PEMBINA Institute

SUBMISSION

Playing to Win: Refining Ontario's data centre playbook

Pembina Institute comments and recommendations

Submitted to Environmental Registry of Ontario

Regarding: ERO 026-0853 — Economic and Strategic Assessment Framework for New Data Centres

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Playing to Win: Refining Ontario's data centre playbook

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Recommendations summary

The development of data centres in Ontario provides a significant opportunity to deploy private capital towards modernizing the province's electricity grid and expanding generation with economically efficient, low-emissions technologies. To leverage this opportunity, the Pembina Institute recommends that the province:

1. Align implementation of the proposed data centre playbook with Canada's Responsible Data Centre Development Principles.
2. Consider the emissions impacts resulting from the new electricity required for a data centre when assessing proposals and prioritize data centres that bring new low-emissions electricity supply.
3. Establish mechanisms for data centre proponents to directly procure new renewable energy power supply.
4. Design the separate rate class for data centres to capture the full costs of data centre connection and operation.
5. Require and incentivize data centre demand flexibility to help manage overall rate impacts, increase system reliability and help integrate renewable energy.
6. Support communities in evaluating data centre proposals and develop standards to ensure alignment with provincial and community priorities.

Context

The Pembina Institute welcomes the opportunity to provide input on ERO 026-0853: Economic and Strategic Assessment Framework for New Data Centres. The data centre playbook proposed by Ontario's Ministry of Energy and Mines represents a strong step towards establishing Ontario as a leader in setting data centre policy.[i] We support the principles and intent of the playbook to capitalize on the economic opportunities and potential benefits of data centre development while safeguarding Ontario communities, enterprises, and ratepayers from its risks.

Recommendations

1. Align the design and implementation of the data centre playbook with Canada's Responsible Data Centre Development Principles

The Canadian government has announced principles to establish a common national framework for data centre development, with widespread support from industry leaders.[ii] We support these principles and encourage Ontario to incorporate them into the data centre playbook.

Our remaining recommendations below detail how the playbook could be refined to align with the federal principles while maximizing the benefits of data centre development for the province.

2. Consider emissions impacts and prioritize data centres that bring new low-emissions electricity supply

The playbook proposes assessing data centre proposals according to how well they support three pillars: (1) advance economic development, (2) protect data security and digital sovereignty, and (3) invest in communities and earn public confidence.

We recommend adding a statement to the third pillar specifying that the impact of emissions associated with a data centre's electricity supply will be considered. This pillar already mentions minimized environmental impacts but only includes localized environmental impacts and does not mention the emissions impact of these projects.

Assessing the emissions impact is important partly because data centre investment in new loads can create opportunities to build out electricity infrastructure that reduces costs and emissions across the grid. Low-emissions sources such as wind and solar, once developed, provide secure, low-cost electricity. In the IESO's recent LT2 procurement round, wind and solar projects met all the province's energy goals, with strong municipal support, Canadian ownership, Indigenous partnership, and affordable energy.[iii] In contrast, constructing natural gas plants to power data

centres reduces energy security because 70% of the natural gas used in Ontario comes from the United States.[iv] Other jurisdictions are already developing strong policies to require data centres to bring new, locally owned and produced, affordable, low-emissions energy supply.[v]

3. Establish mechanisms for data centre proponents to directly procure new renewable energy power supply

Many data centre companies have ambitious clean energy procurement goals but currently lack viable pathways to procure or build clean energy resources at the scale needed for their data centre projects. In conjunction with Recommendation #2, these investments can improve a products strategic viability by boosting clean energy deployment and increasing local economic benefits communities and the province.[vi] This can be accomplished through:

- a dedicated "bring your own new clean generation" program
- a corporate power purchase agreement program tailored to the new data centre rate class
- utility or system operator arrangements that facilitate the addition of new supply without requiring all data centres to use the same procurement model[vii]

4. Design the separate rate class for data centres to capture the full costs of data centre grid connection and operation

The proposal to establish a dedicated separate rate class for data centres is a sound policy that can help ensure data centres pay the full costs associated with their electricity demand. However, its effectiveness will depend on the design of the rate class and interconnection process.[viii] The strategies to ensure the full cost of data centres is captured that should be reflected in the rate design and interconnection process include:

- upfront recovery of transmission, distribution, network, substation, and other infrastructure costs attributable to the project[ix]
- recovery of ongoing costs associated with capacity, reliability, ancillary services, and system operation caused by the new load
- minimum contract terms, bills, financial security, or other protections against stranded costs if load does not materialize, as well as load-ramp commitments when projects are delayed, downsized, or cancelled after system investments have been made

To ensure these costs are appropriately captured, the new rate class should incorporate locational and time-sensitive pricing signals, where the cost of serving a project differs materially depending on where and when it uses electricity.

5. Pair incentives for data centre demand flexibility with requirements

Most system costs added by data centres can be avoided by even a modest amount of flexibility, as data centres can act as controllable, dispatchable loads and ease grid stress during peak events.[x,xi] Flexible data centres can also provide ancillary services to the grid and contribute to lowered rates for customers.[xii]

The proposed exemption from the Industrial Conservation Initiative for data centres supports data centres paying the full cost for their electricity-related impacts. However, it is important to provide data centres with other mechanisms to deliver on flexibility. Projects that provide guaranteed flexibility will have lower system impacts and costs at interconnection and throughout the life of the project.

