New England-Canada Business Council Annual Conference

Canada, New England Talk Energy Infrastructure

By Michael Kuser

BOSTON — New England's transition to a clean energy future may depend more on new transmission lines from Canada than on new or expanded natural gas pipeline capacity, panelists said at a regional energy conference last week.

Speaking at the New England-Canada Business Council's 25th Annual Energy Trade & Technology Conference, Massachusetts Department of Energy Resources Commissioner **Judith Judson** said the region is heavily dependent on gas-fired generation, which puts stress on the system at times of peak demand in winter.

"A lot of those generators end up switching to oil and emissions become extremely high," Judson said. "It also means that we see some very high prices, and one of the challenges is balancing a clean energy future with affordability." However, a key way to reduce greenhouse gas emissions in the heating and transportation sectors is to electrify, she said.

Massachusetts regulators are at the heart of the current Canada-New England energy conversation. In January, the state will select bidders responding to its July request for proposals for 9.45 TWh/year in renewable energy generation. Hydro-Québec partnered separately with Eversource Energy, Avangrid and Transmission Developers Inc. on three different transmission projects for the Massachusetts RFP and has agreements with Boralex and Gaz Métro to add wind power into the energy mix on each project at the state's request. (See *Hydro-Québec Dominates Mass. Clean Energy Bids*.)

TDI CEO Donald Jessome agreed that something special is happening between Canada and the U.S. His company is partnered with Hydro-Québec on the New England Clean Power Link, a 154-mile underwater and underground transmission line that would transmit 1,000 MW of Canadian hydropower under Lake Champlain to Vermont. The project bid into the Massachusetts RFP.

"This has been going on for over a decade, discussing how we will connect the two regions, [and] how do we bring clean energy in from Canada," Jessome said. "How do we get that infrastructure in place? A decade ago, when New England governors and Canadian premiers started talking about this and making that a key issue, people started to take notice. In a lot of ways, it's happening already today."

William Hazelip, vice president of business development at National Grid, said, "Market-based solutions are very complicated in design and take time [and] a lot of buy-in from stakeholders. ... Long-term contracts are really the key to moving forward with financing renewable energy projects."

Left to right: Donald Jessome, Transmission Developers Inc.; Martin Imbleau, Gaz Metro; David Pasieka, Liberty Utilities; Will Hazelip, National Grid; DOER Commissioner Judith Judson; and Attorney Kevin Conroy of Foley Hoag. | *© RTO Insider*

Weak Case for Gas?

Slow growth in retail natural gas consumption could weaken the case for increasing New England's pipeline capacity, according to one panelist.

"The region needs more gas but not necessarily more infrastructure because we're adding 2% of new clients every year, but the overall load, yearly based, is not really increasing just because of the economics of energy efficiency," said Martin Imbleau, vice president of operations for Gaz Metro.

Liberty Utilities COO David Pasieka disagreed.

"When you look at the growth for this particular region, with 1 to 2% growth in customers, when you do the long-term projections, we're out of gas," Pasieka said. "There are in Massachusetts a couple of LDCs [local distribution companies] that went into moratorium mode, not being able to expand their customer base. As an LDC operator, I need more customers to be able to justify the spend that I'm currently doing."

Canada used to get gas from the north, but "all those offshore pockets are drying up," he said. "Between Marcellus and Utica, this is one of the largest producers of natural gas in the world and the price point reflects it. This will be good for customers if we can figure out how to move it from that part of the world to this part."

Imbleau countered: "The shoulder months are decreasing, but the peak period is increasing, so maybe what we need is seeking a solution not necessarily in underground facilities with a load factor of 100%, but in facilities that are designed to meet the peak load. They may be more expensive, but [they] make more economic sense in the long run, also in a social sense, including LNG peaking spots differing in different regions."

Technology to the Rescue

Meanwhile, energy storage is fast replicating some of the attributes of gas-fired generation, Hazelip said.

"National Grid just today announced a 6-MW, or 48-MWh, Tesla battery in Nantucket to help defer the need for a third subsea cable to connect the island to the mainland," Hazelip said. "National Grid Ventures is also

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Cooperation, DOE NOPR, State RFPs the Topics at NECBC Meeting

By Michael Kuser

Left to right: Rich Paglia, Enbridge; James P. Torgerson, Avangrid; Eric Martel, Hydro-Québec; and John Reed, Concentric Energy Advisors. | *© RTO Insider*

BOSTON — Atlantic Canada, New York and New England are one region geographically, and the jurisdictions will be drawn into ever closer cooperation on energy.

