



THE MAINE LEGISLATURE

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Maine Lawmakers Call for Review of “New Reality” of Hydro-Quebec

Projected shortages, new dam construction, increased environmental risks challenge claims made as part of New England Clean Energy Connect

Augusta, Maine (May 11, 2023) – A bipartisan group of Maine lawmakers today called on Massachusetts Governor Maura Healy to initiate a comprehensive review of new information about electricity supply and demand in Quebec that contradicts claims made when the New England Clean Energy Connect (NECEC) was selected in 2018 as a source of electricity to serve Massachusetts ratepayers.

In a letter to Governor Healy, the legislators cited recent reports documenting that Quebec is shifting from years of power surpluses to an extended period of shortfalls, with electricity surpluses ending by late 2026—less than three years from now.

These shortfalls will hamper Quebec’s ability to export power to New England, increase the demand for electricity from New England to meet Quebec’s peak loads, and likely necessitate the construction of multiple new hydropower dams.

In January, Quebec Premier Francois Legault announced that Quebec will need to build four or five new dams to meet future power needs. Premier Legault did not specify which rivers are being targeted to avoid panicking any communities. This reluctance to publicly reveal which rivers are involved signals that these projects likely involve significant permitting risks. New dam construction could cause significant impacts on indigenous communities and pristine river systems.

This new information contrasts sharply with claims made in the NECEC proposal submitted to Massachusetts regulators by Hydro-Quebec and Central Maine Power. Specifically, that proposal

claimed that NECEC was “low-risk” because no new hydropower dams would need to be built. HQ and CMP have repeatedly claimed that HQ had such a vast surplus of existing hydropower that it was literally being wasted by spilling huge quantities of water over dams without generating power. Hydro-Quebec’s claims now appear to be false.

In their letter to Governor Healy, the lawmakers state that the new reality of electricity generation and demand in Quebec “could provide Massachusetts with strong grounds for terminating the NECEC in favor of clean energy sources with fewer environmental impacts.”

The letter was signed by Senators Nicole Grohoski (D-Ellsworth) and Rick Bennett (R-Oxford) and Representatives Maggie O’Neil (D-Saco) and Jennifer Poirier (R-Skowhegan), who also sent a letter today to Quebec Premier Francois Legault. In that letter, the Maine lawmakers also cite the shifting energy system in Quebec and ask for specific information, including information on the location and potential impacts of new dams that Quebec is planning to build, whether Quebec knew about these projected energy shortfalls when it submitted the NECEC proposal to Massachusetts, and how Quebec’s energy shortfalls may affect electricity imports to Quebec from New England over the next 20 years.

The lawmakers’ letter calls on Premier Legault to help dispel the myth that Quebec has so much power that it doesn’t know what to do with it all, which is clearly not accurate.

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May 10, 2023

Governor Maura Healey
Massachusetts State House
24 Beacon Street
Office of the Governor
Boston, MA 02133

Dear Governor Healey:

We are writing to urge you, as Governor of Massachusetts, to initiate a comprehensive review of new information regarding the ability of Hydro-Quebec to meet its contractual obligations for the New England Clean Energy Connect (NECEC), which Massachusetts selected in June 2018 pursuant to its Section 83D Procurement.¹

Such a review is necessary because Hydro-Quebec (HQ) will soon be entering an extended period of projected electricity constraints that challenge prior assumptions and project proposal claims about both the reliability and environmental benefits of the NECEC. If this new information about supply and demand in Quebec was known at the time of the 83D evaluation process, it may well have resulted in a different outcome from the 83D Evaluation Team.

A careful review of the new reality of electricity generation and demand in Quebec could provide Massachusetts with strong grounds for terminating the NECEC contract in favor of clean energy sources with fewer environmental impacts.

I. Hydro-Quebec's claims about a vast power surplus and low-risk energy are proving to be false.

In its proposal² to Massachusetts, Central Maine Power (CMP) and Hydro Quebec Renewable Energy claimed that the NECEC project would provide electricity that was (1) *uninterrupted*, with "firm deliveries every hour of 1,090 MWh Clean Energy Generation imported from the Hydro-Quebec System;" (2) *low risk* because "there is no risk related to the generation resources, which are already in service;" and (3) *with no new environmental impacts* because no new hydropower dams would need to be built, ensuring "no incremental environmental impacts from hydroelectric generation as a result of the Proposal."

