



1 **Undertaking JTC1.1**

2

3 To advise the number of Hydro Ottawa poles that have wireline attachments in the
4 communication space

5

6

7 **Response:**

8

9 ~~There are 31,022 HOL poles with wire line attachments for telecommunications that pay~~
10 ~~OEB approved pole attachment rate as of August 13, 2015.~~

11

12 **Revised Response:**

13

14 There are 29,388 HOL poles with wire line attachers (for telecommunications cables)
15 that pay OEB approved pole attachment rate as of August 18, 2015. Outside of the
16 29,388 HOL poles, there are 4,481 HOL poles with only street light as a third party
17 attachers. This totals 33,869 HOL poles with third party wireline and street light
18 attachers.

19



1 **Undertaking JTC1.3**

2

3 Provide number of Hydro Ottawa in-service distribution poles that have third party
4 attachments of any sort.

5

6

7 **Response:**

8

9 ~~There are 35,755 Hydro Ottawa poles with any third party attachment that pay OEB~~
10 ~~approved pole attachment rate as of August 13, 2015.~~

11

12

13 **Revised Response:**

14

15 There are 33,869 Hydro Ottawa poles with any third party attachment that pay OEB
16 approved pole attachment rate as of August 18, 2015.

17



1 **Undertaking JTC1.11**

- 2 a) To provide the numbers of hours with respect to the response to Carriers 12 for the
3 years 2010, 2011, 2012, 2014, and 2015 Year-to-date.
4 b) To provide the amount tracked for annual routine permit processing for 2011, 2012,
5 2014, and year-to-date 2015.
6 c) To provide the number of permits processed each year for 2011 through to 2015
7 year-to-date.

8
9

10 **Revised Response:**

| Undertaking # | Undertaking Description | 2010 | 2011 | 2012 | 2013 | 2014 | YTD July 2015 |
|---------------|---|----------|----------|-----------|-----------|-----------|---------------|
| JTC1.11 (a) | # of Labour Hours | 560 | 1015 | 2,373 | 1,689 | 1,838 | 970 |
| JTC1.11 (b) | Annual Permit Processing ⁽¹⁾ | \$41,907 | \$71,245 | \$171,254 | \$123,906 | \$139,069 | \$74,486 |
| JTC1.11 (c) | # of Permits Processed | 326 | 266 | 182 | 295 | 275 | 105 |

11

12 ⁽¹⁾ Annual permit processing and O.Reg. 22/04 annual mandated construction
13 compliance audits are captured within the same standing work order.

14

15 In 2010, Hydro Ottawa noted that the third party attachers were not meeting their
16 O.Reg. 22/04 compliance audit requirements. As per Hydro Ottawa's Construction
17 Verification Program (approved by ESA), failed initial audits result in the attacher
18 correcting the deficiencies and additional follow up audits until a sample audit does
19 not fail. These additional audits resulted in increased audit costs in the subsequent
20 years.



1 **Undertaking JTC1.12**

2

3 To confirm whether or not the banners are included in the costs that are tracked.

4

5

6 **Response:**

7

8 Yes, Banner attachments are included in the annual routine permit processing costs.

9 However, this represents a small amount of the annual permit processing costs (<1%).

10



1 **Undertaking JTC1.13**

2 For the numbers for wires down and for trees on wires ~~to under~~ to indicate whether the
3 number of calls provided relates to Hydro Ottawa-owned poles only or if it also relates to
4 Hydro Ottawa plus third-party-owned poles that are operated on.

5 _____

6 **Response:**

7
8 With these field visits for non-Hydro Ottawa wires, Hydro Ottawa does not track who
9 owns the poles.

10
11 As a first responder, Hydro Ottawa with its energized electrical equipment on the pole is
12 normally the first point of contact for the public and emergency services with wires
13 low/down and trees in wires. Hydro Ottawa responds to these reports as follows:

- 14
- 15 • If a tree on a wire is reported, Hydro Ottawa will dispatch a forestry technician the
16 following day.
 - 17 • If there are wires low/down on any pole, a Hydro Ottawa crew is dispatched
18 immediately to investigate.
 - 19 • Upon discovering that it is not a Hydro Ottawa owned plant, the affected telecom
20 owner is informed of the issue.

21
22 In responding to these reports, a small percentage of the poles are not owned by Hydro
23 Ottawa. How would Hydro Ottawa be compensated for their response with the telecom
24 wire issues even if the pole is not owned by Hydro Ottawa? Since these reports only
25 involve telecom wires, Hydro Ottawa views that these costs should be directly attributed
26 to the attachers through this LOP component rather than transferring some of these
27 costs to another pole owner.



1 **Undertaking JTC1.14**

2 To explain why the number of poles affected is the same as the number of poles used in
 3 the calculation in 2013.

4 _____
 5

6 **Revised Response:**

7 The number of poles affected in 2013 should read 808, not 1,087. See yellow
 8 highlight in Carriers 13 c) table - Item C below.

9

10 Loss in productivity costs for the years 2010-2015.

| Item | LIP Costs | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 estimate |
|---------------------------|---|---------|---------|---------|---------|---------|---------------|
| Pole Replacement | | | | | | | |
| A | Field Verification (\$) | 48,007 | 72,797 | 70,251 | 81,410 | 79,163 | 100,743 |
| B | Returning Crew (\$) | 111,446 | 168,994 | 163,083 | 188,988 | 183,772 | 233,870 |
| C | # of poles affected ⁽¹⁾ | 476 | 722 | 697 | 808 | 785 | 999 |
| D | # of poles used in calculation ⁽²⁾ | 641 | 972 | 938 | 1,087 | 1,057 | 1,345 |
| Field Verification | | | | | | | |
| E | Wires Down (\$) | 1,664 | 1,408 | 5,504 | 14,720 | 896 | 4,838 |
| F | Tree on Wires (\$) | 21,974 | 24,898 | 18,043 | 25,301 | 20,866 | 22,216 |
| G | # of poles with attachers | 36,075 | 35,929 | 35,870 | 35,633 | 35,519 | 35,389 |
| H | Total LIP Costs per pole (\$) | 5.08 | 7.46 | 7.16 | 8.71 | 8.02 | 10.22 |

11 ⁽¹⁾ Affected poles represent 74.3% of all pole replaced

12 ⁽²⁾ Total number of poles replaced annually include planned replacement program
 13 and unplanned replacement from JDE.

14 Total LIP cost per pole = H = (A + B + E + F) / G



1 **Undertaking JTC1.15**

2

3 To provide information with respect to how the numbers were arrived at with respect to
4 the field verification and returning crew numbers for the years 2014 and 2015

5

6

7 **Response:**

8

9 From response to JTC1.14, 2014 pole replacement visits was based on actuals from
10 JDE. 2015 is based on EOY forecast.

11

12

13



1 **Undertaking JTC1.17**

2
3 (a) to provide an explanation for the differences between the number of wireline
4 attachers as reflected in response to Carriers interrogatory 1(c) and contrast that to
5 Table 1 that was provided in response to Carriers 16;

6 (b) to provide a description of what's included in wireline attachments in the second row;
7 (c), to confirm the difference between the values for specific charge for access to the
8 power poles as reflected in Exhibit C, Tab 2, Schedule 2, page 2 of 3, with the number in
9 Table 1 in response to Carriers 16;

10 (d), to reconcile the numbers in Carriers 4(a) with those numbers that are found in
11 response to Carriers 16

12
13 **Response:**

14
15 a) Interrogatory Carriers 1(c) provided a list of attachers paying the OEB approved
16 attachment rate (except RCMP). Interrogatory Carriers 16 – Table 1 provided an
17 attacher count of only telecom companies.

18
19 b) As per Section 11 of the Competitive Local Exchange Carrier (CLEC) pole
20 attachment agreement(s) with Hydro Ottawa, the OEB approved attachment rate of
21 \$22.35 came into effect as of March 7, 2005. Prior to this date, the attachment rate
22 was tiered and categorized by type of attachments, such as full attachment,
23 clearance, overlash, and partial attachments. The clearance, overlash, and partial
24 attachments pay a smaller percentage of the full attachment rate of \$22.35 and
25 represent <5% of telecom attacher revenue. These types of telecom attachments
26 were also included in the second row and added to revenue from wireline Attachers
27 row (fourth row) of Table 1 of Carriers 16. See revised Table 1 below identifying
28 different pole attachment rates currently being paid. Note, recent telecom attachers
29 pay full OEB approved attachment rate and as older telecom wireline installations
30 are upgraded, the clearance, overlash, and partial attachment rates will be removed
31 or replaced with the full approved attachment rate.



1
2

Revised Table 1

| | 2011 | 2012 | 2013 | 2014 | 2015* (forecast) | 2016* (estimate) |
|--|---------|-----------|-----------|---------|---------------------|---------------------|
| No. of Wireline Attachers | 8 | 8 | 8 | 7 | 8 | 8 |
| No. of Wireline Attachments (Full) | 43,469 | 45,695 | 46,173 | 42,700 | 43,825 | 43,906 |
| Pole Attachment Fee (\$) | 22.35 | 22.35 | 22.35 | 22.35 | 22.35 | 57.00 |
| Revenues from Wireline Attachers (\$) | 971,532 | 1,021,283 | 1,031,967 | 954,345 | 979,489 | 2,502,642 |
| | 2011 | 2012 | 2013 | 2014 | 2015* (forecast) | 2016* (estimate) |
| No. of Wireline Attachers | 4 | 4 | 4 | 3 | 3 | 3 |
| No. of Wireline Attachments (Clearance) | 2,009 | 1,972 | 1,952 | 1,862 | 1,833 | 1,811 |
| Pole Attachment Fee (\$) | 11.18 | 11.18 | 11.18 | 11.18 | 11.18 | 11.18 |
| Revenues from Wireline Attachers (\$) | 22,461 | 22,047 | 21,823 | 20,817 | 20,493 | 20,247 |
| | 2011 | 2012 | 2013 | 2014 | 2015* (forecast) | 2016* (estimate) |
| No. of Wireline Attachers | 5 | 5 | 5 | 4 | 4 | 4 |
| No. of Wireline Attachments (Overlash/Partial) | 7,263 | 7,056 | 6,957 | 5,707 | 5,519 | 5,312 |
| Pole Attachment Fee (\$) | 5.59 | 5.59 | 5.59 | 5.59 | 5.59 | 5.59 |
| Revenues from Wireline Attachers (\$) | 40,600 | 39,443 | 38,890 | 31,902 | 30,851 | 29,694 |

3
4
5
6
7
8

*Note, 2015 revenues are billed in January based on number of attachments at EOY 2014 + EOY 2015 True-up. Estimated revenues for 2016 attachments based on 2015 YOD attachment numbers (see response JTC1.7) and estimated attacher increase.



1

2 c) The Specific charge for access to the power poles as reflected in Exhibit C, tab 2,
3 Schedule 2, page 2 of 3 is comprised of all pole attachments to HOL poles, including
4 the City of Ottawa, the Village of Casselman, HONI, the RCMP, and all
5 Telecommunication Company attachments. Table 1 of Carriers 16 contains all of the
6 telecom companies' attachments only. The difference being the total in revenue for
7 the City of Ottawa, the Village of Casselman, HONI, the RCMP attachments.

8

9 d) See response JTC1.7 for 2015 YTD attacher values.

10

11



1 **Undertaking JTC1.18**

2

3 To provide a copy of the model agreement referred to in response to carrier 17 (a), (b)
4 and (c).

5

6

7 **Response:**

8 See attached Hydro Ottawa model pole attachment agreement for competitive carriers
9 (Rev 22-12).

10

11

MODEL AGREEMENT

For

LICENSED ATTACHMENT

To

HYDRO OTTAWA LIMITED

By

[insert full legal name of cable telecommunications company]

DATE OF ISSUE: _____

TABLE OF CONTENTS

ARTICLE

ARTICLE 1 – DEFINITIONS..... 5

ARTICLE 2 – TERRITORY 9

ARTICLE 3 – AUTHORIZATION, PERMISSION AND RIGHT-OF-WAY 9

ARTICLE 4 – TAXES..... 9

ARTICLE 5 – PERFORMANCE GUARANTEE 10

ARTICLE 6 – COMPLIANCE WITH STATUTES 11

ARTICLE 7 – APPROVAL OF PERMITS..... 12

ARTICLE 8 – GRANT..... 15

ARTICLE 9 – INSTALLATION AND MAINTENANCE 16

ARTICLE 10 – LINE CLEARING 20

ARTICLE 11 – FEES 21

ARTICLE 12 – REMOVAL, REPLACEMENT OR RELOCATION OF POLES OR ATTACHMENTS 23

ARTICLE 13 – PAYMENT FOR WORK 25

ARTICLE 14 – LIABILITY, INDEMNITY AND INSURANCE 26

ARTICLE 15 – TERM AND TERMINATION OF AGREEMENT..... 28

ARTICLE 16 – TERMINATION OF APPROVAL..... 29

ARTICLE 17 – EXISTING RIGHTS OF OTHER PARTIES 30

ARTICLE 18 – VESTED RIGHTS..... 31

ARTICLE 19 – NOTICES..... 31

ARTICLE 20 – ASSIGNMENT 32

ARTICLE 21 – THIRD PARTIES 32

ARTICLE 22 – DISPUTE RESOLUTION 33

ARTICLE 23 – SCHEDULES 34

ARTICLE 24 – INTERPRETATION 34

ARTICLE 25 – ENTIRE AGREEMENT 34

ARTICLE 26 – HEADINGS 35

ARTICLE 27 – LEGISLATIVE REFERENCES 35

ARTICLE 28 – WAIVER 35

ARTICLE 29 – ENVIRONMENTAL OBLIGATIONS 35

ARTICLE 30 – FORCE MAJEURE 36

ARTICLE 31 – REASONABLENESS..... 36

SCHEDULE ‘A’ - PERMIT FORM 37

THIRD PARTY - CONSTRUCTION VERIFICATION CERTIFICATE..... 46

SCHEDULE 'B' - INTERPRETIVE SKETCHES.....45
SCHEDULE 'C' - MINIMUM PERMIT DRAWING REQUIREMENTS.....49
SCHEDULE 'D' - OWNER CONSTRUCTION STANDARDS, CONVENTIONS AND CAPACITIES.....50
SCHEDULE 'E' - CERTIFICATE OF APPROVAL.....52
SCHEDULE 'F' - RECORD OF INSPECTION AND CONSTRUCTION VERIFICATION PROGRAM CERTIFICATE
.....53
SCHEDULE 'G' - NOTICES.....54

AGREEMENT FOR LICENSED ATTACHMENT

THIS AGREEMENT made in duplicate on the ___ day of _____ is effective as of _____ (the “Effective Date”) through until _____ (the “End of Term Date”).

BETWEEN:

Hydro Ottawa Limited

(hereinafter the “Owner”)

OF THE FIRST PART

AND:

[insert full legal name of cable telecommunications company]

(hereinafter the “Licensee”)

OF THE SECOND PART

WHEREAS the Licensee wishes to affix and maintain its material, apparatus, equipment or facilities to poles of the Owner;

AND WHEREAS all attachments by a cable company or a telecommunications company to poles owned by the Owner require an approved permit;

AND WHEREAS the Owner consents to grant access to its poles by the Licensee in accordance with the terms and conditions hereof;

AND WHEREAS this Agreement replaces previous agreements and assignments between the Owner and Licensee for the Licensee’s material, apparatus, equipment or facilities to poles of the Owner;

AND WHEREAS the Ontario Energy Board regulates access to the Owner’s poles;

NOW THEREFORE, THIS AGREEMENT WITNESSES that, in consideration of the premises and the agreements and other considerations herein contained, the sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

ARTICLE 1 – DEFINITIONS

The terms defined in this Article for the purposes of this Agreement shall have the following meanings unless the context expressly or by necessary implication otherwise requires.

- 1.1 “Affix”, “Affixed” and “Affixing” means to fasten, by the Licensee or its contractors, the material, apparatus, equipment or facilities of the Licensee to poles of the Owner or In-span.
- 1.2 “Annual Licence Fee” means the annual payment by the Licensee to the Owner determined in accordance with Article 11.
- 1.3 “Approval” or “Approved” means the permission granted by the Owner to the Licensee for the Licensee to Affix its Attachments, as specified in the Permit, to poles of the Owner or In-span.
- 1.4 “Attachment” means any material, apparatus, equipment or facility owned by the Licensee which the Owner has Approved for Affixing to poles of the Owner or In-span, including, but without limiting the generality of the foregoing:
- Licensee-owned cable not directly attached to a pole, but Over Lashed to a cable or Support Strand not owned by the Licensee;
 - Service Drops Affixed directly to the Owner's poles;
 - Service Drops Affixed In-span to a Support Strand supported by poles of the Owner;
 - Low transmitting power antenna; and
- Unless otherwise agreed by the parties, Attachment excludes Power Line Carriers.
- 1.5 “Attachment Licence Fee” means the licence fee payable in respect of an Attachment.
- 1.6 "Attachment Status Declaration" means a written notice, provided by the Licensee to the Owner in accordance with Article 9.18.
- 1.7 “Cable Riser/Dip” means a cable attached along a vertical portion of a pole to allow the cable to change its position from/to an underground route to/from an overhead route.
- 1.8 “Change In Control” of the Licensee means and shall be deemed to have occurred at any time when Control of the Licensee is changed, directly or indirectly, whether by merger, amalgamation, arrangement, consolidation, share issuance, share sale or otherwise;
- 1.9 “Clearance Pole” means a single pole, owned by the Owner and used by the Licensee solely to establish and maintain vertical clearance for its Service Drops.

- 1.10 **“Communications Space” means a vertical space on the pole, usually 600 mm in length, within which Telecommunications Attachments are made.**
- 1.11 **“Confidential Information” means any proprietary ideas, plans and information, including without limitation, information of a technical or business nature (including without limitation, all trade-secrets, technology, financial information, intellectual property, any information relating to human resources matters, data, summaries, reports, the terms of this Agreement, or customer lists, whether oral or written and if written, however produced or reproduced) of a party or any of the party’s affiliates that is received by or otherwise disclosed by one party to the other party that is marked proprietary or confidential, or that would logically be considered proprietary or confidential under the circumstances of its disclosure. Notwithstanding anything to the contrary in this Agreement, Confidential Information shall include this Agreement.**
- 1.12 **“Control” of the Licensee means (i) direct or indirect beneficial ownership of shares of the Licensee having attributed to them a majority of the outstanding votes attached to all of the issued and outstanding voting shares of the Licensee, or (ii) the right or the ability by voting power, contract or otherwise to elect or designate for election a majority of the board of directors of the Licensee;**
- 1.13 **“Construction Verification Program” means the Standards and requirements, as set out in Ontario Regulation 22/04 and this Agreement, for conducting inspections and the qualifications of persons conducting inspections.**
- 1.14 **“Dispute Resolution” means the dispute escalation and referral mechanism, described in Article 22.**
- 1.15 **“Emergency Situation” means a situation that poses an imminent danger or threat to public safety or public welfare.**
- 1.16 **“Good Utility Practice” means any of the practices, methods and acts engaged in or approved by a significant portion of the electric utility industry in North America during the relevant time period, or any of the practices, methods and acts which in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition.**
- 1.17 **“Government Authority” means any government, parliament, legislature or any regulatory authority, agency, commission or a board of any government, parliament or legislature, or any political subdivision thereof, or any court or, without limitation to the foregoing, any other law, regulation or rule making entity or any person acting under the authority of any of the foregoing or any other authority charged with the administration or enforcement of laws.**
- 1.18 **“Guy Pole” means a separate pole, used to carry the strain of dead-ending or line deflection to ground.**

- 1.19 **“In-span” means a position between poles, at least one of which is owned by the Owner.**
- 1.20 **I.R.U. means Indefeasible Right of Use, which is the effective long-term lease (temporary ownership) of a portion of the capacity of a cable and associated equipment. IRU is granted by the company that owns the cable.**
- 1.21 **“Joint Use Pole” means a pole in respect of which its Owner has granted the Licensee Approval to Affix its Attachments.**
- 1.22 **“Joint Anchorage” means a common anchor system, including the anchor rod, to which two or more guy wires are attached, each guy wire providing guying for one party’s conductors and related equipment on a Joint Use Pole.**
- 1.23 **"Land Owner" means the owner of the property on which the Owner’s poles that are subject to the Attachments are installed.**
- 1.24 **“Make-ready Work” means any work undertaken or third party consent obtained by, or on behalf of, the Owner and/or an existing third party pole user to accommodate the Attachment and includes but is not limited to:**
- **initial Line Clearing, and**
 - **any changes or additions to or Rearrangement of the Owner's poles or the Owner's Attachments.**

Such Make-ready Work will be scheduled by the Owner in a practical manner within its operations and the Owner will communicate this timeframe to the Licensee. Without restricting the generality of the foregoing, Make-ready Work does not include the costs of repairing any pole in order to ensure that it meets the Standard prior to permitting the Licensee to place its Attachments on the said Joint Use Pole.

