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Impact of New Pipeline Infrastructure Tied to Firm Capacity Contract Debates

FERC to Consider Wholesale Market Rules that Encourage Firm Capacity Contracts to Support Infrastructure Growth

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Policy Brief

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Key Takeaways:

- The Federal Energy Regulatory Commission (FERC) issued a favorable environmental assessment for the Atlantic Bridge natural gas pipeline project that would supply New England states and the Maritime provinces of Canada
- FERC will examine a waiver request for firm capacity releases by electric distribution companies to generators, in a bid to expedite pipeline projects in the constrained Northeast market
- As growth in natural gas supply and demand takes up pipeline infrastructure capacity, closer gas-electric coordination in wholesale markets will be needed for reliable and affordable service

Entities Mentioned:

- Eversource Energy
- Federal Energy Regulatory Commission
- Independent System Operator of New England
- Kinder Morgan
- Massachusetts Department of Public Utilities
- National Grid
- Spectra Energy

Related Research

[California Addresses Gas Shortage Risks Following Aliso Canyon Leak](#)

[PHMSA Proposes Revisions to Expand Scope of Natural Gas Pipeline Safety Regulations](#)

Insight for Industry – Atlantic Bridge Project Preliminarily Approved by FERC, Firm Contracts Critical to Advance Natural Gas Pipeline Infrastructure

On May 2, 2016, the Federal Energy Regulatory Commission (FERC) issued a favorable environmental assessment for the Atlantic Bridge natural gas pipeline project, proposed by Algonquin Gas Transmission and Maritimes & Northeast Pipeline (both subsidiaries of Spectra Energy, a large pipeline and midstream company), to expand existing pipeline systems and enhance natural gas transportation service to the New England states and the Maritime provinces of Canada.

The Atlantic Bridge Project would provide additional firm pipeline capacity required to meet Northeast market growth and has preexisting agreements to account for its entire capacity. The project could eliminate capacity constraints in the Northeast region, where critically constrained pipeline infrastructure – particularly in winter months – has resulted in higher electricity prices and reliability challenges. While natural gas supplies within the Marcellus shale on the Northeast border have grown substantially, delivering those new supplies to market requires pipeline infrastructure investments and firm contract commitments. On high-demand days—when most generators need to operate and the pipeline’s firm customers use all their contracted pipeline capacity—customers without firm capacity contracts may not find the necessary capacity to provide delivery. Gas-fired generators that have contracted only for interruptible pipeline capacity (capacity acquired in the secondary market) may not be able to perform on a high-demand day. Thus, increasing demand for natural gas will continue to restrict the availability of interruptible service as generators will be competing for the remaining unused or unscheduled capacity, pushing generators to contract for firm transportation service.

Currently, power producers lack incentive to procure year-round capacity, as the wholesale electricity market structure—which bases clearing prices on the lowest marginal costs—does not provide generators with an effective means to recover the costs incurred to ensure reliability through firm pipeline transportation. For example, for peaking generators that only run several times a year, firm transportation capacity is considered expensive, as they must be available only when dispatched. Therefore, Algonquin has requested FERC to waive its capacity release rules for electric utilities purchasing pipeline capacity. Electric market design changes providing ways to recover the cost of firm pipeline capacity—where needed for electric reliability—would support existing and incentivize additional pipeline infrastructure necessary to alleviate constraints. The need for binding commitments is perhaps best illustrated by Kinder Morgan’s recent suspension of the \$3.3 billion Northeast Energy Direct (NED) project due to inadequate capacity commitments. Algonquin’s proposal would permit electric distribution companies (EDCs) to prearrange releases of firm gas transportation capacity to generators serving the regional power grid as part of a state-regulated program. Algonquin said that the proposal would further FERC’s gas-electric coordination efforts and support efforts by EDCs to increase supply reliability for gas-fired electric generation and address high electricity prices during peak periods.