CMP and HQ further asserted that HQ had such a *vast surplus* of existing hydropower potential that it was literally being wasted. In March 2019, for example, a CMP official told Maine lawmakers that HQ was wasting huge volumes of potential electricity by spilling it over dams, citing a statement by then-HQ

¹ <https://macleanenergy.com/category/83d/>

² <https://macleanenergy.com/83d/83d-bids/>

CEO Eric Martel: “[W]e are in surplus. It takes U.S. lines to export that. I don’t want to throw ten terawatt hours of water away every year and not monetize it.”³ To put this figure in perspective, HQ claimed that it was wasting as much electricity annually as Maine consumes in a year.

Hydro-Quebec’s claims now appear to be false.

a. Electricity shortages have already emerged in Quebec.

New information suggests that HQ is facing an extended period of *electricity shortages*. As a result, HQ likely cannot guarantee uninterrupted electricity for the NECEC without diverting energy from other markets. In fact, the province of Quebec may need to *import* more power *from* New England than previously assumed to satisfy its own energy demands.

According to recent reports, Quebec is shifting from years of power surpluses to shortfalls.⁴ Hydro-Quebec is “running short of electricity”⁵ and predicts that power surpluses will disappear by the end of 2026—less than three years from now—“hampering the ability to export power to New England.”⁶

Indeed, the shortfalls have already begun.

b. Hydro-Quebec can no longer meet peak electricity demand.

The new reality was apparent this winter when Hydro-Quebec experienced historic peak levels of electricity demand, causing the company to urge customers to reduce electricity use.⁷ HQ also reduced exports and paid premiums to import power from other jurisdictions.

During a cold snap in December 2022, HQ was not able to deliver about 700MW of contracted power to New England, incurring financial penalties.⁸ In February 2023, HQ had a much deeper electricity shortfall, requiring New England to send more than 1,000 MW to Quebec to meet their peak demand.

These shortfalls of power during two cold snaps this winter are documented in an analysis by the New England Power Generators Association titled “The Region Needs to Revisit Long-Held Assumptions: How much can we rely on Hydro Quebec?” (See attached).

Quebec’s electricity supply situation has changed so drastically in the past few years that export projects such as the NECEC are being called a “strategic mistake” that poses significant economic impacts to the province. Commenting on the changed context, Pierre-Olivier Pineau, a professor in energy policy in Montreal, recently said, Quebec “worked hard to obtain [the Maine deal], but now the current [Quebec]

³ <https://legislature.maine.gov/legis/bills/getTestimonyDoc.asp?id=100488>

government has recently switched its position. Now it seems they don't want to export electricity anymore. They want to keep it for our own purposes and industrial development. So they've really switched their discourse."⁹

c. New dams to ease shortages would create significant environmental impacts.

Contrary to a fundamental claim in its NECEC proposal, HQ likely will need to pursue multiple *new hydropower projects* during the 20-year contract term of the NECEC, creating new permitting risks, possible conflicts with indigenous people, and environmental impacts that have not been disclosed to Quebec ratepayers or Massachusetts regulators.

In late January 2023, Quebec Premier Legault announced that Quebec will need to build four or five new dams to meet future power demands.¹⁰ Premier Legault did not specify which rivers are being targeted to avoid panicking any communities.¹¹ This reluctance to publicly reveal which rivers are involved signals that these projects likely involve significant permitting risks. History shows this to be true. In 1994, for example, Quebec terminated a controversial \$10B hydro project in the face of strong opposition from Cree and other indigenous communities.¹²

The Commonwealth of Massachusetts should have been informed during the 83D process that Hydro-Quebec likely would need to “build more dams that could reshape pristine rivers and slash swaths of forests.”¹³ Such information would have enabled Massachusetts regulators to consider the carbon impacts of new dam construction. When new dams are built in boreal forests such as Quebec, the stored carbon in submerged biomass decomposes, releasing CO₂ and methane, and trees can no longer sequester CO₂. In its first year of operation, a new hydropower impoundment releases as much CO₂ as a coal-fired power plant generating the same amount of electricity, and after 10 years still releases two-thirds as much CO₂ as a natural gas plant.¹⁴ This hardly passes as “carbon free” power.

II. Massachusetts should revisit NECEC claims about reliability and environmental impacts.

We urge you to revisit the information about HQ that was available to Massachusetts regulators when the NECEC project was evaluated and selected. Specifically, we urge you to initiate a comprehensive review that addresses the following questions:

- 1) Can Hydro-Quebec actually provide the electricity needed for the NECEC utilizing only existing generation sources, as claimed in its 83D proposal?

