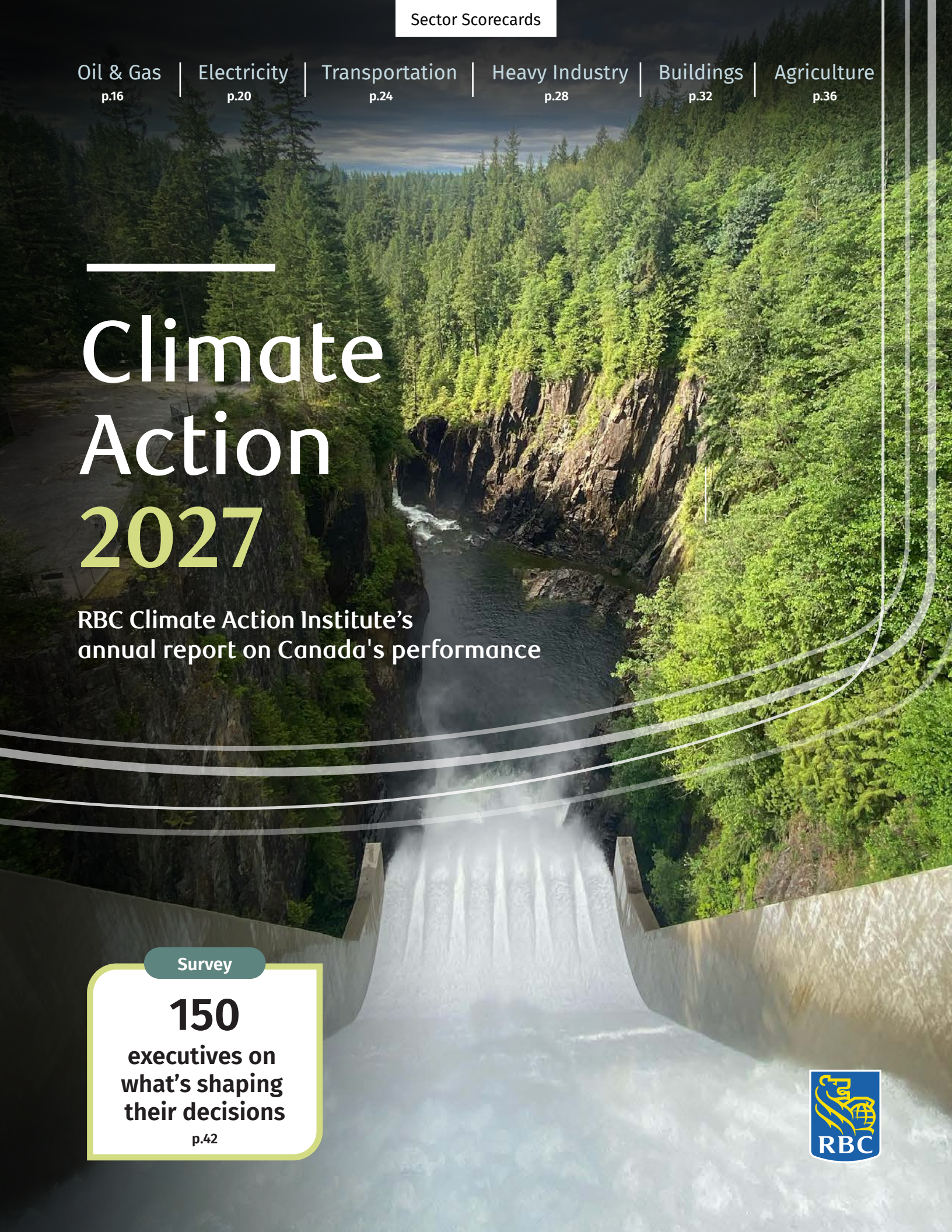
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Climate Action 2027

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RBC



Cover image: Cleveland Dam in Vancouver (Gettyimages)

Photo: Adobe Stock

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Why we wrote this

Amid all the uncertainty and challenges in the world, climate action remains one of the biggest collective needs facing humanity.

That's why the RBC Climate Action Institute undertook the challenge of publishing an annual report on how Canada—and Canadians—are doing. Now in its fourth year, the report draws on economic, consumer and industrial data, explores individual, corporate and policy efforts, and encapsulates Canada's collective progress in a series of barometers and indexes. Climate Action 2027 is a mirror through which we can see the country's successes and shortcomings.

The report-and, more broadly, the work that the Climate Action Institute team does every day-is about more than an emissions scorecard. It's about how the country is progressing with policies, investments, technologies and our own habits as consumers.

This year, we commissioned two surveys. We polled 2,000 Canadian consumers on how they're balancing cost of living challenges with reducing their carbon footprint. We also surveyed 150 executives on how they're navigating global uncertainty with their company's climate commitments. And, for the first time, we solicited policy insights from 65 of the country's leading climate experts.

We are now less than 25 years away from Canada's 2050 net-zero targets. Achieving that goal will be a challenge, but as this year's report shows, technology, funding, innovation and individual action can help carve out pathways to a low-emissions future.

John Stackhouse
Senior Vice-President, Office of the CEO

A note on the Climate Action Institute's methodology

The report is published by the RBC Climate Action Institute, which is staffed by policy experts in economics, energy, climate-tech, agriculture and materials. Throughout the year, this group publishes macro and sector reports, and engages widely with key economic sectors, environmental groups, academics and policymakers.

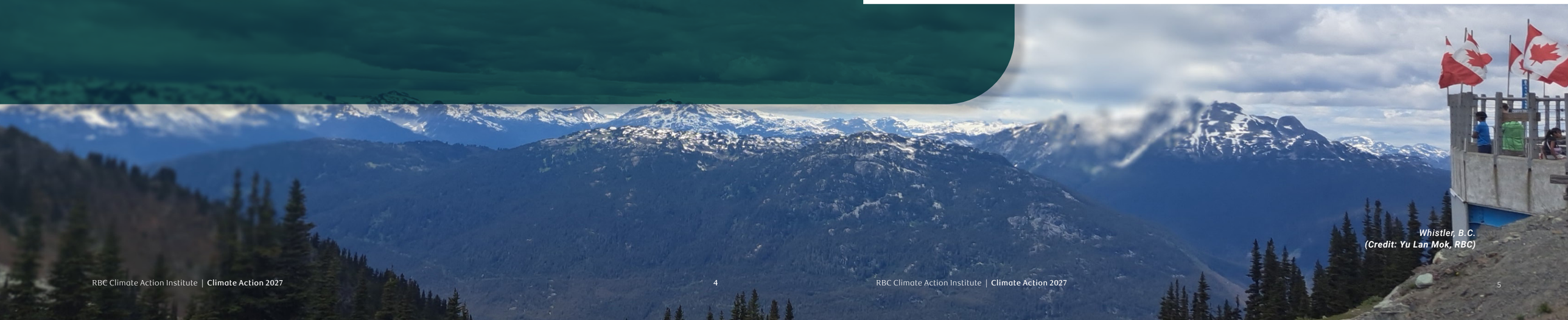
Our annual Climate Action report is designed to be the RBC Climate Action Institute's general view of Canada's progress, and is based on calculations, aggregations and estimates that we have produced using a variety of qualitative and quantitative measures from across the economy and society. We have selected those measures to help paint a picture of where we're at, how far we've come and some of the distance ahead. The report, and its measurement tools, are not designed to be a precise diagnostic of any one sector, policy or technology.

The report and methodologies, including the Climate Action Barometer and Sector Scorecards, are based on the Climate Action Institute team's analysis of datasets from several sources that are detailed in the Methodology section, including the federal government's official national greenhouse gas inventory, the National Inventory Report (NIR) and Canadian federal and provincial government budgets. The most recent NIR, the National Inventory Report 1990–2024, was published by the federal government in April 2026 and tracks greenhouse gas emissions data between 1990-2024. As they are not included in the latest NIR, we estimate national emissions for 2025 and 2026, as described in our methodology.

Using this information and our estimates, the Climate Action Institute's team analyzed key metrics to derive original insights and opinions. The case studies, based on each company's information and public announcements, aim to offer a peek into the efforts of a selection (though not a representative selection) of Canadian businesses to address issues related to climate.

Combined, the analysis of government policies, consumer sentiment, business activities and various industries' efforts and challenges aim to present a snapshot of climate action taking place in Canada, and to provide our understanding of its general direction.

The data in this report precedes the 2026 Federal Budget.



Whistler, B.C.
(Credit: Yu Lan Mok, RBC)

KEY FINDINGS

What we learned

1 **Climate action advanced, even as policy slipped.** The Climate Action Barometer fell—again—from last year on policy pivots and a major project drive amid trade tensions with the U.S. Call it a reset, not a retreat, as we noted in last year's survey: net-zero by 2050 remains a federal target. Action momentum continues through incentives around electric vehicles, provincial retrofitting programs, and renewables deployment progress on a landmark carbon capture and storage project proposal in Alberta.

2 **Oil and gas decarbonization financing pulled back sharply.** A 21% decline between 2023-25 to a five-year low suggests capital is waiting for less policy uncertainty. The Carbon Capture Investment Tax Credit (ITC) extension and Carbon Contracts for Difference, along with the carbon capture project, aim to reverse the slide.

3 **Energy storage is unlocking renewable grid integration.** Canada added 2.1 gigawatt-hours of storage in 2025–up from just 0.1 GWh in 2024. Paired with new renewable capacity, storage is solving a key technical barrier to deeper decarbonization.

4 **Climate change impacts are landing unevenly—on the health and household budgets alike.** Our consumer survey of 2,000 Canadians on climate shows women reported health effects more than men, and Gen Z and Millennials are absorbing the financial hits hardest—suggesting climate costs are compounding existing generational and gender disparities rather than spreading evenly.

5 **The cost narrative around climate action may be outdated.** Just 11% of businesses in our 150-executive survey reported cost increases exceeding 15% from sustainable policies, while the majority experienced modest or manageable costs. The finding counters the narrative that climate action is inherently expensive and suggests that many emissions reduction technologies have reached cost parity or better with conventional alternatives.

6 **Climate policy watchers are pessimistic.** Nearly three of four climate analysts polled in our first-ever survey on government climate policy believe federal government policy is "weaker" or "much weaker" than it was five years ago—only 14% think it's stronger. Nine out of 10 analysts surveyed for the report were either "not confident" or "very unconfident" that Canada would meet its 2030 GHG emissions reduction targets.

7 **Residential heat pumps are a bright spot in climate action.** Adoption reached an estimated 9–10% of housing stock, according to estimates. Commercially, dual-fuel rooftop units allow warehouse and retail owners to reduce emissions by as much as 50% and gain operational savings, without committing to full electrification.

8 **Falling battery prices may signal EV adoption ahead—but the industry is strained.** North American EV battery pack costs are down 40% from $176/kWh in 2019, nearing the $100/kWh parity threshold with gasoline cars. Yet, with U.S. government support receding, American automakers have revised their strategies as they absorbed EV-related losses of US$54 billion over the past year. Honda's shelving of its $15-billion EV plant in Ontario and Quebec government's pulling out of the Northvolt battery plant is emblematic of a wider global slide.



Photo: Adobe Stock

9 **Critical minerals investment is surging.** Canadian firms raised around $225 million in the first seven months of 2026, as Western allies work to loosen China's grip on energy transition supply chains. Five of the 18 projects referred to the Major Projects Office are focused on mining, including the Western world's largest nickel project, which got the greenlight in Ontario this year.

10 **Fertilizer management shows climate action increasingly means economic resilience, not just emissions reduction.** Capital deployment in agriculture has risen over the past five years. The momentum has accelerated as farmers optimize input costs amid disruptions to fertilizer supply chains driven by the Middle East conflict.



Photo: Adobe Stock

The new geopolitics of climate and energy

Like energy, we observe that climate policy is in a transition. It's now wrapped up in global energy security, embedded in trade resilience, and seen as central to supply-chain diversification.

We find ourselves in a new era, where climate policy is impacted by geopolitical forces that are changing global trade, energy security, investment flows and competition.

The rebranding could be a boon for low-carbon technologies as, a decade after Paris 2015, climate policy appears to be dithering.

It's early days still, but the Middle East energy supply shock appears to be benefitting low-carbon technologies. The Strait of Hormuz's blockade has opened new avenues for energy transition to flow into the global economy.[1] As the IEA head Fatih Birol said recently, energy security and clean energy goals have never been more closely aligned.[2]

And yet, global temperatures are set to cross the 1.5°C threshold set by the Paris Agreement, likely within the next few years, according to the United Nations Environment Programme.[3] We see excessive heat waves are hurting wind power and hydropower efficacy, even as AI and ACs are making exponential demands on grids. And a fractured world is no longer pulling together towards common climate goals.

The "Paris dream" of one path, one target, has given way to six regional areas, each battling with its own challenges. We observe:

EU: Decarbonization is now industrial policy. The Carbon Border Adjustment Mechanism and low-carbon tech subsidies are protecting a shrinking manufacturing base, but energy security is sometimes at odds with climate policy.

North America: The U.S. is prioritizing fossil-fuel output and industrial reshoring, but a Democratic sweep in the midterm elections could swing sentiment back in favour of low-carbon energy.

Meanwhile, Canada's focus on a low-carbon grid aims to offset its rapid oil and gas production plans.

East Asia: Security and technology lead. China considers low-carbon tech as industrial strategy, while Japan and South Korea pursue nuclear and LNG security. Climate gains are mostly a byproduct.

Emerging Asia: Growth remains paramount, with coal as the backbone in the short-term. Decarbonization would depend on concessional financing and grid investment. COP 31 in Türkiye in November, could focus on turning past financial pledges into scaling capital for emerging markets.

Latin America: Energy exporters striving for the balance between fossil fuels and renewables. Vast mineral wealth is the region's biggest transition lever.

Middle East: The Hormuz shock has jolted Gulf states, particularly those lacking short-term alternatives. Energy importers, already debt-laden, are being squeezed with price and supply, with climate policies seen as a luxury.

Perhaps fragmentation is not such a bad outcome, given that a singular strategy, a prescribed set of technologies, or deadline was never reflective of the world's economic and social diversity.

Amid policy retreats and resets—the theme of last year's report—energy transition marches on across the regions in different gears. Emerging economies are leading the way. China's electro dynamism is well documented, India beat the U.S. in solar capacity installations last year, Saudi Arabia installed more wind power than France, the U.K. or Canada, while Indonesia added more geothermal capacity than any other country during the same period. Both China and India saw emissions decline in their respective power sectors in 2025.

It's also a time of contradictions: China and India are the biggest coal consumers. Meanwhile, China's dominance in solar panels, electric vehicles and wind turbines—and the raw material supply chains critical to making these products—are undermining the West's industrial dominance. Emerging economies are also eyeing diversification of LNG and crude oil to move away from Hormuz-dependence. For all the talk of record low-carbon energy investment (US$2.2 trillion in 2026), the world has been averaging US$1 trillion a year over the past decade on fossil fuels, which is expected to have implications for emissions.

The great energy jolt

The different playbooks mean both energy exporters and importers have to do everything, everywhere all at once, a common refrain heard these days around energy transition.

The Hormuz shock is expected to play out over time, but four years of the Ukraine-Russia war has already altered many European countries' energy make-up, with a surge in wind and solar installations. It has had some early success: the bloc saved €121 billion from avoided fossil fuel imports in the past four years in the aftermath of Russia's invasion of Ukraine.[4] A resurgence of nationalism in several European countries could channel more funding to resilience and energy security policies.

Many U.S. federal policies are being rolled back, with more than 300 deregulatory climate actions in the first year of President Donald Trump's second term, according to Sabin Center's Climate Backtracker. The pullback on low-carbon tech grants, credits and incentives has also raised states' costs to meet their climate targets.[5]

Average residential electricity prices rose 7% in 2025 versus 2024, with 46 states seeing increases and 12 states, plus D.C., posting double-digit hikes. Polling shows that 82% of voters are concerned about electricity affordability, with 72% saying bills rose over two years, and roughly 1 in 6 households are behind on paying those bills. No wonder, price affordability was a midterm election issue.

However, a bipartisan deal to overhaul federal permitting laws and regulations to speed up development of crucial energy projects, including solar and wind, could yet spur innovation and development that outlast election cycles.[6]

Globally, renewable energy investment stood at US$327.5 billion in the first six months of the year. That's similar to the same period last year, but 21% lower than its peak in the second half of 2024. With many U.S. climate-related incentives expiring soon, 2026 is expected to be the year renewable energy addition slides for the first time in a decade.[7]

Amid these seismic shifts, we expect five enduring themes to determine the pace and progress of energy transition:

1. **Electrification is ascendant:** Geopolitics is pushing global economies towards electrification, while artificial intelligence and air-conditioning have the potential to strain grids.[8] However, extreme weather is challenging hydro and wind power generation, which could pave the way for advances in nuclear, geothermal and hydrogen energy.[9]

2. **Wires, minerals and welder bottlenecks:** We see supply chains are in knots, with transformers to technicians in short supply. A focus on limiting China from energy-transition supply chains means a slew of jurisdictions, including Canada, are seeking fresh capital and infrastructure to build a new inventory of material and technologies. The next decade could see a build-up of massive new energy transition supply chains.

3. **Policy, not technology, is holding up progress:** Solar panels, wind turbines and batteries are now vastly improved technologies with costs that have plummeted over the past decade.[10] But ideological preferences, vested interests, and a focus on energy security are among the headwinds facing climate tech.

4. **Energy security will ensure fossil fuels remain in play:** Oil, natural gas and coal still supply approximately 80% of the global energy system.[11] We observe that only a few policymakers, caught in regular election cycles, have the political will to boldly remake the energy complex while keeping the system affordable.

5. **Climate tech could be leveraged to drive efficiency.** It's not all about AI data centres. Advanced machine-learning, AI, and quantum computing can design lightweight materials that are hyper-efficient.[12] The technologies could also accelerate the decoupling of economic growth with emissions, and spur advances in low-carbon technologies in adaptation and mitigation.

It seems that Canada finds itself straddling these five themes. The resource, and resourceful, economy is navigating a fraying continental trade relationship, striving to be a player in the great critical minerals race, and pivoting to small modular reactors, carbon capture and methane mitigation, to build its low-carbon tech cred.

The new Canadian focus appears to be to meet customers on their energy transition curve: potentially nuclear tech for Poland, liquefied natural gas for Japan, rare earths for Germany, and oil for India. The aim is to operate across old and new energy in this new era.



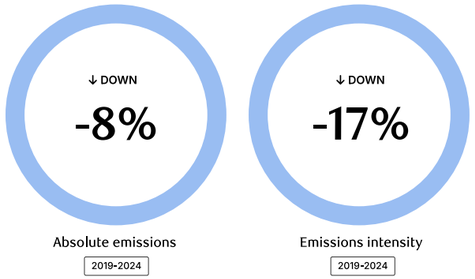
Photo: Adobe Stock

Climate Progress Indicators

Tracking Canada's national and sectoral trends in climate policy, capital, action and emissions

Near Drumheller, Alberta
(Credit: Khawar Mahmood, RBC)

Pockets of action offset regulatory resets



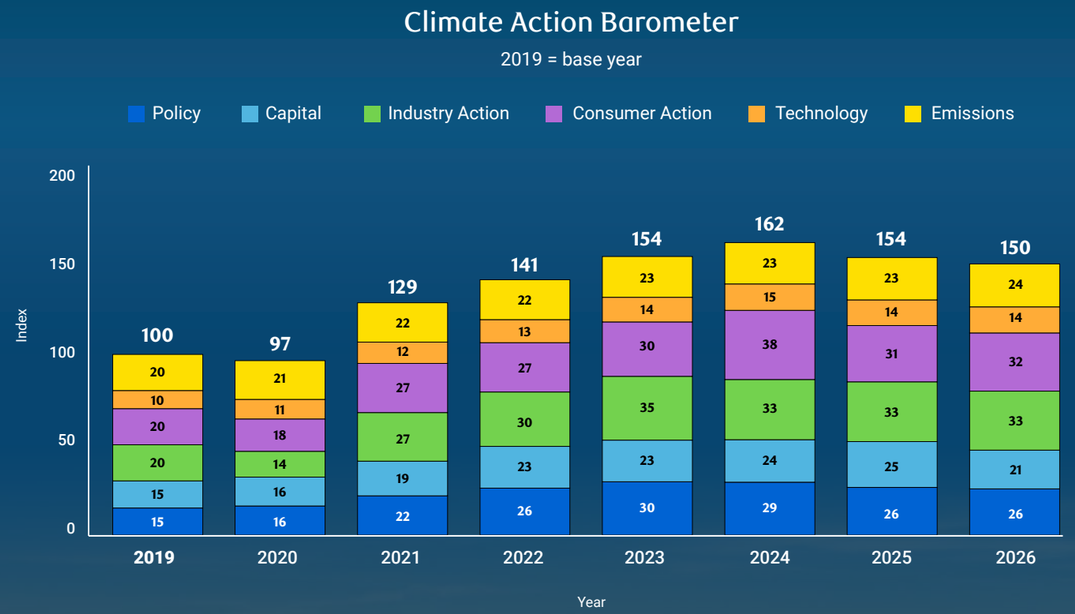
The Barometer slipped for a second straight year. We found that federal and provincial government's policy pivots around carbon pricing, more room for natural gas in grid expansion plans, and a major development drive amid trade tensions with the U.S., have deprioritized climate policies. However, it's not a retreat, but a reset and renewal of policies, as noted in last year's report. The federal government's overarching net-zero ambition by 2050 remains intact, for now. Climate action is also evident in updated incentives around electric vehicles and provincial home-retrofitting programs, and a landmark carbon capture and storage (CCS) project proposal in Alberta.

