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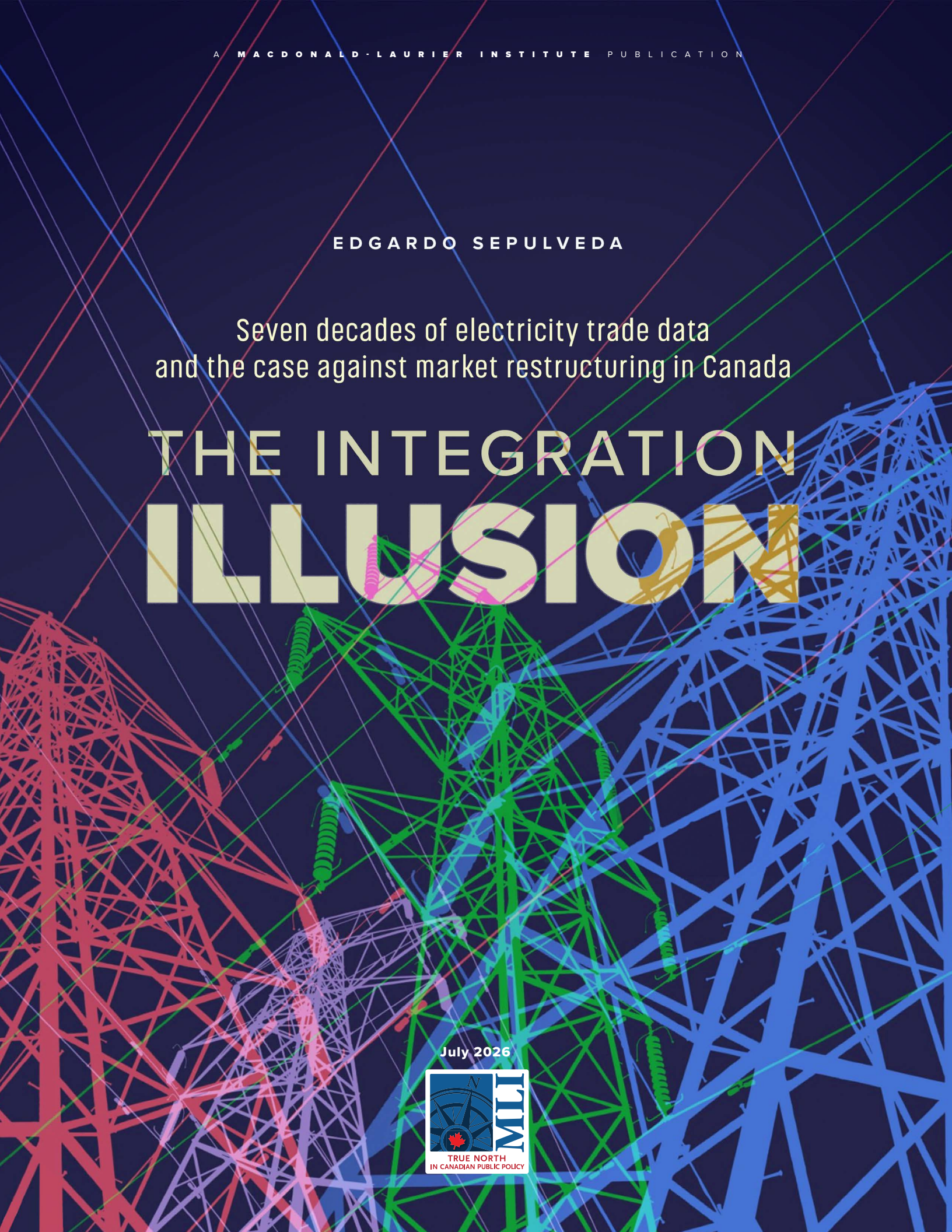
EDGARDO SEPULVEDA

Seven decades of electricity trade data
and the case against market restructuring in Canada

THE INTEGRATION ILLUSION



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List of abbreviations

CAE	Canadian Academy of Engineering
CEAC	Canada Electricity Advisory Council
CER	Canada Energy Regulator
CPAC	Cable Public Affairs Channel
CPI	Consumer Price Index
EDAM	Extended Day-Ahead Market
FERC	Federal Energy Regulatory Commission [US]
HOEP	Hourly Ontario Energy Price
IESO	Independent Electricity System Operator [Ontario]
IRC	Independent Review Committee [Churchill River]
ISO	Independent System Operator
ISO-NE	Independent System Operator – New England
MISO	Midcontinent Independent System Operator
MLI	Macdonald-Laurier Institute
MOU	Memorandum of Understanding
MWh	Megawatt-hour
NARIS	North American Renewable Integration Study
NRCan	Natural Resources Canada [Ministry of]
NREL	National Renewable Energy Laboratory [US]
OPG	Ontario Power Generation
PJM	PJM (Pennsylvania-New Jersey-Maryland) Interconnection
SCC	Supreme Court of Canada
SPP	Southwest Power Pool
WEIM	Western Energy Imbalance Market

Executive summary | *sommaire*

In May 2026, the federal government published *Powering Canada Strong: A National Strategy for an Electrified Canadian Economy*, casting electricity as the backbone of Canada's economic sovereignty, industrial competitiveness, and climate ambition.

At the centre of the strategy sits a familiar and increasingly enticing idea: that Canada must become more electrically "integrated," with provincial utilities more tightly connected both physically, through interties, as well as economically.

It is certainly an appealing vision – clean, unified, and modern. But its apparent coherence conceals a deeper problem: it rests on a misunderstanding of how Canada's electricity system works, and what has made it successful.

Calls for increased integration have been gaining traction across policy circles and environmental groups, often framed as a necessary complement to wind and solar expansion. The logic is based on two mutually reinforcing beliefs: first, that Canada trades too little electricity East–West relative to North–South; and second, that the lack of greater integration is costing Canadians "billions of dollars in annual cost savings" that the federal strategy claims greater integration would deliver.

But that claim depends on highly stylized models that assume that provincial utilities will be unbundled and their transmission and distribution components separated into distinct companies.

Certainly, Canada would benefit from increased interprovincial and US trade and greater transmission. However, neither requires full market restructuring. In fact, evidence from jurisdictions that have attempted this type of dramatic restructuring reveals major downsides, including large upfront transition costs and significant price increases for consumers.

A new first-in-Canada author-compiled database of the volumes, revenues, and prices of interprovincial and US electricity trade over the last seven decades yields two key findings:

- The claim that Canada trades too little electricity East–West is not borne out by the data. Interprovincial trade volumes have exceeded US export volumes in most years since 1955.

- More consequential for policy, certain provinces – Quebec, British Columbia, and Manitoba particularly – built systems that let them export power, including to other provinces, for more than they pay for their imports. Those margins are the return on their public investment. Those three provinces used their export earnings to lower domestic rates, contributing to those provinces having the three lowest system costs in the country in 2023.

These export earnings exist because the three provinces kept control of their electricity systems and chose not to restructure them. If the market were fully restructured, those earnings would likely shrink, because export prices would converge around a common market price, reducing province-by-province spreads. These provinces would most certainly resist any federal move that would reverse a deliberate, decades-long policy choice that continues to pay off for their residents.

Utilities that have been required by provincial or state legislation to restructure — such as Alberta and Ontario in Canada, and about a dozen-and-a-half US states — have lost control over whether and how they trade, with negative consumer price consequences.

The Canadian electricity system is, as a whole, one of the most successful in the world. It has low average prices, high reliability, near-universal access, and a comparatively clean generation mix, built largely by regulated, vertically integrated utilities under public ownership.

The empirical record from jurisdictions that have actually restructured shows the folly of such radical change. Following the lessons learned from them, it is clear that the federal government should indeed pursue more trade and greater transmission – but forcing full market restructuring to create a national grid would be the wrong move.

This case against restructuring is not an argument for federal inaction. Jurisdiction over electricity rests primarily with the provinces and territories, but Ottawa still has a constructive role to play by accelerating transmission corridors.

The federal government must resist the temptation to impose its will – for which it has uncertain authority anyway. It can advance the increased trade and transmission that *Powering Canada Strong* seeks while leaving intact the very foundations of our successful electricity system, which rests on provincial grids. MLI

En mai 2026, *le gouvernement fédéral a publié « Propulser un Canada fort : Une stratégie nationale pour une économie canadienne électrifiée », pilier de sa souveraineté économique, de sa compétitivité industrielle et de ses ambitions climatiques.*

Au cœur de cette stratégie se trouve une notion familière de plus en plus séduisante, à savoir que le Canada doit devenir plus électriquement « intégré » grâce à des liens étroits entre les services provinciaux, sur le plan matériel comme économique.

La vision est certainement attrayante – propre, unifiée et moderne. Pourtant, son apparente cohérence dissimule un problème plus profond : une mauvaise compréhension du système canadien et de ses facteurs de réussite.

Les appels en faveur de l'intégration, souvent présentée comme un complément nécessaire au développement éolien et solaire, gagnent en popularité dans les milieux politiques et environnementaux. Deux convictions se renforcent : premièrement, les échanges est-ouest seraient minimes par rapport aux échanges nord-sud ; et, deuxièmement, le manque d'intégration coûterait aux Canadiens « des milliards de dollars d'économies annuelles » que la stratégie fédérale permettrait de récupérer.

Cependant, ces affirmations reposent sur des modèles hautement stylisés qui supposent le dégroupage des services publics en vue d'assurer la constitution de sociétés distinctes pour les transports et la distribution.

Le Canada bénéficierait d'un nombre accru de corridors de transport et d'échanges interprovinciaux et transfrontaliers. Cependant, ni l'une ni l'autre de ces solutions n'exige une restructuration complète du marché. En réalité, les expériences radicales passées ont entraîné des inconvénients majeurs, notamment en coûts de transition initiaux et en tarifs.

Une base de données inédite au Canada, compilée par l'auteur, sur les volumes, les recettes et les prix des échanges interprovinciaux et transfrontaliers au cours des sept dernières décennies, révèle deux conclusions majeures :

- *Les données ne soutiennent pas l'idée d'un commerce est-ouest insuffisant. Depuis 1955, les échanges entre provinces ont généralement dépassé les volumes vers les États-Unis.*
- *Sur le plan politique, certaines provinces – notamment le Québec, la Colombie-Britannique et le Manitoba – ont établi des systèmes leur permettant d'exporter l'électricité, y compris vers d'autres provinces, à un tarif supérieur à celui qu'elles paient pour leurs importations : on appelle ces marges le rendement de l'investissement public. Ces trois provinces ont pu réduire les tarifs intérieurs grâce à ces recettes, contribuant ainsi aux coûts de réseau les plus bas du pays en 2023.*

Ces recettes d'exportation existent grâce au fait que ces trois provinces ont conservé le contrôle de leurs systèmes et ont choisi de ne pas les restructurer. Une restructuration totale du marché pourrait réduire les recettes, car les prix à l'exportation convergeraient vers un seul, réduisant les écarts entre provinces. Ces trois provinces

s'opposeraient sûrement à toute initiative fédérale modifiant un choix politique ancien toujours bénéfique pour leurs citoyens.