That was the consensus among a dozen or so speakers at the 25th Annual Energy Trade & Technology Conference hosted by the New England-Canada Business Council on Nov. 8-9. Speakers also discussed proposed price supports for coal and nuclear generation and how FERC is likely to treat New England states' contracting for renewables.

NECBC President Jon Sorenson emphasized the benefits of cooperating to balance needs and resources across the area and reminded participants that the bilateral energy trade between Canada and the U.S. is already estimated at $130 billion annually.

Battery for New England

Hydro-Québec CEO Eric Martel said that his company last year exported more than 15 TWh of electricity into New England, about 12% of what the region is consuming now. The company has partnered on six different projects being bid into Massachusetts' recent clean energy procurement.

(See *Hydro-Québec Dominates Mass. Clean Energy Bids*.)

"Our large reservoirs have a combined annual energy storage of 176 TWh," Martel said. "Today we are producing for the Canadian people 170 TWh/year [and] we are exporting about 30 TWh, which makes our production today at 200 TWh. But today our limit [on exports] is the number of transmission lines."

Hydro-Québec began developing non-hydro renewable generation in the early 2000s and has since added 3,500 MW of wind capacity in Québec, Martel said.

"We firm up our domestic wind generation using our hydropower resources, so it's very important that our source for firming is a renewable resource also," he said. "We've been planning for this energy transition that is taking place, but what needs to happen now is to build those transmission lines. At peak periods, hydropower can be adjusted almost in real time, so Hydro-Québec can be the battery for northeastern America."

NB Power CEO Gaetan Thomas suggested how to connect the region to that huge battery.

"The only way to do that is more transmission," Thomas said. "Transmission is king; transmission is going to solve these issues. Our vision should be to tie the whole region

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developing two 40-MW batteries on Long Island, which will replace gas feeders. That's something we've seen really pick up speed out in California as well. It's gotten to the point [that] in some parts of the country, constrained parts of the system, where it's very difficult to site gas infrastructure, batteries are a great choice. They're becoming cost-effective, and you can get them built in a much shorter amount of time, and they provide other great benefits that the gas peakers wouldn't."

National Grid partnered with Citizens Energy on the Granite State Power Link, an HVDC transmission line to deliver 1,200 MW of new wind power from Canada, and the Northeast Renewable Link, a 23-mile AC line from Rensselaer County, N.Y., to Hinsdale, Mass., to deliver 600 MW of new wind, solar and small hydro into the New England grid.

Imbleau highlighted what Gaz Metro subsidiary Green Mountain Power is doing in Vermont by installing rooftop solar panels and including them in the rate base, as it does with batteries.

"The concept is that it benefits the overall system," Imbleau said. "It's a classic example of where the regulatory regime followed technology. Honestly, it's not happening generally because technology's probably at 4.0 and regulatory regimes are at 1.0, if we're generous, so just allowing a regulated entity to play a role, not in the R&D sector, not in the technology that's available off the shelf, but in the middle spot where there's a barrier of entry and the technology has a social, economic and environmental benefit."

Already Happening

Attorney Kevin Conroy of Foley Hoag noted that all of the top 100 largest corporations in the U.S. have set individual renewable energy goals — and many are seeking 100% renewables.

"How are they going to get 100% in some of the communities that they're operating in?" Conroy said. "Guess what's happening? Small hydro and solar developers are out meeting with Amazon and Walmart and everyone's putting solar panels on their roof or doing community solar initiatives. Those things are happening, and it's happening quite rapidly in California, and I see it in Missouri and see it moving very quickly to this part of the world."

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together and get to net zero [emissions]. That's the only way we're going to avoid the hits [caused by climate change] on the Eastern Seaboard. We're all connected to it; we have that in common."

DOE NOPR DOA?

Many speakers agreed that the U.S. Department of Energy's recent Notice of Proposed Rulemaking in support of coal-fired and nuclear baseload generation wouldn't amount to much, if anything.

But Concentric Energy Advisors CEO John Reed cautioned about being too optimistic.

"If we have one lesson from this administration, if you look at immigration or health care, the answer is, if at first you don't succeed, tweet, tweet again," Reed said. "If this doesn't go somewhere, and if you look at the initiatives that have occurred in Ohio, Illinois and New York to support baseload generation, what is going to come down as the next mandate, the next executive order on these issues? Because I don't think the administration's concerns in terms of supporting coal and nuclear and other baseload generation are going to go away."

