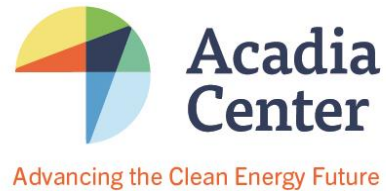


The Missing Energy Crisis & What it Tells Us About the Energy System of the Future



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Part II: What States Are Doing

In the next few months, policymakers across New England may commit tens of billions of ratepayers' dollars to gas pipelines and electric transmission that will shape the region's energy future for decades to come. Some of the projects probably make sense, and could help to replace the region's outdated power plants with cleaner resources, stabilize costs, and reduce greenhouse gas (GHG) emissions. However, as Part I of this analysis series describes, bigger is not necessarily better – particularly when it comes to pipelines – since the region is already struggling with over-reliance on natural gas.

Additionally, both pipelines and transmission lines represent investments in long-lived and large-scale supply resources in a system increasingly moving toward small-scale, distributed clean energy sources, smarter energy management, and customer-focused solutions on the demand side. While there may be environmental and economic benefits to replacing coal plants with hydroelectricity, or even natural gas plants, we should build only as much conventional supply infrastructure as is truly needed. We must also be careful not to squander public money on projects that may benefit developers more than consumers. With energy consumption decreasing [due to efficiency improvements](#) it is clear that we do not need to replace retiring electric generation plants on a 1-for-1 basis. The challenge for governors, legislators, and regulators is to size expenditures appropriately to meet our near- and mid-term needs, while keeping us on the right path for the energy system of the future.

Part II of this analysis series grounds this challenge in the interrelated legislative and regulatory efforts underway in the states regarding pipelines and transmission lines; Part III describes the steps needed to figure out which investments make the most sense.

Option 1: Natural Gas Pipelines

In early 2014, as part of a regional energy agreement, New England states explored creating an unprecedented regional electricity tariff (a charge that would show up on every customer's bill) to

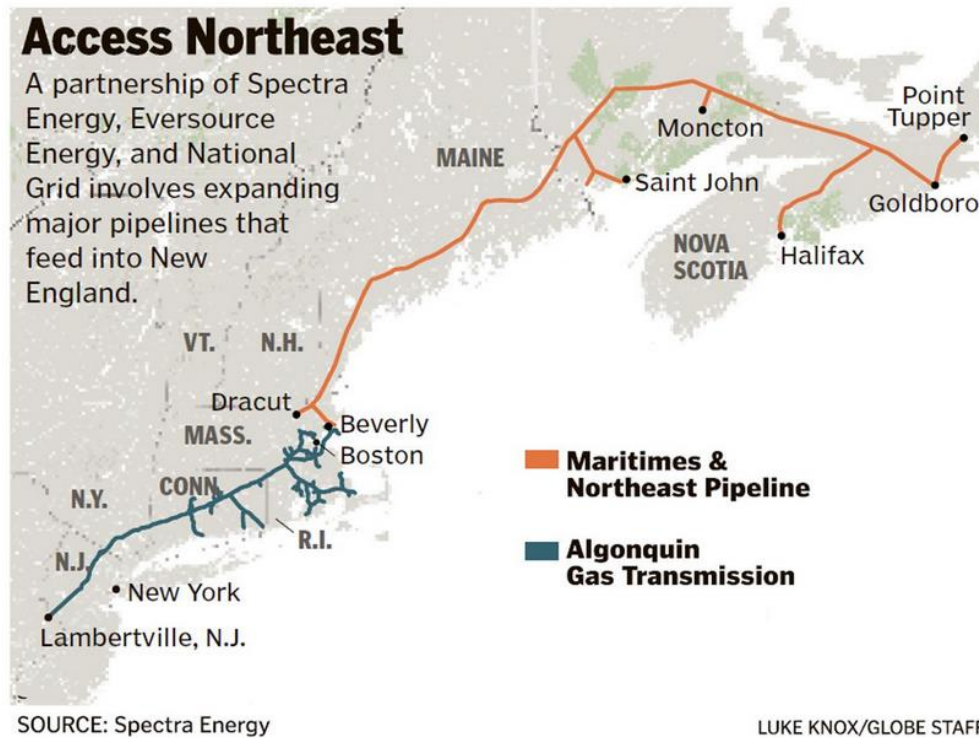
finance natural gas pipelines. The pipeline capacity was intended for electricity generators unwilling to take on the financial risk of securing their own long-term fuel supplies while participating in a short-term competitive electric market. Transferring risk from the private sector to ratepayers was intended to ensure adequate supplies for natural gas generators on cold winter days, when natural gas first goes to heating customers who paid for pipelines through their natural gas bills. However, facing criticisms that this action would constitute market interference, that the states had [not adequately evaluated potential alternatives](#), and the improbability of federal approval, the governors appear to have set the untested regional tariff approach [aside](#). The breakdown in the regional process has left a trio of states pushing for natural gas pipelines funded with state-level tariffs on electric ratepayers. While this approach skirts legal obstacles confronting a regional tariff, jurisdictional conflicts with the Federal Energy Regulatory Commission (which is exclusively authorized to regulate resale of natural gas) will continue to test states' unprecedented interference in federally regulated markets.

