

Hydro One Networks Inc.

7th Floor, South Tower
483 Bay Street
Toronto, Ontario M5G 2P5
www.HydroOne.com

Tel: (416) 345-5680
Cell: (416) 568-5534
Frank.DAndrea@HydroOne.com



Frank D'Andrea

Vice President, Regulatory Affairs & Chief Risk Officer

December 21, 2018

BY COURIER

Ms. Kirsten Walli
Secretary
Ontario Energy Board
Suite 2700, 2300 Yonge Street
P.O. Box 2319
Toronto, ON M4P 1E4

Dear Ms. Walli:

EB-2014-0360 & EB-2015-0176: Report on (a) Hydro One's Progress in Migrating "Hard to Reach" Regulated Price Plan (RPP) Customers to Time-of-Use (TOU) Pricing and (b) the Number and Accuracy of Estimated Bills Received by "Hard to Reach" RPP Customers

Hydro One Networks Inc. ("Hydro One") has been granted two exemptions by the Ontario Energy Board (the "Board") in respect of the identified "hard to reach" TOU customers in its service territory, whose meters do not communicate reliably with the smart meter network. In the Decision and Order issued on March 26, 2015 for the EB-2014-0360 application, the Board exempted Hydro One from implementing TOU pricing by the mandatory date established in the Standard Supply Service Code for these "hard to reach" customers. In the Decision and Order issued on September 24 for the EB-2015-0176 application, the Board exempted Hydro One from certain sections of the Distribution System Code related to estimated billing and billing accuracy for the same "hard to reach" customers. Both exemptions granted by the Board are effective until December 31, 2019.

Hydro One is providing the attached 2018 report to fulfill its reporting obligations related to these exemptions, as set out by the Board in its Decision and Order for EB-2014-0360 and EB-2015-0176. The report has been divided into two sections. The first section addresses the reporting requirements associated with the Decision and Order for EB-2015-0176 while the second section addresses common reporting requirements associated with the Decision and Order for both EB-2015-0176 and EB-2015-0176. The key highlights of Sections 1 and 2 of the report are summarized below.

Section One details the frequency and accuracy of estimated bills issued to the identified "hard to reach" customers. From December 2017 until the end of November of 2018, approximately 35,000 "hard to reach" customers received estimated bills due to smart meter network communication issues. This represents a 15% decrease in the number of customers now receiving estimated bills compared to the same period a year ago. An assessment of the accuracy of the bills issued to "hard to reach" customers

has confirmed that 96.5% of the estimates analyzed were within a 10% variance of the actual meter readings for the same billing window and 66.2% of the estimates were found to be within a 1% variance of the actual meter reading. The assessment results continue to confirm that no fundamental changes are required to be made to the billing system estimation routines and logic to improve billing estimate accuracy.

Section Two of the report provides a summary of the progress that Hydro One has made in transitioning “hard to reach” customers to TOU pricing and discusses the impact that technological and communication network infrastructure improvements have had on enabling this transition. From January until the end of November 2018, approximately 2,000 “hard to reach” customers were migrated from two-tier pricing to TOU pricing as a result of improved meter communication reliability with Hydro One’s Advanced Meter Reading Infrastructure (AMI) network. This figure is below our forecast for 2018 and is largely due to the fact that Hydro One has determined that further monitoring of meter communication performance reliability is required prior to migrating customer to TOU pricing.

For further details related to our progress in transitioning these “hard to reach” customers to TOU pricing and our assessment of the accuracy of estimated bills for the identified “hard to reach” customers, please refer to the attached report.