While some flexibility will be incentivized through lower overall costs to both the data centre developer and the electricity system, there are significant benefits to making a certain degree of flexibility mandatory.[xiii] A range of approaches can be used to both incentivize and require flexibility. Some can be accomplished through the design of the dedicated rate class, while others may require specific regulatory authority.

At interconnection:

- Establish a firm load limit (guaranteed power supply) or contracted level of firm electricity service for large data centres at interconnection based on available grid capacity.
- Offer staged or accelerated connection for projects that agree to operate within certain defined constraints until additional system capacity becomes available.

During operations:

- Offer conditional or non-firm service for demand above the contracted firm service level when system conditions permit.
- Include the locational and time-sensitive value of flexibility into the dedicated rate class.
- Enable and compensate data centres for providing grid services based on measurable system value and verified performance.
- Allow proponents to meet flexibility requirements and incentives through hybrid portfolios that may include:
    - demand response through workload shifting or computational load management
    - on-site generation and battery storage
    - thermal storage or cooling optimization

- contracted capacity
- other controllable resources

To ensure that flexibility commitments deliver real system benefits, the province should develop clear requirements for availability, response time, duration, frequency, telemetry, and performance verification.

6. Develop standards to ensure alignment with provincial strategic priorities and support communities in evaluating data centre proposals

The province should establish a clear set of requirements for data centre proponents to demonstrate alignment with the playbook's three strategic pillars, including independent technical verification of projected economic benefits, grid impacts, and community outcomes.

This could take the form of a provincial framework for assessing the costs, benefits, and local impacts of data centre proposals, supported by standardized disclosure and independent verification of:

- electricity demand and anticipated load growth
- water and land requirements
- supporting infrastructure requirements
- local environmental impacts
- temporary (construction) and permanent employment
- projected tax revenues
- municipal service requirements
- community benefits agreements
- workforce development and training commitments
- opportunity to leverage co-generation of data centre waste heat

In addition, municipalities should be supported in evaluating data centre proposals and their local impacts, with ample time for consultation with affected communities. This support could take the form of funding or access to dedicated experts for communities evaluating proposals.[xiv]

Endnotes

[i] Pembina Institute, “Ontario’s new data centre playbook signals right priorities on future development,” news release, August 13, 2026. https://www.pembina.org/media-release/ontarios-new-data-centre-playbook-signals-right-priorities-future-development

[ii] Innovation, Science, and Economic Development Canada, “Government of Canada launches Canada’s Responsible Data Centre Development Principles,” news release, September 3, 2026. https://www.canada.ca/en/innovation-science-economic-development/news/2026/09/government-of-canada-launches-canadas-responsible-data-centre-development-principles.html

Pembina Institute, “Federal data centre framework sets right direction, but provinces are key to delivering success,” news release, September 3, 2026. https://www.pembina.org/media-release/federal-data-centre-framework-sets-right-direction-provinces-are-key-delivering

[iii] Ontario Energy and Mines, “Ontario Adds New Power 73 Per Cent Lower Than Former Government,” news release, April 9, 2026. https://news.ontario.ca/en/release/1007276/ontario-adds-new-power-73-per-cent-lower-than-former-government

CANREA, “Ontario’s LT2 Energy Window 1 procurement goes all in on renewables,” news release, April 9, 2026. https://renewablesassociation.ca/news-release-ontarios-lt2-energy-window-1-procurement-goes-all-in-on-renewables/

[iv] Enbridge Gas, 5-Year Gas Supply Plan (2025), 50. https://www.enbridgegas.com/-/media/ExtranetPages/Regulatory-Filings/RateCases/Other-Regulatory-Proceedings/EB-2025-0065-5-Year-Gas-Supply-Plan/Gassupply-plan.pdf?rev=35bf1c63111c474fbd55c697d12c2c4e

[v] Ireland’s Commission for Regulation of Utilities has ruled that 80% of data centre electricity must be renewable and produced in Ireland, with a six-year window for developers to build to the target. (Fergus Devine, Jasone Milne, and Liam McCabe, “CRU Publishes Long-Awaited Final Policy on Data Centre Connections,” *William Fry*, December 15, 2026. https://www.williamfry.com/knowledge/cru-publishes-long-awaited-final-policy-on-data-centre-connections/)

Spain has also announced plans to require data centres to cover at least 80% of their energy supply for every hour of operation, and that every new megawatt of energy demand must be matched by a new megawatt of renewable energy installed within a year and a half of when the facility starts operation. (Pietro Lombardi, “Spain Plans New, Stricter Data Centres Rules, Sources Say,” *Reuters*, August 25, 2026. https://www.reuters.com/business/energy/spain-plans-new-stricter-data-centres-rules-sources-say-2026-08-25/)

