NEW BRUNSWICK/MAINE MOU

PHASE 1 REPORT

NEW BRUNSWICK/MAINE MOU - PHASE 1 REPORT

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I. EXECUTIVE SUMMARY

A. Background

By way of a Memorandum of Understanding (MOU) between the Governor of the State of Maine and the Premier of the Province of New Brunswick, the governments of Maine and New Brunswick have agreed to explore opportunities for mutual benefits from their electrical interconnection by jointly undertaking the following tasks:

1. Study the feasibility of expanding generation capacity and transmission infrastructure to increase electrical flows across borders;

2. Identify processes and systems to provide transparency and efficiency in Maine and New Brunswick markets;

3. Study the feasibility of developing common market rules that could be applied in Maine and New Brunswick;

4. Explore the potential benefits and technical and legal impediments to the common provisioning of control area services (including balancing, dispatch and reserve sharing);

5. Explore the tariff and governance structures required for a regional transmission organization for Maine and New Brunswick; and

6. Examine the opportunities for compatible greenhouse gas emissions reduction regimes in the electricity sector.

The MOU provides for a two phase process to complete these tasks. Phase I consists of reviewing the tasks, assessing priorities and possibilities, and identifying common principles to guide future work and implementation. Upon completion of Phase I and agreement on the principles, the governments would proceed to Phase II which will be guided by the principles and will include a detailed assessment of all tasks.

The MOU also provides that Maine and New Brunswick would appoint one person from each government to serve as each jurisdiction's point of contact (the Joint Representatives). The Joint Representatives submit this Phase I Report which provides a set of principles to guide future work, a prioritization of the tasks set forth in the MOU, and a status report on each task. The Joint Representatives respectfully recommend that, based on progress made in addressing the MOU tasks during Phase I and the potential for mutual benefits from further development of these items, the MOU proceed to Phase II.

B. Principles

The following principles will govern the remainder of the MOU:

1. Opportunities should be explored for the production of electricity in New Brunswick and Maine, with particular emphasis on production that is efficient, uses renewable resources, or otherwise helps address climate change and other environmental issues.

2. New Brunswick and Maine should explore all reasonable opportunities to take advantage of the weather and production diversity of their two systems, including but not limited to seeking opportunities to share reserves, increase transfer capability between the two systems, and harmonize dispatch and other system elements to achieve greater efficiencies.

3. New Brunswick and Maine should eliminate barriers to trade with each other and assist one another in expanding trade with bordering regions, including other Atlantic provinces and New England states, in ways that provide mutual economic benefits. In particular, New Brunswick and Maine should explore ways, consistent with the interests of their respective consumers, to stimulate the development of appropriate new generation within their territories, and to facilitate the development of transmission pathways for electricity from new and existing generation to broader markets.

4. New Brunswick and Maine should work to find creative ways to ensure that beneficial generation and transmission projects are undertaken within their regions, and that the benefits and burdens of these projects are fairly apportioned.

5. New Brunswick and Maine should explore market, tariff, governance and related institutional changes to facilitate development of generation and transmission projects that yield overall net benefits to the two regions, as well as to the broader Atlantic Canada and northeast United States regions.

C. Task 1 – Explore Development and Delivery of Low Carbon and Renewable Resources

During the initial phase of the MOU process, participants focused on prioritizing the tasks set out in the MOU. The participants concluded that Task 1 – studying the feasibility of expanding generation capacity and transmission infrastructure to increase electrical flows – should be given the highest priority since a positive outcome on this issue is likely to provide the most significant benefits to citizens of Maine and New Brunswick. Consistent with the principles to focus on clean resources and export opportunities, success on Task 1 issues could also provide benefits to the broader region in terms of (1) meeting demand for electricity and (2) achieving environmental goals to reduce carbon emissions and increase use of renewable resources.

New Brunswick and Maine sit at the edge of the Boston-Washington D.C. megalopolis, a region of intense economic activity and corresponding demand for energy. Looking forward, demand will be particularly strong for renewable and low carbon resources. All states in New England have joined the Regional Greenhouse Gas Initiative (RGGI), as have New York, New Jersey, Delaware and Maryland. RGGI will cap CO_2 emissions from power plants at current levels in 2009 and then ratchet down emissions by 10% beginning in 2015. New England states also have Renewable Portfolio Requirements (RPS) that require specified amounts of renewable supply; in most states these requirements increase over time.

At the same time demand for low carbon and renewable power is growing, it is increasingly more difficult and expensive to site new facilities in the Boston-Washington region, and the availability of certain types of renewable resources, e.g. hydro, is particularly limited. New Brunswick and Maine, as well as the other Atlantic provinces, appear uniquely positioned for new resource development to supply these markets due to our regional advantages in terms of: (1) resource availability; (2) siting; and (3) cost.

There are several thousand megawatts of new renewable and low carbon resources potentially available in Maine and Atlantic Canada:[1] [2]

[1] The individual projects which comprise the overall New Brunswick wind resource are set forth in Appendix A.

[2] In addition to the projects shown, a 42 MW wind facility recently became operational in Mars Hill, Maine and an LNG facility (at least 1 BCF) in New Brunswick presents the opportunity for new natural gas generation.

		Capacity Nameplate MW
New Brunswick		
Wind	Province-wide	1,500
Biomass	Province-wide (up to)	400
Nuclear	Pt. Lepreau	1,000
Nova Scotia and PEI		
Wind	Total	800
Newfoundland and Labrador		
Hydro	Lower Churchill	2,800
Hydro	Other locations	2,000
Wind	Lower Churchill (approximate)	1,500
Bay of Fundy		
Tidal	Estimate of potential	400
Maine		
Wind	Kibby Range, Western Maine	132
Wind	Black Nubble, Western Maine	54
Wind	Stetson, Eastern Maine	57
Wind	Aroostook County	800
Total Nameplate		**11,443**
Total Derated (wind derated to 30% of nameplate)		**8,053**

Development of these resources is critical to meet growing demand in the region, particularly demand for renewable and low carbon power in southern New England. Development also presents significant financial opportunities for the Atlantic Canada and Maine region.

Solutions cannot be achieved, however, nor opportunities realized, without sufficient transmission between the regions, much of which would be sited in Maine. Because new transmission would require a substantial financial commitment, raise local environmental and land-use concerns, and potentially erode or eliminate energy cost savings now realized by consumers within constrained market zones, creative solutions that provide a path from supply to demand while also allowing the benefits and burdens of new supply and transmission to be equitably shared must be explored

Based on the work completed in Phase I, the Joint Representatives conclude that there may be significant economic and environmental benefits to closer coordination between Maine and New Brunswick in the production and transmission of electricity. A full assessment of the feasibility of any particular approach, and a more instructive analysis of the relative benefits and costs of each approach, will require the

additional inquiry anticipated in the Phase II report. Nevertheless, the preliminary work accomplished in Phase I suggests that, while the most effective and practical structure of any new arrangements between Maine and New Brunswick remains to be determined, the potential for benefits is clear.

