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A roadmap to modernize Canada's large-emitter trading systems

Our 2024 Independent Assessment finds large-emitter trading systems are effective at reducing emissions and protecting competitiveness, but they need updates to deliver their full potential.

Large-emitter trading systems are Canada's most important climate policy. Research from the Canadian Climate Institute has shown that these systems are the country's leading driver of emissions reductions. They protect the competitiveness of heavy industry and help low-carbon projects attract investment.

These systems are powerful but they are not perfect. Canada's large-emitter trading systems would be more effective at protecting competitiveness and reducing emissions if they were modernized.

That is why the Canadian Climate Institute has conducted an independent assessment of carbon pricing focusing on large-emitter trading systems (LETS). The assessment evaluates the effectiveness and stringency of these systems, and considers their impact on the competitiveness of Canadian firms.

During more than a year of research, we conducted four rounds of consultation with the federal government and every province and territory, and received input from 16 independent experts. Our work builds on a previous assessment the Institute conducted in 2020-21 that fulfilled a commitment from the Pan-Canadian Framework on Clean Growth and Climate Change.

This summary report synthesizes the findings from the 2024 Independent Assessment and presents recommendations for strengthening LETS in Canada. We find that:

1. Large-emitter trading systems are effective at reducing emissions;
2. Systems are better aligned now compared to the past, thanks partly to the application of minimum national standards;
3. Large-emitter trading systems are protecting industrial competitiveness, as intended; yet
4. Systems lack transparency; and
5. Certain systems are at risk of losing effectiveness, so modernization—along lines recommended in this report—will help them deliver their full potential for attracting investment and reducing emissions.

BACKGROUND

Large-emitter trading systems in Canada

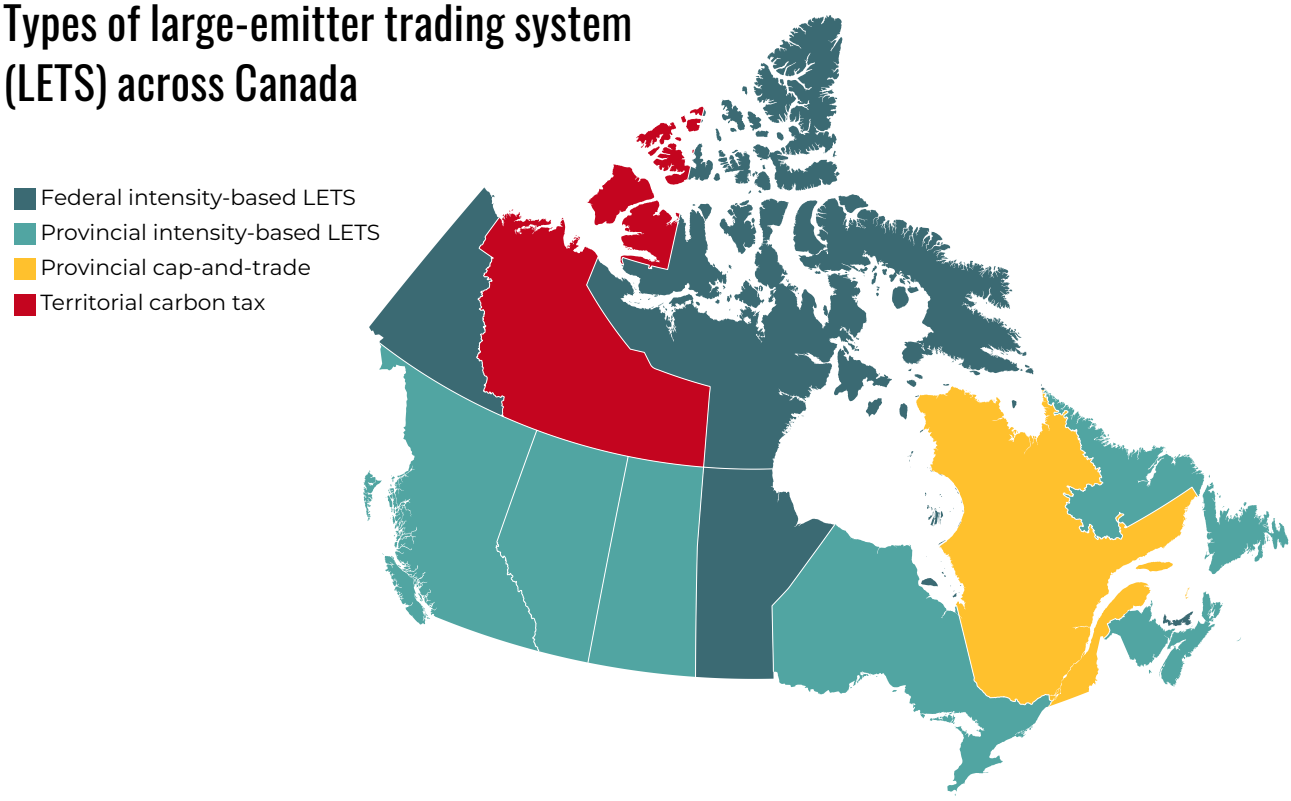
Every province and territory has a large-emitter trading system that creates incentives for industrial emitters to reduce emissions. However, they do not all have the same system. Each province and territory can choose whether to develop its own system or use the federal system, known as **the backstop**. Binding all these systems together is a set of minimum national standards, known as **the federal benchmark**. The result is a patchwork of federal, provincial, and territorial systems.

