

EB-2011-0118

OSEA CROSS EXAMINATION MATERIALS

Hydro One Networks Inc. (“Hydro One”) recognizes the significant changes the Board has made to the proposed amendments to the Distribution System Code (“DSC”) in this proceeding based on the comments received in June of 2008. Hydro One is generally supportive of these proposed amendments but offers comments below to assist the Board in determining the final amendments to the DSC.

Hydro One submits that when the amendments are approved by the Board, distributors will be required to adjust their current processes for assessing generation applications. Hydro One’s view is that such processes can be developed without the Board’s assistance or guidance, but will require a short time to implement.

In addition to the comments on the proposed amendments, Hydro One offers additional suggestions in response to the Board’s discussion on the treatment of load displacement generators. Hydro One has observed some very important impacts of load displacement generators.

Comments on the Proposed Amendments

The Board proposes seven amendments to the DSC as listed in Attachment A of the Notice, and Hydro One provides the following comments to assist the Board:

Hydro One finds the definition in the Board’s proposed **amendment 1** to be clear but submits that the chosen title, “exempt small embedded generation facility” could lead to misunderstandings in the future by parties who do not have the background provided in this Notice and believe that their generation facility is “exempt” from the other requirements in the DSC. A more specific title, such as “queue exempt small embedded generation facility” would be clearer to all parties in the future.

Hydro One supports the proposed **amendment 4** but notes that in point ii) the change should be made to the **second** sentence of section 6.2.6 not the **first** sentence.

With respect to the Board’s proposed **amendment 6**, Hydro One also intends to provide the Board with additional information that would be relevant to the decision of whether to let the exempt small embedded generation facility connect ahead of other generators in the queue. For example, connecting the exempt generator may result in new requirements being imposed on other generators in the queue such as the cost for transfer trip or the need for an SIA.

In the proposed amendment to new section 6.2.8A, it appears the reference in the last line should be to section **6.2.4.1** rather than to section **6.2.4.2**.

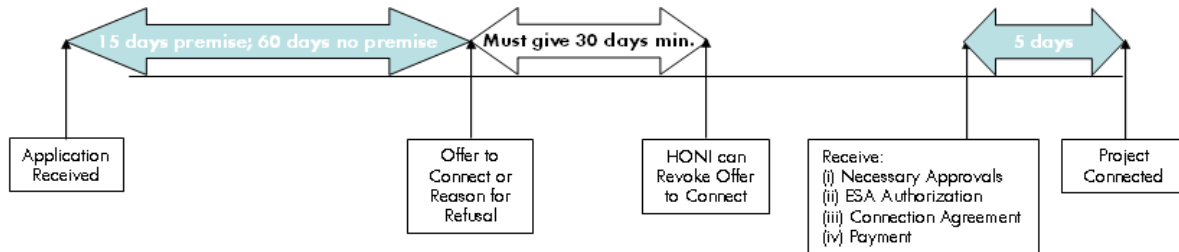
Hydro One supports the Board’s proposed **amendment 7** and notes, for greater clarity, that acceptance of an offer to connect occurs when the applicant executes a CCRA with the distributor.

Comments on Load Displacement Generators

Hydro One suggests that the Board’s clarification on the treatment of load displacement generators provided in the Notice should be further refined. Hydro One accepts the Board’s clarification that an embedded generation facility that is “used exclusively for load displacement purposes” is not subject to the queue process as per section 6.2.1 but the definition that this condition is met “so long as the power produced by the generation facility is no more than the power consumed by the associated load” should

Hydro One Application

These steps and timelines for micro-embedded generation are shown in the figure below.



The Code-mandated timelines for the connection of micro-embedded generators were instituted in response to the amendments to the *Ontario Energy Board Act, 1998* (“the OEB Act”) that were made by the *Green Energy and Green Economy Act, 2009*. Hence, they did not have the benefit of any significant industry experience with processing and connection of micro-embedded generation in Ontario. From its experience to date in this area, Hydro One offers two observations:

- While the Code requirements may be appropriate for a stable and mature business environment, they are not necessarily suitable for periods of volatile, uncertain and high volumes of activity, such as those associated with the early take-up of the microFIT program.
- The timelines, as developed, did not anticipate or allow for certain technical aspects associated with connection of micro-embedded generation. These considerations are now known to include:
 - (i) the cumulative impact that small facilities can have on the distribution system, especially in rural areas; and
 - (ii) the nature, duration and timing of the work necessary to assess and connect these facilities. This information became available only once Hydro One and others gained experience in dealing with micro-embedded distributed generation.

These shortcomings in the existing Code are not surprising. The requirements were developed with urgency and were instituted as part of the Board’s activities to promote the connection of renewable generation and in response to its new objective under the OEB Act.

