

US Electric Utilities & IPPs

Could Transmission Crash the Capacity Party?

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We see a growing threat to capacity prices from proposed transmission lines

Among the growing threats to power markets could well be transmission projects crossing across regions, namely from Canada, pushing down power and more importantly capacity prices. Yesterday NU indicated on its call it would be positioned to bid in its Northern Pass transmission line from Canada into the next New England capacity auction for the 2019/2020 period in Feb '16. It's 1GW size could well have a meaningful impact on capacity prices if HQ (the ultimate offtaker of the project) opts to commit the line's capacity into the next auction (we see no reason why not).

We see meaningful downside to our forecast if transmission is successfully sold

For our New England projections, we see downside to the \$3-4/kW-mo (round tripped back to the historic low levels seen in previous years), vs. the \$5-6 we currently expect. While the line is nominally rated at ~1GW, New England has an exemption in place for up to 600MWs of renewable (read: hydro from Canada) that was adopted into its auction construct. It amounts to 200MWs per year for a three year period, totaling 600MWs of capacity eligible to clear in the market *without being subject to any MOPR tests*. The 200 MWs is roughly equal to projected load growth in peak demand across the footprint (~0.5%/yr). Just as quick as the uplift appeared in New England, transmission projects, if executed without mitigation could take out much of the price upside, particularly following the clearing of new capacity into the region recently.

But if these lines are built with out-of-market deals shouldn't MOPR apply?

We suspect the most significant test of Minimum Offer Price Rules (MOPR) could yet be applied to transmission lines, rather than the conventional new supply units the rules were originally designed to address. We suspect the test of MOPR policies not just in New England, but in New York and even PJM will prove critical to price trajectory. While New England's 600MW exemption should prove a major moderating force in prices, the threat is whether more of the project (remaining ~400 MWs will be allowed to clear – or will be subject to MOPR). We suspect it is likely to be mitigated – but suspect with a 600MW exemption, the economics still bias HQ to move forward. Even if it's not NU's Northern Pass, other proposed transmission projects into the region would have the same impact.

But what is the legacy? New York has already mitigated transmission

Notably, NYISO has already opted to mitigate the ~600 MW HTP transmission line from NJ (PSEG-North zone in PJM) into NYC, which has an offtake contract to NYPA. As such, generators in NY have been adopting strategies to ensure prices remain below the threshold at which the project will clear (this is effectively a 'cap' on prices now in NYC). While developer Blackstone is adamant it will not be out of market, an offtake has yet to be identified. We suspect this case before FERC will prove in addressing the thorny question of whether (merchant) transmission will be treated equitably with generation, or if separate policies apply.

And lastly, what about PJM? ITC's Eerie Connector project merits attention

Lastly, ITC has proposed a 1GW DC line from Ontario into PJM, which would similarly be supported by a Canadian offtake – and presumably sell into the PJM market. While PJM has yet to really apply its MOPR policy to any generator to any effect, such projects could prove the threshold projects here as well. Given the arbitrage in prices, and its relatively lower cost, we suspect this deal may not be mitigated despite a contract.

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What you really need to know:

We see merchant transmission projects as a major source of growing contention in power markets, as the line between merchant generation and conventional transmission investment is blurred. These projects are typically supported by offtakers with long-term views on power and capacity willing to sign deals 'out of market' to enable development to occur. Similar across many of the relevant examples, its Canada's own policy to export power into the US that shines across, with both Hydro Quebec (HQ) and Ontario Power Authority (OPA), both quasi-governmental agencies. Given the long-term view with which the Canadians appear to be placing behind the lines, it's not clear either that projects would be 'stopped' should they receive a mitigation decision that would prevent their clearing for some time.

What does this mean? New York and New England are both substantially exposed. Both are modestly sized markets, with the impact of ~1GW transmission lines in each respectively, placing substantial downside risk to prices. While energy prices will be negatively impacted regardless, the key question is whether capacity prices will be knocked down as well – or whether so-called 'Minimum offer Price Rules' will be put in to effect to force transmission lines to bid in at minimum levels (presumably higher than clearing prices), limiting their ability to clear into the market. Given the 600MW exemption in place in the New England market, this risk is most glaring given advanced development efforts by NU to move forward on its Northern Pass line (which has already received a contract with HQ). Bottom line, policies here merit close attention as FERC decides how to address

And who's impacted? It's the usual cast of characters – NRG primarily in NY and DYN primarily in New England. While this thesis is likely to play out more explicitly in 2016, we suspect the court wrangling over mitigation decisions to begin later this year. We encourage IPP investors to pay greater attention to efforts of transmission developers, especially NU, ITC, and Blackstone given their potential impacts. We see transmission projects as exacerbating our concerns over whether these markets are approaching the 'top of the cycle'. A key further question is whether NU & HQ will have sufficient comfort on the progress of the project in time for next Feb's capacity auction, seeing the planning process as still likely underway in NH. Having previously delayed the project, it's not inconceivable the generators could succeed in pushing this fight off for another year.