Large-emitter trading systems can be further classified into intensity-based systems and cap-and-trade systems, as shown in Figure A. Most of Canada's LETS are intensity-based systems; only Quebec has a cap-and-trade system while the Northwest Territories has a unique carbon tax system.

Broadly, LETS work by requiring facilities to pay for emissions that exceed a set threshold, generally known as a performance standard. Facilities that outperform the standard earn credits, while those that underperform must obtain credits to cover their excess emissions. Credits generate cash flow for emissions-reducing projects, and facilities have an incentive to reduce emissions as long as the credits are valuable.

Figure A:

Types of large-emitter trading system (LETS) across Canada



FINDINGS

Successes and challenges for large-emitter trading systems in Canada

The assessment team conducted in-depth reviews of large-emitter trading systems across Canada, verifying our research with federal, provincial, and territorial governments. Working with Navius Research, we used regionally differentiated economic, energy, and emissions modelling to examine the impacts of LETS in Canada under various scenarios. This is what we found:

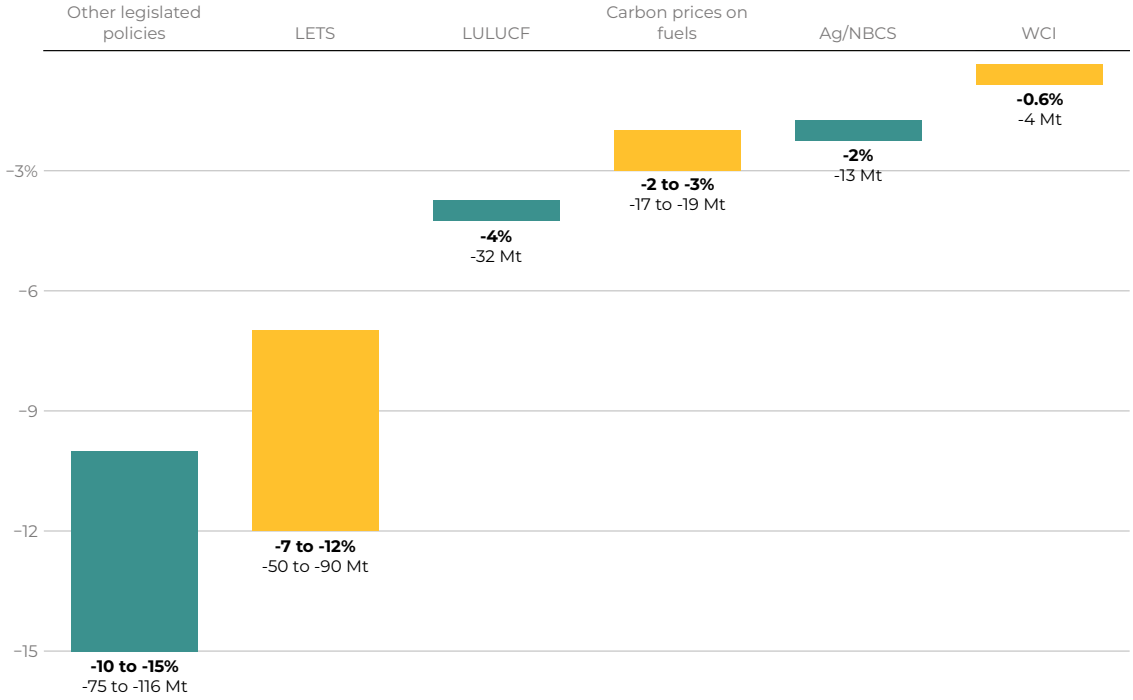
1. Large-emitter trading systems are effective

