Additional Topics
Submitter's Name/Affiliation: Pierre Guimond/Canadian Electricity Association

## I. Introduction

In these comments, the Canadian Electricity Association ("CEA") highlights the importance of the U.S.-Canada electricity trade relationship to both countries and encourages the U.S. Senate Energy and Natural Resources Committee ("ENR Committee"), as it considers proposals for the design of a national clean energy standard ("CES"), to seek solutions which support this mutually beneficial bilateral relationship.

## II. Background

The electric transmission systems of U.S. and Canadian utilities are interconnected with one another at over 30 points, forming a highly integrated North American grid, as shown on the map in Appendix A below. Of the approximately 452,000 circuit miles of transmission lines operated at 100 kV or above in North America, almost 79,000 circuit miles – or 17 percent – are located in Canada.[1]

The integration of the grid has enabled the cross-border movement of electricity to become an established and expanding part of the larger U.S.-Canada trade relationship. Appendix B below demonstrates the significant scale of this relationship, with the map depicting the export and import flows between our two countries and the bar graph representing the growth in both directions of cross-border electricity trade over time. In 2010, power exports from Canada totaled almost 46,000 gigawatt-hours ("GWh"), while 20,000 GWh were imported from the United States. As these data illustrate, the North American electricity market is borderless, with supply meeting demand north-to-south or south-to-north as required.

[1] North American Electric Reliability Corporation. "2010 Long-Term Reliability Assessment" (October 2010), p. 22. http://www.nerc.com/files/2010_LTRA_v2-.pdf

This integrated relationship provides numerous benefits to consumers in both countries: enhanced reliability and security of supply, including during times of emergency outages and periods of high electricity demand; efficiencies in system operation; and, greater access to a more diverse mix of low-emitting and competitively-priced resources. It also assists in achieving efficiencies in fuel and resource management. As the pie charts in Appendix C below indicate, Canada and the U.S. have very different generation mixes. These differences primarily reflect availability of resources, as different geographic regions have access to different input resources. Cross-border trade thus enables market participants to take advantage of the diversity between the respective Canadian and U.S. generation profiles.

Canadian utilities are part of and therefore critical to the energy security of the United States, and the reliability of the North American transmission grid.

## III. Comments

### 1. CEA encourages the ENR Committee, as it considers proposals for the design of a CES, to seek solutions which support the U.S.-Canada electricity relationship.

The ENR Committee's White Paper identifies several energy, environmental and economic policy goals which CES proponents argue can be achieved in whole or in part through the adoption of a national CES. These objectives include the reduction of greenhouse gas ("GHG") emissions, lower electricity rates, diversification of generation portfolios and growth in the domestic clean energy manufacturing sector. In addition, the White Paper calls for input from stakeholders on which objectives ought to guide the design of a CES and whether or not a national CES is in fact the most effective tool at present for fulfilling these goals.

In view of the integrated nature of the international grid and the important role electricity trade can play in strengthening the security of supply in North America, CEA strongly

recommends that the ENR Committee look for ways to support robust electricity trade across the continent. Should the ENR Committee elect to develop a CES, CEA urges committee members to remain mindful of the value and importance of the free flow of electricity between the U.S. and Canada. This will help ensure that, concomitant with the potential adoption of a national CES in the U.S., consumers are able to continue deriving those benefits offered by an open, inclusive electricity marketplace in North America, such as enhanced reliability, improved system efficiency and expanded access to cleaner, more affordable power supplies. Accordingly, CEA respectfully suggests that, as it assesses proposals for the design of a CES, the ENR Committee seek solutions which complement and build on the success of the vibrant U.S.-Canada electricity relationship, and do not undermine this relationship.

In particular, CEA recommends the following:

- A national CES should be inclusive of **all** clean energy sources which generate electric energy sold in the United States. Meeting the clean energy objectives set forth in a national CES will require the deployment of all available, economically viable clean energy technologies and resources. Due to the integrated nature of the North American electricity system, CEA suggests that any CES program should give adequate consideration to all clean energy resources to ensure program objectives can be achieved at the least cost to consumers while enhancing North American energy security.