¹³ <https://www.bloomberg.com/news/articles/2023-04-27/quebec-s-cheap-clean-energy-raises-risk-of-hydropower-shortfall>

¹⁴ <https://www.pressherald.com/2019/01/05/commentary-hydro-quebec-offers-misleading-claims-about-their-powers-climate-impact/?auth0Authentication=true>

- 2) If Hydro-Quebec can only satisfy the NECEC contract by diverting power from other markets, what other generation sources might be utilized, and could this include generation sources that burn fossil fuels?
- 3) If Hydro-Quebec is moving into a period of electricity shortages in less than three years, can these shortages be addressed without building new hydropower dams, as HQ claimed when its proposal was accepted by the state of Massachusetts?
- 4) If Hydro-Quebec does plan to construct new hydropower dams: (a) where would these dams be located; (b) what are the environmental and permitting risks of in those river systems; and (c) how would such risks compare with the assertion made during the 83D procurement process that NECEC would be satisfied with “low risk” generation sources?
- 5) Did Hydro-Quebec intentionally deceive Massachusetts by not disclosing as part of its 83D proposal any internal projections that new dams would be needed during the 20-year contract period of the NECEC?

When you served as Attorney General (AG) for the State of Massachusetts, your office voiced strong concerns about the greenhouse gas emission benefits of the NECEC. During contract hearings at the Massachusetts Department of Public Utilities, Dean Murphy, an expert witness for the Massachusetts AG, expressed his concerns that HQ might meet its contractual obligations to NECEC by shifting electricity from one region to another in a fashion that would not result in new overall reductions in greenhouse gas emissions – e.g., additional or incremental reductions. Assuring overall emission reductions is essential to address the global problem of climate change.

Specifically, Mr. Murphy explained that HQ could meet the requirements of the contracts:

“through resource shuffling – reassignment of a fixed amount of clean energy so as to increase the clean energy delivered to a particular destination without increasing the total amount of clean energy overall. For instance, with the new NECEC transmission link, if HQ increased deliveries into New England by the contracts’ 9.55 TWh relative to historical New England deliveries, this would achieve full incrementality as defined in the RFP. But if HQ accomplished this by reducing its exports to other neighboring regions rather than by increasing clean energy generation overall, then global GHG emissions would not necessarily be reduced. Diverting clean energy from other regions to New England would enable a reduction in fossil generation and emissions within New England, but the reduced deliveries to other regions may need to be replaced by additional fossil generation in those regions. This would effectively substitute fossil generation in other regions for fossil generation in New England, shifting emissions from one region to another, without causing a material decrease...”¹⁵

¹⁵ Testimony of Dean W. Murphy (Brattle Group), Witness for the Massachusetts Attorney General. Petition for approval by the Department of Public Utilities of a long- term contract for procurement of Clean Energy Generation, pursuant to Section 83D of An Act Relative to Green Communities, St. 2008, c.169, as amended by St. 2016, c. 188, § 12, p. 15 of 27, Dec. 21, 2018. See Attachment A.

Additionally, both Mr. Murphy and the Independent Evaluator of the 83D procurement expressed concerns that the process that awarded contracts to CMP and HQ may have been unfair due to “the inclusion of bidders’ affiliates in the Evaluation Team...[which] can bias the evaluation and selection process.”¹⁶

These concerns expressed by the Massachusetts AG’s Office in 2018 gain new relevance in the current context of the HQ energy system in which resource shuffling, including increased imports from New England, may be required to meet Quebec’s projected electricity shortages.

Moreover, HQ’s future generation profile likely will now include the construction of new hydropower dams, with permitting risks and environmental impacts that were not forecast or disclosed during the 83D process. If this information had been known in 2018, then the scoring of competing projects may have resulted in a different outcome.

The Quantitative Evaluation Report on the 83D Process (REDACTED) included a list of additional potential projects. NECEC Hydro was listed with a Total Score of 90.63, which was only 3.11 points above the next highest ranked project, which had a Total Score of 87.52.¹⁷ If the Evaluation Committee were informed in 2018 that Quebec would be moving into a period of electricity shortages by the end of 2026, and that the construction of new hydropower projects likely would be required to satisfy the NECEC contract, would Massachusetts have selected another project?

