Research note: unlock investment, reduce greenhouse gas emissions[1]

Prepared by the Net-Zero Advisory Body

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Net-Zero Advisory Body

Groupe consultatif pour la carboneutralité

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1. **Submitted to the Minister of Environment and Climate Change in August 2025**

Summary

Effectiveness and efficiency of climate policy can be improved

- The NZAB, established under the *Net-Zero Emissions Accountability Act*, is presenting results of analysis on the effectiveness of climate policies in efficiently cutting greenhouse gas emissions and unlocking investment.
- This analysis highlights provincial and territorial contributions to Canada's greenhouse gas emissions reductions, as well as interactions with federal climate policies.
- The research partners were the Canadian Climate Institute and Navius Research.
- The NZAB advises that implementing four timely, high-impact actions, including strengthening the Output Based Pricing System (OBPS), could contribute to the clean growth agenda, help meet Canada's climate change objectives established by the Prime Minister in his mandate letter to Ministers, build one Canadian economy (in alignment with the *One Canadian Economy Act*), and modernize regulations (consistent with the Government of Canada's direction to modernize outdated regulations).

Priority

Strengthening the OBPS unlocks investment and reduces emissions

- Clean growth investment in the hundreds of millions, if not billions, of dollars, is currently untapped due to climate policy uncertainty and regulatory overlap.
- Canada has made progress in reducing greenhouse gas emissions, but is not yet on track to meeting its 2030 and 2035 targets, which are essential if Canada is to reach its net-zero-by-2050 target legislated under the *Canadian Net-Zero Emissions Accountability Act*.
- Advancing the Build Canada agenda, with its investment in large infrastructure projects that can have significant lifetime greenhouse gas emissions, will have implications for Canada's greenhouse gas emissions trajectory.
- Strengthening the OBPS is the key action needed to unlock more efficient and effective climate policy. Steps to adjust or eliminate other climate policies should not be taken independently of this effort: while a much more effective OBPS is a key to unlock investment and reduce emissions, it is insufficient to operate alone.
- This research shows that linking provincial carbon markets is not enough to strengthen the OBPS.
- In its Second Annual Report, the NZAB highlighted the need to strengthen industrial carbon pricing systems by tightening benchmarks to bind the carbon price and avoid an oversupply of cheap credits, offering carbon contracts for difference to provide price certainty, and reducing regulatory overlap.
- This new analysis finds that Canada has the potential to unlock investment and to reduce greenhouse gas emissions by an additional 68 Megatonnes (Mt) by 2030, and 72 Mt by 2035, if it:
  - strengthens federal/provincial/territorial industrial pricing systems (that is, adjusted benchmarks, common participation thresholds)
  - reduces regulatory overlap
  - advances planned methane regulations for the oil and gas sector (75% below 2012 levels by 2030) and landfills (50% below 2019 levels by 2030)
  - provides incentives to low-income households for heat pumps and implements British Columbia's Zero Carbon Step Code for buildings across all provinces

NZAB advice

Four priorities that secure additional emission reductions

1. Strengthen the large emitter pricing system

   - Key elements are increasing OBPS benchmarks to bind the price in the large emitter trading systems, removing large emitters from the *Clean Fuel Regulations* (CFR) to prevent stacking of large emitter and clean fuel regulation credits, increasing OBPS coverage to capture emitters generating >10 kilotonnes (kt) of greenhouse gas emissions, and embedding these changes in equivalency agreements.
   - If implemented together, these actions would create an effective, efficient national carbon market, and secure emissions reductions.
   - The NZAB believes implementing this recommendation, along with increasing the efficiency of the full climate policy package and introducing a carbon contracts for difference program, is urgent and should be part of any federal/provincial/territorial negotiation.
   - Achieving results requires high-level political engagement well in advance of the 2026 review of the OBPS. The scheduled review is technical in nature and not the appropriate avenue for unlocking investment and emissions reductions, while creating a national credit market.