Sincerely,

ORIGINAL SIGNED BY FRANK D’ANDREA

Frank D’Andrea

**Report for EB-2014-0360 (TOU Pricing Exemption) &
EB-2015-0176 (Billing Accuracy and Estimated Billing
Exemption)**

December 21, 2018

BACKGROUND

On May 6, 2015, Hydro One Networks Inc. (“Hydro One”) applied for an exemption (EB-2015-0176) from certain sections of the Distribution System Code related to estimated billing and billing accuracy requirements for approximately 170,000 Regulated Price Plan (“RPP”) customers who are defined as “hard to reach” (and are the subject of Hydro One’s previously-approved Time-of-Use (“TOU”) exemption (EB-2014-0360).

The Board granted the exemption in its Decision and Order on EB-2015-0176, dated September 24, 2015, subject to the condition, among others, that Hydro One perform the following in respect of the “hard to reach” customers:

- For the portion of the ~170,000 “hard to reach” customers that are non-seasonal residential or General Service < 50 kW, Hydro One will bill these customers on a monthly basis and manually read their meters on a quarterly basis. To the extent that the Advanced Metering Infrastructure network provides remote reads within the billing window, these reads will be used to issue monthly bills between quarterly planned actual bills based on an actual read instead of a planned estimate.
- Similarly, for the portion of the “hard to reach” customers that are seasonal customers, Hydro One will bill these customers on a quarterly basis and manually read the meters on an annual basis. Again, to the extent that the Advanced Metering Infrastructure network provides remote reads within the billing window for these seasonal customers, these reads will be used to issue quarterly bills based on an actual read instead of a planned estimate.

In addition, the Board also required that Hydro One file a report on its progress in transitioning the identified “hard to reach” customers to monthly billing based on actual reads 98% of the time on December 31, 2015, December 31, 2016, December 31, 2017 and December 31, 2018. Section 1 of this report addresses this reporting requirement and includes the following details:

- The number of “hard to reach” customers receiving estimated bills as a result of smart meter network communications issues;
- An assessment of the accuracy of estimated bills;
- How Hydro One has and will be improving its accuracy with respect to estimated bills and how it is mitigating future estimated bills to be as accurate as possible.

On December 1, 2014, Hydro One applied for an extension to its exemption (EB-2014-0360) from implementing TOU pricing by the mandatory date specified in the Standard Supply Service Code for the approximately 170,000 eligible RPP customers who are defined as “hard to reach”. The Board granted

the TOU Pricing Exemption in its Decision and Order on EB-2014-0360, dated March 26, 2015, subject to, among other things, to a requirement for a report to be filed on December 31, 2016 and December 31, 2018. Section 2 of this report addresses this reporting requirement and includes the following:

- Status updates of any potential significant improvements in telecommunications infrastructure and/or future technological advancements in Automated Meter Reading Infrastructure (Auto);
- An update on reliable cellular network coverage expansion and its impact on affected customers; and
- Hydro One's progress in transitioning hard to reach customers to TOU pricing

The objective of this report is to satisfy the reporting requirements of both these Decisions and Orders.

SECTION ONE – ESTIMATED BILLING AND BILLING ACCURACY

This section of the report provides an update to the Report on Billing Accuracy and Estimated Billing submitted on December 22, 2017 that fulfilled the reporting requirements of EB-2015-0176.

2018 BILLING ESTIMATION FREQUENCY

The total population of “hard to reach” customers fluctuates over time and is currently split about 80/20 between non-seasonal (both residential and commercial) and seasonal customers respectively. As of the end of November 2018, the number of identified “hard to reach” customers stands at approximately 110,000, down 2% from the 112,000 customers reported at the end of 2017. Of the remaining “hard to reach” customers, 90,000 are non-seasonal (residential and commercial) and 20,000 are seasonal residential customers.

During the 12 months ending November 2018, approximately 35,000 of the “hard to reach” non-seasonal customers received estimated bills as a result of smart meter network communication issues. This represents an improvement of 15% over 2017 when 41,000 such customers received estimated bills. In accordance with Hydro One’s proposed billing plan, non-seasonal “hard to reach” customers would have received one out of three bills in each quarter (or 33%) based on actual reads, and seasonal customers would have received one out of four bills each year (or 25%) based on actual reads.