New projects could challenge long-term emissions trends.[1] Emissions gradually declined between 2022-2024, but getting from the 685 MtCO2e in 2024 to the 440 MtCO2e target by 2030 set by the government would need cuts 3-4 times bigger than the emissions decline seen during the pandemic.[2]

Capital remains around $20-$25 billion annually since 2022,[3] well short of the estimated $60 billion required annually for Canada to get to net-zero by 2050, according to our estimates.[4] Clean economy investment tax credits, one of the government's vehicles to spur action, is making slower progress than anticipated by the Canadian government, with only $12 billion of the budgeted $27 billion expected to be claimed by 2027,[5] in investment tax credits such as Clean Technology Manufacturing ITC & Clean Hydrogen ITC.[6] In capital markets, global sustainable debt issuance is on track to set a new peak with over US$1 trillion exchanging hands in the first half of 2026. The Canadian market accounted for only 1% of the $1 trillion, down from its high of 3.1% in 2022.[7]

Deployment and adoption appear to be plateauing. Renewable deployment momentum largely faded to about 1 GW a year of new wind deployment, and ~500 MW for solar over past few years, from combined new installation peak of 2 GW in 2022.[8] We also observe commercial vehicle decarbonization to be slower than expected. Business confidence, however, showed signs of rebounding. The latest RBC Climate Action institute Business Pulse Check, conducted by Kantar Canada, found 33% of respondents are strongly confident about hitting their 2030 corporate emissions reduction targets, which had dropped to 18% last year. Those who believe targets won't be met have hovered around 7-8% since our survey first began in 2024.

Canadians are still willing to pay a bit more for climate action, but it's falling off their priority list. Only 6% of Canadians picked addressing climate change as the top priority for Canada, according to an RBC Climate Action Consumer Pulse Check survey conducted by Ipsos, half as much as last year. But it is largely in line with sentiment in the 1,000-person survey Ipsos conducted on our behalf in the U.S. and U.K., as affordability demands greater attention. A majority of Canadian survey participants noted they favour regulations and incentives to help drive emissions reductions, although they remain divided over the issue of carbon tax and pricing.



Read the Climate Action Barometer Methodology on page 54 for a detailed explanation of how the index was built.

Blue Mountain, Ontario
(Credit: Ahmed El-Nagdy, RBC)

OIL & GAS

Index at four-year low amid accelerated production

↓ DOWN

-7%

Absolute emissions

2019-2024

↓ DOWN

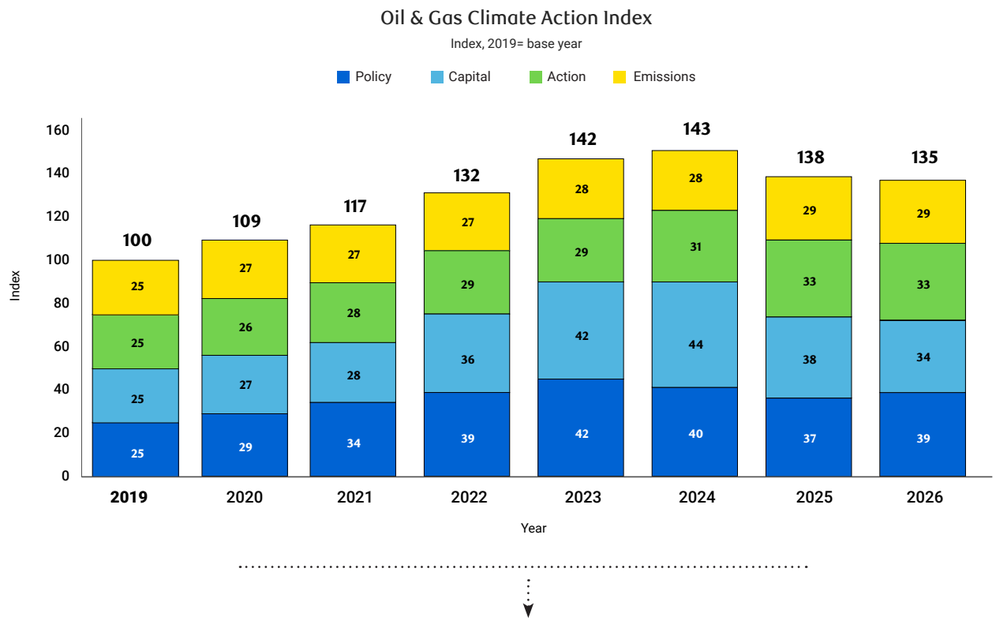
-17%

Emissions intensity

2019-2024



Photo: Adobe Stock



Industrial carbon pricing is back in focus following the scrapping of the emissions cap. The federal government also tightened methane regulations, and extended the carbon capture, utilization and storage (CCUS) Investment Tax Credit to bolster two major levers of decarbonization. Whether this will deliver equivalent emissions outcomes remains a question, especially with several new energy and infrastructure projects planned in light of global energy security concerns. This is reflected in the index, which is at a four-year low.

Methane management seems to be the sector's most credible near-term climate lever. Vented emissions dropped an estimated 24% between 2023 and 2025, even as natural gas production rose 6%.[1 2] A federal-Alberta equivalency agreement targeting finalization by end-2026 will require independent third-party verification for the first time.[3]

Incremental efficiency gains continue, but drastic decarbonization remains elusive. Steam-oil ratios, mined bitumen intensity and methane volumes all improved in 2026—a trend unbroken since 2019.[4 5 6] With the Oilsands Alliance-proposed Pathways Carbon Capture and Storage Project's extended timeline and the emissions cap abandoned, the path to deep emissions reductions in the sector remains unclear.

Capital allocated to decarbonization pulled back sharply. The Capital theme fell to a five-year low, as government and private climate financing fell an estimated 21% between 2023 and 2025.[7 8 9 10 11] The carbon capture, storage and utilization (CCUS) Investment Tax Credit (ITC) extension and Carbon Contracts for Difference are intended to revive investments, which could gain momentum if the Pathways project commences construction as early as 2027.[12]

It's a new era of federal-provincial alignment. The May 2026 Canada-Alberta Implementation Agreement locked in the Alberta industrial carbon pricing and emissions trading system's stringency rates, a carbon credit price floor, and mutual commitments on the CCUS project. While inter-governmental coordination has improved, the overall policy score has not recovered to its 2023 peak—and expanding production ambitions, new pipelines and LNG projects could test the architecture further.

Canada's oil and gas policy reset mirrors a global trend. Fossil-fuel phase-out language seemingly died at COP30, the U.S. repealed its emissions rules while preserving carbon-capture credits, and, globally, we see many producers are expanding output under an energy-security banner. Canada's scorecard tracks the same turn: the cap scrapped, methane and CCUS (Pathways) retained as the working levers, amid expanding hydrocarbon production.

OIL & GAS | KATHAIROS SOLUTIONS

The quest to cap methane

In early 2022, a Montney producer trialled Calgary startup Kathairos Solutions' unconventional idea: replace the gas powering its well-site controllers with inert liquid nitrogen, in what was a modest commercial experiment. Four years on, Kathairos says it has eliminated more than a million tonnes of CO_2e[1] across more than 3,000 sites. This solution aims to address methane emissions reductions, which is considered one of the pillars of Canada's climate strategy.[2 3]

Pneumatic devices—the valves, controllers, and pumps that keep a well site running—have traditionally been powered by the pressure of the gas (methane) coming out of the ground. By design, every device releases a small amount of methane. Multiplied across hundreds of thousands of devices, pneumatics account for roughly a third of Canada's upstream methane emissions, but also the single largest controllable source.[4 5 6]

The Challenge

For decades, the gas powering the pneumatics looked "free." That assumption kept routine methane venting "invisible" to many for over a century. Once methane detecting cameras became more common in the early 2010s, some operations began to recognize that they were venting natural gas – the same product they sell – into the atmosphere, contributing to environmental harm and lost revenue.[7]

The fix for the problem looked daunting. The conventional answer was to electrify: tie a wellsite to the grid, run a generator, install electric controllers and air compressors. But that's hard to replicate across the roughly 130,000 active wells in Western Canada,[8] many of them remote, small, and off grid. "The energy industry has known for a while now that it can electrify a site and install new equipment to eliminate methane venting," said Jacqueline Peterson, Kathairos' chief external affairs strategist. "It quickly becomes challenging at scale. Traditional solutions really haven't been able to solve this problem from a commercial standpoint in a way that makes sense for the industry."

The Idea

Kathairos, founded in Calgary in 2020, did not try to electrify. It replaced the gas with liquid nitrogen. The company installs a cryogenic tank filled with liquid nitrogen at the site and connects it to the existing pneumatic devices. Nitrogen exists as a gas at ambient temperature, so it leaves the tank at the pressure and volume the controllers need, driven by thermodynamics alone[9] —no external power, no moving parts, no equipment replacement.[10] Instead of venting methane, the site vents nitrogen, which already makes up 78% of the air.[11] Tanks are sized to a site's vent rate and refilled roughly once a month.

The Obstacles

Recovered natural gas covers only about a quarter of the system's cost at typical prices. Alberta's Technology Innovation and Emissions Reduction Regulation (TIER) carbon market helps close some of that gap, with current offset pricing of $40 per tonne, rendering large facilities economic, and an expected rising TIER price of $60 by 2030 and $130 by 2040[12] working for progressively smaller facilities. But the carbon price is the upside, not the trigger. What sells the system today is expected reliability: nitrogen is dry and inert, so sites avoid the condensate freeze-ups that can take methane-fed pneumatics offline in a Canadian winter. Unlike reactive nitrogen (utilized in fertilizers such as ammonia), inert nitrogen is not expected to have a harmful environmental impact.[13 14]

Operator inertia also remains a challenge. Some operators moved early, but others view compliance as a future burden. This is more likely the case for smaller independent operators—without balance sheet bandwidth to absorb abatement capital alongside optimal drilling programs—which face the steepest financing barrier given the higher returns of traditional production.

The Insight

Kathairos turned the challenge on its head: instead of focusing on electrification and infrastructure, they aimed to reframe emissions from drilling a problem that can be solved by logistics: a mobile solution for remote, small, scattered wells.

The technology was never the hard part. "I often say that while we are a clean tech company, we're almost more a logistics and distribution company," Peterson said. The advantage was in moving nitrogen reliably, in small volumes, at low costs, to many remote locations. A tank goes in without a grid tie-in and is operational immediately.

Accurately measuring methane emissions has been a persistent challenge for operators and government alike, leading to disagreements over which baselines to use and which sources to address.

According to Kathairos, it is able to accurately measure even the smallest releases through its closed loop system: every volume of nitrogen consumed corresponds to a known volume of methane displaced. Kathairos' emissions data has been approved for a Level 4 (out of 5) under the United Nations' Oil and Gas Methane Partnership (OGMP 2.0) protocols–widely viewed as the industry's gold standard for methane reporting.[15 16] Kathairos' nitrogen data is also accepted under Alberta's TIER quantification protocol for pneumatics.[17]

With hundreds of thousands of pneumatic devices still venting, Kathairos believes its solution can capture a sliver of the methane-reduction opportunity.

> *Kathairos turned the methane challenge on its head: instead of focusing on electrification and infrastructure, it focused on logistics*

ELECTRICITY

Coal retirements partly offset by natural gas's rising prominence

↓ DOWN

-19%

Absolute emissions[1]

2019-2024

↓ DOWN

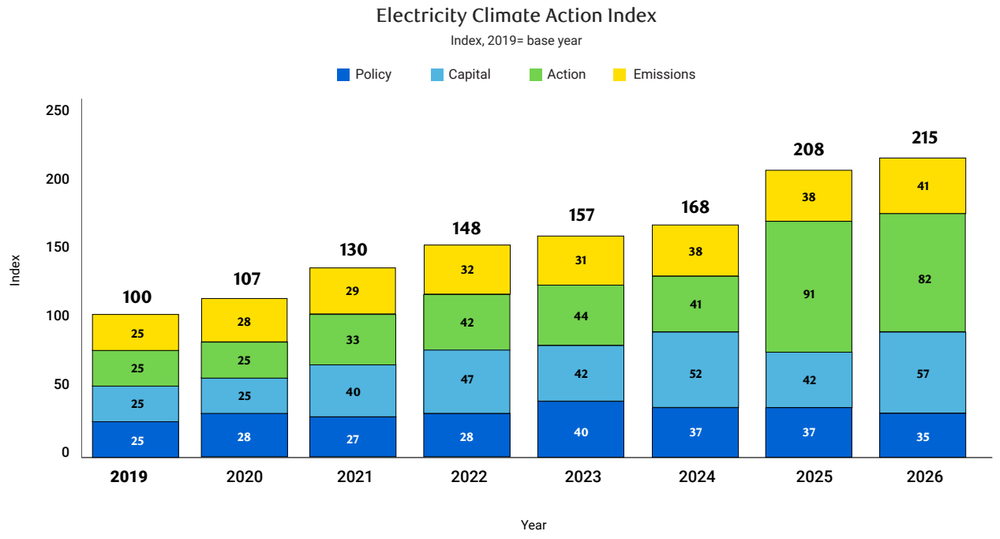
-15%

Emissions intensity[2]

2019-2024



Photo: GettyImages



Coal phase-out has driven sector progress: Coal-fired generation has fallen since 2019, led by Alberta's completed coal phase-out.[3] Retiring legacy coal plants seems to be the sector's most effective decarbonization lever to date.

Year-on-year action gains are narrowing as the cheapest abatement—coal switching—slows. The index continues to grow on sustained investment inflows, falling emissions intensity, and progressive additions of energy storage capacity.

Grid decarbonization has progressed despite policy uncertainty. Electricity sector emissions have declined since 2019 as coal generation has fallen and renewables have grown.[4] [5] Investment tax credits supported continued grid expansion, though an expanded role for natural gas and possible changes to the Clean Electricity Regulations cloud the longer-term outlook.

Energy storage deployment is unlocking renewable grid integration. Utility-scale battery projects reached commercial operation in 2025, providing critical flexibility to accommodate variable renewable generation.[6] Combined with renewable capacity additions, storage deployment can address a fundamental technical barrier to deeper decarbonization and support grid resilience during the transition. The Oneida energy storage project in Ontario drove the index's rise, with Alberta's market adding on storage as well. As much as 2.1 gigawatt-hours of energy storage came online in 2025, a major increase over the 0.1 gigawatt-hours of storage deployed in 2024.[7]

Sectoral investment commitment remains strong, despite uncertainty. Recent Canada Infrastructure Bank commitments—a $206 million loan for Nova Scotia's Mersey River wind farm[8] and $54 million towards the Wasoqonatl transmission intertie linking Nova Scotia and New Brunswick (bringing its total commitment to $285 million)[9]—demonstrate continued public support to low-carbon electricity infrastructure.

AI infrastructure is arriving faster than clean power supply can be built, repositioning natural gas's role in the energy transition. The International Energy Agency's projections indicate that global data centre electricity consumption will more than double to roughly 945 TWh by 2030[10] – slightly more than Japan's entire electricity consumption today. In Canada, Meta's $13 billion, 1GW data centre in Sturgeon County, Alta., powered by the $4.6 billion dedicated natural gas plant, is expected to consume as much electricity as 800,000 homes.[11] The company has also committed to matching its consumption with renewable energy investments. According to the IEA, renewables and natural gas will be key energy sources powering AI data centre buildout, though grid expansion remains a bottleneck.

Metering the Island

The Challenge

Electricity demand in Prince Edward Island has risen sharply over the last past decade. Maritime Electric, which supplies about 90% of the province's electricity customers, saw its annual system peak climb 60% between 2014 and 2023, with a further 32% increase forecast from 2024 – 2033.[1]

Most options for covering peak demands, especially in winter, require large electricity projects in the country's smallest province. It would take years to construct as well as add costs to the rate base—the province had to find additional ways to address how to cover the peaks, and the new wave of demand it faces.

That matters in a province where on-Island generation is dominated by wind and solar, with less than one per cent coming from fossil-fuelled sources, an emissions intensity of 7.2 grams of GHG per kilowatt-hour, the third lowest of any province or territory.[2]

However, the majority of electricity consumed in PEI is imported from New Brunswick, which generates its electricity from a mix of nuclear, fossil fuels, and hydroelectricity.

Roughly two-thirds of PEI's electricity is imported from New Brunswick. NB's supply is over 67% non-emitting but carries a higher emissions intensity of 226 g GHG/kWh, so PEI's overall supply mix is more carbon-intensive than its on-Island generation alone.[3]

The Idea

One option works on demand rather than supply: smart meters, also known as advanced metering infrastructure (AMI).

The technology is well established elsewhere in Canada: British Columbia, Alberta, Ontario and Quebec completed their rollouts years ago, and Natural Resources Canada put smart meters at roughly 82% of all meters in Canada by the end of 2018.[4]

Unlike the meters they replace, AMI meters record consumption at short intervals through the day and communicate it back over a network, which shows the utility when demand peaks rather than only how much a customer used in a month.[5]

The Island Regulatory and Appeals Commission (IRAC) approved a province-wide advanced metering and customer information project in October 2024, supported by $19 million in federal funding through Natural Resources Canada's Smart Renewables and Electrification Pathways Program. Installation began in November 2025 and is scheduled to reach the whole Island by 2027. Around 70% of North American utilities already run this technology.[6]

The Obstacles

Even in a small province like PEI, widespread deployment of AMI technology will take time. About 34,000 smart meters had been installed as of July, with roughly 60,000 to go. However, those will take longer as they will be in rural areas and require more travel. The work isn't expected to be finished until next summer.[7]

Pushing demand shifts can take even longer. Smart meters provide information that allows the introduction of time-of-use pricing, which can encourage customers to reduce electricity use during peak periods. But time-of-use pricing requires a regulatory application, and Maritime Electric has said they will investigate rates after it has collected enough data to build a case—a process that could take several years.[8]

Changing behaviour is difficult. Incentives to change habits may not be enough. Case in point: in Ontario where the auditor general found that the difference between on-peak and off-peak electricity rates had not been significant enough to encourage a change in consumption.

Costs need to be contained. Ontario's auditor general also found that the province's smart metering project was $1 billion over budget. Ontario had also set up a $249-million data centre to collect, analyze and store electricity consumption data—but most distribution companies ended up using their own systems.[9] That duplication, and the cost overruns, were passed along to ratepayers.

The Insight

A small province can move quicker. When Ontario was installing its smart meters a decade ago, it was dealing with dozens of local distribution companies. That came with its own challenges—40 of 73 distribution companies sought extensions because of operational or technical problems.[10] PEI's smaller size has proven to be an advantage with fewer stakeholders involved.

PEI can learn from other regions in the country. Ontario's auditor general found shortcomings in the way smart meter data was processed. As it collects data on electricity usage, PEI can learn from other province's experiences and thoughtfully set rates if it wants to move the needle on demand.

Smart meters need to be deployed in a smart way. They work best when paired with tools that make behaviour changes easy—such as automated EV charging, or time-of-use rates that are clear and easy to understand.