  Consistent with the robust bilateral electricity trading regime, existing and new sources of clean energy from Canada can play a meaningful role in helping to meet these goals. Accordingly, a national CES program should include provisions allowing for the fulfillment of compliance requirements through imports of electricity generated from clean energy resources in Canada and/or the issuance of clean energy credits to all entities generating sources of clean energy sold in the U.S., including sources in Canada.[2]

- Mechanisms for complying with CES requirements ought to be fungible/tradable within and across regions. Electric utilities and other sector participants subject to a CES standard would be better able to manage their compliance when afforded the opportunity

[2] In prior renewable electricity standard proposals, Canadian power could be used to meet a particular utility or sector participant's renewable obligations. CEA cautions against any limits on the use of such power in a CES. The North American Free Trade Agreement ("NAFTA") contains prohibitions on performance requirements. Specifically, Article 1106 provides, in relevant part, that a government may not require a firm to "achieve a certain level of domestic content." Thus, any provision in a national CES that explicitly requires retail electric suppliers to achieve a certain level of domestic content or limits eligibility to domestic product is inconsistent with Article 1106.

> to purchase, transfer and trade credits. This would also assist in addressing concerns of regional disparities and minimizing costs ultimately borne by consumers.

**2. A national CES which supports the bilateral electricity trade relationship is consistent with the objectives of the U.S.-Canada Clean Energy Dialogue.**

If pursued, the development of a CES which supports the U.S.-Canada electricity trade relationship would offer the important benefit of advancing bilateral cooperation on addressing energy and environmental challenges. Such a policy would further the particular efforts of one of the signature vehicles for cross-border collaboration – the U.S.-Canada Clean Energy Dialogue ("CED"), established in February 2009 by President Obama and Canadian Prime Minister Stephen Harper as an intergovernmental initiative to facilitate joint movement towards a low-carbon energy economy powered by clean energy.

One of the three areas of focus in the CED is building a more efficient electricity grid based on clean and renewable generation. In its Action Plan, the CED committed to several priority actions to achieve the goal of transitioning to a modernized electricity system, including the core priority of increasing opportunities for trade in clean electricity. In their Second Report to Leaders on the CED's progress, delivered in February 2011, U.S. Energy Secretary Steven Chu and the Canadian Environment Minister Peter Kent noted the following:

> Free trade in electricity between Canada and the United States contributes to a number of important energy policy objectives, including enhanced reliability and improved asset utilization of generation and transmission infrastructure. Both countries also recognize the potential for enhanced trade in clean electricity to contribute to shared renewable energy and greenhouse gas emission reduction goals.[3]

Moreover, key conclusions supported in this report include a re-affirmation of the role that low-cost, clean electricity trade will play in ensuring that GHG reduction goals can be met while keeping electricity rates affordable for consumers, along with the projection that trade is

[3] http://www.climatechange.gc.ca/Dialogue/default.asp?lang=En&n=DACB77CD-1

set to become a viable option for the most economic low-carbon generation resources currently under development in U.S. states.

Given that the ENR Committee's White Paper is a response to a target proposed by President Obama himself, CEA believes that it is appropriate to highlight how a CES strategically designed to support the existing cross-border electricity trading regime would positively interact with other policy goals set out by the President and contribute to achieving a secure energy future for the U.S. Thus, with respect to any clean energy standard developed by the ENR Committee, CEA urges alignment between its underlying design principles and the broader CED objective for clean, renewable generation to help strengthen the North American electricity system.

## Conclusion

CEA thanks the ENR Committee for this opportunity to respond to the White Paper and respectfully requests that the committee consider these comments as it gathers stakeholder input on the potential design elements of a national CES. CEA looks forward to continue engaging with committee staff and members on issues relevant to the development of a national CES program.

