clean electricity demand	Complete net-zero modelling of energy pathways	Create an energy strategy	Build grid flexibility

Scorecard notes

Starting in 2023, the government of Manitoba began a process of modernizing its energy system via an Energy Policy Task Force and the commissioning of a consultant. The newly-elected government has continued this work, providing a new commitment in recent mandate letters to "align Manitoba Hydro with our government's clean energy targets of a net-zero energy grid by 2035 and a roadmap to a carbon-neutral economy by 2050."[96]

Additionally, the utility has outlined a number of important actions they are undertaking in its recent Integrated Resources Plan that will help address growing power demand.[97]

While the province is moving in the right direction, it currently has no energy strategy or pathways assessment. And despite public commitments to building a net-zero grid, there is little clarity on the actions that will underpin this work.

The province is also facing a near-term industrial power shortage, with Manitoba Hydro warning that the government will have to choose between proposed new projects.[98]

Recommendations and opportunities

The province's energy planning must move from a high-level roadmap to a detailed and climate-aligned energy strategy using a pathways assessment.

This should include best practices on integrating distributed energy resources to create grid flexibility in the short term, and it should outline more details about how the province will procure more clean energy while keeping all cost-effective resources in the mix, including renewables.

Manitoba
CLEAN INDUSTRY

B
Leadership potential

B	C	C	B	B
Build a clean industrial strategy	Establish targets	Develop a workforce strategy	Support skills and training in emerging industries	Support cleantech and decarbonization

Scorecard notes

The new provincial government has made concrete investments in clean economic projects and made commitments to target specific areas of the sustainable economy, providing the province with real leadership potential. The province's new $50 million Strategic Innovation Fund announced in Budget 2024 is the right focus on opportunities, but the capital amount is less than that invested by other provinces.

It recently released a Manitoba Critical Minerals Strategy that capitalizes on the fact that Manitoba has 29 of the 31 minerals found on the federal government's Critical Minerals List. It also has a number of tax credits, including a general manufacturing credit, a tax credit for manufacturers of geothermal heat pump systems, and a credit for green energy transmission equipment.[99,100]

It is also investing in its EV supply chain industry via investments in Canadian companies like New Flyer Industries to produce zero emission buses and a heavy equipment vehicle innovation centre.[101]

However, a strategic vision is still missing. Emerging sectors like alternative proteins and critical minerals offer growth opportunities. Clear goals and objectives in the Manitoba Minerals Action Plan can provide a helpful roadmap for the public and private sector.

Recommendations and opportunities

Manitoba should seek opportunities to apply its clean electricity and potentially hydrogen advantage to value-add domestic manufacturing in areas like fertilizer that build on existing economic advantages.

Manitoba should develop a comprehensive clean industrial strategy that helps it take advantage of emerging opportunities.

Manitoba

CLEAN TRANSPORTATION

C
Middle of the pack

B	C	D	D	C	D
Provide provincial EV rebates	Plan and fund charging infrastructure	Ensure EV supply	Ensure all EV drivers can charge at home	Support public transportation	Incentivize and supply zero-emission commercial vehicles

Scorecard notes

The province has recently introduced a rebate of $4,000 for the purchase of a new battery-electric vehicle.[102]

Manitoba Hydro's Home Energy Efficiency Loan program offers support for home charging installation.[94]

Recommendations and opportunities

The province should introduce additional support for EVs including;

- support for charging infrastructure;
- requirements to ensure condo and apartment dwellers have access to home charging; and
- policies to ensure EV supply.

The province should also introduce incentive programs for zero-emission medium- and heavy-duty vehicles.

Out-of-the-box thinking

Efficiency Manitoba is a Crown corporation with a legislated mandate to develop and support energy efficiency initiatives that will reduce electricity consumption by 1.5% and natural gas consumption by 0.75% annually.[103] The organization has several innovative programs which could be considered by other jurisdictions, including a partnership with Habitat for Humanity on supports for low-income homeowners.[104] As part of its mandate, Efficiency Manitoba also implements programs specifically aimed at extending energy efficiency benefits to Indigenous communities. The Indigenous Community Energy Efficiency Program, for example, provides $40,000 in annual funding and technical assistance for communities to hire an Energy Efficiency Advocate. The advocate then works closely with Efficiency Manitoba and the community for two years to facilitate uptake of energy efficiency programs.[105]

Manitoban solar glass

The Manitoba government is moving forward with a silica sand extraction project in Hollow Water First Nation and a solar glass manufacturing facility in Selkirk, which will create 700 jobs and connect to supply chains in the U.S. Solar glass is a key component in the production of solar panels and the project will reportedly produce 800 tonnes per day.[106]

OVERALL SCORE

C

Middle of the pack

Ontario

As Canada's manufacturing heartland, Ontario has a lot to offer the energy transition. Most notably, the province has actively embraced the EV supply chain including chipping in funding to support a revived auto industry in Ontario, which echoes recent battery and EV manufacturing investments from Honda, Volkswagen, and Stellantis.[107,221] However, when it comes to helping Ontarians access the benefits of driving those electric cars, the province falls short, offering no EV rebates and actively scrapping building code requirements that supported charging infrastructure.

The province has taken some meaningful steps on clean electricity after it became clear that a clean power supply was key to attracting investment. This includes a recent announcement that the systems operator will procure renewables for the first time in 15 years. The degree to which the province follows through on the positive steps it has taken will have a major impact on investment attraction and whether Ontarian's are able to benefit from more affordable, clean electricity.