- 1.25 **“Minor Relocation” means the relocation of a Support Strand up to one metre (1.0 m) in a vertical and/or horizontal direction and includes relocation associated with pole changes.**
- 1.26 **“Over Lash” means to place an additional wire or cable communications facility onto an existing cable or Support Strand.**
- 1.27 **“Owner’s Standards” means the standards set out in Schedule D for construction convention and aerial capacities, and as amended from time to time.**
- 1.28 **“Permit,” means the formal written request for the adding, materially changing or removal of a Attachments to the Owner’s pole(s). The Permit form is entitled “Request for Licensed Occupancy of Poles”, in the form of Schedule "A" attached hereto, the form of which may be revised from time to time by the Owner.**

- 1.29 **“Personal Information” means information about an identifiable individual, including without limitation any information defined or deemed as such pursuant to any applicable laws related to privacy or data protection.**
- 1.30 **“Power Line Carrier” means the use of existing electricity wire infrastructure to carry voice and data signals simultaneously by transmitting high frequency data signals through the electric power lines.**
- 1.31 **“Power Space” means a vertical space at the top of the pole within which electrical power attachments are made.**
- 1.32 **“Rearranging” or “Rearrangement” means the removal of Attachments from one position on a pole and the placing of the same Attachments in another position on the same pole.**
- 1.33 **“Representatives” in reference to party, means the party’s directors, officers, employees, agents, subcontractors, and suppliers, the party’s affiliates, and all such affiliates’ respective directors, officers, employees, agents and suppliers.**
- 1.34 **“Service Drops” means small light-weight non-tensioned Telecommunications cables or wires, whether Affixed In-span or to a Clearance Pole, owned by the Licensee and connected to a Telecommunications cable, whether owned or not owned by the Licensee, and leading to customers of the Licensee.**
- 1.35 **“Standard or Standards” means Canadian Standards Association Standard C22.3 No.1 “Overhead Systems”; Ontario Occupational Health and Safety Act (R.S.O. 1990, c.O.; Part II of Canadian Labour Code; the Ontario Electrical Safety Code; Electrical & Utilities Safety Association Rules and Safe Practices; Ontario Regulation 22-04 or any other applicable regulation administered by the Electric Safety Authority and any successor legislation and standards; and the Owner’s Standards, together with any amendments thereto from time to time and subject to written notification, it being understood that changes to the Owner’s Standards are to be made at the sole discretion of the Owner.**
- 1.36 **“Support Strand” means a bare support strand whose main purpose is to support Telecommunications or low voltage wires or cables.**
- 1.37 **“Telecommunications” or “Communications” means the transmission of voice, data, video or information of any kind by electromagnetic or optical signals.**
- 1.38 **“Total Direct Cost” means the costs included in the annual pole access rate pertaining to administration and loss in productivity.**
- 1.39 **“Transferring,” means the removal of Attachments from one pole and the placing of the same Attachments on another pole.**

- 1.40 **"Wireless Transmitters" means stand-alone transmitters and/or receivers which use electromagnetic waves (rather than some form of wire or cable) to carry voice, data, video or signals over part or all of the communication path.**

ARTICLE 2 – TERRITORY

- 2.1 **This Agreement shall cover the Affixing and maintaining of the Attachments to the poles of the Owner, or In-span, within the area of Ontario where the respective service territories of the Owner and the Licensee overlap.**

ARTICLE 3 – AUTHORIZATION, PERMISSION AND RIGHT-OF-WAY

- 3.1 **The Licensee shall be responsible for obtaining any and all easements, rights of way, authorizations or permissions from others, including authorization or permission to locate on private property, public road allowances, or any other applicable authorization or permission required for private property or from any Government Authority having jurisdiction with respect to the Affixing and maintaining of the Attachments provided for in a Permit.**
- 3.2 **Where permitted to do so, the Owner may authorize the Licensee to use benefits of easements or rights of way to the Licensee, on mutually agreeable terms.**
- 3.3 **The Licensee shall be responsible for obtaining any and all authorizations or permissions for connection to the electrical supply authority's system required by the Electrical Safety Authority of Ontario (ESA).**
- 3.4 **The local electrical supply authority is required to authorize un-metered electrical supply requirements as per its Conditions of Service.**
- 3.5 **The Licensee shall obtain written permission from the building owner before installing an antenna in areas designated by the City of Ottawa as commercially sensitive, heritage, or residential. This includes owners of buildings where the Owner's poles abut the building(s) or are located on the other side of the public road to the building(s).**

ARTICLE 4 – TAXES

- 4.1 **The Licensee shall pay, and indemnify and save harmless the Owner against, all taxes, rates, assessments or fees of every nature and kind lawfully assessed, which are directly applicable to or related to the Attachments designated in an Approved Permit or directly resulting from the privileges granted to the Licensee by this Agreement.**

- 4.2 **The Licensee agrees to remit payment for its portion of such taxes, rates, assessments or fees to the Owner, within 30 days of request for same by the Owner. At the Licensee's request and expense, the Owner shall remit any such taxes under protest. The Licensee shall be free to negotiate with the taxing authority or institute legal proceedings against the taxing authority to have such taxes cancelled or reduced. Any refund of the Licensee's remittance received by the Owner in connection with such taxes shall be paid over to the Licensee with such interest as the Owner will have received from the taxing authority in respect thereof.**

ARTICLE 5 – PERFORMANCE GUARANTEE

- 5.1 **The Owner may request, and Licensee shall comply with such request, that the Licensee deposit with the Owner security in an amount of \$100 per pole to a maximum of \$500,000, or as otherwise agreed by the parties, securing the due performance of the obligations of the Licensee as provided for in this Agreement.**
- 5.2 **The security shall be in favour of the Owner and shall be in a form satisfactory to the Owner and may include a performance bond issued by a surety acceptable to the Owner, cash deposited with the Owner, negotiable bonds issued by an entity satisfactory to the Owner or an irrevocable bank letter of credit. In addition, the Owner may request that the Licensee deposit with the Owner security, and the Licensee shall comply with such request, in any of the following circumstances:**
- (1) the Licensee fails to make any payments required under this Agreement;**
 - (2) the Owner commences collection proceedings against the Licensee;**
 - (3) in Owner's opinion, the Licensee is a credit risk; or,**
 - (4) the Licensee's operational performance record with respect to the Owner's poles is unsatisfactory in Owner's opinion.**
- 5.3 **If the security is in the form of negotiable bonds or cash, then, provided that the Licensee is not in default of any of its obligations under this Agreement, the Licensee shall be entitled to receive any and all income therefrom.**
- 5.4 **The Licensee, when not in default of any of its obligations under this Agreement, shall have the right to substitute the security being held by the Owner with other security authorized by this Article.**
- 5.5 **The Owner shall be entitled to exercise upon the security in the event that the Licensee defaults on any of its obligations under this Agreement including, without limitation, for the purpose of recovering the costs of any of the following:**
- correction of Attachments;**

- **removal of Attachments from the Owner's poles or In-span;**
 - **damage to the Owner's equipment attributed to the joint use activity of the Licensee;**
 - **payment of any of the Licensee's accounts.**
- 5.6 **The security payable by the Licensee may be increased or decreased from time to time at the sole discretion of the Owner, who may take into consideration such factors as increases or decreases in the number of Attachments Approved by Permit, an increase or decrease in the estimated cost to remove Attachments or any other factors that the Owner may consider relevant.**
- 5.7 **Subject to Article 5.8, where, for a period of 3 years, the Licensee does not meet the conditions in Article 5.2 and, in an external rating agency's sole opinion, the Licensee is deemed credit-worthy, the security deposit paid by the Licensee shall be reduced by 50% and where, for a period of 2 additional years, the Licensee again does not meet the conditions in Article 5.2 and, in an external rating agency's sole opinion, the Licensee continues to be credit-worthy, the remainder of the security deposit shall be fully refunded.**
- 5.8 **Where a Licensee's security deposit is reduced or refunded in accordance with Article 5.7, the Owner, acting reasonably, may demand, and Licensee shall comply with such demand, that a Licensee provide a security deposit in accordance with Article 5.**

ARTICLE 6 – COMPLIANCE WITH STATUTES

- 6.1 **This Agreement is subject to all applicable laws, regulations and Standards.**
- 6.2 **The Licensee and its contractors shall comply with the requirements of all relevant statutes, regulations, directions, guidelines, policies and governmental and regulatory agencies and with the Standards, both at the time of Affixing and thereafter, including, but not limited to:**
- **the safety qualifications of the Licensee's employees to carry out the work,**
 - **the use of safe working practices in carrying out the work,**
 - **training in safety awareness,**
 - **Ontario Regulation 22/04**
 - **Good Utility Practice, and**
 - **good and workmanlike practices.**

The Owner reserves the right to have the Licensee's employees or contractors removed from the jobsite for non-compliance with the above.

- 6.3 Any accident reportable by law to the Workplace Safety and Insurance Board or to the Ministry of Labour or to Human Resources and Development Canada or any notice or fine received from any of these authorities by the Licensee or the Licensee's contractor while working on the Owner's poles or In-span must be reported to the Owner within five (5) working days of the accident or notice or fine.**
- 6.4 The higher requirements of the *Canada Labour Code*, R.S. 1985, C. L-2 and the *Occupational Health and Safety Act* (Ontario), R.S.O. 1990, Chapter O.1, as amended from time to time, govern safety regarding the Affixing, Rearranging, Relocating, Transferring, maintenance or other work relating to Attachments. If there is any uncertainty about which standards are applicable, the Licensee shall ensure that the Licensee or its contractor ceases all work immediately and contacts the Owner who shall indicate which standard shall apply.**
- 6.5 The Attachments, requiring an electrical supply, shall be certified electrically safe by the Canadian Standards Association and/or the Electrical Safety Authority of Ontario (ESA).**

ARTICLE 7 – APPROVAL OF PERMITS

- 7.1 Prior to submitting a Permit to the Owner, and for the purpose of initiating discussions as to the parties' requirements, the Licensee shall inform the Owner that the Licensee intends to seek permission to Affix and maintain its Attachments to a pole belonging to the Owner or In-span. The Licensee shall provide to the Owner such preliminary information as may be requested by the Owner.**
- 7.2 At the Owner's sole discretion, the Owner may arrange for a joint field visit by both the Owner and the Licensee to inspect the site of the proposed Affixing of Attachments by the Licensee. The Licensee shall also be entitled to request from the Owner a joint visit, and the Owner shall have the obligation to consider the request, acting reasonably.**
- 7.3 Subsequent to the joint field visit, if any, the Owner shall form a preliminary, non-binding opinion as to the feasibility and desirability of the proposed Affixing of the Attachments by the Licensee, which opinion shall be communicated to the Licensee within a reasonable period of time.**
- 7.4 If the Owner forms a preliminary opinion in favour of the proposed Affixing of the Attachments, the Owner will prepare a preliminary estimate, which will not be binding on the Owner, of any costs of Make-ready Work and deliver such estimate to the Licensee with the preliminary opinion.**

7.5 **After the preliminary estimate has been received and accepted by the Licensee, the Permit, in duplicate, shall be prepared, signed and delivered by the Licensee to the Owner.**

7.6 **Each Permit shall be accompanied by:**

- **drawings, plans or designs in a format approved by the Owner (see Schedule C and ESA's Regulation 22/04 Third Party Attachment Guideline) and signed and sealed by a Professional Engineer registered in Ontario, or signed by a Certified Engineering Technologist, or other competent person, who is qualified by knowledge, training and experience, and approved by the Owner, to indicate compliance with all Standards including the Licensee's standard design drawings and standard specifications, which shall have been prepared, signed, and sealed by a Professional Engineer; or drawings, plans or designs, together with a Certificate of Approval of the drawings by the Electrical Safety Authority. Each Permit shall state its compliance with O.Reg. 22/04 as per Appendix E;**
- **a purchase order or certified cheque authorizing the Owner to complete the Make-ready Work on the Owner's facilities pertaining to the applicable Permit;**
- **other items that the Owner may reasonably require and shall have requested from the Licensee pursuant to the terms of this Agreement.**
- **technical specifications including radiation patterns specific to the Licensee's transmitter;**
- **health studies specific to the Licensee's transmitter including recommended worker safety requirements within proximity to the transmitter;**
- **wind loading study for antennas with respect to the Owner's pole certified by a Professional Engineer; and**
- **documented aesthetic considerations for antennas.**

At a minimum annually or whenever deemed necessary by either party, the Licensee shall submit for consideration to the Owner a list of its staff or staff positions, training and relevant qualifications for design approval as defined in O.Reg. 22/04 (see ESA's O.Reg. 22/04 Third Party Attachment Guideline). The Owner shall provide in writing its acceptance or refusal of all or part of the Licensee's submitted list.

7.7 **If the Owner is satisfied that the Permit documentation is in accordance with this Article and is compliant with all Standards, the Owner will make best efforts to process the Permit within 30 days from receipt of completed Permit documentation and shall, if deemed necessary to further process the Permit, commence Make-ready Work where a signed purchase order or certified cheque has been received. If, while carrying out the Make-ready Work, the Owner determines that the proposed Attachments are no longer feasible because of previously unknown conditions or constraints or because of the intervention of a third party with jurisdiction, such as a Government Authority or Land Owner, the Make-ready Work will be suspended and the Licensee notified of the suspension. If the cause of such suspension cannot be resolved to the satisfaction of the Owner, the Licensee will be invoiced pursuant to Article 8 for all charges to the time of**

suspension. If the Permit is Approved, the Owner will sign both copies of the Permit and return a copy to the Licensee's representative, thus Approving the proposed Affixing of the Attachments by the Licensee.

- 7.8 Each Approved Permit shall be deemed to have been issued pursuant to this Agreement, and shall be read and construed in accordance with this Agreement. Subject to Article 9.8, Permits approved prior to the Effective Date shall be deemed to have been approved in accordance with the then current Standards.**
- 7.9 The Licensee shall retain its copy of the Approved Permit as part of the Licensee's project file and may be required to produce the Approved Permit at any time when requested by the Owner.**
- 7.10 Permits for additional Attachments, except Service Drops, to an existing pole or In-span must be submitted and Approved using the same procedure set out in this Agreement for obtaining Approval to Affix new Attachments.**
- 7.11 When exercising its discretion as to whether to grant Approval to a Permit, the Owner shall exercise its discretion reasonably where the Licensee has complied with all terms this Agreement.**
- 7.12 When exercising the foregoing discretion, the Owner will consider its requirements with respect to, but not limited to, the following:**
- safety;**
 - operation of the Owner's electricity distribution network;**
 - planning;**
 - aesthetics;**
 - road authority and property owner requirements; and**
 - any other matters which the Owner, acting reasonably, may deem relevant and communicate to the Licensee by notice in writing in accordance with Article 19.**
- 7.13 It is expressly understood and agreed that Permit Approval, or use under a Permit, will be denied if, in the sole discretion of the Owner, the Attachments, or use derived therefrom could be:**
- damaging to the Owner's existing plant and/or electrical distribution services; or**
 - unreasonably constraining on the Owner's use of plant; or**
 - damaging to existing plant and /or service of a third party on the Owner's poles; or**
 - non-compliant with the obligations of the Owner.**

Any such denial shall be communicated to the Licensee by notice in writing in accordance with Article 19.

- 7.14 If a proposed installation which has been Approved by Permit is cancelled by the Licensee, the Licensee shall reimburse the Owner for the cost of any Make-ready Work**

completed on the Licensee's behalf upon receiving the invoice for same, and Article 13 shall apply.

ARTICLE 8 – GRANT

- 8.1 For each Permit Approved pursuant to Article 7, the Owner hereby grants to the Licensee the permission to Affix and maintain such of its Attachments to such poles of the Owner, or In-span, as may be designated on each Approved Permit in accordance with the terms of this Agreement and any terms specified in said Permit.
- 8.2 The permission to Affix and maintain Attachments as described in an Approved Permit shall be deemed to be effective as of the date of the Approval of such Permit by the Owner. The Licensee must exercise this permission within 180 days of the date of Approval of the Permit or 180 days of the date of the completion of the Make-ready Work or within some other time period as mutually agreed to by the parties, whichever is later, failing which the Approval is of no force and effect and the Licensee may be required to submit a new Permit requesting permission to Affix its Attachments.
- 8.3 If the Owner determines that the Attachments Affixed pursuant to the Permit could be:
- damaging to the Owner's existing plant and/or electrical distribution services; or
 - unreasonably constraining on the Owner's use of plant; or
 - damaging to existing plant and /or service of a third party on the Owner's poles; or
 - non-compliant with the obligations of the Owner,
- the Licensee agrees that any Approval to Affix and maintain its Attachments previously granted by the Owner in any Permit may be revoked whether before or after the Affixing of Attachments, at the sole discretion of the Owner, if the Licensee has not carried out such work as required to rectify the situation to the satisfaction of the Owner within 30 days of notice by the Owner.
- Any such revocation as it relates to existing Attachments shall be communicated to the Licensee in accordance with Articles 16 and 19, and the Licensee shall pay the cost of removal of the Attachments in accordance with Article 13.
- 8.4 To the extent that other agreements do not prejudice the Licensee rights, granted hereunder, the Licensee agrees that this Agreement does not restrict the Owner in entering into agreements with other parties respecting the use of the Owner's poles.
- 8.5 At all times:
- the Attachments shall remain the property of the Licensee subject to Article 16; and
 - the pole shall remain the property of the Owner, subject to Articles 16.2 and 16.3.

ARTICLE 9 – INSTALLATION AND MAINTENANCE

- 9.1 **The Licensee agrees that it will not Affix any of its Attachments, except Service Drops, to a pole of the Owner until the Owner approves the Permit designating such Attachment. The Licensee agrees that it is solely responsible for Affixing and maintaining its Attachments to the poles of the Owner or In-span.**
- 9.2 **Service Drops may be added to or altered, without reporting the addition or alteration to the Owner, when Affixed to a pole for which a Permit has been Approved, or Affixed In-span where a Permit has been Approved for the nearest pole. If the pole, or the nearest pole to the Service Drop, is not included in an existing Permit, the Service Drop must be reported to the Owner and a Permit applied for within thirty (30) days. If the Permit application is subsequently refused, the Licensee must revise the Permit application to the satisfaction of the Owner, or the Licensee must remove the Service Drop within thirty (30) days of the Owner notifying the Licensee of the refusal. If such plant is not removed within the specified period, the Licensee shall pay all associated costs of the Owner and third parties for the removal of its Service Drops. Any disputes relating to Service Drops shall be addressed in accordance with the Dispute Resolution process set out in Section 22.**
- 9.3 **In conjunction with the Licensee’s system rebuild/upgrade plans, the Licensee shall make best efforts to consolidate its multiple parallel strands on a pole into one strand during the Initial Term of this Agreement. If a third party seeks access to the Communications Space where the Licensee has parallel Attachments, the Licensee shall, at the Licensee’s option, either consolidate its parallel Attachments or transfer title of one of the Licensee’s Strands to the Owner at no charge to the Owner, or to the third party. The Owner shall be given the first opportunity to obtain title in the Licensee’s parallel strand, should the Licensee opt to transfer title of the strand. Any such transfer of the Licensee’s Strands to a third party shall be subject to the conditions in Articles 20 and 21. The Licensee shall consolidate its multiple parallel support strands on a pole into one support strand within 90 days’ notice, or other timing as mutually agreed upon, on a case by case basis, when reasonably requested by the Owner for requirements such as:**
- **safety;**
 - **operation of the Owner’s electricity distribution network;**
 - **planning;**
 - **aesthetics; and**
 - **road authority and property owner requirements**
- 9.4 **If the Licensee needs to carry out any work within safe electrical limits of approach, as specified by applicable regulation and legislation, in conformance with Article 6, the Licensee must use the Owner or an Owner-approved contractor. The Owner shall consider contractors for Approval requested by the Licensee according to the Owner’s approval process.**
- 9.5 **The Licensee covenants and agrees with the Owner to Affix and maintain its Attachments in a safe and serviceable manner satisfactory to the Owner, acting**

reasonably, and in accordance with the Standards and Good Utility Practice, and in such a way as not to

- interfere with the lines, works or equipment of the Owner; or
- interfere with the electrical supply carried by the Owner's equipment; or
- be damaging to existing plant or service of a third party.

9.6 Without limiting the generality of the foregoing, the Licensee is responsible for the installation of all guys, anchors and other equipment required for, or related to, the Affixing and maintaining of Attachments in accordance with the Standards.

9.7 The Owner and Licensee recognize that, from time to time, existing Standards may be amended or new standards may be enacted and that these amendments or enactments may affect both of the parties to this Agreement. The Owner specifically reserves the right to require the Licensee's compliance with the new standards or amended Standards, provided that any new standards or changes to the Standards are applied in a reasonable manner: - e.g. safety related concerns may have to be resolved by changes to existing plant, whereas other changes may apply only to new installations. Where either party feels it has been substantially prejudiced by any such amendment or enactment, it will advise the other party. The parties agree to engage in discussions with a view to addressing the alleged prejudice and may engage the Dispute Resolution process where necessary. During these discussions or Dispute Resolution, the Agreement and/or Approved Permits will continue in full force and effect.

The Licensee shall provide the Owner a softcopy of the Licensee's Standards, certified by a professional engineer, and on-going revisions in a mutually acceptable format such as Acrobat PDF, at no cost to the Owner. The Owner shall only use the Licensee's standards for internal review of the Licensee's Permits and installations as required by and defined in O.Reg. 22/04 (see ESA's Regulation 22/04 Third Party Attachment Guideline). The Owner shall not provide the Licensee's standards to any third party unless: (i) so ordered by a Government Authority or (ii) the prior written consent of the Licensee is obtained. .

9.8 The Licensee agrees that, upon the Attachments being made in accordance with the provisions of this Agreement, it will not make any alterations to its Attachments, (Service Drops and Emergency Situations excluded), so as to effect technical considerations or safety, unless:

- such alteration is approved by the Owner using the same procedure as for a new Attachment, if required, as described in this Agreement; and
- such alteration is carried out in accordance with the Standards and in such a way as not to interfere with the lines, works or equipment of the Owner or of other permitted users of the pole.