It is not too late for Massachusetts to terminate the NECEC contract.

A thorough investigation of this new information about the Hydro-Quebec energy system provides sufficient cause for action. New clean energy projects are being developed in New England that will demonstrably meet the test of providing additional reductions of greenhouse gas emissions. One such example is the Northern Maine Renewable Energy Project.¹⁸ Other new developments, such as the bidirectional Twin States Clean Energy Link,¹⁹ could provide Massachusetts with an opportunity to evaluate transmission solutions that would be a better fit with the dynamic clean energy system of the future than would a unidirectional NECEC.²⁰ This project also has the benefit of utilizing existing transmission corridors and buries new lines along state roadways, an environmental impact minimization strategy not utilized by the NECEC.

In sum, many of the fundamental assumptions that led to the decision by Massachusetts to select the NECEC are no longer accurate, including:

¹⁶ 5 Dean M. Murphy, Op. Cit, p. 15 of 27.

¹⁷ [The Quantitative Evaluation Report on the 83D Process \(REDACTED\)](#), pg. 24.

¹⁸ <https://www.pressherald.com/2023/01/31/northern-maine-wind-power-project-wins-puc-approval/?auth0Authentication=true>

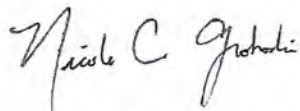
¹⁹ <https://www.twinstatescleanenergylink.com/>

²⁰ Unlike the NECEC, bidirectional transmission lines could provide export pathways for large amounts of solar and offshore wind production planned for New England.

- 1) **Electricity shortages projected in Quebec:** HQ is shifting from a period of power surplus to a period of power shortfalls.
- 2) **New generation will be required:** To deal with the new reality, HQ likely will need to build new dams and/or shuffle electricity among markets, including importing more power from New England.
- 3) **New permitting and environmental risks:** If HQ must build new hydropower projects to satisfy increased electricity demand (including the NECEC contract), then new permitting risks and new environmental impacts have emerged that were waived away as being of no consequence during the 83D process.

For these reasons, we urge you to initiate a thorough review of the new context for the NECEC. We believe such a review could fully justify a decision by Massachusetts to terminate its contract with the NECEC and move on to better alternatives. Such a decision also would be consistent with the overwhelming view of Maine people who voted in November 2021 to terminate the NECEC.²¹

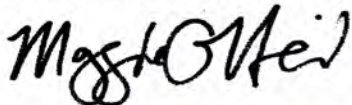
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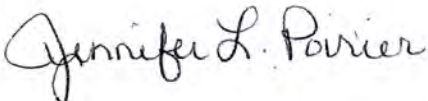
Senator Nicole Grohoski (D-Ellsworth)



Senator Rick Bennett (R-Oxford)



Representative Maggie O'Neil (D-Saco)



Representative Poirier (R-Skowhegan)

cc: Quebec Premier Legault

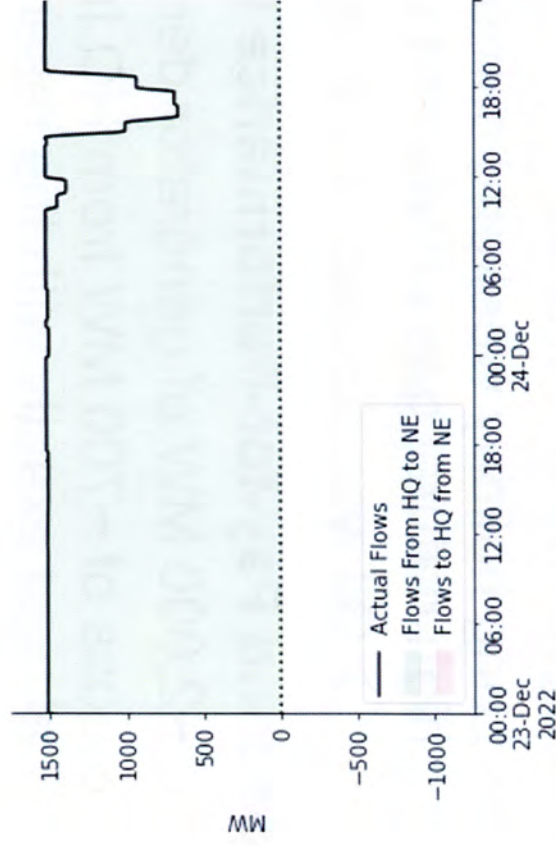
²¹ <https://www.bangordailynews.com/2021/11/02/politics/maine-voters-reject-1b-hydropower-corridor-in-massive-rebuke-to-cmp/>