Despite these challenges, the Maine Public Utilities Commission appears to be on the cusp of implementing its own unprecedented approach of negotiating contracts directly with pipeline developers, setting aside [skepticism from PUC staff that benefits would exceed costs and a dissenting Commissioner's concerns about transparency](#). Maine may, however, have trouble going it alone in contracting for 200 million cubic feet per day of capacity, as the two proposed pipelines would have far more capacity and would have to pass through southern New England states.

Kinder Morgan's Northeast Energy Direct (purple dotted line) courtesy of the [Nashua Telegraph](#).



Map of Access Northeast, courtesy of the [Boston Globe](#).



In Connecticut, [Senate Bill 1078](#) – which passed the legislature and awaits the Governor’s signature – would authorize the Department of Energy and Environmental Protection (DEEP) to acquire natural gas capacity from pipelines or liquefied natural gas (LNG) import facilities, with costs recovered from electricity customers – again, a charge on the bills of all customers. DEEP could also procure energy efficiency, renewables, hydroelectricity, or energy storage, though these resources are artificially capped at 10% of Connecticut’s consumption. The final bill does not include [potential provisions](#) prohibiting Connecticut from acting alone to address the free-rider issue, whereby states that choose not to impose regional gas pipeline construction costs on their electric ratepayers could nonetheless benefit from any resulting decrease in regional electric prices. Free-riding states would not, however, be on the hook for stranded costs if gas price increases make using the pipelines uneconomical. Free-riding states would also avoid exposure to construction cost overruns. It is worth noting that before a single mile has been laid, the estimated cost of the Northeast Energy Direct pipeline has ballooned from [\\$1.2 billion](#) to [\\$5 billion](#). With these underlying risks, if one or a subset of New England states is offering to foot the bill and publicly subsidizing gas pipelines, it may be in the best interest of every other state not to participate in the effort.

In Massachusetts, the Department of Public Utilities has opened an investigation (DPU 15-37) to determine whether existing law allows electric utilities to contract for natural gas pipeline capacity and recover costs from electric customers. The legal basis for this approach is untested, and will likely be challenged by a number of stakeholders ranging from power generators and LNG providers who [oppose market intervention](#), to consumer advocates concerned about high costs, to environmental groups focusing on local impacts and climate change. In addition, the complicated procedures for public participation in the DPU proceedings may create challenges in addressing [concerns about transparency](#) and the lack of public engagement surrounding last year's push for natural gas pipeline subsidies. Massachusetts legislators have also signaled that they expect input on the process. [H2494](#) (on which Acadia Center provided detailed supporting [testimony](#)) would prevent public funding for projects targeting export markets, a potentially lucrative motivation that is “completely underplayed or denied by pipeline proponents” [according to bill sponsor Lori Ehrlich](#).

In New Hampshire, the Public Utilities Commission has [initiated an investigation](#) to explore utilizing existing authorities to address electric “cost and price volatility issues.” Within the proceeding, PUC staff appears to prioritize expanding pipeline capacity, evidenced by [comments](#) that “New England continues to have a high winter electricity price problem that can be addressed economically *only through the addition of new pipeline capacity*” (emphasis added). Concerns about the focus on large infrastructure, constraints on alternatives such as energy efficiency, and a lack of transparency are also raised in [comments by the Office of Energy Planning](#), another branch of New Hampshire government, and additional jurisdictional issues are raised [by CLF](#).

Option 2: Electric Transmission for Clean Resources

In a separate effort, Connecticut, Massachusetts, and Rhode Island are exploring options for building transmission to supply the region with large-scale hydroelectricity from Eastern Canada and wind from Northern New England. In a [draft Request for Proposals \(RFP\)](#), the three states laid out a process for transmission builders, renewable energy developers, and hydroelectricity providers to propose projects and contracting structures to get transmission built. A similar approach enabled Massachusetts and Connecticut to purchase 815 MW of wind and solar in 2013 [at costs lower than conventional generation](#). Additionally, using hydroelectricity to fill up transmission lines when the wind is not blowing could be an effective way to get the most value out of large, long-distance power lines. Bringing additional energy to southern New England will also help diversify power supplies and reduce the region's reliance on natural gas.


