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The one-year anniversary of Alberta's Emissions Reduction and Energy Development plan

An assessment of progress to date and recommendations for action

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Summary

The Government of Alberta has yet to make meaningful progress on implementation of its Emissions Reduction and Energy Development plan, released one year ago today.

Climate policy and economic policy are inextricably linked. Governments around the world are not only making plans to reduce emissions and setting interim targets to 2050 — they are also actively taking steps to grow clean industries and prepare their workforces.

In Alberta, practical work urgently needs to begin and rapidly accelerate. Our assessment of the last twelve months has found that the Government of Alberta has yet to begin the type of preliminary stakeholder engagement that is expected as a key first action in identifying how it will practically reduce emissions across the economy. Sector-by-sector analysis and planning — including the crucial addition of declining interim emissions reduction targets on the way to 2050, and clear policies that ensure emissions decrease in the short term — is still missing. Without this, the Government of Alberta's climate plan lacks credibility.

This assessment document is intended to suggest immediate, tangible steps that the Government of Alberta can take to make progress on its climate plan this year. The Pembina Institute welcomes discussion on what the Government of Alberta can do to reduce emissions across the economy and ensure a prosperous future for all Albertans.

Background

In 2022 the Government of Alberta committed to creating a "made-in-Alberta climate strategy."[1] The first step of its delivery on this commitment was its Emissions Reduction and Energy Development (ERED) plan, published one year ago today on April 19, 2023.

The plan included an "aspiration" for the province's economy to become carbon neutral by 2050, and as such represented an important moment in Alberta officially recognizing, for the first time, its responsibility to join with other governments worldwide (including the Government of Canada and other provincial governments) that were already committed to the same climate goal. Nevertheless, as the Pembina Institute noted at the time of the ERED plan's release, if this target is to become a reality, it must be accompanied by actionable policies.[2]

Why Alberta's emissions reduction plan matters

The shift towards economies that are based on low-carbon energy resources and other clean technologies is already well underway. The proportion of electricity generation from wind and solar has grown exponentially in the last two decades and is set to triple worldwide by 2030 following commitments made by over one hundred governments 2023.[3] At the same time, a range of oil demand scenarios — including those created by industry, international organizations, and research institutes — project that, if the current pace of climate policy action continues, global demand for oil will peak before 2030 and decline steadily afterwards.[4]

Alberta established Canada's first industrial carbon pricing system to enable emissions reduction over a decade ago. Government of Alberta data shows that the Technology Innovation and Emissions Reduction (TIER) regulation has contributed to reducing emissions by approximately 30 megatonnes (Mt) between 2007 and 2022.[5] The province also has a proud history of technical innovation in the energy sector and is home to some of the world's leading experts on emissions reduction technologies, such as carbon capture.

However, the province is quickly falling behind. As shown in Figure 1, Alberta remains by far the largest provincial contributor to Canada's total emissions, accounting for 256 out of 670 Mt, or 38.2% (2021 data).[6] Since 2005, the internationally recognized baseline year against which most governments are tracking their climate policy effectiveness, emissions in Alberta have grown by 9%. Over the same period, they have fallen in every other province in Canada, with the exception of Manitoba (2% growth). Emissions in Alberta did decline in 2015, largely due to the beginning of the phase-out of coal-fired electricity generation. However, without prompt and decisive action to reduce emissions from Alberta's heavy industrial sectors (especially oil and gas production), the gains of the coal phase-out risk being undermined. In addition, if Alberta does not diversify its economy towards emerging clean industries — including further investment in a clean electricity system — the prosperity of the province, and of thousands of Albertans, are at risk.
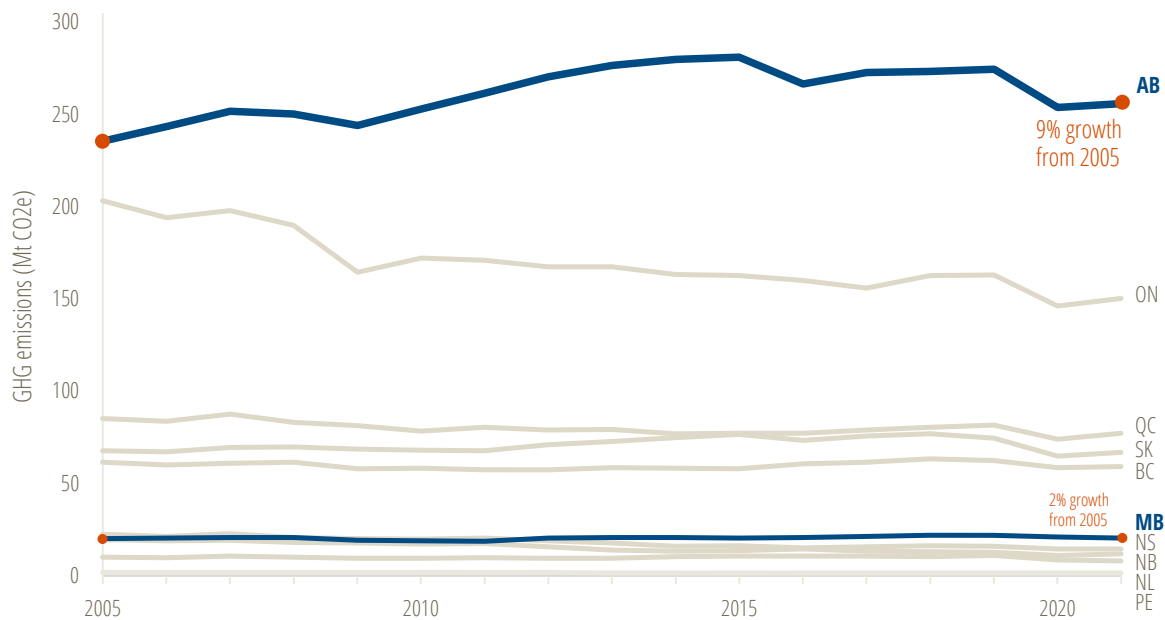
Figure 1. Emissions trends in Canada 2005-2021, by province