BC Hydro introduced the Peak Saver program, which provides customers who help reduce demand during peak hours an annual reward of $50 or $100, depending on income. As of last year, more than 130,000 customers had earned rewards by reducing demand, and have provided capacity savings of about 34 megawatts—the equivalent of charging around 40,000 electric vehicles.[11]

Smart meters need to be deployed in a smart way. They work best when paired with tools that make behaviour changes easy

TRANSPORTATION

Hybrids are on the charge

↓ DOWN

-14%

Absolute emissions

2019-2021

↓ DOWN

-10%

Emissions intensity

2019-2021

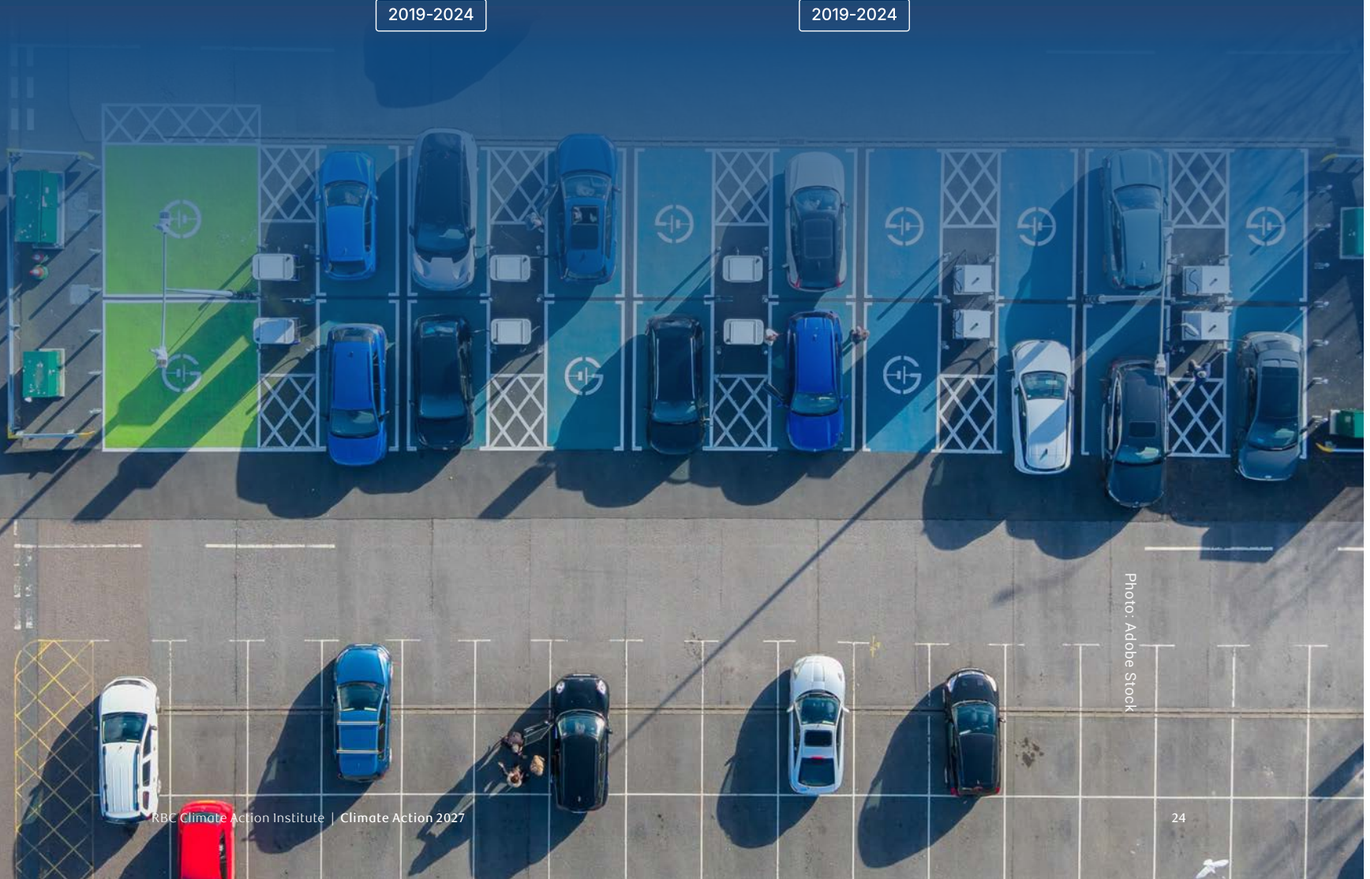
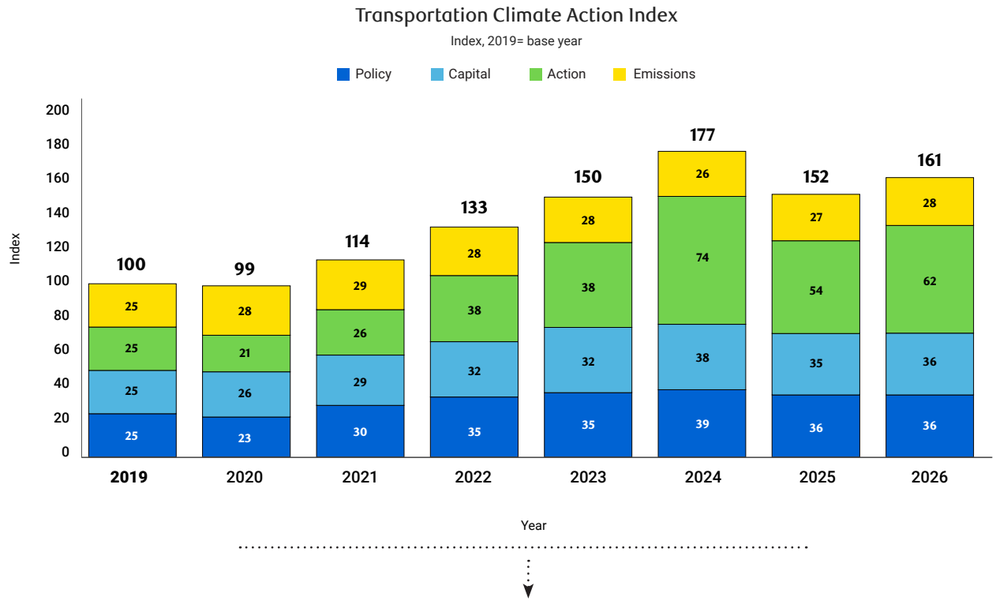


Photo: Adobe Stock



Resurgent electric vehicles (EV) sales[1] helped the index recover from last year's retreat. EVs are projected to rebound to 230,000 sales in 2026, from 180,000 last year, boosted by reinstated $5,000 federal incentives and imports of cheaper Chinese-made vehicles.[2] Still, EVs make up about 1 in 10 new car sales in Canada, in line with stagnating U.S. rates, and in contrast to advancing European peers.[3] Adoption is a tale of two Canadas: British Columbia and Quebec are leading, while the rest of the country averages single-digit adoption rates.[4]

Affordability is shaping the transition. Hybrid electric vehicles, offering lower fuel consumption, have outsold battery and plug-in electric vehicles combined since 2025.[5] [6] It's too early to determine whether the spike in gas prices driven by the Iran crisis impacted EV adoption. The Strait of Hormuz blockade added about 50 cents per litre to gasoline prices at its peak—for context, the scrapped consumer carbon tax added 20 cents per litre.[7] [8]

Medium and heavy-duty vehicle electrification is in the slow lane. The incentives for Medium and Heavy-Duty Zero-Emission Vehicles (iMHZEV) program expired with over half of its $547.5 million budget unspent. Despite enabling the purchase of nearly 12,000 vehicles—half of which were electric trucks (such as the Ford F-150 and Chevrolet Silverado), the underutilization signals weaker commercial adoption momentum.[9]

Canada wasn't the only country to re-evaluate its supply-side policies. The EU eased its CO2 automobile standards from a 100% emissions reduction by 2035 to 90%, with an offset mechanism.[10] The U.K. retreated from its sales mandate policy, only to reinstate it with more flexibility.[11] The U.S. went furthest, repealing its greenhouse gas (GHG) vehicle standards by rescinding the 2009 endangerment finding,[12] and stripping fuel economy rules of penalties.[13] In Canada, the federal government pivoted from a sales mandate that required 100% of new car sales to be EVs by 2035 in favour of revised GHG emission standards for new vehicles, aiming for a 75% EV adoption rate by 2035 by targeting a 57% intensity reduction from 172 to 74 gCO2e per mile.[14] Estimates from the Pembina Institute and the international Council on Clean Transportation suggest further tightening would be needed to reach that goal.[15] Meanwhile, a government announcement in October froze the standard at its 2026 level, with annual tightening resuming in 2030, while restating the adoption goal.

Charging is about three times cheaper than filling a gas tank in Canada.[16] An estimated 800,000 EV owners rely on home chargers,[17] while public charging has grown fourfold since 2019 to nearly 40,000 chargers.[18] Ultra-fast chargers are also gaining ground, with their 250kW+ power output charging 300-kilometre-range batteries in 15-20 minutes. Their deployment doubled to 4,000 units last year and is projected to reach 5,500 by the year-end.[19] [20]

Plugging an EV infrastructure gap

One in 10 new vehicles sold in Canada by May 2026 came with a plug that can—in theory—be charged at home like phones.[1]

Except, that isn't an available option for millions of Canadians living in condos or apartments without EV charging. Guelph, Ontario-based Skyline, a real estate owner, manager and developer with nearly 20,000 multi-residential units across Canada, didn't want residents to hold back on a decision to switch to electric vehicles simply because charging wasn't available at its buildings. As Fay Yachetti, Skyline's director of optimization and sustainability, said, "EV charging is no longer a nice-to-have but a standard amenity that residents expect. EV charging protects our buildings' competitiveness and long-term value, and advances our company-wide sustainability strategy."

Ottawa's support, through Natural Resources Canada's Zero Emission Vehicle Infrastructure Program—a $680-million initiative aimed at federal government's broader target to support deployment of 84,500 chargers, was key to getting the first wave of chargers off the ground for the company.[2]

The Challenge

Skyline's effort addresses a major challenge: EVs are considered a useful technology to decarbonize road transport, a sector that accounted for 16% of global emissions in 2024, according to the Emissions Database for Global Atmospheric Research,[3] and 22% of Canadian emissions.[4]

Over 70% of charging happens at home, according to a Canadian Automobile Association survey.[5] Those with easy access to home charging are most likely to reap the convenience and saving benefits. The challenges are often two-fold: cost and scale.

Upfront capital can be a significant expense for building managers. Retrofitting existing parking can cost upwards of $10,000 per new charger, according to Skyline. Operating expenses, too, can be costly if chargers are left unused without adequate demand.

It would be a heavy lift: 70% of apartment units in the country that house about a quarter of Canadian households were built well before the first Tesla hit the road in 2008.[6,7] Those buildings were designed for toasters, not for EV loads.

The Idea

Skyline charged ahead with a portfolio-wide approach to unlock scaled EV charging at its rental communities.

Integrating its 200-plus properties into one program allowed Skyline to negotiate for better pricing, prepare for government funding, and find the right technical partner. It also allowed the company to phase the rollout, rather than committing the full budget at once.

Phase One placed at least two chargers at the majority of properties Skyline operates. Phase Two used real utilization data from the first wave to optimize the rollout, adding chargers where demand warranted.

Skyline decided to price the charging at cost, with no margin on the electricity. "The return wasn't on the chargers," said Yachetti. "It was a more competitive, future-ready portfolio of apartment buildings."

And now, it is exploring opportunities to generate revenue through Clean Fuel Regulations credits.

The initiative delivered 438,000 kWh of charging in 2025 by EV drivers, equivalent to annual emissions from 37 gasoline-powered passenger vehicles, according to Skyline.[8] By June 2026, the company had installed 1,060 chargers and committed to incorporating EV charging in its new development designs going forward.[9]

The Obstacles

Charging is a highly digital process, requiring network connectivity to process payments and run diagnostics. Parking locations are usually connectivity blind spots, and Skyline found that many chargers simply couldn't connect. Skyline responded by adding LTE network access at each affected site to boost connectivity.

Inspections brought a second challenge: some buildings couldn't physically support the planned number of chargers without a major transformer upgrade. Skyline faced a choice: pour capital into infrastructure upgrades, or install only what it could carry and redeploy capital at a site where it could add capacity.

The Insight

Pick the right partners: You can't optimize what you haven't measured. Linking up with Swtch, a Toronto-based EV charging company specialized in multi-unit and commercial properties, provided the necessary analytics to balance matching the demand and limiting idle chargers. They also play a significant role in servicing and troubleshooting the chargers to minimize the downtime.

Public funding was the catalyst: Federal and provincial incentives made a rollout this size possible; Yachetti is candid that Skyline wouldn't have deployed as many chargers without support from Natural Resources Canada and provincial incentives. But the longer-term impact goes beyond the funding: the company now sees charging as a standard element of its multi-residential development project plans.

An asset—and an amenity: Leveraging charging provides a competitive edge in attracting customers, and it doesn't have to be treated solely as a cost item. Depending on the province that the chargers are located in, according to Skyline they can generate in the range of $0.25-0.30 per kWh in revenue by receiving Clean Fuel Regulations credits tied to emissions reduction.[10]

> *Skyline decided to price the charging at cost, with no margin on the electricity. The return wasn't the chargers--it was a future-ready portfolio of apartment buildings.*

HEAVY INDUSTRY

Steel leads a slow transition as structural barriers remain

↓ DOWN

-3%

Absolute emissions[1]

2019-2024

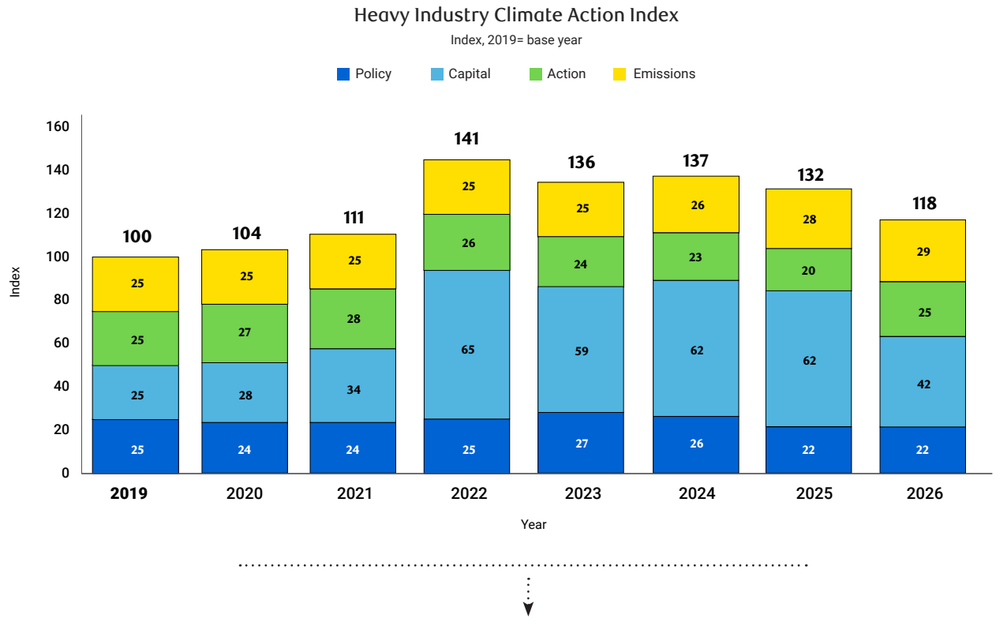
↓ DOWN

-2%

Emissions intensity[2]

2019-2024

Photo: Adobe Stock



The sector index hit a five-year low this year. It was driven by declines in climate-related capital, which had risen from 2019 on a wave of private investments. The index shows that private equity and venture flows into heavy industry decarbonization continue to trend down, with roughly $240 million tracked to date in 2026.[3]

Major sustainable projects appear to be advancing, but the sector's energy base remains centred around fossil fuels. Low-carbon industrial projects, such as Algoma Steel's electric-arc furnace in Sault Ste. Marie, Ont., came online and produced its first steel, and ArcelorMittal Dofasco announced this year it's decommissioning one of its coke plants in Hamilton, Ont.[4] Electrification of high-temperature heat is still nascent, and large projects such as Dow Inc.'s Fort Saskatchewan low-carbon chemicals complex have faced delays amid market uncertainty.[5]

Process emissions remain the hardest to reduce. Process emissions, which come from the chemistry of production rather than burning fuel, such as when limestone is heated to make clinker for cement, and CO2 is emitted as a result, have stayed flat since 2019.[6] Reducing them requires changing the production process or capturing the CO2 through carbon capture, utilization, and storage (CCUS).

Policy support seems to have slipped from its peak. The drop in policy effectiveness score reflects the assessed sectors' focus shifting away from decarbonization and towards trade issues. However, the clean-economy incentive framework, including CCUS and low-carbon manufacturing investment tax credits, remains in place.

Climate and geopolitics are colliding in the critical minerals sector. Critical minerals like lithium and rare earths are key to decarbonization technologies such as wind turbines and batteries,[7] with China believed to control 90% of global rare earth processing capacity.[8] To help close that gap, Canadian firms raised roughly $225 million in 2026, aiming to expand domestic rare earth element recycling and lithium extraction capabilities.[9]

HEAVY INDUSTRY | CIMENT QUÉBEC

The grind toward lower-carbon cement

Five years before Ciment Québec (CQ) broke ground on a $275-million cement grinding facility, it shipped its own raw materials across the Atlantic to a research plant in France. It wanted to test whether the selected state-of-the-art grinding technology would work with its own raw materials before betting the company on it. For the family-owned cement producer with a single plant in Saint-Basile, Quebec, the technical due diligence was not optional. There was no portfolio of cement plants to absorb a bad bet. CQ wanted to make lower-carbon-intensity cement without losing production capacity or taking a chance on unproven technology, so it sought something that was already working.

CQ has been making cement in Saint-Basile, about 30 minutes west of Quebec City, since the early 1950s.[1] It's now in its third generation of family ownership, employs roughly 800 people across its cement, ready-mix concrete and aggregates operations, and sells most of its cement into Quebec, the Maritimes, Ontario and the U.S. Northeast. Its competitors are multinationals with tens of billions in revenue and plants scattered across dozens of countries.[2] [3]

The Challenge

Cement is one of the hardest sectors to decarbonize. Producing it accounts for roughly 8% of global CO2 emissions.[4] Roughly 60% of cement emissions come from calcination, the chemical reaction that strips carbon dioxide out of limestone to make clinker, cement's essential ingredient. That portion is largely unavoidable with today's manufacturing processes.[5]

The Global Cement and Concrete Association expects carbon capture to deliver 36% of the sector's planned emissions reductions by 2050.[6] But the technology is still new at a commercial scale. The first industrial-scale carbon capture facility at a cement plant opened only in 2025, at a Heidelberg Materials plant in Norway.[7] A multinational can test a new technology at one plant while its other plants keep operating normally. A single-plant, family-owned producer does not have that risk tolerance.

According to CQ, its owners saw that Europe was ahead on low-carbon initiatives and expected governments and customers in North America to follow. The European Union, for example, began capping and pricing cement plants' emissions in 2005.[8]

The Idea

Rather than wait for carbon capture to become practical at its scale, CQ went looking for something that already worked. It found it in a grinding technology developed by French manufacturer Fives FCB, commercially available since the early 1990s and already running in a dozen cements plants worldwide, just not yet in Canada.[9] [10] [11]

Cement's carbon footprint can be reduced by lowering the proportion of clinker in the mix and swapping some of it for limestone, which doesn't need to be burned.

Mills with the new technology can produce portland-limestone cement, which replaces some of the clinker with ground limestone that doesn't need to be heated.[12] Canadian and U.S. standards allow portland-limestone cement to contain up to 15% limestone, compared with 5% for regular portland cement. The difference reduces CO2 emissions by up to 10%.The tradeoff is that the mix has to be ground finer to perform like regular cement, and CQ says its existing mills could not have done that without giving up a significant share of their production capacity.[13]

So CQ built a new grinding facility, under construction from 2021 to 2026. Combined with CQ's "Synergia" process, a proprietary combination of alternative-fuel processing, an adapted kiln, heat-recovery systems, and a short rotary kiln, this latest investment is expected to cut emissions by roughly 60,000 tonnes of CO2 a year.[14]

The Obstacles

Workforce, not just capital. Industrial decarbonization requires investment in equipment, but Patrick Jean, CQ's CEO, says its success ultimately depends on the workforce: the people who solve problems and make new technology work. CQ says it trains its own staff so it has qualified people in place for each new investment.

Public funding can help the most when timelines are aligned. The project was awarded up to $46 million in public funding, about a third of its estimated $140-million cost at the time: $28.5 million from the Government of Quebec and $17.5 million from the federal Low Carbon Economy Fund.[15] [16] CQ says the support reduced the project's risk and gave its lenders more confidence. But projects of this scale still move at the pace of a public approval process.

The Insight

Existing technology can be the right first step as newer options mature. Carbon capture is viewed by many as central to the cement industry's long-term plans,[17] but it isn't equally accessible to every producer today. Rather than wait on a pathway it couldn't yet reach at scale, CQ moved first on technology already de-risked at a dozen sites worldwide. CQ's new line is up and running today at a capacity of 90–95%, according to the company.

Pragmatic targets beat performative ones. CQ's decarbonization roadmap, filed with the Quebec government in 2024, does not target net zero. It aims to reduce emissions by 29% by 2030 and 49% by 2050, compared with 2006. CQ told Radio-Canada that with today's technology, net zero isn't reachable without buying carbon credits.[18] Much of the reason is chemistry: roughly 60% of cement emissions come from calcination, and eliminating them is expected to require carbon capture.[19]

Discipline protects a long bet. CQ credits a disciplined, board-approved capital strategy, transparent communication with its lenders about both the environmental and financial case for each project, and a dedicated project team. Together, these insulate day-to-day operations from the disruption of a multi-year build, with keeping its sustainability investments on track.