Respectfully submitted,

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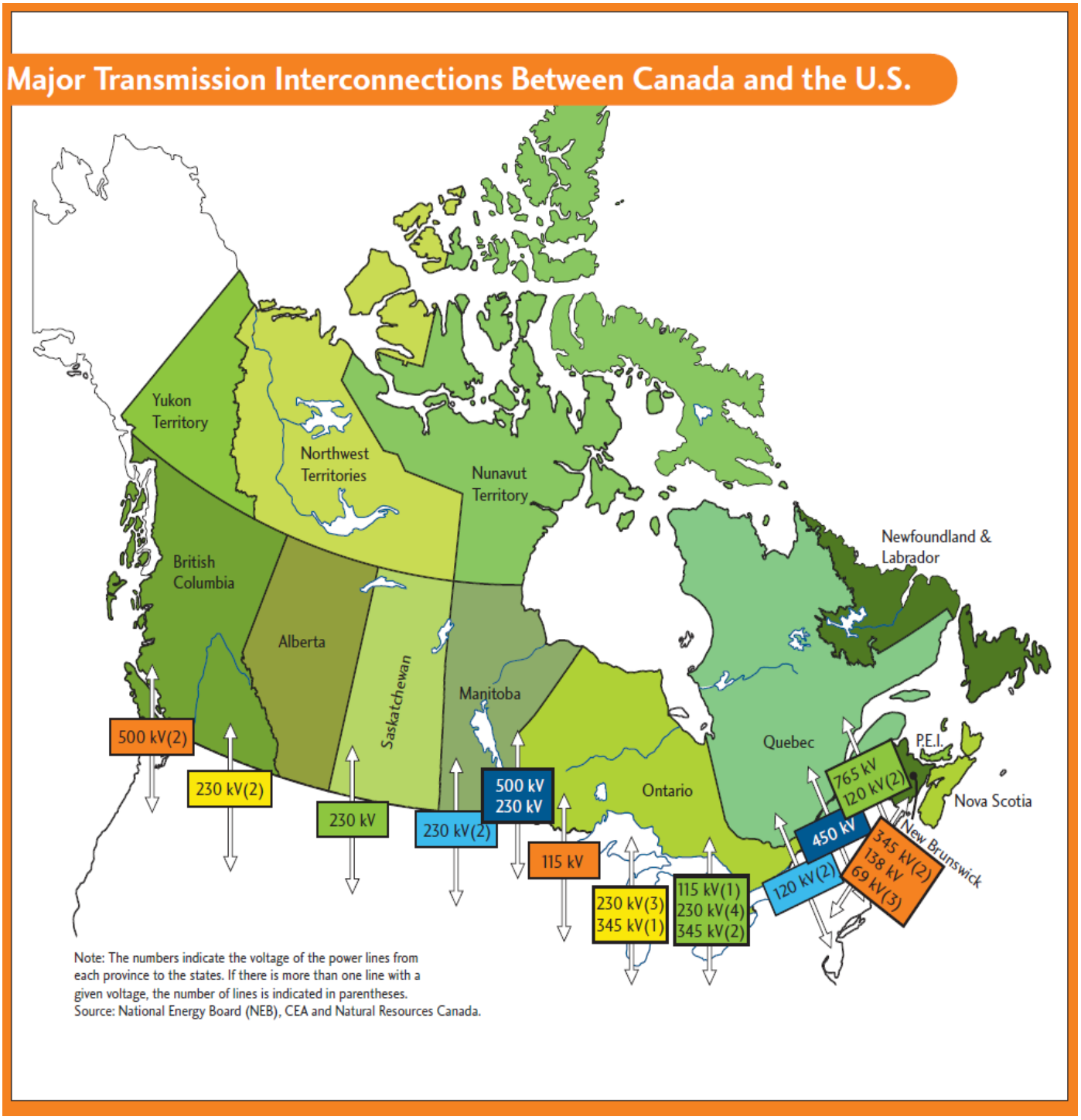
## APPENDIX A


Major Transmission Interconnections Between Canada and the U.S.
Yukon Territory
Northwest Territories
Nunavut Territory
British Columbia
Alberta
Saskatchewan
Manitoba
Ontario
Quebec
Newfoundland & Labrador
P.E.I.
Nova Scotia
New Brunswick
500 kV(2)
230 kV(2)
230 kV
230 kV(2)
500 kV
230 kV
115 kV
230 kV(3)
345 kV(1)
115 kV(1)
230 kV(4)
345 kV(2)
120 kV(2)
450 kV
765 kV
120 kV(2)
345 kV(2)
138 kV
69 kV(3)
Note: The numbers indicate the voltage of the power lines from each province to the states. If there is more than one line with a given voltage, the number of lines is indicated in parentheses.
Source: National Energy Board (NEB), CEA and Natural Resources Canada.