The Region Needs to Revisit Long-Held Assumptions

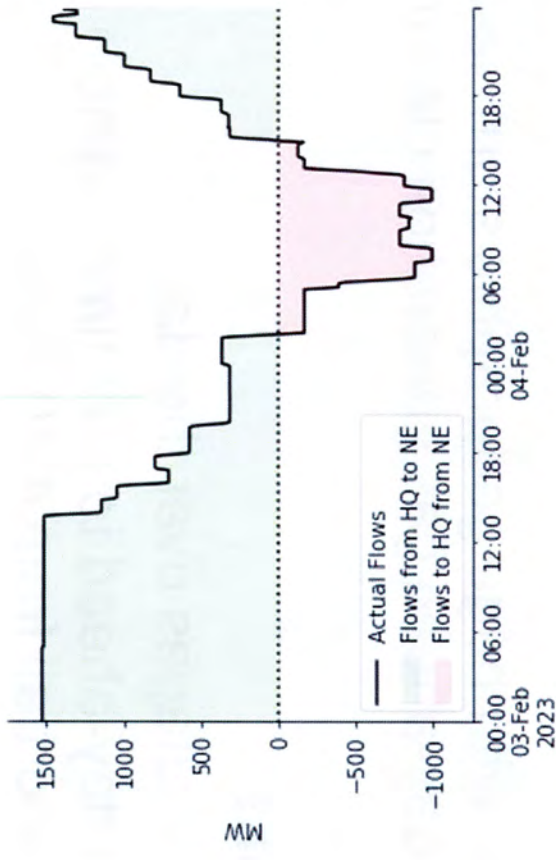
How much can we rely on Hydro Quebec?