> *Rather than wait on a pathway it couldn't yet reach at scale, CQ moved on technology already de-risked at a dozen sites worldwide*

BUILDINGS

Heat-pump adoption emerges as bright spot

↓ DOWN

-13%

Absolute emissions

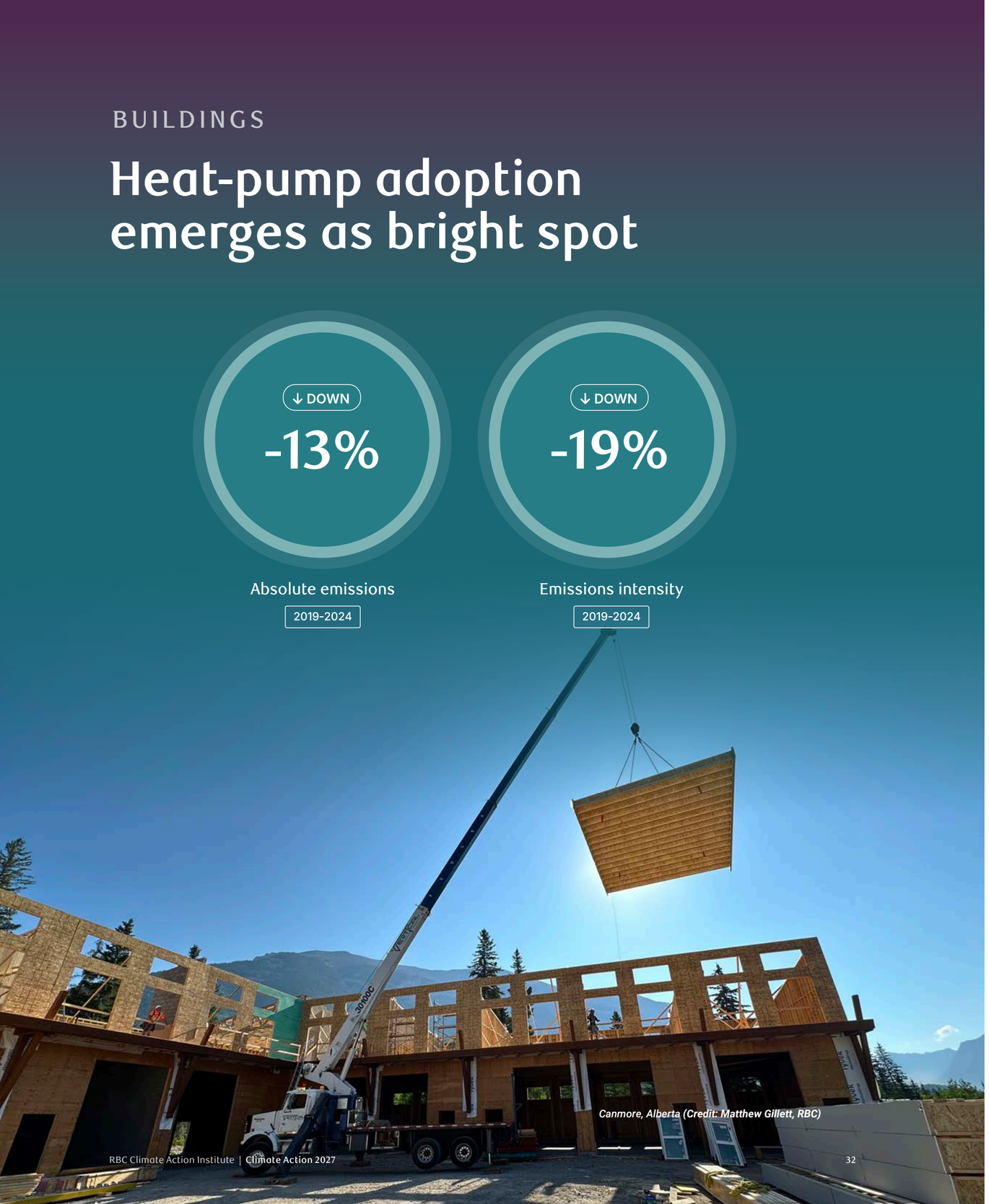
2019-2024

↓ DOWN

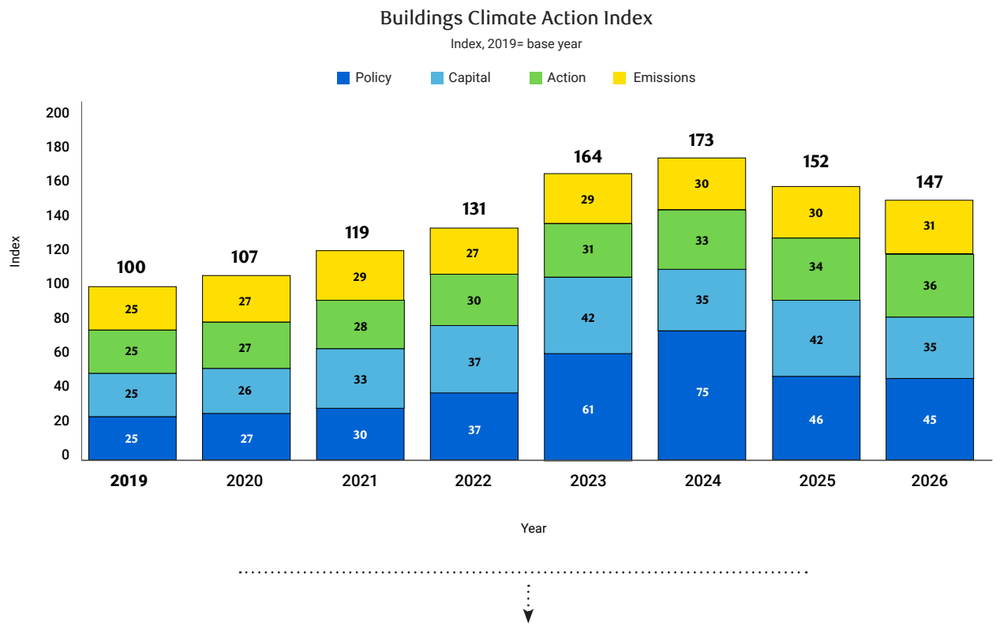
-19%

Emissions intensity

2019-2024



Canmore, Alberta (Credit: Matthew Gillett, RBC)



Policy pullbacks dragged the index down. The federal consumer carbon price and British Columbia's carbon tax were wound down. Vancouver paused its carbon limit rules, while Ontario's green building standards have created a "degree of uncertainty" to implement the Toronto Green Standard, according to Toronto City.[1] Combined with broader uncertainty about climate policies and some resistance to sustainability commitments, it appears building owners are prioritizing investments that cut actual operating costs—such as energy efficiency—over high-profile "green" pledges that don't deliver savings.

Annual capital flows is at around $2 billion. That's little changed since 2021 and falls short of the $5.4 billion needed for Canada to meet its net-zero goals by 2050, according to a report from RBC.[2] Federal Deep Retrofit Accelerator Initiative (DRAI) support has built a pipeline of retrofit studies, but most applicants appear to be waiting for the next cycle, widening the gap between identified opportunities and committed capital.[3]

Residential heat pumps are a bright spot. Adoption reached an estimated 9–10% of housing stock,[4] and the commercial frontier is opening via hybrid systems such as dual-fuel rooftop units that allow warehouse and open-air retail owners to reduce emissions without committing to full electrification.

Building owners are taking a more cautious, operational savings approach. With broad investment uncertainty in real estate, climate efforts seem to be shifting back to energy efficiency and delivering utility cost savings to find a way to drive net operating income growth. DRAI funding helped many more buildings get assessed.

Utility efficiency programs have scaled up. Demand-side spending has risen in recent years and there are strong, long-term funding commitments for efficiency programs in Ontario and Quebec. These programs line up with the operational-savings incentives owners are now prioritizing. Durable gains like the British Columbia and Quebec provincial zero-carbon codes, the federal Green Buildings Strategy, and independent oversight remain in force. New federal model-code GHG limits were set in 2025 but are non-binding until provinces adopt them.

BUILDINGS | CHOICE PROPERTIES

Reducing emissions, one rooftop unit at a time

The Challenge

Choice Properties owns and manages approximately 700 assets across Canada. Many of these properties are open-air shopping centres and warehouses that rely on rooftop units to heat and cool individual tenant spaces. When the company committed to net-zero emissions across its portfolio by 2050[1], rooftop heating equipment emerged as one of its largest opportunities to reduce emissions.

Whole-building deep retrofits were not practical for much of this portfolio due to the nature of the building systems. One property can have many rooftop units of different ages, each serving a separate tenant space. The units do not fail in unison, and replacing them all at once would be costly, disruptive and difficult to fund within the confines of existing tenant arrangements.

Ariel Feldman, Assistant Vice-President, Capital Projects, Choice Properties, said the company was trying to understand how to drive down emissions in a way that was technically feasible, cost-effective and met its payback thresholds.

The Idea

Choice shifted its perspective on capital planning and emissions reduction targets. Instead of asking how to undertake a deep retrofit at every property, it looked for incremental opportunities each time ordinary equipment reached the end of its life.

Dual-fuel rooftop units offered a practical solution. They combine an electric heat pump with a conventional gas heating system. The heat pump provides most of the heating during the year, while gas remains available during very cold weather or when electricity prices are high.[2] This approach aims to reduce natural gas use without requiring a building to be fully electrified at once.

Juhee Oh, Director, Sustainability and Climate, Choice Properties, said that the company shifted from individual building transition plans to a portfolio-wide equipment strategy. Depending on the region, the heat pump can meet 80% to 95% of annual heating needs. In provinces with relatively clean electricity, we estimate heating emissions could fall by roughly 70% to 80%, alongside an energy-efficiency improvement of about 20%, Oh said.

The Obstacles

With the technical solution identified, Choice mapped out the business case for dual fuel rooftop units. Each replacement must work as a capital investment, competing for funding with other projects across the portfolio. Choice compares the incremental cost of a dual-fuel unit with a conventional replacement, then considers utility prices, incentives, expected savings, electrical capacity, installation costs and the payback period.

The economics vary across Canada. Choice said that it modelled early pilots and found an escalating federal carbon price, which strengthened the case for electrification. The company found that after the carbon price was removed, local utility rates and incentives became even more important. A project that works in one province may not produce the same savings in another.

Ownership and leases add another layer of complexity. Choice does not control the rooftop equipment on every building. Where it does, the project must work within the existing financial relationship between owner and tenant rather than depend on lease amendments. The team reviews who pays for equipment, energy and maintenance, and whether costs and savings are sufficiently aligned to proceed.

Timing matters too. If a rooftop unit fails unexpectedly, replacement becomes an emergency and a conventional gas unit may be easier to source. Choice identifies aging equipment early, allowing time to analyze the project, apply for incentives, coordinate with tenants and suppliers, and order equipment. Proactive planning to allow for longer equipment lead times can also reduce the cost premium of dual fuel over conventional units.

These obstacles do not stop the program; they are the work required to find the win-win, said Feldman. Among units nearing replacement and under its control, Choice has been able to proceed with dual-fuel heat pumps in about 70% of cases.

The Insight

The big breakthrough was that Choice began planning around equipment availability, instead of the mindset of a capital project with set timelines.

Choice included rooftop-unit replacements in its 2025-to-2027 climate action roadmap and completed equipment replacements covering approximately 800,000 square feet in the first year.[3]

The company is now measuring operating costs, energy and emissions performance to refine assumptions for future projects.

The experience found that portfolio decarbonization does not always depend on one major retrofit. Large reductions can come from making a better decision when ordinary equipment needs replacing.

With early planning and a systematic review of the economics, leases and equipment specifications, owners can overcome the obstacles. Repeated across a large portfolio, routine capital decisions can become a scalable path to meaningful emissions reductions.



The big breakthrough was that Choice began planning around equipment availability, instead of the mindset of a capital project with set timelines

AGRICULTURE

Capital spending declines overshadow farmers' action

↑ UP

1.9%

Absolute emissions[1]

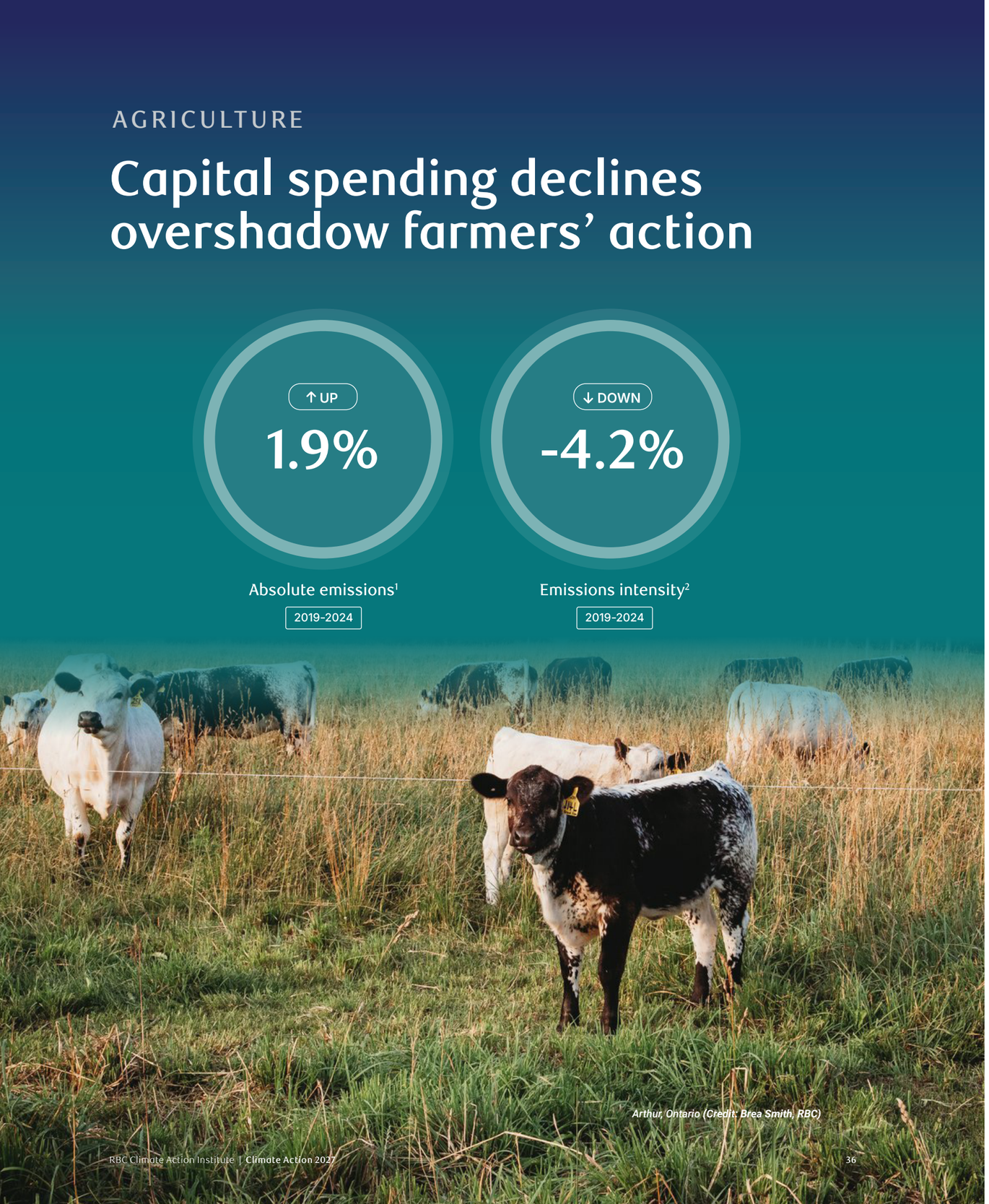
2019-2024

↓ DOWN

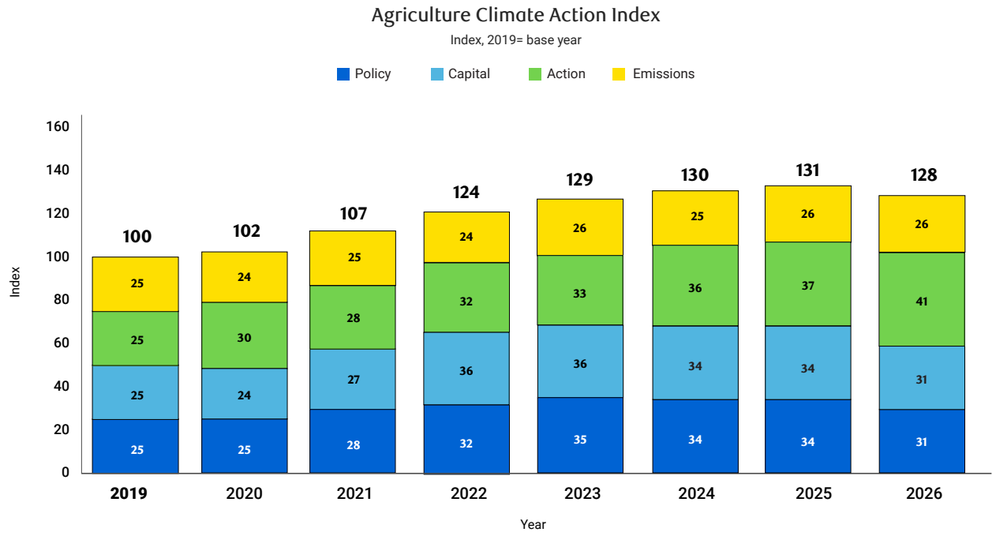
-4.2%

Emissions intensity[2]

2019-2024



Arthur, Ontario (Credit: Brea Smith, RBC)



Farmer adoption of fertilizer management is up four-fold since 2019.[3] The 64% rise in action – our index measure of farm-level changes that affect emissions – was, according to our estimates, due to the capital deployment surge from 2021 to 2025 and farmers optimizing input costs amid disruptions to fertilizer supply chains driven by the Middle East conflict. Conservation tillage adoption, which aims to reduce fuel use and helps to store carbon in the soil, seems to be plateauing in Canada's corn regions, where corn-heavy crop rotations leaving heavy plant residues on the soil, keeping it cool and wet in spring. We observe this may be pushing farmers towards tillage methods that place greater stress on soil health.

Capital spending fell by 24% in 2026, according to our index estimates tracking public and private spending. This is the result of a lack of new 2026 spending announcements and the cooling of venture capital as total climate agriculture tech investments dropped by 91% since the peak in 2022.[4] While agri-food companies continue to make annual investments in sustainable value chain initiatives, the wave of new sustainability program announcements starting in 2020 has flatlined.

A reorientation towards competitiveness has pushed agriculture off the table. The federal government's approach to climate policy seems to have shifted from funding programs to market-driven action. That has led to agriculture appearing to fall between the cracks with limited access to compliance offset markets and no pathways, yet, for being rewarded for low carbon intensity feedstocks in Canada's policy-driven biofuel market under the Clean Fuel Regulation.

Emissions intensity has improved by 8% since 2019, according to our index. This underscores Canadian farmers' steady productivity improvements, but slow progress is adding pressure on the regulatory and innovation systems to accelerate farmers' access to the latest technology tools and applications.[5] Canada trails the United States and other leading jurisdictions in agri-food patent filings, which limits the pipeline of new tools farmers can adopt to raise productivity while reducing emissions.[6]

Rising global biofuel demand could open new markets for Canadian farmers. Global blending mandates, partly in response to the oil and gas shocks from the Iran war, could increase biofuel demand by 30% year-on-year.[7] In Canada, liquid biofuel demand could grow to 2.6 billion litres, about 50% higher than 2025 levels.[8] The shift could create new revenue opportunities for Canadian farmers through market-based incentives that reward carbon intensity reductions, similar to systems in the U.S. and EU. However, growing competition between fuel and food is influencing food prices, with the FAO Food Price Index pointing to pressure on food systems.

AGRICULTURE | UPSIDE ROBOTICS

Microdosing to tackle a big challenge

When consultant Jana Tian and robotics engineer Sam Dugan were scouting for a base for their startup, they scoured locations from Boston to the U.S. Midwest, ultimately landing on Waterloo for their greenfield experiment, Upside Robotics. The mix of robotics expertise at the University of Waterloo, agronomic research from the University of Guelph, and the top corn-producing region in Canada, all within a two-hour drive, drew them in. A welcoming farming community, tax incentives for R&D, and expert welders in the local Mennonite communities sweetened the deal.

Their vision for sustainable agriculture converged on developing an automated robo t that microdoses fertilizers where and when crops need them during their growth cycle. It's a hardware solution that aims to tackle the triple fertilizer challenge of soaring prices, rising greenhouse gas emissions, and frequent supply disruptions.

The Challenge

Fertilizers make up more than 50% of Canadian crop farmers' expenditures[1], but also roughly a quarter of Canadian agriculture's GHG emissions profile.[2]

Dispersing nitrogen application throughout the growing season can be considered an effective method to help optimize fertilizer use and lower GHG emissions.[3] [4] [5] The conventional approach of using large tractors and sprayers to apply fertilizers has meant that farmers—especially those producing corn, which can grow up to 12 feet—are limited in their ability to space out their fertilizer applications once crops are growing. These logistical challenges force farmers to apply most of their fertilizers in the spring or fall, which poses greater risks of excess fertilizer escaping the soil system into waterways or being emitted into atmosphere.[6]

That's where Upside Robotics comes in, delivering a fit-for- purpose robot—the width of a carry-on suitcase to fit between corn rows as they grow—that addresses this challenge.

The Idea

By microdosing nutrients in small, targeted amounts at different points in the growing season, Upside Robotics claims it's helping farmers cut up to 70% of their fertilizer spending—equal to $150 per acre, while maintaining yields.[7] Reducing farmers' reliance on fertilizers can also help shield them from price spikes and supply chain disruptions.