Les sociétés de services publics légalement tenues de se restructurer, comme en Alberta et en Ontario ou, encore, dans une quinzaine d'États américains, ont perdu leur pouvoir sur leurs échanges et les modalités afférentes, avec des conséquences négatives sur les prix à la consommation.

Le système électrique canadien est, dans l'ensemble, l'un des meilleurs au monde : bas prix moyen, grande fiabilité, accès quasi universel et production propre, en grande partie grâce à des services réglementés, verticalement intégrés et publics.

Les exemples de restructurations réalisées par diverses administrations démontrent l'absurdité d'une transformation radicale. Après ces expériences, il est manifeste que le gouvernement fédéral doit effectivement favoriser les échanges et les corridors de transport. Il serait cependant erroné de restructurer entièrement le marché pour créer un réseau national.

Cet argument contre la restructuration ne signifie pas pour autant que le gouvernement fédéral doive demeurer passif. Bien que les compétences en matière d'électricité relèvent principalement des provinces et des territoires, Ottawa peut tout de même jouer un rôle constructif en facilitant la création rapide de corridors de transport.

Le gouvernement fédéral doit résister à la tentation d'imposer sa volonté – car son pouvoir est sujet à caution de toute façon. Il peut renforcer les échanges et le transport d'électricité que le plan « Propulser un Canada fort » prévoit, tout en préservant les bases mêmes de notre système électrique performant, qui dépend des réseaux provinciaux. **MLI**

Introduction

In May 2026, the federal government published *Powering Canada Strong: A National Strategy for an Electrified Canadian Economy* (NRCan 2026). *Powering Canada Strong* frames electricity as central to Canada's economic sovereignty, industrial competitiveness, and climate commitments. It proposes a number of avenues by which Canada can meet these challenges; greater regional electricity integration is one of them.

Electricity integration is how and the degree to which different provincial utilities are connected to each other physically and economically. There is a physical element, referring to the number and size of interprovincial transmission infrastructure, and an economic element, which is the focus of this report. The economic element refers to the mechanisms under which electricity is traded, including how much and at what price. This report provides a quantitative and analytical assessment of the economic integration issue. Whether or not more integration is a good idea is a question that has been floating in policy circles for at least 15 years (CAE 2009). It has recently gained more advocates (CEAC 2024; NRCan 2025; Nathwani et al. 2025; Shaffer 2025), including from environmental organizations who claim that expanded integration is essential to add wind and solar generation (David Suzuki Foundation 2025; Gorski, Jeyakumar, and Williams 2021; Harland 2025). More recent advocates include the eight provinces and two territories that signed a memorandum of understanding (MOU) in March 2026 to advance new interconnections and increase electricity trade, which we refer to as the March 2026 Interprovincial MOU (Ontario 2026). Although the federal government's *Powering Canada Strong* strategy is the occasion for this report, the integration question is a long-standing one that will continue to animate policy discussions, and the report was prepared to address those future debates well beyond the current strategy.

The argument for increased integration takes two mutually reinforcing forms: first, that Canada trades too little electricity East–West relative to

North–South – a claim that this report shows to be factually incorrect; and second, that the lack of greater integration is costing Canadians. This is a claim that rests on assertions or simulation models that assume restructuring, i.e., the unbundling of provincial utilities.[1] This report focuses on the market side of the integration question, leaving to others matters that are not related to the market, including grid-planning, shared resource adequacy standards, and joint transmission planning (e.g., Nathwani et al. 2025; McPherson 2025), as well as the technical, land barrier, and cost-benefit considerations of increased transmission (e.g., CAE 2014; E3 2022; McGrath 2026).

There is a spectrum of economic integration. That spectrum is defined by how much of a utility's product clears at a market-set price (i.e., the price where supply and demand balance) rather than at negotiated prices, and by whether or not the utility remains regulated and vertically integrated (i.e., the utility controls the entire supply chain). At one end is the situation that currently holds for most of the provinces and many of the US states: vertically integrated utilities serve their area under regulated prices and generally trade outside any central market. They retain agency over whether and when to trade and, depending on whether they sell into a separate market or to another regulated utility, the terms of that trade. We refer to this as the Regulated Without Restructuring model. In the middle are vertically integrated utilities that continue to be price-regulated for all or some of the home supply but voluntarily join a market that clears some of their home supply and trade at a single clearing price, while remaining vertically integrated. How much of a utility's electricity is priced at the market's single clearing price varies. At one end, only the short-run trade imbalance clears at that price, as in the Western Energy Imbalance Market (WEIM) and the Extended Day-Ahead Market (EDAM), in which BC Hydro participates. At the other end, a larger part of the utility's operations clears at the market price – including some of its home supply, not just its trade – as in the Southwest Power Pool (SPP) and most of the Midcontinent Independent System Operator (MISO), in which Manitoba Hydro participates. We refer to this case of shallow integration as the Some Markets Without Restructuring model. At the far end are utilities that have been required by provincial or state legislation to restructure: the legislation ends price regulation, so that prices are no longer set administratively but by the market's single clearing price, and remove the utility's agency over whether and how to trade. This is the situation in Alberta and Ontario in Canada and

in about a dozen-and-a-half US states that restructured their utilities and now clear all trade through a single clearing price – New York, Texas, California, and the restructured states that participate in multi-state independent system operators (ISO) (MacKay and Mercadal 2026). We refer to this deep integration case as Full Market Restructuring, which is usually associated with the creation of a national grid.

What *Powering Canada Strong* does not make plain is the distinction between the call for more trade and the mechanisms by which more trade might be achieved. The diagnosis, set out in its Section 2.4 under the provocative title "Electricity 'Islands' and the Need for Greater Regional Integration," leans toward the restructured end of the spectrum. It asserts that the provinces trade too little in an East–West direction and forgo the cost savings that greater integration is said to deliver. Many of the studies it draws on to make that case presuppose Full Market Restructuring. Yet by the strategy's Section 4, "Areas for Action," the actions the federal strategy actually proposes stay at the regulated end: modest non-market reforms that leave matters of provincial jurisdiction inside their borders untouched.

This report supports increased trade and greater transmission but argues that neither requires Full Market Restructuring, which would have large upfront costs and which the literature has shown would adversely affect consumer prices. Drawing on a first-in-Canada author-compiled database of the volumes, revenues, and prices of interprovincial and US electricity trade over the last seven decades, we examine the trading volume and terms of trade of Quebec, British Columbia, Manitoba, Ontario and Newfoundland and Labrador. By terms of trade we mean the trade-related advantage a province gains from selling exports for more than it pays for imports. That is separate from any production-related advantage a province gains from exporting at prices above its own generation cost. Regardless of the mechanism, this report argues that the provinces should maintain control of whether, when, and at what price to trade. Next, we set out the case against Full Market Restructuring, followed by our conclusions. The Appendix presents data for the remaining provinces, Nova Scotia, PEI, New Brunswick, Saskatchewan, and Alberta.

The structure of Canada's electricity trade

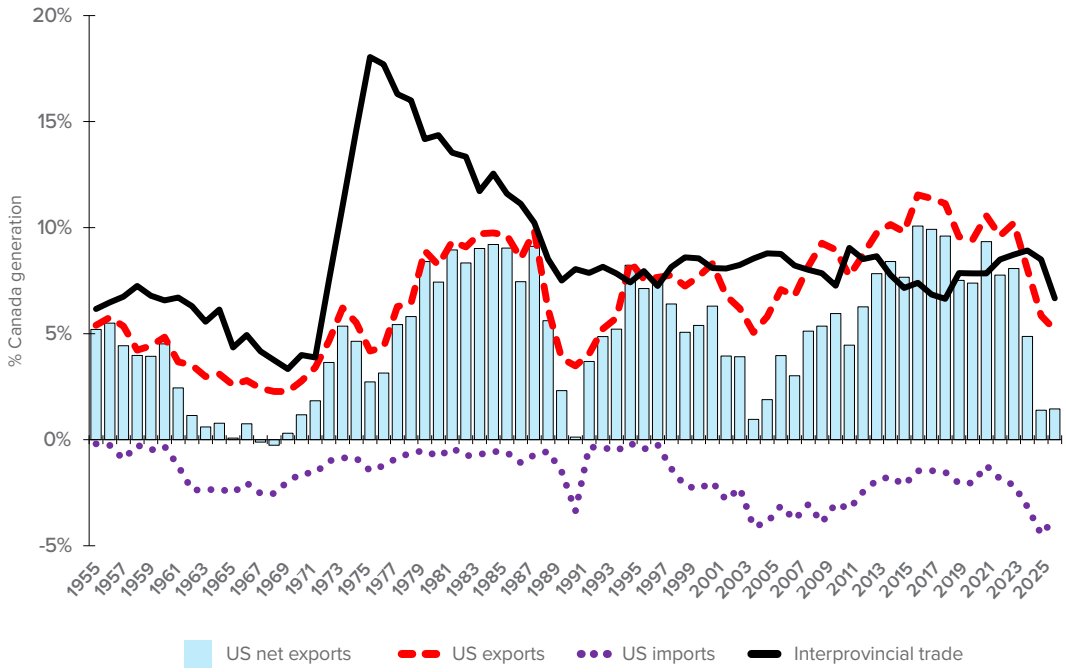
This section presents a first-in-Canada, author-compiled database of seven decades of volumes, revenues, and prices of interprovincial and US electricity trade. It begins with the aggregate picture and then disaggregates that picture province by province, which is where the real structure of Canadian electricity trade becomes apparent. Two findings emerge. The first speaks directly to the arguments for integration: it shows why the claim that Canada trades too little electricity East-West relative to North-South is not supported by the record. The second is more consequential for policy: certain provinces have, over decades and at considerable public expense, constructed and maintained positive terms of trade that directly benefit their provincial governments and residents. Those provinces are unlikely to give those up voluntarily to conform to federal initiatives to promote more trade through restructuring to create a national grid.

The aggregate record

The first of the two integration arguments set out previously is that Canada trades too little electricity East–West relative to North–South. **Figure 1** presents the full seven-decade picture and does not bear this out: interprovincial trade volumes have exceeded US export volumes in most years since 1955. Canada's trade surplus narrowed when US generation build-out was taking place rapidly, and widened after major Canadian projects were commissioned, most notably Churchill Falls in the early 1970s. The long record clearly shows that Canada is not the dependent partner in North–South electricity trade.

