

SERVICE QUALITY INDICATORS

1.0 INTRODUCTION

Hydro One Distribution monitors and reports service quality indicators as required in Chapter 15 of the Ontario Energy Board 2006 Electricity Distribution Rate Handbook. Prior to 2009, Hydro One tracked six customer service indicators and three service reliability indices. As of January 1, 2009 Hydro One will be tracking ten customer service indicators and three service reliability indices on a monthly basis. Results are reported internally on a monthly basis. Reports are provided to the Ontario Energy Board (“the Board”) annually in accordance with the 2006 Electricity Distribution Rate Handbook and in the future will be reported in accordance with the Distribution System Code (“DSC”) amendments that were issued in March and June 2008. Hydro One Customer Service and Service Reliability results and targets from 2006 to 2011 are shown in Tables 1 and 2. Over the historical period, Hydro One Distribution met all the Board targets, except SAIDI & SAIFI in 2007 excluding force majeure¹ impacts.

1.1 Customer Service Indicators

Hydro One Distribution consistently tracks, analyzes and reports the ten customer service indicators on a monthly basis as part of our internal performance reporting process. This process identifies areas of concern so that they can be immediately addressed and brought back in line with the Board requirements.

Analysis of monthly and annual result trends provides valuable information for corporate planning, program planning and services management of resources.

¹Hydro One deems a *force majeure* to have occurred when 10% or more of Hydro One customers have been interrupted by an event. See Page 4 for further information about *force majeure*.

1 The definitions of these indicators are provided in Section 2.1.

2

3 **1.2 Service Reliability Indicators**

4

5 Customer interruptions are analyzed and reported internally throughout the year.

6

7 Interruption data is collected and recorded in the Distribution Operations & Maintenance
8 Centre (part of Ontario Grid Control Centre), through communications with field staff
9 involved in the interruption restoration. It is input into a database system called Outage
10 Response Management System which provides data for in-depth performance analysis to
11 drive strategy and business investment decisions.

12

13 Interruption data is used to calculate the Board reliability indices (see Section 2.2 for
14 definitions) monthly which are reported internally.

15

16 There is ongoing analysis of approximately 40,000 annual interruptions. Trends of
17 frequency, duration, cause of interruptions, feeders, location, etc. are analyzed to allow
18 prioritization of maintenance and capital programs on the distribution system.

19

20 **2.0 DEFINITIONS**

21

22 **2.1 Customer Service Indicators**

23

24 The customer service indicators are as follows:

25

26 2.1.1. Appointments

27

28 2.1.1.1 Appointment Scheduling

29

1 The percentage of appointment scheduling requests must take place within 5 business
2 days on which all applicable service conditions are satisfied or at a later date agreed upon
3 by the customer and Hydro One Distribution. This applies regardless of whether the
4 customer or customer's representative's presence is required.

5
6 In instances where customer or customer representative presence is required, Hydro One
7 Distribution must offer to schedule the appointment during Hydro One's regular hours of
8 operation within a window of time no greater than 4 hours, and must attend the meeting
9 at the appropriate time.

10
11 This does not apply to appointments that are subject to the requirements in the section on
12 Connection of New Services.

13
14 2.1.1.2 Appointments Met

15
16 The percentage of appointments met (as requested in the morning or afternoon of a
17 particular date) includes appointments for disconnects and/or reconnects for maintenance
18 or upgrades, connecting new services, under ground cable locates, inspections, meter
19 reading and instructions on prepaid meters.

20
21 The appointment may be considered to be met even when the customer failed to attend.

22
23 2.1.1.3 Rescheduling a Missed Appointment

24
25 In instances of rescheduling, an attempt to inform the customer before the appointment
26 should be made and an attempt to reschedule should occur one business day following the
27 initial appointment. This does not apply if the appointment is missed due to the failure of
28 customer or customer representative to attend.

