



Canadian
Electricity
Association

Association
canadienne
de l'électricité

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

**FERC Supplemental Notice of Technical
Conference Inviting Comments on Climate
Change, Extreme Weather and Electric
System Reliability**)

Docket No. AD21-13-000

**COMMENTS OF THE CANADIAN ELECTRICITY ASSOCIATION IN RESPONSE TO
SUPPLEMENTAL NOTICE OF TECHNICAL CONFERENCE INVITING COMMENTS**

INTRODUCTION

The Canadian Electricity Association (“CEA”) appreciates this opportunity to submit comments in response to the Supplemental Notice of Technical Conference Inviting Comments on Climate Change, Extreme Weather and Electric System Reliability (“Supplemental Notice”) issued by the Federal Energy Regulatory Commission (“FERC”), and published in the Federal Register on March 19, 2021 (AD21-13-000).

In the Supplemental Notice, FERC seeks comments on issues regarding climate change, extreme weather and electric system reliability. CEA offers these comments in response to this request.¹

DESCRIPTION OF CEA

Founded in 1891, CEA is the national forum and voice of the evolving electricity business in Canada. CEA members generate, transmit, distribute and market electric energy to industrial, commercial and residential customers across Canada and into the U.S. every day. Our membership includes provincially owned and investor-owned utilities; independent power producers; independent system operators; wholesale power marketers; and municipally owned local distribution companies. Several CEA members own assets in the U.S.

CEA members include owners, operators and users of the North American bulk power system (“BPS owner operators”) that adhere to North American Electric Reliability Corporation (“NERC”) standards, pursuant to provincial frameworks, and that provide critical electric infrastructure information to the North American Electric Reliability Corporation (“NERC”) in compliance with mandatory reporting requirements. CEA members are engaged in the buying and selling of electricity, ancillary services, and other energy and environmental products in markets across North America, including in Commission-approved regional transmission organization/independent system operator (“RTO/ISO”) markets as registered participants.

¹ The comments represent the current position of CEA as an organization, but not necessarily the views of any particular CEA member with respect to any issue.





CEA members participate in other cross-border institutions and forums with their American counterparts that aim to ensure grid security, resilience and reliability, including the Electricity Subsector Coordinating Council (“ESCC”) and the Electricity Information Sharing and Analysis Center (“E-ISAC”).

Comments

Given the close integration of the North American electricity grid, and a shared interest in the impacts of climate change, extreme weather and electric system reliability, CEA offers the following general comments on the topics of this docket in the spirit of continued bilateral collaboration:

Background

Canadians and Americans share a highly integrated electricity grid, connected by more than 35 high voltage cross-border transmission lines. Every Canadian province along the U.S. border is electrically interconnected with at least one neighbouring U.S. state. The result of the integrated Canada-U.S. electric grid is a flexible, reliable, and secure grid on both sides of the border. This positive partnership has served American and Canadian businesses and communities for over 100 years.

CEA members engage in bi-directional trade with the U.S., and work with their American counterparts to keep the grid reliable and secure. Trade and integration form the backbone of a highly positive and mutually beneficial cross-border electricity relationship that provides economic, environmental, resilience and security benefits, and which contributes to affordable and increasingly clean energy for customers in both the U.S. and Canada.

The importance of this longstanding relationship is recognized by U.S. and Canadian governments. This is in addition to both countries understanding the need to address climate change and extreme weather events. For example, both U.S. and Canadian federal governments have decarbonization goals they seek to achieve in the coming future. The recently announced *Roadmap for a Renewed U.S.-Canada Partnership* outlined opportunities to cooperate on electricity-related items, including “a coordinated approach to accelerating progress towards sustainable, resilient, and clean energy infrastructure, including encouraging the development of cross-border clean electricity transmission.”² Further, the U.S. Environmental Protection Agency and Environment and Climate Change Canada recently issued a joint statement committing to “bilateral collaboration to increase the production and use of clean electricity, including cross-border transmission.”³ Overall, as both Canada and the U.S. seek to meet climate and decarbonization goals, there is value in continued and deepened cross-border collaboration to meet these goals reliably, affordably and resiliently.

² The White House. [Roadmap for a Renewed U.S.-Canada Partnership](#). February 23, 2021.

³ EPA Press Office. [Joint Statement by the U.S. Environmental Protection Agency and Environment and Climate Change Canada on Environment and Climate Change](#). April 1, 2021.