II. BACKGROUND

On February 8, 2007 the Governor of the State of Maine, the Honorable John Baldacci, and the Premier of New Brunswick, the Honourable Shawn Graham signed a *Memorandum of Understanding between the Province of New Brunswick and The State of Maine to Enhance the Mutual Benefits of the Maine/New Brunswick Electrical Interconnections* (hereafter cited as the "MOU"). This MOU was born out of a mutual recognition that while the electrical interconnections between the two jurisdictions have served the Province and State well in the past, an opportunity exists to better utilize and/or improve the Maine/New Brunswick electricity market. Following discussions of senior officials several issues were identified for initial analysis and exploration. Specifically, the governments of Maine and New Brunswick agreed to:

1. Study the feasibility of expanding generation capacity and transmission infrastructure to increase electrical flows across borders;

2. Identify processes and systems to provide transparency and efficiency in Maine and New Brunswick markets;

3. Study the feasibility of developing common market rules that could be applied in Maine and New Brunswick;

4. Explore the potential benefits and technical and legal impediments to the common provisioning of control area services (including balancing, dispatch and reserve sharing);

5. Explore the tariff and governance structures required for a regional transmission organization for Maine and New Brunswick; and

6. Examine the opportunities for compatible greenhouse gas emissions reduction regimes in the electricity sector.

The Governor and the Premier agreed, as part of the MOU, that the above-referenced tasks would be completed in two phases, with Phase I consisting of an overview of the priorities, an assessment of the possibilities for further success and an identification of common principles to guide additional work and any future implementation. In addition, the Governor and Premier agreed to appoint one person from each government to serve as each jurisdiction's point of contact (the Joint Representatives) and that the Joint Representatives should deliver to their respective governments a report on the Phase I activities no later than June 1, 2007. Subsequently, Premier Graham appointed Jean Finn, Assistant Deputy Minister, New

Brunswick Department of Energy, and Governor Baldacci appointed Richard Davies, the Maine Public Advocate, as their respective government's Joint Representatives.

Pursuant to the provisions of the MOU, the Joint Representatives submit this Phase I report to their respective governments. In this report we set forth a Statement of Principles to govern future discussions, discuss the prioritization of the tasks that has occurred during the Phase I work, provide a status report on each task, and, finally, discuss the further work to be done during Phase II. Based on the progress made toward realizing the goals of the MOU, the Joint Representatives respectfully recommend to their respective governments that the MOU proceed to Phase II.

III. STATEMENT OF PRINCIPLES

Maine and New Brunswick share more than a border. Their long, peaceful and productive partnership, and their similar geographies and demographics,[3] have forged strong cultural and economic bonds. Moreover, each serves for the other as a gateway to broader economic opportunities: Maine for New Brunswick into New England, and New Brunswick for Maine into the Maritimes and the rest of Canada.[4] Both populations share strong links to their French as well as their English heritages. Both economies depend on their natural resources and geography, with timber, fisheries, and tourism important to both, and both economies are looking to a future where traditional industries are struggling and all opportunities for growth consistent with our essential characters must be nurtured. Finally, the electrical systems of Maine and New Brunswick are highly interdependent and interconnected, and both jurisdictions have advantages of geography and resources that may provide fertile ground for energy production and transport.

Against this background, the Joint Representatives have identified the following guiding principles as the Maine and New Brunswick governments seek to enhance their relationship in the context of the production, transmission, delivery and marketing of electricity:

1. Opportunities should be explored for the production of electricity in New Brunswick and Maine, with particular emphasis on production that is efficient, uses renewable resources, or otherwise helps address climate change and other environmental issues.

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[3] See, for example, Memorandum to Senator Richard Rosen, New England Public Policy Center at the Federal Reserve Bank of Boston, March 1, 2007 at http://www.bos.frb.org/economic/neppc/memos/2007/nagowski030107.pdf

[4] Roughly 40% of Maine's international exports go to Canada. See, e.g., "Marketing Maine to the World," R. Coyle, June 2004, at http://www.mitc.com/PDF/Trade%20Day%202004%20[Read-Only].pdf

2. New Brunswick and Maine should explore all reasonable opportunities to take advantage of the weather and production diversity of their two systems, including but not limited to seeking opportunities to share reserves, increase transfer capability between the two systems, and harmonize dispatch and other system elements to achieve greater efficiencies.

3. New Brunswick and Maine should eliminate barriers to trade with each other and assist one another in expanding trade with bordering regions, including other Atlantic provinces and New England states, in ways that provide mutual economic benefits. In particular, New Brunswick and Maine should explore ways, consistent with the interests of their respective consumers, to stimulate the development of appropriate new generation within their territories, and to facilitate the development of transmission pathways for electricity from new and existing generation to broader markets.

4. New Brunswick and Maine should work to find creative ways to ensure that beneficial generation and transmission projects are undertaken within their regions, and that the benefits and burdens of these projects are fairly apportioned.

5. New Brunswick and Maine should explore market, tariff, governance and related institutional changes to facilitate development of generation and transmission projects that yield overall net benefits to the two regions, as well as to the broader Atlantic Canada and northeast United States regions.

IV. PRIORITIZATION OF MOU TASKS

In broad terms, the six items that Maine and New Brunswick agreed to explore and study fall into two categories. The first category includes the potential for generation and transmission projects that may prove worthy of development or expansion. Of particular focus are low carbon and renewable resources. The second category is more technical in nature, involving market rules, tariffs, and institutional structures that could improve trade between Maine and New Brunswick, as well as with other states and provinces in the northeast U.S. and Atlantic Canada.

During the initial phase of the MOU process, participants focused on prioritizing the tasks set out in the MOU. The participants concluded that Task 1 – studying the feasibility of expanding generation capacity and transmission infrastructure to increase electrical flows – should be given the highest priority since a positive outcome on this issue is likely to provide the most significant benefits to citizens of Maine and New Brunswick. Consistent with the principles to focus on clean resources and export opportunities, success on Task 1 issues could also provide benefits to the broader region in terms of (1) meeting demand for electricity and (2) achieving environmental goals to reduce carbon emissions and increase use of renewable resources.

As such, the participants have endeavored to identify: (1) the potential for new generation in Maine, New Brunswick and other Atlantic provinces; (2) associated market opportunities; (3) possible barriers to the development of such resources including

physical (transmission) and structural (tariff); and (4) the need for mechanisms to ensure that consumers in Maine and New Brunswick share in the benefits of these developments. We discuss these efforts and our analysis to date on these issues in this Phase I Report.

While the participants have concentrated their efforts during Phase I on MOU task number one, the remaining tasks (two through six) have also been addressed and are discussed in sections V.B and V.C. Finally, supplemental information is provided in attachments to this Report.

V. PHASE I TASK ACTIVITIES

A. MOU Task 1: Study the feasibility of expanding generation capacity and transmission infrastructure to increase electrical flows across borders