This high-tech solution also has another benefit: making agriculture cool again. Often perceived as low-tech and slow to innovate, the sector is being disrupted by new technologies that could allow young and diverse talent to apply their engineering, science and technology, and business training to the sector. The agriculture sector currently attracts only 1% of business and science post-secondary graduates in Canada, according to Statistics Canada.[8]

Within three years of operation, Upside Robotics has only captured a sliver of Canadian grain corn acres at less than 1%—Tian sees this as an opportunity.[9] On farm revenue from corn production in Canada is more than $3 billion, and in the U.S. nearly $90 billion.[10] [11] Beyond corn, Upside Robotics' plans to expand to other row crops, and even specialty crops.

The Obstacles

Upside Robotics has been challenged by Canada's growth capital gaps. All the company's private capital investment has come from the U.S. and UK.

Tian says it's to do with American optimism: U.S. investors were keen to hear Tian's growth plans, scalability, and timelines. Meanwhile, Canadian investors focused on the biggest risks and failure points.

Having a single growing season per year in Canada for row crops is also a hindrance. The dearth of data makes the decision for Upside Robotics to scale from 80 robots to 400 robots by next year a risky proposition. It's still early days for Upside Robotics to work out the kinks: hardware and software systems are in the iteration stage and market penetration has been focused on one commodity and growing environment.

The Insight

Co-founder alignment is critical. "Finding the right business partner is more important than finding the right life partner," Tian quips about Dugan, stressing that compatibility among co-founders as central to growing the business.

Deep customer immersion drives better solutions. Tian and Dugan also immersed themselves in Southwestern Ontario's farming community, spending summers camping out near field sides to learn more about the people it serves.

A climate-tech ecosystem of investors, mentors, researchers, and organizations focused on climate-related issues is vital for technology startups focused on climate solutions to survive and thrive. Innovation hubs like Waterloo help founders find mentors and support that is vital to nurture startups in Canada's small climate and tech space.

> *New technologies that could allow young and diverse talent to apply their engineering, techn and business training to the sector*

Pulse Check

42 Business Survey

46 Consumer Survey

50 Government Survey

Photo: Adobe Stock

Photo: Adobe Stock

Corporations feel the heat

Government climate policies appear to be relaxing, but businesses are still feeling the heat of climate change.

That's because the climate change has impacted many companies' operations: from Okanagan Valley winemakers dealing with smoke affected grapes after crushing wildfires, to public utilities forced to import energy after seeing water levels dwindle, and homeowners facing rising insurance home costs on flooding and other forms of extreme weather supercharged by climate change. The United Nations' latest report notes that the world's set to cross 1.5°C global warming, which are already proving that climate impacts "will strike faster, hit harder, and last longer, costing more lives and causing deeper disruption.". Environmental damage is pervasive on the ground, even if policy pressures, on paper, have receded.

This is borne by investment even as global policy has eased: Global investments in global energy transition hit a record US$2.3 trillion last year, an 8% jump from the previous year, as companies shrugged off the U.S.'s global tariff war and trade barriers are raised across the world.

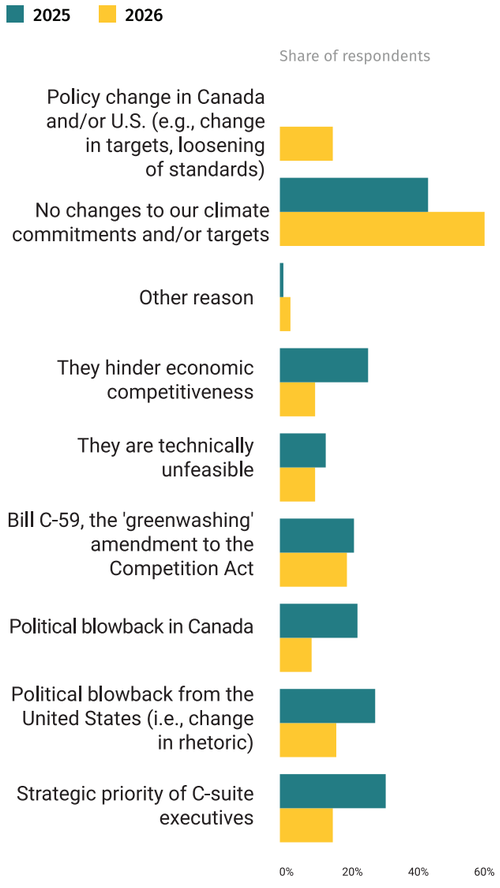
Climate-tech investments in Canada remain subdued, with $336 million across 18 deals in the first half of 2026, 4% more in dollar terms but eight fewer transactions than the same period last year, according to the Canadian Venture Capital and Private Equity Association. Tech dollars are most likely being diverted to AI or areas where policy is on surer footing and returns are quicker. Climate-tech, innovation and programs seem to be jostling for attention to show competitive return on investment compared to other sectors.

A key finding in this year's Business Pulse survey of 150 executives was that very few executives offered excuses. Fewer than 20% cited political dynamics in North America as reasons to scale back their climate commitments, compared to the past two years. And only 1 in 10 cited concerns over eroding economic competitiveness for not pursuing climate policies.

Here are some other insights from the annual survey:

Standing firm on climate

Question: Have you recently, or do you intend to, scale back your climate commitments and/or targets?



Base: Have Greenhouse Gas Emission Reduction Strategy (count = 136)

Source: Kantar Canada, RBC Climate Action Institute

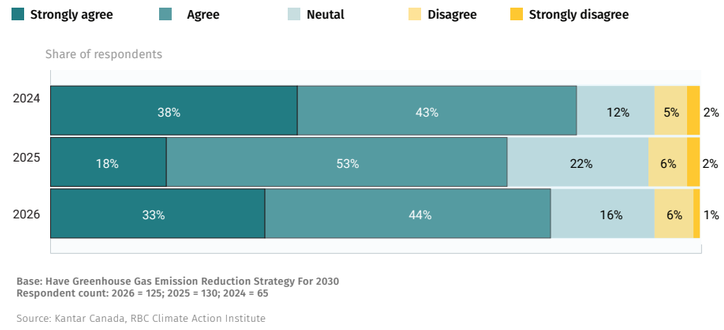
The findings are reinforced by the surveyed executives' strong C-suite commitments, with these executives overwhelmingly seeing themselves as the biggest drivers of climate strategies in companies (70%), followed by demand from their consumers (43%). Government regulations and incentives now play a less significant role in corporate decision-making than before, the survey suggests. That could be because incentives are easier to get or they are not deemed a prerequisite to energy transition.

The survey of 150 senior business executives across Canada suggest the C-suite is championing climate policies, but access to capital remains a persistent bottleneck:

- **Executive confidence is rebounding:** One in three executives (33%) "strongly agree" about hitting their emissions reduction targets—closer to 2024 levels (38%), after last year's dip when only 18% were very confident of achieving their target.

Executive confidence in reaching emission reduction targets rebounds after 2025 blip

Question: Please rate your level of agreement with each of the following statement about your organization reaching its emission reduction targets.



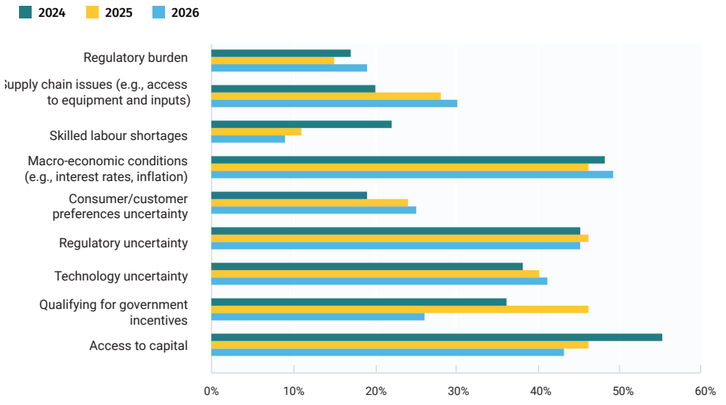
Base: Have Greenhouse Gas Emission Reduction Strategy For 2030
Respondent count: 2026 = 125; 2025 = 130; 2024 = 65

Source: Kantar Canada, RBC Climate Action Institute

- **Barriers are easing, but not disappearing altogether:** Access to capital (43%, down from 55%/46% in 2024/2025) and qualifying for incentives (26%, down from 36%/46%) both improved. Not surprisingly, macroeconomic conditions emerged as this year's top challenge.

Qualifying for government incentives no longer impede progress on climate targets

Question: What are the greatest challenges that your organization is facing as it implements its climate strategy?

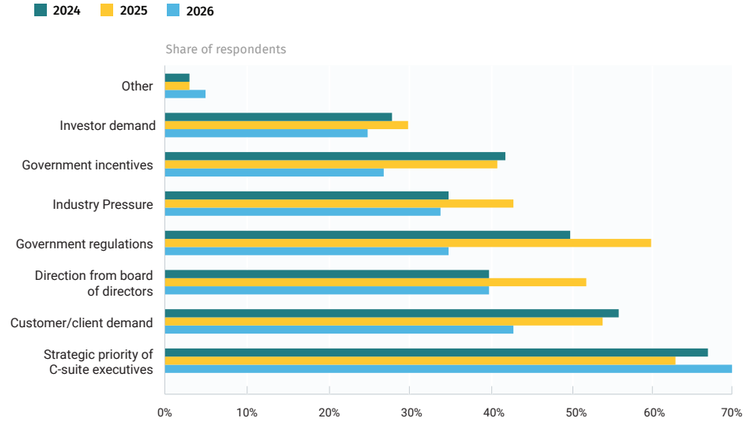


Source: Kantar Canada, RBC Climate Action Institute

- **Industrial carbon pricing remains a key lever:** 27% said improved carbon pricing is essential to hitting their company targets; 41% believe it's necessary for Canada to reach Net Zero by 2050—outpacing calls for tighter emissions regulation (19%).
- **Cost pressure steady, upside shrinking:** 54% report moderate cost impact (5–15%) — flat year-on-year — but fewer see a premium-pricing payoff (23%, down from 32%) or easier financing (23%, down from 35%)

C-suite and clients driving climate strategy, as incentives take a backseat

Question: What are the primary drivers for adopting a climate strategy for your organization?



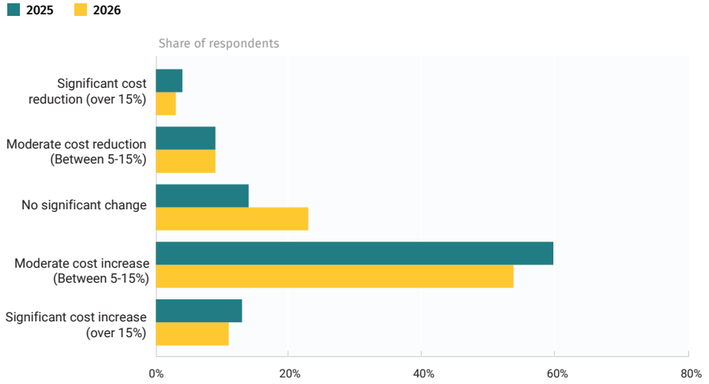
Have Climate Strategy That Includes Greenhouse Gas Emission Reduction Strategy
Respondent count: 2026 = 141; 2025 = 136; 2024 = 86

Source: Kantar Canada, RBC Climate Action Institute

- **Cost impacts remain modest for most firms.** Only 11% of organizations report significant cost increases exceeding 15% from sustainable policies, while the majority experienced modest or manageable costs. The finding counters the narrative that climate action is inherently expensive, and suggests that many emissions reduction technologies have reached cost-parity or better with conventional alternatives, making climate action economically competitive.

Pursuit of sustainable policies raises input costs for 2 out of 3 firms

Question: What has been the impact of implementing sustainable policies on your business costs?



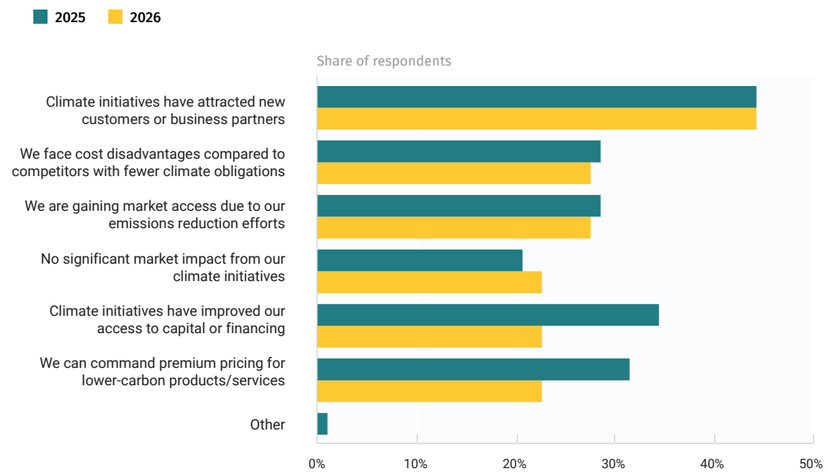
Base: Have Greenhouse Gas Emission Reduction Strategy (count = 136)

Source: Kantar Canada, RBC Climate Action Institute

- **No major change in market access.** Around 45% of executives reported attracting new customers or business partners, similar to last year's gains. However, fewer said they could command a premium (23%, compared to 32% in the previous year's survey). This muted marketplace reward for climate leadership indicates that competitive advantage from climate action remains inconsistent, organizations may need to temper expectations that climate commitments may not automatically translate to market gains.

Climate strategy has yet to pay off for a vast majority

Question: Which of the following describes how your organization's climate strategy impacts its overall market position?



Base: Have Greenhouse Gas Emission Reduction Strategy (count = 136)

Source: Kantar Canada, RBC Climate Action Institute

Photo: Adobe Stock



CONSUMER PULSE CHECK

A near majority favours urgent action—but balanced with economic needs

Budget-strapped Canadians willing to pay a bit more for climate action, but want corporations and governments to lead the way.

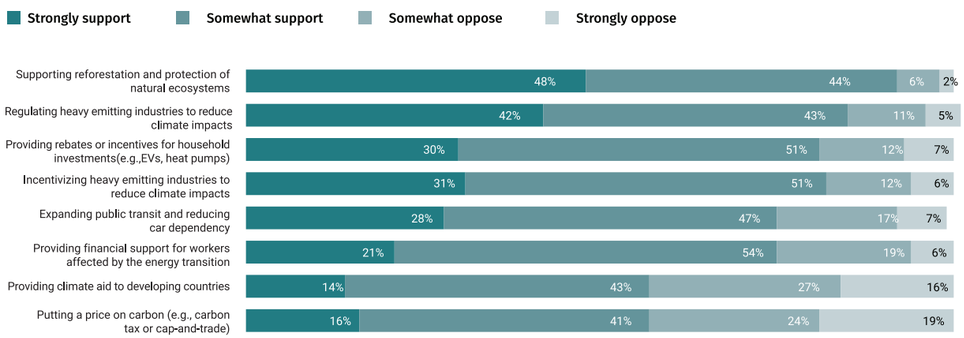
We have found that Canadian consumers are willing to pay slightly more to tackle climate change, but a higher cost of living and affordability crisis has made the issue a lower priority for many across the country.

The second annual survey of approximately 2,000 Canadians, conducted by polling firm Ipsos on behalf of RBC Climate Action Institute, highlights the tension between addressing their own immediate cost of living challenges and the greater longer-term issue of addressing and mitigating global warming. The survey was conducted across Canada, roughly 50-50% between men and women, with representation from Ontario (36%), Quebec (23%), British Columbia (12%), Alberta and Saskatchewan (10% each) and Atlantic Canada (8%). Millennial Generation (1981–1996), Generation X (Born 1966–1980), and Baby Boom Generation (Born 1946–1965) were evenly split, with Generation Z (born 1987-2012) making up 11%.

Ipsos also polled approximately a thousand American consumers and roughly an equal number of Britons to understand consumer attitudes in peer countries, suggesting Canadians aren't the only ones grappling with helping the environment without straining their budgets.

Most Canadians (92%) support reforestation and the protection of natural ecosystems, even if there's a cost

Question: To what extent do you support or oppose the following policies, even if it requires a small increase in taxes, increased deficit, or reallocation of government spending from other areas



Base: All respondents (CA n=2001)

Source: IPSOS, RBC Climate Action Institute

Eight in 10 Canadians also said they would strongly support or be somewhat supportive of regulating and incentivizing heavy-emitting industries to reduce their impact on the climate, even if it requires a small increase in taxes, increased deficit, or reallocation of government spending from other areas, according to the survey of Canadian consumers' attitude towards climate issues.

Other related social measures—like providing financial support for workers in energy transition or expanding public transit—have broad support.

However, roughly a year after the federal government scrapped the consumer carbon tax, the nation seems ambivalent about putting a price tag on carbon emissions to manage climate change.

1. **One in 10 Canadians see climate among Canada's top two priorities—but there's a provincial divide.**

   That's compared to 21% last year. Cost of living was the most dominant issue on Canadians' minds at 70%. But there's provincial divergence: 16-17% of Quebecers and Maritime residents listed climate in the top two issues for Canada, compared to 6% in Prairies, 10% in Ontario and 12% in British Columbia.

2. **A near majority (47%) says we must act urgently on climate change, but balance it with the economy and other needs.**

   That was the dominant sentiment – only 13% don't see an impetus for urgent action citing other priorities.

3. **Every second Canadian has witnessed the impact of extreme heat or wildfires in the past few years**

   The survey was also taken just before the wildfire smoke blanketed the sky across several provinces. The U.S. and the U.K. share similar experiences with extreme heat, topping the chart for the three nations. But Canadians surveyed claim to be more affected more across the board of extreme weather events.

4. **One in four Canadians claim to have suffered a health issue due to climate change in the past two to three years.**

   Women report higher impact than men across health and wellness categories. One in five Canadians were also hit economically, with Gen Z and Millennials feel the greatest impact overall, especially compared to Boomers.

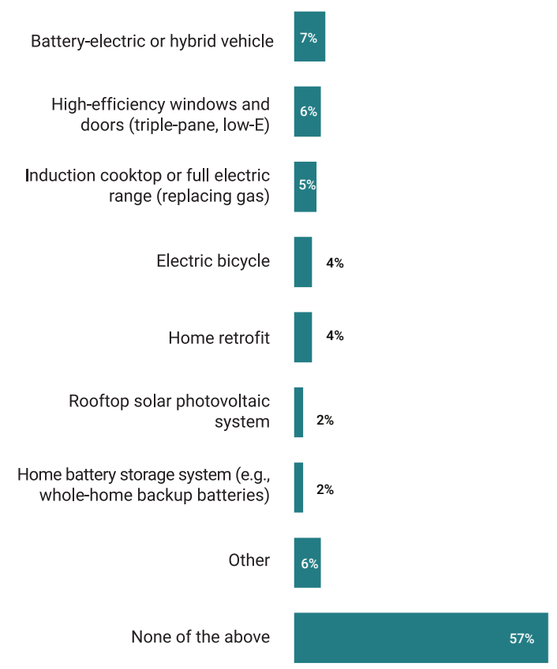
5. **Cost and affordability are the top barriers to climate-friendly action**

   Three quarters (74%) of Canadians cited it as the biggest challenge, followed by limited availability of options. A striking quarter of Canadians doubt individual actions matter.

6. **More than half (57%) of Canadians have not taken** any of the climate action investments (outlined below) in the past 12 months.

Well over half (57%) of Canadians have not taken any big climate action investments in the past 12 months

Question: What is your biggest climate action investment in the past 12 months?



Base: All respondents (CA n=2001)

Source: IPSOS, RBC Climate Action Institute

This tension is reflected in expectations: Canadians overwhelmingly believe governments (62%) and corporations (58%) should lead on climate action, while individual engagement remains more limited and cost-sensitive.

7. **Two in five (38%) Canadians are willing to pay more for a product or service that's considered "environment friendly".**

   Younger Canadians are significantly more willing to pay higher premiums – 51% and 45% among Gen Z and Millennials compared to 31% and 37% for Gen X and Boomers. Most of those willing to pay more, however, would accept up to 10% higher price, and only 2% going as far as paying over 50% premium.

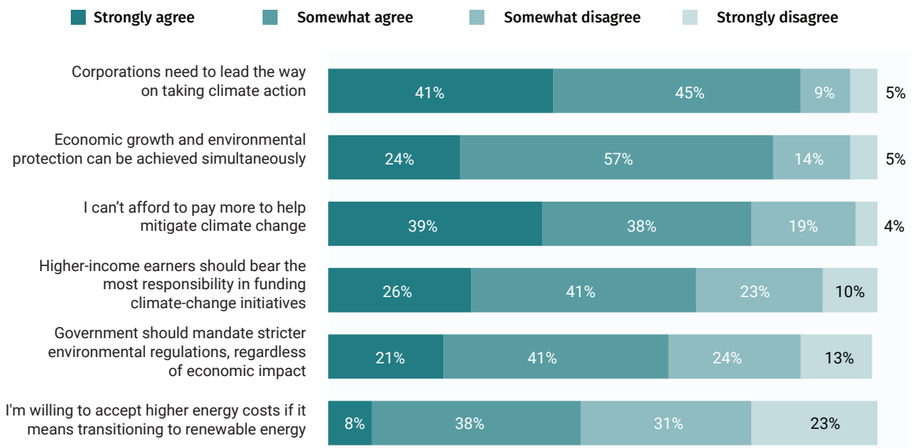
8. **Few Canadians want to see their energy costs rising.** About a quarter oppose accepting higher energy costs if that means transitioning to renewable energy. Generational gap was most pronounced, with nearly two-thirds of Gen Z willing to accept higher costs compared to 38-49% across the rest of age cohorts.

