

**The Integrated North American ●
Electricity Market**

**Investment in Electricity Infrastructure and Supply:
A North American Concern**

March 2006
Canadian Electricity Association

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Contact: Timothy Egan, 416-535-2815
egan@canelect.ca

Executive Summary

The North American electricity system, which interconnects Canadian and U.S. electricity markets, is among the most integrated and reliable in the world. It combines a diversity of fuel sources, extensive transmission interconnects and two-way trading that benefits both countries.

Looking to the future, growth in electricity demand in Canada and the U.S., as well as the retirement of aging or environmentally challenged generation facilities, will require investment in new electricity infrastructure and supply. Investment in this integrated North American market will be affected by a number of factors, including legislative and regulatory measures, as well as policy directives. The passage in the U.S. of the Energy Policy Act of 2005 will play an important role in promoting investment in the U.S., but will also necessarily affect the North American electricity market as a result of the interconnected nature of our respective transmission systems and the interrelationship of electricity supply.

Electricity supply and infrastructure solutions for the U.S. and Canada will necessarily reflect the availability of our respective fuel supply, taking advantage of the diversity of fuel sources. Whether for conventional or emerging generation technologies, investment should focus on assuring sustainable generation sources for our respective countries. Investment in transmission infrastructure must also help to address constraints along the border, which will allow for enhanced cross-border trade.

The U.S. and Canada share the challenges of ensuring the future adequacy of electricity infrastructure and supply, and we need to address these challenges cooperatively. The Canadian Electricity Association proposes the following areas of bi-national cooperation to promote effective investment in electricity infrastructure and supply in the North American market:

- Cooperation in Enhancing Electricity Supply
- Cooperation in Enhancing Transmission Infrastructure
- Cooperation in Addressing Air Quality Issues and Climate Change

The integration between Canada and the U.S. will only increase as energy demand and trade continue to grow. This makes close cooperation between our countries a necessity. The benefits of cross-border cooperation are clear; the challenge is to identify the approaches that will take advantage of our diversity of supply and help to ensure a reliable North American electricity market in the future. Resolving our electricity infrastructure and supply needs must be an international concern, requiring the full engagement and cooperation of both countries. Anything less could impede future cross-border trade and, more significantly, undermine the very sustainability of supply we all seek to see guaranteed.





Canadian Electricity Association
Association canadienne de l'électricité
www.canelect.ca

I. Market Overview: The Integrated U.S./Canadian Electricity Market

The diversity of the Canadian and U.S. electricity systems, the different balances of conventional and emerging technologies in our various regional generation mixes, and the differing market demands region by region over days, weeks, and seasons, have prompted a level of trade that benefits electricity consumers in every region across the continent. When linked across the international border, our diverse systems have created opportunities for efficiencies in regional systems management, reduced

environmental impact, and improved reliability. These are vital achievements for all concerned.

A. Details of the Integrated Market

The map of the North American Transmission Grid below offers a clear visual indicator of the extent of current integration. Electricity trade occurs at a range of points across the Canada-U.S. border, as shown on page 4, reflecting the largely north-south nature of the Canadian grid, as it is integrated with the more dense web of transmission infrastructure in the U.S.

North American Transmission Grid



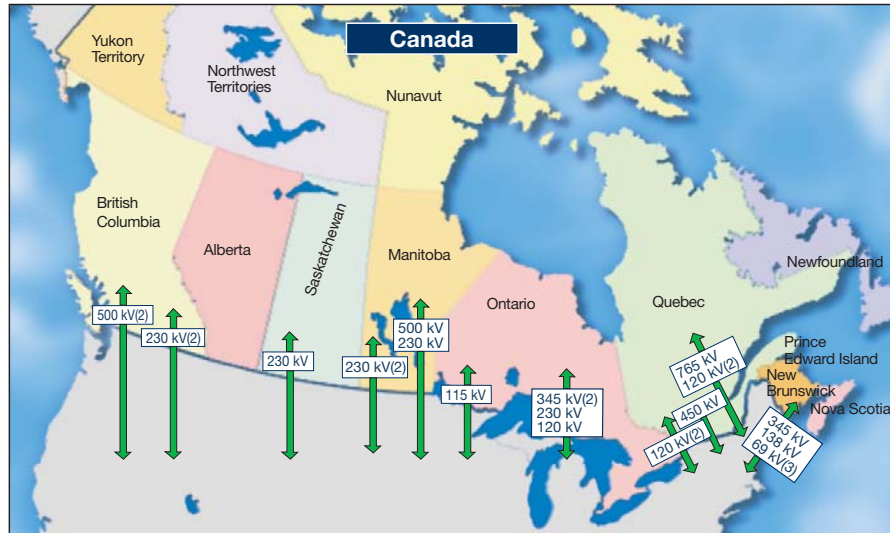
Map copyright® CEA. Lines shown are 345kV and above. There are numerous interconnections between Canada and the U.S. under 345kV that do not appear on this map.