- 9.9 **If the Licensee applying for a Permit requires third party Make-ready Work or the use of a third party Support Strand or Attachment, the Licensee shall coordinate the aforementioned with the third party.**
- 9.10 **The Owner, using commercially best efforts, may facilitate Re-arrangement or Over Lash arrangements between the Licensee and third parties for pole management.**
- 9.11 **The Owner may, at its discretion, require that an employee of the Owner be present when the Licensee is Affixing, Rearranging, or removing its Attachments so as to ensure that the work is carried out in accordance with the terms of this Agreement. The Licensee agrees to provide two (2) working days notice prior to the start of any such work and agrees to pay to the Owner the costs of such employee that may be reasonably necessary for the carrying out of the provisions of this clause in accordance with Article 13.**
- 9.12 **The Licensee shall ensure that its installations are inspected and approved in accordance with any applicable regulation, including, but not limited to, the Electricity Act 1998, O.Reg. 22-04, Section 8, and the Distribution System Code-Appendix C.**
- 9.13 **The Licensee shall notify the Owner upon completion of the specified work when the Affixing, Rearranging or removing of its Attachments to a pole of the Owner is complete so that the Owner may verify the accuracy and completion of the work, including applicable compliance review under the Owner's Construction Verification Program (see ESA's Regulation 22/04 Third Party Attachment Guideline).**
- 9.14 **In order to ensure the accuracy and completeness of existing Approved Permits, a field inspection shall be made jointly at intervals mutually agreed upon, but generally, once every five years. Any discrepancies between the field conditions found and the Approved Permits will be corrected and a new Permit to reflect the actual field conditions will be submitted by the Licensee for Approval in accordance with this Agreement. If the new Permit is not Approved, the Licensee will be notified in writing of the reason why Approval was denied and, within thirty (30) days, the Licensee must either remedy the deficiency and reapply for a new Permit or remove the Attachments, and the provisions of Articles 11 through 13 shall apply. Every effort will be made to include all pole users in the field inspection. Participating parties will come to a negotiated agreement regarding the allocation of costs.**
- 9.15 **The Licensee agrees to place markers on its cables, antennae, and Support Strands in a manner acceptable to the Owner to assist in field identification of ownership of Attachments made by various permitted users of the pole. As a minimum, these markers shall be placed at all Cable Risers/Dips and at every second pole, in a manner acceptable to the Owner. Within five (5) years of the Effective Date, the Licensee shall have placed identifying markers on all Affixed cables and Support Strands existing on the Effective Date.**

- 9.16 **Except where approved by the Owner, Joint Anchorage will not be permitted on all new or reconstructed pole lines. Each party shall be responsible to install and maintain its own separate anchoring system, as may be required.**
- 9.17 **On any existing pole line which has Joint Anchorage, each party will be responsible to satisfy themselves that the existing anchorage is adequate to sustain its plant.**
- 9.18 **At the end of each calendar year, the Licensee shall provide the Owner with an Attachment Status Declaration that declares which, if any, of the Licensee's Attachments, excluding Service Drops, are neither required for nor used to provide service or are reserved for future capacity. The parties, acting reasonably, shall determine the actions to be taken, which may require the Licensee to remove, reactivate, or sell such Attachments. If so required, the Licensee shall remove, sell, or reactivate such Attachments within one (1) year, or within such other time period as agreed to by the parties. The Licensee shall pay all associated costs with respect to such Attachments. The Owner reserves the right to carry out periodic audits of the Attachments. If an Attachment Status Declaration is inaccurate or misleading then the Licensee shall pay the full cost of the Owner's audit of the Attachments and pay the Owner's costs of the removal of Attachments and associated damages. Any disputes arising from Article 9.18 shall be addressed in accordance with the Dispute Resolution process set out in Section 22.**
- 9.19 **The Licensee shall, at all times and in accordance with the terms and conditions of this Agreement, maintain and operate its Attachments in a safe and serviceable condition, and replace Attachments as they deteriorate, become defective or unsafe. A public safety audit should be carried out at an interval mutually agreed upon by the Owner and Licensee.**
- 9.20 **The Licensee agrees that the Owner may change the nature or configuration of its equipment or change the characteristics, such as voltage, frequency or power levels of the electrical supply carried by its equipment at any time.**
- 9.20 **As stated in the Distribution System Code, issued by the OEB, only persons qualified under the Occupation of Health and Safety Act may be involved in inspection activities.**
- 9.21 **From time to time, the Owner or Licensee may have safety hazards and significant conditions with its plant, requiring prompt response. Each party will make best efforts to inform the other of safety hazards.**
- 9.22 **For all poles that have a Power Space, the Owner shall, wherever possible, use the highest position within the Communication Space for the Owner to place the Owner's telecommunications attachments. At the sole discretion of the Owner, the Licensee may use this location to place the Licensee's Strand if insufficient space capacity is available in the other two parallel strand locations. If the Licensee uses this location, the Licensee shall ensure that there is sufficient spare capacity for the Owner to Over Lash to the Licensee's Strand without on-going cost to the Owner. Nothing in this Agreement shall restrict the ability of the Licensee to reasonably charge the Owner for Make Ready Work to Over Lash Attachments to the Licensee's strand. The Owner shall provide**

thirty (30) days' prior written notice to the Licensee where the Owner plans to Over Lash to the Licensee's Strand.

- 9.23 **Subject to Article 14, the Licensee agrees that the Owner is not responsible for any damage, harm or problems of any kind caused to the Attachments or the signals or supply carried by the Attachments which may arise from the Owner's equipment or the electrical supply carried by its equipment, except for such damages, harm or losses caused by gross negligence or wilful misconduct of the Owner.**
- 9.24 **After each installation, re-arrangement, repairs, or removal as defined within O.Reg. 22/04, the Licensee shall file with the Owner within 30 days a "Third Party Record of Inspection & Construction Verification Program Certificate" (see Schedule F).**
- 9.25 **At a minimum annually or whenever deemed necessary by either party, the Licensee shall submit for consideration to the Owner a list of its staff or staff positions, training, experience, and relevant qualifications for construction verification approval as defined in O.Reg. 22/04 (see ESA's Regulation 22/04 Third Party Attachment Guideline). The Owner shall provide in writing its acceptance or refusal of all or part of the Licensee's submitted list.**

ARTICLE 10 – LINE CLEARING

- 10.1 **The Owner and the Licensee agree that vegetation management is required for the ongoing reliable provision of electricity and telecommunication services. The trimming or removing of trees, underbrush or any other items as required to establish clearance for the Licensee's Attachments shall be the sole responsibility of the Licensee. The Licensee, or its contractor as approved by the Owner, shall undertake the trimming or removing of trees, underbrush or any other items as required by the Licensee for the Licensee's purposes in the Communications Space, having regard for all safety, technical and engineering concerns of the Owner. If in the sole but reasonable discretion of the Owner, the vegetation on or around the Licensee's plant is or may be damaging to the Owner's existing plant or electrical distribution system or aesthetics, the Licensee shall correct the situation to the satisfaction of the Owner upon notification by the Owner. Nothing in this clause excuses the Licensee of liability in the event of damage to the Owner's plant because of such vegetation. If the Licensee fails to engage in the requisite trimming or removal within seven (7) days of notification from the Owner, the Owner may undertake such work or arrange for it to be completed, all at the risk and expense of the Licensee, and the Owner shall submit an invoice to the Licensee for the reasonable proportional cost of such work, which invoice shall be paid by the Licensee in accordance with Article 13.**
- 10.2 **The Licensee and Owner may, by mutual agreement, make arrangements regarding provision of tree trimming or line clearing services. If such arrangements are made between the Licensee and Owner, the Owner shall inform the Licensee of the timing, location, cost, and extent of the tree trimming or line clearing services to be undertaken**

on their behalf in advance of the commencement of the tree trimming or line clearing services.

- 10.3 **Should any extraordinary services, such as but not limited to tree trimming or line clearing services after storms, be required in order to establish clearances for the Attachments for operations, maintenance and safety, the cost of such services shall be the sole responsibility of the Licensee. In the event that such extraordinary services are required, in the sole but reasonable discretion of the Owner, the related proportional cost of such extraordinary services undertaken by the Owner shall be charged to the Licensee in accordance with the provisions of Article 13.**

ARTICLE 11 – FEES

- 11.1 **Commencing on the Effective Date, the Licensee shall pay an annual licence fee, in advance, to the Owner. The Owner will determine the Annual Licence Fee by multiplying the number of the Owner’s poles on which the Licensee had Attachments on December 31 in the prior year times the Attachment License Fee as determined in accordance with clause 11.2 and Schedule B.**
- 11.2 **The Attachment License Fee for each year during the term of this Agreement shall be set by the Ontario Energy Board from time to time. This rate is exclusive of any un-metered electrical supply, which is a separate agreement with the local electrical supply authority.**
- 11.3 **If the Licensee has an Approved Permit for a pole and is thus paying an Attachment License Fee, there is no charge for additional attachments made in the Communications Space, or in-span, if such attachments are approved by the Owner. See also Schedule B, Interpretive Sketches.**
- 11.4 **The Licensee shall pay 50% of the full Attachment License Fee to the Owner in respect of each Clearance Pole of the Owner directly supporting one or more Service Drops of the Licensee, which Attachment License Fee shall be effective from March 7, 2005 as per Schedule B.**
- 11.5 **The Licensee shall pay the full Attachment License Fee to the Owner in respect of each Guy Pole of the Owner directly supporting one or more Attachments of the Licensee, which Attachment License Fee shall be effective from March 7, 2005 as per Schedule B.**
- 11.6 **If the Licensee has an Approved Permit for a pole and is thus paying an Attachment License Fee, the Licensee shall pay the Total Direct Cost, mutually agreed by the parties, or as otherwise amended by the Ontario Energy Board, from time to time, for Attachments below the Communications Space, such as antennas, or grandfathered amplifiers / power supplies. If the Licensee is not paying an Attachment License Fee for said pole, the full Attachment License Fee shall apply to such Attachments outside the Communications Space as per Schedule B.**

- 11.7 **Licensee-owned cables not directly Attached to the Owner's pole but Over Lashed to a cable or Support Strand not owned by the Licensee shall be charged 25% of the full Attachment License Fee, provided said cables were Approved by the Owner and were Over Lashed prior to March 7, 2005. Licensee-owned cables not directly Attached to the Owner's pole but Over Lashed to a cable or Support Strand not owned by the Licensee on or after March 7, 2005 shall be charged the full Attachment License Fee, for which the Licensee shall require an Approved Permit from the Owner pursuant to the terms of this agreement. The Licensee shall inform the Owner of details, including quantity, location, and characteristics of existing, prior to March 7, 2005, Over Lashes within two (2) months of the Effective Date of this Agreement, or as otherwise agreed by the parties.**
- 11.8 **In addition to the fees payable pursuant to clause 11.1, in each year the Licensee shall pay to the Owner, fees for the year, for poles to which Attachments have been made during the year. Any Attachments which are Affixed during the year shall be charged the Attachment License Fee for the full year.**
- 11.9 **There will only be one Attachment License Fee referable to the Communications Space of any pole regardless of the number of Attachments made by the Licensee thereto or in-span. In assessing the Attachment License Fee to be applied to a pole supporting multiple Attachments, which may have different fees, the highest fee shall apply.**
- 11.10 **The Attachment License Fee determined in accordance with Article 11 shall be invoiced by the Owner to the Licensee in one instalment to be paid on or before the first day of January in each year of this Agreement or any renewal hereof.**
- 11.11 **If at anytime during the term of this Agreement or of any renewals thereof an Attachment is Affixed to a pole of the Owner without a Permit being Approved by the Owner for such Attachment, then the Licensee shall pay to the Owner the Attachment License Fee for each year that the Attachment existed without a Permit, plus a penalty of five [5] times the Attachment License Fee, or as otherwise agreed by the parties.**
- 11.12 **In addition to the Annual License Fee and any other payments required under this Agreement, the Licensee is solely responsible for all of the costs associated with Affixing and maintaining the Attachments to the poles of the Owner or In-span. The Owner's related costs during regular workday business hours for correspondence, site meetings, preparing cost estimates, joint field visits, reviewing and Approving the Permit, and verifying completed work will be the responsibility of the Licensee. Without limiting the generality of the foregoing, the Licensee shall be responsible for the cost of:**
- **effecting changes, alterations or rearrangements, other than Minor Relocations, to the Owner's poles;**
 - **Affixing the Attachments;**
 - **cleaning up the site around each pole where the Licensee has Affixed Attachments and thereafter ensuring safe disposition of all materials;**

- **conducting a joint field inventory or joint audit program in accordance with the cost sharing arrangements as mutually agreed between the parties;**
 - **field audit and required corrections related to Ontario Regulation 22/04; and**
 - **any other reasonable expenses associated with the Licensee’s obligations under this Agreement and the Owner’s Conditions of Service, as amended from time to time.**
- 11.13 **As of December 31st of each year for which the Owner has the Attachments Affixed to its poles, the Owner will provide to the Licensee an “Annual Statement of Fees” which will itemize the number of Attachments involved and a breakdown of the calculation of the Annual License Fee. Every effort shall be made by the Owner to ensure that the content of the Annual Statement of Fees is accurate. The Licensee shall remit forthwith to the Owner the difference between the Annual License Fee as set out in the Annual Statement of Fees and the amount remitted to the Owner at the beginning of the year in advance. Any overpayment shall be remitted forthwith by the Owner to the Licensee. The Licensee is obligated to track any requested Attachment changes by Permits during a given year to confirm the Owner’s annual Attachment count contained in the Annual Statement of Fees. Any dispute on the numbers shall be settled between the engineering staff of the Licensee and the Owner, and failing resolution, Dispute Resolution shall be applied, with all adjustments (if any) reflected on the following year’s Annual Statement of Fees.**
- 11.14 **All invoices rendered by the Owner pursuant to this Article that are outstanding for longer than forty five (45) days will be subject to interest charged at a rate of one and one-quarter percent (1.25%) per month. The interest shall run from the due date of payment of the invoice until the date the payment should be received by the Owner in the ordinary course of post, following mailing of the payment. If the Licensee fails to pay any invoice within forty five (45) days, the provisions of Article 13 apply and the Owner may invoke any or all of the measures detailed in Article 13.**

ARTICLE 12 – REMOVAL, REPLACEMENT OR RELOCATION OF POLES OR ATTACHMENTS

- 12.1 **Where the Owner, the Land Owner or a Government Authority require that the Licensee remove, replace or change the location of any pole designated by a Permit to which Attachments are Affixed, whether the change or removal be on a temporary or permanent basis, and upon receipt of written notice of such a requirement, the Licensee remove its Attachments from that pole and, except where the notice specifies to the contrary, transfer the Attachments to the new location by the time specified in the notice and at the cost and expense of the Licensee.**

- 12.2 **The Licensee shall pay all costs, damages, charges, penalties, and fines howsoever incurred or levied by the Owner and the Land Owner with respect to the Licensee's failure to comply with a notice issued in accordance with Article 12.1.**
- 12.3 **Licensee acknowledges that the Owner may, in Owner's sole and absolute discretion, remove a pole without replacing it and that there will not be a pole upon which to Affix the Attachments. In such circumstances, the Approval associated with the applicable Permit will cease. The Owner will use commercially reasonable efforts to issue to the Licensee at least sixty (60) days prior written notice of such removal, replacement or change in location of a pole, but in case of emergency, as reasonably defined by the Owner, the Owner may issue no notice or issue a notice that the Owner, in its sole opinion, deems expedient. In Emergency Situations where no notice is issued by the Owner or where the Licensee fails to remove or relocate its Attachment after notice from the Owner, the Owner or its designate may remove or relocate the Attachments and the Licensee shall reimburse the Owner for all costs, as determined in the absolute discretion of the Owner, of removing or relocating the Attachments.**
- 12.4 **To expedite its own work, the Owner may relocate a Licensee's Support Strand at the Licensee's sole cost and expense provided that:**
- **it does not interfere with other Attachments;**
 - **it does not affect a Cable Riser/Dip pole for the Licensee;**
 - **Standards and safety are maintained;**
 - **the Licensee does not require an easement or third party permission; and**
 - **the Support Strand is attached to the pole in a manner equivalent, in the Owner's view, to that formerly used by the Licensee.**
- If the Owner relocates the Licensee's Support Strand, the Owner will provide a written notification to the Licensee of the relocation.**
- 12.5 **Licensee agrees that if the Licensee fails to comply with a notice issued in accordance with Article 12, then, unless the parties agree in writing otherwise, the Licensee shall pay to the Owner a monthly delayed removal fee of \$100.00, or an amount that is otherwise set by the Ontario Energy Board from time to time, for each pole that the Licensee fails to remove, replace or change as required under the notice. The parties agree that this fee is a pre-estimate of damages.**
- 12.6 **Where an Approval is granted and the presence of the existing Attachments causes the Owner to perform Make-ready Work to accommodate the new Attachment, the Licensee shall pay to the Owner the cost of such relocation or modification.**
- 12.7 **Where a Government Authority causes the Owner to accrue a penalty liability due the Licensee's failure to comply with a notice issued by a Government Authority, the Licensee shall pay to the Owner an amount equal to the total of the delayed removal charge under Article 12.5, the amount of penalty incurred by the Owner and the costs related to the payment of the penalty.**

- 12.8 All charges to the Licensee for carrying out work referenced in this Article shall be reasonably determined by the Owner and payable by the Licensee in accordance with Article 13.
- 12.9 Licensee agrees that it shall not hold the Owner liable for damage to the Licensee's plant caused by the Owner's or the Land Owner's removal or relocation of Attachments in accordance with Article 12.
- 12.10 Where a Licensee is in receipt of notices issued in accordance with Article 12 by a Government Authority, the Owner and a Land Owner, or any combination therefore, and the instructions enclosed in one notice conflict with those of any other notice then, to the extent that the instructions conflict:
- the instructions contained in a notice issued by a Government Authority shall prevail over the instructions contained in any other notice; and,
 - the instructions contained in a notice issued by the Owner shall prevail over the instructions contained in a notice issued by the Land Owner.
- 12.11 This Agreement shall continue to apply to the Attachments relocated in accordance with any notice under Article 12.

ARTICLE 13 – PAYMENT FOR WORK

- 13.1 The Licensee shall issue a purchase order or certified cheque to the Owner for each project such as Make-ready Work required to meet the terms and conditions of this Agreement, and which is not covered by the Annual License Fee. The Owner will invoice against the applicable purchase order, as work by the Owner for the Licensee is performed.
- 13.2 Upon completion of any work performed by the Owner on the Licensee's behalf as contemplated by this Agreement, the Owner will render an invoice or invoices to the Licensee for the actual cost (including financial overheads) of performing such work and the Licensee shall pay the amount of the invoice within forty-five (45) days of the date of the invoice.
- 13.3 All invoices that are outstanding for longer than forty-five (45) days will be subject to interest at the rate of one and one-quarter percent (1.25 %) per month. The interest shall run from the due date for payment of the invoice until the date payment is received by the Owner.
- 13.4 If an invoice is outstanding for more than sixty (60) days, the Licensee shall forthwith, upon receipt of written notice from the Owner, but at the expense of the Licensee, remove from the poles of the Owner its Attachments covered by the invoice.

If the Licensee fails to remove the subject Attachments within thirty (30) days of receipt of the notice and the invoice is still unpaid, the Owner may remove such Attachments, at

the risk and expense of the Licensee. Upon the removal of such Attachments by the Owner, the Owner shall have the right to retain the Attachments so removed until the Licensee pays the cost of removal. If the Licensee fails to pay to the Owner the cost of removing such Attachments within sixty (60) days of receipt of the invoice for same, the Owner shall have the further right to sell the Attachments so removed and apply the proceeds against the cost of removing the Attachments. The Owner may also pursue any and all remedies it deems appropriate, including the exercise of any security posted by the Licensee with the Owner, pursuant to Article 5, to recover the outstanding amounts owed to it by the Licensee.

- 13.5 The Licensee shall notify the Owner in writing of any dispute with respect to an invoice. If the dispute cannot be resolved within thirty days through normal business operations, the Dispute Resolution process, as described in Article 22 will be initiated. Article 13.4 will not take effect during the Dispute Resolution process.**

ARTICLE 14 – LIABILITY, INDEMNITY AND INSURANCE

- 14.1 The Licensee agrees that the Owner is not responsible for any damage, harm or problems of any kind caused to the Attachments or the signals or supply carried by the Attachments which may arise from the Owner’s equipment or the supply carried by its equipment, except for such damages, harm or losses caused by gross negligence or wilful misconduct of the Owner.**
- 14.2 The Licensee assumes all risk of loss or damage, including damage to or loss of its Attachments or of its service or its equipment, or to the plant or service of the Owner arising from any act or omission of the Licensee or its agents and contractors under this Agreement, save and except for such portion of losses or damages caused by the gross negligence or wilful misconduct of the Owner, and does hereby release the Owner from all claims and demands with respect thereto.**
- 14.3 The Licensee does hereby indemnify and save harmless the Owner from all claims and demands for or in respect to any loss, damage or injury to property or persons (including loss of life), including those of third parties, arising out of, or attributable to, the exercise by the Licensee or its agents or contractors of the Approvals herein granted, save and except for such portion of loss or damage caused by the gross negligence or wilful misconduct of the Owner. Such indemnification shall include, but not be limited to, compensation to the Owner for time required to prepare for and attend hearings, for all reasonable legal fees and costs, for fees and costs of expert witnesses reasonably incurred and for the payment of any judgment, including costs, made by a Court, tribunal or decision maker and any and all appeals with respect thereto.**
- 14.4 The Licensee shall, during the term of this Agreement and any renewals thereof, maintain a policy or policies of insurance in which the Owner is named as additional insured in the amount of \$5,000,000 per occurrence and the policy or policies shall contain a cross liability clause, or as otherwise may be agreed between the Licensee and**

- the Owner, against liability due to damage to the property of the Owner or any other person or persons including third parties, and against liability due to injury to, or death of, any person or persons, including third parties, in any one instance. The Owner shall not be responsible for the payment of any premium with respect to any such insurance, which is the sole responsibility of the Licensee.**
- 14.5 Prior to the Approval of any Permit and as a condition of any Permit Approval or renewal, the Licensee shall furnish to the Owner annually a certificate of such insurance and for the renewal thereof, so long as this Agreement remains in force.**
- 14.6 The Licensee agrees that the insurance described herein does in no way limit the Licensee's liability pursuant to the indemnity provisions of this Agreement.**
- 14.7 During the term of the Agreement, the Licensee will immediately notify the Owner of any damage whatsoever to the equipment of the Owner or a third party or to persons arising as a result of the Licensee Affixing, inspecting, maintaining, changing, repairing or removing any of its Attachments to the Owner's poles. The Licensee will also immediately notify the Owner of any claims or notices of claims received by the Licensee related in any way to its Attachments.**
- 14.8 During the term of the Agreement, the Owner will immediately notify the Licensee, but not any third party having rights to the Licensee's equipment (whether by Irrevocable Right of Use, sublicense or otherwise) of any damage whatsoever to Attachment arising as a result of the Owner Affixing any Attachments to the Owner's poles. The Owner will also immediately notify the Licensee of any claims or notices of claim received by the Owner related in any way to the Attachments, or to any claims or notices of claim received by the Owner related in any way to any act or omission of the Licensee pursuant to this Agreement.**
- 14.9 The Owner will provide to the Licensee reasonable written notice of its intention to significantly change the nature or configuration of its equipment or change the characteristics, such as voltage, frequency or power levels of the electrical supply carried by its equipment when the Owner has reason to believe that such change might have adverse effects on the Attachments, or the product carried by such Attachments, or place the Licensee in non-compliance with any of the provisions of this Agreement. The Owner is not responsible for any adverse effects on the Attachments, or the product carried by such Attachments, as a result of any changes made by the Owner.**
- 14.10 Notwithstanding anything to the contrary in this Agreement, neither the Owner nor the Licensee shall be liable to the other for, and the indemnities set out herein shall be deemed not to include, indirect or consequential damages or damages for economic loss however caused, arising out of this Agreement.**
- 14.11 Notwithstanding Article 14.10, neither party's liability under Article 14.3 is limited by the provisions under Article 14.10.**
- 14.12 If third party Equipment interferes with the operation of the Attachment, then the Licensee will cooperate with the third party and the Licensor will make reasonable**

efforts, at the expense of the Licensee, to require the third party to cooperate with the Licensee to resolve the interference in a mutually acceptable manner. Subject to Article 22 and unless the Owner requests otherwise, if cooperation fails to resolve the matter, then the Licensee may enjoin the interference by legal action against the third party but without the involvement or participation of the Owner. The Licensee's sole remedy with respect to the Owner will be to terminate this Agreement on thirty (30) days' written notice, without further liability to the Owner. The Owner will not have any liability or responsibility for any interference with the Licensee's operations by third parties.