The record of trade volumes highlights the significance of the Churchill Falls generating station, built by Hydro-Québec in Labrador under a 65-year contract signed with Newfoundland and Labrador in 1969. The steep rise in interprovincial trade volumes in the early-to-mid 1970s coincides precisely with the commissioning of the project. The contract has proven durable, if highly contentious[2]; Newfoundland and Labrador twice failed to overturn it at the Supreme Court of Canada (*Reference re Upper Churchill Water Rights Reversion Act, [1984] 1 S.C.R. 297*; *Churchill Falls (Labrador) Corp. v. Hydro-Québec* 2018 SCC 46). It is now the subject of an MOU, signed in 2024, that would revise the negotiated pricing of these exports (Newfoundland and Labrador 2024). However, the status of the Churchill Falls MOU has been put

FIGURE 1: Interprovincial and US electricity trade volumes

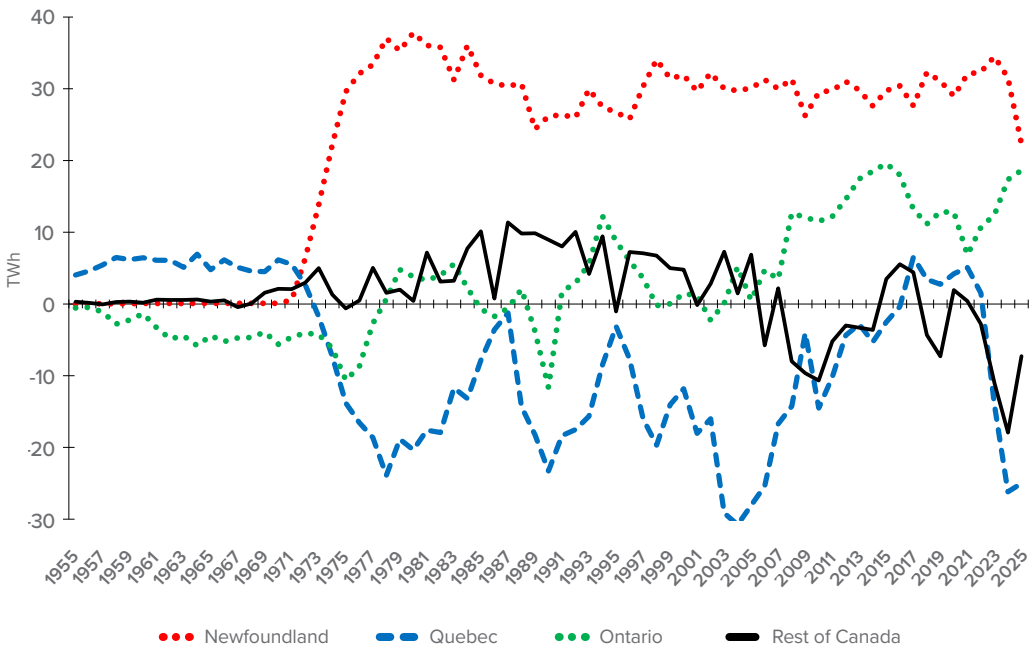


Sources: CER (2026), Statistics Canada (2008, 2026a-f), and author's calculations.

into question as a result of a report released in May 2026 by an independent review committee commissioned by the newly elected Newfoundland and Labrador government (IRC 2026). It concluded that the terms of the MOU were not in the province's interest. Given this history, it is perhaps not surprising that Quebec and Newfoundland were the only two provinces that were not signatories to the March 2026 Interprovincial MOU, in spite of their trade accounting for fully two-thirds of all interprovincial trade. Regardless, what the Churchill Falls MOU signals is that trade between these two provinces will remain a matter negotiated between them, and not subject to federal oversight or jurisdiction.

At the provincial level, **Figure 2** shows net trade data (exports minus imports, including combined interprovincial and US trade) for the three largest electricity trading provinces, and the remaining provinces as a group. Newfoundland and Labrador is the largest net exporter across the full period; its position is built on the Churchill Falls output that is transferred to Quebec. Ontario shifts from being a net importer to a net exporter following the commissioning of the Darlington Nuclear Generating Station and gas generation assets in the

FIGURE 2: Combined net export volumes by selected provinces



Sources: CER (2026), Statistics Canada (2008, 2026a-f), and author's calculations.

early 1990s. Quebec, despite being the dominant interprovincial reseller, is a net importer for most of the post-1973 period, absorbing large Churchill Falls volumes. The remaining provinces are modest net exporters across most of the period. The Canadian electricity system is not a set of isolated provincial islands of roughly equal standing – it is a structured system with persistent exporters, persistent importers, and one dominant intermediary.

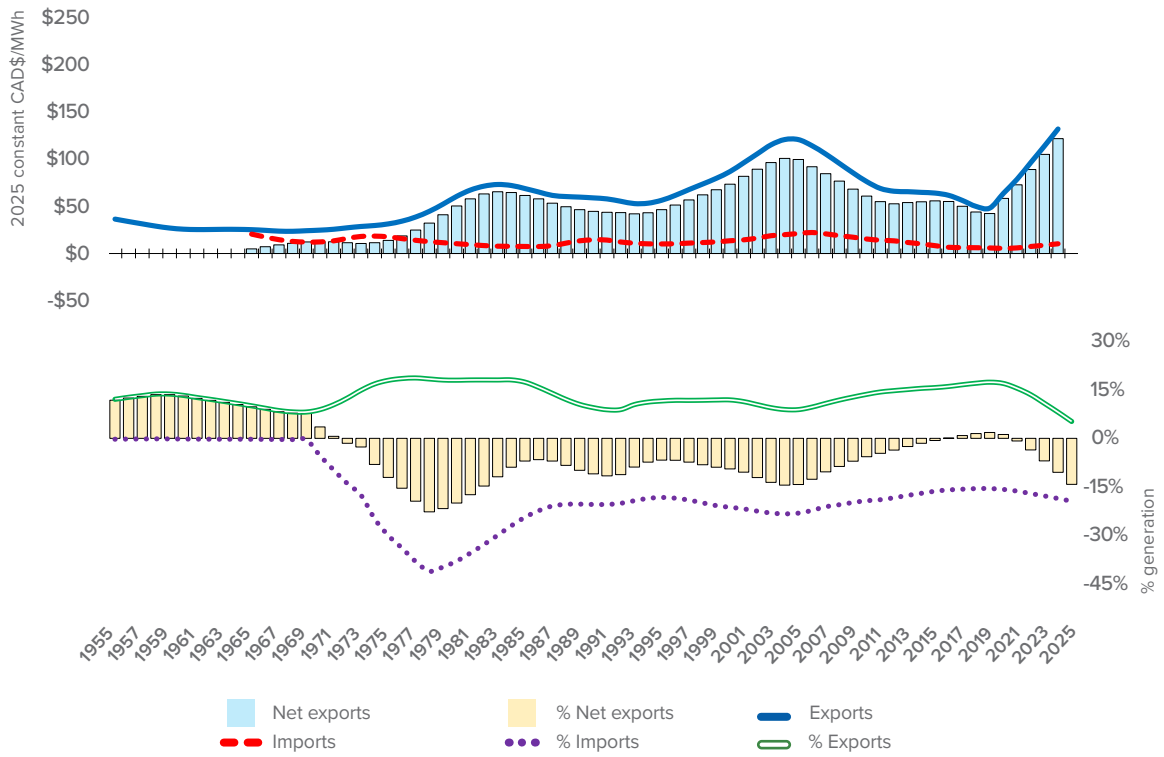
The provincial record

The figures in this section track the combined (interprovincial and US) export and import prices and volumes for the five largest trading provinces: Quebec, Newfoundland and Labrador, Ontario, Manitoba, and British Columbia. The spread between export and import prices – the "terms of trade" – determines the extent to which trade is advantageous from a price perspective. A positive spread means the province exports at higher prices than it imports; a negative spread means the reverse. The size of any advantage or disadvantage depends not only on the price spread but on the volume of trade: a province can run a positive price spread on thin volumes and be a minor beneficiary, while a province with large volumes and a negative spread accumulates a significant

terms-of-trade loss over time. As noted in the introduction, this trade-related spread is separate from any production-related advantage a province gains by exporting above its own generation cost. If positive, both these margins can contribute to export earnings used to decrease internal prices. The Appendix presents the other smaller provinces or those that trade relatively less (Nova Scotia, PEI, New Brunswick, Saskatchewan, and Alberta).

We start the provincial series with Quebec, the province with the largest generation. As **Figure 3** details, the trade picture for Quebec is dramatically different before and after Churchill Falls. From 1955 to the early 1970s Quebec was a net exporter based on its own generation, and had virtually no imports. Churchill Falls changed that, with electricity imports jumping to about 44 per cent of generation by 1978. Since 1973, imports have averaged 23 per cent of the province's own generation. Exports, mostly to the US but also to New Brunswick and Ontario, also increased, but by less than its imports. Exports averaged 14 per cent over the 1973–2025 period, so that net exports averaged -9 per cent. Quebec has mostly been a net importer of electricity since the early 1970s.

FIGURE 3: Export and import prices and volumes (US and interprovincial): Quebec

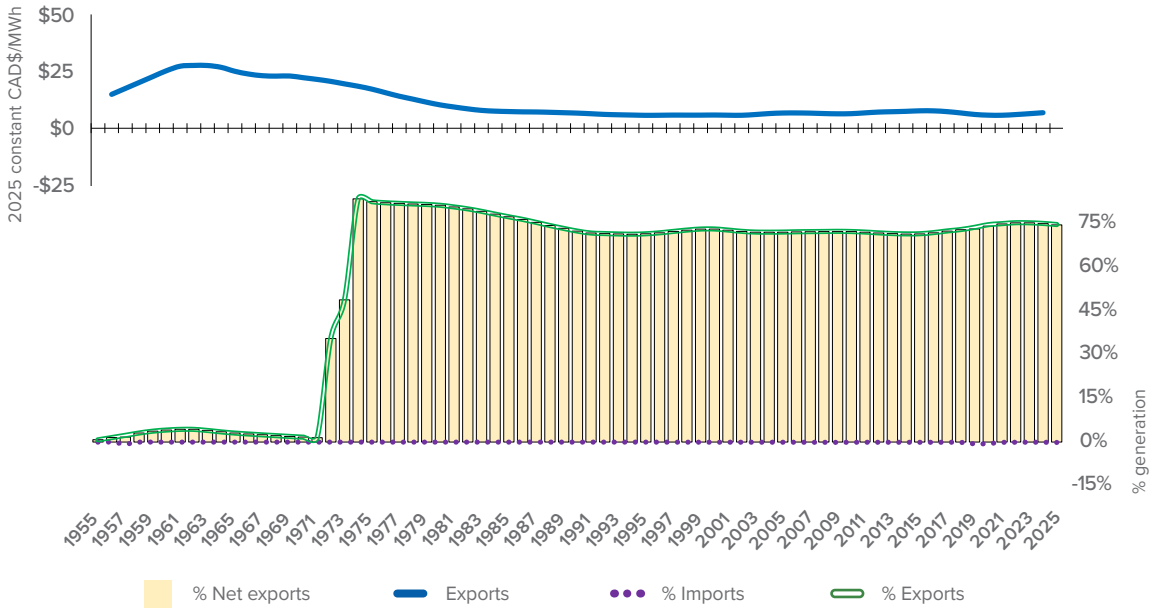


Sources: CER (2026), Statistics Canada (2008, 2026a-f), and author's calculations. All series smoothed using LOESS (FRAC=0.12, IT=3).

On the price side, Quebec enjoyed an average export-import price premium from 1979 to 2024 of $65/MWh,[3] the largest of any province. This premium is driven not by exports, but by imports – given that it has been a net importer since the early 1970s, Quebec is an example of a trade-related price advantage, rather than one based on its production cost. Quebec's export prices averaged $77/MWh over the same period, below the $102/MWh of New Brunswick or $87/MWh of British Columbia. But Quebec's advantage was that, as a result of the Churchill Falls agreement, it paid just $12/MWh for imports during that period, compared to the $86/MWh New Brunswick paid for imports, or the $49/MWh that British Columbia paid for imports. One result of this price premium has been that electricity prices in Quebec have been relatively low. As is the case in Manitoba and BC, Quebec uses the corresponding profits to reduce domestic retail rates (Hydro-Québec 2025).