2. Adjust existing policies to maximize emissions outcomes

   - Where there is regulatory overlap, adjustments can provide a quick and low-cost path to reducing emissions. Adjustments should occur in conjunction with, not separate from, federal/provincial/territorial agreement on strengthening the OBPS.
   - A key example is the interplay between the CFR, the *Clean Electricity Regulations*, and the Electricity Vehicle Availability Standard. As the passenger vehicle fleet electrifies, CFR credit prices fall, reducing incentives for large emitters to pursue emissions reductions (for example, biofuels).
   - Solutions include a) removing electric charger installations from creating CFR credits well before the current plan of 2035, b) removing passenger vehicles to shift the CFR to heavy-duty vehicles, and/or c) removing large emitters from the CFR.
   - These changes, along with reintroducing electric vehicle incentives, will promote clean growth and increase emissions reduction potential.

3. Use equivalency agreements to secure emissions outcomes, increase transparency and improve monitoring

   - Equivalency agreements are a useful tool in federal/provincial/territorial negotiations and enable the recommended policy improvements.
   - Research indicates that equivalency agreements driven by federal policy (for example, large emitter pricing) will, if sufficiently stringent, deliver the majority of provincial and territorial greenhouse gas reductions by 2030 and 2035.
   - Ensuring greater transparency and monitoring of equivalency agreement commitments would increase accountability.

4. Expedite methane regulations and building programs

   - Finalize and implement the methane regulations for both oil and gas (75% below 2012 levels by 2030) and landfills (50% below 2019 levels by 2030) to achieve near-term reductions at low cost.
   - As noted in our annual report, the 75% reduction target for oil and gas "is increasingly seen as a floor, not a ceiling, of what's possible." We argue methane abatement provides a cost effective and prudent mitigation option, given available technology, and is an opportunity to show continued global leadership.
   - Modelling results also support accelerating heat pump incentives for low-income households and encouraging provinces to adopt British Columbia's Zero Carbon Step Code for buildings across the country to realize greenhouse gas emissions reductions by 2035 and beyond. The Government has already committed to using a portion of the revenue from the OBPS to fund consumer incentives, which could include heat pumps and electric vehicles.
   - Federal and provincial/territorial cooperation will be needed to fully realize the greenhouse gas emissions reduction potential of these initiatives.
   - Given the lifetime of buildings, the emissions benefits of these programs compound over time to help Canada reach its net-zero-by-2050 target.

Conclusion

Our research indicates that it is more effective for the Government to focus on a small number of the highest-impact actions and to implement them quickly given the length of time it takes to implement new policies. Adjusting existing policies is cheaper, faster, and fairer than redesigning the policy architecture.

Removing existing policies without a negotiated plan to strengthen other measures, notably the large emitter trading systems, undermines clean growth, as it raises investor uncertainty about commitment to climate policy, and ability to meet emissions targets.

About us

The Net-Zero Advisory Body is mandated to provide the Minister of Environment and Climate Change with independent advice on the most likely pathways for Canada to achieve net-zero emissions by 2050 and to advise on the setting of interim emissions reduction targets on the pathway to net-zero emissions in Canada by 2050. This includes considering the economic costs and opportunities for Canadians and the readiness of new technologies. The research described in this memo will inform our upcoming annual report.

Appendix

Research methods and results

Four high-level insights emerge from the Canadian Climate Institute and Navius Research modelling analysis of provincial/territorial contributions to Canada's greenhouse gas emissions targets:

1. Strengthening the Output-Based Pricing System (OBPS) is urgent. Opportunities modelled include tightening benchmarks to make the carbon price binding (for example, matching federal carbon pricing schedule), reducing regulatory overlap by removing large emitters from the *Clean Fuel Regulations* (CFR), and increasing OBPS coverage (>10 kt coverage threshold to ensure national consistency and overcome loss of voluntary opt-in due to the loss of the consumer carbon price). These adjustments secure additional greenhouse gas emissions reductions, increase credit prices and can help facilitate credit market linkages.
2. Energy efficiency has played a larger role than decarbonization in provincial greenhouse gas reductions to date. Alberta and Saskatchewan are exceptions due to fuel switching (coal to gas).
3. Equivalency agreements, driven by federal policy (for example, coal phase-out, large emitter pricing), deliver the majority of provincial and territorial greenhouse gas reductions by 2030 and 2035.
4. Federal and provincial/territorial regulatory overlap lowers potential greenhouse gas reductions relative to policies in isolation, and creates increasing downward pressure on credit prices as additional federal policies kick in. It is important to review areas of potential overlap to identify opportunities to reduce overlap and increase policy complementarity while maximizing greenhouse gas reductions.