A Tale of Two Cold Snaps

Christmas Eve, 2022

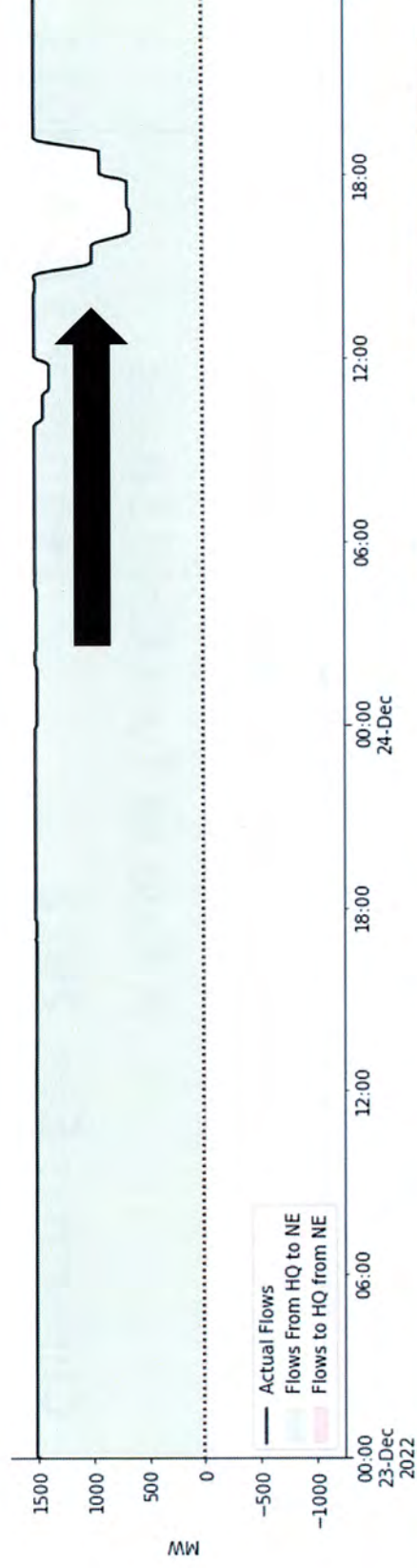


February 3 & 4, 2023



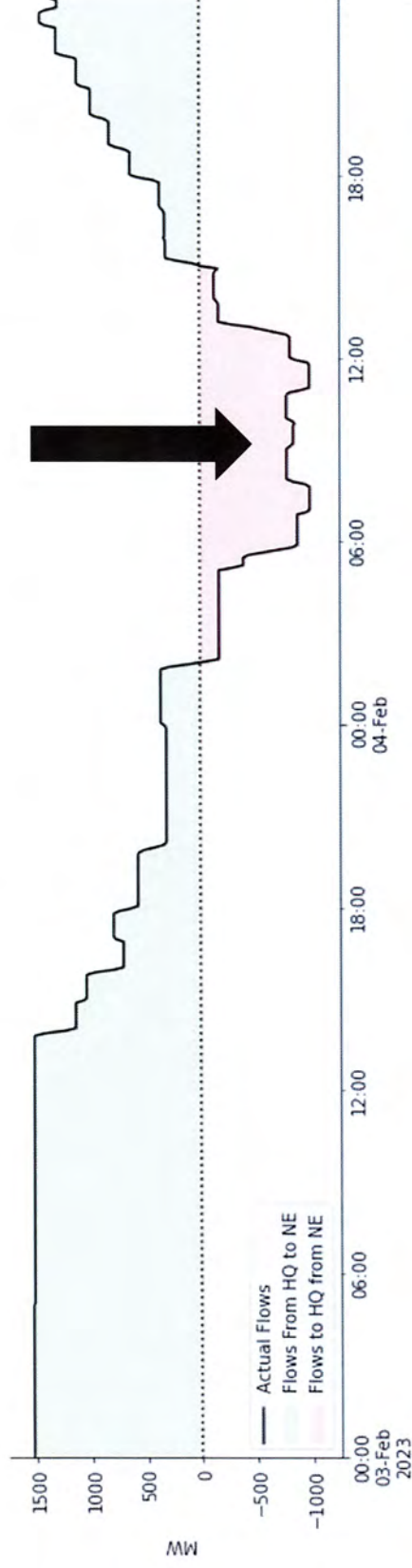
An Eventful Christmas Eve

- **Background & Context**
 - Long holiday weekend combined with huge geographic storm led to high natural gas prices and low day-ahead gas generation clearing.
 - Oil was consistently in-merit.
- **Second Pay-for-Performance Event**
 - ~2,000 MW of generator derates/outages over the day.
 - Loss of ~700 MW from HQ from day-ahead to real-time, coinciding almost exactly with the reserve shortfall from 4:40-6 pm.
 - \$39 million in penalties.



Arctic Weekend

- **February 3 & 4**
 - Extraordinarily low temperatures with wind chills setting records across New England.
- **New England Sent Over 1,000 MW to Quebec**
 - Starting at the afternoon peak on Feb. 3, net exports from Quebec to New England were collapsing.
 - By the morning ramp on Feb. 4, New England was sending 1,000 MW to Quebec to meet their peak demand (a 2,500 MW shift).



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May 10, 2023

Québec Premier François Legault
Édifice Honoré-Mercier, 3^e étage
835, boul. René-Lévesque Est
Québec (Québec) G1A 1B4

Dear Premier Legault:

We are writing to express our strong concerns about recent changes in energy supply and demand in Quebec which undermine broadly-held assumptions about Quebec's vast abundance of power, and which may have affected procurement decisions on projects such as the New England Clean Energy Connect (NECEC).

Specifically, we note the following:

- 1) **Quebec is shifting from years of power surplus to shortfalls.**¹ Hydro-Quebec is “running short of electricity”² and predicts that power surpluses will disappear by the end of 2026—less than three years from now—“hampering the ability to export power to New England.”³
- 2) **Quebec's aggressive pursuit of export deals were premised on no new hydropower dams.** Both the NECEC and the Champlain Hudson Power Express (CHPA) have been sold by Hydro-Quebec to Massachusetts⁴ and New York⁵, respectively, as not requiring the construction of new hydropower.
- 3) **Quebec now is considering building four to five new hydropower dams.** To meet approaching power constraints, you recently announced⁶ that Quebec would need to build new dams—which can take a decade or longer, and which, history shows, can face termination in the face of concerns about impacts on the environment and indigenous communities.