Figure 4 shows that just as the Churchill Falls project was a relatively significant source of imports for Quebec, it was a relatively very large proportion of exports for Newfoundland and Labrador. In effect, Newfoundland exported an average of 74 per cent of the electricity it produced from 1973 to 2025. During that period, it had virtually no imports; trade was essentially one way, which is why **Figure 4** shows no import prices; with negligible import volumes,

FIGURE 4: Export and import prices and volumes (US & interprovincial): Newfoundland and Labrador



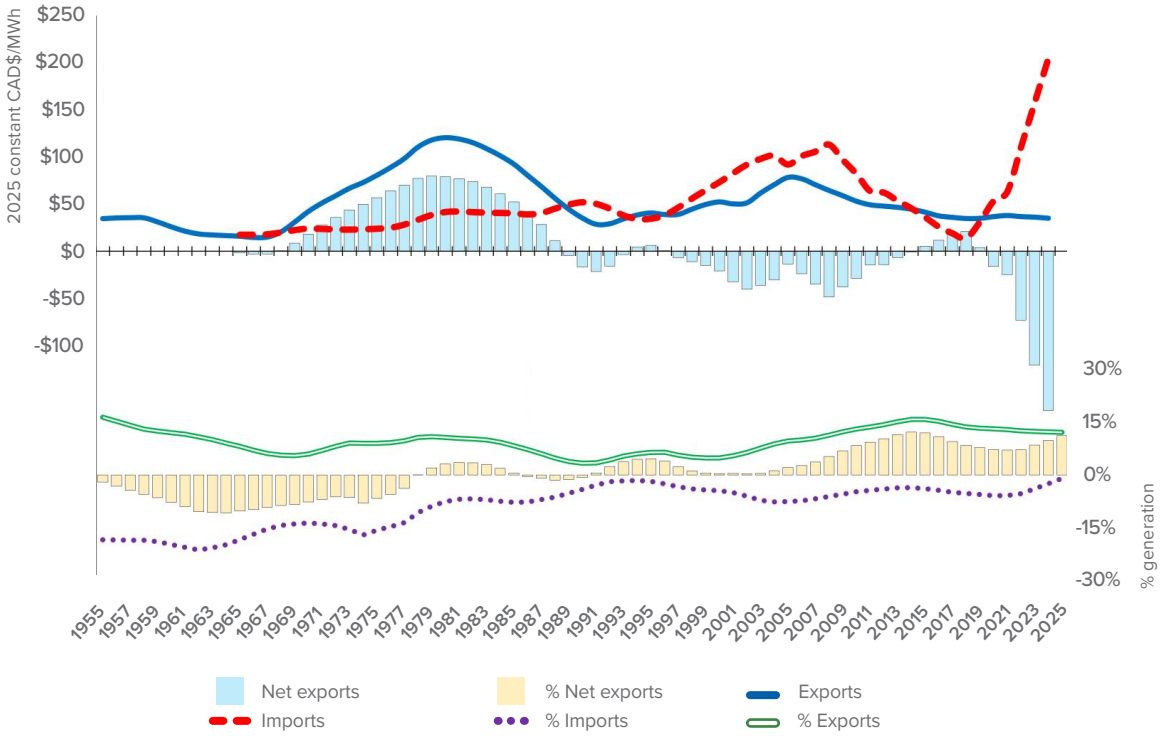
Sources: CER (2026), Statistics Canada (2008, 2026a-f), and author's calculations. All series smoothed using LOESS (FRAC=0.12, IT=3).

any computed price would be highly variable and effectively meaningless. In the same period, export prices averaged $8/MWh.

Figure 5 shows how Ontario went from being a net importer for the first half of the seven-decade period to a net exporter in the second half. When the Darlington Nuclear Power Plant and gas assets came on-stream in the early 1990s, Ontario reduced its electricity imports from Quebec and eliminated the structural electricity deficit that had averaged -5 per cent of generation from 1955 to 1990. From 1991 to 2025 it ran a structural surplus, averaging 6 per cent of generation.

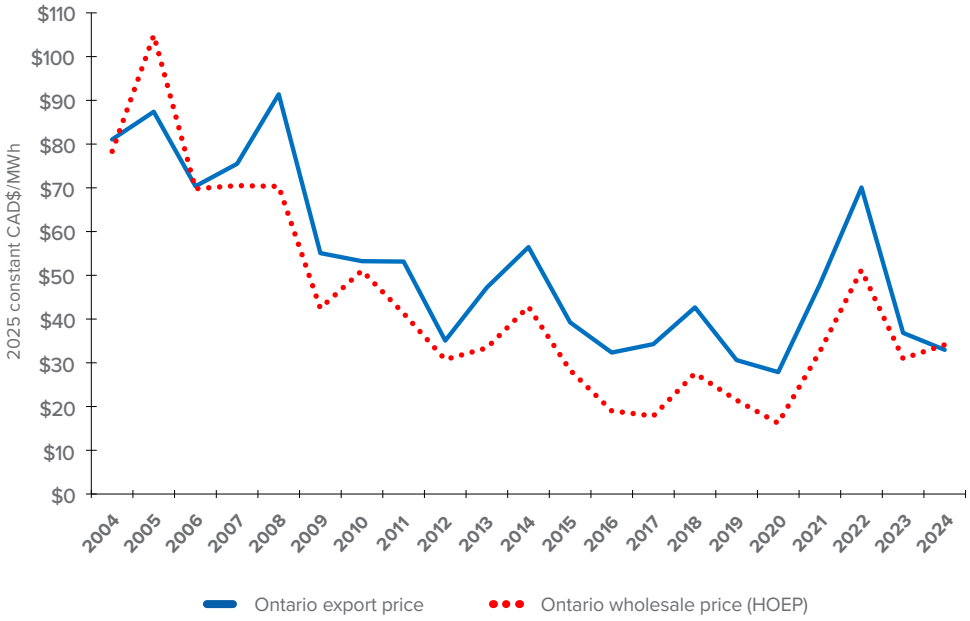
During the 1965 to 1988 period Ontario enjoyed a price premium that averaged $42/MWh. That flipped into negative terms of trade from 1989 to 2024 (-$26/MWh) due to higher import prices ($73 versus $30/MWh) and lower export prices ($47 versus $72/MWh). Those export prices were among the lowest of any of the large trading provinces reviewed in this section during the 1989–2024 period. Quebec had an electricity export price of $80/MWh, Manitoba of $61/MWh, and British Columbia of $95/MWh. As discussed, only Newfoundland and Labrador had a lower export price.

FIGURE 5: Export and import prices and volumes (US and interprovincial): Ontario



Sources: CER (2026), Statistics Canada (2008, 2026a-f), and author's calculations. All series smoothed using LOESS (FRAC=0.10, IT=3).

FIGURE 6: Export (US and interprovincial) and wholesale prices: Ontario



Sources: CER (2026), Statistics Canada (2008, 2026a-f), IESO (2026) and author's calculations.

This change in Ontario's terms of trade reflects a combination of geography and market structure. Geographically, the province is sandwiched between two hydro-based exporting provinces – Manitoba and Quebec – that have not traditionally needed to import significant amounts of electricity from Ontario. What cost Ontario its terms of trade, however, was the 2002 restructuring, when the province unbundled Ontario Hydro's generation assets (Ontario Power Generation, or OPG) from its transmission and distribution assets (Hydro One) into two separate companies, and introduced a wholesale market; from that point, Ontario surrendered its ability to set or negotiate export prices, which were instead primarily driven by its own wholesale price, the Hourly Ontario Energy Price (HOEP), as **Figure 6** shows. This is an important empirical finding linking exports to wholesale prices; the evolution of wholesale prices over the period, likely driven by increasing capacity amid flat or declining demand, is a separate matter not further examined in this report. Relatedly, the loss of control on export prices also applies on the production-related mechanism. Sepulveda (2024a) highlighted the export problem in relation to wind generation in Ontario, calculating that each MWh of wind generated over 2020–23 resulted in an additional 0.17 MWh of net exports. Ontario paid an average of $151/MWh (nominal) for that wind but recouped

an average of only $37/MWh (nominal) on the resulting exports. Having lost the agency to price exports independently, Ontario could only export the surplus at whatever the wholesale market would bear.

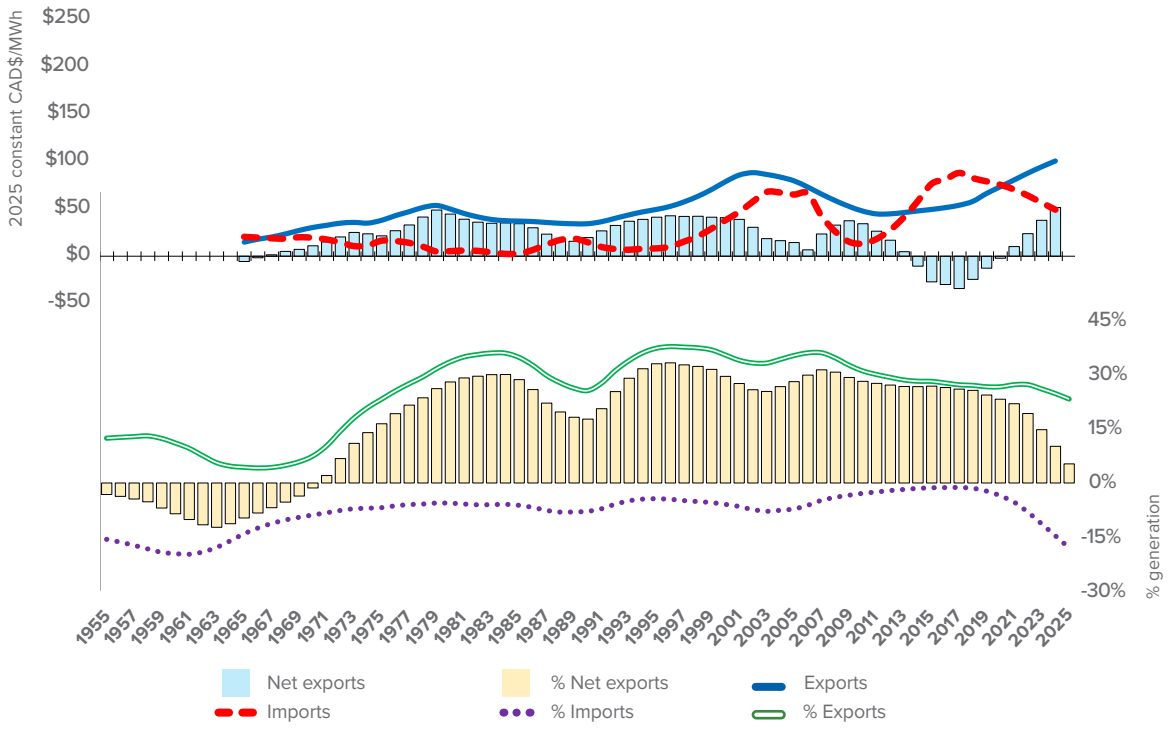
In this context, it is not surprising that the March 2026 Interprovincial MOU initiative has been led by Ontario; it is the province that likely has most to gain from an infrastructure framework that can delink its export prices from its own wholesale price. This is reflected in Ontario Energy Minister Stephen Lecce's statement at a March 4 press conference:

> Before we do it at a discount, you better be sure that the government of Ontario... are going to be very intentional to find a strategy to sell from within. Right now, on the spot market, when we have excess power, we're selling it sometimes at a discount. Ontario's integrated energy plan said that we would bring forward a different strategy to use PPAs, long term agreements, with businesses or other provinces to export power. (CPAC 2026)

Ontario is coming to the realization that one of the consequences of adopting Full Market Restructuring is that the province loses the ability to establish prices. In practice, however, the proposed policy direction – delinking Ontario export prices from Ontario wholesale prices – would be a continuation of the same political economy logic that, within six months of the market opening in mid-2002, delinked Ontario retail prices from wholesale prices. Those have remained delinked ever since, absorbing multi-billion-dollar government transfers to keep retail prices below wholesale costs (Sepulveda 2024a).

