



# Key Murray

## Review of MECL's Proposed OATT

KPMG Canada Advisory Services Inc.

February 2018

This report contains 30 pages

Key\_Murray\_Report





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Review of MECL's Proposed OATT  
Deal Advisory - Infrastructure  
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***Executive Summary***

This report summarizes the results of KPMG LLP's (KPMG's) review of Maritime Electric's proposed Open Access Transmission Tariff (OATT).

There are currently only two load customers to which this tariff applies:

- MECL's distribution business, which serves retail customers across the Province of Prince Edward Island.
- The City of Summerside, which serves retail customers in the City of Summerside through Summerside Electric, its electricity distribution arm. In this report we will refer to this transmission customer as "Summerside Electric" or simply as "Summerside".

In addition to these load customers, the West Cape Wind farm takes service under the OATT as a generator.

Based on our review, we believe that the costs of radial or line connection assets should be excluded from the OATT and directly charged to the two wholesale load customers on a line-by-line basis. This would be the fairest approach and would best reflect each customer's contribution to transmission system costs. Of the approaches available, this approach would be most in accordance with accepted principles of cost allocation.

As an alternative to directly charging the cost of each radial line to applicable customers, a second-best approach would be to put the costs of such radial assets into a pool that is separate from that used for core network assets. This would allow the creation of a second, separate "postage stamp" tariff for the use of MECL connection assets versus for the use of MECL network assets. Creation of a separate tariff for the use of connection assets would achieve the following:

- It would mean that a customer that does not use MECL connection assets, either now or in the future, would then not be required to contribute to the costs of these assets.
- It would allow the tariff structure for the connection asset pool to use a billing determinant that is more reflective of the cost drivers of such assets than the billing determinant used for network transmission service.

MECL has supported the inclusion of radial lines in its OATT based on a misinterpretation of the "postage stamp" concept. In contrast to MECL's understanding, the postage stamp label simply indicates that costs for a certain service are recovered through a uniform charge applied to customers using that service, irrespective of geographic location. It does not imply that radial lines need be included in the OATT. Accordingly, removal of radial lines from the OATT would not result in a departure from the current postage stamp approach for the core network.

Our review indicates that MECL has not provided evidence to support the provision of discounts to wind exporters. Absent this supporting evidence and given that the discounts lack support in principles of cost causality, we cannot conclude that the discounts are not unduly discriminatory. Accordingly, the discounts should not be approved unless additional supporting evidence is provided.



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# **1 Introduction**

Key Murray Law ("Key Murray") has retained KPMG to review and analyze the appropriateness of the new Open Access Transmission Tariff ("OATT") proposed by Maritime Electric Company Limited ("MECL"). This report summarizes the results of our review.

## **1.1 Context**

There are currently only two load customers for MECL's OATT:

- MECL's distribution business, which serves retail customers across the Province of Prince Edward Island.
- The City of Summerside, which serves retail customers in the City of Summerside through Summerside Electric, its electricity distribution arm. In this report we will refer to this transmission customer as "Summerside Electric" or simply as "Summerside".

In addition to these load customers, the West Cape Wind farm takes service under the OATT as a generator.

In most of this report, the term "customer" will refer either to MECL's distribution business or to Summerside Electric. We will use the terms "retail customer" or "retail consumer" to refer to end-users taking electricity from these two utilities.

## **1.2 Scope and Approach**

In the course of our work, KPMG has undertaken the following:

- Reviewed materials filed by MECL in support of its proposal for a new OATT, including interrogatory responses.
- Reviewed a report by Synapse Energy Economics Inc. ("Synapse") on behalf of legal counsel to the Island Regulatory and Appeals Commission ("IRAC"). This report is titled "Fair and Non-Discriminatory Transmission Access on Prince Edward Island."
- Reviewed other materials as appropriate, including information on cost allocation and rate design practices in other jurisdictions, particularly Ontario.

We have prepared a summary of Ontario practices with respect to cost allocation and rate design for transmission tariffs and this summary has been provided in Appendix A. Ontario is a useful benchmark jurisdiction for the following reasons:

- Ontario practices have been addressed in reports by both Synapse and William Dunn and these reports have included different interpretations of certain aspects of the Ontario model.
- The Ontario utility regulator, the Ontario Energy Board, has paid significant attention to cost allocation and rate design issues in the context of transmission tariffs. This has reflected the importance of the transmission system to Ontario's market restructuring process. As a consequence, there has been a considerable amount of debate and analysis in the province and this dialogue can shed light on important issues for PEI.
- The Ontario market is closely connected to adjacent US markets and hence has needed to meet tests for FERC compliance.



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Based on the above factors, we think that it is useful to provide additional information on Ontario practices as context for the consideration of MECL's proposed OATT. We recognize that Ontario is only one of many jurisdictions that could be reviewed, but believe it provides a useful reference point given the extent of debate there on transmission cost allocation methodologies.

### **1.2.1 Approach to Review of Proposed OATT**

In the course of our review of MECL's proposed OATT, we considered the following:

- Principles with respect to appropriate cost allocation.
- Considerations of fairness.
- Implications of the cost allocation process for transmission planning and design.

We have assumed based on good utility practice that tariff proposals should address the following objectives:

- Tariffs should be "fair". We define this to mean that tariffs should allocate costs in a manner that takes into account various users' contribution to total system costs. In other words, costs should be allocated in line with cost causality.
- The tariff design should not be unduly burdensome from an implementation or administrative perspective.
- Tariffs should provide incentives for users to minimize the costs that they impose on the system.

We have used these objectives in our analysis because we think that they represent, based on general rate-making practices, a reasonable basis for the establishment of utility tariffs.

### **1.2.2 Structure of Report**

In the course of our review, we identified the following key issues for further consideration and discussion:

- The inclusion of radial lines in the proposed tariff.
- The definition of a "postage stamp" tariff.
- Questions of "fairness"
- Discounts provided to wind generators.

We have addressed these issues, in turn, in the sections below.

## **1.3 The Inclusion of Radial Lines<sup>1</sup>**

A key issue that has arisen in deliberations to-date is the question of whether the costs of radial lines should be:

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<sup>1</sup> By radial line, we mean a line that connects one or more customers to the core transmission network but that does not carry or support power flows on the core network. Radial lines can also be called connection lines, and we will treat the two terms as synonymous. Connection assets is a somewhat broader term that includes transformer and related infrastructure, as well as radial lines.

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- Included in the base transmission tariff and associated OATT, as currently proposed by MECL
- Directly charged to customers on a line-by-line basis, or
- Made the subject of a separate transmission tariff dealing specifically with radial or connection assets.

Based on our review, we have concluded that the costs of radial lines should be direct charged to customers on a line-by-line basis and should not be included in the base transmission tariff used as the basis of the proposed OATT. More specifically, in this instance, the cost of the T-11 should be direct charged to Summerside Electric and the costs of all other radial lines direct charged to MECL's distribution business (and/or a connected generator, where applicable). This finding is based on principles of cost causation and considerations of fairness.

Separating radial lines from network lines would help to address the fact that different customers impose different costs on the transmission system. These different customers therefore impose different costs on the system in terms of the connection assets that are required to serve them. More specifically, Summerside Electric is served through one single radial feeder of limited length, while the distribution business of MECL covers the length and breadth of the province and requires installation of multiple feeders of varying lengths distributed over a wide area.

As noted earlier, there are now just two load customers to which the costs of radial lines could be directly allocated. In the future, however, it is possible that there could be additional customers subject to such treatment. These might include new large customer loads that wish to connect directly to the core transmission network.

As an alternative to directly charging the cost of each radial line to applicable customers, a second-best approach would be to put the costs of such radial lines into a pool that is separate from that used for core network assets. This would allow the creation of a separate tariff for the use of MECL connection assets versus MECL network assets. Creation of a separate tariff for the use of connection assets would achieve the following:

- It would mean that a customer that does not use MECL connection assets, either now or in the future, would not then be required to contribute to the costs of these assets. This would provide customers with an opportunity to reduce their utility charges in the event that they provide radial lines themselves or otherwise find a means to connect directly to the network portion of the existing transmission system, perhaps through a decision to locate their load at points directly adjacent to the network portion. Thus, customers would be encouraged to take direct responsibility for assets that are for their specific use and/or to minimize the costs that they impose on the system. While this opportunity is perhaps most likely to apply in the near term to Summerside Electric, it could also apply to those existing or future customers of MECL's distribution business that could connect directly to the transmission network (e.g. large industrial users). This could be a significant advantage if the Province of Prince Edward Island were looking to attract a new large industrial or commercial facility, such as an agricultural processing plant or data centre.<sup>2</sup>
- The tariff structure for the connection asset pool could use a billing determinant that is more reflective of the cost drivers of such connection assets. This is discussed in more detail in Section 1.6.2.1.