Previous research from the Canadian Climate Institute concluded that large-emitter trading systems are Canada's single most important emissions-reducing policy. This study presents updated modelling that reinforces our previous finding.

Figure B:

Canada's large-emitter trading systems will reduce more emissions in 2030 than any other single policy

Emissions reductions in the *legislated policies* scenario compared to a *no policy* scenario, by measure



Note: LETS stands for large-emitter trading system. LULUCF refers to an accounting contribution from Canada's projected land use, land-use change, and forestry emissions. Ag/NCBS refers to agricultural and nature-based climate solutions. WCI refers to emissions allowances imported to Quebec from California through the Western Climate Initiative carbon market.

Data provided by Navius Research.

2. Provincial and territorial systems are better aligned now compared to the past

The Institute's 2020 Independent Assessment pointed to many differences between systems that made them less effective and increased domestic competitiveness risks. By 2024, provincial and territorial governments had addressed many of these issues, making systems more effective. Systems now cover more similar kinds of emissions—and apply more aligned costs to emissions—than in the past. This is true even after accounting for the exemptions introduced by the federal government and some jurisdictions.

Minimum national standards—in the form of the federal government's benchmark—have played an important role in the harmonization of systems across the country. The federal benchmark is designed to give provinces and territories the flexibility to tailor systems to their own needs while ensuring that every region adheres to minimum national standards. The assessment indicates that the federal benchmark has helped bring Canada's many systems into closer alignment.

3. Large-emitter trading systems are protecting firms' competitiveness

Large-emitter trading systems have been designed to create incentives for reducing emissions while keeping costs for firms low. Specifically, LETS aim to avoid an outcome where facilities move their production to jurisdictions with weaker controls on emissions, a problem known as carbon leakage.

The Institute's assessment finds that LETS are broadly effective at addressing competitiveness concerns. On average, large emitters pay a small fraction of the carbon price for their emissions, roughly $10 per tonne on average in 2024, which is one-eighth the national carbon price. The assessment presents sales and profit tests that similarly show effective cost containment, with some sectors able to earn net returns, on average, from selling credits while others show only modest impacts on profitability.

Figure C:

Large emitters benefit from low average costs

Projected average costs under large-emitter trading systems in 2025, $ per tonne CO_2e

Note: The dots represent the emissions-weighted sectoral average cost across Canada. The electricity sector is shown as a negative average cost (meaning, net returns) only because of Alberta, which provides unique incentives for low-carbon electricity producers. The sectoral average cost for electricity producers in Alberta is so much lower than in other jurisdictions that it skews the national average into negative territory.

Data provided by Navius Research.

4. Large-emitter trading systems lack transparency

Large-emitter trading systems are complex, and that makes it even more important that they be transparent. Participants in carbon markets should be able to easily understand how the market functions and what prices it sets. The public should know how LETS work and what their effects are.

Yet Canada's LETS are opaque. Regulators publish more information than they once did, but there is still no public data about the prices set in credit markets, except for in Quebec. Many facilities are subject to confidential performance standards. Although the federal, provincial, and territorial governments helped and provided useful data for this assessment, the Institute's analysis was still restricted by confidentiality concerns. Greater transparency would improve the function of carbon markets, support the effectiveness of LETS, and contribute to better public debate.