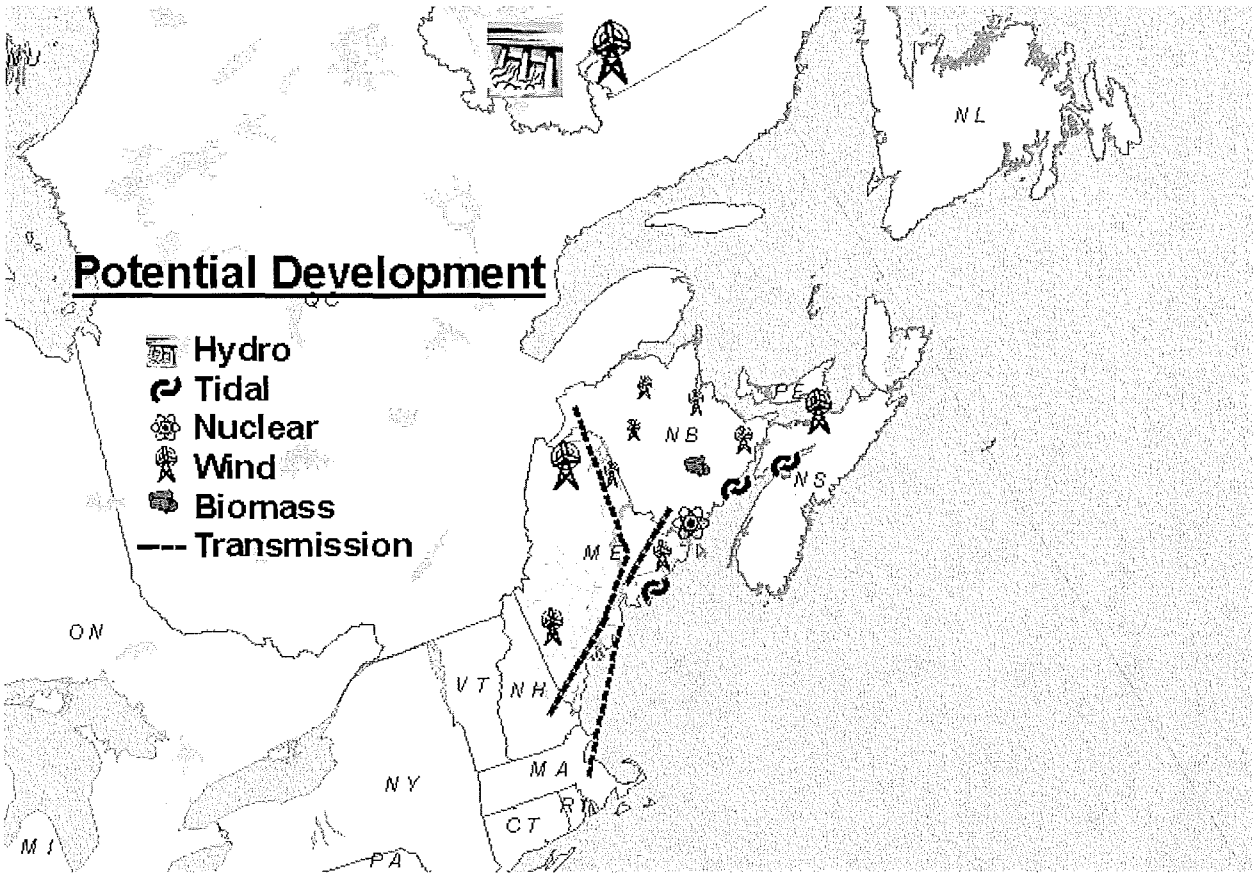
1. Renewable and Low Carbon Resources – A Regional Perspective

New Brunswick and Maine sit at the edge of the Boston-Washington D.C. megalopolis, a region of intense economic activity and corresponding demand for energy. Looking forward, demand will be particularly strong for renewable and low carbon resources. All states in New England have joined the Regional Greenhouse Gas Initiative (RGGI), as have New York, New Jersey, Delaware and Maryland. RGGI will cap CO_2 emissions from power plants at current levels in 2009 and then ratchet down emissions by 10% beginning in 2015. New England states and Atlantic Canadian provinces also have Renewable Portfolio Requirements (RPS) that require load to be served with specified amounts of renewable supply; for most states these requirements increase over time.

New Brunswick and Maine, as well as the other Atlantic provinces, appear uniquely positioned for new resource development to supply these markets due to our regional advantages in terms of: (1) resource availability; (2) siting; and (3) cost.

2. Resource Potential

As depicted below, within the Atlantic Canada and Maine region, there is substantial potential for development of low carbon and renewable resources:



The chart below displays several thousand megawatts of new renewable and low carbon projects that have been identified and are at varying stages of study and development:[5] [6]

		Capacity Nameplate MW
New Brunswick		
Wind	Province-wide	1,500
Biomass	Province-wide (up to)	400
Nuclear	Pt. Lepreau	1,000
Nova Scotia and PEI		
Wind	Total	800
Newfoundland and Labrador		
Hydro	Lower Churchill	2,800
Hydro	Other locations	2,000
Wind	Lower Churchill (approximate)	1,500
Bay of Fundy		
Tidal	Estimate of potential	400
Maine		
Wind	Kibby Range, Western Maine	132
Wind	Black Nubble, Western Maine	54
Wind	Stetson, Eastern Maine	57
Wind	Aroostook County	800
Total Nameplate		**11,443**
Total Derated (wind derated to 30% of nameplate)		**8,053**

New Brunswick and the neighboring Atlantic provinces have significant potential for wind development, as well as for tidal, biomass, nuclear and other types of more conventional generation. The system operator in New Brunswick has received requests to perform system impact studies for wind projects with a total installed capacity of more than 1,500 MW. New Brunswick recently issued a Request for Proposal (RFP) for 300 MW of wind energy to be developed and operational by November 2010. This will augment 96 MW of wind which is being implemented in the southeastern corner of the Province. Estimated wind development in Nova Scotia and

[5] The individual projects which comprise the overall New Brunswick wind resource are set forth in Appendix A.

[6] In addition to the projects shown, a 42 MW wind facility recently became operational in Mars Hill, Maine and an LNG facility (at least 1 BCF) in New Brunswick presents the opportunity for new natural gas generation.

PEI would provide an additional 800 MW by the year 2016. New Brunswick has also identified a potential for 200 - 400 MW of biomass energy and is exploring the feasibility of commercial tidal operations for the Bay of Fundy region. Nova Scotia is pursuing tidal developments as well, and plans to have demonstration projects in operation by 2010. The tidal demonstration projects may initially be small in scope, but could evolve to larger export-oriented enterprises.

In addition, in early 2007 it was announced that New Brunswick would explore the feasibility of developing a second nuclear reactor on the site of the Point Lepreau nuclear generating station. If a decision is made to go ahead, the second reactor would provide approximately 1,000 MW of carbon-free power, most of which would be targeted for export to the New England market. Finally, the province of Newfoundland and Labrador has indicated that it plans to develop substantial new hydro and wind resources, including as much as 2,800 MW of hydro and 1,500 MW of wind in the Lower Churchill Falls project and an additional 2,000 MW of hydro in other locations.

In Maine, there are presently wind projects totaling several hundred MW in various stages of planning and development, and a 42 MW wind facility recently began operating in Mars Hill, Maine. Other major projects under consideration in Maine include: a 132 MW project proposed by TransCanada along Kibby Mountain and Kibby Range in western Maine; a 57 MW project, Stetson Wind, proposed by UPC Wind to be sited in Washington County; a 54 MW project by Maine Mountain Power on Black Nubble in western Maine; and a project proposed for Aroostook County with potential capacity of as much as 800 MW.

In addition to resource availability, it is likely easier to site and less costly to construct new facilities in Atlantic Canada and Maine than in the more densely populated and urban regions to the south. According to recent estimates by the New England Independent System Operator (ISO-NE), the cost of new peaking capacity in Maine was lower than other areas of New England by 6% to 14%, with the greatest differences being between Maine and the relatively urban areas, particularly Connecticut and the greater Boston area. [7] These cost differentials reflect the relatively lower siting and labor costs in Maine. Similar conclusions would presumably apply to comparable regions, including Atlantic Canada, and to other types of generating capacity where siting and labor costs are a significant portion of the total cost.

3. Growing Demand

Development of new resources is critical to meet growing demand in the region, particularly demand for renewable and low carbon power in southern New England. Load in the northeast region has recently been growing at an average rate of about 2% per year. In New England alone, the 2006 summer peak load was about

[7] Direct Testimony of John J. Reed on behalf of ISO-NE, August 31, 2004, before the FERC, Docket No. ER03-563-030.

28,000 MW, and the ISO-NE projects this peak to grow at an annual rate of 1.7% per year through the end of its forecast period, 2016.[8]

Moreover, because of RGGI and RPS requirements, demand for renewable and low carbon power will be even more critical. CO_2 emissions in RGGI states will be capped in 2009 and then, beginning in 2015, must ratchet down by 10% by 2019. As load grows and caps ratchet down, demand for carbon-free power will increase. In addition, RPS's will require suppliers to meet load obligations with a supply mix that includes increasingly higher proportions of renewable energy. In some states, including Maine, the RPS also includes a requirement for renewable energy from newly constructed power plants.

