MEMORANDUM

To: **Planning Advisory Committee**

From: **Eric Runge, NEPOOL Counsel; Heather Hunt, NESCOE Executive Director**

Date: **March 15, 2011**

Re: **EIPC Status Update**

Since the latter part of 2010, we have provided regular verbal reports to the Planning Advisory Committee on developments in the Eastern Interconnection Planning Collaborative ("EIPC"). At this stage, EIPC is working on increasingly technical details related to the macroeconomic futures and the sensitivities that will be modeled. EIPC's technical consultants, Charles River Associates ("CRA"), will soon begin to produce data in the form of a "Business as Usual" case. Given the progress toward the next stage of analysis, we thought it was an appropriate juncture at which to provide New England stakeholders a general sense of recent EIPC issues and the ongoing efforts and challenges associated with obtaining reliable data.

Throughout the EIPC process New England representatives - market participants from all sectors and state representatives - have had a goal: to obtain objective data, through the development of macroeconomic futures and transmission and resource expansion scenarios, that show the real costs and benefits of a range of potential practical options to meet our energy and environmental goals. This information necessarily includes data that allows a comparative assessment of a range of options, including both national and regional development approaches. Stakeholders and state representatives from the Northeast have put considerable effort into trying to be sure the assumptions are likely to result in objective data. To date, we have been successful in that effort in some areas and in others, less so.

Achieving this goal will help state policy-makers, transmission providers, renewable energy developers, and other market participant and stakeholders to make informed decisions about investments and policy options, particularly with regard to how to meet our renewable and carbon reduction goals most cost-effectively.

A key component of this objective is the production of data that allows an assessment of the relative costs and benefits of different approaches including: (1) developing renewable/carbon reducing energy resources and the corresponding transmission infrastructure in New England and neighboring control areas (New York, Quebec and the Maritime Provinces through New Brunswick)[1], and (2) developing remote resources and the transmission superhighway that would be needed to transport renewable and other carbon-heavy[2] energy from the Midwest to the East Coast, including to New England.[3]

This effort is made more difficult because the models used in EIPC to develop scenarios do not in a direct way take into account the cost of new transmission (i.e., the model does not co-optimize generation and transmission). As a result, we have sought regional solution scenarios to be modeled so that they can be compared to transmission costs of national scenarios that would require massive cross-country transmission build-outs. At a later stage, high-level transmission expansion cost estimates will be developed by the planning authorities, including ISO New England Inc. ("ISO-NE"), with the goal of showing whether the total cost of regional solutions is the lowest cost way to meet renewable energy goals and reduce carbon emissions in the electric sector. Such a cost analysis assumes that: (1) the scenarios are based on objective data and assumptions; and (2) transmission cost estimates across the Eastern Interconnection are credible. New England's recent experience building significant amounts of transmission should be useful to inform its efforts in conducting cost comparisons.

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[1] A "regional approach" attempts to satisfy future electricity demand with resources located in proximity to loads, in contrast to a national approach which focus on lowest cost resource cost without consideration of the cost of transmission. For New England, a "regional approach" means meeting renewable and low-carbon goals with resources within the New England and neighboring control areas to which we are interconnected, including New York and Canada.

[2] A cross-country transmission system would not distinguish between distant wind and carbon-heavy generating resources.

[3] This objective is consistent with the stated policy of the six governors of the New England states as articulated by the New England States Committee on Electricity ("NESCOE"), New England's Regional State Committee under the RTO. In particular, it reflects the "New England Governors' Renewable Energy Blueprint" (the "Blueprint"), adopted in 2009 by the six New England state governors, which sets forth mechanisms to facilitate the development of the abundant renewable resources in the Northeast. *See* Blueprint materials, available at http://www.nescoe.com/Blueprint.html.

While New England has long been interested in regional development approaches as articulated by the New England Governors over time, in the EIPC process we have not sought to exclude data that reflects the development of an interconnection-wide super highway approach. We welcome such comparative data, provided the assumptions are objective and credible. Going forward, we will continue to seek the relative costs of all development options to inform policy choices about the best way to meet consumers' needs. In this regard, we will continue to pursue data reflecting: (1) a regional development approach, including maximizing resources in New England and our neighboring regions; (2) other development approaches that are feasible from an implementation and reliability perspective; and, (3) the true relative costs of all development options.