Coordinated Regulation and Reliability

The North American electricity grid is undergoing tremendous evolution to meet the challenges of an evolving resource mix and extreme weather incidents. The interconnected nature of the North American grid offers numerous reliability- and resilience-related advantages to both countries, including (1) a higher level of reliable service for customers through enhanced system stability; (2) efficiencies in system operation and fuel management; (3) opportunities to use power from nearby markets to address local contingencies; (4) opportunities presented by seasonal/time zone variations associated with diversified load; and (5) expanded access to low-carbon and competitively priced resources.

Canadian and American Bulk Power System owners and operators understand that due to the interconnected nature of the North American electricity grid, its reliable and safe operation is a shared responsibility. The physical and market linkages between the U.S. and Canada are made possible by adherence to a common set of operational and commercial rules, especially: (1) electric reliability standards developed by NERC and (2) the standard market practices and protocols utilized by RTOs, ISOs and other U.S. market participants. Compliance with these terms ensures greater liquidity in markets, and a greater diversity of supply options for customers throughout North America.

Canada's clean, predominantly hydropower supply can support the further development of U.S. renewable generation, while providing reliability and resilience benefits. For example, clean, dispatchable baseload electricity trade from Canada can serve as backstop energy to variable U.S. variable renewables, such as solar and wind. Canadian hydroelectric power can play an especially unique role, allowing U.S. variable renewables to sell excess electricity to Canada which allows hydro reservoirs to reserve water, and can be used to generate power to be sold to the U.S. when needed in the future.

This mutually beneficial arrangement facilitates two-way trade and cross-border projects like the Great Northern Transmission Line, which went into operation last year. Analysis in the 2013 Manitoba Hydro Wind Synergy Study demonstrates that projects similar to this one, pairing new U.S. wind generation with Canadian hydro and transmission, can offer significant U.S. load cost savings.⁴ This builds on previous benefits that saw imports of Manitoba hydropower to U.S. utilities reduce GHG emissions in the Upper Midwest by an estimated 44-60 million tons between 2006 and 2012.⁵

Canadian and U.S. electricity entities also work in close collaboration on certain initiatives to harmonize or align carbon reduction efforts across jurisdictions. One example is the Canada-U.S. coordination on Corporate Average Fuel Economy (CAFE) standards, which has the potential to decarbonize the transportation sector by accelerating electric vehicle adoption. Further examples include the Pacific Coast Collaborative, and the Western Climate Initiative which officially integrated California and Quebec's greenhouse gas emissions cap-and-trade programs in 2014, including joint

⁴ Bakke, J., Zhou, Z. & Sumeet M., *Manitoba Hydro Wind Synergy Study (Final Report)*. MISO 2013.

⁵ Manitoba Hydro. *Reducing Emissions*. <https://www.manitobahydropower.com/reducing-emissions/>





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auctions. Aligning regulations across jurisdictions, where appropriate and feasible, can offer not only environmental benefits, but mutual economic ones.

Finally, as various sectors become increasingly electrified, the impacts of extreme weather on the grid will become even more significant. Close collaboration with Canada can support and strengthen the reliability of the grid as well.

Trade

Over 70 TWh of electricity flowed across the U.S.-Canada border in 2019, representing an electricity trade relationship of over \$2 billion USD.⁶ Approximately thirty states engage in electricity trade with Canada each year. This two-way exchange enables electric supply to meet demand in the most efficient manner, increases resilience, supports affordability for customers, and helps regions meet policy and business goals on both sides of the border. Many Canadian and U.S. electricity companies own assets in both countries, and increased cross-border transmission infrastructure could potentially enable further two-way clean electricity trade and future balancing potential.⁷

Although Canadian electricity sales to the U.S. accounted for 2 percent of total U.S. retail sales in 2017, the Canada-U.S. transmission interconnections are integral enablers to northern border states' electricity markets.⁸ In New York and New England, for example, electricity from Canada accounts for approximately 12 to 16 percent of retail electricity sales.⁹ In Vermont, the largest share of electricity consumed comes from hydroelectric generators in Canada.¹⁰

Canada has an abundant clean electricity supply that can meet both domestic and cross-border clean energy demand, with additional clean energy development opportunities. With the majority of electricity trade between the two countries coming from hydropower generation in Canada, U.S. states – particularly in the Northeast – have taken steps to access and take advantage of this abundant, affordable, reliable and clean source of energy supply.

