

# Policy on Network Upgrades

**Presented to:**  
**Régie de l'énergie**

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THE **Brattle** GROUP

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# 1. Scope of the Testimony

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- I address three topics raised by Régie de l'énergie:
  - Application of HQT's "maximum allowance" when considering the costs of network upgrades.
  - Specific application of maximum allowance for network upgrades related to integrating generating stations to supply native load.
  - HQT's follow-up on service commitments associated with Point-to-Point transmission customers whose services induced network upgrades.
- I address these topics by analyzing HQT's approach and comparing it to the FERC's "Higher-Of" transmission pricing policy and supporting principles.
- I also respond to interveners' comments.

## 2. Summary of Conclusions

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- HQT's network upgrade policy treats all transmission customers requesting network upgrades equitably.
- It provides the confidence of adequate cost recovery for network upgrades, and promotes fairness and efficiency in transmission investments.
- It protects all customers from excess cost caused by customers requesting transmission service that trigger network upgrades.
- HQT's network upgrade policy follows consistent regulatory principles as FERC's network upgrade pricing policy.

### 3. Principles of Network Upgrade Policies in the U.S.

## FERC Transmission Pricing Policy

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- FERC regulates inter-state transmission in the U.S.
- FERC's transmission pricing policy objectives include:
  - Ensuring transmission providers offer non-discriminatory open access to the transmission network.
  - Ensuring existing transmission users would not be unduly harmed by costs imposed by customers requesting transmission service involving network upgrades that could increase the embedded costs of the system.

### 3. Principles of Network Upgrade Policies in the U.S.

## FERC's "Higher-Of" Policy

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- Under FERC's "Higher-Of" policy, which is still applicable, transmission customers that require transmission upgrades would pay the higher of the "embedded" or "incremental" cost rate associated with the upgrades.
- The "Higher-Of" policy aims to balance the interest of all transmission customers.
  - If the incremental cost of the transmission upgrade < embedded cost, paying the embedded rate would reduce the average rate and benefitting all customers.
  - If the incremental cost of transmission upgrade > the embedded cost of transmission, FERC expects the customers requesting the transmission service to pay more than the embedded-cost rate.
- The "Higher-Of" policy aims to protect existing customers from undue cost burdens caused by the requesting customers.

### 3. Principles of Network Upgrade Policies in the U.S.

## Example of FERC's Higher-Of Policy

- The illustrative numerical example shows that if the incremental upgrade costs were rolled-in with the embedded cost, the transmission rate to all customers would increase.
- In this example, the transmission customers requesting service would be charged the *incremental cost rate*.

Project Cost (\$ Millions)	80
Project Billing Units (MW)	100
Project Cost (\$/kW)	800
Service Length (Years)	20
Levelized Incremental Rate (\$/kW)	80.75
System Average Rate (\$/kW)	74.65
Rolled-in Rate (\$/kW)	74.66
Incremental Rate Charged (Y/N)	Y

Illustration showing Incremental Rate > Embedded Rate (with rolled in upgrade costs)

From answer to R2.1, HQT-4, Document 1.1

## 4. Principles and Key Components of HQT's Network Upgrade Policy

### Common Principles Between FERC & HQT's Upgrade Policy

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- HQT's Network Upgrade Policy is consistent with the principles associated with FERC's "Higher-Of" policy.
- It provides the confidence of adequate cost recovery from native load and point-to-point customers such that each is protected from excessive costs associated with network upgrades triggered by new requests.
- It treats all customers on the system fairly and equitably.
- HQT's policy promotes efficient transmission investment.



## 4. Principles and Key Components of HQT's Network Upgrade Policy

### **HQT's Current Network Upgrade Policy**

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- HQT recovers the costs of network upgrades through transmission tariff revenues and Contribution, if necessary.
- Network upgrade costs up to the Maximum Allowance is rolled-into HQT's rate base and recovered through rates; excess costs are paid by the customer as a Contribution.
- The same Maximum Allowance calculation method is used for Point-to-Point and native load transmission services.