1 2.1.2 Connection of New Services:

2

3 The percentage of connections for a request of a new low voltage service (<750 volts)
4 that must be completed within 5 business days from which all applicable service
5 conditions are satisfied, or at a later date agreed upon by the customer and Hydro One
6 Distribution.

7

8 The percentage of connections for a request of a new high voltage service (>750 volts)
9 that must be completed within 10 business days from which all applicable service
10 conditions are satisfied, or at a later date agreed upon by the customer and Hydro One
11 Distribution.

12

13 2.1.3 Emergency Response:

14

15 The percentage of responses to emergency trouble calls (including fire, ambulance,
16 police) met within 120 minutes for Rural utilities, and 60 minutes for urban utilities. Due
17 to the predominantly rural nature of its distribution system, Hydro One Distribution is
18 required to meet the 120 minutes response time. The elapsed time is measured from the
19 call to the arrival of Hydro One qualified service personnel.

20

21 2.1.4 Telephone

22

23 2.1.4.1 Telephone Accessibility:

24 The percentage of incoming calls answered within 30 seconds by the customer care
25 center, with time counted from when the customer chooses to speak to a customer service
26 representative (using IVR system) or from first ring in all other cases.

27

1 2.1.4.2 Telephone Call Abandon Rate

2
3 The percentage of incoming calls abandoned before being answered following the 30
4 second period outlined in 2.1.4.1 Telephone Accessibility.

5
6 2.1.5 Underground Locates:

7
8 The percentage of underground cable locates completed within 5 days. The days elapsed
9 is measured from the customer service request until the completion of the underground
10 cable locate. This is no longer required as per Amendments to the Distribution System
11 Code to Implement Electricity Service Quality Requirements and came into force on
12 January 1, 2009.

13
14 2.1.6 Written Response to Inquiries:

15
16 The percentage of responses to customers' request for written information relating to
17 their accounts, required to be met within 10 days from the date where any conditions
18 associated with their enquiry have been satisfied or from the date of receipt of the
19 enquiry. The written response is deemed to be sent on the date it is faxed, mailed or e-
20 mailed by Hydro One, and when it includes a written acknowledgement of receipt of the
21 qualified enquiry and a specific date in which a complete response will be provided.

22
23 **2.2 Service Reliability Indicators**

24
25 The three Service Reliability Indicators are:
26

1 2.2.1 Frequency of Interruptions (SAIFI):

2

3 The average number of times which Distribution customers served by Hydro One were
4 interrupted in the year.

5

6 2.2.2 Duration of Interruptions (SAIDI):

7

8 The average numbers of hours that Distribution customers served by Hydro One were
9 without power in the year.

10

11 2.2.3 Average Interruption Time (CAIDI):

12

13 The average interruption duration (in hours) of Distribution customers who were
14 interrupted.

15

16 The above reliability indices measure all interruptions caused by planned and unplanned
17 interruptions of 1 minute or more.

18

19 **2.3 Force Majeure**

20

21 Hydro One Distribution deems a *force majeure* to have occurred when 10% or more of
22 Hydro One customers have been interrupted by an event.

23

24 An event may be a storm (usually the case), the August 14, 2003 blackout or any other
25 problems that interrupt 10% or more customers and cause a change in the normal
26 restoration business processes.

27

1 All Hydro One Distribution customers interrupted throughout the duration of the event
2 while normal restoration business processes are suspended are counted in the
3 determination of the numerator of the percent interrupted. The denominator is the total
4 number of customers served at the end of the month when the force majeure occurred.
5 Details of all *force majeure* events that have occurred from 2006 to 2008 are provided in
6 Section 3.3.

7

8 **3.0 RESULTS**

9

10 The results of the ten Customer Service Performance Indicators and the three Service
11 Reliability Indices are attached in Tables 1 and 2 respectively.

12

13 In general, Hydro One Distribution has met and or exceeded all service quality indicators
14 as illustrated in Table 1 of this exhibit.

15

16 **3.1 Customer Service Indicators**

17

18 Table 1 indicates customer service results that overall remains consistent over the
19 historical period and is better than the minimum Board targets.