Massachusetts, for example, has authorized long-term contracts of 15-20 years to procure hydropower electricity, and to leverage its environmental and reliability benefits. This mutually beneficial, symbiotic

⁶ Canada Energy Regulator. *Electricity Annual Trade Summary – 2019*. <https://www.cer-rec.gc.ca/nrg/sttstc/lcrtct/stt/lcrtctysmmr/lcrtctysmmr-eng.html>. July 13, 2020.

⁷ Dimanchev, Hodge & Parsons. [*Research Brief: Two-Way Trade in Green Electrons: Deep Decarbonization of the Northeastern U.S. and the Role of Canadian Hydropower*](#). MIT CEEPR Working Paper 2020-003. 2020.

⁸ Stanley, Andrew. *CSIS Briefs: Mapping the U.S.-Canada Energy Relationship*. Center for Strategic & International Studies. <https://www.csis.org/analysis/mapping-us-canada-energy-relationship>. May 7, 2018.

⁹ Stanley, Andrew. *CSIS Briefs: Mapping the U.S.-Canada Energy Relationship*. Center for Strategic & International Studies. <https://www.csis.org/analysis/mapping-us-canada-energy-relationship>. May 7, 2018.

¹⁰ U.S. Energy Information Administration. *Vermont State Profile and Energy Estimates*. <https://www.eia.gov/state/analysis.php?sid=VT>. July 18, 2019.





relationship also exists in the Pacific Northwest, with excess hydropower and wind generation in Washington State finding markets in British Columbia. In New York, the Champlain Hudson Transmission line will provide clean power from Canada to the metropolitan area of New York, helping that region meet its clean energy goals.

Evidence of economic and environmental benefits of trade are further described in a recent study by the U.S. International Trade Commission, which recently noted that “Case studies show the potential for hydroelectricity imports to help stabilize electricity prices, reduce costs to consumers, and make variable renewable energy (such as wind and solar) more profitable. When hydroelectricity imports are used to balance fluctuations in wind power generation, they reduce price volatility and can increase the revenue available to wind projects.”¹¹

Midcontinent Independent System Operator (“MISO”) also found significant benefits of expanding the interface between Manitoba Hydro and MISO, including production cost savings and modified production cost savings, load cost savings, reserve cost savings, and U.S. wind curtailment reduction.¹²

Extreme Weather Events and Mutual Assistance

Canadian and American security experts continue to work together in other forums to develop the tools, standards and best practices that protect the integrity of our shared grid. The ESCC is an effective forum and a good example of effective U.S.-Canada security cooperation, which enjoys the participation of senior government officials and electricity industry CEOs from both countries.

Canadian electricity companies also assist their neighbours in times of need. Over the last few years, hundreds of personnel have deployed from Canada to facilitate power restoration efforts following nor'easters, California wildfires, Hurricane Florence, and other severe weather events in the U.S. This builds on a history of cross-border mutual assistance, including industry action taken following Hurricane Sandy to strengthen available supports. One of the outcomes was a procedure to ensure timely border crossings for mutual assistance fleets.

Additionally, following the February 2021 winter storm event, Canadian provinces stepped up to support overloaded RTOs and ISOs; SaskPower exported between 150 MW and 175 MW to Southwest Power Pool (SPP), and Manitoba Hydro supplied an average of 550 MW of power to the Midcontinent ISO (MISO), with peaks of up to 1,000 MW throughout the week.¹³

¹¹ U.S. International Trade Commission. *Massachusetts Can Meet Its Updated Renewable and Clean Energy Commitments with Relatively Small Increases in Retail Electricity Rates, Says USITC*. https://www.usitc.gov/press_room/news_release/2021/er0224/1727.htm. February 24, 2021.

¹² Bakke, J., Zhou, Z. & Sumeet M., *Manitoba Hydro Wind Synergy Study (Final Report)*. MISO 2013.

¹³ Connect2Canada. *Canada-US Grid Integration Helps States Meet Critical Electricity Needs*. February 22, 2021.





As extreme weather events become more frequent, mutual assistance will remain an important tool for restoration and recovery.

CONCLUSION

CEA appreciates the opportunity to provide these comments to FERC. CEA respectfully requests consideration of the comments raised herein, and looks forward to continuing to work with FERC to ensure the reliability and efficient operation of the integrated North American grid.

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