The draft RFP calls for relatively modest (by transmission standards) combined procurements of just over 2,300 terawatt hours (TWh) for Connecticut and Massachusetts, which could translate into the output of about 200 MW of wind and a similar amount of hydroelectric capacity (for context, a natural gas plant is usually 600-700MW). 400MW is significantly smaller than the majority of transmission lines that [have been proposed for the region](#), most of which are in the 1000-1200MW range. Rhode Island's share of the procurement is open-ended, and the invitation within the draft RFP for developers to submit larger proposals may be intended to pave the way for a far larger procurement of transmission and hydroelectricity by Massachusetts. Massachusetts' additional hydro procurement could be enabled through Sen. Downing's [S 1757](#), a refile of last session's Clean Energy Resources Bill. Procurement could also be pursued through a mechanism like the [Clean Energy Standard](#), which the outgoing Patrick Administration proposed as a requirement for utilities to procure "clean energy" generation in addition to and separate from the requirements of the Renewable Portfolio Standard (RPS) – though the Baker Administration has indefinitely delayed the CES regulation as part of [a sweeping regulatory review](#). Both approaches are designed to deliver 18.9 TWh of clean energy annually, which the state predicted would [help achieve](#) the 25% GHG reduction mandate established by the Global Warming Solutions Act.

While the objectives of the joint procurement are worthwhile, the complexity of the potential contracting mechanisms, the interrelation with Massachusetts procurement, and potentially significant price tag require additional measures to ensure that consumers and the region get the best deal, as Acadia Center [described in comments to the states](#).

- First, procurements should be structured to prioritize renewable energy, which will help drive additional wind development, boost in-region growth and enable achievement of RPS requirements at lowest cost.
- Second, utilities should not be allowed to adjudicate a selection process that includes proposals from their own affiliated transmission developers – as proposed in the draft RFP – and Attorneys General from all participating states need to be involved to promote ratepayer interests.
- Third, binding provisions must be included to ensure that energy is delivered during the on-peak periods when it is needed the most. This is particularly important in winter cold snaps when Hydro Quebec has – in the past – curtailed exports to meet demand in Quebec. As stated in an internal memo obtained through a [Freedom of Information request](#) by the Conservation Law Foundation (see document 30), these curtailments happen during "times when the New England System needs the power the most." Energy efficiency

improvements and additional energy supplies may enable Quebec to export more power during peak periods, but binding contractual obligations will be needed to ensure that this occurs.

The stakes for these interrelated procurements are high: expenditures on transmission and long-term purchase agreements could exceed \$20 billion over the next couple of decades. This projection is based on the proposed scope of the RFP plus large-scale hydroelectric procurements by MA (conservatively limited to 10 years, though legislation could authorize commitments of up to 25 years), estimated costs for new wind and hydro [from EIA](#), and the cost of two new transmission lines (the \$2 billion [Northeast Energy Link](#) and the \$1.2 billion [New England Clean Power Link](#)).

	Procurement		Price	Annual Cost	Contract/ Commitment	Net Present Value
	Resource	GWh	2012\$/MWh	2012 \$m	Years	2012 \$m
Connecticut	Renewables	125	77.1	\$ 10	20	\$ 168
	Hydro	1,375	84.5	\$ 116	15	\$ 1,567
Massachusetts	Renewables	817	77.1	\$ 63	15	\$ 850
	Hydro	18,900	84.5	\$ 1,597	10	\$ 14,838
Rhode Island	Renewables	??	77.1	??	??	??
	Hydro	??	84.5	??	??	??
Transmission	--	--	--	--	--	\$ 3,200
Total	--	21,217	--	\$ 1,786	--	\$ 20,622

One way or another, we are going to need to spend billions of dollars substituting new resources for retiring fossil fuel-fired generation, and significant expenditure on wind and hydroelectricity could work out well for the region. Canadian hydroelectricity and Northern New England wind are far away, and building the transmission to bring power to southern New England will not be cheap or easy. The challenge for policymakers is to find the right balance between imports and in-region energy resources such as solar and offshore wind. And before building anything, we should take the easy steps to improve the efficiency of existing markets, as discussed below.

Option 3: Market Reforms

New England states and the regional grid operator ISO-New England have already achieved promising results from incremental market reforms to alleviate winter price spikes. ISO-NE changed market rules ranging from [the frequency of energy bids](#) to compensating generators for advance purchases of LNG through the [Winter Reliability Program](#), to ensure that they had enough fuel on hand to get through winter cold snaps. The Federal Energy Regulatory Commission also got in on the act to ensure that [adequate preparations were in place](#) for the winter of 2014/2015. ISO-NE

is additionally implementing a [Pay for Performance Program](#) starting in 2018 that will penalize generators that fail to perform during peak periods, thus creating an additional incentive for generators to contract for sufficient fuel supplies. Before taking radical actions, policymakers need to allow existing reforms to continue to bear fruit, and provide time for the Pay for Performance program to take effect.

The drop in prices for oil and LNG on the global market provides more leeway to pursue low-risk market reform solutions. Oil prices are about [40% lower](#) than they were last summer, and prices for LNG have fallen with them. This has led to more LNG deliveries to New England, allowing the region to [use existing infrastructure](#) to meet peak winter demands.

The Path Forward

These efforts to bring additional energy into the region and reform market rules are important parts of a solution, but a balanced outcome must first exhaust all of the ways in which we can reduce consumption and make better use of supplies we already have. How to do that, and how to determine the appropriate mix of supply and demand solutions, will be the focus of the final entry in this analysis series.

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