20

Table 1
Customer Service Indicators

<i>Performance Measure</i>	OEB Target	2006 Actual	2007 Actual	2008 Actual	2009 OEB Target	2010 OEB Target	2011 OEB Target
Appointments							
- Met	≥ 90	92	93	96	≥ 90	≥ 90	≥ 90
- Scheduling	n/a	n/a	n/a	n/a	≥ 90	≥ 90	≥ 90
- Reschedule (Contact customer ≤ 1 day before appointment missed)	n/a	n/a	n/a	n/a	100	100	100
Connection of New Services							
(% completed in ≤ 5 days) - <750V	≥ 90	91	94	95	≥ 90	≥ 90	≥ 90
(% completed in ≤ 10 days) - ≥750V	n/a	n/a	n/a	n/a	≥ 90	≥ 90	≥ 90
Emergency Response -Rural							
(% responded to in ≤ 120 min)	≥ 80	92	88	85	≥ 80	≥ 80	≥ 80
Emergency Response-Urban							
(% responded to in ≤ 60 min) -	n/a	65*	82*	65*	≥ 80	≥ 80	≥ 80
Telephone Accessibility							
(% answered in ≤ 30 seconds)	≥ 65	77	78	82	≥ 65	≥ 65	≥ 65
Telephone Call Abandon Rate							
	n/a	n/a	n/a	n/a	≤ 10	≤ 10	≤ 10
Underground Cable Locates							
(% completed in ≤ 5 days)	≥ 90	92	93	91	N/A**	N/A**	N/A**
Written Response to Inquiries							
(% responded to in ≤ 10 days)	≥ 80	100	100	100	≥ 80	≥ 80	≥ 80

*Emergency Response results including the impact of Force Majeure. The values without the * are the values with *force majeure* removed.

** Removed as per Amendments to the Distribution System Code to Implement Electricity Service Quality Requirements and came into force on January 1, 2009.

3.2 Service Reliability Indicators

Table 2 shows SAIFI (excluded *force majeure*) from 2006 to 2008, at the minimum Board target (or better than target) with the exception of 2007. In 2007, SAIFI missed the Board target due to the impact of three large storms. One storm was in the Niagara

1 Peninsula in January where a freezing rain storm passed through the region over two days
2 (January 15/16). In total, this weather system impacted 9% of Hydro One customers.
3 Another storm was in Eastern Ontario in April, where a powerful storm passed through
4 the region over two days (April 16/17). In total, this weather system impacted 8% of
5 Hydro One customers. The last one storm was in Southern Ontario in August and
6 impacted 9% of Hydro One customers. None of these three weather systems met the
7 *force majeure* criteria. As a result the 2007 total SAIFI of 3.6 interruptions, excluding
8 *force majeure*, is higher than the past seven year (2000-2006) historical average SAIFI of
9 3.0 interruptions.

10
11 Similarly, the 2007 total SAIDI of 8.6 hours is higher than the past seven year (2000-
12 2006) historical average SAIDI of 7.9 hours.

13
14 Five large storm events added an additional 0.4 interruptions to SAIFI and 1.5 hours to
15 SAIDI in 2008. Each of these storms affected 7% to 8% of Hydro One's customers. The
16 storms were not large enough to be considered *force majeure*, however they were large
17 enough to inflict significant damage on the distribution system.

18
19 The storms and responses occurred on April 11-12 when a late winter storm affecting 8%
20 of Hydro One's customers moved from Iowa into Ontario. The storm consisted of snow,
21 freezing rain, thunderstorms, high winds and a tornado watch. On June 5-6, 7% of Hydro
22 One's customers were impacted due to a line of strong to severe thunderstorms that swept
23 across the province. August 18-19 saw a sharp cold front from northern Ontario sweep
24 across southern Ontario causing severe thunderstorms affecting 7% of Hydro One's
25 customers. A low pressure system off the east coast of the United States tracked through
26 southern Quebec and into Ontario on October 28-29 affecting 8% of Hydro One's
27 customers with interruptions due to strong winds and snow in the early winter storm. On
28 December 14-15 the continuation of very large storm systems in the United States
29 affected 8% of Hydro One's customers due to strong winds and snow. These storm

1 systems started Dec 12th and continued through Dec 15th in the United States with a mix
 2 of heavy rains, ice and wind interrupting millions of customers in the United States.