ARTICLE 15 – TERM AND TERMINATION OF AGREEMENT

- 15.1 The Term of this Agreement is five (5) years.
- 15.2 Prior to six (6) months before the End of Term Date, either party may request the other to extend the Term of the Agreement for a further term of one year on the same or amended terms and conditions, as the parties may agree and in such case the Agreement, as amended, shall continue until the new End of Term Date.
- 15.3 If, within 12 months after any End of Term Date, the parties have not agreed on terms and conditions for a renewed Agreement, either party may invoke the Dispute Resolution process as per Article 22.
- 15.4 Subject to Article 15.3 and 15.6, the Licensee shall, upon the termination of this Agreement, as mutually agreed upon by the parties, remove from the poles of the Owner its Attachments covered by this Agreement or the terminated Permit and ensure that the site where the removal occurred is left in a safe and equal or better condition then prior to the removal, at the expense of the Licensee.
- 15.5 In accordance with Articles 15.4 and 15.6, if the Licensee fails to remove the subject Attachments, within one hundred and eighty (180) days of receipt of notice, or otherwise mutually agreed upon, the Owner may, at the Licensee's sole risk and expense, remove such Attachments. Upon the removal of such Attachments by the Owner, the Owner shall have the right to retain the Attachments so removed until the Licensee pays the cost of removal, and if the Licensee fails to pay to the Owner the cost of removing such Attachments within sixty (60) days, then the Owner will have the further right to sell the Attachments so removed and apply the proceeds against the costs of removing the Attachments. The Owner may also pursue any and all remedies it deems appropriate, including the execution of any security posted with it, to recover the outstanding amounts owed to it by the Licensee.
- 15.6 The Agreement shall be deemed to remain in effect during the Dispute Resolution process under Article 22. All of the Owner's and Licensee's remedies to enforce outstanding obligations under this Agreement and Article 15.3 and Article 22 shall survive termination of this Agreement.

ARTICLE 16 – TERMINATION OF APPROVAL

- 16.1 **The Approval granted by each Permit Approved by the Owner pursuant to the provisions of this Agreement shall remain in full force from the date of the Approval until the earliest of:**
- **the End of Term Date; or**
 - **the date upon which the Attachment associated with the Approved Permit is removed by the Licensee or the Owner; or**
 - **subject to 16.5, the date upon which the Licensee defaults on any of its obligations under this Agreement; or**
 - **the pole designated by such Permit is abandoned or removed by the Owner; or**
 - **the date upon which Owner exercises its right to terminate the specific Permit in accordance with Article 16.11.**
- 16.2 **If the Owner intends to sell a pole designated by an Approved Permit to a third party, the Owner will attempt, on a best efforts basis, to secure the agreement of the purchaser that the Attachments be allowed to continue to be Affixed to the pole and the purchaser be bound to assume all of the Owner’s obligations hereunder.**
- 16.3 **The Owner and Licensee may negotiate terms of sale, from the Owner to the Licensee, of a pole vacated by the Owner and located on public and/or private property. Such sale will be subject to any existing obligations of the Owner to third parties, and subject to the consent of the property owner or any Government Authority having jurisdiction over said lands.**
- 16.4 **If the condition of sale of any pole pursuant to Article 16.2 or 16.3 cannot be satisfactorily arranged, the Owner may, by notice in writing at any time, require the Licensee to remove its Attachments from the poles involved, and the Licensee shall, within one hundred and eighty (180) days after receipt of said notice, remove its Attachments from such poles.**
- 16.5 **If the Licensee fails or neglects at any time to fully perform and observe all the covenants, terms and conditions herein contained, including a default at any time in the payment of fees or removal of Attachments, the Owner will notify the Licensee in writing of such default and the Licensee shall correct such default within thirty (30) days or such longer period as agreed to by the Owner. If the Licensee fails to cure such default within thirty (30) days of notice by the Owner or such longer period as agreed to by the Owner, the Owner may forthwith terminate the Approvals accompanying each Approved Permit.**
- 16.6 **The termination of an Approval pursuant to this Agreement shall not be deemed a termination of this Agreement unless the Permit containing such Approval is the last remaining or only Permit Approved pursuant to this Agreement, in which case the**

termination of such Permit will be deemed to be a termination of this Agreement, subject to the Licensee fulfilling all of its outstanding obligations and the right of the Owner to enforce any such outstanding obligations.

- 16.7 The Parties agree that obligations flowing from this Agreement, or a Permit Approved pursuant to this Agreement, will continue beyond the date of termination of the Agreement or Approved Permit, until the obligations are satisfied in full. All of the remedies to enforce outstanding obligations under this Agreement, Article 22 regarding Dispute Resolution, Article 30 and Schedule A, shall survive termination of this Agreement or an Approved Permit.**
- 16.8 The Licensee shall, upon the termination of a Permit Approved pursuant to this Agreement, forthwith at the request of the Owner, but at the expense of the Licensee, remove from the poles of the Owner its Attachments covered by this Agreement or the terminated Permit and ensure that the site where the removal occurred is left in a safe and equal or better condition than prior to the removal.**
- 16.9 If the Licensee fails to remove the subject Attachments, as per Article 16.8, within thirty (30) days of receipt of notice, or such longer period as agreed to by the Owner, the Owner may, at the Licensee's sole risk and expense, remove such Attachments. Upon the removal of such Attachments by the Owner, the Owner shall have the right to retain the Attachments so removed until the Licensee pays the cost of removal, and if the Licensee fails to pay to the Owner the cost of removing such Attachments within sixty (60) days, then the Owner will have the further right to sell the Attachments so removed and apply the proceeds against the costs of removing the Attachments. The Owner may also pursue any and all remedies it deems appropriate, including the execution of any security posted with it, to recover the outstanding amounts owed to it by the Licensee.**
- 16.10 When an Attachment on a pole subject to Joint Use is discontinued, the Licensee shall return its copy of the related Permit to the Owner and the Owner shall mark the Permit "cancelled".**
- 16.11 The Owner may, at its sole discretion, terminate a specific Permit in the event that the Licensee fails to resolve an interference with third party Equipment in accordance with Article 14.12.**

ARTICLE 17 – EXISTING RIGHTS OF OTHER PARTIES

- 17.1 Nothing herein contained shall prevent or limit the right of the Owner from granting to others, not party to this Agreement, the right to occupy its poles.**
- 17.2 If the Owner has granted permission to others, not parties to this Agreement, to use any poles owned by the Owner, whether said poles are covered by this Agreement or not, then nothing herein contained shall be construed as affecting such permission. The Owner shall have the right to continue and extend such existing permission. The Licensee agrees that existing rights of third parties are in no way diminished by this Agreement. The Licensee shall treat third party Attachments to the pole with the same**

duty of care as is required by the Agreement between the Licensee and Owner, and will respect the rights and privileges of third parties.

- 17.3 **The Owner shall not grant to any third party which includes, but is not limited to, any Affiliate (as defined in the Business Corporations Act RSO 1990, c.B.16, as amended) or any other entity related to it, by contract or otherwise, rights or privileges to use any Joint Use Poles used by the Licensee or any poles for which it has given permission for such Joint Use by the Licensee, unless the Owner includes a requirement substantially the same as Section 17.2 above in Owners' agreement with the third party.**

ARTICLE 18 – VESTED RIGHTS

- 18.1 **It is understood and agreed that neither this Agreement, nor any Approval granted by the Owner, shall confer upon the Licensee any vested right or franchise, by implication or otherwise. Any rights or privileges that are expressly provided for in this Agreement shall come to an end if and when the Agreement has been terminated in accordance with its terms. However, any outstanding obligations of the parties existing upon termination will survive termination.**
- 18.2 **It is further understood and agreed that this Agreement shall not confer upon the Owner any vested rights, or franchises, by implication or otherwise, to the Attachments, other than as provided for in this Agreement.**

ARTICLE 19 – NOTICES

- 19.1 **Unless otherwise provided herein, any notice or other communication to Licensee under this Agreement shall be given or served by hand, by registered mail, postage prepaid, email, by same day or overnight courier, or by facsimile transmission (fax) addressed in accordance with Schedule 'G' - Notices.**

Unless otherwise provided herein, any notice or other communication to Owner under this Agreement shall be given or served by hand, by registered mail, postage prepaid, email, by same day or overnight courier, or by facsimile transmission (fax) addressed to contacts in accordance with Schedule "G" – Notices.

- 19.2 **Any notice sent by ordinary mail shall be deemed to have been given or served on the fifth day after it is deposited in any post office in Canada. In the event that mail delivery is impeded for any reason, notice shall be given by email or by fax, and any notice so given shall be deemed to have been given on the day following the day it is sent. Any notice or other communication to a party may also be served in person by delivering same to a responsible person in the offices of the party at the above address. Either party may change its address for service at any time by notice in writing to the other.**

- 19.3 **The Licensee shall provide the required notice to ESA and the Owner for all incidents and accidents related to the Licensee’s Attachments and that affect public electrical safety as defined in O.Reg. 22/04.**
- 19.4 **As contact changes occur, the Licensee shall provide the Owner with the required local Licensee contacts for:**
- a. **Planned field installations, adjustments, and removals,**
 - b. **24/7 emergency response to repair, adjust, and remove Attachments due to emergency work.**

ARTICLE 20 – ASSIGNMENT

- 20.1 **The Licensee agrees that it will not assign its interest, in whole or in part, in this Agreement, the privileges herein granted or any Approved Permit, without the prior written consent of the Owner, which consent shall not be unreasonably withheld. Subject to the foregoing, this Agreement shall extend to, be binding upon, and enure to the benefit of the Owner, its successors and assigns, and the Licensee, its successors or permitted assigns. The Licensee shall have the right to assign its interest in this Agreement in its entirety to one of its affiliates with prior written consent of the Owner which consent shall not be unreasonably withheld, provided that the Licensee shall remain liable for the fulfilment of all of the Licensee’s obligations hereunder. Such consent may be requested more than once.**
- 20.2 **The parties agree that the Owner’s withholding of consent under Article 20.1 shall not be deemed unreasonable where assignee’s financial performance, safety practices and unsafe installations, operational performance (such as timely transfers off old poles and removal of NIU Attachments, Attachment field identification tagging or corrections of outstanding O.Reg. 22/04 audit findings) or asset record accuracy with respect to any agreements or undertakings with the Owner are deemed, in the Owner’s sole discretion, to be unsatisfactory.**
- 20.3 **No Change In Control of the Licensee, whether directly or indirectly, shall occur without the written consent of the Owner.**
- 20.4 **The Owner may assign this Agreement without the consent of the Licensee. The Owner agrees that it will notify the Licensee of assignment of any of the Owner’s interest in this Agreement.**

ARTICLE 21 – THIRD PARTIES

- 21.1 **The Licensee may provide a third party with an Indefeasible Right of Use (IRU) and/or a sublicense to any part of Attachment that is Affixed to the Owner’s equipment. The third party shall not have direct access to the Owner’s poles or other equipment, unless the Licensee has obtained the prior written consent of the Owner and the third party enters into a separate Licensed Attachment Agreement with the Owner. The Licensee**

shall not confer any vested right, or franchise, by implication or otherwise, to use the Owner's poles or equipment or any privileges under this Agreement to a third party.

ARTICLE 22 – DISPUTE RESOLUTION

- 22.1 **If any Approval is refused or terminations invoked, the Licensee may appeal that decision to the Owner's Chief Executive Officer. The Owner has the mutual right to bring a complaint to the attention of the Licensee's Chief Executive Officer. The appeal or complaint shall be heard and decided within thirty (30) days of receiving written notice of the appeal or complaint.**
- 22.2 **The Owner and the Licensee agree to attempt to resolve any disputes arising under this Agreement in an expedient manner. Where possible, the Owner and the Licensee shall endeavour to resolve any disputes between themselves, at the level at which the dispute arose. If the dispute cannot be so resolved, the Owner and the Licensee agree that either party may refer the matter to higher management ("Dispute Resolution"). For both parties, this shall be the Vice President level or designate.**
- 22.3 **Any dispute, controversy or claim arising out of or in connection with this Agreement, including any question regarding its negotiation, existence, validity, breach or termination, or the negotiation of a new Agreement may be referred to the Ontario Energy Board for decision.**
- 22.4 **Alternatively, disputes arising under this Agreement may be resolved by a mutually agreed upon body of competent jurisdiction or arbitration in accordance with the *Arbitration Act* (Ontario), 1991, S.O. 1991, Chapter 17 (the "Act"), as amended from time to time. Arbitration may be initiated by either party by notice in writing. Within twenty (20) days after the written request of either of the parties hereto for arbitration, the parties shall agree upon a single arbitrator, failing which, each of them shall appoint one arbitrator, and the two so appointed shall, within twenty (20) days after the initial twenty (20) day period, jointly select a third, who shall act as the Chair of the tribunal. In case either of the parties hereto fails to name an arbitrator within twenty (20) days after the written request for arbitration, the arbitrator appointed shall be the only arbitrator. In case the two arbitrators appointed are unable to agree on a third arbitrator within twenty (20) days after the expiration of the first twenty (20) day period, application shall be made as soon as reasonably possible to any Judge of the Ontario Superior Court of Justice for the appointment of a third arbitrator. The arbitrator or arbitrators so appointed shall have all the powers accorded arbitrators by the *Arbitration Act*, as from time to time amended, or any statute in substitution therefor. The decision of the said arbitrator or arbitrators (or of a majority of such arbitrators) shall be final and binding on the parties hereto.**
- 22.5 **The Licensee shall resolve any dispute arising under this Agreement with the Owner or any dispute arising with a third party in relation to the Licensee's obligations under Article 14.12 by application or appeal to the Canadian Radio-television and Telecommunications Commission.**

ARTICLE 23 – SCHEDULES

23.1 **The following schedules are hereby incorporated into and constitute part of this Agreement:**

- **Schedule A - Permit Form**
- **Schedule B - Interpretive Sketches**
- **Schedule C - Minimum Permit Drawing Requirements**
- **Schedule D – Owner Construction Standards, Conventions, and Capacities**
- **Schedule E – Certificate of Approval**
- **Schedule F - Record of Inspection & Construction Verification Program Certificate**
- **Schedule G - Notices**

ARTICLE 24 – INTERPRETATION

24.1 **The terms of this Agreement shall be governed by the laws of the Province of Ontario and Canada, as applicable. In the event that any court or arbitration tribunal declares any portion of this Agreement invalid, the remainder of this Agreement shall remain in full force and effect.**

24.2 **Nothing in this Agreement or its performance shall create a partnership, tenancy or agency relationship between the parties, each of which is the independent operator of its facilities.**

ARTICLE 25 – ENTIRE AGREEMENT

25.1 **This Agreement, as of its Effective Date, is the entire Agreement between the parties and supersedes and replaces any prior verbal or written agreement between the Owner and Licensee relating to the Attachments on the Owner’s poles or In-span, but any Permit granted Approval and outstanding under any prior agreement shall, notwithstanding anything contained in such prior agreement, remain in force and effect as if such Permit had been Approved pursuant to this Agreement, in accordance with Article 7.8 on the express condition that the Licensee satisfies all of the terms of this Agreement.**

ARTICLE 26 – HEADINGS

- 26.1 **The division of this Agreement into Articles and sections, and the headings of those Articles, are for convenience of reference only and shall not affect the interpretation of this Agreement.**

ARTICLE 27 – LEGISLATIVE REFERENCES

- 27.1 **Any references in this Agreement to any statute, by-law, rule, regulation, order or act of any government, governmental body or other regulatory body shall be construed as a reference thereto as amended or re-enacted from time to time or as a reference to any successor thereto.**

ARTICLE 28 – WAIVER

- 26.1 **The failure of any party to this Agreement to enforce or insist upon compliance with any of the terms or conditions of this Agreement shall not constitute a general waiver or relinquishment of any rights under this Agreement, and the party shall be at liberty to enforce such terms and conditions at any time thereafter.**

ARTICLE 29 – ENVIRONMENTAL OBLIGATIONS

- 29.1 **The Owner makes no representation or warranty with respect to condition, defects, nature, composition, use (past, present or future) of land or plant. The Licensee hereby accepts land and plant of the Owner on an “as is” basis.**
- 29.2 **The Licensee shall comply with the provisions of any federal, provincial or municipal environmental laws which, during the continuance of this Agreement shall become applicable to the land, plant or Attachments pertaining to Approved Permits. If any governmental authority exercising jurisdiction with respect to environmental protection requires, in respect of any Attachments, the installation of equipment or apparatus, or requires that any other action be taken, then the Licensee shall promptly notify the Owner and install such equipment or apparatus or take such measures as may be required by such governmental authority. The Licensee shall be solely responsible for the cost of all work carried out to comply therewith.**
- 29.3 **Upon the termination of this Agreement, the Licensee shall leave the pole, plant and land upon which the pole is situated free of any environmental contamination resulting from the Attachments. If and when challenged in the future, the Licensee shall have the burden of proving that any environmental contamination has not resulted from its Attachments.**

- 29.4 **In the event the Licensee fails to comply with its obligations in this Article to the satisfaction of the Owner, the Owner may undertake any such work that it considers necessary to correct any environmental contamination which may have resulted from the Attachment or conduct of the Licensee, and all expenses incurred by the Owner, either directly or indirectly, shall be payable by the Licensee upon receipt of the Owner's invoice.**
- 29.5 **The responsibility of the Licensee to the Owner with respect to the environmental obligations contained herein shall continue to be enforceable by the Owner notwithstanding termination of this Agreement.**

ARTICLE 30 – FORCE MAJEURE

- 30.1 **If as a result of force majeure a party is delayed in or prevented from performing or observing any of its obligations (except any obligation to pay a sum of money) under this Agreement: (i) the said party shall, for a period of time equal to the duration of the force majeure, be relieved from the performance of the said obligation and shall not be deemed to be in default hereunder during such period, and (ii) the other party shall not be entitled to any compensation for losses, damages, costs or expenses caused by such non-performance or delay.**

ARTICLE 31 – REASONABLENESS

- 31.1 **Each party agrees that it shall at all times act reasonably in the performance of its obligations and the exercise of its rights under this License.**

IN WITNESS WHEREOF the parties hereto have caused this Agreement to be executed on the day and year first above written.

Hydro Ottawa Limited

•

Name:
Title:

Name:
Title:

I have authority to bind the corporation

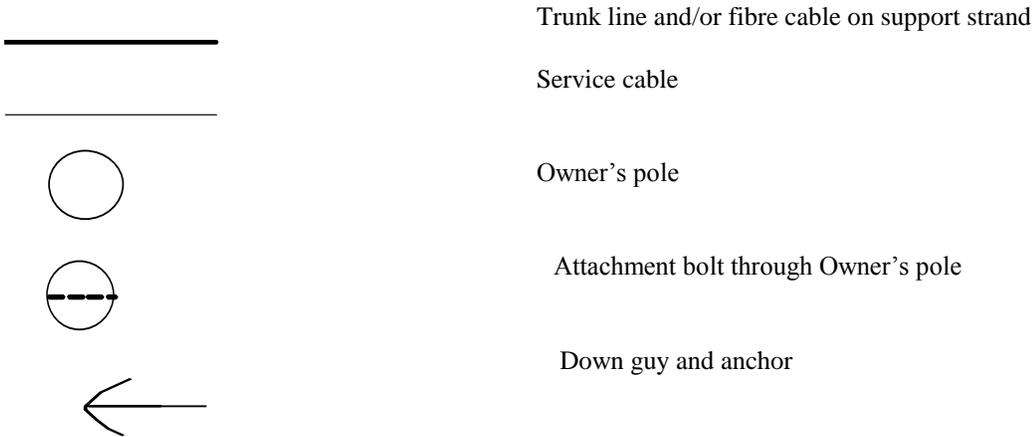
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SCHEDULE 'A' - PERMIT FORM

| | | |
|-----------------------------|--------------------------|----------------------------------|
| TO: | | PERMIT NUMBER: |
| PERMISSION IS REQUESTED BY: | | NUMBER OF POLES: |
| LOCATION: | | |
| | | |
| | | SUPERSEDES/CANCELS PERMIT No. |
| | | |
| | | |
| | | |
| APPLICANT'S REFERENCE: | POLE OWNER'S REFERENCE: | |
| APPLICANT'S FILE | POLE OWNER'S FILE | |
| APPLICANT | APPROVED | |
| _____ | _____ | |
| SIGNATURE AND TITLE | - SIGNATURE AND TITLE | |
| DATE: | DATE: | |
| | | |

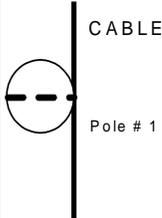
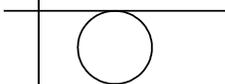
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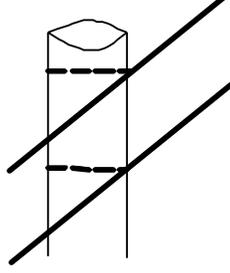
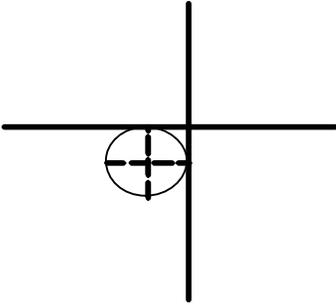
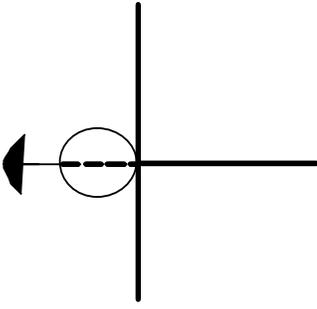
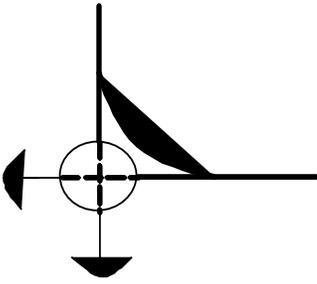
LEGEND



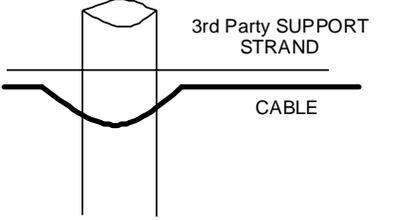
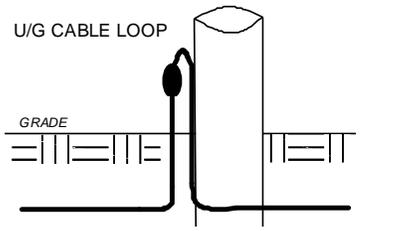
Note: All sketches include any overhead or underground services, and service clearance attached to the pole.