The graph in Figure 1 below illustrates the distribution of “hard to reach” non-seasonal customer accounts that received bills based on estimated reads over the one year period ending November 30, 2018. From this figure, it can be seen that the manual meter reading effort and frequency continue to be significantly augmented by the availability of additional actual reads from the Advanced Meter Reading Infrastructure (AMI) network in months when an estimate was originally planned. In addition, improved monitoring of missed on-cycle manual readings has resulted in earlier identification of issues and remedial actions being taken to avoid persistent estimating.

In fact, 19% (up from 13% in 2017) of non-seasonal customers received four or fewer actual reads over the course of the year, which defines the minimum threshold for the number of actual reads that should be received for non-seasonal customers. While the actual number of customers receiving estimated bills is smaller compared to last year, the percentage is higher because all but the customers with the worst communicating meters remain as part of the “hard to reach” population. Nevertheless, billing accuracy for “hard to reach” customers remains better than originally planned for two main reasons:

- the availability of remote actual reads, and
- the implementation of rigorous monitoring, reporting and remedial follow-up on meters that are scheduled for manual reading, but the reading is not obtained within the billing window.

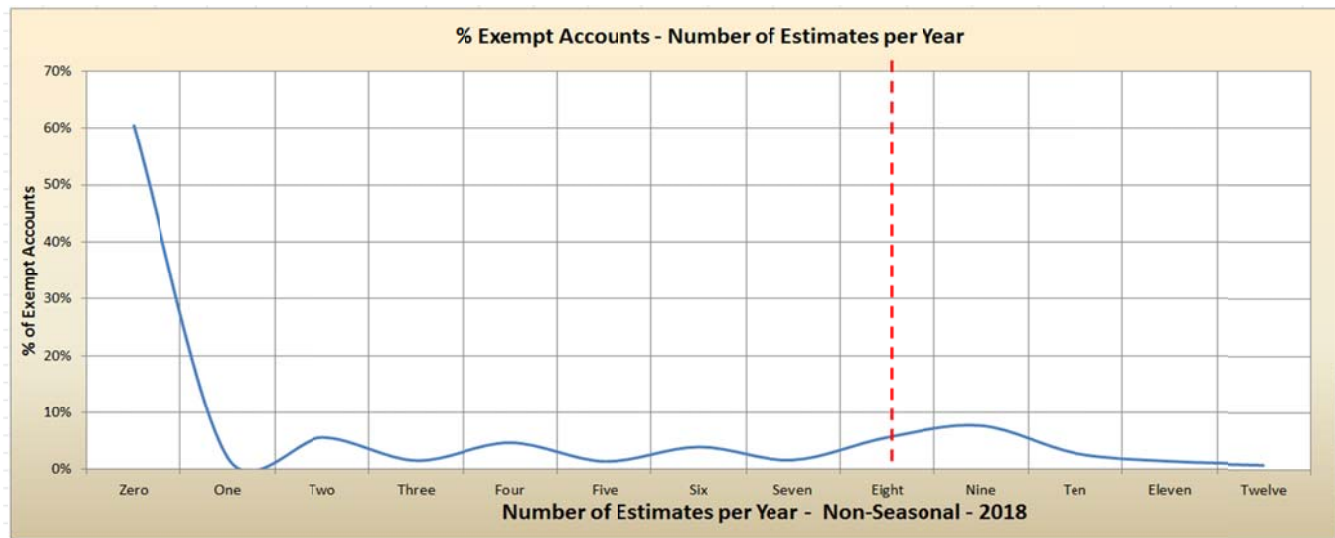


Figure 1: Percentage Distribution of Non-Seasonal “Hard to Reach” Customers Receiving Bills Based on Estimated Reads 2018

For the 12 months ending November 2018, the number of bills issued based on actual reads for the “hard to reach” customers continues to be higher than planned such that:

- 60% of non-seasonal “hard to reach” customers (approximately 54,000) received *all* of their bills based on actual meter reads and this segment will be assessed for potential future migration to TOU rates;
- 70% of non-seasonal “hard to reach” had more than 75% of their bills issued based on actual reads, compared to the minimum planned level of 33% and;
- 74% of non-seasonal “hard to reach” had more than 60% of their bills issued based on actual reads.