"What I would expect — and PJM is already looking into it — is how to price things perhaps differently," said Avangrid CEO James Torgerson. "And I think the other organized markets will probably be told to do the same thing. I think each RTO and ISO is going to be looking at it from their perspective, and [if there is] an issue in their area that needs to be dealt with. FERC will probably push it back to the different regions to get it resolved on a regional basis, because you can't just say it's a national or international problem at this point; it's in certain pockets."

Michael Twomey, vice president for external affairs at Entergy, defended nuclear energy's role as an emissions-free resource. Nuclear power's contribution to New England's energy needs has remained generally unchanged because the retirement of Vermont Yankee was offset by upgrades and increased capacity from other units, he said.

"Oil has effectively disappeared from the landscape, coal is reduced significantly, and hydro and renewables honestly haven't moved that much," Twomey said. "We've seen tremendous gains in carbon emissions reductions in New England over the last 15 years, but that's mainly been attributable to the substitution of natural gas for oil and coal. Well, the oil and coal is going to be gone — soon — and there's not going to be any more low-hanging fruit to achieve carbon reductions, so what we're going to see is probably an increase in carbon emissions from where we are now, going forward, as you see new retirements."

An Accommodating FERC?

FERC is entering a much more "state-centric" cycle, according to Rob Minter, vice president for government and regulatory affairs at ENGIE.

"Confidence in the markets for maintaining things like fuel diversity to keep nuclear plants alive, to integrate renewables, to achieve public policy goals like carbon reduction does not fit with the market structure that we now have," Minter said. "Everyone's trying to build the type of plants they want for their own objectives, for their own fuel reliability, for economic development, to save stranded assets that are uneconomic and underwater but make sense, like a nuclear plant you need to continue to have low carbon. These are not compatible with the current wholesale market that was created in the 1992 Energy Policy Act."

"You start wondering how much of this [NOPR] is about reliability and fuel diversity versus some of the generators who have coal and nuclear plants aren't really making as much as they did in the past," Torgerson said. "So those are things being debated right now." He predicted FERC will set a technical conference so industry participants can examine the issue more thoroughly.

To implement different state public policies on clean energy requires out-of-market actions that are fundamentally incompatible with the wholesale market design, Minter said.

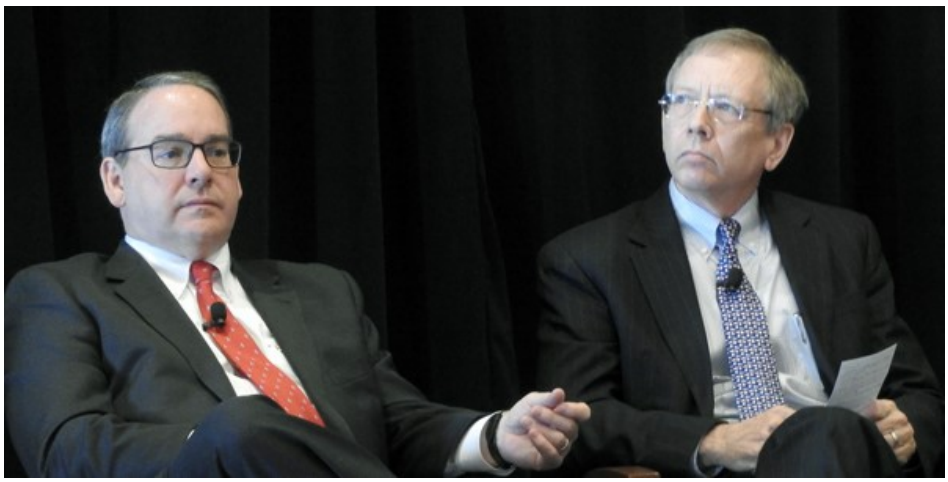
"You can find a way to price those attributes into the markets, but my god, you end up putting dozens of pricing mechanisms and algorithms into an already complicated market," Minter said.

He said although he would prefer fully competitive markets, they have "very little chance of success."

"I would like for it to work; I would like to see fully competitive wholesale markets," he said. "But regulators are not willing to accept the risk of very high energy prices that happen during periods of scarcity."

Leo Desjardins, CEO of Conservation Resource Solutions, said the new, fully staffed commission has arrived at an inflection point for markets.

"Massachusetts probably gets its way on Canadian imports [and] FERC figures out how to accommodate regional and state carbon pricing," Minter said. "And I think you'll see that [the] large renewable procurements that states want, that end up being out-of-market, get accommodated. Only for so long can a commission like FERC fend off states. If the number of states [asserting their public policy] grows, and as the frustration level grows, they eventually have to cave in and accommodate."



Michael Twomey, Entergy (left); and Rob Minter, ENGIE | *© RTO Insider*