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Vice President
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December 31, 2015

BY COURIER

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

Dear Ms. Walli:

EB-2015-0176 – Report on Estimated Billing and Billing Accuracy for Hydro One’s “Hard to Reach” Time-of-Use (TOU) Regulated Price Plan (RPP) Customers

As ordered by the Board in its Decision and Order (“the Order”) issued on September 24, 2015, Hydro One Networks Inc. (“Hydro One”) is providing the Board with its first summary report on the frequency and accuracy of estimated bills issued to those identified “hard to reach” TOU customers, whose meters have demonstrated poor levels of communication reliability with the smart meter network. The findings and results discussed in the attached report are based on estimated bills issued to these customers over the period from January through November of 2015.

In accordance with the reporting requirements set out in the Order, the attached report provides specific details on the following:

- The number of “hard to reach” customers receiving estimated bills as a result of smart meter network communication issues;
- An assessment of the accuracy of estimated bills received by these customers;
- Efforts undertaken by Hydro One to improve the accuracy of its estimated bills.

As of November 2015, approximately 101,000 “hard to reach” customers received estimated bills in 2015 due to smart meter network communication issues. In its assessment of the billing accuracy, Hydro One found that the accuracy of the estimated billing function has improved dramatically since the implementation of its new customer billing system. This is corroborated by the fact that 95.6% of the estimates analyzed were within a 10% variance of the actual meter

readings for the same billing period. Furthermore, 72.5% of the estimates were found to be within a 1% variance of the actual same day reads – creating a very tight accuracy bell curve for estimated bills. The significant improvements realized in the estimated billing accuracy are due in large part to the availability of better customer-specific historical usage data on which to base the estimation algorithms. The results of the assessment confirm that no fundamental changes are required to be made to the billing system estimation routines and logic to improve billing estimate accuracy.

An audit of the outliers of the assessment (estimated bills with a variance greater than 10% of the actual same day reads) has revealed three factors that have a significant impact on estimated bill accuracy: a) an absence of consumption history for new service/move-in type connections b) changes in a customer's historical consumption profile/pattern and c) issues involving meter access. There are some potential improvements that can be made in these areas and these are discussed in the report.

In its last letter to the Board, issued on December 1, 2015, regarding its TOU exemption (EB-2014-0360), Hydro One indicated that it plans to convert approximately 65,000 “hard to reach” TOU customers to two-tier pricing, commencing in January 2016. The high level of accuracy observed in its assessment of estimated bills has given Hydro One confidence that these customers should continue to see fewer billing errors when they receive planned estimated bills. Hydro One also stated in its letter that it plans to transition approximately 57,000 “hard to reach” customers from two-tier pricing to TOU pricing, which means that these customers will now begin receiving monthly bills based on actual reads instead of planned estimated bills. Moving forward, Hydro One will continue to assess investments to improve the smart meter network and opportunities for transitioning more “hard to reach” customers to monthly billing based on actual meter reads.

Sincerely,

ORIGINAL SIGNED BY ODED HUBERT

Oded Hubert



EB-2015-0176

Hydro One Networks Inc.

Report on Billing Accuracy and Estimated Billing

December 31, 2015

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 ("DSC") related to estimated billing and billing accuracy requirements for approximately 170,000 Regulated Price Plan ("RPP") customers that are the subject of Hydro One's previously-approved Time-of-Use ("TOU") exemption (EB-2014-0360). The additional exemption pertaining to estimated billing and billing accuracy was sought for these customers because Hydro One could not economically provide monthly bills that are based on actual reads at least 98% of the time. The technical considerations that lead to that conclusion are the same as those discussed in the December 1, 2014 application for the extension for TOU pricing (EB-2014-0360) and Hydro One's reply submission in that application (dated February 27, 2015).

The Board granted the exemption in its Decision and Order on EB-2015-0176, dated September 24, 2015, subject to the following notable conditions, among others:

- 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.
- Hydro One shall file a report to the OEB 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. This report shall also include 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.