Implicit in the first bullet above is that benefits from having a separate pool will be maximized in the event that customers can self-provide such connections, as an alternative to giving MECL the exclusive right to provide them. This would make the market for connection assets "contestable",

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<sup>2</sup> Direct cost allocation could provide a similar benefit in this circumstance.

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giving customers more choice in accordance with principles of competition and accessing the benefits of a free market. This reflects the accepted principle that exclusivity of franchise rights should be restricted to those services where monopoly service provision is necessary and appropriate.

Either of the approaches recommended above, specifically to directly assign the cost of individual lines or to create a separate connection pool and associated tariff, would introduce the potential for the overall transmission costs paid by different retail customers to differ per unit of final load. This is perfectly appropriate to the extent that different customers impose different costs on the system.

Certain parties may argue that it is appropriate for the costs of different customers to be aggregated together and then used to calculate a rate that reflects average costs among customers with different cost profiles. The objectives of fairness and cost causality do not support this approach. Rate categories should be established to differentiate among customer groups that have fundamentally different characteristics.

In discussing this issue, we find it useful to initially quote Bonbright, an accepted authority on utility rate-making principles:

“On the one hand, there is a strong tradition in support of the fairness of rate differentials based on cost differentials. But on the other hand, there is a widely held, conflicting belief in the inherent fairness of a rule of equal prices for services regarded as the same in some superficial sense and despite marked differences in cost of rendition. This popular preference for rate uniformity beyond the limits justified by the advantages of simple rate structures has been repeatedly noted by economists, most of whom keenly regret its political appeal. Only under special circumstances can the demand for this spurious equality of treatment properly claim whatever merit can be claimed for the ability-to-pay or other social principles discussed in the preceding chapter.”<sup>3</sup>

Earlier in this same document, Bonbright noted:

Most of the departures in ratemaking practices from a cost standard have been due to administrative, historical, and business reasons rather than to social reasons. Indeed, if the social considerations were to become dominant, the enterprises to which they apply would cease to be public utilities in the accepted sense of the term. They would then become “socialized,” like the public schools, the tax-financed or endowed universities, and (to a greater degree) the police, the courts, the military, and the city-street departments.”<sup>4</sup>

Some averaging of costs is expected as a matter of administrative convenience.

“Ratepayers must necessarily be grouped into broad rate classes for purposes of administrative feasibility. In order to avoid discrimination, industrial customers must be granted lower rates than residential customers to the extent that the (marginal) costs of service are lower. Similarly, it may be cost effective to meter customer to the extent possible, with due consideration given to customer classes and incremental metering costs, including the real and intangible.”<sup>5</sup>

In our view, the desire for administrative convenience or simplicity does not justify grouping radial lines with network assets on the PEI system. Given that there are only two separate load customers of the core transmission network, it would be an administratively simple matter to direct charge each

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<sup>3</sup> James Bonbright, Albert Danielsen and David Kamerschen, Principles of Public Utility Rates, Second Edition, Public Utilities Reports, 1988, p. 183.

<sup>4</sup> Bonbright, p. 169.

<sup>5</sup> Bonbright, p. 174.





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such customer for the costs of the radial lines (and other connection assets) that it uses. As noted, this is our recommended approach for the treatment of the costs of such assets.

Alternatively, it would also be an administratively simple matter to create separate pools for network versus radial assets. This is demonstrated by the use of this approach in Ontario, as discussed further in Appendix A. Given the limited number of direct customers affected (MECL versus the City of Summerside), the development of a differentiated rate structure would not result in significant additional administrative burden or confusion.

## 1.4 The Definition of “Postage Stamp”

MECL interrogatory responses show that it misinterprets the concept of “postage stamp” in the context of transmission rates. A postage-stamp rate simply means that costs for a certain group of transmission assets are pooled and that these costs are then recovered through a uniform charge applied to customers using those facilities, irrespective of geographic location. For example, the Industrial Electricity Policy Review Task Force in British Columbia provided the following definition of postage stamp rates in an issue paper:

“BC Hydro’s rate design is founded on recovering costs primarily through postage stamp rates. Postage stamp rates are a method of cost allocation where any rate class charge is the same anywhere on the interconnected system, regardless of the geographical region in the province. The underlying premise is that all customers jointly develop electricity resources and should equally share in the costs. This is the accepted approach to rate-making in the majority of North American jurisdictions.”<sup>6</sup>

The “postage-stamp” concept does not imply that the costs of radial lines need be included in any postage-stamp tariff. In this context, we note that BC Hydro, which characterizes itself as following the postage stamp approach, allocates radial lines to the distribution function.<sup>7</sup>

In contrast, MECL appears to believe that inclusion of radial lines is an integral part of the concept of a “postage stamp” rate. Thus, in its response to Question # 3 from the City of Summerside, MECL notes:

“Under the postage stamp approach, all transmission lines serving customer load, including radial transmission lines, are included as OATT facilities, and thus there is no need to consider them separately using the FERC Seven Factor Test.”

This MECL response misrepresents the “postage stamp” concept and makes it seem more than it is. Removal of radial lines from the OATT, for example through direct allocation to individual transmission customers, would remove these lines from calculation of MECL’s postage stamp rate. However, costs for the transmission assets remaining (i.e. the core network assets) would still be recovered through a postage stamp tariff, as is appropriate. Accordingly, the removal of radial lines from the OATT would result in no general policy shift away from the postage stamp approach.

As noted above, MECL bases its inclusion of radial lines in the OATT on a misinterpretation of the postage stamp concept. Perhaps as a consequence, MECL provides limited additional evidence or justification for why radial lines should be included in the OATT. It has not, for example, performed

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<sup>6</sup> Task Force Issue Paper: Postage Stamp Rates, found at <https://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/electricity/electricity-business/industrial-electricity-policy-review>

<sup>7</sup> See table from Marshall as presented in MECL’s response to City of Summerside IR #4.

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the FERC Seven Factor Test. This means that we have limited evidence from MECL on which to evaluate the issue.

In support of its approach, MECL has repeatedly referenced Bill Marshall's summary of Canadian Pro Forma OATT's. For example, see MECL's response to Question No. 4 of the City of Summerside's December 15, 2017 Questions. MECL asserts that 5 out of 8 other Canadian provinces use the postage stamp approach, based on Marshall's finding that these jurisdictions include load-serving radial lines in their OATT tariffs. MECL's response, however, fails to point out:

- Marshall did not characterize the inclusion of load-serving radial lines as indicating a postage stamp versus non-postage stamp approach. The relevant column in the table prepared by Marshall is simply an indication of what types of assets are included in the OATT. Tariffs that exclude radial lines could still be (and likely are) applied on a postage stamp basis.
- Ontario's inclusion of radial lines does not mean that all transmission users face uniform transmission charges. While radial lines are included in one component of Ontario transmission tariffs (i.e. the connection portion), our Appendix shows that radial lines are excluded from the *network* portion of these tariffs. Customers can bypass connection transmission tariffs by providing their own connection (i.e. radial) assets. This is an important distinction that is overlooked by MECL (and by Synapse).
- Marshall's entry for FERC shows that radial lines may be part of either transmission or distribution tariffs. Hence, it is clear that there is no rule that exclusion of radial lines would somehow make the tariff non-FERC compliant.

In summary, there is nothing in any decision to remove radial lines from the OATT that would necessarily imply a policy shift away from the postage stamp concept. MECL's confusion on this matter needs to be corrected.

## 1.5 The Question of Fairness

As noted in the Key Findings section, inclusion of radial lines in the OATT is not supported by the principle of cost causality. It does not recognize differences in the use of radial assets by MECL's distribution business versus by Summerside. Because the OATT does not account for cost differences, it is demonstrably unfair.

Fairness is often a subjective measure and different parties may have differing views of what constitutes fairness. Bonbright notes:

“In the first place, there are no uniformly accepted, measurable standards of fairness. In a word, fairness is elusive.”<sup>8</sup>

Given the subjective nature of fairness, Bonbright later notes:

“In any case, one conclusion as to the proper role of fairness standards in the determination of reasonable rates seems to us to be clearly justified. It is that this fairness role, though essential, should be a subordinate one. Considerations of fairness or equity, when calling for separate recognition, must be regarded as restraints against the unqualified acceptance of general principles of ratemaking based on considerations of maximum economic or social efficiency.”<sup>9</sup>

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<sup>8</sup> Bonbright, p. 191.