This analysis builds on the NZAB 2024 Annual Report to explore current and potential provincial and territorial contributions to Canada's emissions reductions. This work commenced last fall and proceeded in three phases from Fall 2024 to June 2025. Below is a summary of the findings of each phase of the research.

Phase 1

Historical review of provincial and territorial contributions

The first phase reviewed drivers of provincial and territorial greenhouse gas emissions trends since 2005. The key drivers of changes in Canada's greenhouse gas emissions over time are: 1) economic activity (for example, industrial output, building floor space, kilometres travelled, etc.); 2) energy efficiency; and 3) decarbonization (for example, changes in energy sources, like from coal to natural gas, and reduced emissions from implementation of technologies like carbon capture and storage).

The key insights of Phase 1 include:

1. All regions show some increase in greenhouse gas emissions from increased economic activity.
2. In most regions, efficiency has played a larger role than decarbonization and fuel switching.
3. Alberta and Saskatchewan are exceptions where shifting from coal to natural gas in the power sector has significantly reduced emissions.

Phase 2

Current and potential provincial contributions to Canada's greenhouse gas emissions

The goal in Phase 2 was to measure the incremental greenhouse gas reduction impact of provincial policies by turning policies on and off for 2030 and 2035. Policy categories include federal policies, provincial policies, and equivalency policies where provincial policies are implemented in response to a federal requirement (for example, coal phase-out, carbon pricing implemented instead of federal backstop).

The analysis is up to date in terms of removing the federal and British Columbia consumer carbon price and adding in the federal clean electricity regulation.

The key insights from Phase 2 include:

1. Equivalency policies deliver the largest emission reductions to 2030 and 2035, but provincial and federal policies are also important contributors to reductions.
   - In Alberta and Saskatchewan, equivalency policies targeting industrial greenhouse gases achieve the most reductions and show less overlap than in other provinces.
2. Provincial and equivalency policies contribute between 70% to 75% of 2030 reductions and 71% to 77% of 2035 reductions.
   - Of these greenhouse gas reductions, provincial policies are responsible for 6% to 27% of 2030 and 8% to 22% of 2035 greenhouse gas reductions, mostly from transportation and electricity sectors.
3. Overlap is a concern[2]:
   - All policies combined achieve fewer greenhouse gas reductions—22% fewer in 2030 and 19% fewer in 2035—compared to a theoretical estimate of all policies in isolation (see Scenarios 1 and 3, Phase 3 modelling for further insights into options to reduce overlap).
   - Key concerns include the federal *Clean Electricity Regulations* (which become binding in 2035) overlapping with provincial and equivalency policies (OBPS), and federal *Clean Fuel Regulations* credit prices dropping due to provincial blending policies and federal Electric Vehicle Availability Standard.

2. **The oil and gas emissions cap was not included in this analysis. The final report from Canadian Climate Institute will include discussion notes about potential overlap effects from an oil and gas emissions cap, based on the modelling results of the CFR and OBPS overlap presented here, and other recent modelling results.**

Phase 3

Current and potential provincial contributions to Canada's greenhouse gas emissions

We tested three scenarios in Phase 3 to understand federal and provincial policy interactions. Note that these scenarios are not meant to model achieving 2030 and 2035 greenhouse gas reduction targets. The components of the scenarios are as follows:

1. Current policy plus strengthened federal and equivalency policies
   - Adjusted benchmarks for the OBPS to ensure the policy is binding (tightened in British Columbia, Alberta, Saskatchewan, and Ontario)
   - Increase OBPS coverage (>10 kt threshold, aggregated oil and gas facilities are required to participate)
   - Implement the oil and gas methane regulation (75% reduction below 2012 levels by 2030) now at Gazette 1
   - Implement landfill gas methane regulation (50% reduction below 2019 levels by 2030)
2. Current policy plus strengthened federal and equivalency policies plus expanded provincial policies
   - Expanded provincial policies include
     i. Implement British Columbia's Zero Carbon Step Code in all provinces (requiring new and replacement space and water heating technologies to be zero carbon by 2031)
     ii. Free heat pump subsidy for low-income households ($15k for new and replacement heat pumps between 2026 and 2035)
3. Current policy plus revised and strengthened federal and equivalency policies plus expanded provincial policies
   - same as scenario 2 but removes large emitters from the Clean Fuel Regulations
   - goal is to reduce policy interactions