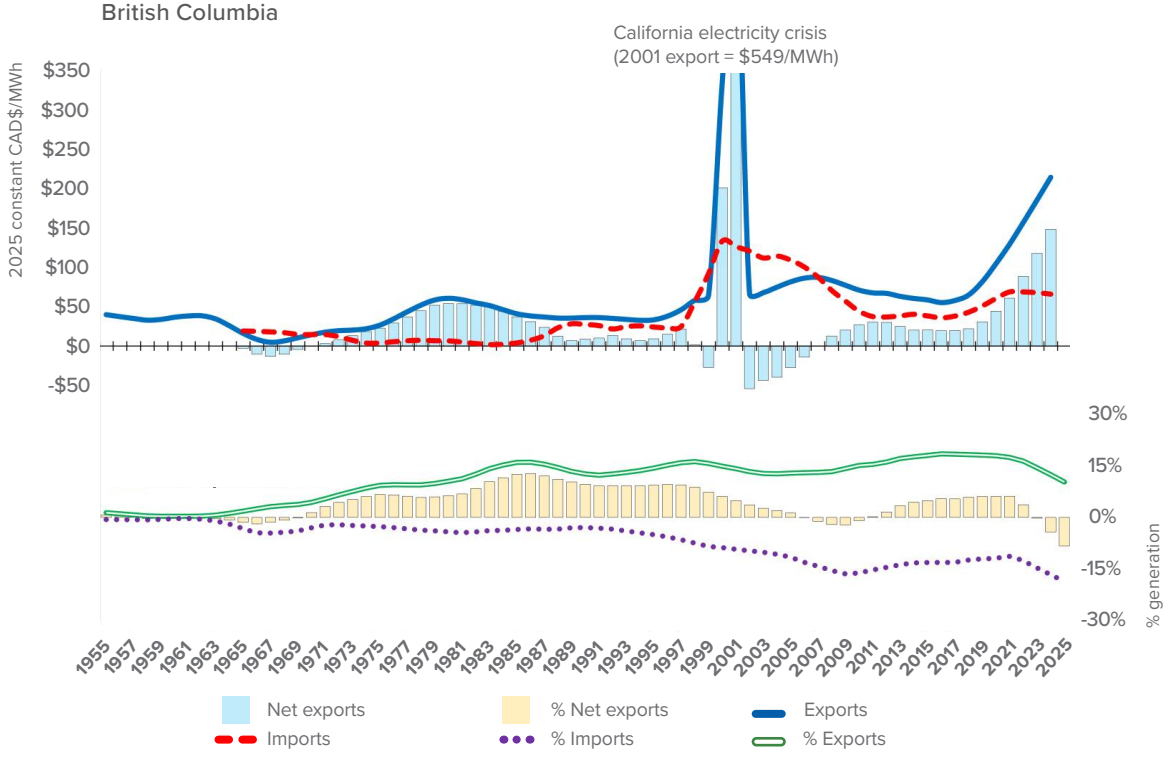
Manitoba was a net importer of electricity until the early 1970s when its large Kettle Rapids generating station came online (1970), followed by the Long Spruce station in 1977. As **Figure 7** presents, for the 50 years from 1974 to 2023, the province's net exports averaged 25 per cent of its generation. Export prices averaged $46/MWh from 1975 to 2001, rising to $67/MWh from 2002 to 2024. Import prices have generally been lower than export prices, but because imports have been modest until very recently, these outpayments have not been significant. Manitoba's main advantage is not the trade-related spread but a production-related one: having built dedicated capacity to export, it profits by selling power above its own low hydro generation cost. One result of this long period of export-led development has been lower electricity rates in the province; Manitoba Hydro's 74th Annual

FIGURE 7: Export and import prices and volumes (US and interprovincial): Manitoba



Sources: CER (2026), Statistics Canada (2008, 2026a-f), and author's calculations. All series smoothed using LOESS (FRAC=0.12, IT=3).

FIGURE 8: Export and import prices and volumes (US and interprovincial): British Columbia



Sources: CER (2026), Statistics Canada (2008, 2026a-f), and author's calculations.All series smoothed using LOESS (FRAC=0.12, IT=3).

Report states that "electricity exports help keep rates in Manitoba lower than they would otherwise be" (Manitoba Hydro 2025). Manitoba Hydro participates in the wholesale Midcontinent Independent System Operator (MISO) market at the border, selling surplus into the United States without having to restructure its provincial system – the Some Markets Without Restructuring model described previously.

Figure 8 shows that BC was a modest net importer of electricity until 1970 when its large Gordon M. Shrum generating station came online, followed by the equally large Mica station in 1976. From 1975 to 2001, the province's net exports averaged 8 per cent of generation. Since 2002, the net position has been near zero, with the notable exception of net imports in the most recent years. BC's combined trade position reflects a system oriented predominantly toward US markets rather than interprovincial exchange (Antweiler 2024).

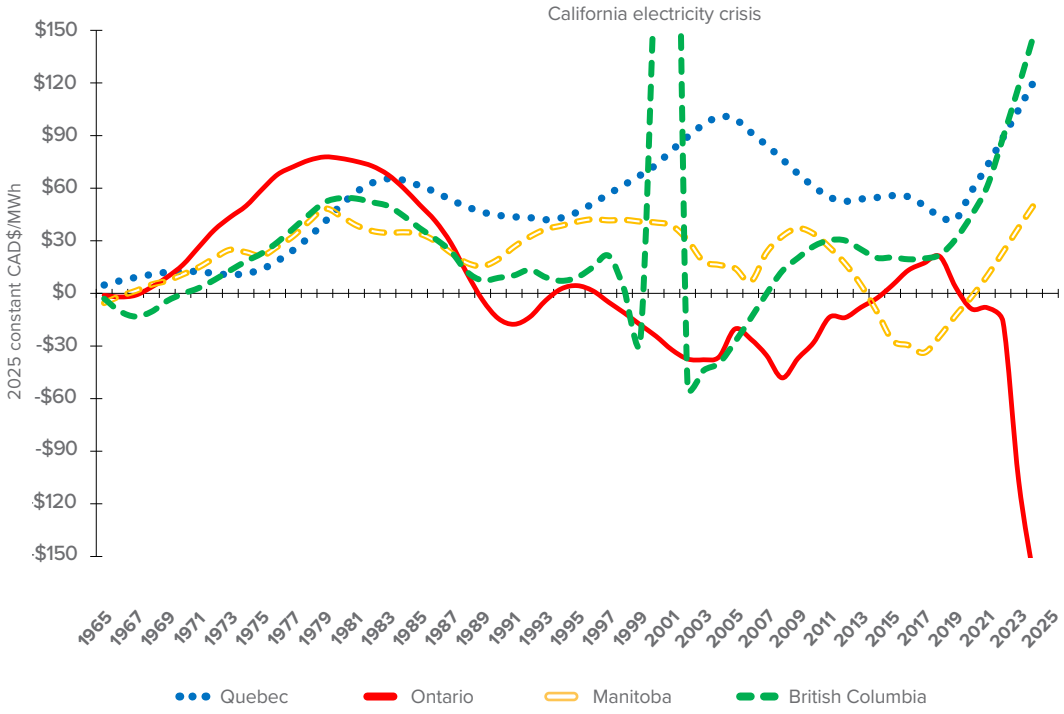
One dimension of British Columbia's terms-of-trade picture stands out above all others. During the 2000–01 California electricity crisis, Powerex, BC Hydro's export subsidiary, captured spot market prices averaging $463/MWh through export sales into California's newly restructured market. The regulatory response that followed made this arrangement permanent: rather than treating those export profits as a one-time windfall, the regulator built them into BC Hydro's rates, so that Powerex's trading income is expected every year and is used to lower the bills of domestic ratepayers. BC Hydro's most recent rate applications, for instance, assumed it will earn $547 million per year in Powerex trade income which it will then use to subsidize ratepayers during fiscal 2026 and 2027 (BC Hydro 2025). Outside the California crisis period, BC's export and import prices track more closely to each other; BC is a moderate structural beneficiary, its advantage built on the dispatchable superiority of reservoir hydro relative to California's structural electricity deficit and increasingly variable market prices. In BC's case both mechanisms are at work – a trade-related premium from selling into higher-priced external markets and a production-related margin from its low-cost reservoir hydro. BC's terms-of-trade premium increased from $26/MWh for 1965–1988 to $35/MWh from 1988 to 2024. For most of this history BC traded as a regulated exporter selling its surplus into neighbouring markets on a bilateral and spot basis; only more recently, since 2018, has BC Hydro participated in the WEIM and the EDAM, and even then only its short-run trade imbalance – the surplus or shortfall left after it has met its home supply – is priced at the

market rate, while its home supply stays regulated and vertically integrated under a single utility – the Some Markets Without Restructuring model described previously.

Comparative provincial terms of trade

The preceding sections established how much electricity provinces trade and in which direction. The more consequential question is on what terms they trade it, and it is here that the regulated and restructured provinces diverge most sharply. **Figure 9** summarizes the situation and presents the export-import price spread for Quebec, Manitoba, British Columbia, and Ontario and shows that the first three, the regulated exporters, have maintained positive spreads across almost the full period. Via these positive spreads, Quebec, Manitoba, and British Columbia use their export earnings to lower domestic rates, contributing to those provinces having the three lowest system costs in the country in 2023 (De Land and Diepold 2026). Under full market restructuring, the provinces would lose their ability to negotiate a higher export price or to control whether

FIGURE 9: Export-import (US and interprovincial) price spread



Sources: CER (2026), Statistics Canada (2008, 2026a-f), and author's calculations. All series smoothed using LOESS (FRAC=0.12, IT=3).

and how to participate in other markets, resulting in convergence towards a common market price (Gugler et al. 2018).

The terms of trade in **Figure 9** are the result of decades of provincial investment in vertically integrated public utilities to exploit hydro resources, and in the case of Ontario, nuclear power. By not restructuring, Quebec, Manitoba, and BC have maintained the means by which to exert greater control over their electricity trade, both in prices and volumes. On the other hand, by restructuring, Ontario voluntarily gave up that control, which explains why it is now Ontario leading the March 2026 Interprovincial MOU process with the hope of trying to regain some of the control it lost. This control is at the heart of why Quebec, Manitoba, and BC, and perhaps other provinces, are unlikely to accept or agree to any federal integration initiatives that, in the name of more trade, would rewrite the rules of the game.