Since 2005, emissions have grown by 9% in Alberta and by 2% in Manitoba. During the same period, emissions have fallen in every other province (Ontario -26%; Quebec -9%; Saskatchewan -1%; British Columbia -4%; Novia Scotia -36%; New Brunswick -39%; Newfoundland and Labrador -18%; Prince Edward Island -13%).

Data source: Environment and Climate Change Canada[7]

Limited progress to date

The ERED plan did not include clear milestones or time-bound strategies we can assess progress against. However, the ERED did include commitments to strengthening Alberta's methane emissions reduction target, and to "exploring" the reduction of Alberta's oilsands emissions limit to align with the reduction milestones outlined by the oilsands industry group, the Pathways Alliance. On methane, the Government of Alberta's February 2024 submission to the federal government's proposed regulatory amendment indicates its opposition to an increased target of 75% reduction from 2012 levels by 2030 ; and on the oilsands emissions limit, there is no publicly available evidence of progress.

More broadly, our review of Government of Alberta announcements and activities in the past year indicates there appears to have only been two incremental actions that would move the province towards short-term emissions reductions and its 2050 carbon neutrality goal:

- In November 2023, the Government of Alberta announced the Alberta Carbon Capture Incentive Program (ACCIP), which will provide grants of 12% for eligible capital project costs.
- In the 2024 provincial budget, a greater proportion of TIER revenues were allocated to enabling emissions reduction projects rather than towards debt reduction; this trend needs to continue.

Recommendations for urgent action in 2024

The Pembina Institute has outlined six key areas where we recommend that the Government of Alberta prioritize action in 2024, to begin to make progress on its ERED. We are committed to engaging with the Government of Alberta, and with key stakeholders in the province, on practical solutions that will result in rapid emissions reductions and help safeguard Alberta's climate and economic future.