Mitigation risk threatens economics

Who's involved? Looking at recent examples.

We include a select list of merchant transmission projects worth tracking. While New England is the most exposed to this thesis, with 600 MWs exempted from MOPR policies (translating to ~\$3/kW-mo negative impact to clearing prices using the latest curves), New York and PJM could yet be impacted if projects aren't mitigated (decisions are still pending before FERC). NU has yet to file for a MOPR exemption as best we understand it.

Mitigation could make transmission economics 'dead on arrival' by excluding from lucrative capacity revenues

Figure 1: Select Transmission Projects Pending and Completed

Project	New England Clean Power Link	Northern Pass	Champlain Hudson Power Express
Lead Operating Company	TDI New England	Northern Pass Transmission LLC	TDI USA Holdings
Lead Investor(s)	Blackstone Group	Eversource Energy	Blackstone Group
Voltage	300-320kV	300kV	300-320kV
Capacity (MW)	1,000	1,200	1,000
Cost	\$1.2Bn	\$1.4Bn	\$2.2Bn
Underwater/ground Milage	154	40	333
Aboveground Milage	0	147	0
Estimated COD	2019	2017	2018
Route	Canada to New England	Canada to New England	Canada to New York
ISO	ISO-New England	ISO-New England	ISO-New York
Mitigated Status	Potential for 600MW exemption	Potential for 600MW exemption	Mitigation Pending

Project	ITC Lake Erie Connector	Grain Belt Express Clean Line	Hudson Transmission Project
Lead Operating Company	ITC Lake Erie	Clean Line Energy	Hudson Power Ventures
Lead Investor(s)	ITC Holdings Corp	Ziff Brothers & National Grid	Starwood & Energy Investors Funds
Voltage	N/A	600kV	345kV
Capacity (MW)	1,000	3,500	660
Cost	<\$1Bn	\$2Bn	\$650Mn
Underwater/ground Milage	66	0	65
Aboveground Milage	0	750	0
Estimated COD	Late 2018/Early 2019	2019	2013
Route	Canada to PJM	Kansas to East	New Jersey to New York
ISO	PJM	MISO & PJM	PJM & ISO-New York
Mitigated Status			Mitigated

Source: Company Filings/Websites

But does a merchant project necessarily need to be mitigated?

The outlook isn't clear that these projects won't clear the MOPR thresholds in robust markets. Rather, given the substantial arbitrage between depressed Canadian energy prices – and more robust prices available in PJM and New England, it's not so obvious to say all transmission projects (built on quasi-ratebase economics for the developers like ITC and NU) are 'out of market'. Rather, in the case of ITC in PJM, we see the project as potentially economic seeing the shorter distance involved (~60 miles underwater), at a cost of likely ~\$600-\$1 Bn by our estimates. Meanwhile, even New England projects could conceivably clear seeing the high price of capacity in recent years (although suspect prices could yet re-trench in the next auction).

So has a transmission project been mitigated?

On November 13th NY-ISO determined that TDI USA Holdings' Champlain Hudson Power Express (CHPE) project would face mitigation as it failed both the Part A and Part B of the Mitigation Exemption Test (exemption is granted for passing either part of the test). The test is presented below:

- **Part A:** Forecast of capacity payments for asset in year 1 must be higher than 75% of Net CONE of the asset (the Default Offer Floor)
- **Part B:** Forecast of capacity payments for asset in years 1-3 must be higher than Net CONE of the asset

TDI challenges the allegation at the FERC in December and argues that it receives no state subsidies and has no out-of-market PPAs, thus should be granted an exemption from the mitigation exemption test. The New York PSC, Con Ed, and others have filed comments supporting CHPE while generators filed opposition. TDI has requested a ruling by February 25th.

The market monitor supported CHPE only if it could pass a FERC-approved Competitive Entrant Exemption, partially arguing the Mitigation Exemption test "understate[s] the forecasted prices and over-mitigate[s] competitive entry." The market monitor opposed TDI's request as filed due to (1) lack of information about whether or not subsidies were present and (2) did not believe that relief should be granted to TDI on a discriminatory basis.

[Please click here for the formal complaint at FERC.](#)

Docket: EL15-33-000

What is the precedent in New York?