Delivering new supplies from the Marcellus region to the market requires pipeline infrastructure investments, which rely on firm contract commitments

FERC's technical conference May 9 will examine the Algonquin proposal in the light of issues questioning the basis and need for the exemption. To date, the proposal has triggered strong reactions on issues ranging from the ambiguity of the proposal to its ability to interfere with competitive operation of New England electricity markets. The FERC technical conference will consider wholesale market rules that encourage firm capacity contracts to facilitate pipeline expansions and projects. Comprehensive solutions that complement gas-electric coordination measures under progress would serve to address infrastructure requirements in constrained markets.

FERC Issues Favorable Environmental Assessment for Atlantic Bridge Pipeline Expansion to Serve New England and Atlantic Canada

The Atlantic Bridge Project would give a tangible push to south-to-north flow on the Maritime system and bodes well for Marcellus drillers and liquefied natural gas (LNG) export facilities. Although there are several proposals to export LNG from the U.S. and Canada, FERC notes that the Atlantic Bridge project differs by having industrial and commercial natural gas users within Canada, rather than LNG export companies, as potential customers.

FERC's [environmental assessment](#) (Docket No. [CP16-9-000](#)) of the Atlantic Bridge Project concludes that the proposal – with appropriate mitigating measures – would not significantly affect the environment. The project would expand existing interstate pipeline systems in New York, Connecticut, Massachusetts, and Maine to deliver up to 132,705 dekatherms per day of natural gas to the North Atlantic coast of the U.S. and Canada (Figure 1).

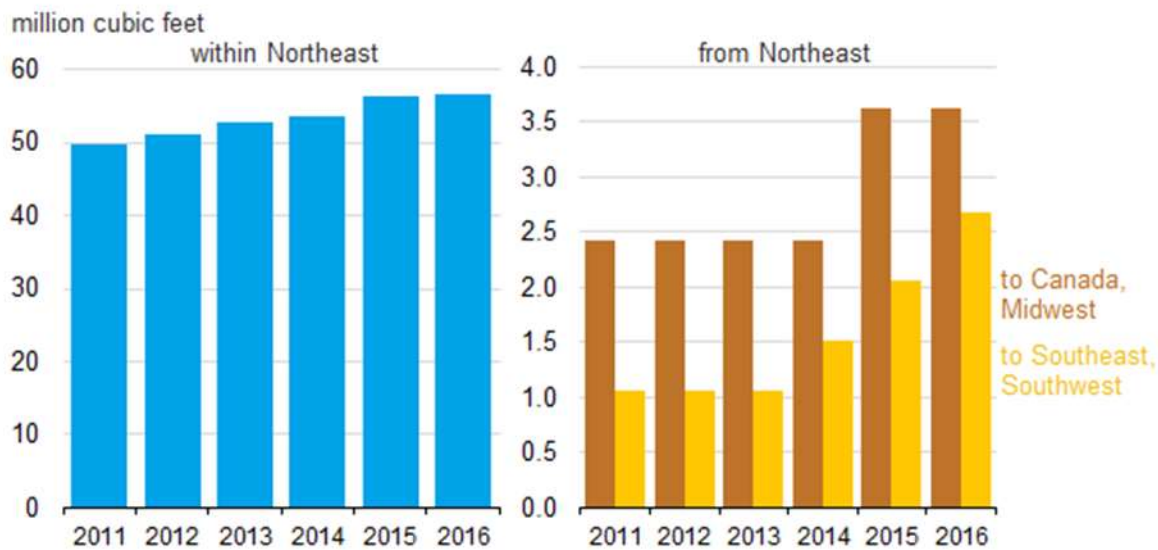
The project has concluded firm commitments of deliveries with seven shippers beginning November 2017: Heritage Gas Limited, Maine Natural Gas Company, NSTAR Gas Company (doing business as Eversource Energy), Exelon Generation Company (as asset manager of Summit Natural Gas of Maine), Irving Oil Terminal operations, New England NG Supply Limited, and Norwich Public Utilities. These shippers have primary delivery point entitlements for approximately 40 percent of the incremental capacity at delivery points on Algonquin's system in Connecticut and Massachusetts. The remaining 60 percent of capacity would be delivered to the Maritimes system at the Salem/Beverly Massachusetts interconnect. A presidential permit issued in July 2009 authorizes the Maritimes to utilize its existing cross-border facilities to import or export natural gas between the U.S. and Canada. The project would provide an export avenue to the Northeast and Canada for growing Marcellus production, reversing the historical Canada-U.S. direction of the flow.