3

4 As a result the 2008 total SAIFI of 3.6 interruptions, excluding *force majeure*, is higher
 5 than the past seven year (2001-2007) historical average SAIFI of 3.0 interruptions.

6

7 Similarly, the 2008 total SAIDI of 8.6 hours is higher than the past seven year (2001-
 8 2007) historical average SAIDI of 8.0 hours.

9

Table 2
Service Reliability Indicators

10

11

Performance Measure	2006 OEB Tgt	2006 Act	2007 OEB Tgt	2007 Act	2008 OEB Tgt	2008 Act	2009 OEB Tgt	2010 OEB Tgt	2011 OEB Tgt
SAIFI Frequency of Interruptions (#of interruptions per customer)	≤ 3.1	2.9	≤ 3.1	3.6	≤ 3.6	3.5	≤ 3.6	≤ 3.6¥	≤ 3.5¥
SAIFI including Force Majeure		5.2†		4.1††		4.8†††			
SAIDI Duration of Interruptions (hrs of interruption per customer)	≤ 8.0	7.1	≤ 8.0	8.6	≤ 8.6	8.6	≤ 8.6	≤ 8.6¥	≤ 8.6¥
SAIDI including Force Majeure		28.4†		11.4††		21.6†††			
CAIDI Average Interruption Time (#of hrs per interruption)	≤ 2.6	2.4	≤ 2.6	2.4	≤ 2.4	2.4	≤ 2.4	≤ 2.4¥	≤ 2.4¥
CAIDI including Force Majeure		5.5†		2.8††		4.5†††			

12

† See explanation in section “2006 Force Majeure Events”

13

†† See explanation in section “2007 Force Majeure Events”

14

††† See explanation in section “2008 Force Majeure Events”

15

¥ Estimate target based on the 2006 Electricity Distribution Rate Handbook to take the largest value of the past three years

1 **3.3 2006 Force Majeure Events**

2
3 In 2006 there were eight *force majeure* events that met the 10% of customers affected
4 definition. The storms and restorations occurred on February 4 to 8, February 16 and 17,
5 March 13 to 15, July 17 to 22, August 2 to 9, September 24 to 30, October 28 and 29 and
6 December 1 to 3. Each of those events respectively interrupted the following percentages
7 of customers: 44%, 13%, 10%, 42%, 47%, 29%, 14% and 23%.

8
9 On February 4 to 8, 2006 a storm consisting of heavy wet snow and wind (up to 60
10 km/hr) spread across the province from Lake Huron to Sudbury to Ottawa causing
11 widespread damage in Southern Ontario affecting 44% or about 505,000 customers.

12
13 This was followed on February 16 to 17 with rain, freezing rain, snow and winds up to 75
14 km/hr affecting 13% or about 155,000 customers in an area from Windsor to Ottawa.

15
16 On March 13 to 15 a storm throughout Southern Ontario had winds gusting up to 80
17 km/hr, torrential rains, diving temperatures and snow squalls affecting 10% or about
18 120,000 customers.

19
20 The storm starting on July 17 with restoration efforts to the 22 was labeled by
21 Environment Canada as the third worst storm in Canada in 2006. This southern Ontario
22 storm of high winds (up to 80 km/hr), rain and thunderstorms left a swath of damage
23 about 400 km long affecting 42% or about 483,000 customers.

24
25 August 2 to 9, 2006 was also included in Environment Canada's third worst storm list.
26 This storm system triggered 10 tornadoes as it hop scotched through cottage country and
27 into Quebec affecting 47% or about 545,000 customers.