<sup>9</sup> Bonbright, p. 192.



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Some parties may view the current MECL OATT proposal as “fair” because the costs of radial lines are socialized across the different transmission users. Socialization results from the fact that costs for radial lines are pooled together with the cost of network assets and then recovered through an equal tariff based on average costs across all users.

Synapse introduces the concept of fairness in its discussion of the implications of MECL's pooled approach. Thus, Synapse notes:

“Under MECL's pooled approach for radial lines, any required upgrades would be based on firm service needs, and they would be paid for based on firm service charge determinates. This is a fair sharing of the costs to upgrade lines within the pool, to the extent they are need to meet firm service requirements.”<sup>10</sup>

Synapse, however, does not provide an explicit definition of what it believes constitutes fairness. Based on the context in which it uses this term, it appears that Synapse believes that fairness is served when costs are averaged as broadly as possible across different consumers, so that each consumer does not see the specific costs associated with its service.

Synapse then notes:

“SE's proposed removal of radial lines from the OATT rate introduces rate differentials between SE and MECL customers for similar service.”<sup>11</sup>

Synapse implies that it is inappropriate to have rate differentials but it does not explain why these differentials are inappropriate. Nor does Synapse identify why it believes that the retail customers of Summerside Electric (“SE”) and of MECL should be considered to receive “similar service”. Individual retail customers within the SE and MECL territories may receive service that is similar in some respects, specifically in the sense that they are served at similar voltage levels and may have similar patterns and levels of electricity consumption at any given point of delivery. However, they are geographically distributed in very different patterns. MECL's retail customer base is much more spatially dispersed and this is a perfectly appropriate basis upon which to have rate differentials. In many jurisdictions, adjacent utilities have different customer densities and this results in differences in rate structures based on differences in the cost to serve their individual customer bases. Objective observers, particularly economists, generally do not argue that this is somehow unfair or inappropriate.

Moreover, the focus of this proceeding is on the transmission tariffs paid by wholesale customers. Issues of fairness should be focused on impacts as between different wholesale customers. Impacts on retail customers will depend on other factors in addition to transmission tariffs, including each utility's approach to rate design and management of other system costs.

## 1.6 Alternatives for the Treatment of Radial Lines

In this section, we expand on our discussion of alternatives for the treatment of radial lines. In the event that radial lines are not included in the OATT, there would appear, as noted earlier, to be two general alternatives for how the costs of these lines could be allocated and recovered:

- Direct Allocation. The cost of each individual radial line could be directly charged to the customers that benefit from it. Thus, in the case of MECL's system, costs for the majority of lines would be

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<sup>10</sup> Synapse, p. 24.

<sup>11</sup> Synapse, p. 24.

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allocated to MECL's distribution business, while the costs of T-11 would be directly charged to Summerside Electric.

- Separate Connection Pool. The costs of radial lines could be aggregated into a separate "connection" pool, and a connection tariff established by dividing total connection costs by total aggregate usage. This would result in a tariff that averages costs across the different transmission users.

The second approach above is similar to the treatment found in Ontario, where such radial lines are allocated to a connection pool. This approach effectively produces a second, separate, postage stamp tariff.

Of the two alternatives above, we recommend direct allocation as the best approach. This approach allocates costs in a manner that corresponds most directly with the relative costs of serving each load customer: Summerside Electric versus MECL's distribution business.

As Synapse correctly notes in its report, the end result of the second approach, which is to set up a separate connection pool, may be roughly the same as the outcome produced by MECL's proposed OATT:

"But Mr. Dunn appears to miss the point of the presence of Ontario's Line Connection pool, the corollary to the Network Pool in Ontario. If the line connection pool were applied in PEI, then the current and ongoing costs (i.e., the current and ongoing revenue requirements) of all of the radial lines (T-11, plus the remaining 69 kV radial lines that serve MECL customers) would be pooled, and a uniform rate would be established based on the underlying total of charge determinants. This is effectively what the MECL proposed OATT rate does."<sup>12, 13</sup>

In summary, costs under the second approach would still be averaged, but the averaging would be done for network and connection assets separately. As long as each customer participates in each pool, however, then the end overall result will be roughly the same as if costs were allocated to just one pool. Slight differences could result to the extent that billing determinants differ between the pools. For example, allocation of the connection pool might be based on the non-coincident peak while the network pool may be more logically allocated based on a measure of maximum on-peak demand or coincident peak demand. The use of different billing determinants may result in a more accurate basis for a cost allocation but may well not lead, in itself, to significantly different outcomes.

We evaluate the two approaches in more detail in the sections below.

## 1.6.1 Direct Allocation

From the perspective of cost causality and economic fairness, direct allocation is generally the best approach for allocating the costs of single-use assets where possible. It avoids the cross-subsidization that may occur when costs are pooled and allocated using allocation factors.

To quote Bonbright: "Direct costs are incurred only and entirely for the provision of a particular service."<sup>14</sup>

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<sup>12</sup> Synapse, p. 24.

<sup>13</sup> For the record, it should be noted that Mr. Dunn did not imply that the use of a separate connection pool would result in any different outcome than that noted by Synapse.

<sup>14</sup> Bonbright, p. 118.

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NARUC's Cost Allocation Manual specifically raises the possibility of directly allocating costs for radial lines::

"The costs of specific transmission facilities, such as long radial transmission lines and substations, may be directly assigned to particular customers. Direct assignments of such costs implies that the facilities can be considered entirely apart from the integrated system. In fact, the case for the independence of the facilities must be unequivocal since the customer must be willing to bear all the costs of service that, due to the unintegrated character of the facilities, may be just as high for service that is less reliable than service on the integrated system.

"Costs assigned directly to customers are often collected via a special facilities charge. The charge can reflect: (1) the installed costs of the facilities; or (2) the average system cost of such facilities."<sup>15</sup>

In many systems and circumstances, a move away from direct allocation can be justified on the basis of administrative convenience. Thus:

- In Ontario, the use of a connection pool to aggregate the costs of radial lines was justifiable given the large number of individual transmission customers. (Hydro One, for example, had to account for 796 different transmission delivery points, 660 of which used connection assets, when it set up unbundled transmission tariffs during the initial market restructuring process.)<sup>16</sup> Direct allocation would have required setting up a very large number of individual tariffs. In addition, the move away from pooling, in parallel with the unbundling process, could have created large rate impacts for some individual transmission customers.
- At the distribution level, some standard allowance for service drops is often provided, to avoid having to directly calculate, track and then assign costs of individual service drops to individual retail customers. In practice, customers may only have to directly pay for the portion of connection assets that exceed a standard allowance specified in connection rules.

For MECL, there is no similar necessity on the basis of administration to avoid directly assigning the associated radial lines to each of the relevant wholesale customers (MECL's distribution business and SE). If it so chooses, MECL can continue to pool costs when allocating its own transmission costs to its retail consumers. This is consistent with a postage stamp approach, thus requiring no policy deviation.

An additional advantage of the direct allocation of radial lines is that each of the two utilities (MECL and SE) could then focus solely on those connection assets that serve their own customer bases. SE would no longer need to participate in proceedings with respect to connection assets elsewhere on the MECL system (i.e. beyond T-11). This would streamline and simplify the regulatory process, providing greater independence for each of MECL and SE with respect to decisions on connection assets.

## 1.6.2 Separate Pool

Relative to the current approach of pooling all transmission assets, the addition of a separate connection pool would result in some additional administrative complexity, without necessarily resulting in significant changes in the pattern of cost allocation overall. This raises the question of what advantages could accrue from this change. The answer is two-fold:

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<sup>15</sup> NARUC Electric Utility Cost Allocation Manual, January, 1992, p. 83.

<sup>16</sup> OEB Decision with Reasons, RP-1999-0044, p. 17.



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- Differentiation between network and connection assets may allow for identification of separate allocators for each pool, likely resulting in a more defensible and fairer basis for cost allocation. This advantage has already been noted earlier in this report.
- To the extent that certain customers do not use MECL-owned connection assets, either now or in the future, they could avoid costs associated with these connection assets.

It is desirable to allow customer loads to self-provide their own connection assets, subject to controls to ensure that appropriate technical standards are adhered to.