1.   Complete sectoral pathways analysis and set targets

Figure 2 shows that, with the exception of the electricity sector, emissions across all sectors of Alberta's economy had increased, remained flat, or seen a nominal decrease (-1.5% in the agriculture sector) in 2021 compared with 2005. The progress made in the electricity sector is largely due to the phase-out of coal-fired power stations, which will be complete in 2024, combined with a growing renewable electricity industry. This demonstrates the progress that can be made when a sectoral pathway to emissions reduction is defined (elimination of coal-fired electricity generation), transition plans are made (for the labour force, alternative generation capacity), and enabling policies (TIER large-emitter trading system, federal coal-fired power emissions regulation, provincial agreements with generators) and other programs (e.g., the Renewable Electricity Program)[8] are put into action, giving industry appropriate signals and milestone dates to work towards in their investment plans.
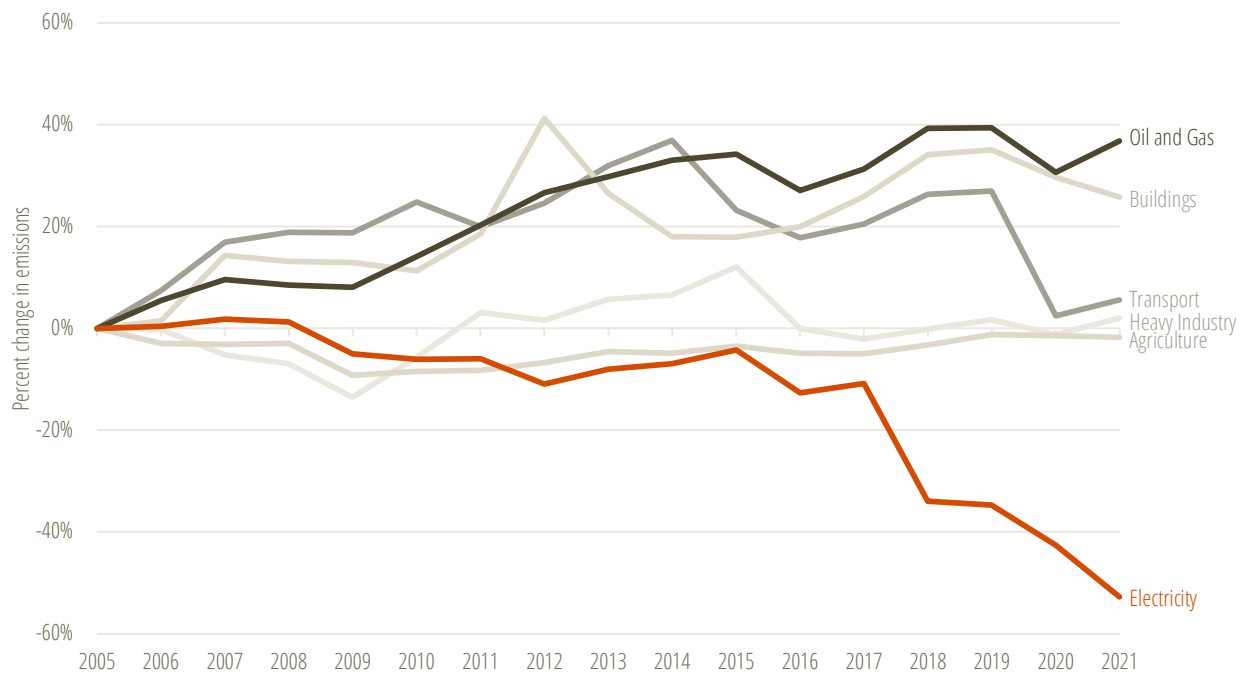

Figure 2. Percent change in emissions by economic sector, Alberta

Data source: Environment and Climate Change Canada[9]

Taking this kind of sector-by-sector approach is particularly valuable, not only because pragmatic solutions to reduce emissions vary across sectors, but also because there are strong interactions between some sectors that need to be considered; for example, electricity generation and buildings. Analyzing sectoral paths to decarbonization, understanding investments needed, and setting pragmatic timelines is critical. Such analysis already exists for some sectors in Alberta; for example, in 2022 the Alberta Electricity System Operator (AESO) published its Net-Zero Emissions Pathways report.[10] Although it is the Pembina Institute's view that some of the modelling assumptions in the AESO report require further work,[11] it is a good example of a sector taking a tangible step forward in creating an actionable roadmap to carbon neutrality.

With this in mind, we urge the Government of Alberta to form a multi-ministry working group, engage key stakeholders and define pathways to carbon neutrality for all sectors. We recommend placing a priority on defining a pathway for oil and gas production, with a special focus on differentiating the sub-sectors of oilsands and of conventional oil and gas. These sectoral analyses should also include five-year declining interim targets on the path to carbon neutrality by 2050, starting with 2030. This will serve to inform pragmatic and achievable targets, meaning that technologically feasible solutions can be deployed as early as possible, and additional innovation can be supported where it is necessary. Interim targets should clearly signal trajectories for emissions and fairly allocate responsibility for emissions reductions. Defining interim targets will also improve predictability and certainty for investors.

