

Despite the wonderful days of summer, we should not be overly comfortable about the situation of our gas supply in New England. The Eastern Interconnection Planning Collaborative published a report on interregional transmission analysis and a gas-electric interface study and concluded that ISO New England and the New York ISO are very vulnerable to gas shortages.

See article below.

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## In East, ISO-NE, NYISO generators most vulnerable to gas shortages

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By [Sean Sullivan](#)

*The Eastern Interconnection Planning Collaborative published a report on interregional transmission analysis and a gas-electric interface study. The transmission analysis portion can be found [here](#).*

A comprehensive study from planning authorities in the Eastern Interconnection that examined electric power generators' access to firm natural gas transportation capacity found New England to be in the red for the next eight winters.

The Eastern Interconnection Planning Collaborative recently submitted to the U.S. Department of Energy its analyses of the interface between the electric transmission system and natural gas grid across the eastern U.S. and Canada, and made the final documents available on July 9.

In the gas-electric portion of the report, the Eastern Interconnection Planning Collaborative, or EIPC, investigated whether the natural gas delivery infrastructure was adequate and adaptable enough to take care of gas-fired electric power generation across the territories of the [Independent Electricity System Operator of Ontario](#), [ISO New England Inc.](#), [Midcontinent Independent System Operator Inc.](#), [New York ISO](#), [PJM Interconnection LLC](#) and [Tennessee Valley Authority](#). DOE, FERC, regional electric power authorities and the gas and electric industries have been looking for ways to improve coordination between the two sectors with the growing use of gas to fuel power generation, as gas is viewed as cheaper and cleaner than coal and oil.

"The increase in gas demand for electric generation coupled with the lack of infrastructure expansions to serve gas-fired generators in certain PPAs [participating planning authorities] raises strategic concerns over pipeline and storage companies' ability to keep pace with the coincident requirements of gas utilities serving residential, commercial and industrial (RCI) customers as well as the needs of gas-fired generation plants on peak demand days," the study

said. "In some PPA regions, such concerns persist throughout the heating season as well, November through March."

Those concerns over the gas-electric interface were highest for the New England region. In a table assessing market forces that could affect gas infrastructure, New England had half its risk categories in the red, meaning conditions were unfavorable for generators. The other regions leaned more heavily green — meaning favorable gas-electric interface conditions relative to the other regions — or yellow — which meant that conditions were neutral, neither clearly favorable or unfavorable to generators.

Market Dynamic and/or Risk Factor	IESO	ISO-NE	MISO		NYISO	PJM	TVA
			North/Central	South			
Transport Deficits	Green	Red	Green	Green	Red	Red	Green
New Pipeline Additions	Yellow	Red	Green	Yellow	Yellow	Green	Green
Proximity to Shale Gas	Yellow	Red	Green	Yellow	Yellow	Green	Yellow
Reversal-of-Flow	Green	Red	Green	Yellow	Green	Green	Green
Available Coal Output	Green	Yellow	Red	Yellow	Yellow	Red	Yellow
Nuclear Retirements/delay	Red	Green	Green	Green	Yellow	Yellow	Green
LNG Import Constraints	Green	Red	Green	Green	Green	Yellow	Green
LNG Export Constraints	Green	Green	Green	Yellow	Green	Yellow	Green
Generator FT Entitlements	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Green
Generator Reliance on Non-Firm Arrangements	Green	Red	Green	Green	Red	Red	Green
Dual Fuel Capability	Yellow	Green	Yellow	Yellow	Green	Yellow	Green
Renewables Penetration	Green	Yellow	Yellow	Green	Yellow	Yellow	Green

Source: Eastern Interconnection Planning Collaborative

FERC Commissioner Philip Moeller has called New England ground zero for [problems between the gas and electric generation industries](#), and other observers have come to this [conclusion](#).