5. Updates to large-emitter trading systems can ensure they deliver their full potential

Though large-emitter trading systems are effective, certain systems could be much less so by 2030 unless governments address the risk of credit oversupply.

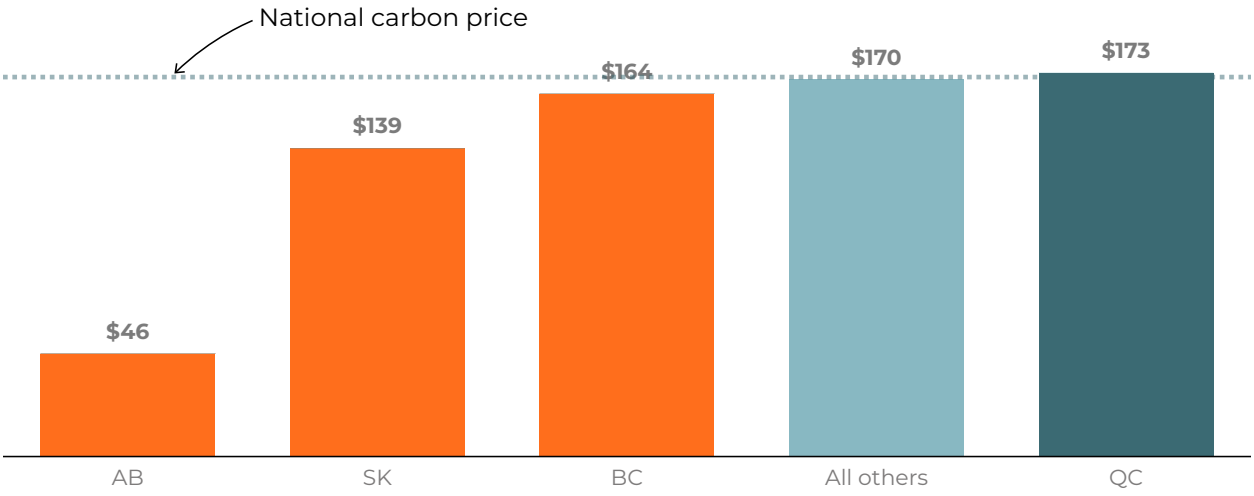
The assessment finds that LETS in three jurisdictions are at risk of developing an oversupply of credits, threatening to undermine the value of their credits—and the emissions reductions that they incentivize. Systems in other provinces are likewise very close to having unbalanced markets. The projected oversupply is driven by a combination of overly generous performance standards and interactions between climate policies.

Fortunately, these problems are fixable. This report recommends updates that can address this risk and deliver additional emissions reductions.

Figure D:

Credit prices in some large-emitter trading systems could collapse by 2030

Projected market value of credits in large-emitter trading systems in the *announced, less stringent policies* scenario, 2030



Data provided by Navius Research.

A roadmap for modernizing LETS RECOMMENDATIONS

The 2024 Independent Assessment primarily focused on evaluating the effectiveness of large-emitter trading systems. Our recommendations present a roadmap to modernize these systems so they deliver on their emissions-reduction potential while protecting the competitiveness of Canadian industries.

To remain effective and responsive to evolving conditions, LETS require regular updates and adjustments. Making these changes requires striking a balance in several areas. For example, while regional flexibility is important—allowing governments to tailor systems to local needs—national alignment is critical for fair competition, system resilience, and long-term effectiveness. Likewise, modernization encompasses both incremental and transformative improvements, but these improvements must be measured to provide certainty to firms and to respect regulatory and political constraints.

The following five recommendations aim to equip policy makers to enhance LETS in Canada by addressing oversupply risks, ensuring fair competition, facilitating pan-Canadian alignment, increasing transparency, and preparing for future challenges. The recommendations are largely intended for provinces and territories, which are the regulators of most LETS in Canada and are responsible for ensuring that the systems are working. Yet there is also an important role for the federal government, whose national standards have played an important part in aligning the country's diverse systems.