In this context, it is useful to revisit why governments and regulators have permitted the establishment of monopoly utilities with distinct service areas. The reason is that for certain services, it is most cost-effective to provide these services jointly to multiple users in parallel. For utilities, significant economies of scale and/or subadditivity of costs mean that competition from multiple providers is generally not realistic or achievable. However, an important trend in the field of regulation is to limit monopoly rights just to those services where monopoly provision is actually required or beneficial. Monopoly provision is certainly not required for connection assets and jurisdictions such as Ontario have recognized this. Thus, in its 2004 decision allowing for self-provision of connection assets under certain circumstances, the OEB noted:

“The rationale underpinning this approach is the Board’s interest in creating opportunities for enhanced competition in the provision of construction and consulting services for connection facilities. Competition should be applicable where the system as a whole cannot reasonably be said to be compromised or unduly disadvantaged by such diversity. In the Board’s view, such competition should result in an overall enhancement and optimization of the transmission system, and the creation of appropriate new business opportunities for other sectors of the economy.”<sup>17</sup>

Later, in support of its decision to allow customers to build their own connection assets to replace those that have become fully depreciated, the OEB noted:

“The underlying rationale for the Board’s view is its interest in providing reasonable opportunities for new approaches to system change, so long as existing customers and the transmitters are not unduly prejudiced. By allowing customers a new range of options and introducing increased diversity in the development of new transmission connection assets within the system, the Board expects to see overall optimization.”<sup>18</sup>

### 1.6.2.1 Implications for Cost Allocation

In the event that radial lines were allocated to a separate pool with its own transmission tariff, the overall costs allocated to each of the two wholesale users may not change significantly. The pool for radial lines could have its own “postage stamp” tariff and, in setting this tariff, aggregate costs for radial lines would be averaged across the wholesale consumers who use radial lines in the Province. (In the case of MECL’s radial lines, there are currently only two wholesale load customers: MECL’s own distribution business and the City of Summerside). As noted, the advantage of having a separate pool is that more appropriate billing determinants can be applied, and this may result in a fairer process for cost allocation. The process will be fairer in that billing determinants will more accurately reflect the cost drivers for the connection (versus network) pool.

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<sup>17</sup> OEB Phase I Policy Decision with Reasons, RP-2002-0120, p. 45.

<sup>18</sup> OEB Phase I Policy Decision with Reasons, RP-2002-0120, p. 51.



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As noted, to the extent that any customer (e.g. Summerside) exits the connection pool as a result of building its own radial line, then it could avoid the postage stamp tariff for connection assets. It would be reasonable for any such customer to compensate MECL for the costs of any "stranded" assets. The appropriate basis for such compensation would be the Net Book Value ("NBV") of any assets that are rendered surplus. This would keep MECL "whole" with respect to its recovery of its costs and associated investments in fixed assets. This mechanism for compensation is the one used, for example, in Ontario. The Rate Base for MECL going would be reduced by the compensation payment (since MECL investors would have been compensated for the stranded assets).

Even if MECL is compensated for the cost of stranded assets, there could potentially be an increase in rates paid by the remaining customer (i.e. MECL distribution business). But such an increase will occur only if the City of Summerside has been subsidizing MECL's distribution business with respect to recovery of the costs of radial lines. As such, such an increase in rates could not be considered as inappropriate or unfair. It will simply represent the reduction of a cross-subsidy inherent in existing rates.

It is also important to note that introduction of a separate pool for connection assets would have no impact on the allocation of costs with respect to the core transmission *network*. Costs for these assets would remain within the central pool used to establish base transmission tariffs. As is the case today, costs for such network assets would be averaged and charged to transmission users on a "postage stamp" basis.

### 1.6.2.2 *The Geographic Context for the Discussion*

It can be seen that the City of Summerside, by geographic happenstance, is located in a relatively central location within the MECL transmission network. This reflects the City's location near the centre of the Island. Further, the City happens to be relatively close to the feeder lines that connect the MECL network to the New Brunswick system. On this basis, it could be argued that Summerside's share of costs for the transmission network should be less than its share of peak demand (the current basis of cost allocation). Given the geographic distances involved, the proportion of MECL network assets actually required to serve Summerside's peak demand is likely much less than the proportion of system demand accounted for by Summerside load. This is a simple consequence of the relatively limited line distances necessary to connect the City of Summerside to the point of connection of the transmission link to New Brunswick. It is to the transmission link to New Brunswick that Summerside Electric requires access.

Notwithstanding the points noted in the prior paragraph, we are not suggesting that Summerside should pay less than its current share of the costs of MECL's core *network* assets. In other words, Summerside should continue to pay for the cost of the core transmission network in proportion to its contribution to system peak demand. The use of "postage stamp" methodologies for averaging transmission *network* costs for users across a wide geographic area is reasonable and appropriate. It would not be practical or appropriate to assign the costs of individual network lines in different proportions to different users, in an effort to arrive at differentiated transmission tariffs by user. This reflects the fact that usage of any different network line varies widely by time period. Further, actual power flows are governed by complex mathematical relationships (e.g. Kirchhoff's Laws) and do not necessarily reflect users' geographic location. Power may flow in ways not obviously related to the shortest geographic path. Another factor favouring the averaging of costs across a wide area is the desire to avoid barriers (through "rate pancaking") of wholesale market transactions. It is therefore



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general practice for network transmission tariffs to be set based on the averaging of costs across a wide geographic area.<sup>19</sup>

The issue at hand in the current proceeding is not the allocation of costs for the core transmission network. Rather, the issue at question is the need to take into account different users' relative use of radial (or connection) lines. Summerside connects to the network through a relatively short feeder line (T-11). Summerside should pay for this connection asset only; it should not have to subsidize another customer (i.e. MECL's retail distribution business) that requires many more feeders and/or longer feeders. This argument applies for Summerside in its current location but would apply equally to any similar customer (i.e. embedded distribution utility) with a similar feeder located in another location, such as at the far end of the Island and the far end of the transmission network. Stated another way, any move to change the approach to allocating *connection* costs will have no impact on various users' share of costs for the core transmission network, as is appropriate.

## 1.7 Price Discrimination for Exports

An obvious element of unfairness in the proposed OATT is the discount provided to merchant generators using the transmission system for exports. This discount is not supported by any principles with respect to cost causality but is intended to act as an incentive for the development of wind power on the island.

As noted by Bonbright:

“Price discrimination involves charging prices for technically similar commodities that cannot be accounted for by the (marginal) costs of production, distribution, transportation, storage, risk, or uncertainty.”<sup>20</sup>

Some degree of price discrimination is common and perhaps unavoidable when setting rates for monopoly utilities. The key question is whether such price discrimination is “undue”, and whether it violates the objective of being “just and reasonable”.<sup>21</sup>

MECL has provided discounts to wind exporters on the basis that it may encourage greater development of merchant wind generation in the Province. The discount has since been expanded to cover all generation for export.

In the electricity sector, it has not been uncommon for discounts relative to fully allocated costs to be provided to new customers to encourage investment and expansion. This has been particularly the case when a system has had surplus capacity that would otherwise go unused. Many utilities had surplus generating capacity in the 1980's as a result of economic downturns and this led to many examples of economic development rates for new industrial users or for incremental load at existing users. Such rates provided for a recovery of at least marginal costs with some contribution to fixed costs. The argument for providing such rates was that it would encourage new business investment and expansion in the affected jurisdiction. This would yield economic benefits for the local economy. Moreover, because new load led to some additional contribution to fixed costs for the utility, it would result in all consumers being better off overall.

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<sup>19</sup> A good summary of transmission pricing practices and associated policy considerations is found in a report by London Economics International LLC: “A review of Uniform Transmission Rates in Ontario – Final Report”, prepared for the Ontario Energy Board, March 2008.

<sup>20</sup> Bonbright, p. 35.

<sup>21</sup> Bonbright, p. 516.





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Discounted rates are often referred to as Economic Development Rates ("EDRs"), a general term that covers rates designed to attract new load to a region and/or those used to retain existing load that would otherwise be at risk of departure. Such rates are typically for the supply of electricity to load customers. The OATT wind discount is not exactly similar, since it applies to the provision of transmission services rather than to bundled electricity supply. However, the wind discount has important parallels to an EDR. It provides for service at less than fully allocated cost in order to incentivize a certain activity. Such service is therefore cross subsidized by other customers.