One FULL = 100% OEB rate

| Item | Sketch | Description | Attachment Rate |
|------|---|--------------------------------|-----------------|
| # 1 |  | Attachment at Pole | One FULL |
| #2 |  | Service Drop on Clearance Pole | 50% of One FULL |

| | | | |
|-----|---|----------------------------------|---|
| # 3 |  | Two separate support strands | One FULL(subject to consolidation requirements) |
| # 4 |  | Two intersecting support strands | One FULL |
| # 5 |  | "T" tap support strands | One FULL |
| # 6 |  | Dead end & change direction | One FULL |

| | | | |
|-------------|--|---|---|
| <p># 7</p> | | <p>Angle pole attachment At Pole # 1</p> <p>Guy Pole to support Pole #1</p> | <p>One FULL</p> <p>One FULL</p> |
| <p># 8</p> | | <p>Cable on support strand at Pole # 1</p> <p>Guy Pole- Dead end support strand at Pole # 2</p> | <p>One FULL</p> <p>One FULL</p> |
| <p># 9</p> | | <p>Cable dip/riser</p> | <p>One FULL</p> |
| <p># 10</p> | | <p>Antenna, or grandfathered amplifier / power supply</p> | <p>Total Direct Cost, if existing permit or One FULL, if no existing permit</p> |

| | | | |
|------|---|---|---|
| # 11 |  | Over Lashed to a 3 rd Party support strand | No Charge if Licensee is paying for an Attachment; Otherwise One FULL (after March 7, 2005) or 25% (prior to March 7, 2005) |
| # 12 |  | Underground cable loop pole | Total Direct Cost, if existing permit or One FULL, if no existing permit |

**SCHEDULE 'C' - MINIMUM PERMIT DRAWING REQUIREMENTS
(AS PER OWNER'S SPECIFICATIONS)**

- 1. Basic Drawing Requirements (applies to all drawings)**
 - a. Title block (name & address of Licensee, date, north point, drawing/project number, location of project)**
 - b. Name & phone number of the Project Manager for the specific application**
 - c. Language: English/French as appropriate**
 - d. Scale & Dimensions: Metric**
 - e. Scale Size: Larger than or equal to 1:1000 (e.g. 1:1000, 1: 500, 1: 250)**
 - f. Legend of symbols**
 - g. Key Map**
 - h. Street names: clearly indicated**

- 2. Project Specific Drawing Requirements**
 - a. Sidewalks, driveways, trees, buildings, bridges, rivers, railroads, other utilities if they add clarity to specific issues**
 - b. Clearly indicated poles and their ownership**
 - c. Proposed cable and Support Strands clearly indicated with heavier line style**
 - d. Proposed cable to be Over-lashed to existing Support Strand and indicate owner of that Support Strand**
 - e. Which side of the pole to be contacted**
 - f. Slack storage & splice can locations**
 - g. Electrical bonding locations**
 - h. Proposed ground rods**
 - i. Dips and/or risers**
 - j. Ducts, guards, and/or concrete work on poles for dips and/or risers**
 - k. Cable dip/riser details**
 - l. Proposed and existing Licensee anchoring**
 - m. Make ready work anticipated by the Licensee with the Owner's poles or third party Attachments**
 - n Existing & proposed pedestal locations along route**
 - o Railroad, major highway, & river crossing engineering details & associated profiles**
 - p. Pole height contact detail (by drawing or table) indicating dimensions above grade for all existing Telecommunications / CATV contacts by name, streetlight contacts, lowest Hydro contacts (neutral, secondary, primary, transformers, unprotected Hydro riser/dips) for both new and existing Support Strands.**
 - q. Horizontal offset measurements for proposed pole contact close construction to buildings, other non-Owner overhead systems (ex. traffic, street lighting, signs), and/or bridges.**
 - r. Wiring, wire routing, and Attachment methods to the pole.**
 - s. Curbs**
 - t. Lot lines and/or buildings, and house numbers in front of poles**

SCHEDULE 'D' OWNER CONSTRUCTION STANDARDS, CONVENTIONS, AND CAPACITIES

GUYS AND ANCHORS

- **Joint anchoring on an Owner's anchor will not be permitted without the Owner's consent.**
- **A minimum 254 mm (10") power installed screw anchor (PISA or equivalent strength and reliability anchor) shall be installed to a minimum depth of 2.13 m (7') on a 25 mm (1") anchor rod. An equivalent strength anchoring device may be used in place of the PISA, but only after engineering calculations have been submitted to Owner and approved. Depending on soil conditions, greater anchoring support may be required. During installation of their anchors, the Licensee shall not weaken the soil around the Owner's anchor.**
- **No push braces shall be used in urban areas and major arterial roads.**
- **For all dead-end or major load changes to the line, pole equipment shall use a minimum of a 3" square washer to prevent pole damage.**

STRAND AND CABLE

- **Unless indicated otherwise by the Owner, the strand shall be installed on the same side of the pole as other communications strands. Where no other communications strands exist, the Licensee shall install the strand on the same side as the electrical neutral conductor. Cables and strands shall not box in the pole to allow pole maintenance.**
- **The number of parallel, vertical (no offset brackets) strands contacting the pole on the same side will be limited to three. For all poles that have a Power Space, the uppermost position within the Communications Space shall be reserved for the Owner to place its own communications attachments. Therefore, over lashing to other communication parties' strands may be necessary. Parallel strands shall not cross over one another between poles.**
- **The installation height of the Licensee's strand shall conform to the Owner's pole framing standard.**
- **A minimum strand breaking strength of 36.5 kN (8200 lbs) for Support Strands shall be used on all major city arterial & collector roads, and crossings of railways, transitways, provincial highways and navigable waterways to provide a minimum capacity for multiparty over lashing.**
- **No self-supporting or figure '8' cable shall be used except for Service Drops. Along major city arterial & collector roads, Service Drop shall be supported by a steel Support Strand for distances greater than two pole spans.**
- **All cables shall be double lashed when crossing major arterial roads, railways, transitways, provincial highways and navigable waterways.**
- **Slack storage of the cable and splice cans shall be installed along the strand and not coiled at the pole. Slack storage and splice cans shall not be located over railways, transitways, roadways, or navigable waterways. Fibre cable and its related equipment (ex. slack storage, splice cans, ...) are not to be located in aesthetic sensitive areas. A maximum of one splice can per strand at a minimum spacing of two pole spans.**

IDENTIFICATION

- **Markers shall be placed on strands and cables in a manner acceptable to the Owner to assist in field identification of attachment ownership by other authorized users of the pole. As a minimum, these markers shall be placed on the cable and strand at all cable risers/dips, at every second pole, each splice can, and antenna in a manner acceptable to the Owner.**

EQUIPMENT ON POLES (except antennas)

- No new amplifiers, power supplies, splitters, permanent work platforms, or splice enclosures shall be installed on the Owner's poles. When requested by the Owner, all such existing equipment shall be removed, on a case-by-base, by the Licensee in accordance with a plan submitted to, and approved by, the Owner.
- All electrical bonding of aerial equipment to the neutral/ground system on a pole shall be done by the Owner or an approved contractor of the Owner at the Licensee's cost based on unit prices or cost estimates to be reviewed and agreed in advance with the Licensee.
- The Licensee shall consolidate multiple Riser/Dip cables on a pole under a protective U guard/pipe that has a maximum diameter of 76 mm (3").
- The Licensee shall not install Riser/Dip cables on poles that have more than 33% of the circumference [120 degrees] taken up with existing Riser/Dip cables and cable protection (guards, duct laterals and concrete curbs). Re-use of existing cable guards is mandatory.
- When required for at grade protection, concrete curbs shall be formed with a SONA tube or equivalent, and then striped for a clean concrete finish.

ANTENNAS & NON-ELECTRICAL SUPPLY BOXES ON POLES

- Only one antenna shall be permitted on an Owner's pole.
- Antennas shall not be installed on poles with traffic signals, poles less than 7.5 metres in height above grade, or decorative poles.
- The 15 metre sight line triangle at all public road intersections, turning islands, and road way medians shall be kept clear of any antennas.
- Antenna mounting height on the pole shall be between 3.5 metres and 5 metres above grade and limited to one side of the pole.
- An antenna on the Owner's pole shall not be closer to other antennas than 100 metres mounted on any other Owner's poles.
- Antennas shall not be installed within ± 60 degrees from perpendicular to commercial building signs.
- Antennas shall not be installed within one pole span of critical crossings (such as railways, waterways, highways, transitways, cliffs).
- The antenna shall not weight more than 10 kg and not exceed 1m in height.
- The Licensee's equipment boxes associated with the antenna shall not be mounted on the Owner's poles.

INSTALLATIONS

- During all work on the Attachments, the Licensee's contractor(s) shall display a large sign indicating that they are working for the Licensee. The Licensee's contractor shall keep a copy of the approved Attachment Permit on site during installation and it shall make available upon request.
- The Licensee and its contractor(s) shall maintain safe work practices as per Article 6. Failure to meet these standards, rules, and regulations shall result in suspension (and possible Agreement termination) of all new plant installation by the Licensee on the Owner's poles until appropriate safety practices and work conditions have been mutually agreed to by the Parties and implemented as required.
- At least two (2) working days notification will be given to the Owner's Lines Area Supervisor before the Licensee's installation commences.
- Unless otherwise directed by the road authorities, separation of at least 1 m from below ground facilities shall be maintained between centre lines of overhead and underground/on-grade facilities.
- Other than the Licensee and its contractor(s), no third party shall be allowed to work on the Licensee's plant on the Owner's pole without written permission from the Owner
- New pole spacing requirements are as per OLS0001 and OLS0003 specifications

SCHEDULE 'E': CERTIFICATE OF APPROVAL

One of the following two versions must be utilized, as appropriate, to indicate compliance with the requirements of O.Reg. 22/04.

- 1. Work Instruction method in conjunction with Standard Design specifications.

| | |
|---|-------------|
| This Project Drawing has been assembled utilizing only certified and approved standard design specifications and equipment and meet with the safety requirements contained within Section 4 of Ontario Regulation 22/04. | |
| _____ | _____ |
| Name | Date |
| _____ | |
| Signature of Qualified Person | |
| *** No additional Certificate of Approval is required *** | |

- 2. Plan method requiring a Professional Engineer

| | |
|--|-------------|
| Certificate of Approval | |
| The installation work covered by this document meets the safety requirements of Section 4 of Regulation 22/04 | |
| _____ | _____ |
| Name | Date |
| _____ | |
| Signature of Professional Engineer | |

SCHEDULE 'F': RECORD OF INSPECTION & CVP CERTIFICATE

**Third Party
Record of Inspection & Construction Verification Program Certificate**

| | |
|---|--|
| <p>As-Constructed</p> <p><input type="checkbox"/> Aerial Installation (New or Addition)</p> <p><input type="checkbox"/> Underground Installation (New or Addition)</p> <p>Like-For-Like: <input type="checkbox"/> Repairs</p> <p style="padding-left: 40px;"><input type="checkbox"/> Replacement</p> <p style="padding-left: 40px;"><input type="checkbox"/> Removal</p> <p>Note: All changes made during construction are shown on attached as-built construction drawing.</p> | Inspection Date: |
| | Permit #: |
| | <p>Work Site Location</p> <p>Street Name : _____</p> <p><i>Between</i> : _____</p> <p>And : _____</p> |

Third Party - Construction Verification Certificate

This is to certify that the construction as recorded in this drawing is consistent with the approved plan, standard designs or work instruction and meets with the safety requirements of Ontario Regulation 22/04. This site has been left in a condition that presents no undue hazards.

Attachment Licensee (Attacher):
(company name)

Name of Licensee Inspector:

Position of Licensee Inspector:

Signature of Licensee Inspector:

SCHEDULE 'G': NOTICES

Notices for the purposes of Article 19.1 shall be given as follows:

| | Owner | Licensee |
|--|--|--|
| For Corporate & Agreement: | <u>Director, Distribution Asset Management</u> Attn: Address: Tel.: Fax: Email: | Attn: Address: Tel.: Fax: Email: |
| For Permits, Field Audits, Field Coordination, & Standards: | <u>Supervisor, Standards</u> Attn: Address: Tel.: Fax: Email: | Attn: Address: Tel.: Fax: Email: |
| For Invoicing & 3rd party insurance claims: | <u>Supervisor, Billing Projects Finance</u> Attn: Address: Tel.: Fax: Email: | Attn: Address: Tel.: Fax: Email: |



1 **Undertaking JTC1.20**

2

3 To advise the end date of the forecast figure from the conference board of Canada, and
4 how many years of extrapolation HOL did in the material currently filed

5

6

7 **Response:**

8

9 The Conference Board of Canada economic data as used in the forecast provided in the
10 Original evidence went to the end of 2018. Itron used the average growth rates from
11 2015 to 2018 to estimate the 2019 and 2020 figures.



1 **Undertaking JTC1.24**

2

3 To provide an updated revenue reconciliation table.

4

5

6

7 **Response:**

8

9 Please find as ATT-JTC1.24-A the updated revenue requirement spreadsheets,
10 Appendix 2-V.

File Number: EB-2015-0004
 Exhibit:
 Tab:
 Schedule:
 Page:
 Date:

**Appendix 2-V
 Revenue Reconciliation**

| Rate Class | Customers/ Connections | Number of Customers/Connections | | | Test Year Consumption | | Proposed Rates | | | Revenues at Proposed Rates | Class Specific Revenue Requirement | Transformer Allowance Credit | Total | Difference |
|------------------------------------|---------------------------|---------------------------------|---------------------|------------|-----------------------|-----------|------------------------------|------------|------------|-------------------------------|--|------------------------------------|----------------|------------|
| | | Start of Test Year | End of Test Year | Average | kWh | kW | Monthly Service Charge | Volumetric | | | | | | |
| | | | | | | | | kWh | kW | | | | | |
| Residential | Customers | 295,999 | 299,296 | 297,647.50 | 2,216,045,000 | | \$ 13.88 | \$ 0.0207 | | \$ 95,448,299.10 | \$ 95,311,752 | \$ 95,311,752 | \$ 136,547 | |
| GS < 50 kW | Customers | 24,473 | 24,569 | 24,521.00 | 726,360,000 | | \$ 23.00 | \$ 0.0216 | | \$ 22,457,172.00 | \$ 22,486,959 | \$ 22,486,959 | \$ 29,787 | |
| GS > 50 to 1,999 kW | Customers | 3,282 | 3,308 | 3,295.00 | 2,954,441,000 | 7,027,979 | \$ 290.00 | | \$ 3.9496 | \$ 39,224,305.86 | \$ 38,433,650 | \$ 790,648 | \$ 39,224,298 | \$ 8 |
| GS > 1,5000 to 4,999 kW | Customers | 76 | 76 | 76.00 | 863,309,000 | 1,847,365 | \$ 4,700.00 | | \$ 3.8376 | \$ 11,375,847.92 | \$ 11,168,107 | \$ 207,829 | \$ 11,375,935 | \$ 87 |
| Large Use | Connections | 11 | 11 | 11.00 | 620,218,000 | 1,121,449 | \$16,900.00 | | \$ 3.6595 | \$ 6,334,742.62 | \$ 6,208,618 | \$ 126,163 | \$ 6,334,781 | \$ 39 |
| Streetlighting | Connections | 55,516 | 55,516 | 55,516.00 | 43,552,000 | 123,144 | \$ 0.80 | | \$ 5.6872 | \$ 1,233,298.16 | \$ 1,233,300 | | \$ 1,233,300 | \$ 2 |
| Sentinel Lighting | Connections | 57 | 53 | 55.00 | 48,000 | 216 | \$ 3.10 | | \$ 11.9059 | \$ 4,617.67 | \$ 4,618 | | \$ 4,618 | \$ 0 |
| Unmetered Scattered Load | Customers | 3,455 | 3,499 | 3,477.00 | 16,651,000 | | \$ 4.75 | \$ 0.0233 | | \$ 586,157.30 | \$ 586,507 | | \$ 586,507 | \$ 350 |
| Standby Power | Customers | 2 | 2 | 2.00 | | 4,800 | \$ 135.00 | | \$ 1.6651 | \$ 11,232.48 | \$ 11,232 | | \$ 11,232 | \$ 0 |
| Embedded Distributor Class etc. | | | | - | | | | | | \$ - | | | \$ - | \$ - |
| | | | | - | | | | | | \$ - | | | \$ - | \$ - |
| | | | | - | | | | | | \$ - | | | \$ - | \$ - |
| | | | | - | | | | | | \$ - | | | \$ - | \$ - |
| Total | | | | | | | | | | \$ 176,675,673.11 | \$ 175,444,744 | \$ 1,124,639 | \$ 176,569,383 | \$ 106,290 |

Note \$ 177,800,312.32

1 The class specific revenue requirements in column N must be the amounts used in the final rate design process. The total of column N should equate to the proposed base revenue requirement.

File Number: EB-2015-0004

Exhibit:

Tab:

Schedule:

Page:

Date:

**Appendix 2-V
Revenue Reconciliation**

| Rate Class | Customers/ Connections | Number of Customers/Connections | | | Test Year Consumption | | Proposed Rates | | | Revenues at Proposed Rates | Class Specific Revenue Requirement | Transformer Allowance Credit | Total | Difference |
|------------------------------------|---------------------------|---------------------------------|---------------------|------------|-----------------------|-----------|------------------------------|------------|------------|-------------------------------|--|------------------------------------|---------------|------------|
| | | Start of Test Year | End of Test Year | Average | kWh | kW | Monthly Service Charge | Volumetric | | | | | | |
| | | | | | | | | kWh | kW | | | | | |
| Residential | Customers | 299,875 | 303,174 | 301,524.50 | 2,198,259,000 | | \$ 18.01 | \$ 0.0164 | | ##### | \$101,164,595 | | \$101,164,595 | -\$ 52,328 |
| GS < 50 kW | Customers | 24,586 | 24,682 | 24,634.00 | 716,896,000 | | \$ 28.00 | \$ 0.0214 | | \$ 23,618,598.40 | \$ 23,613,382 | | \$ 23,613,382 | -\$ 5,217 |
| GS > 50 to 1,999 kW | Customers | 3,310 | 3,336 | 3,323.00 | 2,907,445,000 | 6,908,640 | \$ 350.00 | | \$ 3.9251 | \$ 41,073,702.86 | \$ 40,296,433 | \$ 777,222 | \$ 41,073,655 | -\$ 48 |
| GS > 1,5000 to 4,999 kW | Customers | 76 | 76 | 76.00 | 877,400,000 | 1,877,691 | \$ 5,000.00 | | \$ 4.0419 | \$ 12,149,439.25 | \$ 11,938,235 | \$ 211,240 | \$ 12,149,476 | \$ 36 |
| Large Use | Connections | 11 | 11 | 11.00 | 619,253,000 | 1,119,726 | \$17,900.00 | | \$ 3.8651 | \$ 6,690,652.96 | \$ 6,564,698 | \$ 125,969 | \$ 6,690,668 | \$ 15 |
| Streetlighting | Connections | 55,516 | 55,516 | 55,516.00 | 43,653,000 | 123,144 | \$ 0.90 | | \$ 5.8846 | \$ 1,324,225.98 | \$ 1,324,226 | | \$ 1,324,226 | -\$ 0 |
| Sentinel Lighting | Connections | 53 | 49 | 51.00 | 48,000 | 216 | \$ 3.25 | | \$ 12.6891 | \$ 4,729.85 | \$ 4,730 | | \$ 4,730 | -\$ 0 |
| Unmetered Scattered Load | Customers | 3,503 | 3,547 | 3,525.00 | 16,690,000 | | \$ 5.50 | \$ 0.0235 | | \$ 624,865.00 | \$ 624,532 | | \$ 624,532 | -\$ 333 |
| Standby Power | Customers | 2 | 2 | 2.00 | | 4,800 | \$ 143.00 | | \$ 1.7617 | \$ 11,888.16 | \$ 11,888 | | \$ 11,888 | \$ 0 |
| Embedded Distributor Class etc. | | | | - | | | | | | \$ - | | | \$ - | \$ - |
| | | | | - | | | | | | \$ - | | | \$ - | \$ - |
| | | | | - | | | | | | \$ - | | | \$ - | \$ - |
| | | | | - | | | | | | \$ - | | | \$ - | \$ - |
| Total | | | | | | | | | | ##### | \$185,542,719 | \$ 1,114,431 | \$186,657,150 | -\$ 57,875 |

Note

- The class specific revenue requirements in column N must be the amounts used in the final rate design process. The total of column N should equate to the proposed base revenue requirement.
- Rates should be entered with the number of decimal places that will show on the Tariff of Rates and Charges.

File Number: EB-2015-0004
 Exhibit:
 Tab:
 Schedule:
 Page:
 Date:

**Appendix 2-V
 Revenue Reconciliation**

| Rate Class | Customers/ Connections | Number of Customers/Connections | | | Test Year Consumption | | Proposed Rates | | | Revenues at Proposed Rates | Class Specific Revenue Requirement | Transformer Allowance Credit | Total | Difference |
|------------------------------------|---------------------------|---------------------------------|---------------------|------------|-----------------------|-----------|------------------------------|------------|------------|-------------------------------|--|------------------------------------|----------------|------------|
| | | Start of Test Year | End of Test Year | Average | kWh | kW | Monthly Service Charge | Volumetric | | | | | | |
| | | | | | | | | kWh | kW | | | | | |
| Residential | Customers | 303,718 | 307,033 | 305,375.50 | 2,206,411,000 | | \$ 22.44 | \$ 0.0115 | | \$ 107,605,241.14 | \$ 107,579,377 | | \$ 107,579,377 | -\$ 25,864 |
| GS < 50 kW | Customers | 24,697 | 24,793 | 24,745.00 | 709,791,000 | | \$ 33.50 | \$ 0.0209 | | \$ 24,782,121.90 | \$ 24,751,307 | | \$ 24,751,307 | -\$ 30,815 |
| GS > 50 to 1,999 kW | Customers | 3,338 | 3,365 | 3,351.50 | 2,875,422,000 | 6,824,350 | \$ 420.00 | | \$ 3.8265 | \$ 43,004,935.28 | \$ 42,234,602 | \$ 767,739 | \$ 43,002,341 | -\$ 2,594 |
| GS > 1,5000 to 4,999 kW | Customers | 76 | 76 | 76.00 | 895,369,000 | 1,916,044 | \$ 5,600.00 | | \$ 4.0925 | \$ 12,948,610.07 | \$ 12,733,026 | \$ 215,555 | \$ 12,948,581 | -\$ 29 |
| Large Use | Connections | 11 | 11 | 11.00 | 618,467,000 | 1,118,300 | \$21,000.00 | | \$ 3.8126 | \$ 7,035,630.58 | \$ 6,909,777 | \$ 125,809 | \$ 7,035,586 | -\$ 45 |
| Streetlighting | Connections | 55,516 | 55,516 | 55,516.00 | 43,765,000 | 123,144 | \$ 0.95 | | \$ 6.3578 | \$ 1,415,807.32 | \$ 1,415,813 | | \$ 1,415,813 | \$ 6 |
| Sentinel Lighting | Connections | 49 | 45 | 47.00 | 48,000 | 216 | \$ 3.75 | | \$ 12.5148 | \$ 4,818.20 | \$ 4,818 | | \$ 4,818 | -\$ 0 |
| Unmetered Scattered Load | Customers | 3,551 | 3,599 | 3,575.00 | 16,731,000 | | \$ 6.75 | \$ 0.0223 | | \$ 662,676.30 | \$ 662,083 | | \$ 662,083 | -\$ 594 |
| Standby Power | Customers | 2 | 2 | 2.00 | | 4,800 | \$ 150.00 | | \$ 1.8591 | \$ 12,523.68 | \$ 12,523 | | \$ 12,523 | -\$ 0 |
| Embedded Distributor Class etc. | | | | - | | | | | | \$ - | | | \$ - | \$ - |
| | | | | - | | | | | | \$ - | | | \$ - | \$ - |
| | | | | - | | | | | | \$ - | | | \$ - | \$ - |
| | | | | - | | | | | | \$ - | | | \$ - | \$ - |
| Total | | | | | | | | | | \$ 197,472,364.47 | \$ 196,303,327 | \$ 1,109,103 | \$ 197,412,430 | -\$ 59,934 |

Note

- The class specific revenue requirements in column N must be the amounts used in the final rate design process. The total of column N should equate to the proposed base revenue requirement.
- Rates should be entered with the number of decimal places that will show on the Tariff of Rates and Charges.