Cross-border trade enables market participants to take advantage of diversity between the Canadian and U.S. electricity systems. The diversity and complementarity of our systems are demonstrated by the different balances of various conventional and emerging technologies in our

generation mixes. These differences primarily reflect availability of resources, as different geographic regions have access to different input resources. The pie charts on page 4 show the generation mixes for Canada and the U.S.



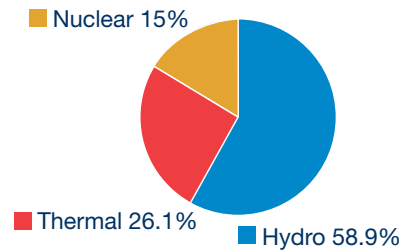
Major Transmission Interconnections between Canada and the U.S.



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: NEB, Canadian Electricity Association and Natural Resources Canada.

Electricity Generation by Fuel Source in Canada and the U.S., 2004

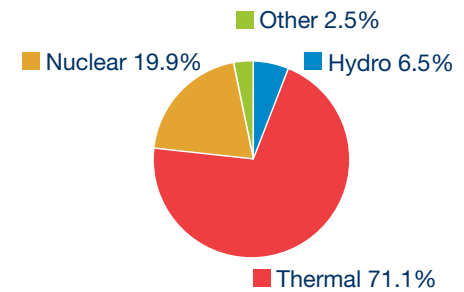
Canada
 Net Electricity Generation, 2004



Total = 568 TWh

Source: Statistics Canada

U.S.
 Net Electricity Generation, 2004



Total = 3,971 TWh

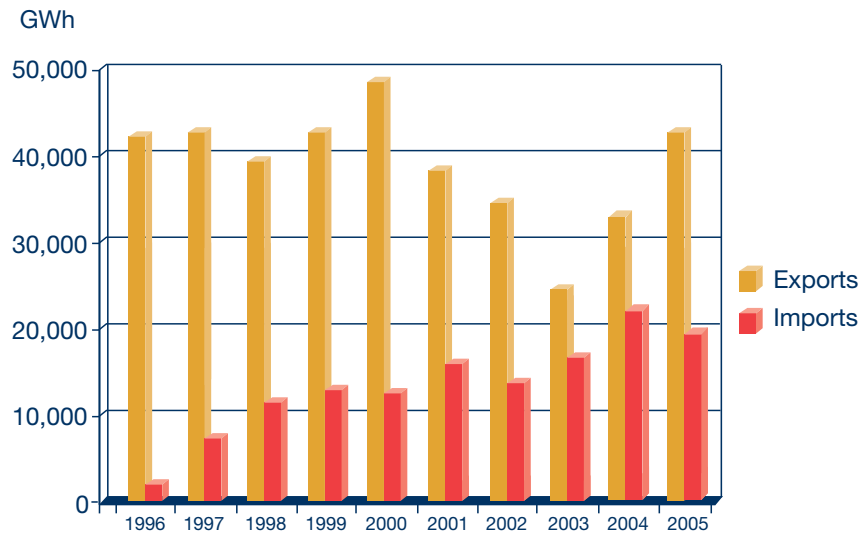
Source: Energy Information Administration
 Electricity Power Annual

Electricity is now established as a key and growing part of the larger energy trade between the two countries, and it is increasingly two way. Electricity trade between Canada and the U.S. stems primarily from two sources. First, generators in Canada are key suppliers to particular U.S. markets. In addition, generators in both countries take

advantage of the trading relationship to optimize the performance of their respective asset portfolios, which contributes to lower electricity costs and higher overall system efficiency and reliability. The bar graph on page 5 demonstrates the extent of this two-way trading relationship.