The interconnection-wide analysis process has provided an important opportunity to learn more about fundamental differences in various regions' planning processes and market structures. Some regions depend on integrated resource planning to identify their resource mix while New England relies in large part on competitive market mechanisms and processes to identify our resources. These differences influence, sometimes adversely, the interconnection-wide analysis.

For example, there was a material difference in the infrastructure that various Regional Planning Authorities included in their inputs to the interconnection-wide Roll-Up. While some included in the Roll Up proposed projects with varied degrees of certainty, ISO-NE included only those projects in New England that had received the relatively stringent "I.3.9" approval. ISO-NE's approach or standard was not problematic when considered in isolation; the fundamental problem resulted from the serious difference among planners' assumptions across the interconnection. New England endeavored through an infrastructure challenge process to increase comparability of regional inputs into the Roll-Up. While some additional New England projects were included as a result of those challenges, the Roll-Up in this initial phase of interconnection-wide analysis did not achieve comparability of resource assumptions across regions. Consequently, New England has proportionately fewer transmission and generating facilities projected to be in-service over the next ten years than those projected to be in-service in

other regions. The discrepancy reflects disparity in market structure and planning practices across regions and it will likely have implications on the results of this planning effort. This issue should be worked through more deliberately in any subsequent interconnection-wide Roll-Up or Baseline infrastructure activities. For this type of analysis to be informative to policymakers, it must recognize and, where appropriate, account for regional differences in market structures and planning processes.

In addition to regional differences in planning processes and market structures, another continuing challenge has been identifying and, as needed, correcting important detailed modeling assumptions. The challenge associated with the number of modeling issues that require attention is compounded by the pace of the EIPC process and the extremely tight time frames between issue identification and decision points. A recent example to illustrate the point relates to assumptions associated with the capital costs for new generation. For New England, CRA elected to use Boston-only costs for all of New England without an apparent basis and without electing comparably high-cost cities for other regions, such as Chicago for the mid-West. This choice would have skewed the analysis in a serious way by artificially inflating the cost of resources across New England. New England representatives therefore disputed using Boston costs to reflect New England costs. Ultimately, it was decided that CRA would use the average capital costs for generation across six New England cities, including Boston, even though the likelihood of new generation in Boston is small and even though including Boston in the New England average will tend to make regional resources appear higher cost than they would be in fact.

Another example of a modeling issue that has the potential to affect New England was the wind potential and capacity factors proposed by region. The numbers proposed to be used by CRA seriously understated the Northeast's wind potential. The Northeast preferred and requested the use of other more recent and more accurate wind data from a national lab. The Northeast was told that the preferred data was not, however, available for use in the EIPC analysis because the data did not align with the model's assumed regions. Ultimately, wind assumptions were resolved imperfectly, but at least in a way that more accurately reflects our wind potential than the data originally proposed by CRA.

Additionally, a material flaw in some prior large-scale transmission studies has been the relative lack of Canadian resources assumed to be available for import to the Northeast. Given the region's close proximity to no-and low-carbon Canadian resources and our long-standing relationships with the Eastern Canadian provinces on energy and environmental issues, any credible assessment of New England's renewable and low-carbon power options and means to serve consumers cost-effectively must include Canadian resources. The Canadian economy is not explicitly modeled, and Hydro Quebec (HQ) and the Canadian Maritimes are not included as NEEM regions.[4] Nevertheless, New England stakeholders properly ensured that the "Business as Usual" future reflects reasonable assumptions regarding our ready access to power from nearby Canadian provinces. For other futures to provide credible information, they must reflect the same realistic assumptions as the "Business as Usual" case does about the significant renewable and low-carbon power located just to our north.

Decisions on these kinds of detailed modeling assumptions will influence the overall results of the analysis and will continue to require close attention. The potential costs associated with various outcomes are in the tens to hundreds of billions of dollars. Accordingly, as this process moves forward it is critically important that we continue to help ensure that the data is objective to enable New England to consider supply and transmission development option(s) within our market structure most able to serve our consumers cost-effectively.

If you have any questions about this memo or its topic, please contact Eric Runge (617-345-4735, ekrunge@daypitney.com), or Heather Hunt, (203-610-7153, HeatherHunt@NESCOE.com).

[4] "NEEM" regions are regions in the North American Electricity and Environment Model used by CRA to model the macroeconomic futures.