[vi] According to analysis by the Business Renewables Centre Canada, Alberta municipalities collected over $70 million in tax revenue from wind and solar projects. (Business Renewables Centre Canada, “Alberta's wind and solar projects deliver $70 million to local communities in 2025,” November 18, 2025. https://businessrenewables.ca/resource/albertas-wind-and-solar-projects-deliver-70-million-local-communities-2025)

[vii] In Virginia, the utility Dominion Energy has a green tariff that lets large customers such as data centres purchase up to 100% clean energy from a new facility built by the utility on the customer’s behalf or through a utility-arranged PPA with a renewable developer. (Ann Collier and Justin Lindeman, “Innovative Utility Tariffs Pave the Way for Flexible, Carbon-Free Data Centres,” *Smart Electric Power Alliance*, 2026. https://sepapower.org/knowledge/innovative-utility-tariffs-pave-the-way-for-flexible-carbon-free-data-centres/)

North Indiana Public Service Co. (NIPSCO) signed a long-term contract to serve 2.4 GW of new load from Amazon data centres in the region, more than doubling the existing load of the utility. To serve the load, the NIPSCO's affiliate generation company will invest in 3 GW of dispatchable generation and storage alongside transmission upgrades, shielding ratepayers from cost increases and returning an estimated $1 billion in savings for customers over the duration of the project. (Electric Power Research Institute, *Win-Win Watts: When Can Data Centres, Efficient Electrification, and New Loads Lower Electricity Prices?* [EPRI, 2026], 15. https://winwin.epri.com/en/tariff-design.html)

[viii] The Energy Markets and Policy desk at Berkeley Lab prepared a brief on evolving practices for data centre tariff design across US states, with explanations and analyses of different tariff elements. Using real-world examples from the different states, the brief covers contract length, cost and risk allocation, marginal pricing, and energy capacity and flexibility, among other relevant topics. (Andrew Satchwell et al. *Electricity Rate Designs for Large Loads: Evolving Practices and Opportunities* (Lawrence Berkeley National Laboratory, 2025). https://eta-publications.lbl.gov/sites/default/files/2025-01/electricity_rate_designs_for_large_loads_evolving_practices_and_opportunities_final.pdf)

[ix] Pennsylvania's Governor's Responsible Infrastructure Development requirements require data centre developers to pay for the full incurred costs of their projects, including for transmission upgrades, distribution buildouts, network upgrades, ancillary service costs, and dedicated substations. (Pennsylvania Department of Community & Economic Development, "The Governor's Responsible Infrastructure Development (GRID) Requirements." https://dced.pa.gov/business-assistance/data-centre-resources/grid-requirements/)

[x] The data centre and AI industries are already preparing for flexible interconnection requirements. The DCFlex initiative led by the Electric Power Research Institute (EPRI) brings together a large coalition of utilities, grid operators, and the data centre industry to develop practical standards and techniques for implementing large load flexibility. (Electric Power Research Institute, *Win-Win Watts: When Can Data Centres, Efficient Electrification, and New Loads Lower Electricity Prices?* [EPRI, 2026], 16. https://winwin.epri.com/en/dcflex.html)

[xi] Research and modelling from Camus Energy, encoord, and the Princeton ZERO Lab found that flexible grid connection (a combination of firm service and conditional service), and "bring your own capacity" programs can reduce interconnection timelines by three to five years and reduce incremental supply costs by $78 million per GW of data centre demand. (Carlo Brancucci et al, *A Faster, More Affordable Path to Power* [Camus, encoord, and Princeton ZERO Lab, 2026]. https://www.camus.energy/flexible-data-centre-report)

[xii] Recent studies from the Nicholas Institute at Duke University have found that flexible grid connections can reduce capital expenditures for the US electricity grid by between $40 billion and $150 billion, reduce natural gas capacity investments by 10%-50%, and result in decreased electricity prices by up to 2.8%. (Jackson Ewing and Martin Ross, "Key Takeaways: Data Centre Flexibility and Generation Capacity Over the Next Decade," *Nicholas Institute*, February 17, 2026. https://nicholasinstitute.duke.edu/articles/key-takeaways-data-centre-flexibility-and-generation-capacity-over-next-decade)

[xiii] Recent studies have also shown the importance of making flexibility required: for PJM, one of the largest grid operators in the eastern US, the difference between 100% data centre flexibility and 90% resulted in over 1,000% increase in overall costs to the system for 20 GW of data centre load. (Maeve Allsup, "Is data centre flexibility a 'regulatory fiction'?", *Latitude Media*, November 19, 2025. https://www.latitudemedia.com/news/is-data-centre-flexibility-a-regulatory-fiction/)

[xiv] Pennsylvania's Department of Community & Economic Development has released the Pennsylvania Data Centre Planning toolkit to assist municipalities in evaluating data centre proposals. This supports municipalities with practical guidance around siting, infrastructure, fiscal and economic impacts, and planning. It is designed for municipal decision-makers, such as elected officials and policy staff. (Pennsylvania Department of Community & Economic Development, "Planning Toolkit." https://dced.pa.gov/business-assistance/data-centre-resources/planning-toolkit/)