The case against full market restructuring

In the federal government's strategy, *Powering Canada Strong*, section 2.4, provocatively titled "Electricity 'Islands' and the Need for Greater Regional Integration," advances two of the traditional greater integration arguments. We previously dealt with the first – that there is not enough East-West trade. This section deals with the second: that the lack of greater integration is costing Canadians – the "billions of dollars in annual cost savings" the federal strategy says greater integration would deliver. It notes the unsettled legal question of whether the specific type of integration that underlies the analysis in Section 2.4 of *Powering Canada Strong* is even within federal power to impose. It then makes the substantive case: that the integration gains claimed in Section 2.4 are an artefact of comparing today's system to an optimized restructured world, and that the empirical record of the jurisdictions that have actually restructured is at best mixed.

This report favours increased interprovincial and US trade, neither of which requires Full Market Restructuring. This position rests on an assessment that, as a whole, the Canadian electricity system is among the most successful in the world: it has low average prices, high reliability, near-universal access,

and a comparatively clean generation mix. This system was mostly built by a fleet of regulated, vertically integrated utilities, predominantly under public ownership. The regulated model is not flawless; it strands assets and is somewhat less efficient than full restructuring (Schmalensee 2019). However, in spite of that, it has still delivered lower prices to consumers (MacKay and Mercadal 2026; Sepulveda 2024b). Equally important, it has demonstrated that it can deliver the type of investment the federal government's strategy calls for to double the grid by 2050; Canada has already doubled installed capacity four times since the end of the Second World War in 1945, first in 1956, then in 1966, 1975, and again by 2006 (Statistics Canada 2026a).

In addition to the policy questions about markets that are the focus of this report, there is the legal question of how such markets are made, which centres on the jurisdictional scope of federal powers over interprovincial electricity trade and the extent to which those powers could reach into intra-provincial matters. By way of comparison, EU legislation requires Full Market Restructuring of all member-states in pursuit of a single European market. In the US, the Federal Energy Regulatory Commission (FERC), the country's national electricity regulator, used its federal interstate-commerce authority to encourage the creation of ISOs in co-operating states, but does not appear to have the authority to impose restructuring (FERC 2005). In Canada, the provinces hold exclusive jurisdiction over "facilities in the province for the generation and production of electrical energy" (*Constitution Act, 1867*, s. 92A(1)(c)). However, section 2.4 of the *Powering Canada Strong* strategy cited van de Biezenbos (2022), who asserts that Ottawa could exercise jurisdiction over interprovincial-line permitting while keeping provincial grids under provincial control, but even that is not settled law. Stikeman Elliott (2019) notes "persistent uncertainty" over the scope and exclusiveness of federal jurisdiction over such works. Ottawa has thus far not exercised any authority over the market aspects of interprovincial trade. Such authority is likely limited, if present at all, and more importantly is not what Section 4 of *Powering Canada Strong* is proposing.

Regardless, we previously showed that certain provinces have constructed and maintained durable terms of trade under the Regulated Without Restructuring model. They are the return on decades of public capital investment, have been realized only because those provinces retained agency over their traded margin and declined to restructure, and have been used to subsidize domestic retail rates. That those same provinces participate voluntarily

in external markets confirms where the line falls: British Columbia through the WEIM and the EDAM, and Manitoba through the MISO, which it joined to clear surplus at the margin leaving the province's regulated systems, and the prices its own customers pay, untouched. The integration most often urged on them is one that would reprice and repurpose their firm dispatchable hydro and nuclear capacity as backup for other jurisdictions' intermittent wind and solar generation. This would be a transfer of value, not a trade. These provinces would resist going further to conform to a federal initiative under either the Some Markets Without Restructuring or the Full Market Restructuring model, because applying a single clearing price to their home supply would reverse the policy choice on which the premium rests. The evidence presented below makes clear that, whether under its recent strategy or future initiatives, the federal government should not propose Full Market Restructuring.

Integration models answer the wrong question

Powering Canada Strong argues that the current "Electricity Islands" within Canada are costing Canadians. This argument relies on a number of integration simulation studies and other advocacy reports. Seatle and McPherson (2025) is one such simulation study that belongs to a family of large-scale energy-system optimization models. Each estimates the costs and composition of a future electricity system using least-cost capacity-expansion – that is, the model builds whatever combination of generation and transmission would meet future demand at the lowest possible cost logic – to determine what generation and transmission to build and where. They construct two scenarios: an unconstrained baseline that allows a central planner to choose the generation sites and build transmission wherever system cost is minimized across a connected grid, and a constrained scenario that limits interprovincial electricity transmission. The difference in total system cost between the two is reported as the implied gain from integration. Four features limit their utility for policymaking, and together they explain why these models answer a different question than the one before policy-makers: not whether Canada should restructure, but what a single least-cost planner would build in a world where it already had restructured.

First, these models are investor-agnostic: they optimize from the standpoint of a hypothetical social planner minimizing total system cost, with no mechanism for representing the balance sheet constraints, regulated

return requirements, or ratepayer obligations of provincial utilities. Second, they are revenue-sufficiency-blind: they track system costs but do not calculate home supply or trade prices and so cannot test whether the assets the planner builds can recover all their costs through prices. Third, they are economically and institutionally frictionless: they assume transmission can be built wherever the optimizer directs, that all generation dispatches to all loads across jurisdictional lines, and that all trade is zero-priced. Fourth, as implied by the previous three features, the model required for the simulation to run at all is Full Market Restructuring.

For example, the National Renewable Energy Laboratory 2021 study builds its cost-optimal continent vision with undefined financing, so the gap between its unconstrained and its constrained scenario is not the gain available from integration but the distance between the real world and a model world in which restructuring is assumed rather than achieved. Seatle and McPherson (2025) apply the same approach to the British Columbia–Alberta and Manitoba–Saskatchewan corridors. Their model calculates zero prices for home supply and for interprovincial and US trade, conceding that no such charge "may have influenced the high utilization of transmission" and is "not indicative of real-world behaviour." Hausman (2025) runs the same logic in reverse: instead of projecting future build-out, it recalculates historical dispatch as a single least-cost operator, and reports the gap from actual dispatch as the gain.

Powering Canada Strong also cites advocacy reports. Torrie and Bak (2020) assert that additional transmission could unlock investment, but provide no modelling to show how this would work. The largest ISO in the US (Pennsylvania–New Jersey–Maryland (PJM) Interconnection) attributes large savings to membership (PJM 2026), but the central estimates rest on counterfactuals the operator constructs and never specifies. Most importantly, in spite of these simulated savings, restructured jurisdictions like PJM's have not delivered lower retail rates than regulated entities, as we discuss below.

Restructured markets, unrealized promises

After more than 25 years of experience with restructured markets, a growing body of careful econometric work has examined whether the benefits promised by restructuring have, in fact, materialized. The answer is, at best, mixed, and at worst, negative. Borenstein and Bushnell (2015) argue that

the greatest political motivation for restructuring was the reallocation of profits (rent shifting), not efficiency improvement, and that restructuring has "generally been viewed as a disappointment because the price-reduction promises made by some advocates were based on politically unsustainable rent transfers." Rose, Tarufelli, and Upton (2022) confirm that retail electricity prices increased in restructured states relative to the non-restructured states. While some studies find modest productive-efficiency gains at restructured plants (Fabrizio, Rose, and Wolfram 2007), Arocena, Saal, and Coelli (2012) find that the regulated US power sector was significantly more efficient by keeping generation, transmission, and distribution under one roof and operating at scale, implying that unbundling destroys productive efficiency. Woo et al. (2006) document that transition costs, stranded-asset write-downs, and the extra profits companies make (market-power rents) substantially eroded the theoretical efficiency gains.

More recently, Cicala (2022) finds that operational savings from restructuring did not translate into lower retail prices; the savings from more efficient dispatch were captured by operators rather than passed to consumers. MacKay and Mercadal (2026) extend this work, finding that in US states that restructured, the increase in markups from market power dominates the modest efficiency gains. Alberta's experience is the most directly relevant Canadian evidence: following restructuring consumers paid approximately $24 billion more than other Canadians for their electricity from 2001 to 2024 (Sepulveda 2024b).

If the consumer-price record is the first failure, the investment record is the second. A restructured market settles every transaction at a single clearing price – the price offered for the last unit needed to meet demand. For assets with high capital costs and low variable costs, i.e., hydro, nuclear, and increasingly the firm capacity a renewables-heavy grid requires as backup, a price set by the marginal unit is structurally insufficient to recover fixed investment. This is the missing-money problem (Joskow 2008). It is not a correctable design flaw but a structural feature of energy-only markets. The response in restructured US markets was to layer capacity markets on top of energy markets to provide the revenue that energy markets could not. Christie (2023), a sitting commissioner on FERC, argued that the creation of capacity markets is an acknowledgement that energy-market revenues alone are not enough to encourage investment in capital-intensive generation. Schmalensee (2019) delivers the verdict: after 25

years capacity markets have not solved the problem, and it is hard to argue that restructuring had any effect on improving the efficiency of investment in generation capacity. Grubb and Newbery (2018) confirm the diagnosis from the United Kingdom where the post-2001 energy-only market not only produced no new firm investment, but forced a partial return to regulated guarantees through Contracts for Difference and capacity auctions.

A parallel MLI report documents that federal electricity policy has already stymied investment (Exner-Pirot 2026); to now require restructuring as part of a package aimed at stimulating more interprovincial trade would be a serious policy mistake, and one for which the constitutional footing is doubtful at best.

Conclusion

This report has provided a quantitative and analytical assessment of the electricity integration question raised by *Powering Canada Strong*. It draws on a first-in-Canada compilation of seven decades of data about the volumes, revenues, and prices of interprovincial and US electricity trade. Its purpose has been to distinguish, as *Powering Canada Strong* itself has not, between the call for more trade and the mechanisms by which that trade might be achieved.

The provinces with exportable dispatchable capacity that retained the regulated position – Quebec, British Columbia, and Manitoba – have held durable terms-of-trade premiums across almost the full period, retaining control over both the prices and the volumes of their trade, while Ontario, which restructured its sector in 2002, surrendered that control and, with it, the premium. Those premiums are the result of decades of provincial investment in vertically integrated public utilities that develop hydro resources, and in the case of Ontario, nuclear power. The provinces use the proceeds to keep domestic retail rates lower than they would otherwise be; indeed, as noted previously, Quebec, Manitoba, and British Columbia had the lowest system costs in the country in 2023. That lost control is why it is Ontario now leading the March 2026 Interprovincial MOU process; the province hopes to use the process to regain some of it. This is the heart of why these provinces, and perhaps others,

are unlikely to accept any federal integration initiative that, in the name of more trade, would endanger the existing terms of trade by rewriting the rules of the game.