The New England RPS's are summarized below:

Massachusetts
2.5% new renewables in 2006, increasing to 5% in 2010

Connecticut
4% Class I and Class II resources by 1/1/2004, rising to 10% by 1/1/2010;
4% Class III resources by 1/1/2010

Rhode Island
16% by 2020

Vermont
Total incremental energy growth between 2005-2012
to be met with new renewables (10% cap)

Maine
30% from renewable and efficient resources.
New renewables ->> 10% by 2017

New Hampshire
25% by 2025

The New Brunswick RPS is 10% from new renewables by 2016.

4. Opportunities Presented

This scenario presents significant opportunities for the Atlantic Canada and Maine regions. Prevailing energy and capacity prices in southern New England are relatively high. For example, in the New England day-ahead market, energy prices at the hub have recently averaged about $70/MWh around-the-clock.

[8] See http://www.iso-ne.com/trans/celt/report/2007/2007-celt_report.pdf

Prices for weekday peak times, 7:00AM-11:00PM, have averaged about $80/MWh.[9] New England also has a separate market for capacity in which prices currently range $3.00-$4.00 kW/month. This capacity market is in transition to a new "forward capacity market" (FCM), in which prices may range even higher.

RGGI and the RPS's create additional value for low carbon and renewable resources. Although the RGGI effect cannot yet be measured, experience with RPS's illustrate their substantial effect. For example, in an auction conducted earlier this year, Massachusetts "new" renewable certificates were sold at average price of $54/MWh; this is value that is incremental to the energy and capacity prices described above.

5. Potential Transmission Development

Solving the growing demand problem in southern New England and realizing the above-described resource development opportunities in Maine and Atlantic Canada cannot be achieved without sufficient transmission between the regions, much of which would be sited in Maine. At the present time, there are major transmission projects underway or under consideration in the region that would enhance transfer and export capability. By year-end 2007, the NRI-IPL (Northeast Reliability Interconnect - International Power Line) project will be completed and on-line. This project involves a second 345 kV transmission line between New Brunswick and Orrington, Maine (in the vicinity of Bangor), and will increase transfer capability from New Brunswick to Maine to 1,000 MW.[10] Other transmission projects in Maine are under consideration. The MPRP (Maine Power Reliability Program) involves a broad scale assessment of new transmission in the CMP (Central Maine Power) service area, including project components to improve the reliability of particular areas in the CMP system and to upgrade the 345 kV backbone. The MPRP potentially includes additional 345 kV circuits from Orrington to the former Maine Yankee site in Wiscasset as well as possible upgrades from Maine Yankee through the greater Portland area to the Maine-New Hampshire interface. Such investment has the potential to significantly increase the capacity to export power to southern New England.

Also under consideration is a transmission project that would interconnect the (MPS) Maine Public Service system directly to the rest of the Maine and New England transmission grid. [11] In addition to providing additional transfer capability between Maine and New Brunswick, this project would provide a more direct

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[9] These reflect prices for the period January 2005 through April 2007. See http://www.iso-ne.com/markets/hstdata/znl_info/monthly/smd_monthly.xls

[10] The transfer capability from south to north will increase to 500 MW.

[11] Currently, MPS is directly connected only to the New Brunswick system and interchanges between MPS and the rest of Maine and New England must be transmitted across the New Brunswick system.

path for sales to New England from generation resources in northern Maine,[12] for example, one or more large scale wind projects, and could enhance competition in the northern Maine region. Finally, independent developers have proposed an undersea transmission line from Wiscasset to Massachusetts – the Green Line – that could further increase export capability into southern New England.

Additional transmission investment in New Brunswick and Maine to further increase the transfer capability between the regions may also be advantageous. The viability of multiple generation projects in Atlantic Canada and Maine may require transfer capabilities in excess of that arising from the aforementioned transmission projects. The New Brunswick System Operator (NBSO) is currently performing preliminary studies of transmission options that would provide such additional transfer capabilities.

6. Costs and obstacles to new transmission investments

In examining the implications of transmission investments that would enhance power export capability, there are three primary questions to be addressed: What are the direct costs of the transmission investments? What siting and/or environmental considerations would be involved? How would the market price of electricity in New Brunswick and Maine be affected?

In order to significantly increase export capability into southern New England, a substantial investment in 345 kV transmission in Maine would likely be required. Although a new line from New Brunswick to Orrington will soon be completed (the NRI), additional investment may also be required from Orrington south through some or all of the rest of Maine. As noted above, CMP is currently studying possible transmission upgrades in Maine, including 345 kV that would increase export capability, but has not yet released any information regarding the cost of the upgrades. Estimates should be available fairly soon and will be included in the Phase II Report. Additional transmission may also be needed in New Brunswick and the other Atlantic provinces to accommodate resource development and export. Further information on those potential transmission needs and costs will also be provided in the Phase II report.

New transmission is also accompanied by land-use and environmental impacts. Although the NRI was successfully sited, it may be more difficult to site transmission in the more populated regions south of Orrington. To the extent new transmission provides benefits only to other regions and not to Maine, siting and public approval is likely to be even more challenging.

With respect to the third question, how new transmission would affect energy prices, under the ISO-NE market structure, energy prices have been lower

[12] Northern Maine includes MPS as well as three consumer-owned utilities: Eastern Maine Electric (EMEC); Houlton Water Company (HWC): and Van Buren Light and Power (VBLP).

in Maine than elsewhere in New England due to relatively low congestion costs and energy losses. In recent years, Maine's energy costs have been from $40 to $90 million per year below the New England average costs at the New England Hub. These savings derive from there being excess generation within Maine coupled with physical constraints that limit exports to the south. Additional new transmission in Maine could reduce or even eliminate these savings, depending on both the scale of the transmission upgrade and on the amount of additional power flowing from New Brunswick through Maine[13].

In addition, in the context of this MOU Task 1, coordination of transmission and generation projects may be necessary. This will be challenging given the respective decision-making and approval processes involved. Because increasing the capabilities of the transmission system through investment in new transmission lines requires a substantial financial commitment, projects must be well-justified on a cost-benefit basis, or be required for reliability reasons. In addition, local and environmental impacts must also be justified. This justification inherently involves a complex mix of legal, technical, and local issues that can render the approval processes difficult and the outcomes uncertain. [14]

Moreover, the decision-making paths on investments in generation and transmission are often separate even though, as noted above, the justification may need to be concurrent. Transmission investment decisions are generally made by transmission owners subject to relevant approvals, and generation investment decisions are made by market participants subject to a different set of regulatory approvals. The fact that the two decision-making and approval processes happen separately from one another and on timelines that are not under the control of any one party increases the complexity of getting such projects financed and approved.

Finally, even when investments appear beneficial on an overall basis, there remain issues involving paying for the transmission and through what mechanism payments would be made. The assessment of these cost allocation issues and their resolution will be an important aspect of the Phase II Report.

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[13] Under the ISO-NE market design In general, additional transmission will tend to raise congestion costs in Maine and increase the energy losses charged to Maine customers. On the other hand, additional imports from NB will tend to reduce congestion costs in Maine and reduce losses. The overall effect will depend on how these two effects balance one another.

[14] Approvals are typically required from various entities for items such as: inclusion in a system operator (RTO or ISO) system planning process; Certificate of Public Convenience and Necessity; environmental approvals; and federal approvals for international transmission lines.

B. MOU Tasks 2 Through 5

Tasks 2 through 5 involve structural changes to Maine and New Brunswick electricity systems that could better harmonize system operation and the respective markets for mutual economic and reliability benefits. Because the issues covered by these tasks are so closely interrelated, we address them as a set in this section.