## 4. Principles and Key Components of HQT's Network Upgrade Policy

# HQT's Modified Network Upgrade Policy

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- HQT has refined its existing network upgrade policy to address Régie's concerns:
  - Aggregate load and generating resource-related network upgrades when applying Maximum Allowance and Contribution for native load.
  - Expand annual follow-ups to examine whether Point-to-Point customers' payments adequately cover the associated annualized rolled-in network upgrade costs.
- These proposed modifications are:
  - Consistent with the applicable foundational principles.
  - Increase confidence in revenue sufficiency.
  - Improve price signals to support efficient transmission investments.

## 5. Responses to Interveners' Comments

# Some Agree with Principles of HQT's Approach

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1. FERC's "Higher Of" policy for new transmission customers represents a balance between the principles of economic efficiency and equity. (AQCIE's witness Mr. Knecht, page 3 lines 19 – page 4 line 15)
2. HQT's approach protects existing transmission customers from cost increases resulting from new transmission customers. (AQCIE, Mr. Knecht, page 8, lines 1 – 3)
3. Aggregating network upgrades associated with generation resource with load eliminates the alleged risk of double application of the maximum allowance for the Distributor's investment and the issues related to integrating variable energy generation resources. (AQCIE Brief, Section 2)

## 5. Responses to Interveners' Comments

# Objections to HQT's Proposed Approach

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Interveners issues that I address:

1. The use of declining revenue requirement as opposed to the flat tariff rate in setting the Maximum Allowance (AQCIE)
2. The use of 20 years depreciation in calculating the Maximum Allowance (AQCIE, UC)
3. Method of aggregating generation resource and load-related Maximum Allowance (AQCIE, ACEFO, UC)
4. Carry-forward of unused investment credits for native load (FCEI, ACEFO)
5. Annual follow-up of Point-to-Point customers (AQCIE, FCEI, ACEFO)
6. The applicable Guiding Principles (AQCIE, FCEI, NLH)
7. The absence of reference to the recent FERC Order 1000 (NLH)
8. The reliance on “Requesters Pay” and potential “Free-ridership” (NLH)

## 5. Responses to Interveners' Comments

### **Declining Rev. Req. to Calculate Maximum Allowance**

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- Mr. Knecht suggests potentially using flat tariff rate to calculate Maximum Allowance. (Mr. Knecht, p.7)
  - Mr. Knecht's proposal would yield a much higher Maximum Allowance for both Point-to-Point customers and Native Load.
  - Current method (\$598/kW) vs. Mr. Knecht's method (\$740/kW)
- HQT's approach conservatively protects other customers from unduly high costs.

## 5. Responses to Interveners' Comments

### 20 Year Depreciation

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- The 20-year depreciation is a conservative measure of accounting for the return on and of the transmission investment.
- Generally, 20-years depreciation is coherent with an upgrade policy that is applied to both Point-to-Point customers and native load.
  - 20-year is consistent with an industry practice of long-term transmission contracts.
  - Applied to native load, 20-years is a balanced term given that the load grows gradually.
- Increasing depreciation term would:
  - Increase the Maximum Allowance, reduce the Contribution.
  - Increase the uncertainty of cost recovery from the requesting customers.
  - Increase the risk of not achieving rate neutrality over the 20-year period.

## 5. Responses to Interveners' Comments

### Calculation of Maximum Allowance

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- Why maintain an element of conservatism?
  - The Maximum Allowance was initially proposed to apply to Point-to-Point customers only and HQT aims to provide confidence that Point-to-Point customers paid sufficient contribution for network upgrades that native load would otherwise not need.
  - When also applied to native load, HQT uses 20-year load forecast consistent with its planning horizon.
  - Load materializes gradually.
  - Applying a greater Maximum Allowance implies greater chance of rate increase in the early years.
- Together, when other components are considered, the package provides a balanced outcome and confidence of rate neutrality when evaluated over 20 years.