Ontario

CLEAN BUILDINGS

C

Middle of the pack

C	C	B	D	C
Provide heat pump rebates	Offer energy efficiency and retrofit programs	Update building codes	Require home energy labelling	Commit to low-carbon construction

Scorecard notes

Ontario's Clean Home Heating Initiative provides up to $4,500 for the installation of a heat pump in eight municipalities. However, the program only supports hybrid heating (a combination of a natural gas furnace and heat pump) and is co-delivered with a natural gas provider.[108]

The electricity systems operator administers a number of incentive programs for income-eligible owners and renters, including free heat pumps for households already heating with electricity (though this is uncommon in the province), free energy savings kits, and free energy efficient devices including refrigerators and smart thermostats.[108–110] There is also funding available to support remote First Nations communities to implement energy efficiency projects.[111]

Ontario has had a relatively ambitious building code in terms of energy efficiency since an amendment in 2016, although the new code, adopted in April 2024, did not increase energy efficiency requirements.

The province is lacking a broad program to financially support households in adopting heat pumps and implementing energy efficiency retrofits. It has also repealed its Green Energy Act, which created the right to receive energy information prior to buying homes, and is overruling the independent regulator by advancing further natural gas infrastructure despite concerns over long-term costs and the risk of stranded assets.

Recommendations and opportunities

The province should improve programming for households looking to move from gas to heat pumps.

It should require energy efficiency information for homes to help inform buyers and incentivize sellers to make upgrades.

Ontario should also take action on embodied carbon in new buildings, for example through requirements in the next building code update.

Ontario

CLEAN ENERGY

B
Leadership potential

C	B	B	B
Prepare for clean electricity demand	Complete net-zero modelling of energy pathways	Create an energy strategy	Build grid flexibility

Scorecard notes

In response to mounting competitiveness concerns and the prospect of missing out on opportunities in the batteries, automotive, and steel sectors, Ontario has taken steps to modernize its energy policy.

Ontario has released an initial energy plan and commissioned one of the only modern pathways assessments in Canada. The government has signalled further steps on an integrated energy planning process and has engaged an expert panel to provide advice on modernizing the energy system. Meanwhile, the Ontario Energy Board and the systems operator have been proactive in evaluating the potential of distributed energy.

The Independent Electricity System Operator has launched a process to procure new clean energy resources by 2030, including wind, solar, and bioenergy, with more to follow.[112]

Despite significant progress, there is a lack of coordination between the province's energy, climate, and economic objectives that risks the province's sustainable economy, and its current plan to procure more natural gas power could further increase emissions intensity of the grid. Furthermore, Ontario has signalled a potential future reliance on SMRs, despite uncertainties regarding the cost and timing for bringing these online.

Whether Ontario can seize a leadership position will depend in large part on the details of its "integrated energy planning process," due to be released later this year.

Recommendations and opportunities

The province has commissioned an independent cost-effective energy pathways study, but this must be made public.[113] This should be followed by a long-term energy strategy, including following recommendations from the Energy and Electrification Transition Panel and increasing ambition on clean energy deployment, primarily through distributed energy resources.

Clearer alignment and coordination between climate, energy, and economic objectives would make its efforts more effective, including setting a net-zero target for the energy system as a whole.

Ontario

CLEAN INDUSTRY

B
Leadership potential

B	B	B	C	B
Build a clean industrial strategy	Establish targets	Develop a workforce strategy	Support skills and training in emerging industries	Support cleantech and decarbonization

Scorecard notes

Ontario has embraced the EV supply chain, revising its existing automotive strategy to reflect the EV opportunity in 2021. Its approach contains specific targets and is complemented by thinking on competitive advantages, including how to leverage its mineral wealth and build on its clean electricity. Support for innovation and export strategy as well as streamlining site selection for mega-industrial manufacturing opportunities have all played a role in Ontario's success in this sector, and resulted in $43 billion in new investment as of spring 2024.[114]

Action in other clean supply chains has been more limited and site-specific, however, like support for decarbonizing existing steel manufacturing facilities, and investments in forest biomass to explore alternative fuels and hydrogen production (including a hydrogen strategy published in 2022) in the province.[115] The province does not have a comprehensive clean industrial strategy that proactively identifies opportunities and supports investment in the highest value aspects of emerging supply chains. It also lacks support for skills and training.

Recommendations and opportunities

Ontario should consider its competitive advantages beyond the EV supply chain. Specifically, it should examine how to scale hydrogen production to decarbonize Ontario manufacturing.

Further plans for workforce changes, including specific support for skills and training, will help ensure Ontario workers benefit.

Finally, more work on Indigenous rights and self-determination over resources will be critical to Ontario's success in building the necessary infrastructure and supply chains.

Ontario

CLEAN TRANSPORTATION

C
Middle of the pack

Provide provincial EV rebates	Plan and fund charging infrastructure	Ensure EV supply	Ensure all EV drivers can charge at home	Support public transportation	Incentivize and supply zero-emission commercial vehicles
D	C	D	C	B	C

Scorecard notes

Ontario has a number of policies and programs that help improve EV charging availability and pricing, including a modest funding program, an “ultra low overnight electricity price” to reduce the cost of home EV charging, right-to-charge legislation, and streamlining the process for connecting EV chargers to the grid.[116–119] Ontario also recently asked the Ontario Energy Board to explore options to reduce electricity rates for public EV charging providers.[120] While these programs are a good start, they don’t yet constitute a comprehensive charging infrastructure plan.

Ontario Power Generation offers paid fleet advisory services for transitioning fleets to zero-emission vehicles, with some financing available on a case-by-case basis. However, it has no comprehensive incentive programs for fleets.

It is also one of the only provinces without any sort of consumer purchase incentive. And in 2018, the current government repealed EV rebates and EV-ready building code requirements.[121]

There is some action to support transit, including a dedicated gas tax fund that channels two cents per litre of the gas tax to transit and capital project investments into inter-city rail expansion.[122]

Recommendations and opportunities

The province should introduce additional support for EVs, including;

- EV rebates;
- requirements to ensure condo and apartment dwellers have access to home charging; and
- policies to ensure EV supply.