RECOMMENDATION 1:

Address the risk of credit market oversupply

The oversupply of credits projected in the assessment would undermine price signals, weakening the incentive to cut emissions and undercutting the returns for emissions-reducing projects. Even uncertainty about the risk of oversupply can weaken the price signal, and therefore the effectiveness, of LETS. A robust demand for credits is essential to drive emissions reductions and investment while minimizing long-term costs.

Actions:

a. **Tighten performance standards** in jurisdictions that face the greatest risk of oversupply. The strictness of performance standards is the primary lever available to regulators to manage oversupply. The exact quantity and focus of tightening would vary by jurisdiction. Regulators have worked hard to balance emissions reductions and cost containment, and this balance will remain critical when acting to reduce the risk of oversupply.

b. Conduct ongoing **net demand tests** to monitor market conditions and maintain a 10 per cent buffer of net demand. Net demand refers to the degree to which demand for credits exceeds their supply. The assessment finds that most LETS have net demand equal to less than 10 per cent of covered emissions, making them more vulnerable to oversupply if circumstances do not evolve as predicted.

c. Introduce **adaptive market stability mechanisms** that can provide more certainty about the quantity and price of credits in the market. These mechanisms could include price floors or adaptive credit withholding triggered by oversupply thresholds, which have been adopted by systems in Quebec, the EU, and the northeastern United States. Another option is to integrate partial **credit auctions** into intensity-based LETS. This approach could make it easier to identify the market value of tradeable credits, and net proceeds could be returned to firms to reduce competitiveness risks.

d. Monitor credit banking trends and **set limits on banking** where necessary to prevent excessive credit accumulation. Most LETS allow facilities to hold—or bank—excess credits for a given period, which they can use for future compliance, thereby reducing their costs. However, excessive banking could contribute to oversupply, and reasonable limits help to ensure long-term system integrity.

e. Review and refine **policy interactions** between federal, provincial, and territorial climate policies to enhance complementarity and eliminate inefficiencies. Policies can reinforce or undermine each other, and the assessment finds that some policies are interacting with LETS in counterproductive ways.

RECOMMENDATION 2:

Align sub-national systems to improve their effectiveness and ensure fair competition

There are still important design variations between—and even within—different LETS in Canada. These design variations can send inconsistent signals about the cost of carbon, distorting the market and undermining the reward for reducing emissions. Updates that send more consistent price signals and align the design features of different LETS will minimize competitive distortions and enhance system effectiveness.

Actions:

a. Implement the principle of **"one product, one standard."** Facilities that make the same product are often subject to individually tailored performance standards rather than a common, sector-wide standard. The lack of a common standard can undermine the price signal, since it shields more emissions-intense facilities from competing directly with high performers. "One product, one standard" would phase in sector-wide performance standards, starting with new facilities to ensure that these are built for high performance. There could be a phase-in for existing facilities as needed, being mindful of large variations in emissions intensity and hence cost impacts across firms.

b. Reduce regional variation in costs by harmonizing **tightening rates** federally and provincially. Performance standards tighten—become stricter—over time but the rate at which this happens currently varies widely by region, so facilities face misaligned costs. Regulators could develop a pathway to gradually adopt harmonized rates.

c. Mandate that all facilities emitting **10 kilotonnes or more per year** participate in large-emitter trading systems. Currently, regions set different requirements that qualify which facilities count as large emitters, with some regions obliging only very large facilities to participate. Standardizing these requirements and setting a lower threshold would help harmonize costs, and would also support the liquidity of these markets. To ensure that the price signal incentivizes long-term reductions, participation in LETS should be permanent, regardless of future emissions levels.

d. Expand coverage to **indirect emissions** from electricity, heat, and hydrogen use, leveraging best practices from Alberta and Quebec. All else being equal, broader coverage leads to more effective systems.

e. Decouple **revenue recycling** from compliance payments. Different regions take their own approaches to using revenues from LETS, which is appropriate. However, some systems allow individual firms to recoup all of their carbon costs under certain conditions. This approach at least partly negates the signal to reduce emissions. Decoupling revenue recycling from emissions would preserve price signal integrity, encourage market liquidity, and avoid perverse incentives.