In fact, Hydro One had anticipated that certain challenges would be faced by distributors in meeting such timelines. In responding to EB-2008-0102, “Notice of Proposal to Amend A Code” dated May 16, 2008, Hydro One shared with the Board its concerns about unpredictable volumes and the proposed fixed timelines as stated in the Code at the time. Specific mention was given to the timelines in sections 6.2.6 and 6.2.7 of the Code. Hydro One’s experience has validated its initial concerns. Although Hydro One’s comments in that proceeding were made in response to a Board proposal to expand the classification of micro-embedded generation, they foreshadowed some of the volume-related, timeline, and technical issues that the Company now faces in managing even smaller micro-embedded generation. For the Board’s convenience, Hydro One’s full comments are attached in Appendix B.

The volume issues continue: in early 2011, Hydro One received about 200-250 applications per week; and recently, Hydro One received almost 1500 applications within an 18-day period¹.

As a result, the Company undertook and continues to take significant actions in its efforts to meet customer expectations, its compliance obligations and its own commitment to supporting the connection of renewable energy generators. Following are some of the generic actions undertaken. Additional information about mitigating measures, specific to sections 6.2.6 and 6.2.7, is found in the corresponding Parts A and B, respectively, of this Application.

Resourcing: Hydro One's initial response to the high volumes of applications naturally involved staffing and other resourcing actions, to first address any backlogs at the front end, namely application processing. This involved the use of overtime, hiring, redeployment of staff, training, and shifting work among work groups. While Hydro One has significant resources in place to serve generation proponents, the acquisition of certain additional resources requires lead times as long as six weeks, arrangements for additional workstations, and sometimes relocation of staff.

Screening: In response to the many cases where the assessment of technical limits was delaying Hydro One's response time, the Company developed and established a screening tool and a process to identify, in a timely manner, projects that are constrained. The screening tool is described in further detail below, in Part A.

Executive and Management Oversight: Hydro One's commitment to the efficient and effective connection of distributed generation is reflected in senior management's attention to the high volumes, customer issues and complaints, and regulatory compliance through bi-weekly meetings.

Customer Communications: Hydro One's Business Customer Centre ("BCC") is accountable for the processing of micro-embedded generation connection applications and for interfacing with customers. The Company has had to rely on its website and on generic written communication with customers rather than responding to customer specific enquires and concerns. Improved resourcing and other measures have to a large degree mitigated this deficiency, and the BCC is now positioned to deal with customers both proactively and reactively on a more timely and informative basis.

It is in the absence of any further significant mitigating actions that Hydro One has decided to approach the Board for relief by way of exceptions from these Code requirements.

¹ Hydro One's records indicate that 1485 applications were received between February 10 and February 28, 2011. In total, 1853 applications were received by the Company in February 2011.

PART A

REQUESTED EXEMPTION FROM SECTION 6.2.6 OF THE CODE

On November 25, 2010, Hydro One sent a letter to the Board disclosing its non-compliance with section 6.2.6 of the Code, and describing the underlying issue and mitigating actions. However, despite the elapsed time and actions taken by Hydro One to become compliant, the Company continues to find itself in non-compliance. Hydro One submits that the time-based requirements of this section are not achievable by Hydro One at this time due to:

- volume of micro-embedded generator applications (as described above);
- technical screening and rescreening required to ensure that generation can be connected without jeopardizing the reliability of the existing system or negatively affecting existing customers;
- non-volume related issues; and
- the need and time required for Hydro One to identify and explore investments that would allow for proposed generator connections to proceed.

Technical screening: Hydro One wants to ensure that micro-embedded generation connections are within acceptable industry standards. Through experience, Hydro One has learned that, although an individual micro-embedded project may have little or imperceptible impact on the performance of the distribution and transmission systems, in aggregate, micro-embedded generation connections can have a substantial effect. If permitted to proceed nonetheless, such connections could eventually exceed capacity constraints and reverse flow limits, and result in breaches of accepted industry operating standards.

Hydro One has therefore found it necessary to introduce technical screening, similar to, but simpler than a Connection Impact Assessment, to ensure that generation projects can be connected without unduly risking the reliability of the existing system or negatively affecting existing customers.

Although micro-embedded generators are not subject to Connection Impact Assessments, Hydro One's technical screening is required before a micro-embedded generator is given an offer to connect, giving the Distributor authority to refuse connection unless mitigating actions are undertaken. This approach is preferred to disconnecting micro-embedded generation that put the reliability of the system at risk, under sections 3.1.1, 4.1.8 or 4.2.4.

Non-volume related issues: Hydro One's BCC processing of applications for the connection of micro-embedded generation includes technical screening and a determination of the need for a site visit by Hydro One staff. A site visit is required if the customer selects a standalone generator connection, an upgrade is needed of a load transformer for purposes of connecting a generator, Hydro One or the Customer requires further validation to complete a design estimate, or a three-phase connection is involved.

For example, a subset of all applications at existing customer connections (where the 15-day timeline in section 6.2.6 applies) requires an investigation to determine if any upgrades are required to existing

connection assets serving that customer before the proponent can connect. The investigation includes, but is not limited to, a check of the existing transformer and associated assets at the connection, and a possible site visit which may require the proponent to be on site. This investigation work requires more than 15 days' time, and therefore Hydro One cannot achieve compliance with the Code in such cases, regardless of the volume of applications being processed. It is the Company's intent, during the exemption period, to confirm the time needed and to assess the long-term resolution to this compliance issue.