The objective of this report is to fulfill the reporting requirements in the last condition noted above, related to reporting on bill accuracy and estimations. The term of Hydro One’s exemption from estimated billing and billing accuracy requirements coincides with the duration of the TOU exemption for the approximately 170,000 hard to reach customers, and ends on December 31, 2019. Hydro One recently submitted a report under EB-2014-0460 that provided its plan, including its customer communications plan and products (direct mail letter and agent scripting), for migrating 65,000 “hard to reach” customers on TOU pricing to RPP two-tier pricing and the resulting changes to their meter reading and billing frequencies. In its submission, Hydro One also noted that it is planning to transition approximately 57,000 customers, who are currently on two-tier pricing and whose meters are now communicating reliably with the smart meter network, to TOU pricing. As a result of this transition, these customers will now receive monthly bills based on actual reads instead of planned estimated bills.

2015 BILLING ESTIMATION FREQUENCY

The total population of “hard to reach” customers will fluctuate over time but has remained at approximately 140,000 customers in 2015. During the period from January through November of 2015, 101,450 of these “hard to reach” customers received estimated bills as a result of smart meter network communication issues. 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” customer accounts that received bills based on actual reads over a one year period. From this figure, it can be seen that the manual meter reading effort and frequency are being significantly augmented by the availability of additional actual reads from the Advanced Metering Infrastructure network in months when an estimate was originally planned. In fact, only a very small percentage of customers received four or fewer actual reads over the course of a year, which defines the minimum threshold for the number of actual reads that should be received for non-seasonal customers. As a result, billing accuracy for both non-seasonal and seasonal “hard to reach” customers has greatly improved simply because Hydro One has been able to use remote actual reads more frequently for billing than was planned.

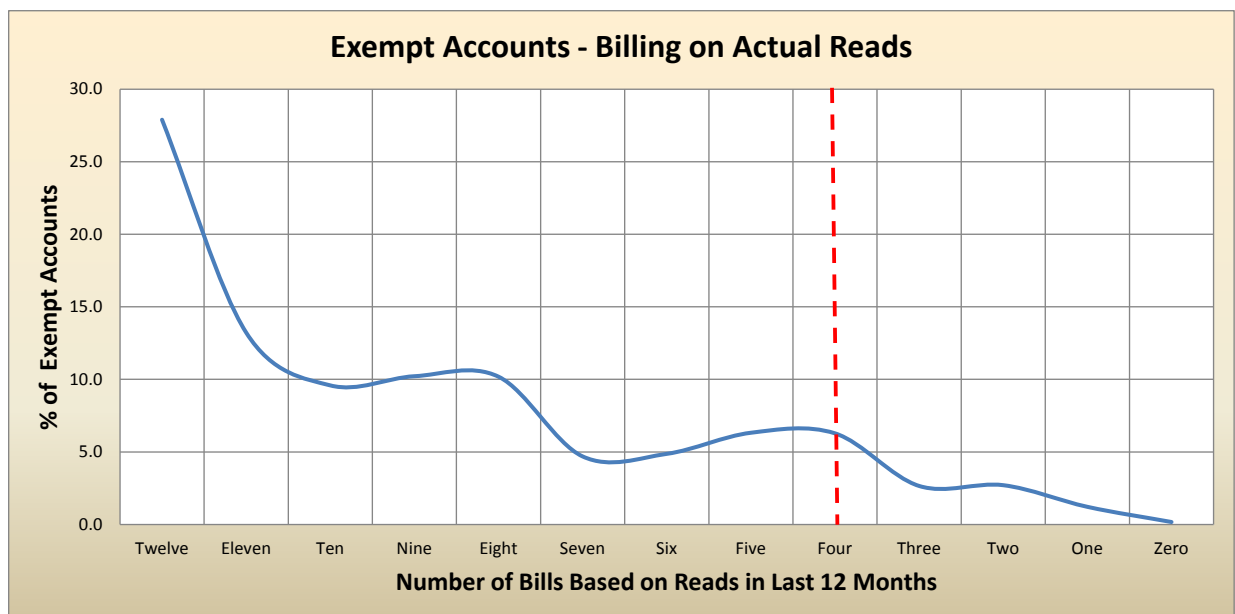


Figure 1: Percentage Distribution of “Hard to Reach” Customers Receiving Bills Based on Actual Reads

In 2015, the number of bills issued based on actual reads for these “hard to reach” customers was substantially higher than planned such that:

- 27% of “hard to reach” customers (approx. 39,000) received *all* their bills based on actual meter reads and this segment will be assessed for potential migration to TOU rates;
- 61% of these customers had more than 75% of their bills issued based on actual reads, compared to the minimum planned levels of 25% (for seasonal) and 33% (for other customers) and;
- 87% of the customers had more than 60% of their bills issued based on actual reads.