Because EDRs represent a departure from standard rate-making principles, regulators have typically put in safeguards and restrictions to ensure that they are not provided frivolously or without robust evidentiary support. These safeguards have included the following:

- Rate may be available to a given customer for only a limited period of time, typically less than or equal to five years. This ensures that rates are not used to support activities that cannot pay their full costs over time. It also limits the duration of cross-subsidization by other users, an important principle for ensuring fairness.
- Utilities may be required to perform a cost-benefit analysis that demonstrates that there is a net societal benefit from offering the discount.<sup>22</sup>
- Users may be required to demonstrate increases in employment as a result of being provided with an incentive rate.<sup>23</sup> Similarly, utilities may be required to document and report any increase in employment and capital investment resulting from an EDR on an annual basis.<sup>24</sup>
- Rates may be offered only to customers that are also eligible for other forms of economic development assistance, such as may be provided by external government agencies. By requiring eligible customers to meet the requirements of an independent government program, utilities shield themselves from claims of inappropriate price discrimination.<sup>25</sup> Further, they can "piggy-back" on the qualification requirements of those programs.

A report by Catalyst Consulting concludes that the most common requirements imposed on EDR's are that:

- Other customer be "no worse off" as a result of the rates discounts, and
- Eligible customers are required to demonstrate, perhaps by sworn affidavit, that if not for the rate discount they would be unable to establish, expand or maintain operations in the utility service territory. This is referred to as the "but for" principle.<sup>26</sup>

In conclusion, the sources highlighted above show that rates that are clearly discriminatory, such as MECL's provision of a discount to wind exports, must have a clear rationale and supporting analysis if they are nevertheless to be considered "just and reasonable". Wind farm owners are for-profit enterprises and there should be a sound public policy rationale for providing preferential rates to these enterprises, where such rates are below fully allocated cost. MECL has not put forward such

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<sup>22</sup> For example, see provisions associated with discount rates offered by MidAmerican. Example is cited at page 18 of a report by Navigant Consulting: "Industrial Rates as a Growth Driver in Other Jurisdictions", prepared for Canadian Manufacturers & Exporters, December, 2014.

<sup>23</sup> For example, see requirements of PECO's Economic Developer Rider, cited at page 24 of Navigant report cited in preceding footnote.

<sup>24</sup> John Wolfram, Catalyst Consulting LLC, Economic Development Rates for Utilities, p. 5.

<sup>25</sup> John Wolfram, Catalyst Consulting LLC, Economic Development Rates for Utilities, p. 4.

<sup>26</sup> John Wolfram, Catalyst Consulting LLC, Economic Development Rates for Utilities, p. 4.



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justification nor has it provided any analysis to show why discounted rates are necessary to ensure the ongoing economic viability of the current wind farm customer base.

In particular, we note that MECL has provided no information or analysis with respect to:

- The impact of export discounts on the initial size of the West Cape Wind Farm or on the annual volume of wind exports. (See response to City of Summerside IRs #6-a and #6-e.)
- The margins earned by West Cape Wind farm on wind exports, and hence the impact that transmission discounts may have had, and will have, on volumes exported. (See response to IRs #6-e and #9.)
- The availability of similar discounts in other jurisdictions. (See response to IR #6-f.)

Further, MECL indicates that discounts will be provided as long as there is no congestion on the PEI transmission system. (See response to IR #6-b) Thus, in contrast to accepted practices elsewhere, where discounts under an EDR are time-limited, MECL is prepared to provide service at below fully allocated cost in perpetuity, assuming that lines remain uncongested. MECL is therefore asking its remaining customers to shoulder a disproportionate share of system costs on an ongoing basis.

Although MECL can demonstrate that wind generators cover at least the incremental costs associated with their usage of the transmission system, MECL has thus failed to meet other common tests or evidentiary standards associated with the provision of rate discounts. As noted above, these tests may include:

- Demonstration that wind discounts are (or were) necessary for the investment in, or continued operation of, associated wind farms.
- Demonstration that there is a net societal benefit from offering discounts to wind producers.

Absent this supporting evidence and given that the discounts lack support in principles of cost causality, we cannot conclude that the discounts are not unduly discriminatory. Accordingly, the discounts should not be approved unless additional supporting evidence is provided.

In parallel with this discussion, it is interesting to note that MECL has calculated that removal of radial lines would result in a decrease in the transmission tariffs paid by West Cape of \$158,000 annually. (See response to IR #5.) This amount appears to be less than the benefit that West Cape now receives from the export discount. (MECL's response to IR #6 indicates that the West Cape wind farm pays approximately \$500,000 less annually than it otherwise would in the absence of such discounts.) In this context, we thus note that removal of radial lines from the OATT would offer a rational and cost-based justification for providing a discount to West Cape, albeit one that is considerably smaller than the current discount based on off-peak pricing.

## 1.8 Conclusions

In summary, based on our review of MECL's application for an OATT, our conclusions are as follows:

- The costs of radial lines should be excluded from the OATT and directly charged to the two wholesale load customers on a line-by-line basis. This would be the fairest approach and would best reflect each customer's contribution to transmission system costs.
- As an alternative to direct charging the costs of radial lines, a second-best approach would be to put the costs of such lines into a pool that is separate from that used for core network assets. This

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would allow the creation of a second, separate “postage stamp” tariff for the use of MECL connection assets versus for the use of MECL network assets. This would achieve the following:

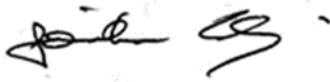
- It would mean that a customer that does not use MECL connection assets, either now or in the future, would then not be required to contribute to the costs of these assets.
- It would allow the tariff structure for the connection asset pool to use a billing determinant that is more reflective of the cost drivers of such assets than the billing determinant used for network transmission service.
- Our review indicates that MECL has not provided evidence to support the provision of discounts to wind exporters. Absent this supporting evidence and given that the discounts lack support in principles of cost causality, we cannot conclude that the discounts are not unduly discriminatory. Accordingly, the discounts should not be approved unless additional supporting evidence is provided.

## 1.9 Acknowledgment of Expert's Duty

This report has been prepared by Jonathan Erling, P.Eng., a Partner in the Advisory practice of KPMG LLP, acting objectively and independently. I understand that this report will be submitted in evidence in a regulatory proceeding relating to consideration of the proposed OATT. I further acknowledge that it is my duty to provide:

- Evidence that is fair, objective and non-partisan;
- Evidence that is related only to matters that are within my area of expertise; and
- Such additional assistance as the Commission may reasonably require, to determine a matter in issue.

Signed this February 9, 2018 in Toronto, Ontario.



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## **A Appendix – Ontario Policies in the Transmission Sector**

In this Appendix we provide some background information on policies in Ontario with respect to the regulation and pricing of electricity transmission services. This information provides additional context for the discussion of Ontario practices that was provided in reports by both Synapse and William Dunn. It also illustrates that there are alternatives to the rate design approach used by MECL and these alternatives may provide important advantages.

### **A.1 Context**

In this Section, we highlight some key characteristics of the Ontario marketplace that have influenced the transmission pricing regime and associated regulatory rules. These characteristics are as follows:

- Ontario has a competitive market for electricity generation; this includes an electricity spot market and participation by multiple generating companies. Competitive services such as generation are separated from monopoly “wires” businesses such as transmission and distribution. Although the competitive electricity market has been overshadowed by a direct contracting market, with long-term Power Purchase Agreements (PPAs) sponsored by government agencies, the competitive electricity market is still an important element in the short-term management of the electricity system.
- Ontario has four separate companies providing transmission services, covering separate service territories. Hydro One accounts for, by a large margin, the majority of transmission assets and revenues.
- Ontario has made a policy decision that loads rather than generators should bear the burden of network transmission costs. Part of the rationale for this decision was the view that any costs borne by generators will, in any event, ultimately be borne by electricity consumers.
- Ontario has a large number of individual distribution companies operating at the municipal level. In addition, the distribution arm of Hydro One services customers across the province, many of whom reside in rural areas.

Transition to a competitive electricity market in Ontario occurred in 2002. In preparing for this transition, Ontario Hydro was restructured into a number of successor entities, including Ontario Power Generation (OPG) and Hydro One. OPG assumed Ontario Hydro generation assets and Hydro One assumed Ontario Hydro's transmission and generation assets. The separation of generation, transmission, and distribution required the development of unbundled transmission and distribution tariffs.

Transmitters' provision of transmission services is governed by the Transmission System Code (“TSC”) of the Ontario Energy Board (“OEB”). The elements of the TSC were developed through an extensive proceeding in the early part of the last decade. A number of important policy decisions are reflected in the provisions of the TSC. The TSC has been revised a number of times in response to the evolution of the policy framework and to address operational issues.