Electricity Exports from Canada and Imports from the U.S., 1996-2005

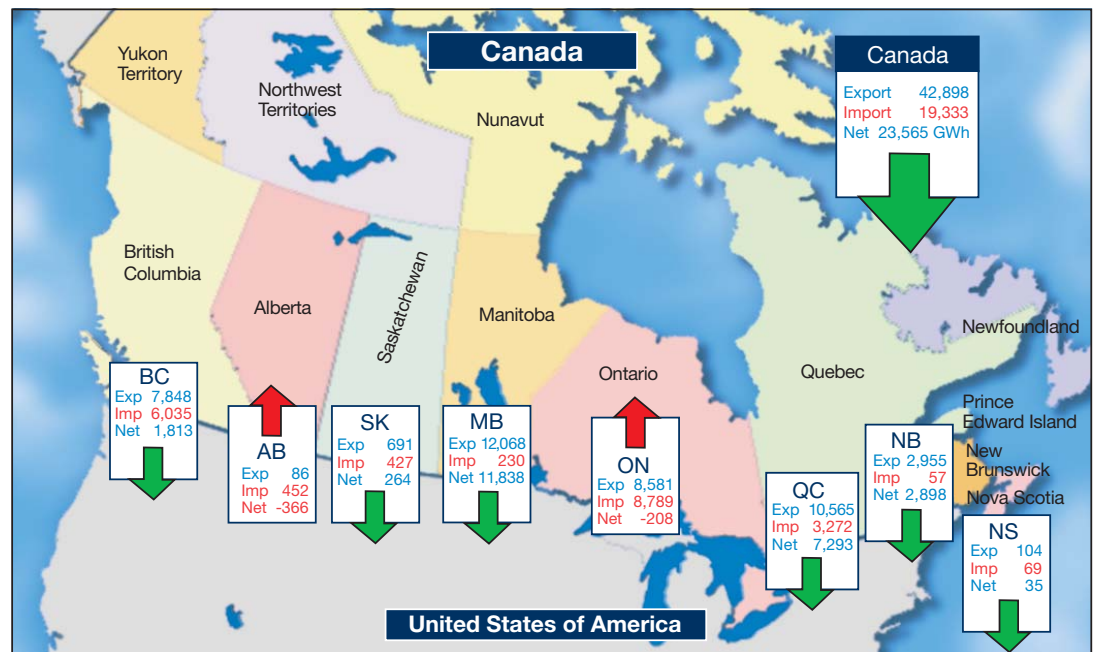


Source: NEB Electricity Exports and Imports, Monthly Statistics, various years.

The quantity of electricity exported from Canada has typically been 6 to 10 percent of production. At the same time, electricity

imports to Canada have increased significantly. The fundamental point is that the market is a borderless one, and supply

Exports and Imports between Canada and the U.S., 2005



Source: NEB Electricity Exports and Imports, January 2005 to December 2005.

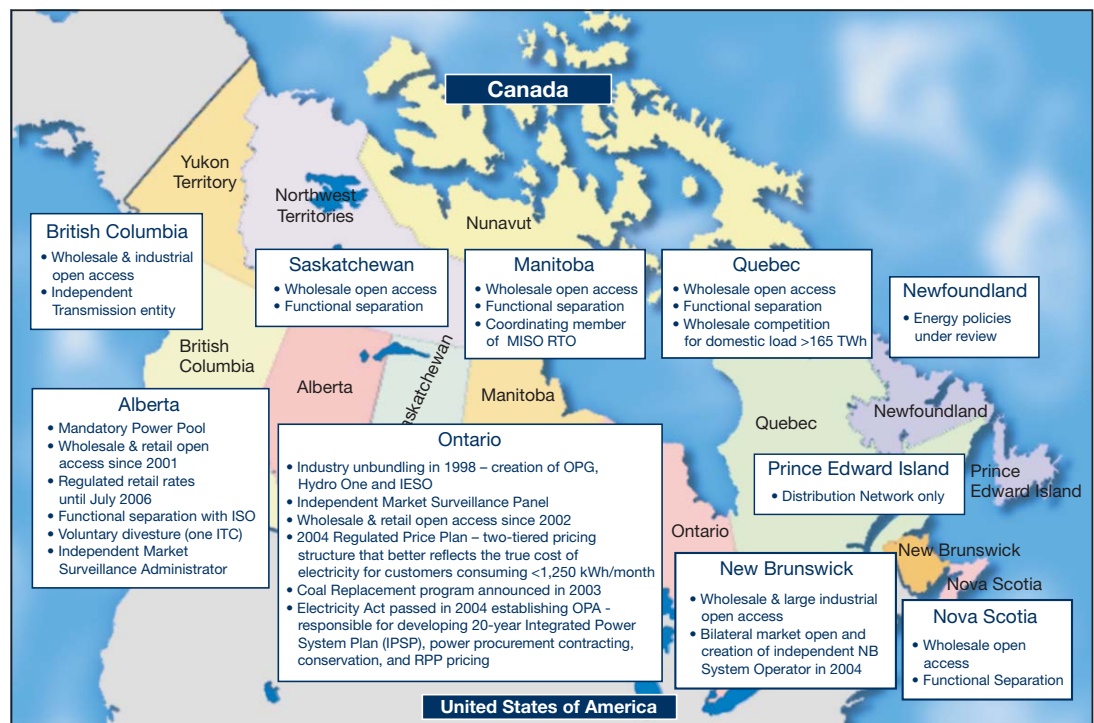


meets demand north to south or south to north as that market requires, to the advantage of consumers across the continent. Robust competitive wholesale markets in both the U.S. and Canada rely on integrated U.S./Canadian systems. As the markets continue to open, the importance of cross-border trade will only increase.