File Number: EB-2015-0004
 Exhibit:
 Tab:
 Schedule:
 Page:
 Date:

**Appendix 2-V
 Revenue Reconciliation**

| Rate Class | Customers/ Connections | Number of Customers/Connections | | | Test Year Consumption | | Proposed Rates | | | Revenues at Proposed Rates | Class Specific Revenue Requirement | Transformer Allowance Credit | Total | Difference |
|------------------------------------|---------------------------|---------------------------------|---------------------|------------|-----------------------|-----------|------------------------------|------------|------------|-------------------------------|--|------------------------------------|----------------|------------|
| | | Start of Test Year | End of Test Year | Average | kWh | kW | Monthly Service Charge | Volumetric | | | | | | |
| | | | | | | | | kWh | kW | | | | | |
| Residential | Customers | 307,543 | 310,839 | 309,191.00 | 2,214,984,000 | | \$ 26.98 | \$ 0.0060 | | \$ 113,393,582.16 | \$ 113,352,102 | \$ 113,352,102 | -\$ 41,480 | |
| GS < 50 kW | Customers | 24,808 | 24,903 | 24,855.50 | 704,193,000 | | \$ 39.00 | \$ 0.0200 | | \$ 25,716,234.00 | \$ 25,732,200 | \$ 25,732,200 | \$ 15,966 | |
| GS > 50 to 1,999 kW | Customers | 3,367 | 3,393 | 3,380.00 | 2,852,593,000 | 6,761,930 | \$ 490.00 | | \$ 3.6735 | \$ 44,714,349.86 | \$ 43,953,518 | \$ 760,717 | \$ 44,714,235 | -\$ 115 |
| GS > 1,5000 to 4,999 kW | Customers | 76 | 76 | 76.00 | 914,569,000 | 1,957,009 | \$ 6,600.00 | | \$ 3.9077 | \$ 13,666,604.07 | \$ 13,446,354 | \$ 220,164 | \$ 13,666,518 | -\$ 86 |
| Large Use | Connections | 11 | 11 | 11.00 | 617,036,000 | 1,115,702 | \$ 24,500.00 | | \$ 3.6633 | \$ 7,321,151.14 | \$ 7,195,591 | \$ 125,516 | \$ 7,321,108 | -\$ 43 |
| Streetlighting | Connections | 55,516 | 55,516 | 55,516.00 | 43,876,000 | 123,144 | \$ 1.00 | | \$ 6.7566 | \$ 1,498,226.75 | \$ 1,498,229 | | \$ 1,498,229 | \$ 2 |
| Sentinel Lighting | Connections | 45 | 41 | 43.00 | 48,000 | 216 | \$ 4.25 | | \$ 12.2397 | \$ 4,836.78 | \$ 4,837 | | \$ 4,837 | \$ 0 |
| Unmetered Scattered Load | Customers | 3,599 | 3,643 | 3,621.00 | 16,772,000 | | \$ 7.25 | \$ 0.0227 | | \$ 695,751.40 | \$ 695,243 | | \$ 695,243 | -\$ 508 |
| Standby Power | Customers | 2 | 2 | 2.00 | | 4,800 | \$ 160.00 | | \$ 1.9208 | \$ 13,059.84 | \$ 13,060 | | \$ 13,060 | -\$ 0 |
| Embedded Distributor Class etc. | | | | - | | | | | | \$ - | | | \$ - | \$ - |
| | | | | - | | | | | | \$ - | | | \$ - | \$ - |
| | | | | - | | | | | | \$ - | | | \$ - | \$ - |
| | | | | - | | | | | | \$ - | | | \$ - | \$ - |
| Total | | | | | | | | | | \$ 207,023,795.99 | \$ 205,891,134 | \$ 1,106,397 | \$ 206,997,532 | -\$ 26,264 |

Note

- 1 The class specific revenue requirements in column N must be the amounts used in the final rate design process. The total of column N should equate to the proposed base revenue requirement.
- 2 Rates should be entered with the number of decimal places that will show on the Tariff of Rates and Charges.

**Appendix 2-V
 Revenue Reconciliation**

| Rate Class | Customers/ Connections | Number of Customers/Connections | | | Test Year Consumption | | Proposed Rates | | | Revenues at Proposed Rates | Class Specific Revenue Requirement | Transformer Allowance Credit | Total | Difference |
|------------------------------------|---------------------------|---------------------------------|---------------------|------------|-----------------------|-----------|------------------------------|------------|------------|-------------------------------|--|------------------------------------|----------------------|-------------------|
| | | Start of Test Year | End of Test Year | Average | kWh | kW | Monthly Service Charge | Volumetric | | | | | | |
| | | | | | | | | kWh | kW | | | | | |
| Residential | Customers | 311,321 | 314,604 | 312,962.50 | 2,217,628,000 | | \$ 31.29 | \$ - | | \$ 117,511,159.50 | \$117,440,189 | \$117,440,189 | -\$ 70,970 | |
| GS < 50 kW | Customers | 24,917 | 25,012 | 24,964.50 | 699,744,000 | | \$ 44.00 | \$ 0.0188 | | \$ 26,336,443.20 | \$ 26,331,658 | \$ 26,331,658 | -\$ 4,785 | |
| GS > 50 to 1,999 kW | Customers | 3,395 | 3,421 | 3,408.00 | 2,835,387,000 | 6,711,579 | \$ 550.00 | | \$ 3.4709 | \$ 45,788,019.55 | \$ 45,033,242 | \$ 45,788,295 | \$ 275 | |
| GS > 1,5000 to 4,999 kW | Customers | 76 | 76 | 76.00 | 935,554,000 | 2,001,525 | \$ 7,600.00 | | \$ 3.6208 | \$ 14,178,321.72 | \$ 13,953,146 | \$ 14,178,318 | -\$ 4 | |
| Large Use | Connections | 11 | 11 | 11.00 | 615,195,000 | 1,112,342 | \$27,900.00 | | \$ 3.4206 | \$ 7,487,677.05 | \$ 7,362,584 | \$ 7,487,722 | \$ 45 | |
| Streetlighting | Connections | 55,516 | 55,516 | 55,516.00 | 44,015,000 | 123,144 | \$ 1.05 | | \$ 6.9249 | \$ 1,552,261.49 | \$ 1,552,267 | \$ 1,552,267 | \$ 5 | |
| Sentinel Lighting | Connections | 41 | 37 | 39.00 | 48,000 | 216 | \$ 4.50 | | \$ 12.2322 | \$ 4,748.16 | \$ 4,748 | \$ 4,748 | \$ 0 | |
| Unmetered Scattered Load | Customers | 3,647 | 3,691 | 3,669.00 | 16,827,000 | | \$ 7.50 | \$ 0.0229 | | \$ 715,548.30 | \$ 716,144 | \$ 716,144 | \$ 596 | |
| Standby Power | Customers | 2 | 2 | 2.00 | | 4,800 | \$ 165.00 | | \$ 1.9635 | \$ 13,384.80 | \$ 13,385 | \$ 13,385 | \$ 0 | |
| Embedded Distributor Class etc. | | | | - | | | | | | \$ - | | \$ - | \$ - | |
| | | | | - | | | | | | \$ - | | \$ - | \$ - | |
| | | | | - | | | | | | \$ - | | \$ - | \$ - | |
| | | | | - | | | | | | \$ - | | \$ - | \$ - | |
| Total | | | | | | | | | | \$ 213,587,563.76 | \$212,407,364 | \$ 1,105,363 | \$213,512,726 | -\$ 74,837 |

Note

- The class specific revenue requirements in column N must be the amounts used in the final rate design process. The total of column N should equate to the proposed base revenue requirement.
- Rates should be entered with the number of decimal places that will show on the Tariff of Rates and Charges.



1 **Undertaking JTC1.25**

2

3 With reference to IR 7-Energy Probe-45, to provide an updated appendix 2-p.

4

5

6

7 **Response:**

8

9 Please find as ATT-JTC1.25-A the updated Cost Allocation Appendix 2-P.

10

11 Please note, Hydro Ottawa has identified a data entry error in the rate design. As a
12 result, in Tables B) Calculated Class Revenues, Column 7C - Current approved
13 allocation of revenue requirement in misaligned with Column 7D - LF X proposed rates.

14

15 Hydro Ottawa will update for this error after Settlement discussions.

File Number: EB-2015-0004
 Exhibit: G
 Tab: 1
 Schedule: 1
 Page: 1
 Date:

**Appendix 2-P
 Cost Allocation**

Please complete the following four tables.

A) Allocated Costs

| Classes | Costs Allocated from Previous Study | % | Costs Allocated in 2016 Test Year Study (Column 7A) | % | Costs Allocated in 2017 Test Year Study (Column 7A) | % | Costs Allocated in 2018 Test Year Study (Column 7A) | % | Costs Allocated in 2019 Test Year Study (Column 7A) | % | Costs Allocated in 2020 Test Year Study (Column 7A) | % |
|--------------------------------|-------------------------------------|---------|---|---------|---|---------|---|---------|---|---------|---|---------|
| Residential | \$ 94,436,258 | 56.15% | \$ 100,238,699 | 53.56% | \$ 105,328,608 | 53.44% | \$ 111,019,237 | 53.37% | \$ 116,186,027 | 53.37% | \$ 119,671,582 | 53.35% |
| GS < 50 kW | \$ 19,093,962 | 11.35% | \$ 19,757,531 | 10.56% | \$ 20,702,452 | 10.50% | \$ 21,682,955 | 10.42% | \$ 22,536,979 | 10.35% | \$ 23,064,840 | 10.28% |
| GS > 50 kW < GS 1,500 | \$ 39,359,863 | 23.40% | \$ 46,312,320 | 24.75% | \$ 48,657,537 | 24.69% | \$ 51,204,923 | 24.61% | \$ 53,339,855 | 24.50% | \$ 54,820,390 | 24.44% |
| GS > 1,500 '4,999 kW | \$ 7,805,712 | 4.64% | \$ 11,256,075 | 6.01% | \$ 12,193,492 | 6.19% | \$ 13,235,171 | 6.36% | \$ 14,199,229 | 6.52% | \$ 14,975,918 | 6.68% |
| Large User | \$ 5,754,313 | 3.42% | \$ 7,385,288 | 3.95% | \$ 7,873,457 | 3.99% | \$ 8,378,322 | 4.03% | \$ 8,790,688 | 4.04% | \$ 9,046,623 | 4.03% |
| Street Lighting | \$ 1,183,502 | 0.70% | \$ 1,618,174 | 0.86% | \$ 1,740,613 | 0.88% | \$ 1,857,278 | 0.89% | \$ 1,961,236 | 0.90% | \$ 2,027,248 | 0.90% |
| Sentinel Lighting | \$ 10,894 | 0.01% | \$ 9,037 | 0.00% | \$ 8,734 | 0.00% | \$ 8,370 | 0.00% | \$ 7,921 | 0.00% | \$ 7,321 | 0.00% |
| Unmetered Scattered Load (USL) | \$ 470,639 | 0.28% | \$ 505,215 | 0.27% | \$ 536,341 | 0.27% | \$ 567,572 | 0.27% | \$ 595,282 | 0.27% | \$ 613,024 | 0.27% |
| Standby | \$ 58,465 | 0.03% | \$ 61,943 | 0.03% | \$ 66,617 | 0.03% | \$ 71,540 | 0.03% | \$ 75,878 | 0.03% | \$ 78,252 | 0.03% |
| | | 0.00% | | 0.00% | | 0.00% | | 0.00% | | 0.00% | | 0.00% |
| | | 0.00% | | 0.00% | | 0.00% | | 0.00% | | 0.00% | | 0.00% |
| Total | \$ 168,173,609 | 100.00% | \$ 187,144,282 | 100.00% | \$ 197,107,850 | 100.00% | \$ 208,025,368 | 100.00% | \$ 217,693,094 | 100.00% | \$ 224,305,197 | 100.00% |

Notes

- Customer Classification - If proposed rate classes differ from those in place in the previous Cost Allocation study, modify the rate classes to match the current application as closely as possible.
- Host Distributors - Provide information on embedded distributor(s) as a separate class, if applicable. If embedded distributor(s) are billed as customers in a General Service class, include the allocated cost and revenue of the embedded distributor(s) in the applicable class. Also complete Appendix 2-Q.
- Class Revenue Requirements - If using the Board-issued model, in column 7A enter the results from Worksheet O-1, Revenue Requirement (row 40 in the 2013 model). This excludes costs in deferral and variance accounts. Note to Embedded Distributor(s), it also does not include Account 4750 - Low Voltage

B) Calculated Class Revenues

2016

| Classes (same as previous table) | Column 7B | Column 7C | Column 7D | Column 7E |
|----------------------------------|------------------------------|-------------------------------|---------------------|-----------------------|
| | Load Forecast (LF) X current | L.F. X current approved rates | LF X proposed rates | Miscellaneous Revenue |
| Residential | \$ 86,359,164 | \$ 95,751,490 | \$ 95,313,120 | \$ 7,978,164 |
| GS < 50 kW | \$ 20,171,698 | \$ 22,365,549 | \$ 22,488,267 | \$ 1,147,372 |
| GS > 50 kW < GS 1,500 | \$ 34,607,039 | \$ 38,370,862 | \$ 39,224,154 | \$ 1,841,535 |
| GS > 1,500 '4,999 kW | \$ 10,061,938 | \$ 11,156,263 | \$ 11,375,938 | \$ 406,822 |
| Large User | \$ 5,599,620 | \$ 6,208,628 | \$ 6,334,781 | \$ 242,196 |
| Street Lighting | \$ 872,268 | \$ 967,135 | \$ 1,231,877 | \$ 61,239 |
| Sentinel Lighting | \$ 3,902 | \$ 4,327 | \$ 4,617 | \$ 805 |
| Unmetered Scattered Load (USL) | \$ 549,494 | \$ 609,257 | \$ 586,395 | \$ 18,686 |
| Standby | \$ 10,131 | \$ 11,232 | \$ 11,232 | \$ 2,719 |
| 0 | | | | |
| Total | \$ 158,235,254 | \$ 175,444,744 | \$ 176,570,383 | \$ 11,699,538 |

2017

| Classes (same as previous table) | Column 7B | Column 7C | Column 7D | Column 7E |
|----------------------------------|------------------------------|-------------------------------|---------------------|-----------------------|
| | Load Forecast (LF) X current | L.F. X current approved rates | LF X proposed rates | Miscellaneous Revenue |
| Residential | \$ 86,397,220 | \$ 101,540,382 | \$ 101,173,048 | \$ 7,882,182 |
| GS < 50 kW | \$ 19,995,810 | \$ 23,500,550 | \$ 23,612,472 | \$ 1,121,955 |
| GS > 50 kW < GS 1,500 | \$ 34,281,385 | \$ 40,290,011 | \$ 41,073,789 | \$ 1,818,300 |
| GS > 1,500 '4,999 kW | \$ 10,164,325 | \$ 11,945,863 | \$ 12,149,475 | \$ 414,104 |
| Large User | \$ 5,594,105 | \$ 6,574,605 | \$ 6,690,668 | \$ 244,512 |
| Street Lighting | \$ 872,268 | \$ 1,025,154 | \$ 1,322,140 | \$ 61,959 |
| Sentinel Lighting | \$ 3,776 | \$ 4,438 | \$ 4,729 | \$ 728 |
| Unmetered Scattered Load (USL) | \$ 552,900 | \$ 649,809 | \$ 624,360 | \$ 18,638 |
| Standby | \$ 10,131 | \$ 11,906 | \$ 11,888 | \$ 2,753 |
| 0 | | | | |
| 0 | | | | |
| Total | \$ 157,871,920 | \$ 185,542,719 | \$ 186,662,570 | \$ 11,565,131 |

2018

| Classes (same as previous table) | Column 7B | Column 7C | Column 7D | Column 7E |
|----------------------------------|------------------------------|-------------------------------|---------------------|-----------------------|
| | Load Forecast (LF) X current | L.F. X current approved rates | LF X proposed rates | Miscellaneous Revenue |
| Residential | \$ 87,038,947 | \$ 107,926,310 | \$ 107,577,306 | \$ 7,994,458 |
| GS < 50 kW | \$ 19,869,160 | \$ 24,637,306 | \$ 24,751,440 | \$ 1,130,429 |
| GS > 50 kW < GS 1,500 | \$ 34,078,185 | \$ 42,256,173 | \$ 43,002,312 | \$ 1,833,870 |
| GS > 1,500 '4,999 kW | \$ 10,293,812 | \$ 12,764,092 | \$ 12,948,579 | \$ 428,935 |
| Large User | \$ 5,589,542 | \$ 6,930,904 | \$ 7,035,586 | \$ 248,853 |
| Street Lighting | \$ 872,268 | \$ 1,081,593 | \$ 1,413,675 | \$ 63,102 |
| Sentinel Lighting | \$ 3,651 | \$ 4,527 | \$ 4,816 | \$ 679 |
| Unmetered Scattered Load (USL) | \$ 556,350 | \$ 689,861 | \$ 662,155 | \$ 18,902 |
| Standby | \$ 10,131 | \$ 12,562 | \$ 12,523 | \$ 2,812 |
| 0 | | | | |
| 0 | | | | |
| Total | \$ 158,312,045 | \$ 196,303,327 | \$ 197,408,393 | \$ 11,722,041 |

2019

| Classes (same as previous table) | Column 7B | Column 7C | Column 7D | Column 7E |
|----------------------------------|------------------------------|-------------------------------|---------------------|-----------------------|
| | Load Forecast (LF) X current | L.F. X current approved rates | LF X proposed rates | Miscellaneous Revenue |
| Residential | \$ 87,685,777 | \$ 113,638,101 | \$ 113,366,958 | \$ 8,060,517 |
| GS < 50 kW | \$ 19,773,873 | \$ 25,626,339 | \$ 25,733,442 | \$ 1,131,665 |
| GS > 50 kW < GS 1,500 | \$ 33,951,625 | \$ 44,000,273 | \$ 44,714,369 | \$ 1,833,759 |
| GS > 1,500 '4,999 kW | \$ 10,432,118 | \$ 13,519,708 | \$ 13,666,520 | \$ 439,879 |
| Large User | \$ 5,581,227 | \$ 7,233,100 | \$ 7,321,108 | \$ 250,086 |
| Street Lighting | \$ 872,268 | \$ 1,130,433 | \$ 1,499,498 | \$ 63,601 |
| Sentinel Lighting | \$ 3,525 | \$ 4,568 | \$ 4,838 | \$ 626 |
| Unmetered Scattered Load (USL) | \$ 559,799 | \$ 725,483 | \$ 695,047 | \$ 18,986 |
| Standby | \$ 10,131 | \$ 13,129 | \$ 13,060 | \$ 2,841 |
| 0 | | | | |
| 0 | | | | |
| Total | \$ 158,870,343 | \$ 205,891,134 | \$ 207,014,840 | \$ 11,801,959 |

2020

| Classes (same as previous table) | Column 7B | Column 7C | Column 7D | Column 7E |
|----------------------------------|------------------------------|-------------------------------|---------------------|-----------------------|
| | Load Forecast (LF) X current | L.F. X current approved rates | LF X proposed rates | Miscellaneous Revenue |
| Residential | \$ 88,188,231 | \$ 117,545,462 | \$ 117,435,491 | \$ 8,130,334 |
| GS < 50 kW | \$ 19,702,481 | \$ 26,261,296 | \$ 26,331,513 | \$ 1,134,409 |
| GS > 50 kW < GS 1,500 | \$ 33,865,217 | \$ 45,138,705 | \$ 45,788,377 | \$ 1,842,673 |
| GS > 1,500 '4,999 kW | \$ 10,582,413 | \$ 14,105,222 | \$ 14,178,315 | \$ 452,193 |
| Large User | \$ 5,570,474 | \$ 7,424,844 | \$ 7,487,723 | \$ 251,478 |
| Street Lighting | \$ 872,268 | \$ 1,162,640 | \$ 1,551,285 | \$ 64,177 |
| Sentinel Lighting | \$ 3,399 | \$ 4,531 | \$ 4,750 | \$ 574 |
| Unmetered Scattered Load (USL) | \$ 563,555 | \$ 751,159 | \$ 716,110 | \$ 19,140 |
| Standby | \$ 10,131 | \$ 13,503 | \$ 13,385 | \$ 2,856 |
| 0 | | | | |
| 0 | | | | |
| Total | \$ 159,358,170 | \$ 212,407,364 | \$ 213,506,949 | \$ 11,897,833 |

Notes:

- Columns 7B to 7D - LF means Load Forecast of Annual Billing Quantities (i.e. customers or connections X 12, (kWh or kW, as applicable). Revenue Quantities should be net of Transformer Ownership Allowance. Exclude revenue from rate adders
- Columns 7C and 7D - Column total in each column should equal the Base Revenue Requirement
- Columns 7C - The Board cost allocation model calculates "1+d" in worksheet O-1, cell C21. "d" is defined as Revenue Deficiency/ Revenue at Current Rates.
- Columns 7E - If using the Board-issued Cost Allocation model, enter Miscellaneous Revenue as it appears in Worksheet O-1, row 19.

