

Synopsis of Changes to the Transmission System Code

Introduction

On July 25, 2005, the Ontario Energy Board (the “Board”) issued a final revised version of the Transmission System Code (the “Code”) following an extensive consultation process.

The Code sets out the electricity *transmitters’ obligations* with respect to its customers. It includes a Connection Agreement which covers the *technical and commercial responsibilities* of both transmitters and their customers. The Code also addresses the transmitters' *standards for operating, managing and expanding* their transmission system.

The purpose of this document is to provide a brief synopsis of the more substantive changes to the Code, relative to the initial version that was issued in July 2000. This Synopsis is not intended to be, nor should it be used as an interpretive tool for the Revised Code for any purpose, or in any forum. It is merely an attempt at a narrative and informal description of the various changes made to the Code, and it has no legal or regulatory role in its interpretation, implementation or enforcement.

Understanding this Document and the Code

Providing clarification about some of the terms used in this document may assist in better understanding this document and the Code.

- There are different types of transmission assets. “Network” assets benefit all Ontario electricity consumers while “connection” assets are only used by a specific customer or group of customers. An analogy that may provide a better understanding is that the common network assets are similar to the highways we all drive our vehicles on, while connection assets are like the connecting roads only a certain driver(s) uses to get to the highway. The Code focuses primarily on connection (i.e., transformation and line) assets. Some are private while others are shared.
- Network assets are always owned by a transmitter. Connection assets can be owned by customers or transmitters.
- References to “customer” means a customer *directly* connected to the transmission system and includes electricity consumers, generators and distributors. In other words, it does not include a customer of a distributor.
- The term “load” essentially means a customer’s level of electricity demand.

Why was the Code Revised?

Numerous expressions of concern were received from stakeholders regarding the application and interpretation of the Code. This included applications for changes to the Code. The Board decided that the Code, in its previous form, was not sustainable and a broad review was needed. A primary objective was to refine the Code to enhance the level of regulatory certainty for participants in the Ontario electricity market.

On June 14, 2002, the Board published a Notice of Proceeding indicating its intent to undertake this broad review. Based on the submissions received, the Board decided it would be best to divide the proceeding into two phases; Phase 1 dealing with *policy* issues and Phase 2 addressing *implementation* issues. The Board then issued a set of guiding principles and 41 preliminary propositions. The intent was to provide a vision of where the Board wanted to take the Code.¹

The Board's Phase One Decision followed on June 8, 2004. This Decision set the policy framework and focused primarily on the following policy issues: (1) Available Capacity; (2) Transmission System Bypass; (3) Cost Responsibility; (4) Contestability; (5) Economic Evaluation; and (6) Contractual Issues. The following discusses how the Board has amended the Code in addressing these overlying policy issues.

Major Policy Issues

1. Available Capacity & Bypass

Available capacity is essentially the remaining amount of capacity on a transmitter's connection assets that is not required to meet the expected needs of the current customer(s).

Facilitating Competition in the Transmission Connections Market

A transmitter will not have an automatic right to require customers to use the transmitter's available capacity to service *new* customer load.² 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 customer choice. However, this will only apply where the load is new – in other words, where the load has not been part of a customer's contractual forecast of its needs. In such cases, the customer will be held accountable for its forecast (i.e., by way of true up payments), throughout the economic evaluation period. Transmitters invest in the connection assets based on the customer(s) contractual forecast and customers must be held accountable for the costs of facilities built to meet it. It would be inappropriate to burden all the rest of the transmitter's customers with such costs.

If a customer chooses to build its own new connection facilities, those 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. The methodology used to determine the required amount of compensation is discussed below. An issue arises if the customer involved is a distributor. Unlike an end-use customer of the transmitter, bypass in these cases could come at the expense of the distributor's captive customers. In such cases, there will always be a prudence review by the Board in

¹ A Settlement Conference was also held on September 9 - 16, 2003 to seek consensus, where possible, and develop workable alternatives for the Board's consideration.