As described in the preliminary findings above, it appears that there may be significant economic and environmental benefits to closer coordination between Maine and New Brunswick in the production and transmission of electricity. A full assessment of the feasibility of any particular approach, and a more instructive analysis of the relative benefits and costs of each approach, will require the additional inquiry anticipated in the Phase II report. Nevertheless, the preliminary work accomplished in Phase I suggests that, while the most effective and practical structure of any new arrangements between Maine and New Brunswick remains to be determined, there do not appear to be insurmountable obstacles to achieving substantial benefits without imposing intolerable costs. Put another way, the inquiry in Phase I has confirmed the preliminary assessment implicit in the MOU that under a variety of circumstances there is great potential for mutual benefit in cooperation between the state and the province.

Phase II, should it move forward, would thus explore further the particulars (e.g. the processes and systems) that would be required to achieve that greater degree of cooperation. In particular, Phase II would assess the variety of approaches to achieving transparency and efficiency in the market (item 2 of the MOU), the feasibility of developing common market rules that could be applied in Maine and New Brunswick (item 3 of the MOU), the common provisioning of control area services (item 4 of the MOU) and the tariff and governance structures required for a regional transmission organization encompassing the two jurisdictions (item 5 of the MOU).

A great deal of the groundwork on these issues has been accomplished. Much of the analysis relating to the structural issues and possibilities concerning a combined Maine/New Brunswick electricity market is contained in a report to the Maine PUC completed in 2003.[15] The interim report to the Maine Legislature prepared by the Maine PUC[16] provides a further assessment. Stated briefly, those reports conclude that there is a broad spectrum of possible configurations that may be able to achieve the efficiency and transparency sought by the MOU, ranging from bilateral agreements to full-blown regional transmission organizations, and that there is no theoretical obstacle to harmonizing market rules and tariff structures. The optimal configuration, however,

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[15] A Maine/Canadian Regional Transmission Organization; Advantages and Disadvantages ("EA Report"), Energy Advisors, LLC (2003).

[16] See in particular "The Canadian Option: The prospects for a market comprising Maine, New Brunswick, Nova Scotia and Prince Edward Island," submitted January 16, 2007 in MPUC Docket No. 2006-364 ("Canadian Option Report").

will depend upon a further assessment (to occur in Phase II) of the reasonably achievable benefits and reasonably avoidable costs that a closer relationship may bring. Once a clearer picture of the "goal" has been developed, the details for the configurations required to achieve that goal will require, at least, extensive stakeholder participation and government involvement.

Both the EA Report and the Canadian Option Report note that any reconfiguration of the electricity market between Maine and New Brunswick is likely to require a variety of government approvals and must otherwise conform to legal and treaty obligations. Thus as a preliminary matter, the Phase I inquiry included a review of several of the key requirements to help guide the discussions and assessments in Phase II. A summary of that review is set forth below.[17]

It does not appear that the North American Free Trade Agreement (NAFTA) will present an impediment to further coordination. In fact, the thrust of NAFTA is to increase trade between the United States and Canada; efforts to increase the trade of electricity between Maine and New Brunswick are entirely consistent with that objective.

Regulatory approvals would need to be obtained at least from Maine, New Brunswick, and the Federal Energy Regulatory Commission. Approvals in Maine even for the formation of an RTO with New Brunswick could likely be achieved without legislative action, while legislative action would probably be required in New Brunswick for such a transformation. As a practical matter, however, the significance of a change in market structure of the magnitude of a new RTO would almost certainly prompt legislative action in both jurisdictions. From the FERC perspective, the principal issues would likely involve compliance with the new FERC order concerning open transmission access.

Finally, there is already an example of close market cooperation between a U.S. market and a Canadian utility in the way of the "Coordination Agreement" between the Midwest Independent System Operator ("MISO") and Manitoba Hydro. The Coordination Agreement provides for, among other things, the sharing of reserves and ancillary services, extensive real time information exchange, and coordinated transmission planning. This agreement may provide a template for a relationship consistent with the objectives of the MOU that is short of the full integration implicit in the formation of a new RTO and will be explored further during the Phase II discussions.

C. MOU Task 6: Examine the opportunities for compatible greenhouse gas emissions reduction regimes in the electricity sector

As noted above, Maine and the rest of the New England states have joined the Regional Greenhouse Gas Initiative. Although New Brunswick is not

[17] A more detailed discussion of the review is in Appendix B.

currently part of RGGI, nor at this time considering NB-specific regulations, it appears that Canadian federal regulations on Greenhouse Gas (GHG) emissions will apply. On April 27 of this year, the Canadian federal government set out its strategy to reduce GHG emissions in the "Regulatory Framework for Greenhouse Gas Emissions". The Regulatory Framework will set greenhouse gas emissions for industrial sectors including electricity generation.

Pursuant to the Regulatory Framework, emissions intensity targets will be set at 18% below 2006 levels by 2010 and 26% by 2015. With the current projected domestic electricity growth in New Brunswick these targets will lead to absolute net reductions. Compliance options will include in-house reductions, credit trading, offset credits, Kyoto based clean development mechanisms, and technology investments.

The Canadian federal government will actively be exploring opportunities for linking the Canadian emission trading system with other regulatory based trading systems including RGGI. An essential condition will be that credits are real and emission reductions verified. New Brunswick will continue to assess the option of joining the RGGI initiative as our national GHG regulatory system unfolds.

Coordination between the RGGI states and the Canadian system will be an important aspect of fulfilling the objectives of RGGI. The Phase II report will provide further analysis and a status report on this point. In addition, because New Brunswick and neighboring provinces are not participating in RGGI, the potential exists for emissions "leakage" between the regions.[18] In the context of this MOU, a potential increase in leakage capacity may be created if transmission between the regions is expanded. Careful consideration of these issues is critical to the success of this MOU process. Therefore, to assist in this regard, the Joint Representatives recommend that Maine and New Brunswick host a workshop later this year, to be attended by representatives from energy, environmental and regulatory bodies of the New England states and Eastern Canadian provinces for discussion and planning of operational and coordination issues arising from RGGI and the Canadian regulations, as well as options to minimize leakage.

[18] Leakage refers to the tendency for lower cost power from non-capped regions to flow to load in capped regions.

New Brunswick System Operator Operations

System Impact Studies

Completed System Impact Studies

Number	Project Name	Project Location	Project Size (MW)	Project Type	Company Name	SIS Completion Date
1	Lamèque Wind Farm	Lamèque, NB	45	Generation	Wind Dynamics	Apr 07, 2004
2	Grand Manan Wind Farm	Grand Manan, NB	20	Generation	Eastern Wind Power	Apr 20, 2004
3	Kwesawek Wind Farm	Memramcook, NB	26	Generation	Ventus Energy Inc.	Feb 04, 2005
4	Community Pasture 50 MW Wind Farm	Murray Corner, NB	50	Generation	Ventus Energy Inc.	Apr 21, 2005
5	Caribou Wind Farm	Caribou, NB	102	Generation	Ventus Energy Inc.	Jun 10, 2005
6	Community Pasture 102 MW Wind Farm	Murray Corner, NB	102	Generation	Ventus Energy Inc.	Oct 04, 2005
7	Fairfield Hill Wind Farm	Dorchester, NB	20	Generation	Vector Wind Energy Inc.	Apr 04, 2006
8	Linekin Bay Project	Aroostook County, Maine USA	500	Generation	Linekin Bay Energy	May 08, 2006
9	Point Escuminac Point Wind Farm	Point Escuminac, NB	27	Generation	Natural Forces Tech/Vision Quest Wind	Jul 10, 2006
10	Stonehaven Wind Farm	Stonehaven, NB	50	Generation	Natural Forces Tech/Vision Quest Wind	Sep 11, 2006
11	Kent Hills Wind Farm	Kent Hills, NB	120	Generation	Natural Forces Tech/Vision Quest Wind	Dec 08, 2006
12	Dorchester Wind Farm	Dorchester, NB	51	Generation	Natural Forces Tech/Vision Quest Wind	Jan 15, 2007
13	Pokeshaw 174 MW Wind Farm	Pokeshaw, NB	174	Generation	Gale Force Energy	Apr 10, 2007