The need for the field visit and/or estimate for the indirect connections to determine if a transformer and pole upgrade impacts not only the offer to connect, but also Hydro One's ability to connect within 5 days after Electrical Safety Authority authorization (see Part B).

Exploring options: In cases where generation cannot be connected, Hydro One's view is that it is not sufficient to immediately dismiss the proposal, refuse connection, and proceed to the next applicant. Instead, it is the Company's intent and current practice that investments to permit generator connections be identified and planned in a managed, integrated fashion that would allow for multiple generation connections and other system benefits. These additional practices increase the required time to deal with these applications.

Volumes of Applications and Compliance Status

As of April 11, 2011, some 12,350 generation projects have applied to Hydro One. Of these, about 100 projects, mostly more recently arrived, are currently waiting processing through Hydro One's Customer Relationship Management system, and will be categorized as direct or indirect connections. The remaining 12,215 projects are broken down as follows.

	Total Projects	Offer to Connect or Reasons for Refusal Issued	Application under review within required timelines	Offer to Connect or Reasons for Refusal Yet to be Issued
15 day	9,159	8,883	68	208
60 day	3,092	2,323	535	234
Total	12,251	11,206	603	442

Thus the current level of non-compliance is estimated at 442 applications.

15 Days

As noted, of the approximately 12,350 proposed micro-embedded generation projects that have applied to Hydro One, as of April 11, 2011, about 100 were being prepared for processing. The remaining 12,215 comprise some 9,159 where the proposed micro-embedded generation facility is located at an existing customer connection, and therefore require Hydro One to issue an offer to connect or reason for refusal within 15 days. Hydro One has issued such notice to 8,883 project proponents. Of the remaining, 68 were being processed, still within the 15-day timeline, and 208 had not been issued notice

Renewable Energy Timeline

June 2003	Ministerial Directive (John Baird) to Ontario Energy Board regarding regulatory reform to enable “private sector” investment in alternative energy forms
May 2005	OSEA released <i>Powering Ontario Communities: Proposed Policy for Projects up to 10 MW</i>
August 2003	Power Blackout in Ontario and north eastern US
October 2003	Liberals elected with platform including 2700 MW of renewable energy and phase of coal generation by 2010
January 2005	OPA established and procurement process for 1000 MW of renewable energy transferred from Ministry to OPA
August 2005	Ministerial Letter (Dwight Duncan) to Ontario Energy Board and Ontario Power Authority regarding a standard offer program for clean and renewable energy citing the need to remove regulatory barriers and address connection issues
December 2005	OEB and OPA delivered draft RESOP
March 2006	Premier McGuinty and Dr. Suzuki announced RESOP to facilitate individuals, farmers, First nations and communities to generate renewable energy
June 2006	Supply mix Directive doubled renewable energy target suggested by OPA
November 2006	Orange Zone (connection limitations areas) announced
November 2006	RESOP Program launched
April 2007	OPA issues First Quarter Report: 36 contracts representing 238 MW executed
November 2007	OSEA released Renewables without Limits (Advanced Renewable Tariffs)
January 2008	OPA issues Progress Report: 262 contracts executed representing 1,025 MW
May 2008	OEB initiates EB-2008-0102 to amend DSC to ensure timely connections
May 2008	OPA issues revised RESOP rules, claiming target of 1000 MW had been met although less than 30 MW were connected
May 2008	OSEA called for a Green Energy Act to embed ARTS in legislation
June 2008	Hydro One raised concerns in meeting timelines for connection in EB-2008-0102
June 2008	Green Energy Act Alliance established
September 2008	GEAA issues Vision for a Green Ontario

Renewable Energy Timeline

September 2008	Minister Smitherman sends IPSP back to OPA to determine if more conservation and renewable energy is possible
October 2008	GEEA meets with Minister Smitherman
December 2008	OSEA issues <i>Recommendations for Procuring Sustainable Energy: An Addendum to Renewables Without Limits</i>
January 2009	GEEA issues Proposal for a Green Energy Act for Ontario
January 2009	Hydro One is generally supportive of OEB amendments to DSC in EB-2008-0102
February 2009	Minister Smitherman introduces Bill 150 – Green Energy and Green Economy Act
Feb 2009	Last RESOP Report: 438 contracts executed representing 1,412 MW; Less than 400 MW which are connected as of June 30.
May 2009	Legislature passes Bill 150.
October 2009	FIT and Micro Fit Program Launched
June 2010	16,756 applications with a capacity of 154 MW Contracts Executed 522/3 MW
November 2010	Hydro One advised OEB that it was in non-compliance on timelines
September 2010	19, 891 Applications/182 MW 894 Contracts Executed/6 MW
April 2011	Hydro One filed application for exemption
July 2011	OEB initiated EB-2011-0118
August 2011	34,976 Applications/322 MW 6780 Contracts Executed/59 MW

Document #: 454603