Until recently, restructuring of the electricity industry followed a similar pace in both

Canada and the U.S. The drive to open markets in both countries, however, appears to have stopped, at least for the present. Currently, approximately 50 percent of Canadian retail customers are in open markets (although regulated rates remain available to retail customers in both Ontario and Alberta). The map below provides the status of market restructuring in Canada.

Status of Market Restructuring in Canada, 2006



B. The Economic and Environmental Benefits of an Integrated Market

Cross-border electricity trade provides the opportunity to optimize the use of generating resources to the benefit of U.S. and Canadian market participants. When linked across borders, the diversity of our systems, our climates, and our demand profiles allow for efficient power flows north or south at various times depending on

market circumstances. The resulting regional market efficiency gain reduces the overall need for generating facilities and results in lower generation costs to consumers. Moreover, electricity companies can derive environmental benefits through such efficiencies. For instance, a “must-run” fossil-fuel fired or nuclear generator in the U.S. can sell off-peak power to a hydro generator in Canada, allowing the latter to “bank” energy (in the form of stored water)



in its reservoirs. During periods of high demand, the hydro generator releases enough water to both meet its own needs and to assist in meeting the peak demand of its partner in this diversity exchange, thereby avoiding both emissions and higher costs from fossil peaking units. Such opportunities exist to a greater or lesser extent in each of the regional markets across the continent.

Efficiencies in regional systems management can also be achieved through participation in or coordination with regional transmission organizations (“RTOs”). In many cases, RTOs present an opportunity for the effective utilization of existing transmission infrastructure. In fact, some Canadian utilities are actively exploring participation in bi-national RTOs as an approach for optimizing the management of their respective transmission systems, all with an eye to the longer term objective of enhanced cross-border integration.

The objectives of reliable, affordable, environmentally preferable power require that all technologies be available. Increased integration enables the larger, combined U.S. and Canadian regional electricity markets to take full advantage of various emerging technologies like wind power, whose intermittent nature requires backup capacity, to meet our future energy needs on a larger scale. In fact, wind power technologies offer greater reliability where there are increased cross-border system interactions, through diversity of supply over larger geographic areas.

II. Setting the Stage: Factors Affecting Investment in the North American Electricity Market

The bi-national electricity trading system that has evolved between Canada and the U.S. over more than a half century is, like the trading relationship in general, without compare. What began with small tie-lines and the development of boundary waters for hydroelectricity has evolved into extensive cooperative arrangements for managing transmission system reliability, major inter-ties

across the Canada-U.S. border coast-to-coast, and significant trade volume, in both imports and exports. And since the 1980s, the combination of international agreements and regulatory actions has allowed for the creation of integrated North American electricity markets.

Looking to the future, investment in this integrated market will be affected by a number of factors, including legislative and regulatory measures, as well as policy directives. These factors set the stage for investment opportunities in our integrated North American markets.

A. The Passage of the U.S. Energy Policy Act of 2005

The U.S. Congress passed the Energy Policy Act of 2005, in part, to encourage investment in all sectors of the energy industry, including electricity. The Act promotes both conventional technologies and emerging technologies, recognizing the need for promoting all energy sources to assure the sustainability of electricity supply. And while the Energy Policy Act is U.S. focused, the Act will necessarily affect the North American electricity market as a result of the interconnected nature of our respective transmission systems and the interrelationship of electricity supply.

A number of provisions in the Energy Policy Act could encourage investment in this integrated North American electricity market. Of far-reaching impact, in terms of investment in both generation and transmission facilities, is the repeal of the Public Utility Holding Company Act (“PUHCA”). PUHCA had contained provisions restricting investment in U.S. utilities by foreign companies. With the repeal of PUHCA, these restrictions on foreign investment are eliminated.

In terms of transmission facilities, several provisions will help to ensure a truly integrated North American grid and encourage investment in cross-border transmission facilities. First, the reliability standards language in the Energy Policy Act will allow for the establishment of an



international Electric Reliability Organization to develop mandatory reliability standards in both the U.S. and Canada. Moreover, the Energy Policy Act encourages transmission investment by providing backstop siting authority, requiring FERC to establish incentive-based rate treatments for transmission facilities, and providing two new tax provisions. Such provisions could allow for increased transmission investment across our respective borders.

The Energy Policy Act should also serve to encourage investment in generation facilities in the North American market, thereby increasing electricity supply. The Energy Policy Act encourages the development of clean coal facilities, encourages the construction of new nuclear facilities, and provides support for renewable technologies in the U.S..