The Canadian electricity system as a whole is among the most successful in the world: it provides low average prices, high reliability, near-universal access, and a comparatively clean generation mix. It was built largely by regulated, vertically integrated utilities under public ownership, a model that has demonstrated it can deliver the kind of investment the *Powering Canada Strong* strategy calls for, having doubled installed capacity four times since 1945. This report is in favour of increased trade and greater transmission, neither of which requires Full Market Restructuring. Requiring such restructuring as part of a package aimed at stimulating more interprovincial trade would impose large upfront costs and place at risk the very terms of trade that decades of public investment have earned. It is a step the federal government should not take and the provinces should not agree to.

This case against restructuring is not a case for federal inaction. The provinces and territories have themselves invited a federal role, committing in the March 2026 Interprovincial MOU to "advocate for federal support, including investment to accelerate transmission corridors" (Ontario 2026). And the terms of that role are ones the federal government has itself accepted. *Powering Canada Strong* concedes that "jurisdiction over electricity rests primarily with the provinces and territories" and that the federal role is "centred on its responsibilities for international and inter-provincial trade," adding that "each province and territory will still determine what works best in its own market" (NRCan 2026), reinforcing the earlier First Ministers' declaration that called for "a practical approach that respects each government's jurisdiction" (PMO 2026). The risk to guard against, then, is not that Ottawa offers too little, but that it attaches conditions that would erode the provincial agency that this report has shown to be the source of those gains. By spending money to enhance the existing process rather than imposing its will – for which the federal government has uncertain authority anyway – Ottawa can advance the increased trade and transmission that *Powering Canada Strong* seeks while leaving intact the very foundations of our successful electricity system, which rests on provincial grids. MLI

About the author

Edgardo Sepulveda is a Canadian economist with more than thirty years of experience. He has advised governments, regulatory agencies, companies, unions, and consumer advocates in more than forty countries. He has written for the Progressive Economics Forum, the Alberta Federation of Labour and *Jacobin* magazine, and has been lead author of three peer-reviewed academic articles in the last five years. His previous work for the Macdonald-Laurier Institute includes *Chasing the Wind: The Value of Wind Generation in a Low-Emission Nuclear and Hydro-Dominant Grid – The Case of Ontario* (2024) and *Scorched Earth: A Quantitative Analysis of Arson Against Canadian Religious Institutions and Its Threat to Reconciliation* (2025). Born in Chile, he received his BA (Hon) from the University of British Columbia and his MA from Queen's University, both in Economics. He established Sepulveda Consulting Inc. in 2006. MLI

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Endnotes

1 When utilities are "unbundled," the existing vertically integrated utility is broken down into different combinations of separate business units: generation, transmission, distribution, and sometimes retail. With the break-up, different companies take the place of a single company to perform each function or combination of functions.

2 This report takes no position on the fairness of the agreement; what the record establishes is that this single infrastructure project reshaped the entire pattern of Canadian interprovincial trade, and that the largest interprovincial flow of electricity is now being repriced through a negotiated mechanism.

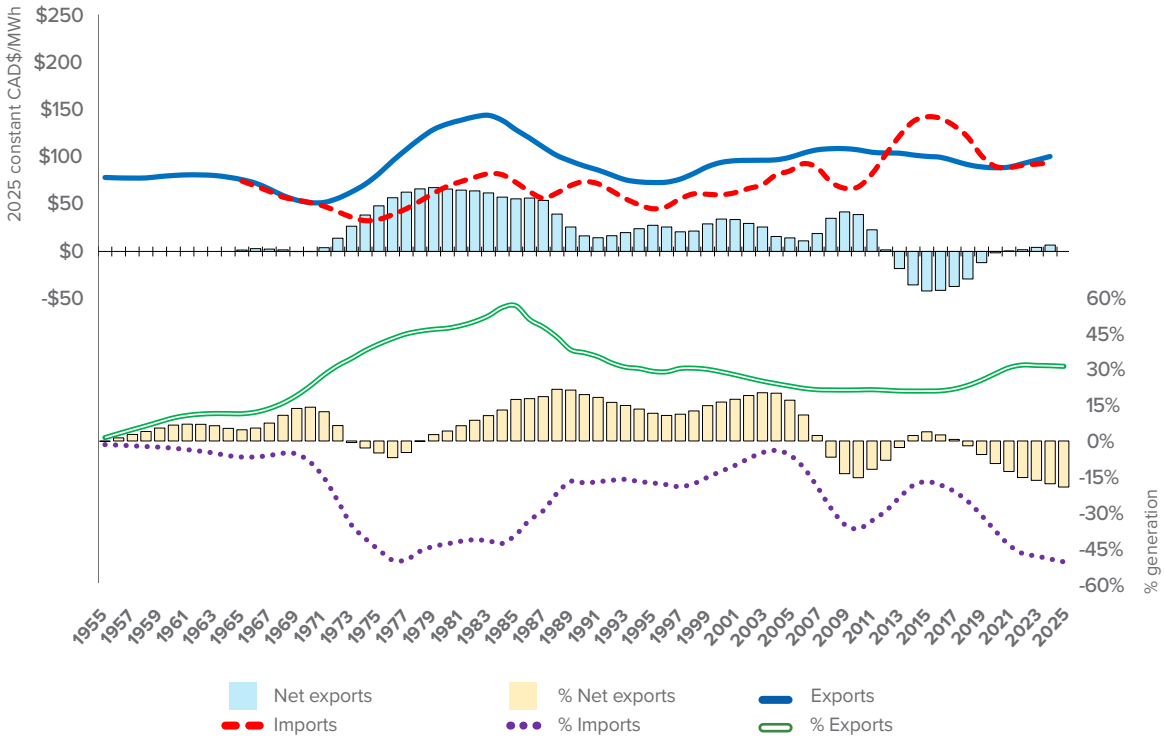
3 All dollar amounts in this report, unless otherwise indicated, are constant 2025, deflated using the average annual All-Items Consumer Price Index (CPI) (Statistics Canada 2026f).

Appendix: Provinces that are smaller and less active electricity traders

This report documents the terms-of-trade record for the five large trading provinces – Quebec, Newfoundland and Labrador, Ontario, Manitoba, and British Columbia. This Appendix presents the corresponding evidence for the remaining five provinces: New Brunswick, Saskatchewan, Nova Scotia, Prince Edward Island, and Alberta. These provinces are either smaller in terms of their generation and/or they trade relatively less as a share of their own generation.

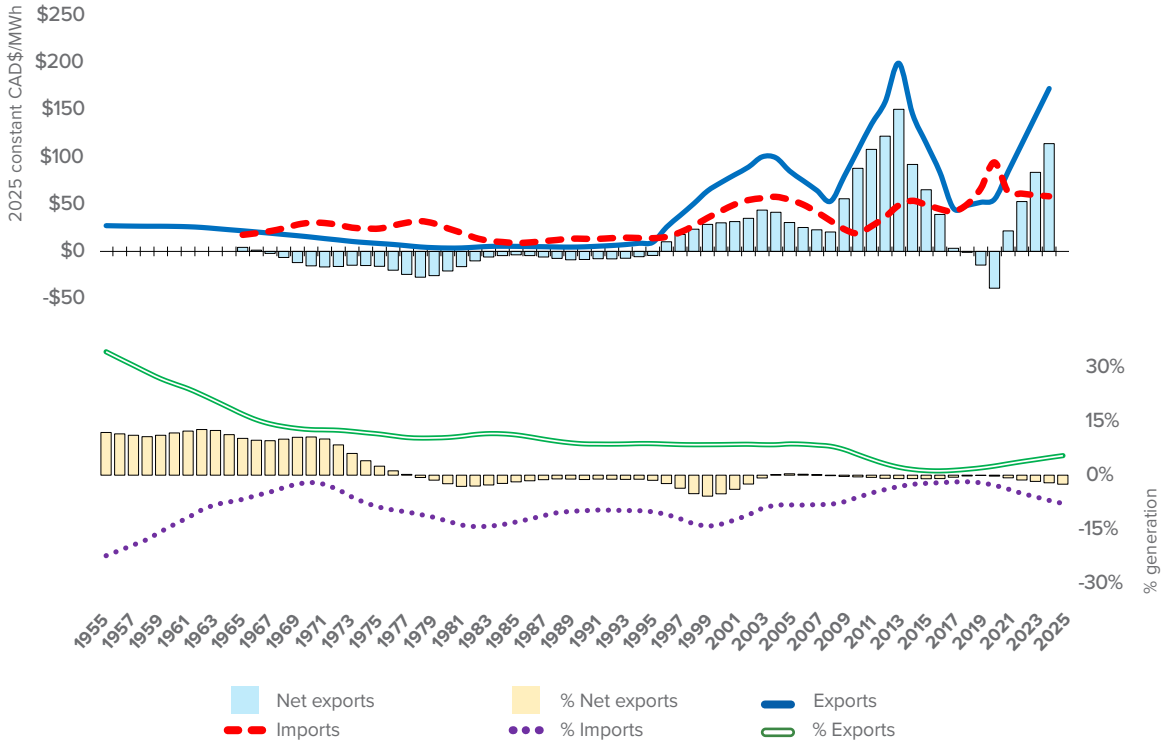
Figure A1 shows that New Brunswick became a very active electricity trader once the Churchill Falls project came online in the early 1970s. From 1973 to 2025, New Brunswick imported about 32 per cent of its own generation, mostly from Quebec, and exported about 34 per cent, mostly to the US and to PEI. New Brunswick's export prices consistently exceeded its import prices

FIGURE A1: Export and import prices and volumes (US and interprovincial): New Brunswick



Sources: CER (2026), Statistics Canada (2008, 2026a-f), and author's calculations. All series smoothed using LOESS (FRAC=0.12, IT=3).

FIGURE A2: Export and import prices and volumes (US and interprovincial): Saskatchewan



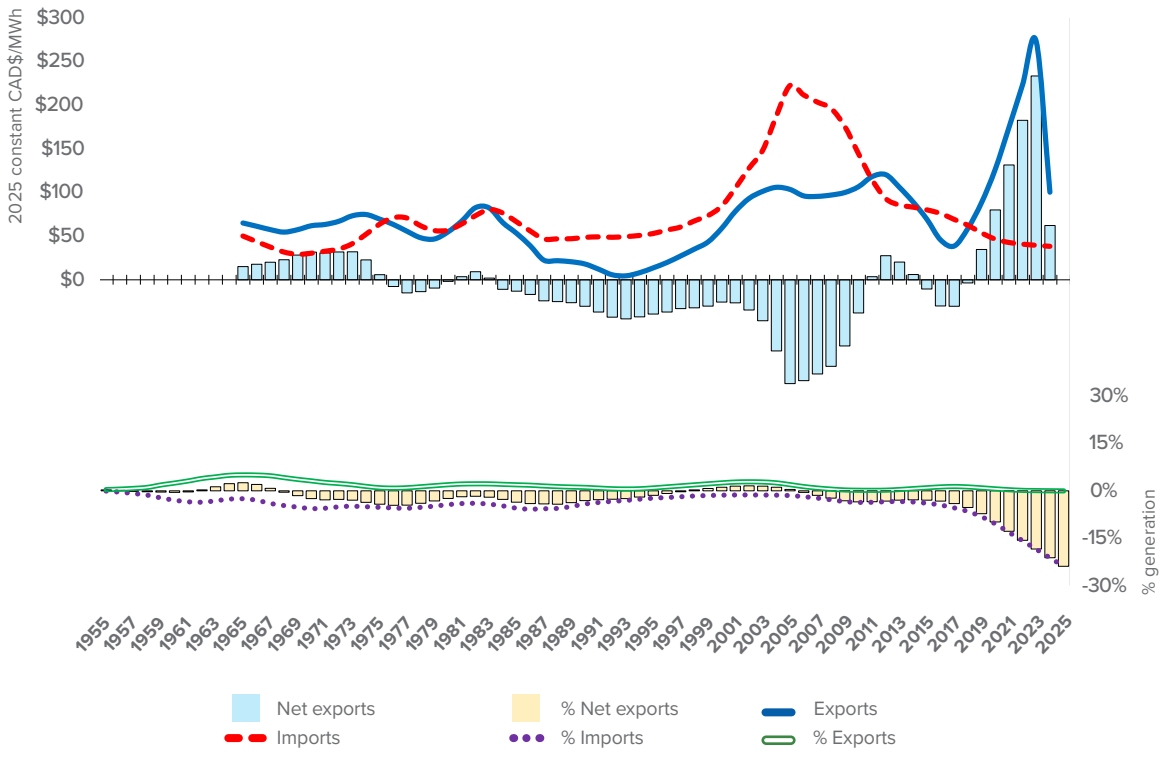
Sources: CER (2026), Statistics Canada (2008, 2026a-f), and author's calculations. All series smoothed using LOESS (FRAC=0.12, IT=3).