2. Strengthen the Technology Innovation and Emissions Reduction (TIER) regulation

Alberta should apply stronger tightening rates that align TIER stringency with its target of carbon neutrality by 2050,[12] to enable companies to follow through on their stated climate goals. This would ensure that, as companies successfully decarbonize (which in many cases will rapidly reduce facilities' direct emissions in TIER), the credit market will not be flooded with an excess of emission performance credits that undermines those companies' projects. An over-supplied credit market would mean credit prices are lower than required to align with the federal carbon price benchmark and will not encourage investors to support additional emissions reduction projects. Investors will also be making decisions, particularly about larger and more capital-intensive projects, that are based on a reasonably predictable credit price trajectory; if the market becomes oversupplied and those prices begin to drop, this could negatively impact low-carbon investment in Alberta.

TIER revenues need to be fully allocated to enabling emissions reduction in Alberta. As TIER revenues are currently forecasted to decline, funding sources for innovation and clean tech development need to be identified.

3.   Lower the Oil Sands Emissions Limit

We strongly recommend that the Government of Alberta lower the legislated Oil Sands Emissions Limit and enable enforcement through effective regulations. Reducing emissions from this high-emitting sector is critical to reaching carbon neutrality in Alberta. Doing so will provide the greater medium- and long-term certainty that oilsands operators have repeatedly asked for before they can make final investment decisions on emissions reductions projects. With the production of bitumen predicted to increase, taking action on this commitment is even more urgent than when it was made in the ERED plan a year ago.

A robust sectoral pathway analysis should inform attainable limits over time. Given the Pathways Alliance's commitment to reaching net-zero oilsands operations by 2050, their assessment of feasible trajectory and milestones should also inform limit-setting.

4.   Diversify electricity generation, transmission and distribution

Achieving a net-zero electricity supply will unlock emissions reductions across Alberta's economy, given the number of sectors that already rely on electricity generation, as well as the additional electrification that will take place on the path to 2050. Alberta could get other benefits from having a clean electricity supply — as Ontario, British Columbia, and Quebec have seen, it helps attract global companies that are looking for clean electricity to power their businesses, so that the products and services they produce meet emerging emission intensity standards.

As noted earlier, progress has been made in reducing emissions from Alberta's electricity sector. But that progress will stall, unless the government undertakes urgent planning on electricity generation, transmission and distribution. Failing to create the clean, modernized electricity system that Alberta needs will risk leaving Albertans with unaffordable, high-emissions electricity — and would represent a lost opportunity to attract investment to the province.

Strategies and targets are needed to decarbonize Alberta's electricity system. Specifically, Alberta should modernize the mandate and regulations for its utility regulator (the Alberta Utilities Commission) and the Alberta Electric System Operator to give them direction to fully decarbonize the grid. These mandates should send clear signals for the development of renewable electricity and facilitate a comprehensive range of available approaches. This should include the use of technology such as smart grid measures, storage, distributed energy resources, demand-side management including energy efficiency and demand response, and substantial and necessary infrastructure growth, such as expanded interregional transmission interties, as well as transmission and distribution within the province. The government should

engage with multiple stakeholders for this policy development, including consumers and investors, as well as representatives of incumbent industry.

5.   Re-establish Alberta as a leader on tackling oil and gas methane emissions

Alberta is Canada's only major oil and gas producing province that has yet to formally begin updating and strengthening its methane regulations to achieve equivalency with newly amended federal regulations. Urgent action is required if Alberta intends to remain a leader in this space. The Government of Alberta must:

a.   Formally adopt the target outlined in the ERED plan of a 75-80% methane emissions reduction from the conventional oil and gas sector by 2030 (from 2014 levels).

b.   Leverage Albertan ingenuity and expertise to design and implement made-in-Alberta regulations to deliver impactful methane reductions.

c.   Seek equivalency with federal oil and gas methane regulations, which will allow Alberta to implement its own cost-effective solutions and enforce its own regulations, and will ensure that companies are responsive to a single regulatory regime.

d.   Through a combination of funding and regulation, follow through on the province's commitment to continuously improve methane measurement and reporting, to ensure that policymakers, companies, and the public have a clear and credible picture of industry's progress.

6.   Implement rules that would pave the way for cost-effective demand-side management measures for electricity use

Alberta has a robust innovation ecosystem and a history as a leader in emerging technologies, yet adoption rates remain low for technologies and practices that would reduce emissions across the economy — from advanced agriculture practices to biofuels and building technologies.[13] The ERED plan identifies actions and opportunities to increase adoption rates through measures including sustainable finance and tax credits, energy benchmarking, supportive codes and standards and workforce development. Implementation of specific actions in these policy areas is critical to enabling Alberta businesses and workers to contribute to emissions reductions in their respective sectors, continue to increase productivity, manage operating costs and remain competitive.