B. Regulatory and Policy Matters Affecting the Investment Environment

While the U.S. Energy Policy Act will play an important role in encouraging infrastructure and supply investment in North American markets, other factors will also have an impact on investment decisions. Energy policies promoted by other respective governments will certainly affect investment decisions. For example, a number of Canadian provincial governments are requiring minimum levels of renewable energy purchases. The government of Ontario has committed to adding 2,700 megawatts of new renewable energy to Ontario's electricity system by 2010. And the British Columbia Energy Plan has a 50 percent clean energy goal for new electricity demand over the next 10 years. While the U.S. Congress did not include a renewable portfolio standard in the Energy Policy Act, a number of states have adopted renewable mandates in their respective states.

Policy actions taken with respect to climate change will also have a significant impact on generation investment decisions in the U.S. and Canada in the future. Canada, a signatory to the Kyoto Protocol, must have in place the mechanisms to achieve a

reduction in greenhouse gas emissions of 6 percent below 1990 levels for the 2008-2012 period. Looking ahead, Canada agreed to the Montreal Action Plan of December 2005, a commitment for further international action on climate change and greenhouse gas reductions by industrialized countries beyond 2012. While the U.S. is no longer committed to the Kyoto Protocol reductions, any actions taken by the U.S. in the coming years will impact investment in the fossil-fuel generation technologies.

Regulatory actions will also influence investment decisions. Since the passage of the Energy Policy Act, FERC has issued several rulemakings to implement provisions in the Act and is in the process of completing other major rulemakings. Relevant to cross-border investment decisions, FERC has issued rules implementing the provisions of the reliability standards language, the repeal of PUHCA, and the changes to Section 203 (the merger provision). Other rulemakings will follow, including rules to establish incentive-based rate treatments and to implement the native load language. The U.S. Department of Energy is also conducting workshops and studies to implement provisions in the Act relating to the transmission grid. The results of such actions could help to identify necessary grid investments along the Canada/U.S. border, as well as identify the necessary incentives to make such investments. Finally, the Department of Energy and other U.S. agencies are implementing a number of provisions in the Energy Policy Act to promote enhanced electricity supply.

IV. The Need for and Opportunities for Investment in the North American Market

Growth in electricity demand in Canada and the U.S., as well as the retirement of aging or environmentally challenged facilities, will require increases in generation capacity in our respective countries. Both the U.S. and Canada project the need to increase



generation capacity by approximately 25 percent by 2025 to satisfy increases in demand. Increases in generation capacity will require increases in transmission infrastructure to ensure that such supply reaches all end-use customers. The following sections explore the need for investment in generation and transmission in the North American market, recognizing the importance of the bi-national nature of our respective electricity markets, as well as the diversity of supply between our countries.

A. Increasing Generation Supply

Within the U.S./Canada bilateral trading system is a diversity of supply that reflects the differing fuel opportunities in our respective countries. In the U.S., 51% of electricity generation needs are met by coal-fired generation facilities, 20% by nuclear generation, and 20% by natural gas, with hydroelectric capacity and other renewables accounting for the remaining 9% of generation capacity. In contrast, 58% of Canadian electricity generation capacity is hydropower, 29% is conventional thermal power, and 13% is nuclear power.

In terms of future generation investment, solutions will necessarily reflect the availability of supply. Currently, in the U.S., coal is the predominant fuel source. In Canada, hydroelectric power is the dominant generation technology. In the future, the focus should be on enhancing these and other technologies, reflecting the availabilities of supply. Emerging technologies are of particular importance, in light of concerns regarding costs and sustainability.

1. Conventional Generation

The U.S. Energy Policy Act recognized as problematic the recent focus on natural gas as the fuel of choice for new electric power plants. Both recent high natural gas prices and questions about availability of natural gas supplies in the future argued for alternative fuel choices to meet electricity demand. Promoting both clean coal and

nuclear generation in the Energy Policy Act reflects recognition of the problems in relying on natural gas as the single fuel source for new generation facilities and the reality that both coal and nuclear power represent important and sustainable generation sources for the future in the U.S.

In terms of promoting clean coal technologies, the Energy Policy Act contains language to encourage the commercialization of advanced coal technologies through both tax incentives and agency programs. Such incentives are important to spur the commercial availability of these facilities, whose costs are substantially higher than pulverized coal facilities. Companies in both the U.S. and Canada have announced plans to invest in advanced coal generation facilities, relying on technologies such as integrated gasification combined cycle and super-critical circulating fluidized bed. Such companies will utilize applicable U.S. and Canadian incentives to overcome the relatively high capital costs of these facilities, at least in the near-term.

The Energy Policy Act also contains provisions to promote nuclear facilities. While no nuclear facility has been built in the U.S. since the 1970s, the Act contains numerous incentives to spur investment in nuclear facilities. In fact, the U.S. Department of Energy's Energy Information Agency ("EIA") projects that 6 gigawatts of new nuclear capacity will be built as a result of the incentives in the Energy Policy Act. The Canadian government promotes nuclear investment through Atomic Energy of Canada Limited and its CANDU technology, although no new nuclear plants have been built in Canada since 1986. Nevertheless, concerns about air quality and climate change will spur interest in investment in the construction of new nuclear facilities.