RECOMMENDATION 3:

Facilitate pan-Canadian alignment for credit trading

Canada has more than a half-dozen trading markets for LETS credits. Fragmented markets have higher compliance costs and are less competitive. A harmonized, integrated approach across jurisdictions can reduce costs and improve system functionality.

Actions:

a. Establish an **intergovernmental harmonization process** to align design features such as performance standards, credit and offset standards, and market oversight.

b. Prepare for **linked trading systems** by creating fungible credit standards that are additional, reliable, and consistent across jurisdictions. Linked trade would lead to fairer competition and would also help contain costs.

c. Introduce measures to enhance market liquidity, including **developing secondary markets**, to support efficient credit trading. Only some LETS have secondary markets enabling non-regulated entities to participate in trading, which help reduce compliance costs and increase the liquidity of the systems.

RECOMMENDATION 4:

Enhance system transparency

Greater transparency builds trust and supports efficient price discovery, which refers to the process whereby firms determine or 'discover' the market value of credits within the trading system. Better transparency also improves public and stakeholder confidence in LETS.

Actions:

a. Mandate the **disclosure of settlement prices** for bought and sold credits, with the routine publication of aggregated data to enhance market transparency while protecting confidentiality. The prices in credit markets should be public wherever reasonably possible. This will help participants better navigate the systems and regulators to manage them.

b. Publish **facility-level covered emissions and compliance obligations**, following practices in the EU Emissions Trading System and the Regional Greenhouse Gas Initiative system in the northeastern United States. Transparently indicating how many emissions from each facility are covered by each system and how many emissions allowances are owed to comply would enhance effectiveness and accountability. Facility-level compliance obligations are kept confidential in Canada but our trading partners routinely publish this information, and no adverse competitiveness impacts have been observed.

c. Issue **market performance and compliance reports**, including liquidity indicators, market concentration metrics, covered emissions, credits created, surrendered, and banked, as well as offset and payment use. Regulators have recently started publishing additional information, but there remain many unknowns in all systems.

d. Conduct and publish **sectoral leakage risk assessments** to help justify the cost containment measures inherent in LETS. Performance standards are the main cost containment measure, and they are set or adjusted based on competitiveness risk assessments. These assessments are opaque and largely private to preserve confidentiality. It is not necessary to publish commercially sensitive information but sector-level reports would help justify the protective measures adopted in LETS.

e. Develop a **centralized, publicly accessible registry** to compile reporting, providing a unified, accessible source for emissions and compliance data.

RECOMMENDATION 5:

Prepare for future challenges

LETS must integrate with broader climate and industrial policies to drive transformational change and prepare for emerging global trade measures.

Actions:

a. Prepare for **carbon tariffs** by developing transparent, sector-specific metrics and aligning them with international border carbon adjustment frameworks. Canada's trading partners—including the EU, the United Kingdom, and potentially the United States—are implementing or exploring border carbon adjustments that could expose Canadian firms to tariffs unless they can show that their emissions are already priced. LETS can shield firms from these tariffs where they have been adopted.

b. Initiate a process to **determine average costs (or effective prices paid), the basis on which penalties are levied**, in preparation for trade mechanisms such as the EU's Carbon Border Adjustment Mechanism, ensuring competitiveness and avoiding trade penalties. The variation in carbon costs across Canada may make it harder for facilities to avoid unfair carbon duties. Clarifying the actual costs paid will make it easier.

c. Provide **advance notice of at least five years** for post-2030 price adjustments to give businesses and investors the certainty needed to plan long-term decarbonization strategies.

d. Align LETSs with **sector-specific industrial policies**, ensuring a coordinated policy approach. Climate policies are only one of the many categories of measures being used to support the competitiveness of Canadian industries. The better aligned these policies are, the more effective they will be.

CONCLUSION

Large-emitter trading systems are working. The Canadian Climate Institute's 2024 Independent Assessment finds that LETS are reducing emissions, protecting the competitiveness of Canadian industry, and working more cohesively than in the past. Yet LETS in Canada would also benefit from modernization. The recommendations outlined in this report aim to support regulators as they retool their systems so that LETS can continue delivering economic and emissions benefits for the long term.

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