Treatment of HQICCs in a Prompt Capacity Market

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Summary

- Hydro-Québec Interconnection Capability Credits (HQICCs) on the Phase II intertie have evolved through various market treatments, with Interconnection Rights Holders (IRHs) maintaining preferential status for nearly 20 years
- Current HQICC treatment is preferential vis-à-vis both PTF-funded ties and normal supply-side capacity
  - For most transmission assets, load pays only once for capital expenditures, but with HQICCs they pay in perpetuity. Current payment rates for HQICCs are several times higher than reported costs, indicating ongoing profits at expense of load
  - Compared to capacity resources, HQICCs receive full capacity value without performance obligations, at above market payment rates. The tariff allows IRHs to substitute an inferior good (tie benefit capacity) for a superior good (CSO with performance obligations) and implicitly forces non-IRH to purchase HQICCs even if true capacity is available at the same price
- Something needs to change this unreasonable, and highly preferential outcome, aligning the treatment of Phase II with *either* PTF *or* traditional capacity

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Tie Benefits reflect expected emergency assistance from neighboring control areas

- ISO uses this "emergency assistance" language frequently but it is also somewhat ambiguous about when/where it should be measured:
  - PSPC presentation in 2023: "Tie benefits reflect the assumed amount of **emergency assistance from neighboring Control Areas** that New England could rely on, without jeopardizing reliability in New England or the neighboring Control Areas, in the event of a capacity shortage in New England" [emph. added]
  - ISO Filing Letter on Filing of Installed Capacity Requirements, Hydro-Quebec Interconnection Capability Credits and Related Values for 2025-2026, 2026- 2027 and 2027-2028 Annual Reconfiguration Auctions: "Tie benefits reflect the amount **of emergency assistance that is assumed to be available to New England from its neighboring Control Areas in the event of a capacity shortage in New England**, without jeopardizing reliability in New England or its neighboring Control Areas" [emph. added]
- Does not appear to be a defined term in their usage, but closely conforms with the Emergency Energy Transaction concept (III.3.2.6; III.4.3)

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We have no idea how much, if any, emergency assistance HQ could provide New England when needed

- HQICCs are not backed up by any particular resource and the Reliability value of HQICCs derives from the ability to use Phase II for **Emergency Energy Transactions**
  - Section 7.1 of the Use Agreements explicitly state that "in the event of an Emergency, the IRH…shall make their Use Rights available to ISO-NE for Emergency Energy Transactions"
  - Section 6.2 of the HQ/ISO-NE Operators Agreement notes that during an emergency a balancing area "shall provide maximum reasonable assistance" and that "Such assistance shall be limited to levels that shall not threaten the reliability of, or create an unsafe situation on, the furnishing Party's system.
- HQ itself has sought to dissuade ISO-NE from rely on HQICCs, explaining
  - "[T]he HQ Interconnection does not generate any energy. Nor do the owners or users of the line (the IRHs) have any contractual right to call on generation in Québec that could deliver energy over the transmission system in Québec, across the U.S.-Canadian border, and down the HQ Interconnection to loads in New England…. **[T]here is no objective number available that can be used to designate its reliability value**." (EL03-25)
- ISO-NE's Emergency Power Sales and Purchases data indicates HQ has *not* provided emergency assistance to New England (in at least in the last 7 years, maybe longer)

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Phase II provides reliability benefits *and creates reliability risks*

- Last month, IRH noted that "There has been no resource adequacy-based loss of load resulting from use of tie benefits in planning and operations" (Slide 4)
- Its true that there has been no *loss of load* because of Phase II, but it is one of the largest contingencies on the system so its failure can *cause* or otherwise compound OP-4 and/or Capacity Scarcity Conditions (CSCs) otherwise known as PfP events
- For example, the OP-4 Actions on December 5, 2014 (pre-PfP) resulted from "Capacity Deficiency due to loss of all Hydro Quebec Imports"
- For example, the CSC on July 5, 2023 was caused by Phase II tripping offline. Per ISO-NE,