2. Emerging Technologies

In addition to conventional technologies to satisfy the need for new generation in the North American market, emerging generation



technologies will play an important role in meeting our long-term supply needs. Canada's electricity comes principally from hydroelectric facilities, while hydroelectric power serves as a critical resource in major portions of the U.S. Other renewable resources — particularly wind generation — are gaining in importance, both in recognition of their benefits in achieving fuel diversity and in improving air quality.

The U.S. EIA estimates that renewable generation, including combined heat and power generation, will grow by 1.7 percent per year, from 358 billion kilowatt hours in 2004 to 559 billion kilowatt hours in 2030. In terms of renewable generation potential in Canada, there is technical potential of more than 300 billion kilowatt hours of renewable energy, with a reasonable target of over 100 billion kilowatt hours by 2020. Capturing this renewable potential will help to ensure a sustainable — and environmentally preferable — electricity supply in the North American market.

B. Transmission Investment

In its National Transmission Grid Study, the U.S. Department of Energy concluded that the transmission system in the U.S. has become congested because growth in electricity demand and investment in new generation facilities has not been matched by investment in new transmission facilities. Similar disparities between generation and transmission investment have occurred in Canada. In fact, the North American Electric Reliability Council projects that transmission investment will continue to lag behind generation investment, resulting in still greater congestion on the North American transmission grid.

While the integrated U.S./Canadian electricity market enjoys the benefits of cross-border trade, constraints along the border and within large regional markets continue to inhibit further trading. Several examples exist of supply potentially available to constrained regions that cannot move because of transmission congestion. For example, the constraints in the Pacific

Northwest limit the opportunities for cross-border trade between western Canada and the western U.S. Enhanced transmission capacity between Manitoba and its bordering states would allow for increased exports from Manitoba. And constraints within the northeast region constrain economic flows across the border.

C. Distribution and Demand Side Measures

Adequate generation and transmission capacity are critical to ensuring a reliable North American electricity market. Focusing solely on the supply side of the grid, however, misses opportunities for employing demand-side measures to address supply adequacy. Investment in demand-side measures — particularly energy efficiency and distributed generation — can help to relieve existing transmission constraints along the border by reducing reliance on the transmission grid and reduce the need for the construction of new generation facilities. Demand-side measures have been implemented both in Canada and the U.S. in response to various policy directives, but are likely to increase in importance, particularly where fuel prices continue to remain high.

Measures to relieve transmission constraints can often occur in places other than where the constraint exists. For example, transmission constraints in the U.S. may be relieved through distributed generation or efficiency measures taken in Canada, and vice versa. Moreover, these same measures can help to avoid, or at least delay, the need to build new generation facilities to satisfy increases in demand.

V. The Path Forward

The interconnections across our respective borders have significantly increased overall system reliability, cost effectiveness and operational efficiency, and will continue to do so. Imports and exports balance system usage and provide reliability at the various transfer points along the U.S./Canada



border. Canadian electricity plays an important role in serving peak demands in a number of U.S. regional markets along the border, and even helps to secure reliable service as far south as southern California. And such interconnections will prove critical to meeting increased electricity demand in both the U.S. and Canada in the future.

The U.S. and Canada share the challenges of ensuring the future adequacy of electricity infrastructure and supply, and we need to address these challenges cooperatively. Such cooperative action is particularly important now, when markets on both sides of the border are facing uncertainties in the face of aging infrastructure and the need for new generation and transmission.

The U.S. Congress anticipated the benefits of cross-border cooperation in addressing the need for enhanced electricity infrastructure and supply through several provisions to promote international cooperation. First, the Secretary of Energy is directed to carry out a program to promote cooperation on energy issues with the countries of the Western Hemisphere. In addition, the Act mandates the establishment of the U.S. Commission on North American Energy Freedom, which is directed to develop findings and recommendations for a coordinated and comprehensive North American energy policy that will achieve self-sufficiency by 2025. The benefits of cross-border cooperation are clear; the challenge is to identify the approaches that will take advantage of our diversity of supply and help to ensure a reliable North American electricity market in the future.

A. Cooperation in Enhancing Electricity Supply

CEA encourages a continued emphasis on dialogues on regional supply requirements to take advantage of the interconnected nature of our electricity markets and the great diversity of our respective generation supply options. To that end, CEA recommends an approach that considers

the advantages of the diversity of fuel sources and generation supply. Such an approach would promote a more secure North American electricity market, all the more important at this time given global geopolitical uncertainty in key energy supply regions.