C) Rebalancing Revenue-to-Cost (R/C) Ratios

| Class | Previously Approved Ratios Most Recent Year: 2012 | 2016 | | 2017 | | 2018 | | 2019 | | 2020 | | Policy Range |
|--------------------------------|---|-------------------|------------------|-------------------|------------------|-------------------|------------------|-------------------|------------------|-------------------|------------------|--------------|
| | | Status Quo Ratios | Proposed Ratios | |
| | | (7C + 7E) / (7A) | (7D + 7E) / (7A) | (7C + 7E) / (7A) | (7D + 7E) / (7A) | (7C + 7E) / (7A) | (7D + 7E) / (7A) | (7C + 7E) / (7A) | (7D + 7E) / (7A) | (7C + 7E) / (7A) | (7D + 7E) / (7A) | |
| | % | % | % | % | % | % | % | % | % | % | % | |
| Residential | 97.00 | 103.48 | 103.05 | 103.89 | 103.54 | 104.42 | 104.10 | 104.74 | 104.51 | 105.02 | 104.93 | 85 - 115 |
| GS < 50 kW | 114.00 | 119.01 | 119.63 | 118.94 | 119.48 | 118.84 | 119.37 | 118.73 | 119.20 | 118.78 | 119.08 | 80 - 120 |
| GS > 50 kW < GS 1,500 | | | | | | | | | | | | |
| | 95.00 | 86.83 | 88.67 | 86.54 | 88.15 | 86.11 | 87.56 | 85.93 | 87.27 | 85.70 | 86.89 | 80 - 120 |
| GS > 1,500 '4,999 kW | 120.00 | 102.73 | 104.68 | 101.37 | 103.04 | 99.68 | 101.08 | 98.31 | 99.35 | 97.21 | 97.69 | 80 - 120 |
| Large User | 107.00 | 87.35 | 89.06 | 86.61 | 88.08 | 85.69 | 86.94 | 85.13 | 86.13 | 84.85 | 85.55 | 85 - 115 |
| Street Lighting | 76.50 | 63.55 | 79.91 | 62.46 | 79.52 | 61.63 | 79.51 | 60.88 | 79.70 | 60.52 | 79.69 | 70 - 120 |
| Sentinel Lighting | 50.00 | 56.78 | 60.00 | 59.16 | 62.48 | 62.19 | 65.65 | 65.58 | 68.98 | 69.73 | 72.72 | 80 - 120 |
| Unmetered Scattered Load (USL) | 119.00 | 124.29 | 119.77 | 124.63 | 119.89 | 124.88 | 119.99 | 125.06 | 119.95 | 125.66 | 119.94 | 80 - 120 |
| Standby | 230.00 | 22.52 | 22.52 | 22.01 | 21.98 | 21.49 | 21.44 | 21.05 | 20.95 | 20.91 | 20.75 | N/A |
| 0 | | | | | | | | | | | | |

Notes

1 Previously Approved Revenue-to-Cost Ratios - For most applicants, Most Recent Year would be the third year of the IRM 3 period, e.g. if the applicant rebased in 2009 with further adjustments over 2 years, the Most recent year is 2011. For applicants whose most recent rebasing year is 2006, the applicant should enter the ratios from their Informational Filing.

2 Status Quo Ratios - The Board's updated Cost Allocation Model yields the Status Quo Ratios in Worksheet O-1. Status Quo means "Before Rebalancing".

D) Proposed Revenue-to-Cost Ratios

| Class | Proposed Revenue-to-Cost Ratios | | | | | Policy Range |
|--------------------------------|---------------------------------|--------|--------|--------|--------|--------------|
| | 2016 | 2017 | 2018 | 2019 | 2020 | |
| | % | % | % | % | % | |
| Residential | 103.05 | 103.54 | 104.10 | 104.51 | 104.93 | 85 - 115 |
| GS < 50 kW | 119.63 | 119.48 | 119.37 | 119.20 | 119.08 | 80 - 120 |
| GS > 50 kW < GS 1,500 | | | | | | |
| | 88.67 | 88.15 | 87.56 | 87.27 | 86.89 | 80 - 120 |
| GS > 1,500 '4,999 kW | 104.68 | 103.04 | 101.08 | 99.35 | 97.69 | 80 - 120 |
| Large User | 89.06 | 88.08 | 86.94 | 86.13 | 85.55 | 85 - 115 |
| Street Lighting | 79.91 | 79.52 | 79.51 | 79.70 | 79.69 | 70 - 120 |
| Sentinel Lighting | 60.00 | 62.48 | 65.65 | 68.98 | 72.72 | 80 - 120 |
| Unmetered Scattered Load (USL) | 119.77 | 119.89 | 119.99 | 119.95 | 119.94 | 80 - 120 |
| Standby | 22.52 | 21.98 | 21.44 | 20.95 | 20.75 | N/A |
| 0 | | | | | | 0 |

Note

1 The applicant should complete Table D if it is applying for approval of a revenue to cost ratio in 2014 that is outside the Board's policy range for any customer class. Table (d) will show the information that the distributor would likely enter in the IRM model) in 2014. In 2015 Table (d), enter the planned ratios for the classes that will be 'Change' and 'No Change' in 2014 (in the current Revenue Cost Ratio Adjustment Workform, Worksheet C1.1 'Decision - Cost Revenue Adjustment', column d), and enter TBD for class(es) that will be entered as 'Rebalance'.



1 **Undertaking JTC1.26**

2

3 To provide a response to VECC-48, part (D) which deals with the breakdown of
4 residential customers and usage categories.

5

6

7

8 **Response:**

9

10 Hydro Ottawa has completed the following chart using the 2014 12 month billing data.
11 Customers with no consumption in one or more month(s) were not incorporated into the
12 chart.

13

| Residential Categories | # of Customers |
|------------------------|----------------|
| 0-100 kWh | 4,150 |
| >100-250 kWh | 28,824 |
| >250-500 kWh | 86,571 |
| >500-800 kWh | 91,937 |
| >800-1,000 kWh | 32,730 |
| >1,000-1,500 kWh | 30,657 |
| >1,500-2,000 kWh | 7,160 |
| >2,000 kWh | 3,619 |

14



1 **Undertaking JTC1.28**

2

3 With reference to CCC question 33, to provide the salary scale adjustment.

4

5

6 **Response:**

7

8 The salary scales were adjusted upward by 2.1% effective January 1, 2013.

9



1 **Undertaking JTC1.29**

2

3 With reference to CCC question 35, to provide an analysis with respect to the difference
4 in savings attributed to smart meters.

5

6

7 **Response:**

8

9 The main OM&A saving attributed to Smart Meters is the elimination of external meter
10 reading costs. Prior to the implementation of smart meters, the external cost on meter
11 reading was approximately \$1.1M per annum (2007) or \$1.3M in 2016 value (assuming
12 2% annual inflation). The meter data is now coming through phone lines to our IT
13 system. The incremental costs include additional phone lines, IT maintenance support,
14 database support, and a meter data analyst; also totaling approximately \$1.3M per
15 annum as shown in Table 1 below.

16

17

Table 1: Comparison of Meter Costs

| <i>\$Million</i> | 2007 Actual in 2016 value | 2016 Budget |
|--|--------------------------------------|--------------------|
| Meter Reading – Outside Services | 1.3 | - |
| Meter Reading – Telephone Lines | - | 0.4 |
| Meter data – IT Maintenance & Supports | - | 0.8 |
| Meter Data Analyst | - | 0.1 |
| Total | 1.3 | 1.3 |

18



1 **Undertaking JTC1.30**

2

3 To provide a comparison or analysis of various projects that hydro Ottawa has
4 performed with respect to the cost for either contracted work or in-house work; (b),
5 to provide a list of those types of works or trades that hydro Ottawa no longer does in-
6 house but contracts out the work for.

7

8

9

10 **Response:**

11 Hydro Ottawa has been using contractors to complete overhead and underground line
12 work for a number of years. We have used a combination of local and out of town
13 contractors that we have engaged through the use of standing offer agreements. We
14 have determined that these contractors prove most effective when they are allocated
15 large sustainment and demand construction jobs that span several weeks or months.
16 The crews are dedicated to the jobs and are rarely interrupted or reallocated to other
17 jobs. Contract crews are motivated to work longer days and be on the road back home
18 on Thursdays each week which can result in less set ups and tear downs over longer
19 duration jobs. Shorter duration jobs such as commercial demand jobs or one of pole
20 replacements are not well suited for contract resources due to the fact that the narrow
21 scope does not lead to economies of scale by using large construction crews so their
22 higher rates are prohibitive.

23

24 Hydro Ottawa crews are responsible to balance all of the demands of a given
25 operational area including small demand projects, trouble calls, and reliability work in
26 additional to larger sustainment and demand construction. As a result, an internal
27 construction crew will often experience interruptions through the course of a project to
28 ensure that all of the area needs are met. Smaller jobs are better for internal crews as
29 their rates are lower than contract resources and they have a much better understanding
30 of our overall system. They are able to be flexible in balancing small customer demand



1 and sustainment projects with the unforeseen work such as trouble call and reliability
2 issues.

3
4 The contractors also provide some flexibility to the workforce. There are often delays in
5 the start of third party driven construction projects such as plant relocations for road
6 widening. If these projects are scheduled late in the year and are deferred to the
7 following year, we have taken the opportunity to send contract resources home until the
8 project start if known with certainty.

9
10 Below are examples of two downtown pole replacement projects, one completed by
11 Hydro Ottawa and one completed by external contractors. Both were completed in less
12 than estimated man hours and both were delivered below cost estimate.

13

| Project | Resource | Estimate | Actual | Variance \$ | Variance % |
|-------------|------------|-----------|-----------|-------------|------------|
| Gilmour St. | HOL | \$386,200 | \$325,600 | \$60,600 | 15.7% |
| Argyle Ave. | Contractor | \$410,000 | \$401,500 | \$8,500 | 2.1% |

14

| Project | Total Poles Replaced | Total Poles Worked On | Cost per pole replaced | Cost per pole worked on |
|-------------|----------------------|-----------------------|------------------------|-------------------------|
| Gilmour St. | 12 | 22 | \$27,133 | \$14,800 |
| Argyle Ave. | 14 | 27 | \$28,679 | \$14,870 |

15
16 When considering the total number of poles worked on over the course of the project the
17 unit cost is essentially the same.

18
19 (b) The following types of work are largely contracted out by Hydro Ottawa:

- 20
- 21 • General civil maintenance
 - 22 • Heavy civil maintenance
 - 23 • Rock drilling
 - 24 • Hydro vac services
 - Environmental and oil spill clean-up



- 1 • Vegetation management
- 2 • Underground locates
- 3 • Infrared scanning
- 4 • Graffiti abatement
- 5 • Crane services
- 6 • Asbestos removal
- 7 • Insulator washing
- 8 • Residential subdivision servicing
- 9 • Power quality monitoring
- 10 • Standby generation
- 11 • Snow removal
- 12 • New Greenfield Substation Construction

13

14 Hydro Ottawa has taken the approach that those services requiring specialized
15 equipment with significant capital investments such as hydro vac, rock drilling, and large
16 cranes have been contracted out. The volume of work requiring this equipment
17 fluctuates from year to year so we contract them on an as needed basis. In addition,
18 those services that are more labour intensive that require less skilled or non-trades
19 resources such as civil maintenance, graffiti abatement and snow plowing have been
20 contracted to third parties. Contracting those services is more cost effective than
21 completing in-house.

22

23 Hydro Ottawa staff does complete some of the services above. As an example, Hydro
24 Ottawa completes all of the underground locates inside the fences of our substations
25 and our construction crews have the ability to auger pole holes if soil conditions permit.

26

27 Hydro Ottawa also uses contractors and resources from other LDCs in emergency and
28 storm restoration efforts when it is determined that our internal capacity is not sufficient
29 to restore power to customers in a reasonable amount of time. Some of this is
30 accomplished through mutual aid agreements.

31



1 **Undertaking JTC1.31**

2
3 a) With reference to IR EP no.1, to provide a table of the amounts and explanations
4 for each of the reallocations;

5
6 b) To advise whether the amount in the forecast figures for the facilities
7 implementation is identical to the amount in the proposed numbers in table 1 of
8 Energy Probe 1, and show that it's identical to these numbers in Energy Probe 5
9 or not

10
11
12
13 **Response:**

14
15 a) The table below depicts each change between the forecast column and the
16 proposed column in Table 1 of Interrogatory Response to Energy Probe #1.

17

| | \$ Millions | | | | | |
|------------------------------|--------------------|--------------|--------------|--------------|--------------|---------------|
| Investment Category | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
| System Access (Gross) | 0.7 | - | - | - | - | 0.7 |
| System Renewal | (2.4) | (2.5) | (2.6) | (2.7) | (2.9) | (13.1) |
| System Service | 2.7 | 8.7 | 4.4 | 1.8 | 2.8 | 20.4 |
| General Plant | (14.1) | (12.4) | (4.7) | (5.2) | (5.7) | (42.1) |
| Total Reduction | (13.1) | (6.2) | (2.9) | (6.1) | (5.8) | (34.1) |

18
19 **System Access (Gross):** The 2016 budget change was to reflect the latest third party
20 project plan.



1 **System Renewal:** The budget reductions are related to the reduction in Plant Failure.
2 The initial budget was based on historical trend, however management reduced the
3 budget to set an aggressive target.

4

5 **System Service:** The increase is due to SCADA, Telecom Master Plan, and Remote
6 Disconnect Smart Meter reclassified from General Plant to System Service as per the
7 Ontario Energy Board investment category definitions.

8

9 **General Plant:** There are several reasons for the budget reduction. First certain
10 projects were reclassified to System Service as described above, secondly certain
11 projects were eliminated (or deferred to after 2020) such as the new data centre and
12 disaster recovery projects, lastly there was a general 10% reduction in many of the
13 general plant life cycle categories to drive continuous improvement and productivity in
14 this area.

15

16

17 b) The amounts in the proposed column on Table 1 of Interrogatory Response to
18 Energy Probe #1 are identical to the first row of figures in Table 1.1 of
19 Interrogatory Response to Energy Probe #5.

20

21 Also the figures for the facilities implementation plan is identical in both the
22 forecast column and the proposed column on Table 1 of Interrogatory Response
23 to Energy Probe #1.



1 **Undertaking JTC1.33**

2

3 With respect to Energy Probe Interrogatory 11, provide an explanation of what's hard
4 about doing the calculation.

5

6 **Clarification from transcript:**

7 Page 182, Line 8. Would you take it, subject to your understanding that deficiency
8 adjustment in Horizon is basically the difference between the PEG efficiency cohort
9 between your starting point and what you are in each year? So, for example, if you've
10 started in the middle cohort within a stretch factor of .3, and if you fall in 2016, you fall to
11 .45 or whatever the next worst cohort is, it's that differential times the revenue
12 requirement. That's the extent of the calculation.

13

14

15

16 **Response:**

17

18 Hydro Ottawa objects to the Efficiency Adjustment Mechanism not based on the ease
19 with which it may be calculated but based on the use of the OEB efficiency assessment
20 and resulting cohorts which Hydro Ottawa does not propose to adopt in its Custom IR
21 plan.

22



1 **Undertaking JTC1.36**

2

3 To reconcile the number in table 1 of Energy Probe 1 with the numbers in the table on
4 page 14 of the Innovative workbook and explain the differences in those numbers, and
5 there is a request to specifically look at both system renewal and aging assets.

6

7

8 **Response:**

9

10 The proposed columns of Table 1 of Interrogatory response to Energy Probe #1 are
11 replicated below with totals for each category:

12

| | \$ Millions | | | | | |
|----------------------------------|--------------------|--------------|--------------|--------------|--------------|--------------|
| Investment Catgeory | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
| System Access (Gross) | 36.3 | 35.2 | 35.1 | 35.8 | 36.6 | 179.0 |
| System Renewal | 41.0 | 31.8 | 36.5 | 36.0 | 35.7 | 181.0 |
| System Service | 22.2 | 34.0 | 29.5 | 30.5 | 33.3 | 149.5 |
| General Plant | 45.9 | 48.1 | 18.3 | 18.7 | 14.0 | 145.0 |
| Total | 145.4 | 149.1 | 119.4 | 121.0 | 119.5 | 654.5 |

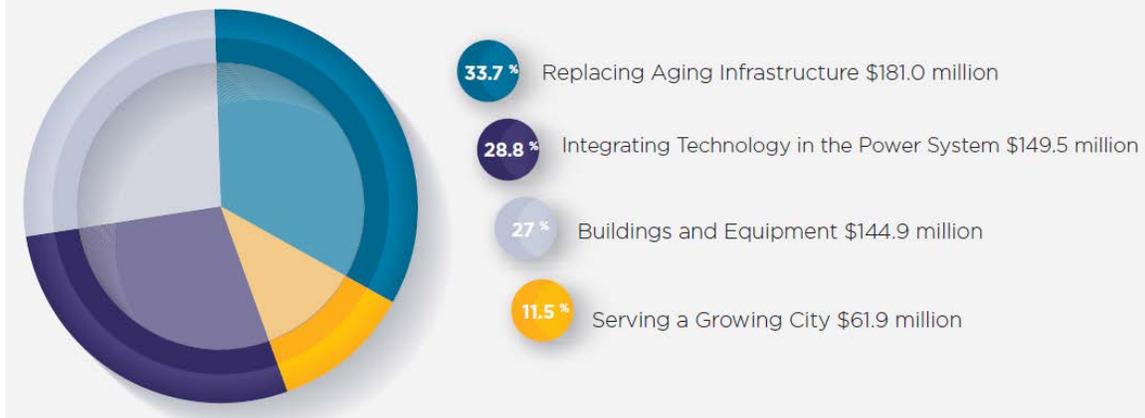
13

14 The figures in page 14 of the Innovative workbook are also replicated below:

15



2016-2020 Forecasted Capital Spending



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The Innovation Workbook category: Replace Aging Infrastructure \$181.0 million corresponds to the System Renewal category.

The Innovation Workbook category: Integrating technology in the Power System \$149.5 million corresponds to the System Service category.

The Innovation Workbook category: Buildings and Equipment \$144.9 million corresponds to the General Plant category, small rounding difference.

The Innovation Workbook category: Serving a Growing City \$61.9 million corresponds to the System Access category of \$179.0M, however the amount shown in Table 1 is the Gross amount whereas the amount shown in the workbook is net of third party contributions.



1 **Undertaking JTC1.37**

2

3 To go through the list that Mr. Fenrick has provided applying those criteria and determine
4 which of those [US] utilities are comparable to Hydro Ottawa.

5

6

7

8 **Response:**

9

10 None of the utilities listed by Mr. Fenrick on Table 2-1, page 9 of the PSE Report, are
11 exactly comparable to Hydro Ottawa. There are a number of utilities with similar
12 customer counts (see Table 2-1 which includes the number of customers for each U.S.
13 utility), however, each utility will have differences from Hydro Ottawa, such as different
14 forestation levels, etc. The advantage of econometric benchmarking is that the study is
15 not dependent on including utilities that are exact comparators to the studied utility.
16 What is required, however, for an accurate econometric benchmarking study is for the
17 studied utility not to be an outlier within the dataset. In other words, the dataset should
18 include utilities that adequately surround the explanatory variables. For this reason, the
19 U.S. dataset provides a far more accurate performance depiction relative to an Ontario-
20 only dataset.

21

22 Mr. Fenrick addressed the reasons and importance of using a U.S. dataset in Chapter 5
23 of the PSE Report. An excerpt of Chapter 5 (found on pages 33 and 34 of the PSE
24 Report) is provided below.

25

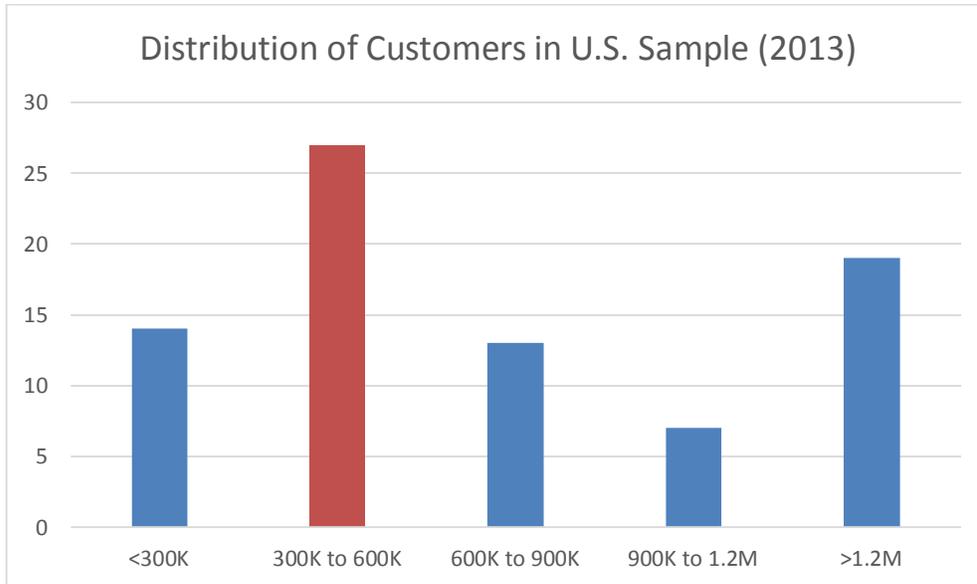
26 “The number of customers served is the dominant output for electric distribution. The
27 figure below displays the distribution of the number of customers per utility, within the
28 sample used for this study. Hydro Ottawa’s customer count grouping is indicated in red
29 (i.e. 27 utilities in the sample, including Hydro Ottawa, had between 300,000 and
30 600,000 customers). Hydro Ottawa has a fair number of utilities that are both smaller
31 and larger than the company within the U.S. sample—i.e., it is not an outlier in the U.S.



1 sample with respect to number of customers.

2

3 **Figure 5-1 Distribution of Utilities in the U.S. Cost Sample, by Number of**
4 **Customers (including Hydro Ottawa)**



5

6

7 Conversely, an Ontario-only sample of distributors does not adequately encompass the
8 size of Hydro Ottawa. The figure below illustrates the outlier status of Hydro Ottawa,
9 with only Hydro One Networks, Toronto Hydro, and Powerstream larger than Hydro
10 Ottawa in terms of the number of customers. Of those three, only Powerstream is within
11 the same grouping as Hydro Ottawa.