² The method to be used to distinguish between a customer's *new* and *existing* load is established by a customer's forecast of their needs; i.e., load forecast.

the next distribution rate proceeding. Such a review could result in some or all of the investment being disallowed in distribution rates paid by consumers. The onus will be on the distributor to make a business case to the Board that the new facility was necessary and that it was more cost-effective to build it than to use the transmitter's existing facilities.

The decision to bypass will require time and planning by any customer. Transmitters will need to take bypass into account in planning their systems. The Connection Agreement has therefore been revised to require the customer to give at least one year's notice of their intention to bypass.

The underlying rationale for these decisions is the Board's interest in providing reasonable opportunities for new approaches to system change, as 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 connection assets within the system, the Board expects to see overall optimization.

Overloaded Line and Transformation Connections Facilities

If a customer chooses to build its own connection facilities, those facilities may also be used to serve *existing* load without compensating the transmitter, provided the existing transmitter's facility is *overloaded*. Overloading any facility reduces the economic efficiency of the transmission system and should be avoided. However, only the overload portion will be transferable without compensation.

A Reasonable Approach to Determining the Amount of Bypass Compensation

Given the above, the Board needed to decide on the most appropriate method for determining the amount of bypass compensation, where such was required. After considering a number of options the Board decided to base it on the Net Book Value (NBV) of the stranded asset, plus an adjustment for salvage and removal costs, which includes environmental remediation. This approach is the most objective and it is consistent with the Board's approach for determining the rate base of a transmitter. Therefore, the NBV approach will be used for any bypass that triggers the need for compensation under the Code. That is, unless the customer in question is subject to the true up requirements referred to above and described below or the customer continues to be subject to gross load billing, as discussed below, on the affected connection facility. To also require bypass compensation based on NBV, in such cases, would result in the transmitter being fully compensated twice for the same asset.

Contracted and Assigned Capacity

The amended Code introduces the concepts of *assigned* and *contracted* capacity along with a transparent process to manage *available* capacity on the transmission system. Customers may request that available capacity be assigned to them and transmitters will assign the capacity on a first-come-first-served basis. That assignment is, however, valid for only a one year period if not taken up by the customer. If not, and an extension to the one year period is not granted, it can be reassigned to another customer in need.

Overall economic efficiency is achieved by allowing transmitters the flexibility they need to manage transmission capacity, while also ensuring that all of the capacity a customer has contracted for (i.e., contracted capacity) will be available to them if and when that customer ultimately needs it.

Transparency is achieved by requiring transmitters to establish an available capacity procedure which includes specific customer notification requirements. This procedure will be implemented by the transmitter when the available capacity on a connection facility is reduced to 25% or less. A reasonable period will then be provided for customers to submit competing applications. The available capacity will, in turn, be divided fairly amongst those customers that have adequately demonstrated a need.

Concerns were raised that a transmitter could provide its affiliated distributors with preferential treatment in allocating capacity that is available for use. Going forward, in all such cases, an assignment of available capacity to its affiliate will trigger a requirement that the transmitter notify all customers connected to the affected facility (i.e., regardless of whether the 25% threshold is triggered).

Contracted Capacity will Not Remain Idle

As noted, if a customer is not using a portion of its contracted capacity, the transmitter will be permitted to reallocate the unused capacity to other customer(s) in need. The Code will also not permit capacity to be reserved for back-up purposes. This will contribute to efficient use of the system and will defer or fully avoid unnecessary investments. The alternative approach that was not adopted would have been to allow customers to reserve all of the capacity that they had under contract for their sole use. This could have resulted in an inefficient and overbuilt transmission system.

2. Transmission System Bypass & Embedded Generation

A Comprehensive Definition of Embedded Generation — Enhancing Regulatory Certainty

Embedded generation is often self-generation which tends to be separate and apart from the transmission system. Whether generation is embedded, in relation to a customer, affects how the customer is to be charged for transmission services which is discussed below.

