

New England States Committee on Electricity

To: Massachusetts DOER & Synapse Energy Economics, Inc.
From: NESCOE
Date: December 23, 2014
Subject: Comments on December 18 Low Demand Analysis presentation

NESCOE appreciates the opportunity to provide comments in connection with the Low Demand Analysis (the Study) modeling results discussed at the December 18, 2014 stakeholder session. In this context, NESCOE's views do not reflect the views of officials from the Commonwealth of Massachusetts.

NESCOE appreciates that DOER considered stakeholder comments and took additional time to complete the modeling and verify the accuracy of the results. Notably, the revised marginal heat rate assumption, which the Study uses to estimate potential gas demand reduction associated with electric sector alternative measures, is reasonable. NESCOE appreciates the Study's caveats. They are comprehensive, clearly presented, and provide important context as stakeholders consider the results alongside the results of the many other studies on New England's natural gas needs.

Primary Observation: the Study Confirms the Need for Additional Infrastructure

According to the Study's statement of work, the "goal of DOER's study is to determine, given updated supply and demand assumptions, whether or not new infrastructure is required, and if so, how to optimize for environmental, reliability, and cost considerations."¹ The Study achieved this goal. Under all eight scenarios Massachusetts studied, Massachusetts-based electric sector natural gas demand exceeded the capability of existing infrastructure.

In order to balance supply and demand for natural gas in Massachusetts in 2020, the Study showed hypothetical natural gas "pipeline additions [that] range from 25 billion Btu per peak hour to 33 billion Btu per peak hour (0.6 Bcf per day to 0.8 Bcf per day)."² This primary Study result - the need for additional natural gas pipeline to satisfy Massachusetts' energy needs - includes the effects of 1) Massachusetts building two hypothetical additional transmission lines filled with imported hydro energy plus 2) Massachusetts implements *all* of the alternative

¹ DOER Request for Response, Consulting Services for Low Demand Scenario (September 5, 2014), at Statement of Work requirements on page 5.

² Massachusetts Low Demand Analysis, Third Stakeholder Meeting Presentation (updated on December 19) ("December 18 Presentation") at slide 28, available at <http://synapse-energy.com/project/massachusetts-low-demand-analysis> .

resources deemed technically and economically feasible and practically achievable. Thus, the Study, even using these very conservative assumptions about hypothetical investments, confirms the need for additional infrastructure.³ The Study’s findings are directionally consistent with myriad other studies that evaluated natural gas demand in New England.

Moreover, the Study indicates that alternative resources that will continue to be important to the region’s power system, cannot, on their own, fully address Massachusetts-based electric sector demand for gas.

Based on information provided on December 19, 2014 in the supply curve analysis workbooks, the table below shows the estimated peak hour gas savings associated with both: (1) just the economically feasible alternative resources and (2) all alternative resources.

Year	Alternative Resources	Peak Hour Gas Savings (MMBtu / hour)	Peak Day Gas Savings (Bcf / day)
2015	Economically Feasible	27	0.001
	All Alternatives	54	0.001
2020	Economically Feasible	2,963	0.07
	All Alternatives	7,493	0.18
2030	Economically Feasible	6,394 – 12,105	0.15 – 0.29
	All Alternatives	26,590	0.65

Compared with the pipeline amounts that the Study added to balance supply and demand mentioned above, which range from 0.6 to 0.9 Bcf /d in 2030, the alternative resources, even including the resources the Study assumed would not be economically feasible, does not eliminate Massachusetts-based electric sector resources’ need for additional infrastructure.⁴

Secondary Observation: the Study Provides Useful Information on Alternative Resources

The Study results presented on December 18, 2014 are directionally consistent with the analytical work others have undertaken on the subject. Similar to the findings of ICF International, Black & Veatch, and Levitan & Associates, the Study finds that when compared to the significant and growing electric sector demand for natural gas, gas infrastructure and available supply are inadequate during the winter season.

While not endorsing all of the assumptions in the economic analysis, the Study may provide useful information about the technically and economically feasible and practically achievable alternative resources available in the immediate, near-term, and long-term timeframes. The

³ For example, the Study “assumes LNG availability from Dstrigas for import in the peak hour.” December 18 Presentation at slide 66. In contrast, the November 2014 Federal Energy Regulatory Commission Office of Enforcement Energy Market Snapshot for the East Region, at 32, indicates that daily LNG sendout from this same facility have been much lower than its maximum capability, the amount assumed available in the balancing analysis.

⁴ Much of the scalable alternative resource gas savings potential, especially in 2030, comes from offshore wind. However, the Study found this resource not to be feasible. For example, offshore wind, estimated to have a *net* levelized cost of \$117 / MWh (or approximately \$984 / MMBtu) in 2020 is more expensive than other balancing measures like pipeline investments at a *gross* levelized cost of \$ 4 – 4.48 / MMBtu.

Study also provides electric sector costs and emissions-related information that may be useful in considering emissions reduction targets. With these qualifications, in addition to the imported-hydro scenarios, the Study identifies relatively lower cost alternative resources capable of displacing significant amounts of gas demand. As the New England states have a strong interest in maximizing resources such as energy efficiency and have, in broad terms, common interest in increasing the relative amount of no- and/or low-carbon resources in the region's generation mix, information about alternative resources and their relative economic feasibility is useful.