1 On September 24 to 30, severe winds gusting up to 90 km/hr, started at Georgian Bay
2 and moved east across the province affecting 29% or about 334,000 customers

3

4 October 28 to 29 saw an early winter storm consisting of snow and winds gusting up to
5 100 km/hr move from Georgian Bay and North Eastern Ontario to Ottawa affecting 14%
6 or about 164,000 customers

7

8 December 1 to 3 had snow, freezing rain and winds gusting up to 50 km/hr affecting 23%
9 or about 264,000 customers throughout Southern Ontario.

10

11 The effect of these storms resulted in a contribution to the annual SAIDI of 21.3 hours
12 and annual SAIFI of 2.3 interruptions per customer, with a CAIDI of about 9.5 hours.

13

14 **3.4 2007 Force Majeure Events**

15

16 In 2007, there were three *force majeure* events that met the 10% of customers affected
17 definition. The storms and restorations occurred on March 1-3, June 8-9 and July 8-12.
18 Each of those events respectively interrupted the following percentages of customers:
19 16%, 16%, and 18%.

20

21 On March 1 to 3, the storm consisted of freezing rain, ice pellets, snow, rain and winds
22 gusting up to 70 km/hr, affecting 16% or about 184,000 customers from southwestern
23 Ontario to the Ottawa River Valley.

24

25 On June 8 to 9, a fast moving band of thunderstorms from Texas to Sault Saint Marie
26 caused widespread damage and interruptions throughout Mid Western, Eastern United
27 States and Ontario. The thunderstorms moved west to east with heavy rain, strong winds
28 and hail affecting 16% or about 190,000 customers.

1 On July 8 to 12, a heavy band of thunderstorms from North Western Ontario to South
2 Eastern Ontario caused widespread damage and interruptions throughout Hydro One's
3 service territory affecting 18% or about 217,000 customers.

4
5 The effect of these storms resulted in a contribution to the annual SAIDI of 2.7 hours and
6 annual SAIFI of 0.5 interruptions per customer, with a CAIDI of about 5.5 hours.

7
8 **3.5 2008 Force Majeure Events**

9
10 In 2008, there were five *force majeure* events that met the 10% of customers affected
11 definition. The storms and restorations occurred on Jan 9-11, Jan 30-31, Sep 14-15, Nov
12 15-19 and Dec 28-31. Each of those events respectively interrupted the following
13 percentages of customers: 32%, 13%, 10%, 23% and 48%.

14
15 On January 9 to 11, high winds (70 - 130km/hr) swept across most of southern Ontario
16 causing widespread damage to the distribution system. Mixed Freezing Rain also hit the
17 province from south, central to eastern Ontario. This event affected 32% or about
18 380,000 Hydro One customers.

19
20 On January 30 to 31, strong winds moved into southwestern Ontario and continued to
21 move eastward across all of southern and north-eastern Ontario causing extensive
22 damage to the distribution system. This affected 13% or about 156,000 Hydro One
23 customers.

24
25 On September 14 to 15, high winds from hurricane Ike caused extensive damage to the
26 distribution system in southern Ontario and resulted in downed trees and conductor
27 affecting 10% or about 124,000 Hydro One customers.

1 On Nov 15 to 19, a strong storm from the northern United States affected southern
2 Ontario. Heavy rain with gusty northwesterly winds, mixed precipitation and wet snow
3 affected 23% or about 273,000 Hydro One customers.

4

5 On December 28 to 31, a strong wind at 70- 90km/h with gusts to 100 km/h in some
6 locations along with rains in southern Ontario had a very negative impact on the
7 distribution and transmission system. About 48% or 570,000 Hydro One customers were
8 affected.

9

10 The effect of these storms resulted in a contribution to the annual SAIDI of 13.0 hours
11 and annual SAIFI of 1.3 interruptions per customer, with a CAIDI of about 10.3 hours.