As a key first step, we strongly recommend the Government of Alberta direct the Alberta Utilities Commission to require distribution utilities companies to deliver cost-effective demand-side management (DSM). Utility DSM is a market-based mechanism that allows distribution utilities to incorporate management of customer end-use into the utility resource mix. By recognizing the value to the utility system that comes from reducing or managing load,

and paying users for generating this value, utilities provide the infrastructure needed to accelerate and expand investment in demand-side resources identified in the ERED plan. Enabling deployment of emission reduction technologies, such as building energy efficiency, energy management systems, electric vehicle infrastructure and distributed supply (including on-site renewables and energy storage) would lower Alberta's emissions, deliver cost savings to participating customers (not only residential but also agricultural, commercial, institutional and industrial) and reduce utility costs for all rate payers.

The Pembina Institute acknowledges that the work we steward and those we serve span across many Nations. We respectfully acknowledge the space our organization is headquartered in as the traditional and ancestral territories of the Blackfoot Confederacy, comprised of the bands Siksika, Piikani, and Kainai, the Îyârhe Nakoda Nations, including the bands of Goodstoney, Chiniki, and Bearspaw, and the Tsuut'ina Dené. These Lands are also home to the Métis Nation of Alberta — Region 3 whose Peoples have deep relationships with the Land.

These acknowledgements are some of the beginning steps on a journey of several generations. We share them in the spirit of truth, justice, reconciliation, and to contribute to a more equitable and inclusive future for all of society.

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[1] Alberta Premier Danielle Smith, *Mandate Letter to Minister of Environment and Protected Areas*, November 9, 2022. https://open.alberta.ca/dataset/71ebe02e-bda3-46f3-8ddd-6bf3a0d3d7ca/resource/0972d584-4a3a-4b47-990a-8381ca57e1c1/download/epa-mandate-letter-environment-and-protected-areas.pdf

[2] Pembina Institute, "Alberta climate plan acknowledges need to cut emissions but lacks key elements of a credible strategy," media release, April 19, 2023. https://www.pembina.org/media-release/alberta-climate-plan-acknowledges-need-cut-emissions-lacks-key-elements-credible

[3] Kate Abnett, Valerie Volcovici, David Stanway, "More than 100 countries at COP28 agree to triple renewable energy, push out fossil fuels," *Reuters*, December 2, 2023. Available at https://www.theglobeandmail.com/business/article-117-countries-at-cop28-agree-to-triple-renewable-energy-push-out

[4] Janetta McKenzie, *The future of oil in the energy transition: Understanding global oil demand scenarios* (Pembina Institute, 2022), 3. https://www.pembina.org/pub/future-oil-energy-transition

[5] Alberta Environment and Protected Areas, "Annual TIER Compliance Workshop (2023 Compliance Period)," presentation, February 15, 2024. https://www.alberta.ca/system/files/epa-annual-tier-compliance-workshop-2023.pdf

[6] Environment and Climate Change Canada, *National Inventory Report 1990–2021: Greenhouse Gas Sources and Sinks In Canada* (2023), Part 1, Table 2–2. https://publications.gc.ca/site/eng/9.506002/publication.html

[7] *National Inventory Report 1990–2021*, Part 3, Tables A12-2 through A12-11.

[8] Sarah Hastings-Simon et al., "An Alberta Wind Energy Windfall," *Energy & Environment Policy Trends* (October 2022). https://www.policyschool.ca/wp-content/uploads/2022/10/wind-windfall-final.pdf

[9] *National Inventory Report 1990–2021,* Part 3, Table A12-10.

[10] AESO, *AESO Net-Zero Emissions Pathways Report* (2022). https://www.aeso.ca/assets/AESO-Net-Zero-Emissions-Pathways-Report-July7.pdf

[11] Nick Schumacher and Binnu Jeyakumar, *Pembina Institute Response to AESO Net-Zero Emissions Pathways Report* (Pembina Institute, 2022), 6. https://www.pembina.org/pub/pembina-institute-response-aeso-net-zero-emissions-pathways-report

[12] Scott MacDougall, *Pembina Institute Input to Government of Alberta's 2022 TIER Review* (Pembina Institute, 2022), 6. https://www.pembina.org/pub/pembina-institute-input-government-albertas-2022-tier-review

[13] Guidehouse, *Demand Side Management Opportunities for Alberta*, prepared for Alberta Energy Efficiency Alliance (2022). https://www.aeea.ca/s/DSM-Cost-Benefit-Report-for-Alberta.pdf