What qualifies as embedded generation was initially addressed in an earlier Board Decision (RP-1999-0044) and, more recently, in two proceedings that dealt with two customer complaints. Each asserted that the transmitter was failing to recognize certain generators as embedded and was, in turn, billing the customers improperly. The Board concluded that the generation in question qualified as embedded in both cases. These disputes arose, in part, because the current definition of embedded generation lacked the necessary specificity.

Given the above, the Board decided to look at the issue more broadly to determine under what specific circumstances generation will be considered embedded. In doing so, the Code now consolidates the Board's findings on embedded generation in the three Decisions noted above. This more refined and comprehensive definition of embedded generation will provide greater regulatory

certainty which should facilitate investment in desired new supply in Ontario's electricity market.

In arriving at the approach described below, the Board has taken into account the fact that transmission issues are part of a larger electricity supply picture. Ontario is currently facing a tight electricity supply situation and has had to rely on expensive sources of supply, including imports, from time to time to meet peak demand.

There are four combinations of generation and load — new and existing — to be considered in deciding what qualifies as embedded generation. The date to distinguish between new and existing generation is the date that the Phase One Decision was published; i.e., any generation which went into operation on or after June 8, 2004 will be considered to be new.³

New Generation

New generation will be considered embedded in relation to either existing or new load subject to satisfying certain criteria. The Code now identifies six specific circumstances that will not affect whether new generation qualifies as embedded generation: Any new generation that is connected on the customer side of the connection between a customer and the transmitter will be considered embedded (i.e., not bypass) regardless of: (1) whether the customer load is new or existing; (2) who owns the generation; (3) where the generation is located; (4) what voltage the generation is connected at; (5) what commercial arrangements the generator enters into; and (6) the size of the generation capacity and the number of generating units.

The transmitter will be compensated in one circumstance that involves new embedded generation. That is where an existing customer disconnects from the transmitter's connection assets to take service from a new and, in effect, a duplicative facility that is not owned by the transmitter. This would result in the transmitter's assets becoming stranded. Due to the disconnection, the transmitter would not be compensated for this stranding through gross load billing as the Board envisioned in RP-1999-0044. As a result, the revised Code provides that the customer will be required to compensate the transmitter based on the respective net book values (NBV) of these facilities, because this is clearly a case of "uneconomic" bypass.

The Board recognizes that the transmitter may lose revenue from existing load when it is supplied by new generation that qualifies as embedded generation and this may lead to an increase in transmission costs borne by ratepayers. However, this should be more than offset by the expected reduction in energy costs for all consumers resulting from the entry of new generation and the overall growth in demand that will continue to be served by the transmitter.

The Board also took into account that embedded generation is predominantly cogeneration which tends to be a more efficient and cost-effective form of generation. Embedded generation also tends to enhance reliability, reduces the need to invest in expanding the transmission network, decreases the amount of energy wasted due to transmission line losses and can reduce inefficiencies associated with

³ October 31, 1998 will continue to be used for the application of rates as per RP-1999-0044.

transmission congestion. Reducing congestion means high cost generation does not need to be used as often when lower cost supply is available, thus tending to reduce overall energy costs in Ontario.

To the extent that all Ontario consumers will benefit from lower energy costs and enhanced reliability, it is appropriate that such additional transmission costs be shared across the system.

Existing Generation

Existing generation can also become embedded in relation to an existing customer by reconfiguring existing connections. Similarly, new customers could be connected so that existing generation can be embedded in relation to that customer. Neither combination will be treated as embedded generation.

Reconfiguration may result in some benefits for the specific generator and customer involved but there is no apparent benefit to electricity consumers as a whole, primarily because no new generation has been added to the Ontario market as a result of the mere reconfiguration of the connections. At the same time, such reconfigurations may create additional costs for Ontario consumers due to the stranding of the transmitter's assets. Accordingly, these reconfigurations amount to "uneconomic" bypass of the transmitter's facilities.