Queued System Impact Studies

Number	Project Name	Project Location	Project Size (MW)	Project Type	Company Name	SIS Initiation Date
1	Garvie Mountain Wind Farm	Garvie Mountain, NB	30	Generation	UPC Canada Wind, Inc.	Apr 25, 2006
2	West Cape Wind Farm	West Cape, PEI	200	Generation	Ventus Energy Inc.	May 04, 2006
3	Bayfield Wind Farm	Bayfield, NB	101	Generation	SkyPower Inc.	May 11, 2006
4	Maisonette Wind Farm	Maisonette, NB	101	Generation	SkyPower Inc.	May 11, 2006
5	Hopewell Cape Wind Farm	Hopewell Cape, NB	25	Generation	J.D. Irving, Limited	Jul 07, 2006
6	Upham Mountain Wind Farm	Upham Mountain, NB	60	Generation	J.D. Irving, Limited	Jul 07, 2006
7	Pokeshaw 37.5 MW Wind Farm	Pokeshaw, NB	37	Generation	Gale Force Energy	Jul 11, 2006
8	Burnt Church 27 MW Wind Farm	Burnt Church, NB	27	Generation	Atlantic Wind Power Corporation (2005) Ltd	Sep 05, 2006
9	Blue Mountain Wind Farm	Blue Mountain, NB	101	Generation	Invenergy Services Canada ULC	Dec 08, 2006
10	Lower Churchill - Quebec Option	Quebec/NB border to NB/New England border	740	Point to Point	Newfoundland and Labrador Hydro	Apr 18, 2007
11	Lower Churchill - Salisbury, NB Option	Salisbury, NB to NB/New England border	740	Point to Point	Newfoundland and Labrador Hydro	Apr 18, 2007
12	Aulac Wind Farm	Aulac, NB	100	Generation	Acciona Wind Energy Canada Inc.	May 28, 2007
13	Lamèque Wind farm	Lamèque, NB	50	Generation	Acciona Wind Energy Canada Inc.	Jun 11, 2007

Last Updated: Jun 14, 2007 10:55 Atlantic time

DETAILED DISCUSSION OF THE FEASIBILITY OF A MAINE/NEW BRUNSWICK MARKET OR CONTROL AREA (TASKS 2-5)

1. NAFTA

The North American Free Trade Agreement (NAFTA) establishes rules for trade between the United States and Canada (as well as between the United States and Mexico). In Section 4.6 of their report, Energy Advisors outlined the NAFTA provisions that would impact electricity trade and concluded that:

> "Nothing in [NAFTA] appears to impose any limitations or approval requirements on the formation of a cross-border RTO. Rather, while generally encouraging free trade in electricity, the Chapter specifically preserves the right of the parties to continue requiring export licenses (Article 603.5), and, by incorporating by reference the General Agreements on Tariff and Trade ("GATT"; see Article 603.1), to limit exports in order to avoid domestic shortages."[1]

The Energy Advisors also noted that, under the federal law adopting NAFTA, Congress established that no provision of NAFTA "which is inconsistent with any law of the United States shall have effect." 19 U.S.C. Section 3312.

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[1] EA Report at p. 66.

The Advisors concluded that NAFTA is unlikely to have an impact on the development of an RTO encompassing New Brunswick and Maine. There is no more recent authority to suggest that the Energy Advisor conclusions are no longer valid.[2]

One issue not addressed in the EA Report, however, warrants mention. The essential principle of NAFTA is that neither country should act to disadvantage trade across the border. At least one commentary has suggested that, by creating a favored status for electricity generated using specified characteristics (e.g. by enacting renewable portfolio standards ("RPS") with limited eligibility), Maine might be in violation of the "national treatment" requirement of the GATT. The argument might be that, by creating a share of the electricity market subject to regulation that as a *de facto* matter excludes or limits foreign producers, domestic products would be given an inappropriate advantage.[3] Moreover, Chapter 11 of NAFTA provides a range of rights for investors in the electricity sectors of the other NAFTA party; in essence,

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[2] While the EA Report focused on a combination of Maine and New Brunswick, the same principles would apply in any broader combination (such as one including other Maritimes provinces).

[3] For a discussion of this issue, see "NAFTA Provisions and the Electricity Sector," Environmental Challenges and Opportunities of the Evolving North American Electricity Market (Secretariat Report to Council under Article 13 of the North American Agreement on Environmental Cooperation), June 2002, at pp 10-12.

governments (including state and provincial governments) are to treat foreign investors as they treat their own.[4]

Both the RPS and investment issues, however, are present with respect to Maine's relationship with New Brunswick regardless of whether a new electricity market structure is adopted. It is conceivable that these issues may gain greater prominence than they have heretofore[5] in the context of developing a more integrated Maine/New Brunswick market, but, even if that were to prove to be the case, the requirements of NAFTA appear to be consistent with moving towards a more seamless market. For that reason, the EA Report conclusion that NAFTA should not create a barrier is still valid.

2. Regulatory Approvals: Maine

The EA Report, at pp. 60-63, summarizes the regulatory approvals that would likely be required in Maine for the formation of an RTO comprising Maine and New Brunswick. These requirements have not changed since that report was presented to the MPUC, and there is no reason to alter the general conclusion of the EA Report that, under existing law relating to "significant agreements" entered into by utilities, "the Commission would enjoy broad discretion to determine whether an RTO agreement was needed and in the

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[4] Id. at 21.
[5] It does not appear that the issue of NAFTA's impact on electricity trade between the United States and Canada has as yet been litigated.

public interest."[6] There is also no reason to disturb the EA Report's conclusion that neither sections 708 or 1101 of Title 35-A M.R.S.A., which deal with the approval of reorganizations and the disposition of property, would apply to the creation of a Maine/New Brunswick RTO or similar entity.

Perhaps more importantly, the Maine Legislature has, through the Resolve to which the Maine PUC's January interim report responds, indicated its direct interest in determining the best course with respect to the structure of the electricity market. The legislature will consider the MPUC's recommendations and will be in a position following its determinations to enact legislation enabling (or requiring) the implementation of its conclusions.

3. Regulatory Approvals: Canada's National Energy Board

As indicated in the EA Report, it does not appear that NEB approval would be required for the formation of an RTO encompassing Maine and New Brunswick. Moreover, as the EA Report observes, the existence of a different market structure between New Brunswick and Maine would not substantially alter any obligations utilities in the provinces might have to obtain export licenses: there are already substantial exports flowing into Maine, and it does not appear

[6] EA Report at 61.

that an increase in exports (which might require a new license) would be difficult to obtain.[7]

4. Regulatory Approvals: New Brunswick

At the time of the submission of the EA Report, New Brunswick was engaged in revising its Electricity Act. There was, during that period, some consideration given to legislation that would expressly provide for the participation of the New Brunswick utilities in an RTO.[8] In the intervening years, however, New Brunswick has taken a somewhat different direction: while the law now provides for the unbundling of the components of the previously vertically integrated utility, the creation of a system operator, and the adoption of an open access transmission tariff, the government did not specifically endorse, or pass express enabling legislation, for an RTO that would go beyond the borders of New Brunswick.