Plugging in

Ontario has, through deliberate action and innate advantages, the key ingredients for a successful battery supply chain. It’s home to many of Canada's largest higher education institutions, many of which offer relevant research, innovation, and scaling programs from the University of Toronto’s Clean Energy Lab to the Toronto Metropolitan University’s Clean Energy Zone. The provincial government is also using its investment attraction and innovation arms to make the most of the opportunity. Invest Ontario, for example, focusses on advanced manufacturing, life sciences, and technology, and provides site evaluation and selection concierge services.[123] The Ontario Vehicle Innovation Network assists with development, testing, piloting, and adoption of the latest transportation and infrastructure technologies.[124]

The province’s automotive manufacturing strengths go without saying, and the government has been instrumental in nurturing this advantage through the electric transition. In 2021, the province’s automotive plan revealed a focus on electric, autonomous vehicles, while supporting a broader supply chain that includes the exploration, mining, and production of critical minerals.[125] A combination of investment and efforts to ready major industrial and manufacturing sites has attracted investments from a number of big companies including Volkwagen, Stellantis, and most recently, Honda.

While the province has not excelled at helping Ontarians buy the cars they will make, it has introduced some novel measures for EV charging and electricity planning, including its "Ultra Low Overnight Electricity Rate" that reduces the cost of home EV charging and reduces peaks in electricity demand.[124,126]

OVERALL SCORE

A

National leader

Quebec

Quebec is the Canadian leader in almost every category assessed. It has best-in-class EV policies, including the most generous and longest-running EV rebate in the country, an ambitious and well-funded charging strategy, and a zero-emission vehicle sales regulation. It also has one of the cleanest grids in the country, with plans to expand clean power supply in line with increasing demand. While it has an abundance of hydro power, Quebec also has the third-highest (behind Ontario and Alberta) installed capacity of wind, solar, and energy storage in Canada.[127]

The province has also proactively built a leading EV battery supply chain, comprised of mining operations, manufacturing facilities like Northvolt's EV battery plant, and research hubs like Ville de Saint-Jérome where several EV-related companies have set up shop.

The only areas where the province scores less well is in buildings, with improvements to building codes and low-carbon construction policies needed for the province to receive top marks.

Quebec

CLEAN BUILDINGS

B

Leadership potential

A	A	B	B	C
Provide heat pump rebates	Offer energy efficiency and retrofit programs	Update building codes	Require home energy labelling	Commit to low-carbon construction

Scorecard notes

Quebec offers heat pump rebates of up to $6,720 (though it has no low-income top-up).

Its energy efficiency programs provide funding for retrofits such as insulation, air tightness, and heat recovery, as well as free energy assessments for low-income households.

Hydro-Quebec also offers funding for energy efficiency retrofits in non-profit housing.[128–130]

Quebec has not adopted the 2020 National Model Code energy efficiency requirements, but it has banned the installation of new oil heating in new and existing residential buildings.[131–133]

It has also published a roadmap on reducing emissions in the buildings sector and is working on implementing energy efficiency labels.[134,135]

Recommendations and opportunities

Quebec needs to increase its commitments on low-carbon construction.

It should add top-up financial support for heat pumps for low-income households.

Quebec

CLEAN ENERGY

A
National leader

A	A	A+	C
Prepare for clean electricity demand	Complete net-zero modelling of energy pathways	Create an energy strategy	Build grid flexibility

Scorecard notes

Quebec has been leading the way on energy policy for several years, connecting the dots between its economic, energy, and climate objectives. It has a clear energy strategy that is regularly updated, modelled net-zero pathways, and is accelerating the deployment of resources and infrastructure. Utility Hydro Quebec made headlines with the release of its ambitious capital plan, which earmarks up to $185 billion by 2035 for transmission, new clean generation, and operating expenses.[136] The province has also been proactive in embracing innovative technologies with a variety of pilot projects from batteries to micro-grids.

However, the main gap in this otherwise leading approach is around distributed energy resources which, despite a pilot, do not appear in the pathway assessment, the province's energy strategy, or the utility's energy plan. Furthermore, greater coordination between the build out of its electricity and natural gas infrastructure will be critical to avoid stranded assets.

Recommendations and opportunities

Quebec needs to focus on the role of distributed energy resources in future pathways assessments and energy planning. These resources can help balance increased variable renewable production.

Quebec

CLEAN INDUSTRY

A
National leader

A	A	B	B	A+
Build a clean industrial strategy	Establish targets	Develop a workforce strategy	Support skills and training in emerging industries	Support cleantech and decarbonization

Scorecard notes

Quebec has also been a leader in securing investments in the EV battery supply chain despite not possessing an existing auto manufacturing base by creatively using Investissement Quebec, marketing its clean power advantage, streamlining approvals, and creating public-private partnerships.

The province has also made significant investments in innovation and cleantech, including several funding streams announced in its most recent budget.

Despite its strengths, Quebec is lacking a clear strategy on workforce transition and has been criticized for focusing its industrial strategy too strongly on jobs at the cost of broader productivity.[137]

Recommendations and opportunities

Quebec needs to develop a clear strategy on workforce transition.

Quebec should also evaluate the effectiveness of its current economic development programs at addressing productivity challenges. That could mean shifting the focus from job creation toward a wider range of economic outcomes.

Quebec

CLEAN TRANSPORTATION

A
National leader

A	A+	A+	A	A	A
Provide provincial EV rebates	Plan and fund charging infrastructure	Ensure EV supply	Ensure all EV drivers can charge at home	Support public transportation	Incentivize and supply zero-emission commercial vehicles

Scorecard notes

Quebec has the most generous and longest-running EV rebate in the country, though the province intends to wind it down by 2027.[138]

Quebec has also allocated funding to public transit investments, partially uses money from its cap and trade program to improve public transit, and has the best service supply and ridership metrics in the country.