## 5. Responses to Interveners' Comments

# Aggregation of Resource and Load

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- Bundling the resource-related network upgrades with those initiated by meeting load growth is an appropriate approach.
  - This is similar to allocating the upgrade costs associated with network resources to load.
  - HQT currently cannot charge generation resources used to serve native load a separate transmission charge (counter to Mr. Knecht's suggestion that HQT could pay for upgrades associated with generation resources to serve load).
- HQT's approach also treats load-based and PtP-based generation resources consistently.
  - The approach uses the maximum capacity of the generation in estimating the initial Contribution.
  - For native load, the approach only allows to roll in resource-related upgrade costs if there are sufficient credits from MW load growth, net of Contribution.



## 5. Responses to Interveners' Comments

### **Carry Forward Max Allowance Credits for Native Load**

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- The carry-forward approach for native load can offset the potential Contribution in following years.
- It is consistent with the nature of native load growth and the continual transmission investment pattern to serve native load.
- Carry forward of credits counterbalances effect of having a conservative Maximum Allowance for native load.

## 5. Responses to Interveners' Comments

# Maximum Allowance and Follow-Up

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- Annual follow-up for Point-to-Point customers is an administrative method to demonstrate that Point-to-Point customers pay sufficient transmission charges annually to cover the annualized rolled-in portion of the upgrade costs.
  - After costs are rolled-in, the annual follow-up for Point-to-Point customers compares the actual revenues to the levelized/annualized rolled-in costs.
  - The follow-up does not affect the size of customers' Contribution.
- The annual follow-up also addresses the concern that one \$ of revenue is only counted one time.

## 5. Responses to Interveners' Comments

# Principles Discussed in this Proceeding

Below are the key principles discussed in this proceeding. While different words are used, I clarify below how the most relevant principles are consistent with each other:

Régie's Main Principles	U.S. FERC's Main Principles	HQT's Principles	AQCIE Witness' Principles
<b>Equitable treatment of all customers</b>	Provide <u>open access</u> to the transmission network	Ensure equitable treatment and <u>non-discriminatory</u> access to the transmission system	Policies that apply to native load are <u>comparable</u> to those that apply to PTP customers
<b>Network upgrade cost policy must maintain rate neutrality</b>	Protect transmission customers <u>from undue cost burden</u> caused by other customers that require network upgrades	<u>Avoid excessive cost</u> burden for network upgrades requested by a customer  <u>Recover the costs</u> of upgrades done for a customer	
	Support <u>economic efficiency</u> in transmission investment	The combination of Maximum Allowance and Contribution sends <u>price signals</u> to customers	Balance between <u>economic efficiency</u> and equity