Atlantic Bridge Adds to Projects Bringing Marcellus and Utica Gas to the Northeast and Mid-Atlantic Markets

Since 2011, the Marcellus and Utica areas have seen a combined growth of 12 billion cubic feet per day, accounting for 89 percent of the total U.S. natural gas production growth. Consequently, the natural gas reach from these regions has grown steadily (Figure 1).

Atlantic Bridge Project would give a tangible push to south-to-north flow on the Maritime system and bodes well for Marcellus drillers and liquefied natural gas (LNG) export facilities

Figure 1 – Natural Gas Pipeline Capacity in the Northeast Region



Source: EIA

Gas delivery capacity from Marcellus and Utica is expected to increase further through a number of recently completed and upcoming natural gas infrastructure projects. Since 2015, [the EIA reports](#) that several new pipeline projects have added a combined 4.2 billion cubic feet a day (Bcf/d) in Northeast takeaway capacity to Mid-Atlantic and Gulf-Coast Markets, with key projects that came online in 2015 and 2016 including:

- **Columbia Gas Pipeline's East Side Expansion** - 310-MMcf/d from Pennsylvania to Mid-Atlantic markets;
- **Tennessee Gas Pipeline's Broad Run Flexibility Project** - 590-MMcf/d from West Virginia to the Gulf Coast markets;
- **Williams Transcontinental Pipeline's Leidy Southeast project** – approximately 512 MMcf/d of Marcellus gas to Transco's mainline, which extends from Texas to New York to serve Mid-Atlantic and Gulf Coast markets.

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More pipeline expansions are underway to facilitate firm transportation service of Marcellus-sourced natural gas into New England markets. The [Algonquin Incremental Market](#) (AIM) project, currently under construction, will add 342 million cubic feet per day (MMcf/d) of firm transportation service on the existing system and is supported by long-term contracts from local distribution companies and municipal gas utilities in Connecticut, Massachusetts, and Rhode Island. The project is scheduled for completion in November 2016, after FERC denied attempts by New York to block the project earlier this year.

In addition to these infrastructure projects stemming from production in the Marcellus and Utica areas, growing prominence of gas-fired generation is encouraging expansion across other regions (Table 1).

Table 1 - Approved Major Pipeline Projects, 2016 (As of March 14, 2016)

Docket No.	Company/Project	Capacity (MMcf/d)	Miles of Pipe	States
CP14-529	Tennessee Gas Pipeline Company, L.L.C. Connecticut Expansion Project	72.10	13.30	CT, MA, NY
CP15-137	Rockies Express Pipeline LLC REX Zone 3 Capacity Enhancement Project	800.00	0.00	IN, OH
CP14-554	Florida Southeast Connection, LLC (PF14-2) FL SE Conn Proj (see Sabal Tr, Tran/Hillabee)	640.00	126.00	FL
CP15-16	Transcontinental Gas Pipe Line Co., LLC (PF14-6) Hillabee Expansion Proj (see Sabal Trail, FL SE Con)	1,131.70	43.50	AL
CP15-17	Sabal Trail Transmission LLC (PF14-1) SE Mkt P/L Proj (see FL SE Conn, Tran/Hillabee)	1,075.00	516.20	AL, FL, GA
CP15-95	Columbia Gas Transmission, LLC Tri-County Bare Steel		34.00	PA
CP15-105	Texas Gas Transmission, LLC Western Kentucky Lateral Project	230.00	22.50	KY

Source: FERC

Algonquin Seeks Waiver of FERC's Capacity Release Rules to Enable Gas-Fired Generators to Secure Firm Pipeline Capacity

Citing inadequate incentive for market commitments, on February 16, Algonquin [proposed](#) tariff revisions (Docket No. [RP16-618-000](#)) that would facilitate the release of firm capacity acquired by EDCs through state-regulated electric reliability programs for use by electric generators, thereby supporting electricity generation for grid delivery and ratepayer benefits. The proposal seeks to exempt EDCs participating in state-regulated electric reliability programs from the capacity release bidding requirements when they directly or indirectly release capacity to electric generators. It would permit EDCs to prearrange releases of firm gas transportation capacity to generators serving the regional power grid as part of a state-regulated program. Algonquin said that the proposal would further FERC's gas-electric coordination efforts and support EDCs' efforts of to increase supply reliability for gas-fired electric generation and address high electricity prices during peak periods. In addition, Algonquin said that the proposal was consistent with FERC's current policy of exempting releases for natural gas LDCs from bidding requirements, pursuant to state-regulated retail access programs.