9. **Canadians believe corporates and governments should take the most responsibility for addressing climate change and mitigation.**

   Canadians surveyed believe that it is the job of lawmakers and major emitters, with only 1 in 10 Canadians seeing individuals taking the most responsibility. One in four Quebecers is more likely to say NGOs should take on some of the burden.

Most (87%) Canadians agree that corporations need to lead the way on taking climate action

Question: To what extent do you agree or disagree with the following statements



Base: All respondents (CA n=2001

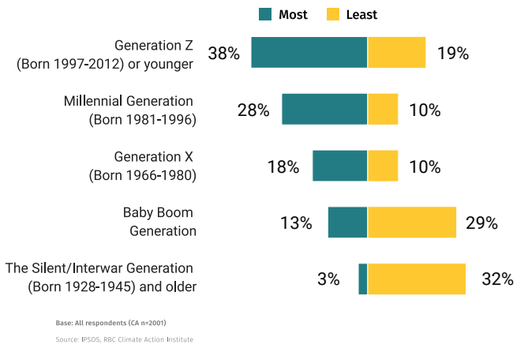
Source: IPSOS, RBC Climate Action Institute

10. **Every generation believes they are the generation that cares the most about climate action.**

    All the generations surveyed identified themselves as most caring about climate action. However, among all the Canadians surveyed, Generation Z was viewed as the most concerned about climate action, with Boomers and the Silent Generation getting the fewest votes."

Canadians think Gen Z care about climate action the most, and Boomers +, the least

Question: Which generation cares about climate action the most and the least?



Base: All respondents (CA n=2001)

Source: IPSOS, RBC Climate Action Institute

Affordability is seen as a single main obstacle to making choices with climate in mind across all three countries (57-74%), in Canadian provinces (70-79%), and age groups (71-75%). Though younger generations quote convenience as a relatively more challenging barrier, boomers, at the verge of retiring and one of the largest consumer groups, cited finding limited options.

11. **Women care more than men**

    Canadian women generally displayed more concern for the environment:

    They are more likely to say we must act urgently, balancing environmental and economic needs (52%), compared to men (43%). Women are more likely than men to report taking several actions, including reducing consumption (61% vs. 47%), reducing home energy use (54% vs. 44%), and shifting diet (23% vs. 14%), while men are more likely to say they have taken no actions (12% vs. 7%) or "none of the above" (19% vs. 11%).

12. **Canadians are not the only ones struggling to balance climate with other priorities.**

    British (14%) and American (15%) residents are largely in line with Canadians (12%) to identify climate change as among their nation's top priorities. Still, climate remains among the lowest priorities for all three nations.

    Americans surveyed are more likely to have experienced climate change through extreme heat waves (47%) or severe storms (38%). Western U.S. residents are most likely to report extreme heat effects and drought or water restrictions, along with poor air quality.

    Britons experienced climate change through heat waves (46%) and changes in seasonal patterns (36%).



Columbia Ice field, Alberta (Credit: Lorna McKercher, RBC)

GOVERNMENT PULSE CHECK

How experts see Canadian policymaking

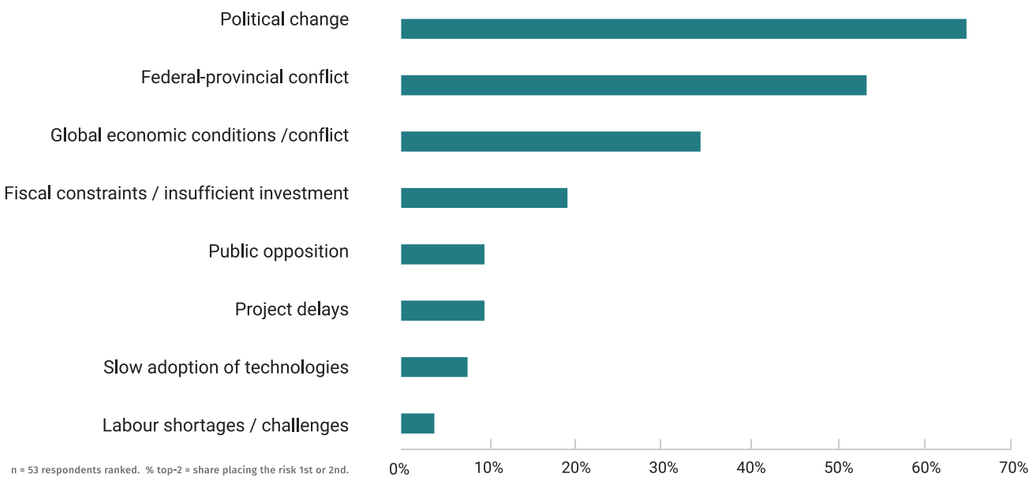
Politics—not technology adoption or project delays—is the biggest risk to Canada achieving its stated emissions goals. That's the view of a majority of Canada's climate experts in RBC Climate Action Institute and the Canadian Climate Institute's inaugural survey on climate policy. The survey consisted of 65 climate experts between June 25 and July 24, 2026, spanning academia, advocacy, industry and finance, aimed to assess the state of Canadian policymaking through the lens of many who watch it closely.

Political winds have shifted since then, with changed leadership in British Columbia, a Democrat wave in the United States that has the potential to renew several low-carbon incentives, and a new federal budget from Ottawa that appears to bring climate competitiveness back as a central piece of Canada's quest to boost capital and trade. Still, it's early days for a change sentiment to trickle down into policy measures.

Among the panellists, there was broad consensus on the durability of Canada's climate policies over the next 10 years: with 56% labelling it fragile or very fragile, nearly a quarter were neutral, while 17% felt it was durable.

Biggest risks to the 2035 target

Question: What risks could undermine the effectiveness of climate policy in Canada in delivering the 2035 target? (Rank from biggest risk (1) to least (8))



n = 53 respondents ranked. % top-2 = share placing the risk 1st or 2nd.

Source: RBC Climate Action Institute, Canadian Climate Institute

There was also broad agreement that Canadian climate action needs to be balanced by the country's ability to remain economically competitive: 86% of respondents believe international developments on environmental policy are relevant or very relevant to Canada's climate trajectory. The finding confirms the broader reset already underway across global climate policy.

Here are some key highlights from the survey:

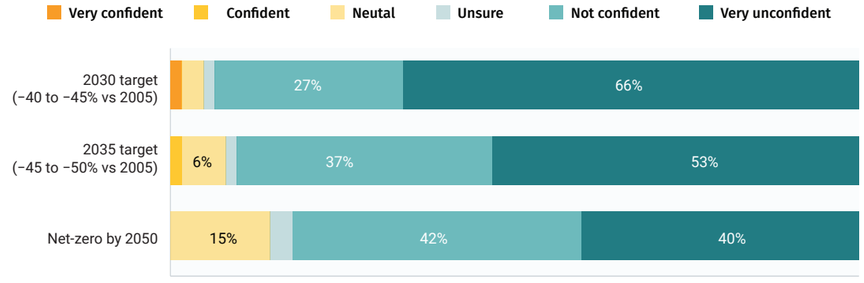
1. **Experts are in a pessimistic mood.** 73% believe federal government policy is "weaker" or "much weaker" than five years ago; only 14% think it's stronger. Nine out of 10 panellists were either "not confident" or "very unconfident" that Canada would meet its 2030 GHG emissions reduction targets.

2. **But some are still on the fence on 2050 goals.** Around 18% were neutral or unsure about Canada hitting its net-zero targets.

> "I see a big disconnect between how the Canadian political class is looking at the future of energy and energy transition, and what's happening around the world.
>
> —Panellist on Canadian climate policy.

Confidence that current policies can hit Canada's targets

Question: How confident are you that implemented policies can place Canada on a GHG emissions reduction pathway aligned with its stated targets (40-45% below 2005)



Counts shown; n = 62 per target. "% unconfident" = Not confident + Very unconfident.

Source: RBC Climate Action Institute, Canadian Climate Institute

3. **Industrial carbon pricing is seen as the most effective tool.** It ranks among those surveyed as the single most effective federal policy for reducing emissions through to 2035, receiving 24 of 50 first-place rankings. Regulations were a distant second, while funding programs such as the scrapped consumer carbon pricing regime was ranked last.

Question: How would you rate Canada's current climate policy frameworks in their effectiveness at reducing GHG emissions?

Response	Count	% of n
Ineffective	28	45%
Neutral	16	26%
Effective	12	19%
Very ineffective	4	6%
Unsure	2	45%
Total	62	100%

n = 62.

Source: Climate Action 2027: Government Tracker (fielded Jun 25 - Jul 24, 2026).

4. **Climate funding is seen as ineffective.** Four in 10 experts expect only about 50-70% of announced federal climate funding to be fully deployed. Funding programs rank second last among federal policy tools.

5. **Electricity, Canada's seemingly emission-busting workhorse, is expected to lead emissions fight.** It was chosen as best positioned to reduce emissions by 2035, receiving 32 of 55 first-place rankings. Transportation was ranked second.

> "Canada is one generation behind what's happening in Europe.
>
> —Panellist on Canadian climate policy compared to Europe.

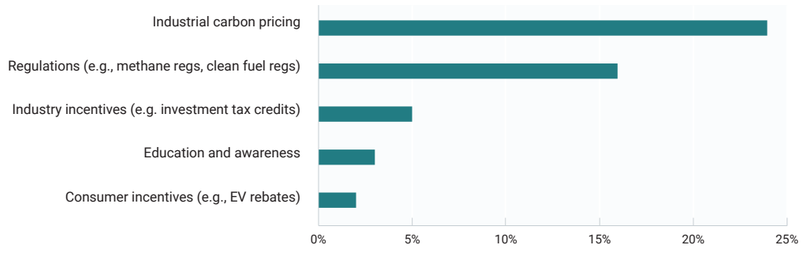
6. **Expectedly, oil and gas came in last.** The sector, which accounts for 30% of national emissions, garnered low confidence in meeting its targets by 2035 from 62% of the panel.

7. **Alberta's policy tools got tough grades:** 61% labelled its industrial carbon pricing (TIER) regime as ineffective or very ineffective, 57% had similar views on the province's funding programs, and 65% for consumer incentives. Regulations passed muster with 65% effective or neutral, while 61% felt industry incentives were either effective or neutral.

> "It's kind of like, you know, showing up to a gunfight with a knife.
>
> —Panellist on Canada's investment tax credits versus U.S. incentives.

Highest-impact policy tool to 2035

Question: Rate the effectiveness of the following policy tools delivered by the Federal government in reducing GHG emissions.

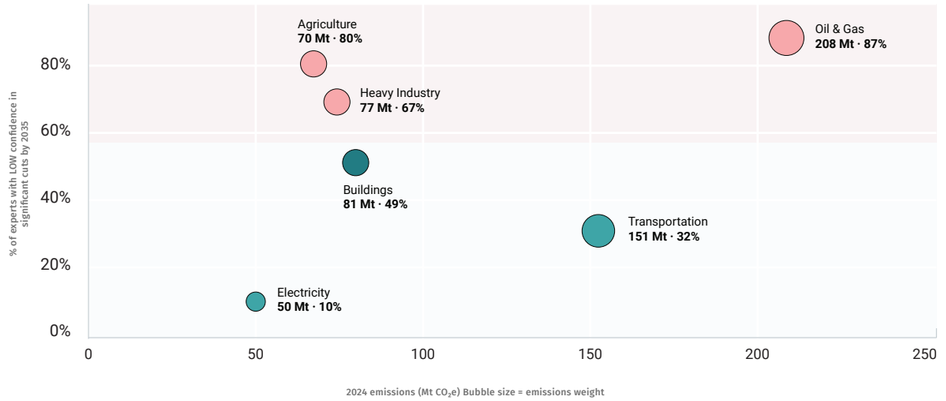


n = 50. Industrial carbon pricing leads on first-place votes (24).

Source: RBC Climate Action Institute, Canadian Climate Institute

The two biggest sectors carry the least confidence

Question: How confident are you that current climate policies in Canada can deliver significant GHG emissions reductions in the following sectors by 2035?



n = 55. Emissions: National Inventory Report 2026 (2024 economic-sector). % LOW = (Low + Very low) ÷ rated. Sector bases 50–54.

Source: RBC Climate Action Institute, Canadian Climate Institute

8. **British Columbia's industrial carbon pricing received strong praise.** Two out of three respondents labelled it as effective, or very effective. Strong majorities felt B.C. regulations (83%), consumer incentives (77%) and funding programs (66%), industry incentives (55%) were robust.

9. **Ontario scored a slew of "neutral" tick marks, veering on the negative.** It was mostly for its industrial carbon pricing policy, regulations and funding programs, suggesting more policy upgrades are needed to boost provincial climate action. Bright spot: 44% picked its consumer incentives as effective.

> "I think making a deal with Alberta is better than still fighting over carbon pricing.
>
> —Panellist referring to the Ottawa-Alberta memorandum of understanding on wide-ranging energy and climate issues.

10. **Quebec is the climate A grader.** The province's industrial carbon pricing (92%), and consumer incentives (83%), scored the highest marks among the four largest provincial economies that account for roughly 80% of national emissions.

> "I think we're stuck in the next year or two and wallowing in oversupply.
>
> —Panellist on the state of industrial carbon pricing in Canada.

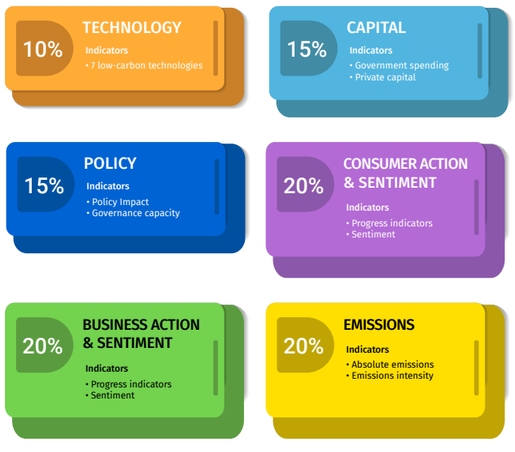
Methodology

Climate Action Barometer Methodology

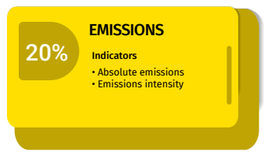
What's in the index
And how we calculated it

The Climate Action Barometer is an index developed by the Climate Action Institute team to track economy-wide climate action in Canada across several key drivers of change, that are described below. The index starts from year 2019, which is the baseline year and is set at 100, and all changes are relative to the baseline. The index is constructed using progress indicators that fall into one of the six themes, described in detail below.

- The Barometer includes six themes, each adding up to a single score with respective weights: Emissions (20%), Business Action & Sentiment (20%), Consumer Action & Sentiment (20%), Policy (15%), Capital (15%), and Technology (10%). The weighting was decided by the team.
- All indicator values are set to 100 for the baseline year 2019, with increases in value indicating progress.
- Time frame covered by indicators 2019-2026, or wherever latest data is available.
- Data values used in the Barometer are from 2026. Where data for year 2026 is not available, it is estimated based on projections or annualized year-to-date data.



- Within each theme are indicator(s) that measure progress towards decarbonization and enabling factors, such as policy, funding and sentiment. Choice of indicators was decided by the RBC Climate Action Institute team.
- If indicators have different units of measurements, they are converted to a common unit by applying factors or combined with weights to ultimately create one score.



Absolute emissions:
Historical emissions values are used for the absolute emissions indicator.

The data is sourced from most recent Canada's Official Greenhouse Gas Inventory released in April 2026, covering the period up to 2024. Reported emissions data has a two-year lag from the year when they are released. We complement it with Environment and Climate Change Canada's (ECCC) annual emissions projections to derive values for the years 2025 and 2026 where data is not yet reported.

We compute annual percentage changes from the ECCC projections for each sector and apply them to historical data to extend the series for the years not yet reported. Emissions projections have been informed by the Intergovernmental Panel on Climate Change (IPCC) standards and external expert views, use recent data, and apply internationally recognized energy and macroeconomic modelling framework (that incorporates ENERGY 2020 model, and Oxford Economics' North America Economic Model), as described in Canada's First Biennial Transparency Report under the Paris Agreement submission to United Nations Framework Convention on Climate Change (UNFCC).

Emissions intensity:
We define emissions intensity as a ratio of absolute emissions and real gross domestic product (GDP). Absolute emissions data is as described above; and real GDP is sourced from Statistics Canada's Table: 36-10-0434-03. For the year 2026 we use projection from RBC Economics released in June 2026.

Emissions are measured in two ways: absolute emissions and emissions intensity. Because a drop in emissions is good news, both are flipped so that a higher number means more progress. Each is then converted to an index via formula (a), and the two are combined into one score for the theme, with equal weights of 50%, via formula (b). That score is multiplied by the theme's 25% weight in the Barometer to get its final score, via formula (c). The formulas are at the end of the document.



Progress indicators:
The following actions have been selected by the Climate Action Institute as progress indicators towards decarbonization, that captures primary technology/practice choices, within the business sector. We use the following technology/practice to track progress: wind and solar deployment, carbon capture, utilization and storage (CCUS) usage, carbon sequestration in the agriculture sector, and electrification of commercial transport.

Due to difference in measurement units, we attempt to convert all values to a common unit and then aggregate into a single value. We estimate how much each technology or practice could reduce emissions, converting to tonnes of CO2 equivalent units where needed.
Data sources and how it is measured:

- Wind and solar deployment: sourced from BloombergNEF's Global Power Capacity database. The database includes both historical data and forecast in megawatt units. For each year of the indicator, we record difference from the previous year, which constitutes net new capacity addition. To convert units, we assume that wind and solar power avoid the same emissions that natural gas power would have produced. Based on data from Canada's Official Greenhouse Gas Inventory (Table: A7-1), we derive the emissions intensity per MWh as the ratio of electricity generated from natural gas to emissions associated with it – resulting in ~470 ktCO2e per MWh. We also assume 30% and 10% utilization factor for wind and solar, respectively, based on electricity generation and installed capacity from Statistics Canada tables 25-10-0015-01 and 25-10-0022-01.
- Carbon capture, utilization and storage (CCUS): sourced from Quest Carbon Capture and Storage project annual reports. Annual total mass injection of CO2 is recorded for respective years. For the years where reporting is not yet available, we extend the latest year's value. The unit for the indicator requires no conversion.
- Carbon sequestration: sourced from Canada's Official Greenhouse Gas Inventory (Table: 6-9). Each year of the Barometer, we record the annual change in 'C' inputs from change in tillage. The unit is in CO2e and requires no conversion.
- Electrification of commercial transport: sourced from BloombergNEF's Long-Term Electric Vehicle Outlook dataset. The commercial electric vehicles sales are converted from unit of sales to the common unit of emissions abated using an estimate of 10 ktCO2e per vehicle from Pembina Institute's fact sheet.

Progress across the technologies/practices are summed to get a value for the indicator. The total value for the progress indicator is indexed via formula (a).

Sentiment:
Business sentiment indicator is based on (1) RBC Climate Action Institute's Business Pulse Check survey to assess sentiment based on a sample of business leaders' responses towards their emissions targets progress and (2) data from Bloomberg on emissions target setting:

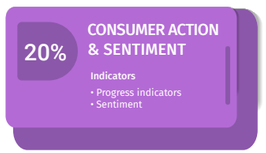
(1) RBC Climate Action Institute business surveys ask corporate leaders about their agreement level from 'strongly disagree' to 'strongly agree' with the following statement: "My organization will achieve its emissions reduction targets by 2030". For each year of the surveys, we record the share of those who respond, "strongly agree" and "agree," and combine them using 75% and 25% weight.

(2) From Bloomberg, starting from the baseline year 2019 and each subsequent year, we record the share of S&P/TSX Composite Index constituents that claim net-zero target or report an emissions target to Climate Disclosure Project (CDP).

The steps above result in two data series—survey results from (1) and net-zero target claims from (2) – which are the combined to create a measure for overall sentiment

tracking. To combine these, we first convert them into an index (formula a), then averaged into one score for the indicator (formula b), with each counting for 50% each.

The resulting indexed values for the progress and sentiment indicators are combined into total score for the theme via formula (b) using following weights—75% for progress and 25% for sentiment. Resulting value is then multiplied by its scorecard contribution factor (25%). This results in the final score for the theme. Formula (c) is used to aggregate all final thematic scores into total score for the Barometer. Refer to formulas for details.



Progress indicators:
Following actions have been selected by the Climate Action Institute as progress indicators towards decarbonization, that attempts at capturing main technology/practice choices, related to consumers: electric vehicles adoption and heat pump sales.

Due to difference in measurement units, we attempt to convert all values to a common unit and then aggregate into a single value. We estimate a potential emissions abatement for each technology and convert to units of emissions abated, for example an electric vehicle saves on emissions that otherwise would have been generated by a gas-powered vehicle.