## 5. Responses to Interveners' Comments

# Concept of Rate Neutrality

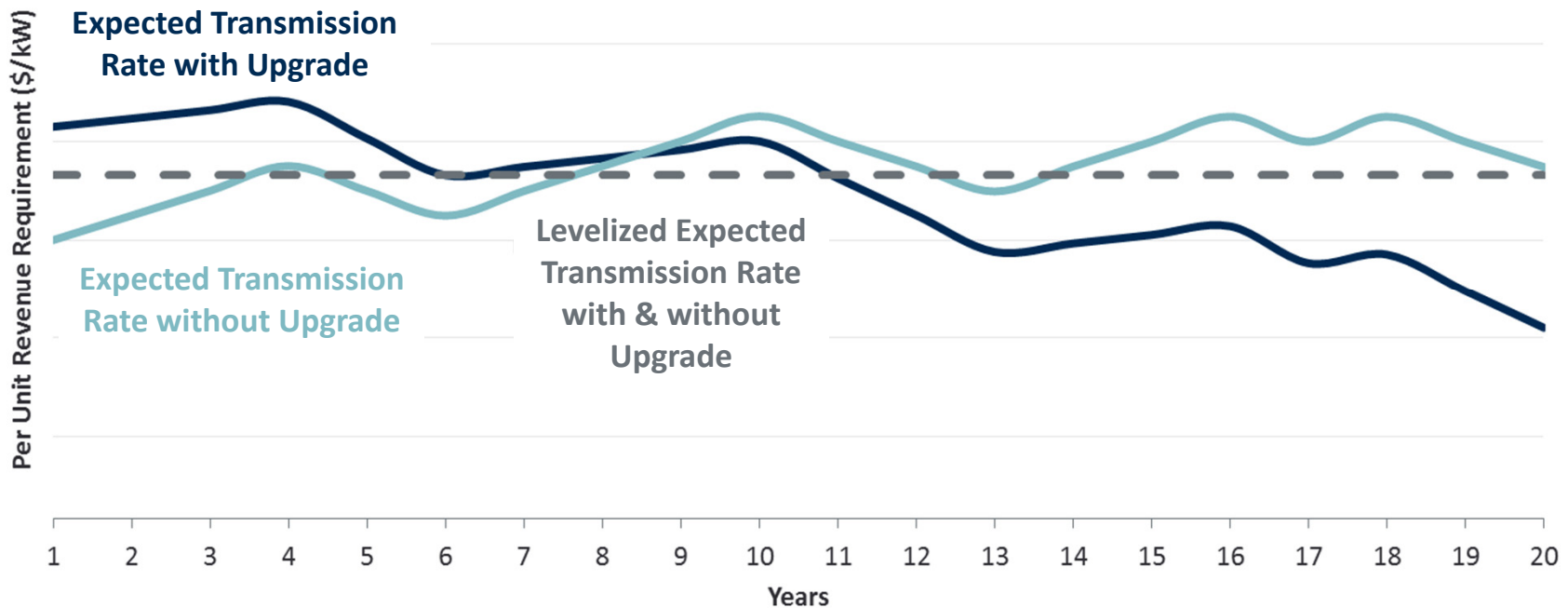
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- “Rate Neutrality” has been used to mean different things.
- Most relevant and important meaning:
  - The approach avoids excessive cost burden for network upgrades requested by a customer.
  - The transmission owner recovers the cost of upgrades done for a customer.
- “Rate Neutrality” does **not** mean:
  - Transmission rate stays constant over future years.
  - Transmission rate is exactly the same had the new service not been added.
- “Rate neutrality” cannot mean these two things because:
  - Other upgrade and system maintenance costs are rolled into the embedded revenue requirement.
  - Year-to-year load uncertainties exist.
  - “Rate neutrality” is analyzed over a 20 year period.

## 5. Responses to Interveners' Comments

# Concept of Rate Neutrality Explained

“Rate Neutrality” as shown below is consistent with the Régie’s policy goals of protecting transmission customers from undue costs caused by other customers.



## 5. Responses to Interveners' Comments

# Economic Efficiency in Transmission Investments

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- The combination of Maximum Allowance and Contribution sends a price signal to new transmission service customers that require network upgrades.
  - By requiring a Contribution for the amount above the Maximum Allowance, HQT's Network Upgrade Policy provides price signals that reflect the cost impact a new service request has on overall transmission network costs.
  - The price signals allow transmission customers to factor in the costs of transmission into their commercial decisions.
- Confidence of cost recovery from the customers that induce the upgrade costs also supports efficient investment decisions.

## 5. Responses to Interveners' Comments

# Policy and Objectives of Order 1000

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### U.S. Landscape prior to Order 1000:

- U.S. transmission companies traditionally focused on planning to serve local load and to fulfill transmission service requests.
- Regional planning processes began in response to FERC Order 890.
- Over time, planners began to plan for transmission needs across multiple transmission owners' service territories (i.e., for reliability, economics of different generation fuel mix, and public policy objectives).

### U.S. Issues that Order 1000 tries to solve :

- Cost allocation for projects across multiple transmission companies became barriers to regional and inter-regional transmission development.
- Transmission projects to reduce congestion or meet public policy goals were not built.
- Non-traditional and non-incumbent transmission companies want to develop regional projects.

## 5. Responses to Interveners' Comments

# Intent of FERC Order 1000

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- FERC Order 1000 “builds on the transmission planning principles adopted in FERC Order No. 890.” (paragraph. 6)
- FERC Order 1000 requires regions to develop cost allocation methodologies across transmission companies of a region – not local to one transmission company.
- FERC wants to expand inter-regional transmission planning and asked regions to consider public policy objectives (such as interconnecting renewable energy resources to access larger markets) when planning the system.
- FERC wants to open up regional transmission projects to competition by removing incumbent companies’ “right-of-first-refusal.”