from the early 1970s to the early 2010s. New Brunswick pursued an export-led development strategy, including by commissioning the large Coleson Cove generating station in 1976 to export electricity to New England, including into the ISO-NE open market from 1997 onward. New Brunswick enjoyed an export-import price premium from the early 1970s to the early 2010s of about $33/MWh. However, this turned mostly negative from 2013 onward (-$22/MWh), driven primarily by an increase in import prices from Quebec.

Saskatchewan enjoyed surplus electricity and a relatively active trade in electricity from 1955 to the mid 1970s. However, as **Figure A2** shows, since the mid-1970s the province has generally had a modest structural deficit, with modest imports and exports. The relative volatility of both export and to a lesser extent import prices from the early 2000s likely reflects the relatively modest trade volumes.

Nova Scotia has traditionally had relatively little electricity trade. The province mostly ran modest trade deficits until 2018, as presented in **Figure A3**. From 2019 to 2025, however, its net imports averaged 17 per cent of its

FIGURE A3: Export and import prices and volumes (US and interprovincial): Nova Scotia



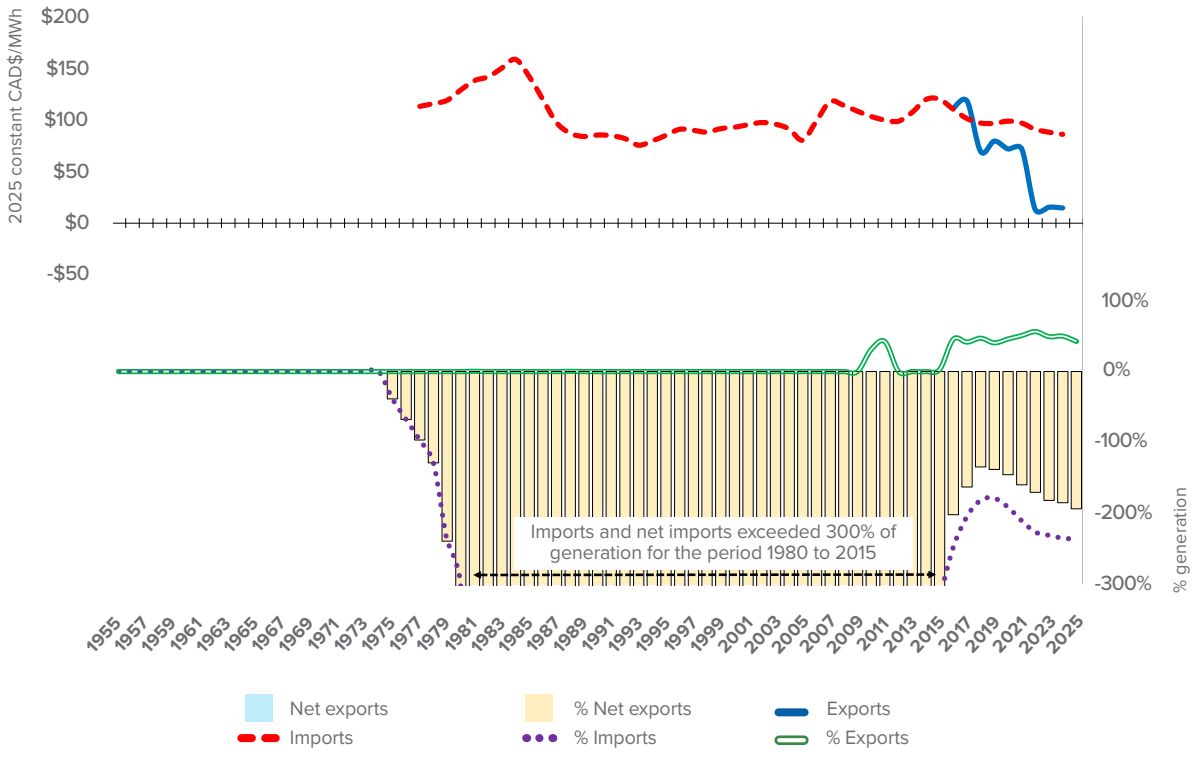
Sources: CER (2026), Statistics Canada (2008, 2026a-f), and author's calculations. All series smoothed using LOESS (FRAC=0.12, IT=3).

generation, peaking at 23 per cent in 2025. As in other jurisdictions with thinly traded import and export volumes, Nova Scotia's export and import prices are volatile and probably not representative, perhaps with the exception of imports for the 2019–2024 period that were predominantly from New Brunswick.

Prince Edward Island was a true island grid until 1977. The province was self-sufficient in electricity thanks to its small-scale oil-fired generation; it had no transmission connection to the mainland. When submarine cables were installed in 1977, it resulted in the progressive decommissioning of the on-island oil-fired generation and PEI began importing electricity from New Brunswick. Imports rose sharply through the 1980s to exceed 300 per cent of PEI's own generation for most of the 1980 to 2015 period, as **Figure A4** illustrates. Two new cables came online in 2017 to enable two-way trade and PEI began exporting its surplus wind-generated electricity to New Brunswick and importing more reliable power from that province during low-wind periods.

The import price PEI pays is a negotiated bilateral rate under a long-term Energy Purchase Agreement between Maritime Electric and NB Power. The

FIGURE A4: Import and export prices and volumes (US and interprovincial): PEI

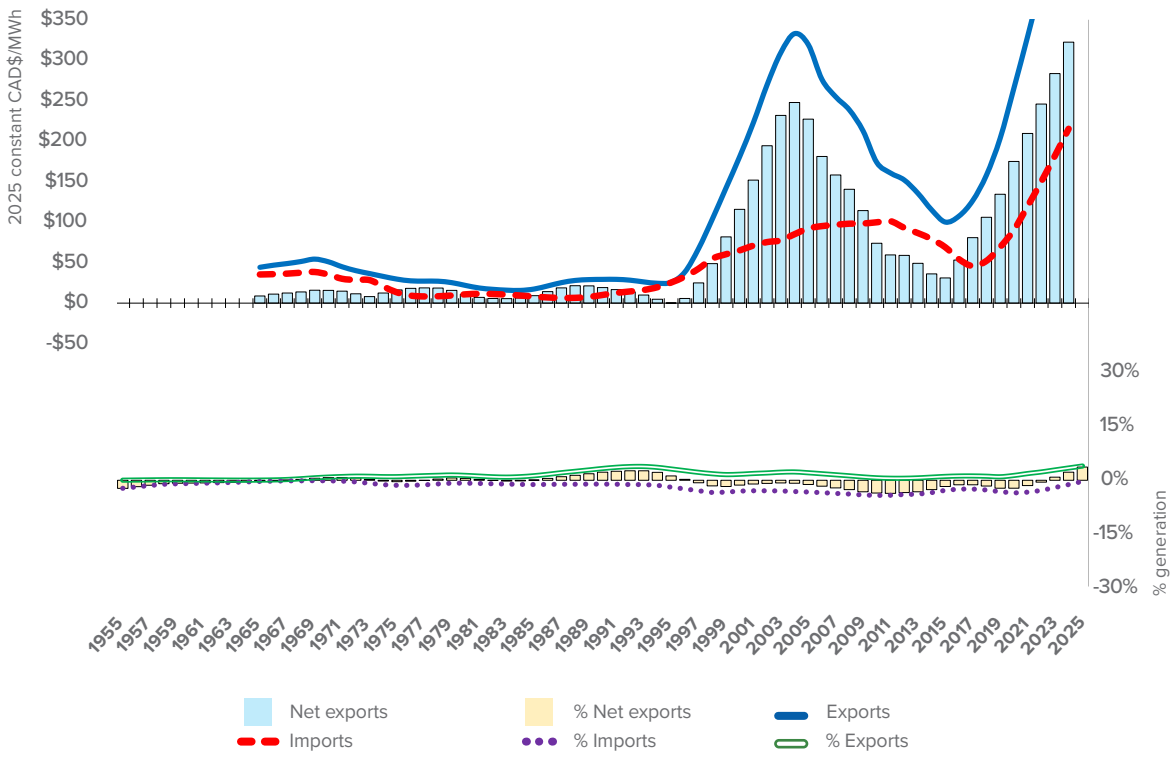


Sources: CER (2026), Statistics Canada (2008, 2026a-f), and author's calculations. All series smoothed using LOESS (FRAC=0.12, IT=3).

agreement is bilateral but the bargaining position is structurally asymmetric. PEI's import prices have been relatively stable, averaging a relatively high $101/MWh over the 1977–2024 period. Export prices in 2017 started at around the same level, but have declined to an average of $14/MWh from 2022 to 2024, reflecting the asymmetry between what PEI pays NB Power for firm capacity-backed supply and what NB Power pays PEI for intermittent surplus wind-based supply, which has no capacity value and no alternative buyer.

Figure A5 shows that Alberta is the largest example of a policy-induced near-isolated grid in Canada. While the grids of the Territories are true isolated grids, Alberta's relative isolation was initially based on an explicit policy of self-sufficiency. Given the province's relatively small export and import volumes, the corresponding prices have limited financial impact. Nevertheless, the contrast between pre- and post-liberalization prices is stark. Before restructuring in 2000, prices for electricity in Alberta were modest and relatively stable. Afterward, they have been relatively high and more volatile, reflecting the dynamics of an isolated and liberalized wholesale market.

FIGURE A5: Export and import prices and volumes (US and interprovincial): Alberta



Sources: CER (2026), Statistics Canada (2008, 2026a-f), and author's calculations. All series smoothed using LOESS (FRAC=0.18, IT=3).

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MACDONALD-LAURIER INSTITUTE

TRUE NORTH
IN CANADIAN PUBLIC POLICY

323 Chapel Street, Suite 300,
Ottawa, Ontario K1N 7Z2
613-482-8327
info@macdonaldlaurier.ca

macdonaldlaurier.ca