Data sources and how it is measured:

- Electric vehicles adoption: sourced from Statistics Canada Table: 20-10-0025-01. Quarterly data is summed to derive annual value. For the latest year, where full annual data is not yet available, BloombergNEF's projection from Long-Term Electric Vehicle Outlook dataset is used. The engine type coverage is for battery, plug-in and hybrid electric vehicles. For passenger vehicles segment, we use ratio of total ICE vehicle fleet to emissions to derive per vehicle emissions intensity which it used as a proxy for the emissions abatement per vehicle.
  - Full value of emissions abatement is applied to battery electric vehicles.
  - For plug-in electric vehicles, we assume they are driven 50% the time powered by electricity, therefore, 40% of the emissions abatement is applied.
  - For hybrid electric vehicles, we assumed 25% emissions abatement.
- Heat pump sales: sourced from Heating, Refrigeration and Air Conditioning Institute of Canada's quarterly statistics on shipments as a proxy. We use combined shipments of ductless split systems (assuming 85% are heat pumps) and central heat pump systems. Emissions abatement is based estimates on emissions saving from Canadian Climate Institute's online calculator for heat pumps. We take an average across all building types and vintages.

Electric vehicle adoption and heat pump sales values are multiplied by the respective emission abatement proxies, and summed to get a value for the indicator. The total value for the progress indicator is indexed via formula (a).

Sentiment:
Consumer sentiment indicator is based on results of a third-party survey by Ipsos of 2,000 Canadians, conducted quarterly. The question used for measuring sentiment asks Canadians to rank various economic and social issues facing Canada. For each year, we record the share of respondents that rank 'climate change/environment' among top 3 issues.

The total value for the sentiment indicator is indexed via formula (a).

The resulting indexed values for the progress and sentiment indicators are combined into total score for the theme via formula (b) using following weights – 75% for progress and 25% for sentiment. Resulting value is then multiplied by its scorecard contribution factor (25%). This results in the final score for the theme. Formula (c) is used to aggregate all final thematic scores into total score for the Barometer. Refer to formulas for details.



Policy impact:
Based on the Environment and Climate Change Canada's (ECCC) annual emissions projections.

We use emissions projections (under 2 scenarios specified below) relative to the historical emissions values to gauge the impact of policies.

For each year of the indicator, we obtain the following from the latest available release from ECCC: (1) the historical emissions reported for 2019, (2) projected emissions values for 2035 under the 'Reference Case' scenario and (3) and projected emissions value for 2035 under the 'Additional Measures' scenario.

With the data collected above, for each year, we compute the following differences to create two data series: (2) minus (1), and (3) minus (1). Resulting data series are averaged, and constitute the final value of the indicator.

Emissions projections have been informed by the Intergovernmental Panel on Climate Change (IPCC) standards and external expert views, use recent data, and apply internationally recognized energy and macroeconomic modelling framework (that incorporates ENERGY 2020 model, and Oxford Economics' North America Economic Model), as described in Canada's First Biennial Transparency Report under the Paris Agreement submission to United Nations Framework Convention on Climate Change (UNFCC).

For the years where projections did not cover 2035, we used 5-year average year-over-year change to extend the projections.

Governance capacity:
This indicator assesses whether the governance system in each sector where government policies are introduced is conducive to enabling climate action.

This governance indicator is adapted from the OECD's governing for a green transition framework for the following economic sectors: oil and gas, transportation, heavy industry, buildings, agriculture, electricity.

The Climate Action Institute team evaluated the following government practices:

- Long-term strategy: A sector strategy to inform and align policy and action direction towards a common decarbonization vision.
- Whole of government: All relevant departments and agencies are engaged and have a working framework to coordinate resources, policies and actions.
- Monitoring & measuring outcomes: A system is in place to track progress against decarbonization pathways and/or targets in the sector.
- Independent oversight: There is a governing body that provides objective reviews on sector progress in climate action.
- Policy innovation & foresight: There is evidence of novel or advanced policy development that puts the sector on a robust decarbonization path.
- Enabling regulatory framework: Legislation in place is conducive for sector decarbonization.
- Enabling markets: Market conditions and dynamics are conducive for sector decarbonization.
- Sufficient budget: There is sufficient government spending committed to deliver on the sector's decarbonization path.
- Enabling procurement: Government procurement and procurement policy for the sector is conducive for sector decarbonization.
- Sector skills: Training and talent acquisition is aligned to the skills and expertise required for sector decarbonization.

Based on available information and their knowledge of the sector, the team evaluated each practice every year, from low to high: where low (0-3) means the indicator does not exist, is in early development stages, or in poor state; medium (4-7) suggests that the indicator exists and there is some evidence of positive impact; and high (8-9) shows the indicator exists and there is strong evidence of positive impact. Then the scores are summed to get a total value for the indicators in respective year.

Evaluations across the sectors are summed to derive the final value for the indicator.

The indicators are then indexed via formula (a) and combined into total score for the theme via formula (b) using equal weights – 50% for each. Resulting value is then multiplied by its scorecard contribution factor (25%). This results in the final score for the theme. Formula (c) is used to aggregate all final thematic scores into total score for the Barometer. Refer to formulas for details.



Government spending:

- For public spending, we track climate-related funding and expenditures announced in the budgets of the federal government and the four largest provinces by economy—Alberta, British Columbia, Ontario, and Quebec.
- These include transfer payments, program spending, tax expenditures, and selected public financing that cover announced plans towards climate- and environment-related initiatives focused on decarbonization, innovation, energy efficiency, fuel switching, and low-carbon technology manufacturing and deployment, skills, research and planning.
- We spread each program's total expenditure amount evenly over the program's timeframe announced in the budgets. For example, a $500 million program announced to run from 2021 to 2025 is counted as $100 million per year.
- We do not include Clean Economy Investment Tax Credits from public spending to avoid double accounting as these are likely captured in private capital deployment.

Private capital:

- Private capital tracks investments in the low-carbon energy transition, covering a wide scope of sectors central to the transition, from renewables and energy storage to hydrogen, CCUS and electrified transport.
- It is sourced from BloombergNEF's Energy Transition Investment Trends database.
- Data is updated annually, typically in January of each year, with mid-year updates available for renewable energy investments. For the latest year where data has not yet been released, we applied the average of the previous 3-year period and included estimates from the mid-year update for renewable energy if available.

The dollar values of both indicators are summed.

To align with sectoral scorecards outlined in Sector Methodology, we adjust the dollar amounts to be relative to the total capital required to achieve a net-zero transition. This step is done through formulas (d) and (e). The total capital requirement is determined in The $2 Trillion Transition: Canada's road to net-zero report.

The theme score construction follows formula (a) for indexing the indicator. Resulting value is then multiplied by its scorecard contribution factor (25%). Then we apply the scaling factor as descried in formulas (d) and (e). This results in the final score for the theme. Formula (c) is used to aggregate all final thematic scores into total Sector scores. Refer to formulas for details.



Indicators:

The Technology score tracks the adoption readiness of the major anticipated technologies determined by the Climate Action Institute: carbon capture, storage and utilization (CCUS), direct air capture, hydrogen, geothermal, small modular nuclear reactors, utility scale batteries and anerobic digestors.

Each technology is considered/referred as an indicator. In evaluating the adoption readiness of various technologies, we used a similar approach to the U.S. Department of Energy's Adoption Readiness Assessment (version: April 2025).

Our research team selected eight criteria: (1) cost, (2) development stage, (3) infrastructure, (4) technological maturity, (5) supply chains, (6) regulatory environment, (7) market opportunity, and (8) market competitiveness– that are aimed at illustrating the viable ecosystem for the commercial deployment of the technology through market forces.

Our research team evaluated each technology and practice, based on their knowledge and available information, across the above criteria on a 1 to 4 scoring scale, where the lowest score (1) is meant to illustrate the following:

- Cost: no pricing signal;
- Development stage: primarily R&D development stage;
- Infrastructure: no available infrastructure for deployment;
- Technological maturity: lowest/no score by Global Technology Readiness Level from Energy Technology Perspectives published by the International Energy Agency;
- Supply chains: no upstream or downstream value chains;
- Regulatory environment: no regulations or environment;
- Market opportunity: lack of target market;
- Market competitiveness: limited viability and only via government support.

Below is an example of each score for 'cost' criteria, for illustrative purposes:

1: Cost level continues to fluctuate with no benchmark level;
2: Technology reached a benchmark cost level, which is substantially higher than alternatives;
3: Technology cost exhibits a declining trajectory;
4: Technology is cost competitive with alternatives.

We apply following weight to each technology: carbon capture, storage and utilization (40%), hydrogen (25%), batteries (10%), SMR (10%), anerobic digestor (5%), geothermal (5%), direct air capture (5%). These weights are determined by the Climate Action Institute team based on our judgement of total addressable emissions pool by the given technology.

The indicators are then indexed via formula (a) and combined into total score for the theme via formula (b) using equal weights – 50% for each. Resulting value is then multiplied by its scorecard contribution factor (25%). This results in the final score for the theme. Formula (c) is used to aggregate all final thematic scores into total score for the Barometer. Refer to formulas for details.

Formulas

Formula (a):
Creates the starting value of an indicator in 2019 to 100. The formula adjusts subsequent years' data relative to the 2019 baseline value. Indexing allows to level set all indicators to the same starting point, and track their relative progress. For illustrative purposes, we show how an indicator value is indexed. Assume the following: the indicator value is 195 in 2019, and 288 in 2026 (actual values of the Governance Capacity indicator within the Policy Theme), As the first step the formula sets the 2019 value at 100. All subsequent years' values are then divided by 195 and multiplied by 100. Hence indexed indicator value for 2026 is 288/195*100 = 148.

Formula (b):
Combines indicators into a total value for a theme, using respective indicator weights.

Formula (c):
Combines themes into a total value for a scorecard, using respective theme weights.

Formula (d) and (e):
A two-step process developed by the Climate Action Institute team allow for comparability across barometer and sectoral scorecards: first step (formula d) converts the dollar amounts relative to total capital requirement; second step (formula e) uses the result from previous step to scale every year's progress.

- Formula (a): Indexing

$$Indicator^{x}_{j,t,year} = Indicator_{j,t,year} / Indicator_{j,t,2019} * 100$$

- Formula (b): Combining indicators into a theme total

$$Theme_{t,year} = \sum_j w_{j,t} * Indicator^{x}_{j,t,year}$$

- Formula (c): Combining themes into a sectoral total

$$Scorecard_{year} = \sum_t f_t * Theme_{t,year}$$

- Formula (d): Capital theme scaling factor

$$Scaler = \frac{\sum_{2019}^{year} Total\ Capital_{year}}{\sum_{2019}^{year} Required\ Capital_{year}}$$

- Formula (e): Capital theme scaling formula

$$Capital\ Score_{year} = Indicator^{x}_{2019} + (Indicator^{x}_{year} - Indicator^{x}_{2019}) * Scaler$$

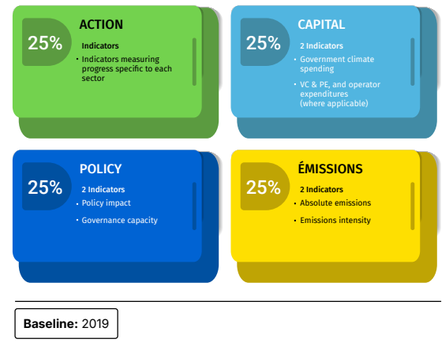
Where:
Indicator ^{j,t,s,year} are the actual values of indicators in the period **year**. Where **j** denotes the indicator, **t** used for a theme.
Upper script ^{x} denotes indexed value for the indicators with value for 2019 set at 100.
w are the weight for indicators.
f are themes' scorecard contribution factors.
Total Capital in formula (d) refers to the value of the indicator as described in the '*Capital*' section of the methodology. And ***Required Capital*** is annual spending based on '*Two Trillion Transition*' study.

Sector Methodology

The Sector Scorecards are indexes developed by the Climate Action Institute team to track climate action in Canadas main economics sectors per Canada's Official Greenhouse Gas inventory—oil and gas, transportation, electricity, heavy industry, buildings, and agriculture—across several key drivers of change, which are described below.

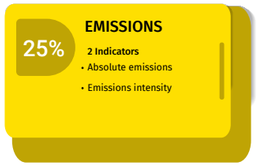
The indexes start from year 2019, which is the baseline year and is set at 100, and all changes are relative to the baseline. The indexes are constructed using progress indicators that fall into one of the four themes, described in detail below. The themes sum up to one Sector Scorecard for each sector, allowing for comparison of progress over time and across sectors:

- Sectoral scorecards include four themes, each adding up to a single score with respective weights: Emissions (25%), Action (25%), Policy (25%), and Capital (25%). The weighting was decided by the team.
- All indicator values are set to 100 for the baseline year 2019, with increases in value indicating progress.
- Time frame covered 2019-2026, or wherever latest data is available.
- Data values used in the Sectoral Scorecards are from 2026. Where data for year 2026 is not available, it is estimated based on projections or annualized year-to-date data.
- Within each theme are indicator(s) that measure progress towards decarbonization and enabling factors, such as policy, funding and sentiment. Choice of indicators was decided by the RBC Climate Action Institute team.



- If indicators have different units of measurements, they are converted to a common unit by applying factors or combined with weights to ultimately create one score.
- Approach and calculations for Emissions, Policy and Capital themes apply equally across the six sectors, except where specified otherwise. For Action theme, we provide the approach and calculations for each sector separately.

Emissions theme



Absolute emissions:
Absolute emissions are measured using same approach across all six sectors.

Historical emissions values are used for the absolute emissions indicator.

The data is sourced from most recent Canada's Official Greenhouse Gas Inventory released in April 2026, covering the period up to 2024. Reported emissions data has a two-year lag from the year when they are released.

We complement it with Environment and Climate Change Canada's (ECCC) annual emissions projections to derive values for the years 2025 and 2026 where data is not yet reported.

We compute annual percentage changes from the ECCC projections for each sector and apply them to the historical data to extend the series for the years not yet reported. Emissions projections have been informed by the Intergovernmental Panel on Climate Change (IPCC) standards and external expert views, use recent data, and apply internationally recognized energy and macroeconomic modelling framework (that incorporates ENERGY 2020 model, and Oxford Economics' North America Economic Model), as described in Canada's First Biennial Transparency Report under the Paris Agreement submission to United Nations Framework Convention on Climate Change (UNFCC).

Emissions intensity:

- For each year of the scorecard, we compute emissions intensity. Emissions intensity is calculated separately for each of the six sectors.
- To compute emissions intensity, RBC Climate Action Institute team determined to take the ratio of absolute emissions and a sector specific activity measure.
- Absolute emissions data is as described above.
- Sector specific activity measures are determined by the Climate Action Institute team based on data availability and judgement about best representation of activity in the sectors. For example, for transportation sector, annual activity is measured by how many kilometres are driven each year. Below we list activity measures selected by the team for each of the six sectors:

Transportation: Total vehicle-kilometres driven annually. This data is sourced from BloombergNEF's Long-Term Electric Vehicle Outlook dataset that covers passenger and commercial vehicles and busses.

Electricity: Real gross domestic product of the utilities sector (NAICS 22). This data is sourced from Statistics Canada Table 36-10-0434-06, in chained 2017 dollars. For 2026, where full annual data is not yet available, we calculate the year-over-year percentage change in monthly GDP to the latest reported month and apply it to the 2025 annual value.

Oil and Gas: Total annual Oil and Gas production, measured in barrels of oil equivalent. Historical data is sourced from the Canada Energy Regulator. Current year production is per RBC Capital Markets' most recently published Canadian oil and gas production estimates.

Buildings: Absolute greenhouse gas emissions in the building sector (Mt CO2e) and emissions intensity by gross domestic product (GDP) of the building sector (tCO2e / $million). Data is sourced from Statistics Canada and Environment and Climate Change Canada

Agriculture: Emissions intensity estimates are based on primary agriculture emissions and production outputs, covering on-farm nitrous oxide, carbon dioxide, and methane emissions from both crop and animal production. Emissions intensity is measured by dividing primary agriculture emissions by national total on-farm outputs, which is "agricultural production" (i.e., crops and animals in tonnes). The data sources for the estimated emissions intensity are annual emission estimates reported by Environment and Climate Change Canada in the National GHG Inventory Report and the National GHG Emission Projections, and annual agriculture production of crops and livestock are reported by Statistics Canada.

Heavy Industry: Real gross domestic product of key heavy industry sub-sectors, including mining and smelting, pulp and paper, iron and steel, cement and chemicals is summed to get a single value. This data is sourced from Statistics Canada Table 36-10-0434-06, in chained 2017 dollars. For 2026, where full annual data is not yet available, we calculate the year-over-year percentage change in monthly GDP to the latest reported month and apply it to the 2025 annual value.

Emissions are measured in two ways: absolute emissions and emissions intensity. Because a drop in emissions is good news, both are flipped so that a higher number means more progress. Each is then converted to an index via formula (a), and the two are combined into one score for the theme, with equal weights of 50%, via formula (b). This results in the final score for the theme. That score is multiplied by the theme's 25% weight in the Sectoral Scorecards to get its final sector score, via formula (c). The formulas are at the end of the document.

Policy theme



Policy impact:

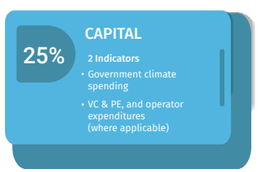
- To gauge the impact of policies that have been implemented we use emissions projections into 2035.
- For each year of the indicator, we obtain the projected emissions values for 2035 under the 'Reference Case' scenario from the latest available release from ECCC at the time. The projected emissions' value for each year is then used as the indicator for each sector.
- Data is sourced from the Environment and Climate Change Canada's (ECCC) annual emissions projections.
- Emissions projections have been informed by the Intergovernmental Panel on Climate Change (IPCC) standards and external expert views, use recent data, and apply internationally recognized energy and macroeconomic modelling framework (that incorporates ENERGY 2020 model, and Oxford Economics' North America Economic Model), as described in Canada's First Biennial Transparency Report under the Paris Agreement submission to United Nations Framework Convention on Climate Change (UNFCC).
- For the years where projections did not cover 2035, we used 5-year average year-over-year change to extend the projections.

Governance capacity:

- This indicator assesses whether the governance system in each sector where government policies are introduced is conducive to enabling climate action.
- This governance indicator is adapted from the OECD's governing for a green transition framework for the following economic sectors: oil and gas, transportation, heavy industry, buildings, agriculture, electricity.
- The Climate Action Institute team evaluated the following government practices:
- Long-term strategy: A sector strategy to inform and align policy and action direction towards a common decarbonization vision.
- Whole of government: All relevant departments and agencies are engaged and have a working framework to coordinate resources, policies and actions.
- Monitoring & measuring outcomes: A system is in place to track progress against decarbonization pathways and/or targets in the sector.
- Independent oversight: There is a governing body that provides objective reviews on sector progress in climate action.
- Policy innovation & foresight: There is evidence of novel or advanced policy development that puts the sector on a robust decarbonization path.
- Enabling regulatory framework: Legislation in place is conducive for sector decarbonization.
- Enabling markets: Market conditions and dynamics are conducive for sector decarbonization.
- Sufficient budget: There is sufficient government spending committed to deliver on the sector's decarbonization path.
- Enabling procurement: Government procurement and procurement policy for the sector is conducive for sector decarbonization.
- Sector skills: Training and talent acquisition is aligned to the skills and expertise required for sector decarbonization.
- Based on available information and their knowledge of the sector, the team evaluated each practice every year, from low to high: where low (0-3) means the indicator does not exist, is in early development stages, or in poor state; medium (4-7) suggests that the indicator exists and there is some evidence of positive impact; and high (8-9) shows the indicator exists and there is strong evidence of positive impact. Then the scores are summed to get a total value for the indicator in respective year.

The indicators are then indexed via formula (a) and combined into total score for the theme via formula (b) using equal weights – 50% for each. This results in the final score for the theme. That score is multiplied by the theme's 25% weight in the Sectoral Scorecards to get its final sector score, via formula (c). The formulas are at the end of the document.

Capital theme



Government spending:

- Public sector climate spending is sourced from federal budgets and the budgets of the four largest provinces—Ontario, Quebec, Alberta and British Columbia. For more details on how this dataset is compiled, refer to the methodology section of the Climate Action Barometer.
- Public investments from the Canada Growth Fund

directed towards Climate Action business.
- Each spending program within our compiled list is allocated to the most relevant sector.

Venture capital (VC) & private equity:

- We use climate-related venture capital (VC) and private equity (PE) fundraising to determine private capital spending. We source data from S&P Capital IQ and BloombergNEF's Climate-Tech Investment database.
- BloombergNEF defines climate tech as a label for the emergence of technologies addressing the climate crisis, usually targeting both mitigation and adaptation.
- Where distinguishable, we include operator capital expenditures.

The dollar values of both indicators are summed.

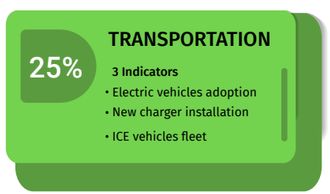
To align with Climate Action Barometer outlined in its respective Methodology, we adjust the dollar amounts to be relative to the total capital required to achieve a net-zero transition. This step is done through formulas (d) and (e). The total capital requirement is determined in The $2 Trillion Transition: Canada's road to net-zero report.