New Embedded Generation – Not Considered Bypass

New embedded generation projects that are consistent with the criteria discussed above will not be considered system bypass. One area of concern among customers which led to the Board's review of the Code arose because a transmitter was including a "no bypass" provision in the contracts that customers were required to sign before construction of facilities would be carried out. Going forward, such contract provisions that would unnecessarily discourage the development of new embedded generation will not be permitted.

Remaining Consistent with RP-1999-0044 Principles and Eliminating Barriers to Embedded Renewable Energy

Customers with new qualifying embedded generation will be subject to the rate treatment established in RP-1999-0044. That is, *net* load billing for *network* charges and *gross* load billing for *connection* charges. If it does not qualify as embedded generation, gross load billing will apply for both charges.⁴

For renewable embedded generation, the threshold for full net loading billing treatment (i.e., both network and connection charges) will be increased to 2 MW per unit through changes to the Rate Order. This recognizes the technological advances in renewable sources, particularly new wind projects which are now all primarily between 1 MW and 2 MW per unit. This threshold increase also reflects a societal interest in increasing the proportion of renewable generation in the overall supply mix.

⁴ Under the Rate Order, net load billing applies for both network and connection charges for small scale embedded generation for administrative reasons (i.e., metering & billing). The threshold will continue to be 1 MW or less per unit for *conventional* generation sources.

Prudent Replacement of Existing Transmission Connection Facilities

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.

Replacement will be at no direct cost to any individual customer since such assets will be included in the transmitter's rate base. Until facilities are replaced there is an obligation on the transmitter to ensure that those facilities are properly maintained and repaired, on an ongoing basis, so that they perform at the required technical standards and level of reliability.

Customers will also be able to construct their own new facilities, at their own cost, to replace the transmitter's connection assets 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.

Prohibiting Measures that Discourage Energy Efficiency and Conservation

Reductions in demand due to energy efficiency, conservation and load management will not be considered system bypass, under any circumstances. This includes the installation of renewable energy technologies (e.g., solar panels) that reduce a customer's overall demand on the system. The promotion of energy efficiency and conservation is particularly important at a time when Ontario faces a tight electricity supply. There is a growing consensus that there is a need for increased conservation measures by consumers, and many initiatives are underway to facilitate achievement of that goal. The Board has therefore revised the Code to eliminate opportunities that might otherwise exist to create barriers or disincentives that stand in the way of such initiatives. However, customers will be required to demonstrate to the transmitter that the reduction in demand is in fact due to a conservation measure as opposed to, for example, a simple downturn in the economic cycle.

Practices that discourage these initiatives, such as a transmitter imposing a minimum payment obligation to cover present loads, will now be prohibited. Allowing such practices would require a customer to pay the same minimum amount even if, for example, they were able to cut their demand in half. This would constitute a penalty for conserving energy which is inconsistent with the societal goal to create a "culture of conservation" in Ontario.

This change to the Code takes into account the broader electricity market. A reduction in electricity demand is equally, and sometimes more, beneficial than an increase in supply. When high demand stretches the system close to its limits, electricity prices rise sharply. A relatively modest reduction in demand at such times, due to the measures discussed above, can hold peak prices in check and foster price stability for the benefit of all Ontario electricity consumers.

3. Cost Responsibility

All Parties to Pay Their Fair Share — No More, No Less

Customers who require new or upgraded connection facilities to meet their needs will bear the associated costs, to the extent that the cost is not already recovered in the transmitter's rates.

Customers should not, however, be required to bear the cost of facilities that were already planned by the transmitter. To ensure that this does not happen, a transmitter will be required to provide customers, upon request, with any pertinent existing transmission plans dealing with system expansion. All affected customers will be informed of the capacity available for use on all relevant facilities following the expansion. Such plans are expected to be developed by transmitters to address growing demand, system reliability and integrity. These plans will also be essential to determine whether a particular connection project is truly triggered by the needs of a specific customer.