However, despite this better performance for the vast majority of these customers, Hydro One was unable to obtain manual readings as specified in its proposed plan for approximately 13% of the identified non-seasonal “hard to reach” customers and less than 2% of seasonal “hard to reach” customers. These customers received a higher number of estimated bills than planned. For these occurrences, manual readings could not be obtained due to meter access issues -- specifically the inability to gain physical access to inside meters and access issues due to road conditions or water access issues in more remote areas.

For the identified seasonal “hard to reach” customers, nearly 99% received a higher number of bills based on actual readings than planned, with 42% receiving *all* of their bills based on actual meter readings due to the availability of automated meter reads. Less than 2% of seasonal customers identified as “hard to reach” (313 customers) received a higher number of estimates than planned because Hydro One was unable to obtain the planned annual manual reading due to access issues.

2017 BILLING ESTIMATION ACCURACY

The accuracy of estimated bills was assessed by comparing estimated usage data from Hydro One's billing system to *actual* meter read/usage data reported to our Advanced Meter Reading Infrastructure from those same meters, for the same billing cycle period.

The graph in Figure 2 below shows that for 96.49% of bills issued based on estimated data, the variance was within 10% of the actual meter readings/data. Furthermore, 66.16% of those bills were based on estimates that were within a variance of 1% of the actual meter reads. This year's estimation accuracy figures are slightly lower compared to the figures reported last year (97.56% and 77.6% respectively). It is evident based on the assessment performed that the accuracy of billing estimates from Hydro One's billing system continues to be dramatically improved since its implementation in 2013, due to the availability of more customer-specific historical consumption data. A detailed review of the billing system estimation routines and algorithms has not revealed any significant or systemic issues with the logic and this is further supported by the analysis presented below.