The 660MW Hudson Transmission project between New Jersey (PJM) and New York City (ISO-New York) was mitigated after it was built but it remains to be seen if Blackstone will continue with its Champlain Hudson Power Express project if it faces mitigation. We suspect the mitigated floor price for this project is near ~\$14/kW-mo., above the current and projected price in Zone J (NYC).

New England allows a 600MW exemption

New England allows for a 600MW exemption to the MOPR which would presumably be utilized by Northern Pass, New England Clean Power Link, or another transmission competitor (this is available on a first-come-first-serve basis). It's unclear if other generation, such as wind, used some of this exemption in the latest auction results (although it would not necessarily get full credit for its capacity anyway).

The exemption's origin is part of the settlement arrangement between states and the generators reached as part of the latest batch of reforms approved last year (2014) to move to a sloped demand curve (enabling the latest sharp move up in capacity prices. While unconventional, we flag that FERC opted *not* unwind this structure as part of its latest rehearing petition on the subject.

[Further details are available in our latest note on New England following the recent Capacity auction.](#)

Out of the transmission projects presented above we focus primarily on the issue of mitigation which we anticipate remaining a key issue.

"If the Commission does not support the creation of a Competitive Entrant Exemption, then there would be no basis for granting the requested waiver to TDI."

– IMM intervening comments

Lake Erie Connector: viability will be clearer in 1H15

On the 3Q call ITC management highlighted a focus on "non-traditional projects" to diversify its development pipeline. Both projects focus on capacity exports into PJM. Both of the projects below are not included in current capex guidance; but we suspect some of this capital is fungible as some spend is delayed in SPP.

We see credibility to ITC pursuing a merchant DC tie into PJM – we suspect this could be a key source of upside for shares into mid-'15

- (1) The Lake Erie project is a 60 mile bidirectional underwater 1000MW HDVC cable, connecting Ontario, Canada to Erie County, Pennsylvania –connecting Ontario's IESO to PJM. The project is in early stages of development. We expect submission of project details in Ontario in the first part of February, and a formal filing should follow 60 days after that, according to mgmt. This will be followed by an ~12 month permitting period, by the end of which (~mid 2016) we may start seeing firm interest from shippers (a solicitation will begin in February).

The key question on this project remains who would be a prospective offtaker on this merchant project.

It is quite clear that offtakers will be Canadian in nature (a push rather a pull project), with potential counterparties likely the usual suspects (HQ, OPG, etc). Economics on the project would appear to provide a positive spread, with spot prices in IESO in the teens (\$10-20/MWh) relative to PJM in the \$30's/MWh; the question is if the return profile is there? The project would be interconnected as a generator and would qualify in theory for capacity payments (mgmt is confident it would not be mitigated, but we're not as confident seeing the latest outcome for Blackstone's NY project). Further, it appears that there are not any transmission interconnection upgrade costs to export into PJM per its completed studies. The project would also be bidirectional, enabling flows in both directions to take advantage of potential arbitrage. We think given the potential for nuclear closures in Ontario, the supply situation in there may change for the worse should the CANDU reactors retire (long-dated risk, aggravating delay risk on the project).

Net-net, we don't doubt Canadian desires to export to the US – particularly if its driven by a quasigovernmental agency.

Cost estimates by the previous owner of the project were ~\$1bn – however this is not a number that is validated or endorsed by ITC management (we flag also that an earlier interconnection study done for Dynegy by PJM had estimated an underwater interconnection in ATSI for PJM would cost >\$100 Mn). We suspect there is a downwards bias on this estimate, with even a \$10Mn/mi estimate (\$600 Mn) + DC converter as still likely a discount vs the \$1 Bn price tag. Overall, the project is expected to be a significant part of the company's overall capital spending plan, in case it is undertaken.

Timeline for the project remains 2018, albeit likely in 2H (vs 1H).

- (2) The other non-traditional project includes lines which will connect the New Covert plant owned by Tenaska Capital in Michigan to PJM, based on a bilateral agreement. Although management has not yet announced the cost of the project, they have indicated that it will be relatively small (small tens of Mn's). The upgrade is currently underway. Management views it attractive nonetheless as they see an opportunity for future projects with generators who don't want the hassle of dealing with NERC requirements.

What are we forecasting?