The Electricity Act, implemented in 2004, created the New Brunswick System Operator. That entity has the tasks of operating the transmission system, procuring ancillary services, developing market rules, and system planning. The NBSO is also directed to "to work with responsible authorities outside New Brunswick to coordinate the SO's activities with their activities." Electricity Act, Section 42(g). There is no suggestion in the Act, however, that

[7] EA Report at pp. 63-64.
[8] EA Report at pp. 64-65.

the NBSO has the authority to transfer its authority to any other entity (such as a multi-jurisdictional RTO or similar structure). This leaves open the possibility that the NBSO could itself, by contract, perform the functions of a system operator for a broader region; the NBSO has, in fact, indicated its willingness to perform such a role.

Further, the Electricity Act requires a license from the New Brunswick Energy and Utilities Board to: "(a) own or operate a transmission system, (b) direct the operation of transmission systems in the Province, (c) provide or convey, or cause to be provided or conveyed, electricity or ancillary services into, through or out of the SO-controlled grid, or (d) engage in an activity prescribed by the regulations that relates to electricity." Electricity Act, Section 86. Thus any RTO or similar structure that included New Brunswick would require a license from the New Brunswick Board. In granting the license, the Board "may specify the conditions under which a person may engage in an activity described in section 86 and may specify such other conditions as the Board considers appropriate, having regard to the purposes of this Act." Electricity Act, Section 90. Based on this language, it appears that the Board would have broad discretion with respect to the approval of any RTO-like arrangement.[9]

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[9] Under Section 119(1) of the Electricity Act, "[t]he Lieutenant-Governor in Council may by regulation establish policies and rules to be observed by the Board in the exercise of any jurisdiction or authority conferred upon it under this Act." This indicates that the government of New Brunswick itself is likely to have an important direct role in establishing regulatory policy in electricity markets.

Finally, the Electricity Act requires the NBSO and the transmission owning utilities to submit open access transmission tariffs. Electricity Act, Division C. The tariffs have been submitted and have been approved by the Board. As a practical matter, this means that the terms of any RTO-administered tariff would have to be approved by the New Brunswick Board in order to satisfy the terms of the Electricity Act, raising the sovereignty issue directly to the extent that the tariff included Maine and thus was also subject to FERC jurisdiction. As the EA Report observes, however, "there is no indication that New Brunswick would be any more inclined than other provinces to have its utility subject to the jurisdiction of a foreign government agency" as might be the case, for example, if the New Brunswick utilities joined an RTO subject to the jurisdiction of the FERC.[10] [11]

5. Regulatory Approval: FERC

The EA Report, at pp. 52-57, reviews the FERC approvals that would be required for the creation of a new RTO. These include approvals under sections 203 and 205 of the Federal Power Act, and satisfaction of the standards of independence and scope described in FERC Order 2000. While the analysis in the EA Report remains germane with respect to the formation of an RTO per se, the FERC's recent decision in its final rule on Open Access Transmission Tariff

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[10] Id., p. 65.

[11] Appendix A includes a discussion of approvals that would be required in the other Maritimes Provinces.

("OATT") Reform[12] provides important guidance for both the duties of an RTO and for a utility operating outside an RTO with respect to its open transmission access and other obligations. The relevant features of Order 890 are summarized below.

FERC Order 888 had established the framework for open access to transmission systems. Because some had criticized the standards under Order 888 as being too lax, and permitting too much discretion in transmission access, and also because the Energy Policy Act of 2005 directed FERC to emphasize new policies and priorities, FERC initiated the Order 890 docket to determine how to improve its rules. The order adopting the final rule, issued after the submission of 6500 pages of comments, itself runs over 1000 pages, and sets forth in considerable detail the requirements that every transmission owner and operator must meet, whether that entity is part of an RTO/ISO or not. The particular relevance for any ME/CAN structure, of course, is that should the Maine utilities withdraw from ISO-NE, they will have to meet the Order 890 requirements either on their own or as part of a new entity. The principal elements of Order 890 are forth below:

1. Transmission planning must be coordinated, open and transparent. FERC indicated that the existing planning processes were insufficiently inclusive

[12] Preventing Undue Discrimination and Preference in Transmission Service – Docket Nos. RM05-25-000 and RM05-17-000 (FERC, February 16, 2007).

or transparent, and required that utilities (including RTOs and ISOs) must show that they meet the following nine principles:

a. Coordination. Transmission providers must work with customers and interconnected neighbors to develop a nondiscriminatory transmission plan.

b. Openness. All affected parties must be allowed to participate in the planning process.

c. Transparency. Transmission providers must disclose to stakeholders all of the data, criteria and assumptions underlying the plan.

d. Information Exchange. Transmission owners must provide guidelines for the exchange of information among customers and other stakeholders, including demand resources.

e. Comparability. All similarly situated customers must be treated the same.

f. Dispute Resolution. Transmission owners must develop processes to resolve disputes in the planning process.

g. Regional Participation. Transmission owners must work with their neighbors to ensure that plans are simultaneously feasible and to identify enhancements that can relieve congestion.

h. Economic Planning Studies. FERC now requires that planning take into account economic effects as well as reliability. Customers now have the right to request transmission owners to study enhancements that, for example, could reduce congestion.

i. Cost Allocation. While FERC did not dictate that any particular cost allocation principle be used, and indicated that it would permit a degree of regional flexibility, FERC said that it considered the following issues relevant in deciding cost allocation disputes: whether cost causation is fairly reflected; whether the proposal creates adequate incentives for new construction; and whether participants and state authorities in the region favor the allocation method. FERC strongly encouraged state participation in the planning process generally.

2. Transmission owners must develop a consistent method for calculating available transmission capability ("ATC"). FERC was concerned that some owners have been using their ATC calculations to prevent the efficient use of their systems by others. Order 890 specifies in detail what it will require in ATC calculations, and requires the transmission owners to develop an approach in conjunction with NERC for FERC approval.

3. While the focus of both Order 888 and Order 890 was on non-price terms of the transmission tariffs, Order 890 made a number of changes to its pricing requirements, including changes to generator imbalance charges (to reduce the penalties on intermittent generation such as wind); capacity reassignment pricing (to permit more liquid reassignment); point to point service (to facilitate the availability of such service); and more transparent OASIS systems (to give customers more information about the use of the system).

Taken together, the requirements of Order 890 indicate that FERC is reducing the flexibility available to transmission owners with respect to how they meet their open access requirements. Moreover, FERC's renewed emphasis on market-opening requirements, while stopping short of requiring membership in broad regional RTOs or ISOs, suggests that FERC would look skeptically on efforts to reduce market access or electricity flows between and among systems. There are at least three significant implications for the development of a Maine/New Brunswick alternative to membership in the NE-ISO. First, any new structure, whether Maine's utilities operating on their own or as part of a system that included utilities in New Brunswick, would have to develop the capacity and tariffs to comply with the more expansive requirements of Order 890. Second, the fact that FERC has undertaken the substantial effort required to develop the new open access rules indicates that FERC would be unlikely to cede jurisdiction over these issues to (for example) a foreign regulatory authority; coupled with the low probability that any Canadian authority would be willing to cede authority to FERC, it seems unlikely that any Maine/New Brunswick structure would be able to proceed under a single regulatory authority. Finally, FERC's continuing interest in opening markets, eliminating discrimination and increasing the opportunities for flows between systems suggests that structures or rules that appeared to limit such flows would be viewed skeptically.

6. The MISO/Manitoba Model

The authors of the EA Report noted the development between Manitoba Hydro and the Midwest Independent System Operator ("MISO"), in which Manitoba Hydro entered into a "Coordination Agreement" with MISO without subjecting utilities on either side of the U.S.-Canadian border to the regulatory reach of the other.[13] The Coordination agreement, first executed in 2001 and amended in 2005, allows close operational coordination between the MISO system and Manitoba Hydro, and minimizes "seams" between the two areas, without requiring identical market structures in both areas or altering the jurisdictional oversight in the respective national jurisdictions.