However, despite this better performance for the majority of customers, Hydro One was unable to obtain manual readings as specified in its proposed plan for approximately 6.7% of the identified “hard to reach” customers. These customers received a higher number of estimated bills than planned. For all of 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.

2015 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 Metering Infrastructure from those same meters, for the same billing cycle period.

The graph in Figure 2 below shows that for 95.6% of bills issued based on estimated data, the variance was within 10% of the actual meter readings/data. Furthermore, 72.4% of those bills were based on estimates that were within a variance of 1% the actual meter reads.

It is evident based on the assessment performed that the accuracy of billing estimates from Hydro One’s billing system has improved dramatically since the system implementation due to the availability of customer-specific historical consumption/usage 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 above.

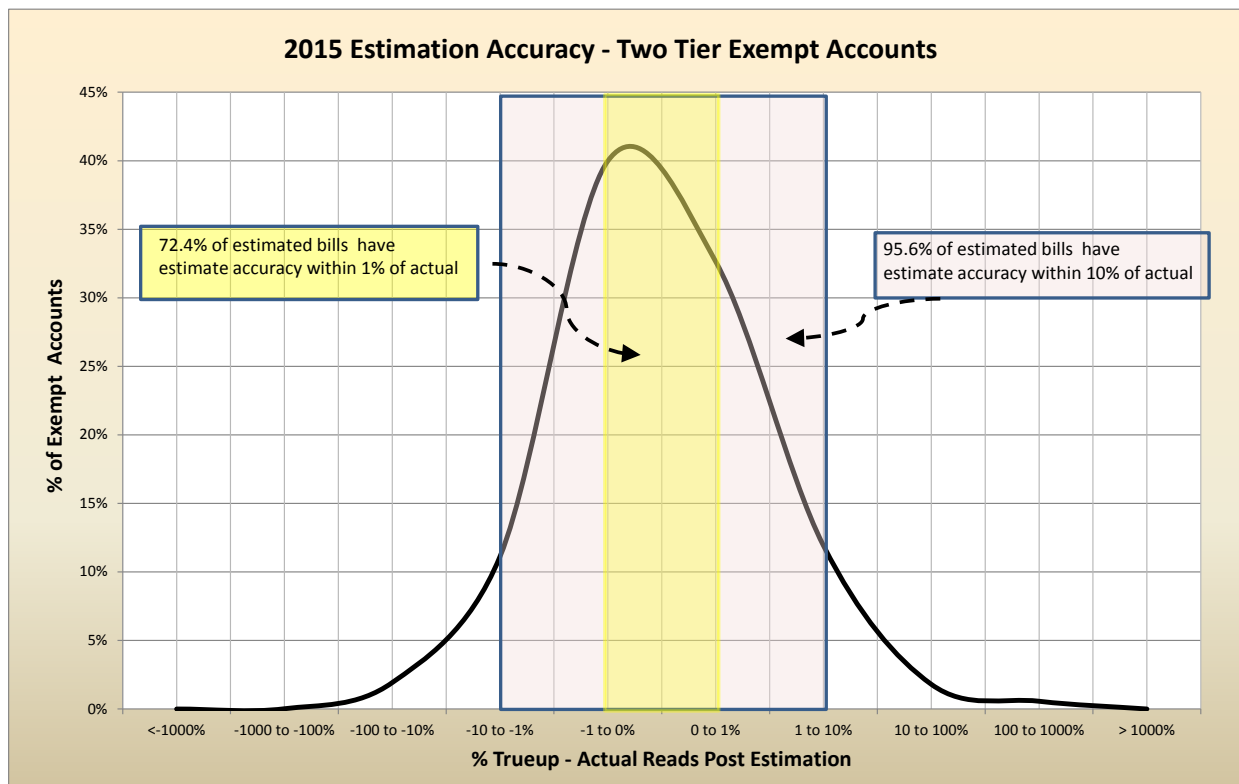


Figure 2: Bill Estimation Accuracy for “Hard to Reach” Customers

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 were leading to the less accurate estimates. The following factors were identified in those 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 an 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) of the meter, etc.)

Hydro One is exploring potential opportunities to support improvements to the estimates in these situations, including:

- requesting additional information from customers at the time of new service/move-in connection;
- continuing to encourage customers to advise of significant changes in their consumption patterns;
- working with customers where we have persistent access challenges and 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.