We include our latest forecasts for New England and our preliminary outlook for New York below. We caution *neither has been adjusted to reflect transmission imports. Moreover, we increasingly view these two markets inextricably tied, such that a decline in one market will necessarily lead to a lower floor price in the other due to the arbitrage available to transmission capabilities between the two states. Broadly stated, we see downside to both of our estimates.*

New England capacity price outlook –

Figure 2: ISO New England FCM Results - Historic & UBS Forecast

ISO New England FCM Results - Historic & UBS Forecast							Actual	Forecasted	Forecasted
FCA Auction #	4	5	6	7	8	9	10		
Auction Date				Feb '13	Feb '14	Feb '15	Feb '16		
Period (Years)	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20		
Net CONE (Updated)	4.918	5.349	5.723	6.05	6.39	11.08	11.08		
Increase/Decrease		9%	7%	6%	6%	74%	74%		
Clearing Price, \$/kW-month (Actual/Forecasted)	2.95	3.21	3.43	3.15	7.025	10.000	6.00		
Increase/Decrease		9%	7%	-8%	123%	42%	-40%		
Pro-Rated Price (Actual/Forecasted)	2.52	2.86	3.13	2.88	7.025	10.000	6.00		
\$/MW-day Equivalent	82.72	94.03	102.87	94.78	230.96	328.77	197.26		
SEMA (Southeast Mass Clearing Price)						11.08	6.00		
NEMA (Boston Clearing Price), \$/kW-month [1x1 * Net CONE]				6.66	15.00	10.00	6.00		
\$/MW-day Equivalent				219	493	329	197		

Source: UBS estimates, ISO New England, Company Sources, Factset

New York capacity price outlook –

Figure 3: NYISO Capacity Price Projections (\$/MW-day) -> Convergence projected by 2018

NYISO - RoS	2012	2013	2014	2015	2016	2017	2018
Summer ICAP (\$/kW-month)	1.25	4.20	5.15	4.00	3.75	3.75	3.75
Winter ICAP (\$/kW-month)	0.15	0.82	2.58	2.90	2.65	2.40	2.50
NYISO - RoS (\$/kW-month)	0.81	2.80	3.92	3.41	3.16	3.09	3.13
NYISO - RoS (\$/kW-yr)	9.74	33.64	47.02	40.90	37.90	37.10	37.50
NYISO - LHV	2012	2013	2014	2015	2016	2017	2018
Summer ICAP (\$/kW-month)	1.25	4.20	9.96	7.00	5.00	4.00	3.75
Winter ICAP (\$/kW-month)	0.15	0.82	5.06	5.90	3.90	2.90	2.50
NYISO - LHV (\$/kW-month)	0.81	3.22	7.65	6.12	4.28	3.38	3.62
NYISO - LHV (\$/kW-yr)	9.74	38.60	91.80	73.40	51.40	40.60	43.45

Source: NYISO and UBS estimates

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Calpine Corporation ^{2, 4, 5, 6a, 16}	CPN.N	Neutral	N/A	US\$21.39	12 Feb 2015
CMS Energy Corporation ¹⁶	CMS.N	Buy	N/A	US\$35.53	12 Feb 2015
Consolidated Edison ¹⁶	ED.N	Sell	N/A	US\$65.61	12 Feb 2015
Dominion Resources ^{2, 4, 6a, 6b, 6c, 7, 16}	D.N	Buy	N/A	US\$73.72	12 Feb 2015
Duke Energy ^{2, 4, 5, 6a, 16}	DUK.N	Neutral	N/A	US\$81.06	12 Feb 2015
Dynegy, Inc. ^{2, 4, 5, 6a, 16}	DYN.N	Buy	N/A	US\$28.38	12 Feb 2015
Eversource Energy ^{13, 16}	NU.N	Buy	N/A	US\$52.30	12 Feb 2015
FirstEnergy Corp. ¹⁶	FE.N	Sell	N/A	US\$37.17	12 Feb 2015
ITC Holdings Corp ^{13, 16}	ITC.N	Buy	N/A	US\$39.28	12 Feb 2015
NextEra Energy ^{2, 4, 5, 6a, 16}	NEE.N	Buy	N/A	US\$105.34	12 Feb 2015
NRG Energy Inc. ¹⁶	NRG.N	Buy	N/A	US\$25.46	12 Feb 2015
PG&E Corporation ^{6a, 16}	PCG.N	Neutral	N/A	US\$55.20	12 Feb 2015
Public Service Enterprise Group ^{6b, 7, 16}	PEG.N	Neutral	N/A	US\$39.78	12 Feb 2015
Southern Company ^{2, 4, 6a, 16}	SO.N	Sell	N/A	US\$46.56	12 Feb 2015
Xcel Energy Inc. ^{6a, 16}	XEL.N	Neutral	N/A	US\$35.53	12 Feb 2015

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