A general policy goal in Ontario is that certain transmission activities should be “contestable”. Specifically, the provision of line connection and transformation assets should be open to competition:

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provision of these assets is not limited to the existing transmitters.<sup>27</sup> This was part of a general thrust of the original Market Design Committee ("MDC") to use competition to promote efficiency and customer choice to the extent possible.<sup>28</sup>

## **A.2 The Use of Pools**

There are three separate transmission tariffs applied to load customers in Ontario, reflecting the division of the transmission system and associated asset base into three separate pools. The three tariffs are:

- Network Service Rate.
- Line Connection Service Rate.
- Transformation Connection Service.

These transmission tariffs are paid by customers (loads) connected to the Ontario transmission system.

The Network Service rate recovers costs associated with the 'Network' pool, which contains those shared assets that represent the backbone of the transmission system and which are used by all customers.

The Line Connection rate recovers costs associated with the Line Connection pool. This pool consists of the radial parts of the transmission system that emanate from the network facilities and that connect individual customers or groups of customers to the transmission network.<sup>29</sup>

The Transformation Connection Service rate recovers costs associated with utility-owned transformation assets. The "Transformation" pool consists of all transformation facilities that step down voltages from above 50 kV to below 50 kV.

### **A.2.1 Customer Application**

It is important to note that customers pay any individual transmission tariff only to the extent that they make use of the associated asset pool. Thus:

- Some customers connect directly to the network portion of the transmission system and therefore do not pay the Line Connection Service rate.
- Some customers own their own transformers and therefore do not pay the Transformation Connection Service rate.

All customers, however, are charged the Network Service Rate; all customers are assumed to benefit from the network portion of the transmission system.

In the context of transmission tariffs, a customer is defined as an entity that connects to the transmission system controlled by the Independent Electricity System Operator (IESO). Most individual customers take service from a distribution utility and therefore are not considered

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<sup>27</sup> OEB Decision with Reasons, RP-1999-0044, para 2.2.21, p. 17.

<sup>28</sup> The Market Design Committee was formed to provide advice to the Government on the format and structure of the future electricity sector in Ontario, following the decision to introduce a competitive electricity market structure.

<sup>29</sup> OEB Decision with Reasons, RP-1999-0044, p. 11.



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customers of the transmission network. For such customers, the distribution utility is the direct customer of the transmission system.

## A.2.2 Use of Uniform Pools

In the Ontario system, the Revenue Requirement associated with each type of transmission service is pooled across the four transmitters. A uniform rate is then established for each type of service by dividing the Revenue Requirement by a forecast of aggregate billing determinants across the four companies. Thus, users served by each of the different transmission providers face uniform rates. This is consistent with the direction provided with the White Paper and MDC recommendations.<sup>30, 31</sup> The methodology used in Ontario is referred to as providing "Uniform 'Postage Stamp' Rates".

An alternative methodology that was considered but rejected is the concept of using a "license plate" tariff. Under this approach, separate tariffs would be set for each individual transmitter and these tariffs would then be applied just to that transmitter's customer base. A customer of any utility would nevertheless be able to purchase electricity from any participant in the IESO market. Customers would pay no further charges even if such purchases required access to the grid outside their own transmitter's service territory.<sup>32</sup> Under this approach, customers of different utilities would therefore face different transmission charges for access to the Ontario transmission network.

Although Ontario ultimately adopted a postage stamp approach, it is important to note that the objective of having uniform network rates does not imply that different users must pay equal transmission charges overall. As noted above, a customer in Ontario that can bypass certain transmission services, such as connection and/or transformation, by virtue of having a direct connection to the network and/or owning its connection and transformation assets, will have lower transmission costs. Having uniform rates does not imply that each customer has to pay equal transmission charges.

### A.2.2.1 Billing Determinants

Billing determinants are different for the network versus connection and transformation pools as follows:

- For the Network Service Rate, billing demand for any customer is defined as the higher of:
  - The customer's coincident peak demand (MW) in the hour of the month when the total hourly demand of all Provincial Transmission Service (PTS) customers is highest for the month, and
  - 85% of the customer's peak demand in any hour during the peak period 7 AM to 7 PM (local time) on weekdays, excluding holidays.

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<sup>30</sup> OEB Board Staff Discussion Document, Treatment of Multiple Transmitters for OEB-Regulated Transmission Pricing in Ontario, p. 6.

<sup>31</sup> The "White Paper" was the originally government policy document that set out the principles and objectives of market restructuring.

<sup>32</sup> For example, a customer of Great Lakes Power (GLP), a small transmission utility in Northern Ontario, would then pay rates based just on GLP's loads and costs, instead of paying rates based on the overall pool for all transmitters in the Province.

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- For the Connection Service Rate and the Transformation Connection Rate, the billing demand is defined as the customer's non-coincident peak demand (MW) in any hour of the month.<sup>33</sup>

Differences in billing determinants reflect the finding that the various pools (network versus connection versus transformation) have very different characteristics with respect to the nature of their use and the factors that drive the costs of associated assets. This is outlined further in the sections below, where we outline the rationale for the billing determinants used.

### *A.2.2.2 Billing Determinants - Network*

With respect to network portion of the PTS, the Board noted:

“Having assessed the merits of various charge determinants for network service, the Board concludes that, on balance, charge determinants based on peak demand have stronger support in regulatory principles for network transmission pricing where costs are largely fixed, as is the case with the OHNC [*Ontario Hydro Networks Company*] transmission system. The issue then is which demand related charge determinants, or which combination, may be more appropriate for Ontario's network transmission system.”<sup>34</sup>

For network service, the Board opted to base billing demand by looking at the maximum of any customer's coincident demand and 85% of its non-coincident peak demand. In adopting this approach, it avoided following some stakeholders' view that demand should be based simply on coincident demand. The Board's adoption of a composite measure was based both on consideration of the current capacity balance on the system and the desire to avoid gaming by some customers. The Board noted:

“A rate design aimed at customer demand reduction during the system's coincident peak hours would meet the test of economic efficiency, but only if the network transmission system is generally capacity-constrained. This is not the case for the OHNC network transmission system either today or in the foreseeable future. The issue therefore of constructing a rate design which would avoid capacity expansion is of secondary importance. The fairness issue of recovering the sunk transmission costs therefore becomes important. Exclusive reliance on the coincident peak method where some customers may be able to withhold demand in that period while others do not have such opportunity will result, in the Board's view, in unfairness.

“Under the OHNC proposal (the higher of the customer's demand coincident with the system peak demand and 85% of the non-coincident peak demand), concerns about free ridership and gaming are somewhat reduced. The choice of 85%, while somewhat arbitrary, does reflect the fact that the average monthly system coincident factor...is of the order of 85%.”<sup>35</sup>

### *A.2.2.3 Billing Determinants - Connection*

The capital costs of connection assets are driven by local demand peaks. It is the maximum demand, rather than the demand that is coincident with provincial peaks, that influences the capacity that must be installed to address local service requirements. In a May 2000 Decision in which the current tariff structures were initially established, the Board noted:

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<sup>33</sup> Ontario Uniform Transmission Rate Schedule.

<sup>34</sup> OEB, Decision with Reasons, RP-1999-0440, May 26, 2000, para 3.4.23, pp. 42-43.

<sup>35</sup> OEB, Decision with Reasons, RP-1999-0440, May 26, 2000, paras 3.4.27 and 3.4.28, pp. 43-44.



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"The Board notes the broad consensus that a charge determinant for connection services based on a customer's non-coincident peak demand is appropriate. Unlike the network transmission facilities, the line and transformation connection facilities are specifically dedicated to serving a single customer or a relatively small group of customers and therefore are of no obvious use to the remaining customers of the transmission system. The costs of these dedicated assets therefore must be recovered from these customers."<sup>36</sup>

### A.3 Treatment of Export Loads

In addition to the transmission tariffs applied to in-province loads, the Ontario system applies an Export Transmission Service ("ETS") tariff to users who use the transmission system to export electricity from within the province to other jurisdictions. The tariff also applies to 'wheel-through' transactions, in which the system is used to transfer electricity to and from other jurisdictions.