MISO is a FERC-approved RTO, with functional control over the transmission assets of its member companies in 15 states in the Midwest. MISO operates a "day two" market (i.e., a day ahead and real time energy market and congestion management system) throughout its United States territory. Manitoba Hydro, on the other hand, is a vertically integrated Crown Corporation providing retail and wholesale electric energy services as well and transmission and distribution.

The Coordination Agreement between MISO and Manitoba Hydro allows a significant, but not complete, degree of integration of Manitoba Hydro into the MISO market. In particular, the Agreement provides that:

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[13] EA Report at 68. See, also, The Canadian Option, Section D.

1. MISO provides to Manitoba Hydro, as an independent contractor, a variety of services including:

a. Posting available transmission capability ("ATC") and other transmission related information for Manitoba Hydro's system on OASIS;

b. Recommend curtailment procedures to Manitoba Hydro and, with Manitoba Hydro's permission, implement curtailment and other congestion management procedures;

c. Provide advice on coordinating transmission maintenance schedules;

d. Act as the reliability coordinator for the Manitoba Hydro system;

e. Process point to point transmission service requests within the Manitoba Hydro system, and administer the financial aspects of such service;

f. Coordinate system impact studies for MISO with the impact studies performed by Manitoba Hydro; and

g. Coordinate transmission planning between MISO and Manitoba Hydro.

2. Manitoba Hydro is obligated to:

a. Calculate ATC in accordance with NERC requirements;

b. Provide ancillary services in support of MISO under rates and terms that are "consistent" with FERC requirements; and

c. Provide information to MISO concerning the Manitoba Hydro transmission facilities.

3. The parties agree to provide "comparable" transmission service under their respective tariffs. Market participants in MISO are to have access to the Manitoba transmission system, and Manitoba Hydro is to have access to the MISO system.

3. In pricing transmission services, Manitoba Hydro is to be treated as if it were a transmission owner within MISO. Neither Manitoba Hydro nor MISO members are to be assessed access charges by the other system.

4. For energy price calculation purposes, Manitoba Hydro is set up as the "Manitoba Hydro Zone" within the MISO structure in the same manner as a MISO transmission owner might be considered a pricing zone. Unlike within MISO's U.S. territory, however, Manitoba Hydro will not include congestion charges based on locational marginal pricing or financial transaction rights.

5. The pricing "seams" between MISO and Manitoba Hydro are largely eliminated, and the cost of transmission of the two systems taken as a whole are recovered under a single system-wide tariff, so long as the service is accomplished entirely within the combined areas (i.e. neither the generation source nor the load are outside MISO and Manitoba Hydro territory). Revenues are distributed to Manitoba Hydro in the same manner as they are distributed to the MISO transmission owners.

6. Ancillary service rates are to be the same for both parts of the system.

7. MISO and Manitoba Hydro establish a Coordinating Committee to address the technical and operational aspects of the Agreement.

8. The Agreement is to be governed by Canadian law, with MISO and Manitoba Hydro agreeing that the Manitoba Court has exclusive jurisdiction of the resolution of disputes under the agreement that cannot be resolved under the alternative dispute resolution provisions of the Agreement.

In addition to the Agreement itself, both the Midwest Governors Association and the Province of Manitoba have agreed to a protocol concerning the siting of transmission facilities to reflect the substantial integration of their electricity markets.[14]

The Coordination Agreement accomplishes several of the objectives that a ME/CAN combined market structure. Most of the transmission tariff seams are eliminated; there is a significant degree of operational coordination across the border; there is a single reliability coordinator for the combined areas; and the conditions for trading between Manitoba and MISO are improved both by the removal of scheduling and transmission cost barriers and the increased transparency of energy price at the border. Some elements of full integration are lacking: for example, Manitoba Hydro is under no obligation to employ economic redispatch of its system to address congestion within that system. This means that, as a practical matter, MISO and Manitoba Hydro are dispatched independently, thus reducing to some extent the efficiencies that a common

[14] See "Protocol Among Midwestern Governors Regarding the Permitting and Siting of Interstate Electric Transmission lines in the Midwestern United States and Manitoba, Canada," and "Province of Manitoba Supporting Memorandum for the [Protocol], July 2005.

dispatch might provide. Further, the arrangement is entirely contractual, with each party free to withdraw on 12 months notice. Moreover, the Agreement is specifically conditioned on the ability of each party to comply with its obligations under the Agreement under the laws of its respective jurisdiction (i.e. Canadian and Provincial laws for Manitoba Hydro and U.S. law for MISO).

The MISO/Manitoba Hydro approach may provide guidance on how a relationship short of a full ISO or RTO encompassing Maine and New Brunswick could be established without the need for either side to compromise principles of sovereignty and likely without significant legislative change (though for a contract of this nature regulatory approval would be required). Moreover, it could serve as a model in a variety of contexts, including a combination of Maine with New Brunswick, or as an agreement between ISO-NE and the New Brunswick should Maine remain within the existing New England market.

Nova Scotia

The Nova Scotia Electricity Act (2004) required Nova Scotia Power to file an open access tariff. In addition, the Act permitted certain designated wholesale customers to purchase electricity from any competitive supplier. The open access tariff was approved in 2005. Beyond these developments, however, the Nova Scotia electricity market remains characterized by a traditional approach to utility organization and regulation. There is no legislative or government

indication at this point that transfer of transmission operations, or the operation of an electricity market, to an independent third party (such as an RTO or other system operator) is contemplated.

The Electricity Act preserves the authority for regulations (implicitly including those governing approvals) for the Governor in Council. Electricity Act, Section 5(1). The authority reaches "any ... matter the Governor in Council considers necessary or advisable to carry out effectively the intent and purpose of this Act." Because the "intent and purpose" of the Act is not specified, it is reasonable to conclude that any activity that involved a major restructure of the electricity market in Nova Scotia (including the participation of Nova Scotia Power in an RTO or similar structure) would be within that reach.

The language in the order approving the open access tariff may be indicative of the incremental approach likely to be taken by Nova Scotia in assessing the desirability of joining a new structure. The Board approved a "consensus proposal" for a limited open access tariff because, among other things, "in view of the limited nature of the change proposed for Nova Scotia's electricity market at this time, it is not necessary or appropriate to attempt to develop an extensive OATT which addresses a number of issues which may or may not develop in the future." In the Matter of an Application by Nova Scotia Power Incorporated for approval of an Open Access Transmission Tariff, NSUARB-NSPI-P-880, 2005 NSUAB 50 (May 31, 2005) at para. 21.

In short, approval of the participation of Nova Scotia in a restructured electricity market that included Maine would require at least the concurrence of the Governor in Council, and since the Electricity Act itself has limited scope, most likely also a legislative enactment permitting the change.

Prince Edward Island

Prince Edward Island's Electric Power Act requires the approval of the Island Regulatory and Appeals Commission for any sale of property by any public utility (Section 10), and further provides that "no right under any franchise to own or operate any public utility shall be assigned, transferred or leased, nor shall any contract or agreement with reference to or affecting any such franchise or right be valid ... unless the assignment, transfer, lease, contract or agreement has been made with the written approval of the Commission." Section 11(1). Moreover, the Maritime Electric Company, Limited (the sole electric utility in Prince Edward Island) must seek approval from the Commission for any change to the rates, terms and conditions of service. Thus any transfer of operational control of transmission from the utility would require Commission approval. While Prince Edward Island has publicly indicated an intention to develop an open access transmission tariff and has largely completed stakeholder consultation on its proposal for such a tariff, it has not yet finalized that process.