It's the only province with EV readiness requirements in its building code (which currently applies to new single-family, duplex, triplex, and quadruplex homes with requirements for other multi-unit buildings expected later this year), and the only province with a comprehensive EV charging strategy backed with significant funds for a public charging network.[139,140]

Quebec is home to the longest running EV sales mandate (in place since 2018), ensuring EV supply.[141]

The province also boasts several targeted medium- and heavy-duty vehicle programs, including assessments and advisory services for fleets and infrastructure, a paid fleet advisory service called Cleo through Hydro Quebec, and has begun pre-consultations on a zero-emission medium- and heavy-duty vehicle sales regulation.[142]

Recommendations and opportunities

Instead of winding down its rebate, Quebec should consider modifying it to target lower- and middle-income drivers, similar to what B.C. has done.

It also needs more emphasis on equity for small- and medium-sized fleets through innovative financing mechanisms.

Connecting the chain

In 2022, Propulsion Québec—a hub for electric and smart transportation—with the support of the Government of Quebec, published Ambition EST 2030, an industrial policy aimed at building the electric and smart transportation industry. This strategy is built around eight major strategic themes, including talent, innovation, experimentation, and batteries.[143]

The strategy was developed in collaboration with industry, bringing together an all-of-government approach to achieve the ambitious target of making Quebec a world leader in electric and smart transportation by 2030. The province sets a strong example for other provinces hoping to boost promising economic value chains.

OVERALL SCORE

C

Middle of the pack

New Brunswick

New Brunswick gets top grades for its energy planning, leading the country in grid innovation by piloting smart grids and other distributed energy technology projects like smart thermostats. The province also offers decent rebates for home upgrades and EVs, helping New Brunswickers save money by ditching fossil fuels.

The province has a history of developing key clean technologies, including small modular reactors and clean hydrogen, which give it good clean industrial potential. However, it needs to better connect the public and private sectors in its promised economic development plan to best seize this opportunity.

New Brunswick

CLEAN BUILDINGS

B

Leadership potential

B	A	C	C	C
Provide heat pump rebates	Offer energy efficiency and retrofit programs	Update building codes	Require home energy labelling	Commit to low-carbon construction

Scorecard notes

Utility NB Power provides rebates for home retrofits including up to $1,500 for an air source heat pump, $2,000 for a ground source heat pump, as well as financial support for other kinds of retrofits.[144] There is also additional funding for low-income households.[145]

The province also made commitments to adopt the 2020 National Model Building Codes in 2023 with the objective of achieving net-zero energy ready construction by 2030, but this is not yet implemented.[146]

Recommendations and opportunities

It must follow through on commitments to update the building code and create energy labels to allow informed choice for buyers and avoid energy waste for new construction.

New Brunswick should consider an increase in heat pump rebates.

New Brunswick

CLEAN ENERGY

B
Leadership potential

C	A	A	B
Prepare for clean electricity demand	Complete net-zero modelling of energy pathways	Create an energy strategy	Build grid flexibility

Scorecard notes

New Brunswick has quietly assumed a potential leadership position in modernizing its energy system, commissioning both a pathways assessment and developing the most comprehensive energy strategy in the country after Quebec. The energy strategy proposes a significant buildout of renewables, energy storage, and distributed generation. The province has long been a leader in the innovation space, with a variety of smart-grid and distributed energy resource pilots.[147]

However, while the planning framework is nearly country-leading, so far the execution remains to be seen. The renewable and storage deployment targets are positive, but limited details are available about the actual quantity and timing. The province is also heavily relying on the deployment of nuclear power, without clarity on a back-up plan.

Recommendations and opportunities

New Brunswick should publicly release an updated pathways assessment, including analysis of off-ramps if small modular reactor technology does not scale up as quickly as planned.

The province must share clear procurement plans and timelines to meet clean energy goals and ensure a back-up plan is ready if nuclear is unable to meet timeline or cost requirements.

New Brunswick

CLEAN INDUSTRY

C
Middle of the pack

C	C	B	B	C
Build a clean industrial strategy	Establish targets	Develop a workforce strategy	Support skills and training in emerging industries	Support cleantech and decarbonization

Scorecard notes

The province has committed to developing a Sustainable Economic Development Plan, presenting an opportunity to up its grades in 2024.

It has also committed to conducting a clean technology skills gap assessment by 2025, which will complement funding programs to train tradespeople and shore up its strategy on workforce development.

However, its grades today reflect that this work is not yet complete.

Recommendations and opportunities

New Brunswick must finalize its Sustainable Economic Development Plan in conjunction with industry, experts, and Indigenous partners. It should hone in on key new strategic opportunities—not just those based in the oil and gas sector—using clear targets.

The province should conduct a clean technology skills gap assessment as promised by 2025.

New Brunswick

CLEAN TRANSPORTATION

C
Middle of the pack

A	B	C	D	D	C
Provide provincial EV rebates	Plan and fund charging infrastructure	Ensure EV supply	Ensure all EV drivers can charge at home	Support public transportation	Incentivize and supply zero-emission commercial vehicles

Scorecard notes

The province offers rebates of up to $5,000 for EVs, as well as incentives for home charging and business charging.[148,149]

It also has some targets and plans for its public charging network, including a plan to install chargers every 65 kilometers along highways.[150]

Rebates of up to $5,000 per vehicle are also available for commercial light-duty fleets.[151]

Recommendations and opportunities

The province should introduce additional support for EVs, including;

- more support for public charging infrastructure and developing a comprehensive EV charging strategy;
- requirements to ensure condo and apartment dwellers have access to home charging; and
- policies to ensure EV supply.

The province should also introduce incentive programs for zero-emission medium- and heavy-duty vehicles.