  "[t]he primary factor leading to the implementation of OP-4 and the Capacity Scarcity Condition (CSC) was the trip of the Hydro-Quebec to New England Phase II line resulting in the loss of 680 MW of imports during the peak hour… Based on Day-Ahead Market results, ISO was expecting ~1,300 MW to be imported on Phase II during the peak hour"

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Historical Context of HQICCs

- **Evolution of HQICCs: From Supply-Side Resource to Demand Reducer**
  - In the 1990s, HQ Phase II was treated as a supply-side resource (similar to generation) in Operable Capacity analysis
  - HQICCs were originally linked to a 7 TWh Firm Energy Contract between Hydro Québec and IRHs
  - This contract expired in 2001, leading to discussions on valuing and allocating HQICCs
  - NEPOOL and FERC both assumed that treatment of HQICCs would be **temporary** and Phase II would eventually be moved into PTF (ER02-61 at 6)
  - Current HQICC structure established in FCM Settlement Agreement
- **Key Questions Following Contract Expiration (2002-2006)**
  - What is the capacity value of the line, if any?
  - Who should be the beneficiary of that capacity?

FERC Findings and Current Status

- **FERC Determinations**
  - Phase II reliability benefits should not be socialized; IRHs had sole right to HQ credits based on their financial support (EL02-61/70 at 48-50)
  - HQICCs "provide a significant reliability benefit to New England customers“ and the reliability benefits that the HQ Interconnection provides exist because of the IRHs contractual obligation to pay for all of the costs of the HQ facilities.” (EL02-61 at 28-29)
  - The “HQ Interconnection must be treated in a manner consistent with NEPOOL's internal generation with respect to the level of Installed Capacity (ICAP) provided” (ER03-894 at 2)
- HQICCs, as enshrined today, appeared as part of the FCM Settlement Agreement
  - Calculate HQICCs in “the form of reduced capacity requirements”, allocate rights to the IRH, no double-counting allowed (ER03-563 Settlement Agreement III.B.3.a)

In March, IRH provided arguments in favor of the current treatment of HQICCs

- All load interests benefit from tie benefits generally
- Tie benefit value of Phase II should accrue to the IRH because they pay for the upkeep of Phase II (unlike the PTF treatment of other ties)
- The primary benefit of Phase II is that it enables the ISO to procure less capacity to meet resource adequacy requirements (HQICCs are what we *"net"* in Net ICR)
  - HQICCs are just another form of tie benefits with a different cost allocation
  - HQICCs are simply the capacity credits that go to the financial supporters of Phase II
- In Q&A, the IRH proffered an argument of **economic neutrality** to justify treatment; that HQICCs provide a hedge to rightholders against capacity costs and allow non-rightsholders to avoid the purchase of CSO MWs at a rate of 1:1
- IRH Conclusion: "It's just accounting, it's a wash"
- **To the contrary, the next slides show that the IRH receive preferential treatment for their HQICCs compared to both PTF and capacity**

For most transmission assets, load pays only once for capital expenditures, but with HQICCs they pay in perpetuity

- Most ties are part of Pool Transmission Facilities (PTF) and consumers pay for those ties through regional transmission rates
  - For PTF assets, as with most utility ratemaking, utilities get to collect a rate of return on undepreciated capital plus ongoing O&M.
  - Consumers pay for the ties, and once depreciated, pay only for their O&M plus ongoing capital expenditures to support their continued operation
- If Phase II was treated as PTF, it would earn ~10.5% ROE
  - FERC Form 1s for 2024, show that the line cost nearly half-a-billion dollars to build, but is 90% depreciated. Plant in Service, net of depreciation, is $54mm (For point of reference, New England Power Company's assets are just 20% depreciated)
  - O&M appears to be less than $4.8mm for 2024
  - **PTF-like treatment would earn the rightsholders ~ $10.5mm**
- By contrast, HQICCs are paid a *market rate* forever
  - **For 2024/25, HQICCs were paid $36.7mm; for 2027/28 this increases to $43.4mm**
- **Just because it's a good deal for the IRH, doesn't mean it's a good deal for consumers**

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HQICC structure provides IRHs preferential treatment compared to CSO and forces non-IRH customers to buy an inferior good