This approach would mirror our electricity market in that generation options would reflect the range of fuel and generation technology choices that exist in the North American market. For example, we anticipate that more coal and nuclear power plants will be constructed in the U.S. to take advantage of the incentives in the Energy Policy Act and more hydroelectric capacity will be added in Canada to take advantage of the hydropower potential, and the integrated North American energy market will benefit from this increased generation by relying on the diversity of supply in the U.S. and Canadian markets. The availability and utilization of a range of supply options — different fuels, different technologies — will be fundamental to a cost-effective, reliable, and secure North American electricity system.

To ensure efficient and rational supply choices in our respective countries, CEA recommends examination of any measures that might create seams within and between electricity markets. While we enjoy robust electricity trade between our two countries, there may exist certain operational or business obstacles to electricity transactions that impact future investment decisions. Identification and elimination of such obstacles will help to ensure efficient and effective investment decisions.

Efforts to diversify our current energy supply by promoting emerging technologies are laudable strategies to help ensure reliable and environmentally sound energy. However, where a technology support initiative suggests environmental preferability without a sound scientific basis or where that initiative arbitrarily picks winners and losers among a range of technologies, it can result in more harm



than good. And where such technology initiatives serve to exclude certain technologies from other jurisdictions (such as defining “renewable technologies” to exclude hydropower), the benefits from cross-border trade are compromised. CEA believes that our respective markets would benefit from common definitions of environmentally preferable power choices (renewable or otherwise) and from common approaches to supporting them.

Given our common electricity market and our common air shed, CEA also supports a bi-national cooperative approach to research and development to enhance our conventional generation supply and to increase the cost effectiveness of emerging generation technologies. Cooperative cross-border measures between our governments and between governments and industry could help to ensure an adequate and sustainable electricity supply in the future. This is true, for example, with regard to clean coal technologies, where companies in both the U.S. and Canada have expressed interest in siting large-scale clean coal units. Moreover, similar interests and opportunities with respect to renewable technologies present real synergies for research and development for our respective governments and industry. Further, cooperation in reducing our respective consumption through demand-side measures will better secure our electricity supply in the future.

B. Cooperation in Enhancing Transmission Infrastructure

Promoting the construction of the transmission necessary to relieve existing constraints on the North American grid and to ensure available transmission capacity with respect to new generation supply will help ensure an adequate supply of electricity in the North American market in the future. A bi-national cooperative approach to encouraging the construction of such new transmission capacity would therefore help to relieve constraints along the U.S./Canadian border, as well as help to

assure the sustainability of electricity supply in the U.S. and Canada.

Opportunities to ease transmission congestion must first be identified. The U.S. Department of Energy is currently examining transmission capacity in the U.S. as part of its directive to designate National Interest Electric Transmission Corridors. CEA recommends that this exercise also examine transmission bottlenecks along the U.S./Canada border with an eye toward a North American solution to transmission constraints. This inquiry may further allow for consideration of regional solutions that are also bi-national. However, CEA cautions that this cooperative effort to identify and address transmission bottlenecks must respect the sovereignty of each country.

A cooperative approach should also identify factors that could inhibit transmission construction, and identify solutions to address such barriers to construction. One such barrier may be public opposition to the construction of new transmission lines, coupled with extensive regulatory processes for the approval of such lines. Transmission reinforcements may be more acceptable in regions where new construction is politically or logistically infeasible. The solution to regulatory delays could involve the streamlining of the process for siting transmission lines. Moreover, speeding up the process for transmission siting would allow for increased construction of beneficial transmission facilities within the North American transmission system.

Other measures should also be considered to promote investment in transmission infrastructure. First, action may need to be taken to ensure adequate returns. Rates of return on capital invested in transmission facilities are often too low, serving to discourage investment in such facilities. CEA believes that regulatory approaches that increase rates of return for transmission facilities would encourage greater investment in such facilities. To that end, Provincial



(and State) regulators should be encouraged to follow FERC's lead in providing higher rates of return for investments in transmission infrastructure. In addition, measures to promote investment in merchant transmission facilities in our two countries could also be explored. Moreover, tax measures that would facilitate more investment in the development of new transmission infrastructure at key bottlenecks across the continental marketplace could be implemented. For example, improved capital cost allowance rates based on useful life would encourage greater transmission investment. The U.S. Congress recognized the importance of tax incentives to encourage the construction of transmission facilities by including in the Energy Policy Act provisions that treat transmission facilities as 15-year property and provide an 8-year period for recognition of gains following the disposition of transmission property.