Energy planning

Over the past couple of years, the province of New Brunswick quietly vaulted itself to near the top of the class when it comes to energy planning. Starting in early 2023, the province started conducting significant public and expert consultations to inform the creation of an energy strategy.[152] By that winter, the province released one of this country's most comprehensive strategies that aligns with most of the best practices we've identified, and has subsequently commissioned an update to its independent pathways assessment and struck a working group to provide further advice and consultation with the public. This is a roadmap that other provinces should be following.[153–155]

OVERALL SCORE

C

Middle of the pack

Nova Scotia

Nova Scotia's clean energy and industrial policies have been swept up in a surge of wind power developments that have boosted the province's scores in both categories. The province has approved five wind projects, which are majority-owned by Mi'kmaw communities, to increase its wind power supply and is actively exploring options to use Crown lands to produce wind energy.

The same wind potential is also powering a nascent green hydrogen industry, with the province recently producing a Green Hydrogen Action plan.[156] Nova Scotia's industrial ranking is also supported by its world-leading EV and cleantech hubs, some of which have received provincial support.[157]

The province scores reasonably well on household affordability measures, offering rebates for both EVs and energy upgrades.

Nova Scotia

CLEAN BUILDINGS

C

Middle of the pack

B	A	C	C	D
Provide heat pump rebates	Offer energy efficiency and retrofit programs	Update building codes	Require home energy labelling	Commit to low-carbon construction

Scorecard notes

Efficiency Nova Scotia is a frontrunner in providing financial and direct support to households for energy retrofits. The organization provides free home energy assessment and energy efficiency upgrades for low-income homeowners, including draft-proofing and insulation.[158,159] It also provides retrofit funding to rental properties, with a condition that they keep rent affordable.[160]

Efficiency Nova Scotia also runs a pilot project for home sellers to list their EnerGuide ratings.[161]

The province's Climate Plan includes a commitment to ban oil heating in new builds by 2025.[162]

Recommendations and opportunities

The province should upgrade energy efficiency in buildings by adopting a more up-to-date building code.

The province also needs to consider low-carbon construction.

Nova Scotia

CLEAN ENERGY

B
Leadership potential

B	B	C	B
Prepare for clean electricity demand	Complete net-zero modelling of energy pathways	Create an energy strategy	Build grid flexibility

Scorecard notes

Nova Scotia has been moving quickly to modernize its energy system in line with net-zero goals. The province has provided a high-level energy vision (albeit lacking in detail) and previously released energy modelling (though it only considered a target of 80% emissions reductions by 2050).[163]

It has plans to deploy a variety of renewable resources and has taken steps to modernize its energy system, including by piloting innovative grid flexibility solutions, including vehicle-to-grid programming and a community solar program.

Following the recommendations of the Clean Electricity Solutions Task Force, the government initiated sweeping changes to the governance and regulatory structures, creating a new stand-alone energy regulator and a new system operator. However, neither currently have a clearly established net-zero mandate.[164]

Recommendations and opportunities

Nova Scotia must develop a more detailed pathways assessment to ground energy planning.

Its existing energy planning needs more detail and a net-zero trajectory.

There should also be more detail on upcoming procurements of clean energy.

Finally, building off existing innovation on grid flexibility and distributed energy resources, the province needs to quantify the opportunity and build a strategic approach to capitalize on the most promising technologies.

Nova Scotia

CLEAN INDUSTRY

C
Middle of the pack

B	C	C	B	C
Build a clean industrial strategy	Establish targets	Develop a workforce strategy	Support skills and training in emerging industries	Support cleantech and decarbonization

Scorecard notes

With more university students and graduates per capita than anywhere else in Canada, Nova Scotia has capitalized on and benefited from its strong higher education institutions and makes significant contributions to research and development as a share of GDP.[165] From its expertise in batteries to ocean tech, Nova Scotia has a number of innovation hubs and industries.

Nova Scotia is also building the plans for a play on clean hydrogen, including improving permitting for offshore wind (which will power hydrogen operations), including on Crown lands.[166]

Nova Scotia's climate plan includes a section on developing skills for the clean economy, with planned actions on training, and its hydrogen plan recognizes the need to consider development impacts on labour, as well as health and education services.[166]

However, existing successes have not all been as a result of robust industrial strategy but rather a good history of innovation, and academic and private collaboration. Its approach to date has yielded some success which we recognize in our grading, but Nova Scotia can do more to advance and support clean economic industries and opportunities.

Recommendations and opportunities

Nova Scotia should increase support to attract clean investment.

In addition, the province should create a workforce strategy that builds off its strengths in innovation and higher education.

By creating targets for areas of competitive advantage like hydrogen production, Nova Scotia can help orient public and private support.

Nova Scotia

CLEAN TRANSPORTATION

C
Middle of the pack

C	C	B	C	C	B
Provide provincial EV rebates	Plan and fund charging infrastructure	Ensure EV supply	Ensure all EV drivers can charge at home	Support public transportation	Incentivize and supply zero-emission commercial vehicles

Scorecard notes

Nova Scotia has a rebate of up to $3,000 for EVs.[167] It also offers fairly significant support for public and multi-unit residential building charging infrastructure, though it has no specific charging targets or plans to build out its network.[168,169]

The province recently introduced vehicle incentives for zero-emission MHDVs up to $50,000 per vehicle.[170]

It also runs the Next Ride program offering advisory services to fleets wanting to transition to zero-emissions vehicles.[151,171]

This is complemented by an EV Assist Program for light-duty vehicle fleets that includes rebates of up to $3,000 per vehicle.[167,170]

While public transit service levels are high compared to other provinces across the country, this is largely focused in Halifax. Investments of $5.1 million to municipalities across the province will help expand and improve service in other cities in the future.

Recommendations and opportunities

The province should introduce additional support for EVs, including;

- developing a more comprehensive EV charging strategy;
- requirements to ensure condo and apartment dwellers have access to home charging; and
- policies to ensure EV supply.