## 5. Responses to Interveners' Comments

# FERC Order 1000 is NOT...

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- FERC Order 1000 does not prescribe how to allocate local transmission upgrade costs.
  - For the regions with multiple transmission companies, FERC does not require one cost allocation approach.
- FERC Order 1000 does not affect point-to-point transmission service request process or cost allocation (see next slide).

## 5. Responses to Interveners' Comments

# Applicability of Order 1000 in Québec

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- In decision D2012-010, the Régie has already decided that U.S.-style “Attachment K” regional planning approach is not applicable to Québec, except for setting up an “information and discussion process.”
  - Québec is a separate Interconnection, asynchronous with neighboring systems, and with only one major transmission provider.
  - Cost allocation across neighboring transmission systems does not apply to Québec.
- Order 1000 is designed to build on Order 890’s transmission planning procedures in the U.S. and to reduce the barriers to transmission investments in the U.S.
- Order 1000 is not relevant to Québec and not applicable to this proceeding or to HQT.

## 5. Responses to Interveners' Comments

# Requesters Pay

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- In the context of FERC Order 1000, FERC's notion of identifying "beneficiaries" of certain transmission upgrades is associated with transmission projects that traverse multiple transmission service companies and more than one subregion may "benefit" from such investments. This is not applicable in Québec.
- Québec already has a well-designed hybrid system whereby all non-growth related network upgrade costs are spread across all users, consistent with the notion that all users of the integrated system pay for the common costs.
- This proceeding is only about network upgrades that would not be needed, but for to serve the needs of specific customers.
- The requesters-pay principle is appropriate for meeting these needs.

## 5. Responses to Interveners' Comments

# Cost Causation Principle

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- Cost-causation principle is fully consistent with the “requesters pay” approach because the requester is the primary “cost-causer.”
- “Requesters pay” is the fair method to address upgrade costs that otherwise would not have been incurred.
- FERC has stated: “... if the cost of expansion is directly attributable to a customer's request for transmission service and the expansion would not be undertaken "but for" that customer's request, then it is reasonable to assign the cost of expansion to that customer.”

## 5. Responses to Interveners' Comments

# Free-Ridership

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- In the context of FERC 1000's, free-ridership is about waiting for another transmission company to make the transmission investment and “free-ride” on that investment, and thereby creating barriers to adequate transmission investments. This is not applicable to Québec.
- Nature of transmission investments is “lumpy”
  - Thus, sometimes a requester has to pay a high upgrade cost.
- “First-come-first-serve” or queuing is the most common and well-established practice for transmission service requests in the U.S.
  - It is a fair way to address multiple needs.

## 5. Responses to Interveners' Comments

### Other Notions Put Forward by NLH's Witness

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The notions in Mr. Adamson's testimony are not relevant in this proceeding:

- **#1:** Allocation of costs commensurate with benefits.
  - Due to the hybrid nature of HQT's system, this concept is already incorporated in the application of the users-pay for non-growth projects. This proceeding is about costs that are triggered by certain service requests.
- **#2:** Users that receive no benefit from transmission facilities must not be allocated costs.
  - This notion is irrelevant to Québec because this principle was referring to costs across multiple transmission owners and across regions.
- **#3:** Benefit to cost thresholds should be set such that projects with significant net benefits should not be excluded.
  - This notion is irrelevant to Québec. To my knowledge, HQT has not and does not refuse to build customer-requested projects.
- **#4:** Costs are not to be allocated outside a region without consent.
  - This notion is irrelevant to Québec.
- **#5:** Cost allocation methods and the identification of beneficiaries must be transparent.
  - HQT's OATT already makes the cost allocation methodology transparent.
- **#6:** Different allocation methods can apply to different types of transmission facilities.
  - Cost allocation discussed is about between transmission companies, irrelevant in Québec.