- HQICCs are treated as a demand reduction, reducing ICR from the "gross" to "net" value
  - For CCP 2024/25, ICR drops from 34,153 MW to 33,270 due to HQICCs
- Unlike other ties, HQICCs have a quasi-market pricing treatment
  - HQICCs get paid both the rest-of-pool FCM clearing price for that delivery period (equivalent to payment to a CSO capacity resource in that zone)
  - HQICCs also get paid all of the other costs incurred by CLO as part of the RoP Total Charge Rate not just the clearing price (for 2024/25, the HQICC payment rate was $3.466/kWm vs auction's clearing price of $2.61/kWm)
- Conceptually, the first part of the HQICC payment rate is equivalent to bidding in the full quantity of HQICC MWs as a price taker into the FCM and getting paid the clearing price; the second part reflects the value of avoiding all of the other costs associated with CLO (e.g. rate locks)
- All the money that goes *to* the IRH comes from "somebody" and as it turns out somebody is *everybody* with a Capacity Load Obligation (III.13.7.5.1.1.4)

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HQICC structure provides IRHs preferential treatment compared to CSO and forces non-IRH customers to buy an inferior good

- Putting aside fact that HQICCs get paid a rate in excess of capacity clearing price, foundational premise that HQICCs and CSOs are equivalent changed with introduction of Pay for Performance
  - IRHs receive market rate capacity credits without obligations required of other capacity
  - "Wash" argument ignores that CSO capacity now has strongest performance incentives while ties/HQICCs have none
- **For IRH**: tariff treatment allows them to substitute an inferior good (tie benefit capacity) for a superior good (CSO with performance obligations)
- **For non-IRH**, forced payment for HQICCs compels purchase of an inferior good
  - HQICCs do not necessarily reduce consumer costs for non-rights-holders because the HQICCs are paid the RoP price. Supply curve appears relatively flat in recent auctions
  - Those non-rights-holders also forego the reliability benefits associated with CSO having performance obligations
- Creates uneven playing field where some “capacity” valued equally despite unequal reliability value
- **HQICCs receive preferential treatment compared to capacity. Current rules mandate procurement of inferior goods, weakening reliability**

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Reform of preferential HQICC treatment is needed to ensure that upcoming capacity market reforms are reasonable and durable

- Current HQICC treatment creates significant market distortions relative to both PTF-funded ties and normal supply-side capacity:
  - **Financial inequity**: While traditional transmission assets require consumers to pay only once for capital and then ongoing O&M, HQICCs command perpetual payments at market rates. Current HQICC payments ($36.7MM in 2024/25, rising to $43.4MM in 2027/28) dwarf the reported costs of a 90% depreciated asset (~$5.4MM + O&M), creating windfall profits for IRHs
  - **Reliability disparity**: HQICCs receive full capacity value without any performance obligations, while creating market inefficiencies in two directions:
    - **For IRH**: The tariff permits substituting an inferior product (tie benefits without any performance incentives) for a superior product (capacity with PfP obligations)
    - **For non-IRHs**: Consumers are compelled to purchase HQICCs at above-market rates even when true performance-backed capacity is available at the same price
- Just because we haven't considered treatment of HQICCs in two-decades doesn't mean we shouldn't now. Treatment of HQICCs should be conformed with either PTF or capacity obligations. Doing so would restore market equity and strengthening regional reliability

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Appendix: Form 1 Data

FERC Form 1 Data on Utility Plant and O&M Costs

Company	O&M Costs	Total Utility Plant	Net Utility Plant	% Dep
New England Hydro-Trans. Elec. Co., Inc.	$4,776,382	$292,705,281	$32,342,963	89%
New England Hydro-Transmission Corporation	$195	$201,634,387	$21,548,068	89%
New England Electric Transmission Corporation	$133	$6,183,985	$114,192	98%
Vermont Electric Transmission Company, Inc.	$0	$47,336,445	$0	100%
Total	**$4,776,710**	**$547,860,098**	**$54,005,223**	**90%**

Notes:

- O&M costs from each company's F1, Page 227, Line 12
- Utility Plant from each company's F1, Pages 200-201, Lines 13 & 15

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