A history of innovation

The Jeff Dahn Research Group at Dalhousie University has a partnership with Tesla that has spun off a small ecosystem of battery innovation in Halifax, including Novonix, which is creating the "most accurate" battery testing systems in the world.[172] Acadia University has a Tidal Energy Institute that is helping advance tidal energy in the Bay of Fundy. And the Verschuren Centre at the University of Cape Breton is developing renewable energy solutions. The blossoming cleantech industry has received some provincial support, including a community feed-in tariff program to help develop and commercialize tidal power technologies.[173]

Upping the PACE

While provinces have an important role to play in directly supporting clean buildings, they can also support municipalities. Several provinces and territories have adopted legislation to enable Property Assessed Clean Energy (PACE) programs. Municipalities can then choose to implement such a program, which allows homeowners to finance the upfront cost of energy retrofits, secured against the property's value, and repay it over time as an addition to the owners' property tax bills.

The process is unique in that the loan for retrofit costs is attached to the property, not the person, and so can be transferred at point of sale.[18] This system currently exists in nearly 50 municipalities in Canada, across five provinces, and the Yukon.[19] Nova Scotia authorized PACE loans under the Municipal Government Act in 2010 and is now home to 16 PACE programs, of which twelve are administered by the Clean Foundation. Households in these municipalities can receive financing for insulation, solar panels, or a heat pump which they repay through their property tax bills over a period up to 15 years and with interest rates as low as 1% (depending on the municipality), all while benefiting from immediate savings.[20]

OVERALL SCORE

B

Leadership Potential

Prince Edward Island

Virtually all the power currently generated on Prince Edward Island comes from wind, with 30% of the province's electrical needs met by a combination of provincially owned and private wind developments.[174,175] The province is also growing its solar power supply, making regulatory changes to ensure it can issue permits for solar and wind farms.[176] As a result, P.E.I. scores well on clean energy, though there is still policy work to do.

The province really excels when it comes to household clean energy solutions, boasting one of the most generous EV and home charging incentives in the country, as well as extensive help for residents to install heat pumps. Additionally, the province has earned its designation of "leadership potential" in the clean industry category, with a focus on cleantech development and training programs.

Prince Edward Island

CLEAN BUILDINGS

B

Leadership potential

A+	A	C	C	D
Provide heat pump rebates	Offer energy efficiency and retrofit programs	Update building codes	Require home energy labelling	Commit to low-carbon construction

Scorecard notes

The province offers free heat pumps for households with a net income below $100,000, as well as general rebates of up to $2,500 for air source heat pumps and $4,000 for ground source heat pumps. Rebates and financing (including top-ups for low-income households) are also available for different retrofits.[177,178]

P.E.I adopted the 2020 national model code with Tier 1 energy requirements in March 2024, but has made a commitment to a net-zero energy ready building code for residential buildings by 2030.[179,180]

It also has plans to implement mandatory energy labelling.[181]

Recommendations and opportunities

P.E.I. must act on commitments for ambitious and even net-zero building codes.

It must also expand its focus on buildings from just energy waste to low-carbon construction materials.

Prince Edward Island

CLEAN ENERGY

B
Leadership potential

A	D	B	B
Prepare for clean electricity demand	Complete net-zero modelling of energy pathways	Create an energy strategy	Build grid flexibility

Scorecard notes

P.E.I. was the first jurisdiction in Canada to have an energy strategy centred on climate targets and is in the process of updating it to align with the province's plan for a net-zero economy by 2040.[182]

The province is almost entirely powered by clean energy, with modest plans to procure additional resources as well as energy storage. P.E.I. has also highlighted the role of distributed resources for some time.

Recommendations and opportunities

The province needs to develop an updated energy strategy that aligns with a net-zero economy by 2050.

This needs to be accompanied by a pathways assessment to understand the most cost-effective way forward for the province.

Prince Edward Island

CLEAN INDUSTRY

B
Leadership potential

B	C	D	B	A
Build a clean industrial strategy	Establish targets	Develop a workforce strategy	Support skills and training in emerging industries	Support cleantech and decarbonization

Scorecard notes

With a population of 156,000, Prince Edward Island needs to think about industrial strategy a little differently than larger jurisdictions.

Planned development of the CleanTech Park, Academy and Innovation Centre is innovative thinking about what a small, focused jurisdiction could do to attract clean investment (see breakout box).

Backed by solid decarbonization objectives, P.E.I is also attracting investment via tax breaks, support for labour training, streamlining industrial sites, and a focus on job creation and training.

Recommendations and opportunities

P.E.I. should employ a more pointed approach to its clean industrial development, including targets and a more strategic focus on specific key industries like ag-tech, wind, and smart grid sectors. This should include workforce development, including how to best target and expand existing programs like the PEI Energy Academy.

Clean Tech Hub

The P.E.I. government has committed to setting up three tax-free cleantech development zones in the province. This includes a $25-million, 60-acre tax-free zone and Clean Tech Park in Georgetown which will be a hub for business and education, and will include a Clean Tech Learning and Innovation Centre as well as a 25-hectare business park.[186,188] The learning centre will house the Cleantech Academy, offering specific training including a certificate and master's degree in Cleantech Leadership. In designing its approach to attract clean tech investment to a small jurisdiction, PEI looked to Samsø Energy Academy in Denmark, which is also housed on a small island that has become a model for renewable energy and sustainability.

Prince Edward Island

CLEAN TRANSPORTATION

C
Middle of the pack

A	C	B	D	D	C
Provide provincial EV rebates	Plan and fund charging infrastructure	Ensure EV supply	Ensure all EV drivers can charge at home	Support public transportation	Incentivize and supply zero-emission commercial vehicles

Scorecard notes

P.E.I offers EV rebates of up to $5,750 and waives registration fees for fully electric vehicles, making its rebate one of the most generous in the country.[183,184]

It provides a home charging incentive to all EV rebate recipients and its PEI Electric Vehicle Charging Funding Program supports up to 75% of eligible costs for business, academic, and community organizations to install commercial EV chargers.[185]

P.E.I. aims to electrify its entire public schools branch fleet by 2030 and its entire government-owned fleet by 2040. It boasts one of the largest electric school bus fleets in the country.[186]

Recommendations and opportunities

The province should introduce additional support for EVs, including;

- developing a more comprehensive EV charging strategy;
- requirements to ensure condo and apartment dwellers have access to home charging; and
- policies to ensure EV supply.