In its filing, Algonquin referred to its Access Northeast Project (ANP) – which would deliver up to 900,000 Dth per day of natural gas for New England electric generation markets – and recent filings by Eversource Energy and National Grid with the Massachusetts Department of Public Utilities ([MA DPU](#)). As part of ANP, Algonquin proposes to construct a LNG storage facility in Massachusetts to provide flexible service and to supplement supplies for generators on cold winter days. Algonquin states that Eversource Energy has executed two preexisting agreements for transportation and storage on the ANP and has sought MA DPU approval of the agreements, as well its Electric Reliability Service Program. Under the proposed ERSP, developed in collaboration with National Grid, the EDCs will hire a capacity manager to administer the release of the EDCs' transportation capacity and supply to gas-fired electric generators in Independent System Operator of New England ([ISO-NE](#)) region. The release would coincide with ISO-NE's Forward Capacity Market (FCM) bidding schedule, allowing generators to acquire fuel capacity prior to commitments in the FCM. The remaining capacity would be made available in bidding windows corresponding to the traditional natural gas trading periods. Following the filings by Eversource Energy and National Grid, Algonquin said that EDCs would continue to seek approval of state-regulated programs and ANP preexisting agreements from state commissions. Algonquin noted that the proposed revisions are not limited to the ANP or any specific pending state electric reliability program.

Algonquin highlighted the lack of adequate incentives for gas-fired generators to purchase year-round firm transportation and the possibility of paying higher prices for deliveries or secondary market capacity during peak periods. For example, on April 20, Kinder Morgan and its subsidiary, Tennessee Gas Pipeline Company (TGP), announced suspension of the Northeast Energy Direct (NED) project due to inadequate capacity commitments from prospective customers. The \$3.3 billion project was among the largest proposed project to alleviate New England's severely limited natural gas transportation capacity. Kinder Morgan attributed the inadequate contracted capacity to several factors, including lack of established state regulatory procedures to facilitate binding EDC commitments, open-ended nature of state processes to establish such procedures, uncertainty over the success of those processes.

FERC Calls for Technical Conference to Examine Basis for Waiver Due to Strong Industry Reactions

Although Algonquin argued that the waiver would alleviate supply constraints during periods of high demand for natural gas, the firm's waiver request attracted multiple opposing comments from the industry on issues ranging from the ambiguity of the proposal to its interference with competitive operation of New England electricity markets. In response, FERC [scheduled](#) a technical conference to examine the Algonquin proposal.

While some commenters have supported the concept, several others have sought clarity on the scope and applicability of the proposal. The

The need for binding commitments is perhaps best illustrated by Kinder Morgan's recent suspension of the \$3.3 billion Northeast Energy Direct (NED) project due to inadequate capacity commitments

Massachusetts Attorney General (AG) opposed the filing and questioned the legality of such electric reliability programs under Massachusetts law and public interest of EDCs' gas transportation contracts. A MA DPU-approved [order](#) (Docket No. [15-37](#)) that allows EDCs in Massachusetts to contract for pipeline gas capacity to fuel power generation challenged by the Massachusetts AG is under review by the state's Supreme Judicial Court. MA DPU issued the rules in response to the Department of Energy Resources request to investigate financial assurances for pipeline construction, including an "innovative mechanism" where electric utilities would promise to buy the gas.