## APPENDIX B

# Exports and Imports Between Canada and the U.S., 2010

Source: NEB Electricity Exports and Imports. January 2010 - December 2010 (GWh)

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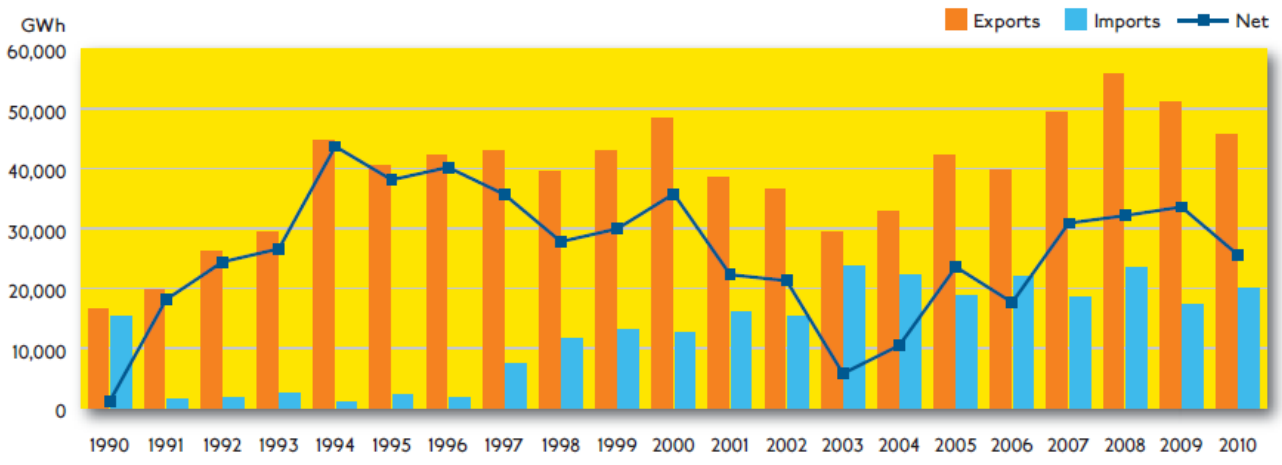
## Electricity Exports from Canada and Imports from the U.S., 1990-2010

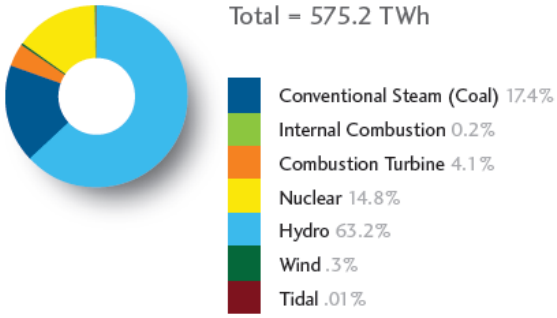



Source: National Energy Board, Electricity Exports and Imports

## APPENDIX C

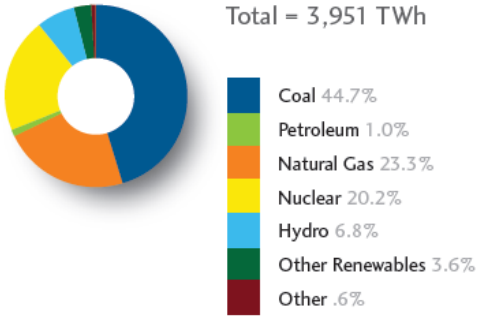
### Electricity Generation by Fuel Source in Canada and the U.S., 2009*

**Canada**
**Net Electricity Generation, 2009**




*Numbers may not sum to 100 percent due to rounding.
Source: Statistics Canada, *Survey 2151*, 2010

**U.S.**
**Net Electricity Generation, 2009**




*Numbers may not sum to 100 percent due to rounding.
Source: US Energy Information Administration, *Electric Power Monthly*