The province should also introduce incentive programs for zero-emission medium- and heavy-duty vehicles.

All aboard

P.E.I. hosts one of the largest electric school bus fleets in the country, with 107 electric buses making up roughly 30% of its fleet.[187] The province's ambition started from its 2040 net-zero framework, including a goal to reach a 100% zero-emission government-owned fleet and register at least 40% medium- and heavy-duty vehicles by 2040.[187] A key part of the strategy was to electrify half of the province's school buses by 2027 and, so far, the province has invested $40 million in electric buses over a five year period.[187] As many of the school buses embark on predictable routes of between 40 and 112 kilometres and return to the same depots overnight for easy (level 2) charging, the island's buses are primed for electrification—and because most school buses across the country act in much the same way, the province is a role model for pollution-free commutes for kids.

OVERALL SCORE

C

Middle of the pack

Newfoundland and Labrador

Newfoundland still has a heavy reliance on traditional resource sectors, including mining and oil and gas. However, with the scale of the renewable energy and green hydrogen opportunities, Newfoundland is starting to engage in the clean economy—particularly in clean hydrogen.

The province has very generous heat pump rebates and offers some help for residents to purchase EVs. However, it has taken few steps to support a provincial EV charging network.

The province was one of the first to introduce an energy strategy in 2021, laying out a clear vision for the role of clean energy as well as specific action plans, but a continued focus on oil and gas investments—including in the province's 2023 budget—is holding back greater focus on the sustainable economy.[189]

Newfoundland and Labrador

CLEAN BUILDINGS

C

Middle of the pack

A	B	N/A	D	C
Provide heat pump rebates	Offer energy efficiency and retrofit programs	Update building codes	Require home energy labelling	Commit to low-carbon construction

Scorecard notes

Newfoundland and Labrador offers generous rebates for heat pumps of up to $22,000 (minus the federal grant amount) for income-qualified households switching from oil heating, and up to $9,000 for non-income-qualified household switching from oil heating to a heat pump.[190] It also provides grants of up to $2,000 for energy efficiency updates.

The province also has a guide for public procurement that includes green procurement approaches for buildings using sustainable and recycled materials.[191] Newfoundland and Labrador does not have a provincial building code. Instead, municipal councils are required to adopt the national model code and can adopt standards that exceed these requirements.

Recommendations and opportunities

The province should continue to develop home energy labelling and work with municipalities on building codes.

Newfoundland and Labrador

CLEAN ENERGY

C
Middle of the pack

C	D	B	D
Prepare for clean electricity demand	Complete net-zero modelling of energy pathways	Create an energy strategy	Build grid flexibility

Scorecard notes

The province has long had an energy strategy in place that meets many of the best practices we've identified.[192] The grid is also largely clean, with new industrial projects specifically linked to clean energy deployment.

However, there are limited renewable projects currently in the works and insufficient focus on grid flexibility.

Recommendations and opportunities

The province should update the 2021 energy strategy to outline clear plans for meeting increased electricity demand by procuring new clean generation. This should be complemented by an independent cost-effective energy pathways study.

Newfoundland also needs a plan to integrate distributed energy resources and other demand-side technologies to balance grid reliability.

Newfoundland and Labrador

CLEAN INDUSTRY

C
Middle of the pack

B	D	D	B	C
Build a clean industrial strategy	Establish targets	Develop a workforce strategy	Support skills and training in emerging industries	Support cleantech and decarbonization

Scorecard notes

Newfoundland and Labrador recently developed a framework for collaboration with the federal government focused on critical minerals, wind, hydrogen, electrification, and carbon capture, utilization, and storage.

The province has a critical minerals strategy with an action plan to follow.[193]

Newfoundland and Labrador is supporting clean technology through a specific investment tax credit and has matched the federal government's provincial contribution to the Low Carbon Economy Leadership Fund.[193,194]

Newfoundland has a workforce development plan, but it lacks consideration of the clean economy.[195]

It also has a Renewable Energy Plan that contemplates exporting renewable energy, opportunities to attract and retain industry, using energy to produce green hydrogen and ammonia, and decarbonizing the offshore oil and gas industry.[196]

Most recently, the government allowed four companies to pursue development of wind-hydrogen facilities on Crown land.[193,197]

Recommendations and opportunities

The province should focus workforce programs and economic development programs around clean economic opportunities.

Developing an industrial strategy, including a critical minerals action plan and specific targets, would help keep value-add processes in the province.

Newfoundland and Labrador

CLEAN TRANSPORTATION

D
Falling behind

C	D	D	D	D	C
Provide provincial EV rebates	Plan and fund charging infrastructure	Ensure EV supply	Ensure all EV drivers can charge at home	Support public transportation	Incentivize and supply zero-emission commercial vehicles

Scorecard notes

Newfoundland and Labrador offers an EV rebate of up to $2,500, though unlike all other provinces, this incentive is not offered at the point-of-sale.[198]

Beyond rebates, the province has taken few steps to support drivers in going electric, with limited support for public charging.[199]

The province offers some incentives of up to $2,500 per vehicle for light-duty commercial fleets, as well as some rebates for commercial charging.[200]

Recommendations and opportunities

The province should introduce additional support for EVs, including;

- revamping the rebate program to be available at point-of-sale and making it more generous;
- more support for public charging infrastructure and developing a comprehensive charging strategy;
- requirements to ensure condo and apartment dwellers have access to home charging; and
- policies to ensure EV supply.