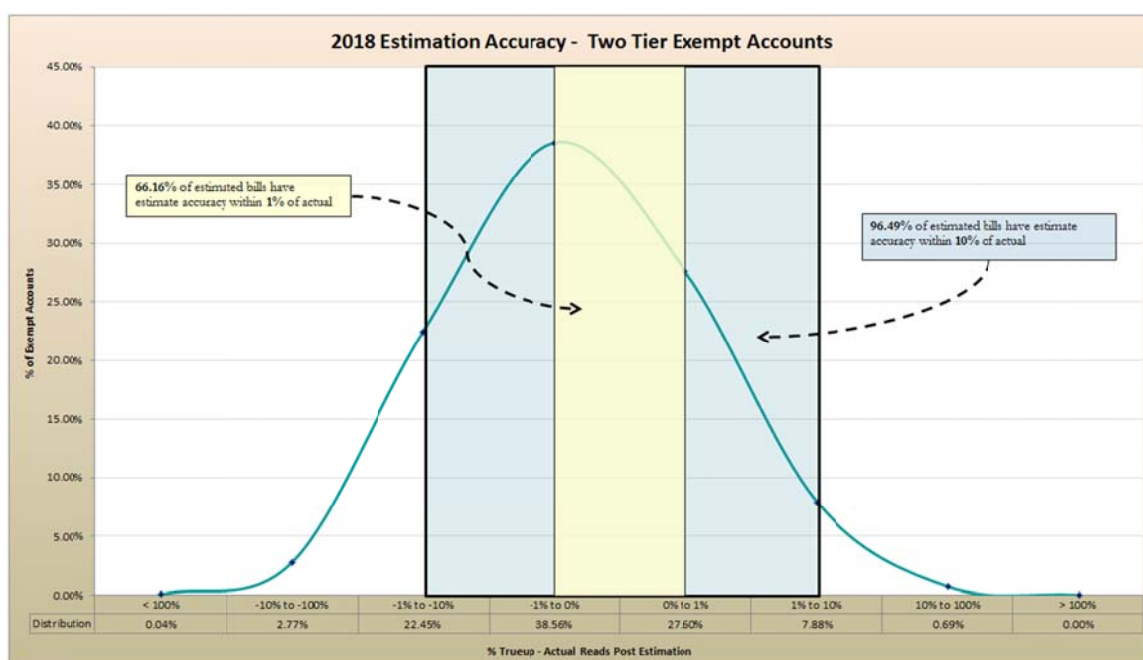


Figure 2: Bill Estimation Accuracy for all “Hard to Reach” Customers

An audit of those “hard to reach” accounts where the estimates exceeded 10% of the actual/true-up meter read was performed utilizing billing/usage history, contact notes and service notifications for the account to gain insight into the specific factors that led to the less accurate estimates. As in prior years, the same factors were identified in cases involving estimates with a greater than 10% variance:

1. Significant change in customer consumption pattern from the previous year, typically caused by a change in heating source at the premise, a significant building renovation or expansion, a household change in terms of number of occupants/occupancy pattern or a major equipment addition/removal.
2. New service/move-in connections where there is no relevant consumption history available.
3. Meter access challenges (i.e. meters located on islands, seasonally closed roads, meters located within enclosures, breakers that are before (on the line side versus the load side) the meter, etc.)

Hydro One continues to improve the estimates in these situations in the following ways:

- requesting additional information from customers at the time of new service/move-in connection;
- where there is inadequate customer-specific usage history available, using usage history for the premise or the average for the rate class in the geographic area;
- continuing to encourage customers to advise of significant changes in their consumption patterns and/or power-consuming equipment;
- continuing to work with customers where we have persistent access challenges by encouraging customer reads and/or providing advance notice to the customer of the next planned meter reading window so that, to the extent possible, access issues can be resolved and our field staff can obtain actual meter readings/data.
- Identifying services where the breaker is on the line side (rather than the load side) of the meter

SECTION TWO – PROGRESS IN TRANSITIONING CUSTOMERS TO TOU PRICING

This section of the report provides information to the Board on significant technological improvements and updates on reliable cellular network expansion in Hydro One's service territory as well as technological improvement in its AMI network as required by the Decision and Order in EB-2014-0360.

TECHNOLOGICAL AND COMMUNICATION INFRASTRUCTURE IMPROVEMENTS

In 2018, there were no significant advancements in the cellular network coverage that resulted in improved communication with the AMI in the Hydro One service territory. Bell continues to expand their network, but this is occurring at a slowing rate. Most of Bell's focus is aimed at upgrading existing sites with Long Term Evolution (LTE) infrastructure. In addition, Hydro One has replaced meters as a result of Bell's CDMA decommissioning, which has now postponed till early 2019. There has been no degradation of Hydro One's meter performance as a result.

During the year, Hydro One commissioned some new cellular-based meters that provide a broader portfolio of product options to support reliable communication as part of its AMI technology advancement.

CUSTOMERS MIGRATED TO TOU PRICING IN 2018

In 2018, Hydro One determined that ongoing reliability of meter communication performance required further monitoring and only a small number of meters were migrated to TOU pricing. Although the 2017 report estimated from 8,000 to 20,000 customers might be migrated during 2018, the actual net reduction in "hard to reach" meters realized for this period was approximately 2,000 (from 112,000 to 110,000 meters).

Hydro One will continue to monitor meter communication for the remaining "hard to reach" meters through 2019 and will migrate meters from tiered to TOU pricing when there is adequate confidence, based on demonstrated ongoing long-term reliable meter communication performance that high quality/accuracy TOU billing is assured.