Opportunities for bi-national cooperation for both investment in advanced transmission technologies and transmission R&D — either through government programs, industry support, or government-industry partnerships — should also be explored to take advantage of the bi-national interest in a reliable and efficient transmission system. Advancements have been made in transmission technologies both to reinforce the grid and to improve the management of the grid. Improvements to grid management, such as the utilization of real-time data and cooperation between control area operators in the development of consistent scheduling protocols and sharing of reserves, have allowed for the more efficient use of the existing transmission infrastructure. Nevertheless, in the absence of higher rates of return, there may not be sufficient incentives for such improvements to the transmission grid, or for the necessary research and development to pursue advanced transmission technologies.

C. Cooperation in Addressing Air Quality Issues and Climate Change

The electricity industry in both Canada and the U.S. is facing increasing pressure to reduce air emissions from fossil-fuel generating facilities. The major air pollutants generated from the combustion of fossil fuels are nitrogen oxides (NO_x), sulphur oxides (SO_x), mercury, and particulate matter. There already exist significant regulatory and policy measures to address these issues on both sides of the border, and the requirements for emission reductions are expected to increase over time. However, uncertainty regarding how and when these additional requirements will take effect greatly impedes the industry's ability to plan for and execute efficient, cost-effective long-term solutions. Moreover, changing emission reduction requirements will almost certainly impact investment decisions with regard to both generation and transmission facilities.

The electricity industry recognizes the merits of addressing the various air emission issues in an integrated fashion to achieve efficient solutions. The U.S. Congress continues to debate bills to require increased emissions reductions on a multi-pollutant basis. In the interim, the U.S. Environmental Protection Agency has issued rules imposing new emissions reduction requirements for NO_x, SO_x, and mercury. The industry, however, also recognizes that these pollutants have cross-border impacts and, in fact, air quality issues related to these emissions can be particularly acute in some of the heavily populated Canada/U.S. border regions. Accordingly, while a multi-pollutant approach for controlling these air emissions is important, it is equally important to find solutions that reflect the regional realities along the Canada/U.S. border.

Given the cross-border impacts of NO_x, SO_x, mercury and particulate matter, the management of these air emissions would benefit from coordinated approaches.



Although requirements under international agreements such as the Canada/U.S. Clean Air Agreement attempt to address some of these issues, efforts in this area could be enhanced with other tools such as emission trading. Moreover, focusing on approaches that reflect the regional nature of the air-shed should result in optimal solutions to the air pollution problems. For example, building on existing efforts aimed at harmonizing long-term targets of key emissions on both sides of the border will facilitate effective reductions and promote a sustainable electricity sector and enhanced trade between the U.S. and Canada. There is a need for continued dialogue between officials on either side of the border, with industry participants in the discussions, so as to facilitate the most cost-effective and practical solutions to an issue of concern to all.

The climate change debate remains a continuing challenge for both the U.S. and Canada, but one that could also benefit from cross-border dialogue. Canada and the U.S. have taken different approaches to the issue of climate change. Whether the Canadian government's pro-Kyoto stance changes under the new Conservative government remains to be seen. Nevertheless, there are opportunities for developing a coordinated approach to climate change between the NAFTA partners, which would allow for the development of an approach that recognizes the unique characteristics of North American energy production, but would nevertheless encourage investment decisions that are climate friendly. As decision-makers begin to look at the post-Kyoto period, this becomes all the more important.

In addition to developing a common approach to greenhouse gas ("GHG") emissions reductions, the NAFTA partners could work together on a coordinated approach to GHG emissions trading, although such an approach would again present a challenge, given Canada's commitment to the Kyoto Protocol. A North American GHG registry could encourage

substantial reductions in GHG emissions in North America. First, established protocols both for reporting emissions and for reporting emissions reduction could encourage businesses in all of North America to engage in the trading of emissions reduction credits. Second, the existence of established protocols could encourage additional investments in greenhouse gas reduction measures. Finally, eligibility for a much broader range of projects for credits could encourage more businesses to participate in the registry. As with the great success with energy trading, GHG emissions trading between Canada and the U.S. could offer significant benefits to both countries — building on already strong regional markets through new trading opportunities. And by providing businesses with the flexibility that trading provides, the NAFTA partners could help companies identify the most cost-effective options to reduce emissions.

Conclusion

Growing electricity demand in both the U.S. and Canada requires investment in electricity infrastructure and supply in the future. The integration between Canada and the U.S. has created truly North American electricity markets, and that integration will only increase as electricity demand and trade continue to grow. This makes close cooperation between our countries a necessity. At the same time, the market, regulatory and administrative systems are different in each country. These differences will necessitate flexibility in developing solutions to ensure an adequate and reliable supply of electricity in the future. Still, given the interconnected nature of our respective transmission systems and the interrelationship of our electricity supply, the future of our respective electricity markets cannot be properly addressed without full engagement of and cooperation between the U.S. and Canada. Anything less could impede future cross-border trade and, more significantly, undermine the very sustainability of supply we all seek to see guaranteed.