The current ETS tariff is \$1.85/MWh. This amount was agreed to through a settlement process. The value of \$1.85/MWh is close to the value that was suggested by a cost allocation study. This cost allocation study did not allocate any costs related to shared assets (e.g. network assets) to the export service.<sup>37</sup>

In the original Board decision that established the ETS charge, the Board set the ETS tariff at \$1.00/MWh. This was recognized both as an interim value and as a value at the low-end of the range of values that had been suggested by interested stakeholders. In setting the value, the Board noted that the original Market Design Committee had recommended that the ETS tariff should recover only incremental transaction-specific costs and should not include any contribution to sunk costs. The rationale for setting tariffs at a low level was to facilitate the Government's long-term objective of reducing energy costs through competition. The Board noted:

"The Board considers that the Government's long-term objective of reducing energy costs through competition can be served by the development of larger, open power markets where trade can take place with the minimum of impediment. In this regard, the Board appreciates the recommendation by the Market Design Committee that EWT [*export and wheel-through transactions*] should be subject to only incremental transaction-specific charges and no contribution to sunk costs should be levied. However, the feasibility of the MDC recommendation is, in the Board's view, dependent on the pricing policies of the other interconnected jurisdictions."<sup>38</sup>

An important consideration in the setting of export tariffs for Ontario is that electricity trade in and out of the province was (and is) expected to be relatively balanced over the long-term. Electricity transactions are used to optimize short-term system operating economics. Unlike jurisdictions such as Quebec or Manitoba, generation assets were (and are) not built to serve export markets.

### A.4 Definition of Pools

The definition of transmission asset pools has been the subject of some debate. A particular concern is that some transmission assets can be considered to fulfil both network and connection functions.

<sup>36</sup> OEB, Decision with Reasons, RP-1999-0440, May 26, 2000, para 3.4.33, p. 45.

<sup>37</sup> Hydro One Networks Transmission Revenue Requirement and Rate Application, 2017/2018, EB-2016-0160, Exhibit H1, Tab 4, Schedule 1, p. 2.

<sup>38</sup> OEB, Decision with Reasons, RP-1999-0440, May 26, 2000, para 3.8.20, p. 66.





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This is the case when a line built primarily to connect customers is nevertheless connected at both ends to the transmission network (it is not radial) and can offer support to the network by providing a parallel flow path. Hydro One has referred to these as “dual-function” lines.<sup>39</sup> Hydro One has reported that dual function lines represent about 7% to 8% of the total Net Book Value (“NBV”) of transmission assets.<sup>40</sup>

The approach currently used in Ontario is to split the costs of these lines between the network and connection pools. The proportion of a line's value that is allocated to the connection pool is equal to the ratio obtained by dividing monthly customer peak coincident demand (for customers connected to the line) by the minimum capacity of the line.<sup>41</sup>

## **A.5 Transmission System Bypass**

### **A.5.1 Provisions of the TSC**

The TSC specifically addresses the circumstance in which a load customer bypasses transmitter-owned connection assets and builds its own connection facility. In this circumstance, the load customer must compensate the transmitter.<sup>42</sup> Compensation is calculated based on the NBV of the bypassed connection facility, including a salvage credit and reasonable removal and environmental remediation costs, if applicable.

The specific section in the TSC that addresses the issue of bypass is 6.7.6:

“Subject to sections 6.7.2, 6.7.7 and 6.7.8, for all or a portion of existing load a load customer may bypass a transmitter-owned connection facility with its own connection facility or the connection of another person, provided that the load customer compensates the transmitter.”

The TSC also requires transmitters to replace any retired assets without seeking a capital contribution from customers served by those assets. Section 6.7.2 states:

“Where a transmitter's connection facility is retired, the transmitter shall not recover a capital contribution from a customer to replace that connection facility.”

Section 6.7.8 addresses calculation of the amount of compensation in the case of bypass. As noted above, compensation is based on NBV, with adjustments for salvage and decommissioning. Section 6.7.8 also addresses the measurement of the capacity that has been bypassed.

### **A.5.2 Compensation for Bypass**

A variety of different methodologies were considered by the Board in setting compensation for bypass. In opting for NBV, the Board cited the following factors:

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<sup>39</sup> Hydro One Networks Inc, Transmission Rate Application EB-2005-0501, Exhibit G1, Tab 3, Schedule 1, Updated February 23, 2007, p. 3 of 10.

<sup>40</sup> Ibid., p. 6 of 10.

<sup>41</sup> Board Staff Discussion Paper, Regulatory Framework for Regional Planning for Electricity Infrastructure, EB-2011-0043, November 8, 2011, p. 23.

<sup>42</sup> OEB Transmission System Code, Section 6.7.6.



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- The approach is objective and
- The approach is consistent with the Board's approach for determining the rate base for transmitters.<sup>43</sup>

Other approaches, such as the adjustment of depreciated value based on Iowa curves or to take into account physical condition were rejected as introducing unnecessary complexity and perhaps also subjectivity.

Some participants in the proceeding opposed the use of NBV to set the compensation payment on the basis that it would encourage customers who were served by lower cost assets to leave the connection pool, leaving costs to be borne by customers served by higher cost assets. This would have the impact of increasing rates for customers remaining within the pool. This argument did not convince the Board, which, as noted above, adopted NBV as the parameter to set compensation payments.<sup>44</sup>

### **A.5.3 Restrictions on Bypass**

Over time restrictions on bypass have been relaxed. Customers historically had more opportunity to supply their own transformation assets than they had for connection assets. During the proceeding RP-2004-0220, however, the OEB proposed changes to the TSC to bring more consistency between connection and transformation assets. A synopsis of key proposed changes noted:

"The Revised Code deals with transmission system bypass in the same way for line connection facilities as it does for transformation connection facilities. In other words, bypass of line connection facilities is not prohibited by the Revised Code, although it may trigger the need to pay bypass compensation to the transmitter in the same way as would bypass of transformation connection facilities. The underlying principle that the duplication of assets should not be prohibited in circumstances where it is economic should apply equally to both types of connection facilities."<sup>45</sup>

Current policies with respect to bypass are outlined in more detail in the sub-sections below.

#### **A.5.3.1 Transmission Bypass with New Load**

When a load customer has new load, it can build its own connection assets to serve this new load, even if the incumbent transmitter has available capacity on its existing connection assets. The customer is not obligated to compensate the transmitter for not using the available capacity. The reason is that bypass is not considered to have occurred. The Board noted:

"A transmitter will not have an automatic right to require customers to use the transmitter's available capacity to service *new* customer load. Accordingly, a customer opting to build its own facilities to meet new load will not be considered to have bypassed the transmitter's facilities. This approach allows for greater competition, which should increase economic efficiency on the part of the transmitter, without resulting in any uncompensated stranding of assets. It also enhances

<sup>43</sup> OEB Phase I Policy Decision with Reasons, RP-2002-0120, p, 31.

<sup>44</sup> Transmission System Code Review Proceeding – RP-2002-0120, Facilitators Report, p. 3.

<sup>45</sup> Synopsis of Key Proposed Changes to the Transmission System Code - Board File No.: RP-2004-0220, p. 2.



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customer choice. However, this will only apply where the new is new – in other words, where the load has not been part of a customer's contractual forecast of its needs."<sup>46</sup>

***Extension of Bypass to Existing Load***

In the case where a customer chooses to build new connection facilities to serve new load, it is important to note that the customer may also use these facilities to supply its existing load, provided that it compensates the transmitter for the lost load. The OEB document accompanying revisions to the Code noted:

"If a customer chooses to build its own new connection facilities, these new facilities may also be used to supply the customer's existing load, provided the customer adequately compensates the transmitter for the loss of that customer's existing load."<sup>47</sup>

Consistent with statements elsewhere, compensation is based on the NBV of facilities bypassed.

Customers are required to give transmitters at least one year's notice of their intention to bypass. This recognizes the need that transmitters have to take bypass into account when planning their systems.<sup>48</sup>

***A.5.3.2 Transmission Bypass for Existing Load***

For existing load, bypass of existing transmission facilities without compensation is possible in the circumstance that these facilities have reached the end of their useful life. In its synopsis of changes to the TSC, the OEB noted:

"Customers will also be able to construct their own new facilities, at their own cost, to replace the transmitter's connection asset that have reached the end of their useful life. At that point the transmitter is obligated, if the customer chooses, to have the connection assets replaced with no contribution by the customer. This is not bypass since the transmitter's assets have been fully paid for."<sup>49</sup>

It should be noted that determination of useful life depends on physical condition and is not based on the asset's NBV. An asset may have reached the end of its useful life even if the NBV is greater than zero. Alternatively, assets may continue in use past their accounting life. The OEB noted:

"Some assets will require replacement before they have been fully depreciated, while others will still be useful even though they are fully depreciated. Connection facilities should, therefore, only be replaced by a transmitter if they have reached the end of their useful life, regardless of whether they have been fully depreciated. To do otherwise would not be prudent."<sup>50</sup>

The OEB approach is designed to avoid uneconomic bypass of assets.