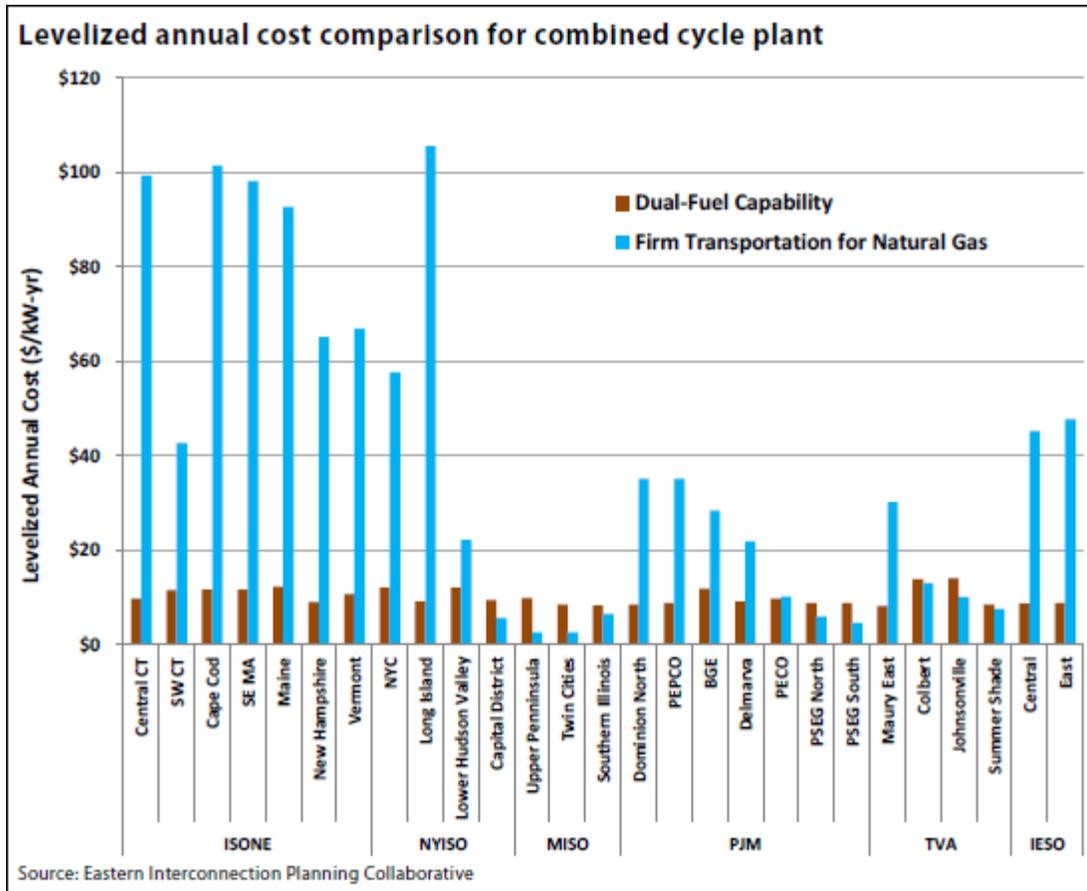
The study found in ISO-NE that gas infrastructure would be constrained in winter 2018 and 2023 under almost all of the tested market and resource conditions, which it said reflected commodity supply and transportation deficits.

"Nearly all of the gas-fired generators in New England lack primary firm entitlements back to a liquid sourcing point, thereby limiting access to natural gas during cold snaps," the study found. "The deliverability shortfall is explained by upstream transportation bottlenecks into New England along the major pipeline pathways linking [the Marcellus Shale] with New York and New England, as well as the anticipated continued decline in traditional imports from Canada.

In the study's scenarios, limiting receipts at the LNG import facilities in New Brunswick and Massachusetts increases the deliverability shortfall in New England, especially on the [Spectra](#)

Energy Partners LP's Algonquin Gas Transmission LLC and Kinder Morgan Inc.'s Tennessee Gas Pipeline Co. mainlines around Boston.

"While there are many new pipeline projects on the drawing boards for New England, only Spectra's AIM project and Tennessee's Connecticut Expansion project, comparatively moderate and small pipeline expansions, respectively, have been incorporated in the scenarios [tested], due to the development status of the projects at the time analysis inputs were set," the study said. "The affected gas-fired generation is mitigated fully in 2018 and 2023 when high daily spot market gas prices place oil-fired generation, and, to a much lesser extent, coal-fired generation, in merit.



"In case sensitivities, the postulated reutilization of the LNG import terminals at both Canaport and Distrigas materially lessens the amount of affected

generation," the study said. "There are no constraints in summer 2018, but by summer 2023, growth in electric loads increases transportation deficits affecting generation throughout the region."

The study also found NYISO to have gas infrastructure constraints in winters 2018 and 2023. "Despite the large pipeline buildout to accommodate shale gas production from Marcellus to upstate and downstate New York, Ontario and New England, generators throughout NYISO are exposed to pipeline constraints and/or local delivery constraints during cold snaps when LDCs exercise their superior rights in order to serve RCI load," the study said.

The picture was brighter for the other regions. "In PJM, depending on location, the gas infrastructure is either adequate or moderately constrained in winter 2018 and 2023," the study said.

The study found gas infrastructure would be adequate in future winters in IESO, MISO and TVA.

The study observed that gas pipeline and storage infrastructure were built and sized to meet the demand of firm customers during peak demand conditions "with little or no reserve capacity," which the study noted is a different design than the bulk electric system, which has a reserve margin in case of contingencies. The study noted that the majority of generators that can use gas do not have firm service agreements for gas storage and transportation.

The study pointed out that many gas-fired generators have dual-fuel capability: the ability to also burn oil when they cannot get gas because of pipeline constraints. This capability is a much less costly option for generators to secure fuel delivery than buying firm transportation on gas pipelines, the study said.

"Despite the ostensible economic superiority of the dual-fuel capable solution to the challenge of maintaining fuel assurance for electric reliability, there may be other commercial reasons that otherwise induce generators to invest in firm transportation," the study said.

Among those other reasons, environmental groups that have argued against gas pipeline expansions might not see burning fuel oil as an improvement.

The study noted that FERC [updates](#) to gas transportation nomination cycles were designed to improve gas-electric coordination and increase scheduling flexibility for all pipeline shippers.