Newfoundland and Labrador should develop more widespread support across vehicle classes to decarbonize the medium- and heavy-duty transportation sector.

Territories

Given the unique challenges faced by remote and northern communities, we have not graded the performance of the territories. However, territorial governments have still rolled out some programs and support for the sustainable economy, some of which are summarized below.

The Yukon

The Yukon is a true leader on clean transportation. The province offers rebates of up to $5,000 toward EVs, including up to $1,500 for shipping costs. Its efforts have resulted in the third-highest EV sales by market share in Canada (after B.C. and Quebec).

It has also taken steps to support EV charging, making a building code change that requires new residential buildings in Whitehorse (where two-thirds of the territory's population lives) to be "EV-ready." The Yukon's Good Energy Program offers up to $9,000 toward the installation of EV chargers in homes and municipal- and First Nation-owned buildings.[201] In addition, the Government of Yukon's Carbon Rebate Program allows businesses to receive credits for clean technologies, including charging infrastructure installations.[202–204]

The Yukon has also been piloting commercial vehicles, offering 75% rebates for zero-emissions medium- and heavy-duty vehicles in exchange for participation in a two-year pilot program to study their performance.[205]

The territory has been proactive on clean buildings, offering a generous heat pump rebate of up to $8,000 as well as a commitment to ensure that all newly built homes are "net-zero energy ready" by 2032.[206] The latter includes rebates for homes that are built to be at least 50% more efficient than the building code.[207]

The Yukon was the first Canadian jurisdiction to expand Property Assessed Clean Energy (PACE) programs to fund individual off-grid alternative energy power systems, allowing residents to make upgrades with no down payment and repay them via their annual property tax bill.[208] The Yukon Housing Corporation also offers low-interest loans for retrofits as well as a First Nation housing retrofit program.[202]

Electricity generation in the territory is predominantly from hydropower, but the contribution of wind and solar has increased significantly in recent years.[202,203] There are a number of utility-scale solar projects in advanced stages of planning, while wind power generation has increased 19-fold between 2022 and 2023.[209]

The Northwest Territories

The Northwest Territories commissioned an independent pathway assessment in 2023 to identify ways to reduce the territory's emissions. Among the recommendations is to increase renewable power supply, and there has been some welcome growth in recent years from wind power generation.[209]

The Northwest Territories also co-funds a non-profit that that provides rebates of up $20,000 for home improvements and renewable energy projects.[210,211]

When it comes to clean buildings, the government is reviewing the 2015 Model National Energy Code for Buildings to add new targets. The territory is also in the early stages of introducing a Property Assessed Clean Energy program.[209,212]

Nunavut

Given its remote nature, Nunavut has a unique set of challenges and opportunities.

The government has taken some steps on buildings, including adopting a national model building code and administers a Home Renovation Program.[213]

The territory also has some support for off-grid power generation, including one-time grants of up to $5,000 to install solar or wind power systems on cabins or homes. Homeowners located within municipal boundaries in Nunavut can also apply to the Nunavut Housing Corporation for up to $30,000 towards a solar energy system.[214]

In 2020, Nunavut generated 100% of its electricity through the combustion of fuels, but it is looking for ways to add clean power with a number of power producers investigating solutions. The Qulliq Energy Corporation has created a shortlist of five Nunavut communities that would have the potential to generate electricity through wind power, and the Nunavut Nukkiksautiit Corporation has proposed to build a wind and battery storage project.[215,216] The Government of Canada has also invested $7 million in the Inuk-led Kivalliq Hydro-Fibre Link, which aims to bring clean hydroelectricity from Manitoba to the Kivalliq region of Nunavut.[217] The project is estimated to reduce emissions by 371,000 metric tons annually.[215]

In 2024, Canada formally gave the giant Arctic territory of Nunavut control over its reserves of gold, diamonds, iron, cobalt, and rare earth metals—a move that could boost exploration and development of critical minerals that will be important in the sustainable economy.[218] Greater road and rail connections could help export of these materials become financially competitive.[219]

Putting the **pillars in place**

While each has its own strengths and weaknesses to address, all provinces should take these key actions across our four pillars:

Clean buildings

Transform existing and new housing stock by moving it off fossil fuels, and improve energy efficiency to reduce waste and save residents money. Canada needs to catch up with international jurisdictions that are far ahead of our thinking—and whose residents are saving money as a result.

Clean industry

Modernize industrial strategies by identifying competitive advantages and setting targets collaboratively with industry, labour, and others. This should be accompanied by strategies to prepare the workforce for energy transition.

Clean energy

Plan and build clean electricity to reduce energy bills and support clean industries through best practices including energy strategies, pathway assessments, and energy sector reforms.

Clean transportation

Free Canadians from dependence on volatile gas prices and unlock fuel and maintenance cost savings by supporting transit and helping Canadian drivers and businesses switch to zero-emission vehicles through purchase incentives, charging infrastructure support, and proactive planning.

All of the above must support Indigenous participation in the clean economy, including loan guarantees, equity partnerships on major projects, dedicated skills, and targeted energy efficiency programming that can help advance community leadership, ownership, and economic development.

Methodology

- Because most of our scorecard criteria are policy-based rather than outcome-based, our measurements of success are inherently qualitative.
- While public-private partnerships are key, and federal-provincial cooperation will be essential to succeed, this report card focuses on actions that are within the jurisdiction of the provinces, where governments should be showing leadership, spending tax dollars wisely, and planning ahead. We have considered actions taken by Crown corporations or other semi-public entities, provided they have government support, funding, or a mandate.
- Our scoring allows for shared leadership, i.e. more than one province can be a national (or even global) leader.
- Our scoring considers the differing sizes and resources of Canadian provinces, grading on a scale for this reason.
- This report card is current to April 16, 2024, and considers all actions to date by a province under the leadership of any party.

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