<sup>46</sup> OEB, Synopsis of Changes to the Transmission System Code, July 25, 2005., p. 2.

<sup>47</sup> OEB, Synopsis of Changes to the Transmission System Code, July 25, 2005., p. 2.

<sup>48</sup> OEB, Synopsis of Changes to the Transmission System Code, July 25, 2005., p. 3.

<sup>49</sup> OEB, Synopsis of Changes to the Transmission System Code, July 25, 2005., p. 7.

<sup>50</sup> OEB, Synopsis of Changes to the Transmission System Code, July 25, 2005., p. 7.



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### A.5.3.3 Forecasts of Bypass

In its 2014 submission for its 2015/2016 Revenue Requirement, Hydro One indicated that its forecasting approach includes consideration of the potential for bypass of line connection and transformation assets. However, for the period covered by the 2014 submission, no bypass was assumed.<sup>51</sup> Similarly, no bypass was assumed in Hydro One's load forecast in its submission for the 2017/18 period.<sup>52</sup>

## A.6 New Load

Where a load customer requires new connection facilities, the TSC requires that the transmitter allow the load customer to elect either:

- To provide its own connection facilities or
- To require the transmitter to provide them.<sup>53</sup>

This provision is consistent with the desire to make the provision of connection assets a “contestable” service: transmitters do not have a monopoly in the provision of these assets.

### A.6.1 Generation Connection Assets

In setting up new transmission tariffs during the electricity restructuring process, a policy decision was made that generators would not pay any of the costs associated with existing connection assets. This is consistent with the principle that transmission costs are, in general, to be borne by loads.

New generators, however, are responsible for providing any dedicated connection assets that may be required to connect to the transmission system.<sup>54</sup> They are also responsible for making a contribution to any costs of modifying transmitter-owned facilities to accommodate their connections.<sup>55</sup>

Initially, transmitters were prohibited for building new generation connection assets.<sup>56</sup> This prohibition has been modified however, to give transmitters a role in building so-called “enabler” facilities. These are connection assets built to serve new renewable generation projects. Given the potentially smaller size of such projects and their distributed nature, it was recognized that there may be a role for transmitters in facilitating renewable generation by building connection assets in advance on behalf of project developers. Interest in enabling facilities reflected a policy goal to support renewable generation.

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<sup>51</sup> Hydro One, 2015-2016 Transmission Rates Proposal, 2014-06-27, Exhibit A, Tab 15, Schedule 2, p. 8. of 23.

<sup>52</sup> Hydro One, 2017/2018 Transmission Revenue Requirement and Rate Settlement, EB -2016-0160, Exhibit E1, Tab 3, Schedule 1, p. 9. of 51.

<sup>53</sup> OEB Transmission System Code, Sections 6.6.1.

<sup>54</sup> OEB Transmission System Code, Sections 6.3.3.

<sup>55</sup> OEB Transmission System Code, Sections 6.3.4. and 6.3.12.

<sup>56</sup> OEB Staff Discussion Paper: Generation Connections – Transmission Connection Cost Responsibility Review, July 8, 2008, p. p.2.

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## **A.7 Planning Processes**

An important development of the Ontario model is the development of new planning processes for transmission assets to ensure that development of the electricity system is optimal. This process provides for:

- Participation by distributors.
- Protocols for the sharing of information among relevant parties.
- Consideration of all potential solutions, including distributed generation and Conservation and Demand Management (CDM), in the determination of investment plans.<sup>57</sup>

Planning processes are led by the relevant transmitter. However, there is a clear expectation that robust information sharing will occur and that planning should occur on a coordinated basis.

An important objective of the regional planning process is to ensure that investments are cost-effective and that costs are borne by the relevant beneficiaries. In regard to costs, there has been considerable attention paid to processes for evaluating whether specific assets provide some benefits to the network, as well as serving as connection assets to local customers. This discussion reflects the fact that, in some cases, it is not straightforward to allocate certain assets between the network and connection functions. As a consequence, and as noted earlier in this Appendix, such assets are classified as “dual-function” and their costs are apportioned accordingly. An example would be a connection line that runs in parallel to the network, is connected at two ends, and supports or carries network flows in certain circumstances.

While the division of costs highlights certain practical issues in creating different pools for network and connection assets, the general thrust of policy decisions in Ontario is to reaffirm the importance of making this distinction in function, both for philosophical and incentive-making reasons. The Board resisted calls to define all assets as network assets. Instead, it has sought to bring more consistency to the approach to distinguishing between network and connection assets and costs.

Thus, the Board has noted:

“The Board concludes that no redefinition is required in relation to transformation connection assets for the purpose of facilitating regional infrastructure planning. However, the Board also concludes that the redefinition of certain line connection assets in a manner that better reflects the function that each asset performs will facilitate the implementation of regional infrastructure planning, and should also place distributors (and therefore all Ontario customers) on a more level playing field in terms of cost responsibility. To the extent that line connection assets are defined based on function, distributors (and their customers) will be responsible only for the costs associated with upgrades to assets that are used solely to supply a distributor or group of distributors (i.e. where such distributors are the sole beneficiaries). The end result will be somewhat akin to ‘partial’ province-wide pooling with the uploading of some transmission assets from the line connection pool to the network pool. At the same time, all distributors will remain responsible for the costs associated with some line connection assets. This approach should maintain cost discipline.”<sup>58</sup>

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<sup>57</sup> OEB, Report of the Board, Renewed Regulatory Framework for Electricity Distributors: A Performance-Based Approach, October 18, 2012, p. 39.

<sup>58</sup> OEB, Report of the Board, Renewed Regulatory Framework for Electricity Distributors: A Performance-Based Approach, October 18, 2012, p. 44.



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As an example of network pooling, the Board decided that 115/230 kV auto-transformers and the associated switchgear should consistently be defined as network assets. This reflects the fact that these items help to optimize use of the transmission system as a whole in accommodating new loads safely and reliably.

The Board has specifically resisted moving to a pooling of the costs of new connection assets, either on a regional or provincial basis.

“During the consultation process, stakeholders provided insight into the relative merits of implementing changes to the Board’s cost responsibility regime that are of a more transformative nature than those discussed above. Specifically, stakeholders commented on the potential to move to the regional or province-wide pooling of transmission connection facility costs, in whole or in part. The Board has concluded that a shift to province-wide pooling carries with it the risk of cross-subsidization, the potential for transmission overbuild and an inappropriate cost shifting between regions in the province...Moreover, the Board is satisfied that a move to any form of pooling of costs is neither necessary nor desirable at this time for the purpose of facilitating regional infrastructure planning and the execution of regional plans, given how the Board is addressing the cost responsibility issues discussed above.”<sup>59</sup>

The discussion with respect to cost responsibility for new assets highlights an important distinction in the allocation of cost responsibility for connection assets. The costs of existing connection assets were pooled in the “connection pool” when unbundled transmission tariffs were developed in Ontario at the start the market restructuring process. For new connection assets developed subsequently, however, any costs that would not be recovered through existing tariffs levels were instead charged to the customer that “triggered” the investment in new connection assets. The OEB backed away from this very targeted cost-allocation approach in recognition that it led to certain perverse incentives. For example, a distributor may delay requesting a service upgrade in the hope that another customer would trigger the asset upgrade first (and thereby assume the costs of this upgrade). The distributor would then take advantage of the capacity so-created without, in certain circumstances, having to contribute to its costs. These types of incentives had the potential to undermine the sharing of information that is necessary for a coordinated transmission planning process. Hence, elimination of such incentives is an important element in promoting effective regional transmission planning.

In addition to encouraging the sharing of information, the “beneficiary pays” approach that is currently in-place is intended to ensure that costs are more equitably distributed.<sup>60</sup> Consistent with the beneficiary pays approach, there is no expectation that the costs of new connection assets benefiting just a few users are pooled on a provincial or even regional basis.

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<sup>59</sup> OEB, Report of the Board, Renewed Regulatory Framework for Electricity Distributors: A Performance-Based Approach, October 18, 2012, p. 46.

<sup>60</sup> As an example of the shift, the Transmission System Code originally indicated that the transmission customer that funded a new asset would be entitled to a partial cost refund if some capacity on this asset were later used by another customer. However, this entitlement to a refund ended after 5 years. Subsequent changes increased the period during which a refund could be obtained to 15-years. See TSC Section 6.3.17.