¹ <https://montrealgazette.com/business/local-business/hydro-quebec-chief-sophie-brochu-to-step-down-on-april-11>

² <https://www.bloomberg.com/news/articles/2023-04-27/quebec-s-cheap-clean-energy-raises-risk-of-hydropower-shortfall>

³ <https://www.cbc.ca/news/canada/newfoundland-labrador/maine-jury-transmission-line-hydro-quebec-newfoundland-1.6818037>

⁴ See NECEC Hydro proposal to Massachusetts 83D procurement stating that there is “no risk related to generation sources, which are already in service.” <https://macleanenergy.com/83d/83d-bids/>

⁵ “CHPA does not involve the construction of new dams,” <https://www.eenews.net/articles/how-a-6b-transmission-project-made-it-in-new-york/>

⁶ <https://montrealgazette.com/news/local-news/power-hungry-quebec-will-soon-need-more-hydro-dams-legault-says>

- 4) **Details about Quebec's hydropower plans are being kept secret.** Although you announced that new dams will be needed, you also have said "I can't reveal the four or five projects." According to media reports: Premier Legault "won't say which rivers are being targeted to avoid panicking any communities... [and when] asked if the plan includes such environmental jewels as the Magpie River and the Petit Mécatina, which were both mentioned as potential projects in Hydro-Québec's 2009-2013 strategic plan, Legault again avoided answering."

- 5) **Tensions are building between Quebec's commercial and residential users.** Because Quebec has attracted large-scale power consumers, which now use as much as half of HQ's generating capacity, residential users are being urged to conserve energy and concerns are growing about increases in power costs and impacts on economic growth.⁷

As you know, in November 2021, the people of Maine voted overwhelmingly to terminate the NECEC.⁸ Throughout the multi-year debate in Maine about the NECEC, representatives of Hydro-Quebec (HQ) and Central Maine Power (CMP) claimed that the project would exclusively utilize existing generation and that no new hydropower dams would need to be built. While this raised many questions about how the NECEC could possibly deliver new, additional reductions in greenhouse gas emissions if there was no new generation, the debate excluded discussion about the risks and impacts of new dam construction.

We now wonder whether HQ and CMP intentionally deceived Massachusetts regulators by not mentioning the possible need for new dam construction, thus reducing perceived project risks associated with the proposal and increasing the chances of winning the contract.

We find it hard to believe that during the period while the NECEC was going through the procurement and permitting processes (2017-2021), HQ was not already evaluating the need to build new dams to meet domestic and export demands but was just keeping those plans under wraps.

We have read that HQ's export deals, including the NECEC, are now being called a "strategic mistake" by industrial energy consumers in Quebec. We also know that Quebec has been urging people to conserve electricity and has increased imports from New England to meet peak demand. And we are well aware of the social and environmental impacts of hydropower projects, and the cost and time it takes to build a dam. HQ's Romaine-4 project that came on-line in 2021 cost \$7.3 billion and took a decade to build.

Many people in New England have lived with a myth that Quebec has so much power that it doesn't know what to do with it all. We have been told that HQ was wasting large amounts of power by spilling water over dams without generating power, and all that was needed was transmission lines to get the power to new markets. But this clearly is not the case. The reality is much more complicated, and we believe Quebec has a responsibility to fully reveal that complexity to the public, including to those who live in export markets for HQ power.

⁷ <https://www.bloomberg.com/news/articles/2023-04-27/quebec-s-cheap-clean-energy-raises-risk-of-hydropower-shortfall>

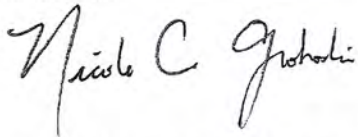
⁸ <https://www.pressherald.com/2021/11/02/hotly-contested-power-line-brings-out-maine-voters/>

With Quebec's changing energy picture in mind, as policymakers in your neighboring State of Maine, we respectfully request that help us find answers to the following questions:

- 1) What are the river systems and locations envisioned for the four or five new hydropower projects that Quebec is considering, and what are the potential environmental impacts and permitting risks of those projects?
- 2) Did Quebec know in the period of 2018 to 2021 that Quebec would shift from a period of electricity surplus to a period of shortfalls starting in late 2026? If so, why was this not revealed in connection with the debate about the NECEC? If not, why not?
- 3) What are the projections for increased imports of power from New England to Quebec over the next 20 years (the term of the NECEC contract), particularly during peak load periods, based on various scenarios of Quebec's energy supply becoming more constrained due to export commitments, economic growth, and expansion of electric vehicles and other electrification strategies?

We appreciate your attention to our concerns and look forward to your response.

Sincerely,



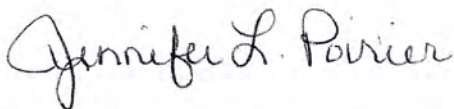
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cc: Massachusetts Governor Healy