Other opposing commenters have argued that:

- Exemption from FERC capacity release policies should be implemented through rulemaking procedures rather than an individual pipeline tariff proceeding;
- The proposal is premature and should not be considered until a state-regulated electric reliability program has been approved by Massachusetts or other New England states, or until Algonquin can provide additional details;
- The proposal would result in undue discrimination for Algonquin-connected gas-fired electric generators which would benefit of purchasing non-biddable, subsidized capacity from EDCs through their asset manager and generators connected to other pipelines;
- The proposal does not justify a bidding exemption for capacity releases compared to state-sponsored natural gas retail access programs;
- The arrangement would provide certain shippers with preferential treatment despite the willingness of other shippers to pay more than the price obtained for the preferentially released, non-biddable capacity

In addition, EDCs drew on FERC authority to find that the public interest supports the proposal given the existing provision of exempting state natural gas retail access programs and asset manager arrangements from capacity release bidding requirements. The outcome of the conference may have significant impact on similar infrastructure projects in the future, especially if it leads to sufficient incentives for gas-fired generators to lock up firm capacity.

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Increasing Dependence on Natural Gas for Electric Generation Continues to Drive Gas-Electric Coordination Activities

The electric generation market currently presents a significant growth opportunity for natural gas, and the interdependence of electric-gas markets will likely accelerate as renewable energy resources require natural gas plants for backup and as low natural gas prices encourage increased gas consumption. Utility demand for reliable gas supplies is expected to increase as pending environmental regulations constrain traditional base load sources

of power. In addition, planned LNG export projects and cross-border pipelines rely on pipeline expansions to access diverse supply sources. While the Marcellus Shale basin has substantial production growth to meet the demand, bringing this new capacity to market requires additional natural gas pipeline infrastructure investments, which hinges on incremental contract commitments.

Long-term firm subscriptions, which account for capacity on proposed projects, are critical to advance pipeline projects as they provide revenue certainty for infrastructure investments. Inadequate firm commitments are seen as a barrier for new pipeline development as the electric generation market has not traditionally favored long-term firm pipeline commitments.

As Algonquin underscores, the majority of gas-fired units in New England rely on interruptible pipeline services or the secondary market for electricity generation. At the same time, LDCs use their capacity to supply customers, implying that generators that cannot avail interruptible services seeking to acquire capacity on the spot market, which creates pricing and reliability challenges. Given the close correlation between gas prices and power prices, competition for pipeline capacity causes spikes in spot prices, which leads to higher power costs, especially on pipeline peak days. Algonquin has noted that hourly, daily, monthly, and annual deliveries on the Algonquin system continue to set records, and that essentially no interruptible service has been scheduled on the Algonquin system for the past three years, indicating the need for additional pipeline infrastructure. New England power generators that do not hold firm pipeline capacity, rely upon interruptible capacity, wherein generators pay much less, but only receive what the pipeline can deliver on the spot market after firm capacity service commitments have been met. Firm capacity services, on the other hand, require long-term contracts and cost more.

Recognizing the increased dependence on natural gas as a fuel for electricity generation, FERC has already taken steps to improve coordination of wholesale natural gas and electricity market scheduling:

- [FERC Order No. 787](#), issued on November 15, 2013 (Rulemaking [RM13-17-000](#)), provides explicit authority to interstate natural gas pipelines and public electric utilities participating in the interstate commerce to share nonpublic, operational information with each other to promote reliable service or operational planning on their systems;
- [FERC Order 809](#), issued on April 16, 2015 (Rulemaking [RM14-2-000](#)), provides for better coordination of the scheduling practices of the wholesale natural gas and electric industries, as well as additional contracting flexibility to firm natural gas transportation customers through the use of multi-party transportation contracts.

Inadequate firm commitments are seen as a barrier for new pipeline development as the electric generation market has not traditionally favored long-term firm pipeline commitments.

The FERC technical conference will likely consider wholesale market rules that encourage firm capacity contracts to facilitate pipeline expansions and projects. Solutions that complement the gas-electric coordination measures that are currently under progress would serve to enhance infrastructure investments in constrained markets. The recent suspension of Kinder Morgan's AED and Algonquin's proposal to facilitate electric utility purchase of pipeline capacity demonstrate the need for regulatory solutions to facilitate binding EDC commitments.

Solutions that complement the gas-electric coordination measures that are currently under progress would serve to enhance infrastructure investments in constrained markets

Disclosures Section

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