

## New England States Committee on Electricity

**To:** Massachusetts DOER & Synapse Energy Economics, Inc.  
**From:** NESCOE  
**Date:** October 20, 2014  
**Subject:** Comments on October 16, 2014 study presentation

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NESCOE appreciates the opportunity to provide some preliminary observations in connection with the study discussed at the October 16, 2014 stakeholder session. In this context, NESCOE's views do not reflect the views of officials from the Commonwealth of Massachusetts.

***Caution Against Study Approach Understating the Size of the Regional Problem:*** If the study assumes that gas pipeline maximum daily quantity (MDQ) design capacities are the appropriate metric for defining available pipeline capacity on the winter peak day, it may understate the size of New England's problem. It is instructive that several prior gas-electric studies have examined the relationship between contracted capacities and gas price basis differentials. Empirical analysis has shown a statistically significant relationship when contracted capacity exceeds 75-80% of MDQ. While the MDQ approach is technically feasible, it is unclear whether it is economically feasible. To be consistent with the alternative resource supply curve approach, simultaneous technical and economic feasibility should be applied to the definition of available pipeline capacity. Accordingly, some value less than MDQ should be considered, at least as a spreadsheet modeling sensitivity, in the analysis. Incorporating economically feasible pipeline capacity limits will more accurately reflect the size of the pipeline constraint problem.

***Size of Hydro Imports:*** It appears that two of the eight electric sector modeling runs will be dedicated to imported hydro. The proposed quantity for those modeling sensitivities is 2400 MW. If one assumes current technology, it may actually take three transmission lines to accomplish that level of imports, instead of two. Using voltage source converter (VSC) technology, high-voltage direct current (HVDC) transmission lines are limited to 1000 MW, rather than the single-source planning contingency limit of 1200 MW. If the alternative resource supply cost curve includes imported hydro, the relative position on the supply curve will be affected by the assumption of two versus three transmission lines. Consequently, if the study assumes two rather than three transmission lines to achieve 2400 MW of imports, the cost of imported hydro would be understated by the cost of an entire transmission line. To reflect current technology and resulting price implications, the study could examine the costs of adding 2000 MW and assume the cost of two new transmission lines, or examine the cost of adding 2400 MW and assume the cost of three new transmission lines.

***Size of the Problem Not Fully Examined:*** At this time, the study does not appear to be designed to examine the extent and duration of the pipeline network constraints. Rather, the study assumes that the hypothetical peak winter day will provide information relevant to whether or not new infrastructure is required. In 2012, NESCOE expressed to ISO-NE significant concern about ISO-NE's Phase I Gas Study for relying on a similar deterministic approach, and cautioned

ISO-NE not to draw any conclusions from analysis that looks at one design day. In response, ISO-NE commissioned a Phase II Gas Study in 2013 that included duration analyses. The extent and duration of the constraint remains a critically important factor.

***Generator Retirement Assumptions Affect the Extent and Timing of the Regional Challenge:***

NESCOE understands that the study timeframe is necessarily compressed and the number of modeling runs is limited. Important factors may therefore not be able to be included in the analysis. For example, all eight electric sector modeling runs will assume the same generator retirements and additions. Thus, the impact of unexpected generator retirements and gas-fired additions on the electric sector demand for gas will not be explicitly examined. NESCOE's Gas-Electric Study completed in September 2013 assumed certain generators in the region would continue in operation and several non-natural gas-fired generators - to everyone's surprise - announced retirement shortly thereafter. This of course meant as soon as the study was completed, it understated the extent of New England's natural gas constraint problem. NESCOE shares that experience in light of the current study's ability to look at only one set of potential generator retirement assumptions.

NESCOE appreciates the opportunity to share its views and looks forward to reviewing other forthcoming assumptions including the electric and gas load forecasts, generator retirements and additions, pipeline additions and flows, imported and peak shaving LNG send-out rates, alternative resource technical and economic potential, alternative resource capital and carrying cost assumptions, and fuel prices.