The combined value of the indicators is indexed via formula (a). This results in the final score for the theme. That score is multiplied by the theme's 25% weight in the Sectoral Scorecards as in formula (c). Then we apply the scaling factor as descried in formulas (d) and (e), before it is aggregated into total Sectoral score. The formulas are at the end of the document.

Action theme

For each sector we select relevant set of indicators determined by the RBC Climate Action Institute team, and apply approach and calculations that are relevant for each respective sector, while aiming to maintain comparability. Each sector approach and calculations are outlined and described separately below.

Transportation: We measured three indicators and weighted them equally (33%).



Electric vehicles adoption:

- Electric vehicles adoption covers passenger and commercial vehicles and busses.
- Engine type coverage: Battery electric vehicles (BEV), Plug-in electric vehicles (PHEV). For purposes of this Sector Scorecard, we extend the adoption to Hybrid electric vehicles (HEV) where available.
- Passenger electric vehicles adoption is based on Statistics Canada Table 20-10-0025-01. Quarterly data is summed to derive annual value. For the latest year, where full annual data is not yet available, we used projections from BloombergNEF's Long-Term Electric Vehicle Outlook dataset. The engine type coverage is for battery, plug-in and hybrid electric vehicles.
- Commercial electric vehicles and electric bus adoption is sourced from the BloombergNEF dataset mentioned above.
- Due to differences in size of vehicles and engine types, adoption values are first converted to a common unit and then aggregated. We estimate a potential emissions abatement per vehicle and convert the units of sales to units of emissions abated, for example an electric vehicle saves on emissions that otherwise would have been generated by a gas-powered vehicle.
- For passenger vehicles segment, we use ratio of total ICE vehicle fleet to emissions to derive per vehicle emissions intensity which it used as a proxy for the emissions abatement per vehicle.
- Battery electric vehicles are assumed to reduce full amount of the emissions from the ICE vehicles, therefore, we apply full value of emissions abatement to this engine type segment.
- For plug-in electric vehicles, we assumed they are driven 50% of the time powered by electricity, therefore, 50% of the emissions abatement is applied.
- For hybrid electric vehicles, we assumed 25% emissions abatement.
- For commercial vehicles and busses, we assumed 10 tonnes CO2e per vehicle based on Pembina Institute's fact sheet on decarbonizing medium- and heavy-duty vehicles.
- Each year's we collect the electric vehicle sales across the tree engine types—battery, plug-in, and hybrid. These are then multiplied by their respective emission abatement estimate discussed above, and summed to get a value for the indicator.

New charger installation:

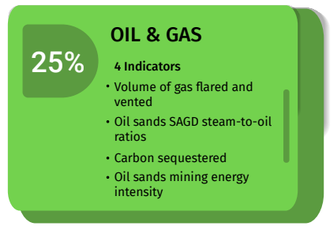
- This indicator is based on data from BloombergNEF's Global Public Charging Infrastructure Dashboard. For each year, we take the difference of the total EV chargers number from the previous year to represent net new installation.

ICE vehicles fleet:

- This indicator is based on data from BloombergNEF's Long-Term Electric Vehicle Outlook dataset. For each year we take the value of the total passenger ICE vehicle fleet size.

The indicators are then indexed via formula (a) and combined into total score for the theme via formula (b) using equal weights—33% for each. This results in the final score for the theme. That score is multiplied by the theme's 25% weight in the Sectoral Scorecards to get its final sector score, via formula (c). The formulas are at the end of the document.

Oil & Gas: We measured four indicators and weighted them as described below.



Volume of gas flared and vented:

- For historical years, venting and flared emissions are calculated based on historical emissions factors and reported volumes of flared and vented gas across three provinces: Alberta, Saskatchewan and British Columbia. For 2026, values are an annualized value based on the calendar-day average of reported volumes.
- For Alberta, vented and flared gas volumes are taken from Petrinex's Conventional Volumetric Data Download and calibrated with Alberta Energy Regulator historical data as denoted under Statistical Report ST60b.
- For Saskatchewan, vented and flared gas volumes are taken from Petrinex's Conventional Volumetric Data Download.
- For British Columbia, vented and flared gas volumes are taken from the BC Energy Regulator Well Flare and Facility Volumetrics data (BIL-311) report.

Oilsands Steam-Assisted Gravity Drainage (SAGD) steam-to-oil ratios:

- For historical years, changes in steam to oil rations are the year-over-year change in reported oil sands steam to oil ratios across Steam-Assisted Gravity Drainage (SAGD) as disclosed in the Alberta Energy Regulator Statistical Report ST53. For 2026, values are an annualized value based on the calendar-day average of reported volumes within statistical report ST53.

Volume of carbon sequestered:

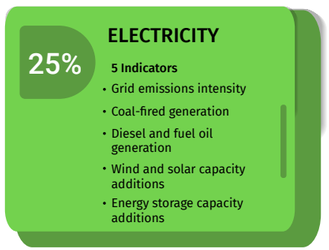
- For historical years, annual carbon sequestration volumes are taken from Petrinex's Conventional Volumetric Data Download well specific data for both Alberta and Saskatchewan. For 2026, values are an annualized value based on the calendar-day average of reported volumes within Petrinex.

Oilsands mining energy intensity:

- For historical years, energy intensity is calculated by taking the reported total gas used at oilsands mining facilities (Alberta), specifically the aggregation of purchased fuel gas and processed fuel gas, divided by total bitumen produced as disclosed in the Alberta Energy Regulator Statistical report ST39. For 2026, values are an annualized value based on the calendar-day average of reported statistical report ST39 volumes.

The indicators are indexed to 2019 values and then selectively weighted to obtain an aggregate Action score for the oil and gas sector. The respective weighting for each indicator is as follows: Volume of gas flared and vented (35%), oilsands steam to oil ratios (30%), Oilsands mining energy intensity (25%), carbon sequestered (10%). The respective weights align with the historical aggregate emissions as measured by each indicator, with slight adjustments in weights based on RBC Climate Action Institute's assumption of the relative importance of each technology to future sector emissions declines.

Electricity: We measured five indicators and weighted them as described below.



Electricity grid emissions intensity:

- Electricity sector emissions from Canada's National Greenhouse Gas Inventory (ECCC), extended for unreported years as described in the Emissions theme, divided by total electricity generation.
- Total generation is based on Statistics Canada Table

25-10-0015-01, for Canada, all classes of producer and all types of generation. Monthly data is summed to derive the annual value.

Coal-fired electricity generation:

- This indicator is based on the Canada Energy Regulator's Canada's Energy Future 2026, Electricity Generation appendix, Current Measures scenario, coal by primary fuel type. For years beyond the CER's reported historical data, CER projections under the Current Measures scenario are used.

Diesel and fuel oil electricity generation:

- This indicator covers internal combustion generation in Yukon, the Northwest Territories and Nunavut, based on Statistics Canada Table 25-10-0015-01. Monthly data is summed to derive the annual value (MWh). Territorial data for 2019 is not available. The 2019 value is estimated by linear extrapolation from subsequent years.

Wind and solar capacity additions:

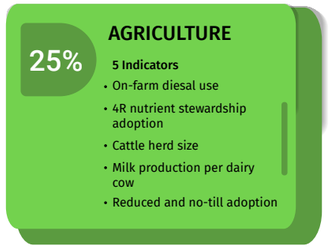
- This indicator is based on BloombergNEF power assets data. For each year, we take the capacity of onshore wind and solar photovoltaic (crystalline silicon and thin film) assets by year commissioned. 2026 reflects year-to-date commissioning.

Energy storage capacity additions:

- This indicator is based on BloombergNEF energy storage assets data. For each year, we take the energy capacity GWh of operational storage assets by year commissioned. 2026 reflects year-to-date commissioning.

Electricity grid emissions intensity, coal-fired electricity generation and diesel and fuel oil generation are first inversed to align upward direction with positive progress. All indicators are then indexed for each year via formula (a) and combined into total score for the theme via formula (b) using weights of 35% for grid emissions intensity, 35% for coal-fired generation, 20% for wind and solar capacity additions, 5% for diesel generation and 5% for storage capacity additions. This results in the final score for the theme. That score is multiplied by the theme's 25% weight in the Sectoral Scorecards to get its final sector score, via formula (c). The formulas are at the end of the document.

Agriculture: We measured five indicators and weighted them equally (20%).



Reduction in on-farm diesel use:

- Tracks diesel fuel used in the agriculture sector each year, for purposes such as running tractors, combines, or other farm equipment, based on Natural Resources Canada's Comprehensive Energy Use Database. That database draws from Statistics Canada's report on Energy Supply and Demand (Table 25-10-0029-01). The sector covers all types of farms, businesses that provide services to agriculture, and hunting and trapping. Use is measured in terajoules, a unit of energy. One terajoule is roughly the energy in 26,000L of diesel. Burning diesel releases carbon dioxide, so lowering use can mean lower emissions from on-farm fuel use.

Adoption of 4R Nutrient Stewardship Plans:

- Tracks the national average share of farmers (%) with a 4R Nutrient Stewardship plan, based on Fertilizer Canada's Fertilizer Use Survey, conducted by Stratus Ag Research. A 4R Plan® is a nutrient management plan tailored to an individual farm that applies the Fertilizer Institutes concept of the right fertilizer source at the right rate, at the right time, and in the right place. Nitrogen fertilizer is a major source of nitrous oxide from farm soils, and matching applications more closely to crop needs can reduce those emissions.

Advancements in herd management that lead to herd size reductions:

- Tracks the total number of cattle and calves on Canadian farms on January 1st of each year, counted in head (one head is one animal), based on Statistics Canada livestock estimates. The count covers beef and dairy animals of all ages. Cattle produce methane through digestion and from their manure, so a smaller herd reduces those emissions.

Improvements in milk production per dairy cow:

- Tracks the average volume of milk produced per dairy cow each year, in hectolitres, based on data from Agriculture and Agri-Food Canada. It is calculated by dividing the total Canadian milk production from AAFC by the number of dairy cows from Statistics Canada (table 32-10-0130-01 (formerly CANSIM 003-0032). When each cow produces more milk, fewer cows are needed to supply the same volume, which lowers methane emissions per litre of milk.

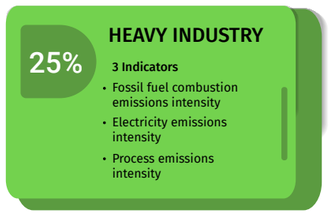
Adoption of reduced and no tillage:

- Tracks the national average share of crop acres (%) under reduced and no tillage, as reported by growers in Fertilizer Canada's Fertilizer Use Survey. No-till plants directly into the previous crop's residue without working the soil. Reduced tillage disturbs the soil less than conventional tillage. Fewer tillage passes burn less fuel, and leaving soil undisturbed can help sequester more soil organic carbon.

Because the five indicators use different units, they are not converted to a common unit or to emissions abatement. Instead, each indicator is indexed to its 2019 value (2019 = 100) via formula (a). On-farm diesel use and cattle herd size are inverted, so that declines increase the score.

The indicators are then indexed via formula (a) and combined into a score via formula (b) using equal weights – 20% for each. This result is the final score for the theme. That score is multiplied by the theme's 25% weight in the Sectoral Scorecards to get its final sector score, via formula (c). The formulas are at the end of the document.

Heavy Industry: We measured three indicators and weighted them equally (33%).



Fossil fuel combustion emissions intensity:

- Covers pulp and paper, iron and steel, aluminum and non-ferrous metals, cement, chemicals and mining. - Fossil fuel consumption by sub-sector is based on Statistics Canada Table 25-10-0029-01, Supply and demand of primary and secondary energy in terajoules. Consumption is converted to emissions using emission factors from Canada's National Greenhouse Gas Inventory (ECCC).
- Emissions are divided by annual production in tonnes to derive intensity for each sub-sector. Production is sourced from the Canadian Industrial Energy End-use Data and Analysis Centre (CIEEDAC) NAICS database at Simon Fraser University. - Sub-sector intensities are combined into a single value using production weights.

Electricity emissions intensity:

- Electricity consumption by sub-sector is based on the same Statistics Canada table, converted to emissions using grid emission factors from Canada's National Greenhouse Gas Inventory.
- Emissions are divided by annual production and combined using production weights, as above.

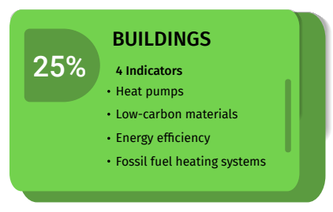
Process emissions intensity:

- Covers cement, iron and steel, chemicals and aluminum.
- Industrial process emissions are sourced from Canada's National Greenhouse Gas Inventory (ECCC) and divided by annual production for each sub-sector. Sub-sector intensities are combined using production weights.

Production data are reported through 2023. Subsequent years are estimated through linear extrapolation. Energy use data are reported through 2023 and process emissions through 2024. Values for subsequent years are estimated through linear extrapolation.

Because a decline in emissions intensity is good news, all three indicators are first flipped so that a higher number means more progress. Each is then converted to an index via formula (a), and the three are combined into one score for the theme, with equal weights on 33%, via formula (b). This is the final score for the theme. That score is then multiplied by the theme's 25% weight in the sector scorecard and combined with the other themes' scores into the total sector score via formula (c). Refer to page 6 for more details on formulas.

Buildings: We measured four indicators and weighted them equally (25%).



Heat Pumps:

This indicator is based on data from Statistics Canada and

Natural Resources Canada. The value reported is the estimated floor area of homes in Canada with heat pumps.

Assumptions: Average home size of 185 square meters; excludes apartments and mobile homes.

Low Carbon Materials:

This indicator is based on data from the Government of Canada database of mass timber buildings under construction or planned in Canada. The value reported is the total surface area of completed projects.

Assumptions: Calculated using linear progression from previous years as no new data yet available for 2026.

Energy Efficiency:

This indicator is based on data from the Canadian Green Building Council (CAGBC)'s list of LEED buildings. The value reported is the cumulative floor space of registered buildings.

Assumptions: Used available data from January to June 2026 and projected for the remainder of the year.

Fossil Fuel Heating Systems:

This indicator is based on data from Natural Resources Canada (NRCan). The value reported is the number of household buildings with fossil fuel heating systems.

Assumptions: Calculated using linear progression from previous years as no new data yet available for 2026.

The indicators are then indexed via formula (a) and combined into total score for the theme via formula (b) using equal weights – 25% for each. This results in the final score for the theme.

That score is multiplied by the theme's 25% weight in the Sectoral Scorecards to get its final sector score, via formula (c). The formulas are at the end of the document.

Formulas

Formula (a):
Creates the starting value of an indicator in 2019 to 100. The formula adjusts subsequent years' data relative to the 2019 baseline value. Indexing allows to level set all indicators to the same starting point, and track their relative progress. For illustrative purposes, we show how an indicator value is indexed. Assume the following: the indicator value is 195 in 2019, and 288 in 2026 (actual values of the Governance Capacity indicator within the Policy Theme), As the first step the formula sets the 2019 value at 100. All subsequent years' values are then divided by 195 and multiplied by 100. Hence indexed indicator value for 2026 is 288/195*100 = 148.

Formula (b):
Combines indicators into a total value for a theme, using respective indicator weights.

Formula (c):
Combines themes into a total value for a scorecard, using respective theme weights.

Formula (d) and (e):
A two-step process developed by the Climate Action Institute team allow for comparability across barometer and sectoral scorecards: first step (formula d) converts the dollar amounts relative to total capital requirement; second step (formula e) uses the result from previous step to scale every year's progress.

- Formula (a): Indexing

$$Indicator^{x}_{j,t,s,year} = Indicator_{j,t,s,year} / Indicator_{j,t,s,2019} * 100$$

- Formula (b): Combining indicators into a theme total

$$Theme_{t,s,year} = \sum_j w_{j,t,s} * Indicator^{x}_{j,t,s,year}$$

- Formula (c): Combining themes into a sectoral total

$$Scorecard_{s,year} = \sum_t f_{t,s} * Theme_{t,s,year}$$

- Formula (d): Capital theme scaling factor

$$Scaler_s = \frac{\sum_{year=2019}^{year=2035} Total\ Capital_{s,year}}{\sum_{year=2019}^{year=2035} Required\ Capital_{s,year}}$$

- Formula (e): Capital theme scaling formula

$$Capital\ Score_{s,year} = Indicator^{x}_{s,2019} + (Indicator^{x}_{s,year} - Indicator^{x}_{s,2019}) * Scaler_s$$

Where:
Indicator ^{j,t,s,year} are the actual values of indicators in the period **year**. Where **j** denotes the indicator, **t** used for a theme.
Upper script ^{x} denotes indexed value for the indicators with value for 2019 set at 100.
w are the weight for indicators.
f are themes' scorecard contribution factors.
Total Capital in formula (d) refers to the value of the indicator as described in the '*Capital*' section of the methodology. And ***Required Capital*** is annual spending based on '*Two Trillion Transition*' study.

Surveys Methodology

Government Pulse Check
The government pulse check is informed by quantitative and qualitative insights on government spending, government policy impact on GHG emissions trajectory, and climate policy experts' perspectives on climate policy and its efficacy in Canada.

The RBC Climate Action Institute research team tracks annual government spending at the federal level and in the four largest provinces by gross domestic product to maintain tracking of government fiscal commitment to climate action.

To understand if government policies and spending are tracking towards 2035 and 2050 targets, the research team also considers the modelled projections of policy on GHG emissions scenarios to provide a directional, quantitative lens on policy efficacy in meeting GHG targets. These projections are produced each year by Environment and Climate Change Canada.

Finally, the research team surveyed an expert policy panel of more than 40 to glean additional detailed insights on the impact of current policies on Canada's GHG emissions reduction targets. CAI solicited their views of policy efficacy (i.e., did it achieve its desired result), policy impact (i.e., broader consequences of policy–intended and unintended), policy durability (i.e., long-term stability of policy). This survey was conducted between June and August 2026.

The list of participants for the expert policy panel was curated by the Climate Action Institute and the Canadian Climate Institute and included academics, policy experts, former government officials and analysts. Key policy actions identified in the Government Pulse Check—such as carbon pricing, methane regulations, and Clean Fuel Regulations, consumer incentives, industry incentives, funding programs and education and awareness—were deemed by our Climate Action team, in collaboration with external climate policy experts, to have a meaningful impact on the trajectory of Canada's emissions.

Please see full list of participants in the Acknowledgment section.

Business survey
The business survey tracks year-over-year change in business leaders' approach to climate action in their strategies, operations and products and services. The businesses are primarily focused on the six key sectors identified by the CAI Team as our focus areas, namely: Buildings, Agriculture, Oil & Gas, Transport, Heavy Industry, and Electricity.

The business survey is run by Kantar Canada Inc., a third-party vendor, in June and July 2026 and attracts roughly 150 business responses.

Kantar Canada's business survey is a self-administered online poll. It targeted vice-presidents and business leaders on a best-effort recruitment process. The survey was targeting complete responses from 100-150 companies. Industry coverage included Buildings, Agriculture, Oil & Gas, Transport, Heavy Industry, and Electricity, with top up in 'other' industries.

Consumer Survey
The consumer survey tracks year-over-year change in Canadian consumers' perspectives, experiences and actions on climate change.

The consumer survey is run by a third-party vendor, Ipsos Canada, between June and July 2026 and collects roughly 2,000 individual responses from its Ipsos online omnibus in English and French across Canada.

This survey examines the views, experiences, and actions related to climate change among adults in Canada, the United States, and the United Kingdom.

All three countries were asked the same three questions, while respondents in Canada were asked an additional 11 questions.

The survey was conducted online between June 3–5, 2026 in Canada, June 8–9, 2026 in the United States, and June 12–16, 2026 in the United Kingdom.

Surveys were completed by adults aged 18 and older through the Ipsos I-Say Panel.

Results are considered accurate within a confidence interval (+/- percentage points), 19 times out of 20, compared to what would have been obtained if all adults aged 18+ had been surveyed. Sample sizes and confidence intervals are as follows:

CA n=2001 +/- 2.7

To allow for international comparisons, Ipsos ran select questions in the U.K. and U.S. to gleam insights from international consumers. These surveys run in June and July and collect roughly 1,000 responses each.

Sample sizes and confidence intervals are as follows:
U.S. n=1005 +/- 3.8
U.K. n=1122 +/- 3.6

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Endnotes

Overview

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[2]Canadian Energy Regulator
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[5]Alberta Energy Regulator ST 53: Alberta In Situ Oil Sands Production Summary
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Electricity

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[2]Change in electricity-sector emissions intensity (emissions per unit of generation), 2019 – 2026. Emissions from ECCC National Inventory Report. 2026 figure from ECCC's With Measures Scenario projections. Generation figures from Statistics Canada, Table 25-10-0015-01, "Electric power generation, monthly generation by type of electricity" (2026 annualized from available monthly data). Reduction figure is an estimate.
[3]Canada Energy Regulator, Canada's Energy Future, 2026, Current Measures Scenario
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Transportation

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[2]BloombergNEF; Electric Vehicle Outlook 2026; https://www.bnef.com/flagships/ev-outlook
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