Generators will also be held responsible for the costs associated with connection facilities that they cause. This should not be considered a deterrent to new generation because this is a standard cost of doing business for all new generators within and outside of Ontario. In other words, all customers of the transmitter need to pay their fair share.

If a transmitter adds more capacity than a customer requested, in anticipation of future growth in demand, the transmitter will not be permitted to charge that customer for the additional costs. Permitting such a requirement could inhibit the development of new generation.

Customer Accountability

The transmission system is dynamic in nature and customers will be expected to understand that they may have to upgrade their own equipment to adjust to a changing and growing transmission system. As a result, all customers will be held responsible for upgrading their own equipment to the new available fault current levels triggered by a new or modified connection, up to the maximum level set out in the Code. This is necessary to ensure Ontario's transmission system operates as efficiently and effectively as possible.

The Connection Agreement has also been revised to better recognize that there needs to be symmetry between customer obligations and the transmitter's obligations. Transmitters cannot do it alone.

Facilitating Necessary Transmission Planning and System Efficiency

It is important for a transmitter to be notified, as early as possible, of any reductions in a customer's demand resulting from installing embedded generation or implementing energy efficiency or conservation programs. All such initiatives would require planning by a customer and it would, therefore, not be unreasonable for a customer to notify a transmitter in advance. Transmitters need such information for their own transmission planning and prudent investment purposes as well as to operate Ontario's transmission system efficiently and effectively. The Code now recognizes this and

requires customers to provide information to transmitters on an annual basis regarding material changes in load and peak demand.

4. Contestability

Enhancing Customer Choice and Increasing Competition

Work on new connection facilities will be contestable, regardless of whether a capital contribution is required. This will facilitate competition and optimize efficiency. A customer requiring new dedicated facilities will have two options; either design, construct, pay for and own the new facilities or have them owned by the transmitter. If the latter, a customer may choose to accept the transmitter's cost estimate or contract with any qualified contractor. Regardless of which option is chosen, transmitters will retain the right to work on their own existing facilities as they will be most familiar with those assets. This is important to ensure the efficient operation and safety of the Ontario transmission system.

This approach provides business opportunities for private, innovative companies across Ontario. It also gives the customer options if the transmitter does not provide adequate customer service. The Board originally expressed its vision of developing a more competitive market for connection facilities in 1999, as part of its RP-1999-0044 Decision. The changes made now should further facilitate realizing that vision.

5. Economic Evaluation

Protecting Existing Ontario Electricity Consumers

The economic evaluation methodology provides the mechanism for determining any cost recovery shortfall, and ensures that all connection facility costs are recovered from the connecting customer, either through rates or a capital contribution. Except in exceptional circumstances, this does not include network facility costs which generally benefit all electricity consumers. This mechanism is needed to protect transmitters and their existing ratepayers from potential subsidization of specific customers. Again, all customers must pay their fair share, and an economic evaluation is the tool that will be used to make sure this happens.

Customers to Pay for Only the Transmission Services they Use — No More, No Less

As discussed above, the revised Code will prohibit minimum payment obligations being imposed by the transmitter. This approach resulted in a one-way true up process in favour of the transmitter. The Code will instead include a true up process for customer connection facilities that works both ways. If the true up calculation shows that a customer's actual demand is below its contractual forecast and, therefore, has not generated the anticipated revenues for the transmitter, the customer will be obliged to make up the shortfall. If the opposite occurs, the excess revenue realized by the transmitter will be returned to the customer when the last true up calculation is carried out. In this way, parties are held accountable for their contractual forecasts and the associated costs, but have the prospect of

reimbursement if they generate more revenue than was expected under the original economic evaluation.

To preclude the further creation of barriers to energy efficiency, conservation, renewable energy activities and small scale embedded generation projects,⁵ the customer's initial load forecast will be adjusted downward to reflect such measures and the associated reductions in demand on the transmission system. If the forecast was not adjusted, it would be equivalent to penalizing these desirable measures which would conflict with the societal goal to create a "culture of conservation". The Ontario market will benefit from such measures due to improvements in the balance between supply and demand.