The key insights from Phase 3 are:

1. Scenario 1: Strengthening the Large Emitter Trading Systems (LETS) plus the methane regulations reduces greenhouse gases by an additional 65 Mt or 11% in 2030 relative to current policies, with the majority of the reductions from the oil and gas sector, and significantly reduces the overlap identified in Phase 2 that reduced potential emissions reductions.
2. Scenario 2: Emissions reductions to 2030 are small but grow significantly by 2035 in categories not addressed by other policies.
3. Scenario 3: Further 3 Mt achieved from reducing remaining overlap compared to Scenario 1 for a total of 68 Mt of reductions by 2030. By 2035, 72 Mt of reductions (12% relative to current policy) are achieved.
   - Strengthening LETS and methane regulations reduce emissions 58 Mt or 10% relative to current policy in 2035 (lower than 2030 due to overlap with Clean Electricity Regulations and increased economic activity).
   - Additional 14 Mt in greenhouse gases by 2035 from the Zero Carbon Step Code and free heat pumps subsidy.

The table on the following page summarizes these results. By 2030, the strengthened policies and reduced overlap would achieve emissions reductions of 28% below 2005 levels by 2030, and 31% below 2005 levels by 2035, moving Canada closer to its 2030 and 2035 greenhouse gas emissions targets.

Greenhouse gas emissions by scenario

Policy scenarios	Targeted policies	Mt CO_2e 2030	Mt CO_2e 2035	% reduction relative to 2005[3] in 2030	% reduction relative to 2005 in 2035
Current policy	-	615	593	19%	22%
#1 Strengthened federal and equivalency	LETS, methane (oil and gas and landfill)	550	535	28%	30%
#2 Strengthened federal and equivalency, and strengthened provincial	Above plus building codes and heat pump subsidies	550	521	28%	31%
#3 Strengthened all plus reduced overlap	Above plus remove large emitters from CFR	547	522	28%	31%
Emissions targets					
Lower end (40%, 45%)	-	455	417	40%	45%
Higher end (45%, 50%)	-	417	379	45%	50%
Gap (difference between scenario #3 and lower end of target)	-	92	105	-	-

ECCC estimates of emissions reductions from other actions, based on the 2024 Biennial Transparency Report[4]					
LULUCF accounting	-	-28	-31	-4%	-
Nature-based climate solutions and agricultural soils	-	-12	-12	-2%	-

Long description: Table shows projected greenhouse gas emissions under different policy scenarios in 2030 and 2035, and percentage reductions relative to 2005. Under current policy, emissions are 615 Mt of carbon dioxide equivalent in 2030 and 593 in 2035, equal to reductions of 19% and 22%. Scenario one, with strengthened federal policies and methane reductions, lowers emissions to 550 Mt in 2030 and 535 in 2035, a 28% and 30% reduction. Scenario two, which adds building codes and heat pump subsidies, reaches 550 and 521 Mt, equal to 28% and 31% reductions. Scenario three, which adds reduced overlap and removes large emitters from the Clean Fuel Regulations, results in 547 and 522 Mt, a 28% and 31% reduction.

The lower-end emissions targets are 455 Mt in 2030 and 417 in 2035, while the higher-end targets are 417 and 379. The gap between scenario three and the lower-end target is 92 Mt in 2030 and 105 in 2035. Environment and Climate Change Canada also estimates reductions from other actions: Land Use, Land-Use Change and Forestry accounting at minus 28 and minus 31 Mt, and nature-based climate solutions at minus 12 Mt in both years.

3. Percentage reductions are relative to 2005, while scenario results are percent reductions in 2030 and 2035 compared to current policies; 2005 greenhouse gas emissions are 759 Mt CO_2e.
4. Updated from earlier version that used values from the 2023 Emissions Reduction Plan

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