A customer's economic evaluation calculation will not include sunk costs or historic revenues, which have sometimes been included in the past. Only projected costs and revenues for the supply of new customer load will be included, since only they are genuinely relevant. Customers should not be paying the transmitter for costs that were, for example, incurred before they even became a customer.

6. Contractual Issues

Projects, Especially New Generation, will No Longer be Unnecessarily Delayed

The Code has been revised to clearly prohibit the transmitter from placing construction work on hold pending the outcome of a dispute resolution process. This can have the effect of causing needless delays to projects, including much needed new generation. The goal is that the addition of new supply to the Ontario electricity market will no longer be unnecessarily delayed by the transmitter.

Protecting Consumers & the Financial Viability of the Transmitter

Transmitters will be permitted to require a reasonable security deposit from a customer to cover all related construction costs. A customer requesting the new connection could walk away from the project or go bankrupt after the transmitter has incurred the costs to build the facility for that customer. If all goes as planned, the transmitter will return the deposit (with interest) once that risk no longer exists. Not permitting a transmitter to require a reasonable security deposit could result in all Ontario electricity consumers bearing the costs of delinquent customers.

Inappropriate Contract Provisions will Not be Enforceable by Transmitters

Any contract provisions that are inconsistent with the revised Code, such as a minimum payment obligation or a "no bypass" provision, will not be enforceable by transmitters. The Board did not accept a position that this should not apply to existing agreements. Otherwise, it would create a double standard based on an arbitrary distinction between existing and future customers. The regulatory environment needs to be consistent for all transmitters and customers.

⁵ Small embedded generation is 1 MW or less for *conventional* generation and 2 MW or less for *renewable* energy.

7. A Common Set of Rules for New and Existing Customers

In terms of how the revised Connection Agreement will be applied to *existing* customers, the Board decided that the same set of rules will apply to all customers and transmitters going forward. This approach will provide greater certainty to transmitters and customers alike in terms of the rules that will govern their relationship. It will also promote fairness across all customers. However, elements of existing agreements that have been freely negotiated will be preserved to the extent that they are not contrary to the revised Code. The Code therefore now clarifies that existing agreements will be deemed to be amended to conform to the revised Connection Agreement.

Conclusion

The revised Code is the result of an extensive consultation process, which has included six opportunities for parties to provide written submissions. In total, there have been over 130 submissions received. There was also an extensive Settlement Conference that lasted five full days.

The Board would like to thank the stakeholders involved for their significant contribution to this process. Their input has assisted the Board in shaping and refining its vision for the Code.

The Board is of the view that it has achieved the appropriate balance in arriving at the revised Code. Many of the changes take into account that transmission issues cannot be properly addressed in isolation. Instead, they are part of a larger picture which includes the fact that Ontario needs more generation and energy conservation to improve the balance between supply and demand. At the same time, the Board has taken a great deal of care to ensure that the integrity of the transmission system is maintained and overall system optimization is facilitated.

The changes should help ensure that the transmitter's monopoly position will not restrain competition in areas where greater competition is beneficial, and should also facilitate the ability of parties to effect efficiencies in their use of electricity without facing disincentives. The Code includes provisions that eliminate opportunities that might otherwise exist to create barriers and disincentives that can discourage new generation, energy efficiency, conservation, demand management and the use of renewable energy sources.

The changes to the Code should also better ensure that all transmission customers will be held responsible for paying their fair share of the costs that they cause and the assets they benefit from. The financial viability of the transmitter, as well as all operational, safety and reliability requirements of the transmission system, remained a high priority for the Board throughout this process.

The Board is confident that the revised Code will result in providing all participants in the Ontario electricity market with greater regulatory certainty and predictability — a prerequisite to attracting investors to the Ontario market. While the changes will make the Code more prescriptive, the Board has also maintained sufficient room for negotiation amongst the parties. The Board is confident that the revised Code will enhance the regulatory environment in which these negotiations will take place.