12

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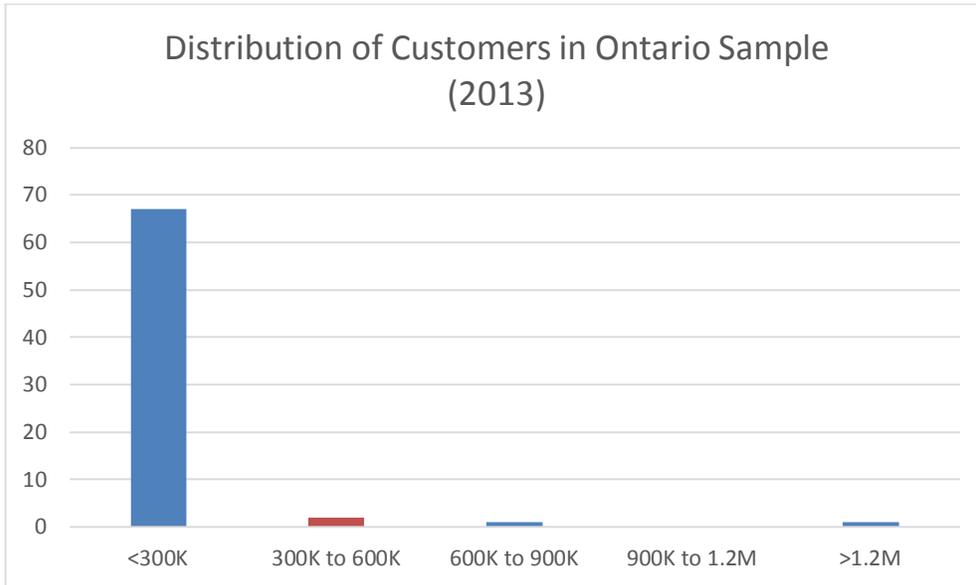
17

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19



1 **Figure 5-2 Distribution of Utilities in the Ontario Cost Sample, by Number of**
2 **Customers**



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Based on the previous figures, we can conclude that an attempt to benchmark Hydro Ottawa’s cost performance against only Ontario utilities is unlikely to produce a fair assessment. The model used to generate such a benchmark will embody performance based on utilities whose scale of operation are unlike Hydro Ottawa’s.”



1 **Undertaking JTC1.38**

2

3 In relation to SEC 1(B)(III), provide the strategy for improving the efficiency level for the
4 years 2016 to 2020 for Hydro Ottawa based on the Board's measurement.

5

6

7

8 **Response:**

9 Hydro Ottawa's strategy for improving its efficiency and productivity during the course of
10 its five year Custom IR term is set out in Exhibit D-1-4. The strategies and initiatives
11 set out in Exhibit D-1-4 illustrate Hydro Ottawa's continued commitment to finding
12 sustainable efficiency savings that may be implemented to the benefit of both Hydro
13 Ottawa and its customers.

14

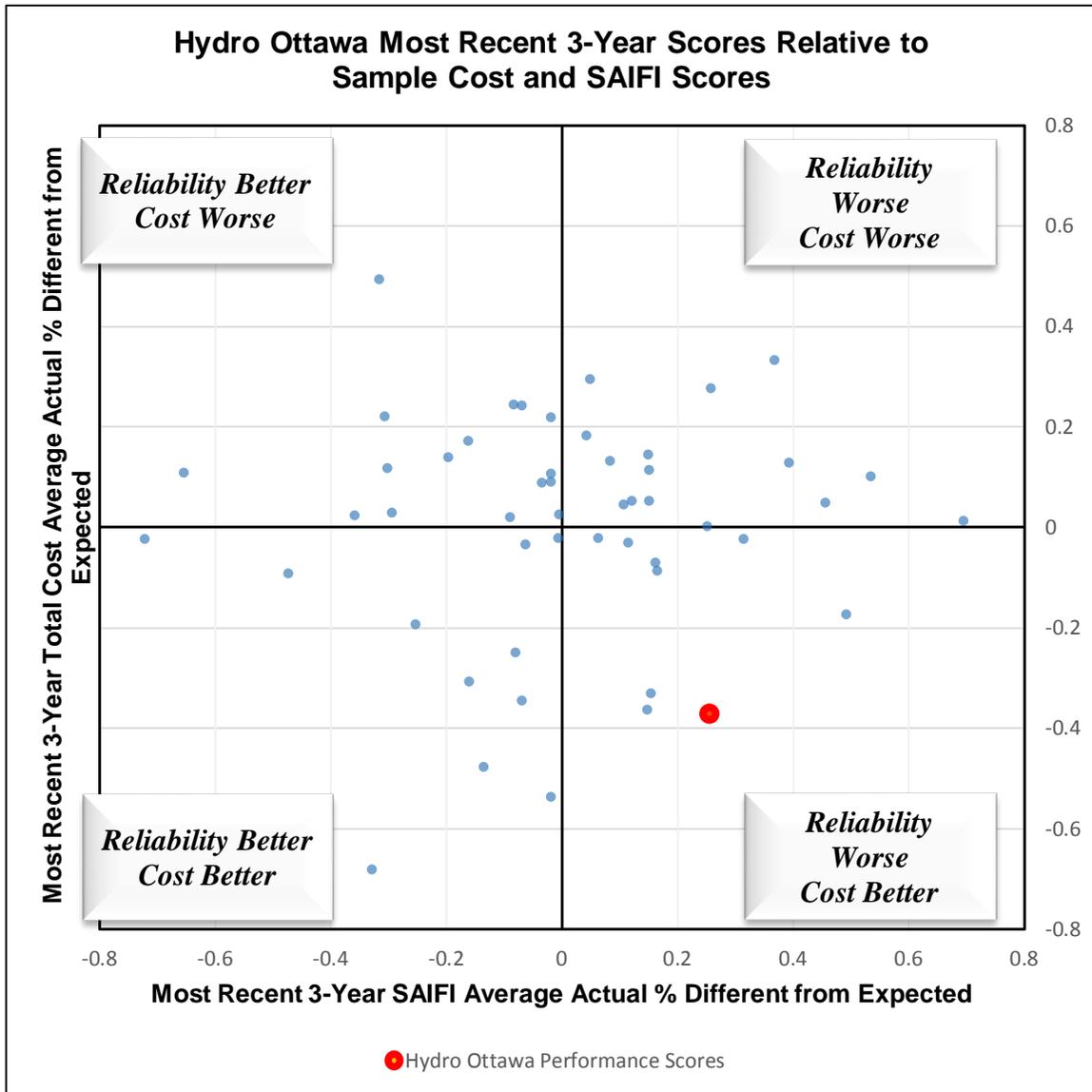
15 According to the PEG measured performance efficiency assessment, Hydro Ottawa is in
16 Cohort III which, according to PEG, means its total cost forecasts are +/- 10% within
17 predicted costs. According to this approach Hydro Ottawa would be subject to a 0.30%
18 stretch factor. Hydro Ottawa however maintains that the PEG cost efficiency approach
19 is not the appropriate benchmarking method for determining the efficiency levels of
20 distributors such as Hydro Ottawa.

21

22 In PSE benchmarking report, Hydro Ottawa's 2011-2013 efficiency level is 37% below
23 the PSE benchmarks. In PSE's supplement evidence that included an extreme
24 temperature variable, Hydro Ottawa's 2011-2013 efficiency level is 45% below the PSE
25 benchmarks. Both models provide strong evidence of extremely strong cost
26 performance and are statistically significant at a 90% confidence level. While continuous
27 improvement is always a key objective, Hydro Ottawa believes system renewal and
28 improving reliability outcomes provides the best improvement strategy for customers.
29 PSE's reliability benchmarking evidence provided a finding that, while Hydro Ottawa cost
30 levels are far lower than expected, reliability levels are worse than expected and should
31 be improved from a benchmark perspective.



- 1 The PSE cost/reliability balance figure (Figure 1-5) illustrates the situation where Hydro
- 2 Ottawa's total cost performance is very strong, yet SAIFI performance is quite weak.
- 3 This explains why improving Hydro Ottawa's performance involves increasing spending
- 4 to address the SAIFI shortcomings.
- 5



6
7



1 **Undertaking JTC2.1**

2

3 To provide a list of the outcomes and the corresponding costs with respect to each of the
4 outcomes, in response to SEC No. 3, new customer service offerings and benefits

5

6

7 **Response:**

8

9 Please see Table 1 below that lists the outcomes and corresponding costs with respect
10 to Hydro Ottawa's Customer Experience Vision 2020 (Reference to D-1-6).

| Customer Experience Solution | Outcome | (\$ '000) | |
|---|---|-----------|-----------------|
| | | Opex 2016 | Capex 2016-2020 |
| Outage Communications System Upgrade | Eliminate potential points of failure, provide premise-based outage reporting, and deliver information to customer through their choice of communications medium. | 100 | 900 |
| MyHydroLink (MHL) Development and Support | Continue to support MHL offering, and further enhance the service through further improvements. | 100 | 40 |
| Oracle Customer Self-Serve | Allow automation of customer web-initiated move ins/outs and account set-up through CC&B without the need to re-key data which will result in productivity gains. | 40 | 475 |
| Customer Relationship Management System | Provides robust information regarding the customer beyond their billing and payment status. | 100 | |

11

12 To be continued on next page ...

13

14

15

16

17



| Customer Experience Solution | Outcome | (\$ '000) | |
|--|---|--------------------|-----------------|
| | | Opex 2016 | Capex 2016-2020 |
| Avaya CC6 | A robust, multi-channel customer experience portal that manages phone calls, email, chat, fax, social media, agent routing, Interactive Voice Response (IVR), reporting and analysis. Features include Workforce Optimization, Multi-Media, Experience Portal, Rescripting MPS 500, Proactive Outreach Manager, Proactive Outreach for Payment, Callback Assist, and Customer Survey. | 50 | 370 |
| Pre Pay Billing | Provides customer choice in their bill payment management. This option allows payments in advance prior to consuming electricity rather than paying after the product has been consumed. | 20 | 300 |
| Strategic Account Management Program | A program to transition from a current reactive account management approach to a proactive account management approach. | 40 | |
| Promoting "Go Paperless" | Continually drive postage and paper billing costs down. | 200 | |
| Bill Redesign & Unilingual Bills | To address Hydro Ottawa's customers desire to simplify their bills through an easier to understand bill, in the language of their choice. | Not in 2016 budget | |
| Cx Program Management and Implementation, incl. day to day project management, business analysis, and other services | Coordinated program management and implementation. | 210 | 460 |
| | Total | \$860 | \$2,545 |



1 **Undertaking JTC2.4**

2

3 To confirm Hydro Ottawa's position with respect to applying for a Z factor, and if there is
4 an obligation or if it is discretionary.

5

6

7 **Response:**

8

9 As indicated by Hydro Ottawa witness and captured on page 171, line 10 of transcript
10 volume 1 of the technical conference, Hydro Ottawa will apply the OEB policy as it
11 relates to Z factors.

12

13 The OEB's policy as it relates to Z factors is set out on page VIII of Appendix B of the
14 Supplemental Report of the Board on 3rd Generation Incentive Regulation for Ontario's
15 Electricity Distributors, EB-2007-0673.

16

17 According to the OEB's policy:

18 Z-factors are events that are not within management's control. A distributor will
19 be expected to supply the details of management's plans for addressing these
20 events in support of the distributor's request for special cost recovery.

21

22 A distributor may record amounts which meet the eligibility criteria presented
23 below for Z-factor events.

24

25 A distributor is expected to follow the guidelines listed below when applying to the
26 Board to recover from ratepayers the amounts that the distributor has recorded.

27

The Board may limit the recovery of certain amounts.

28

29 According to the OEB's policy Z factor filing guidelines:

30

"[d]istributors are expected to submit evidence that the costs/revenues which
31 were incurred / received meet the three eligibility criteria outlined above.



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Distributors are expected to report events to the Board promptly and apply to the Board for any amounts claimed under Z-factor treatment with the next rate application. This will allow the Board and any affected distributor the flexibility to address extraordinary events in a timely manner. Subsequently, the Board may review and prospectively adjust the amounts claimed under Z-factor treatment.

The Board expects that any application for a Z-factor will be accompanied by a clear demonstration that the management of the distributor could not have been able to plan and budget for the event and that the harm caused by extraordinary events is genuinely incremental to their experience or reasonable expectations.

| Criteria | Description |
|-------------|--|
| Causation | Amounts should be directly related to the Z-factor event. The amount must be clearly outside of the base upon which rates were derived. |
| Materiality | The amounts must exceed the Board-defined materiality threshold and have a significant influence on the operation of the distributor; otherwise they should be expensed in the normal course and <u>addressed through organizational productivity improvements</u> . |
| Prudence | The amount must have been prudently incurred. This means that the distributor's <u>decision to incur the amount</u> must represent the most cost-effective option (not necessarily least initial cost) for ratepayers. |

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Hydro Ottawa confirms that it will apply the OEB's policy as it relates to events that qualify for Z factor treatment. Hydro Ottawa further confirms its understanding of the OEB's policy that distributors are to report events and promptly apply to the Board for amounts claimed for Z factor treatment. Hydro Ottawa confirms that Z factors in incentive regulation plans are intended to be symmetrically applied but observes a disconnect between the reporting obligation and the obligation to apply based on the Board's three criteria.



1 **Undertaking JTC2.7**

2

3 To provide forecast costs and benefits for e-billing for the year 2016.

4

5

6 **Response:**

7

8 As a provincial leader in this area, Hydro Ottawa is moving into uncharted territory with
9 respect to the number of customers on e-billing therefore it is very difficult to predict how
10 far and how fast we can push customer acceptance. Having said that, Hydro Ottawa
11 has targeted to achieve 12,000 additional customers moving to e-billing in 2016, 1,000
12 per month. The associated cost (marketing, promotions, etc.) that Hydro Ottawa has
13 budgeted is \$200K in 2016, this is a one-time expense. The associated savings are
14 \$72K in 2016 for the 12,000 customers. As of 2017, Hydro Ottawa will realize the full
15 benefit and the cumulative savings in 2017 to 2020 will be approximately \$528K (\$132K
16 each year).



1 **Undertaking JTC2.8**

2

3 To specifically advise exactly what orders are being looked for, covering what rates and
4 for what periods?

5

6

7 **Response:**

8

9 The specific orders and approvals being sought by Hydro Ottawa's can be found in
10 Exhibit A, Tab 6, Schedule 1 – Application and Approvals Sought.

11

12



1 **Undertaking JTC2.10**

2

3 To provide the spreadsheet that supports figure OEB-15-2.

4

5

6 **Response:**

7

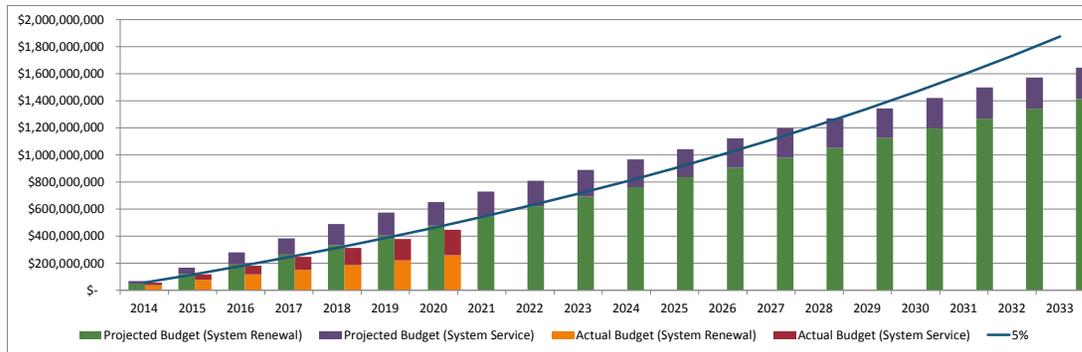
8 Please see attachment Att-JCT2.10-A Forecast vs. Actual Investment.

9 Please note that the graph has been updated to have 2014 actuals as the starting value
10 for the 5% year over year comparative line.

11

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|--------------------------------------|------------------|------------------|-------------------|-------------------|-------------------|------------------|------------------|------------------|------------------|
| Assets | \$ 50,335,305 | \$ 70,964,599 | \$ 71,015,878 | \$ 71,090,354 | \$ 71,200,973 | \$ 71,334,216 | \$ 71,481,058 | \$ 71,634,753 | \$ 71,793,096 |
| Capacity | \$ 18,255,556 | \$ 27,550,000 | \$ 42,750,000 | \$ 33,150,000 | \$ 34,000,000 | \$ 12,900,000 | \$ 6,500,000 | \$ 5,500,000 | \$ 8,700,000 |
| System Need | \$ 68,590,860.20 | \$ 98,514,598.82 | \$ 113,765,877.99 | \$ 104,240,353.84 | \$ 105,200,973.08 | \$ 84,234,215.81 | \$ 77,981,057.54 | \$ 77,134,753.04 | \$ 80,493,096.36 |
| Current Spend (proposed 5% increase) | \$ 56,700,000 | \$ 59,535,000 | \$ 62,511,750 | \$ 65,637,338 | \$ 68,919,204 | \$ 72,365,165 | \$ 75,983,423 | \$ 79,782,594 | \$ 83,771,724 |
| System Need | \$ 68,590,860 | \$ 167,105,459 | \$ 280,871,337 | \$ 385,111,691 | \$ 490,312,664 | \$ 574,546,880 | \$ 652,527,937 | \$ 729,662,690 | \$ 810,155,787 |
| Current Spend | \$ 56,700,000 | \$ 116,235,000 | \$ 178,746,750 | \$ 244,384,088 | \$ 313,303,292 | \$ 385,668,456 | \$ 461,651,879 | \$ 541,434,473 | \$ 625,206,197 |
| 5% | \$ 56,700,000 | \$ 59,535,000 | \$ 62,511,750 | \$ 65,637,338 | \$ 68,919,204 | \$ 72,365,165 | \$ 75,983,423 | \$ 79,782,594 | \$ 83,771,724 |
| Projected Budget (System Renewal) | \$ 50,335,305 | \$ 70,964,599 | \$ 71,015,878 | \$ 71,090,354 | \$ 71,200,973 | \$ 71,334,216 | \$ 71,481,058 | \$ 71,634,753 | \$ 71,793,096 |
| Projected Budget (System Service) | \$ 18,255,556 | \$ 27,550,000 | \$ 42,750,000 | \$ 33,150,000 | \$ 34,000,000 | \$ 12,900,000 | \$ 6,500,000 | \$ 5,500,000 | \$ 8,700,000 |
| Actual Budget (System Renewal) | \$ 37,400,000 | \$ 40,000,000 | \$ 41,000,000 | \$ 31,800,000 | \$ 36,500,000 | \$ 36,000,000 | \$ 35,700,000 | | |
| Actual Budget (System Service) | \$ 19,300,000 | \$ 20,800,000 | \$ 22,200,000 | \$ 34,000,000 | \$ 29,500,000 | \$ 30,500,000 | \$ 33,300,000 | | |
| Cumulative Values | | | | | | | | | |
| 5% | \$ 56,700,000 | \$ 116,235,000 | \$ 178,746,750 | \$ 244,384,088 | \$ 313,303,292 | \$ 385,668,456 | \$ 461,651,879 | \$ 541,434,473 | \$ 625,206,197 |
| Projected Budget (System Renewal) | \$ 50,335,305 | \$ 121,299,903 | \$ 192,315,781 | \$ 263,406,135 | \$ 334,607,108 | \$ 405,941,324 | \$ 477,422,382 | \$ 549,057,135 | \$ 620,850,231 |
| Projected Budget (System Service) | \$ 18,255,556 | \$ 45,805,556 | \$ 88,555,556 | \$ 121,705,556 | \$ 155,705,556 | \$ 168,605,556 | \$ 175,105,556 | \$ 180,605,556 | \$ 189,305,556 |
| Actual Budget (System Renewal) | \$ 37,400,000 | \$ 77,400,000 | \$ 118,400,000 | \$ 150,200,000 | \$ 186,700,000 | \$ 222,700,000 | \$ 258,400,000 | | |
| Actual Budget (System Service) | \$ 19,300,000 | \$ 40,100,000 | \$ 62,300,000 | \$ 96,300,000 | \$ 125,800,000 | \$ 156,300,000 | \$ 189,600,000 | | |

| | 2014 | 2015 | 2016 |
|-----------------------------------|---------------|----------------|----------------|
| Projected Budget (System Renewal) | \$ 50,335,305 | \$ 121,299,903 | \$ 192,315,781 |
| Projected Budget (System Service) | \$ 18,255,556 | \$ 45,805,556 | \$ 88,555,556 |
| Actual Budget (System Renewal) | \$ 37,400,000 | \$ 77,400,000 | \$ 118,400,000 |
| Actual Budget (System Service) | \$ 19,300,000 | \$ 40,100,000 | \$ 62,300,000 |



| | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | |
|--------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Assets | \$ 71,359,035 | \$ 71,525,158 | \$ 71,693,872 | \$ 71,861,222 | \$ 72,024,191 | \$ 72,184,262 | \$ 72,344,240 | \$ 72,504,398 | \$ 72,668,052 | \$ 72,832,111 | \$ 72,996,183 | |
| Capacity | \$ 9,400,000 | \$ 6,000,000 | \$ 3,500,000 | \$ 6,500,000 | \$ 5,000,000 | \$ - | \$ - | \$ 5,500,000 | \$ 5,500,000 | \$ - | \$ - | |
| System Need | \$ 80,759,035.06 | \$ 77,525,158.04 | \$ 75,193,872.15 | \$ 78,361,221.86 | \$ 77,024,191.46 | \$ 72,184,262.42 | \$ 72,344,239.75 | \$ 78,004,398.46 | \$ 78,168,051.86 | \$ 72,561,810.66 | \$ 72,561,812.66 | |
| Current Spend (proposed 5% increase) | \$ 87,960,310 | \$ 92,358,325 | \$ 96,976,242 | \$ 101,825,054 | \$ 106,916,306 | \$ 112,262,122 | \$ 117,875,228 | \$ 123,768,989 | \$ 129,957,439 | \$ 136,455,311 | \$ 143,278,076 | |
| System Need | \$ 890,914,822 | \$ 968,439,980 | \$ 1,043,633,852 | \$ 1,121,995,074 | \$ 1,199,019,265 | \$ 1,271,203,528 | \$ 1,343,547,767 | \$ 1,421,552,166 | \$ 1,499,720,218 | \$ 1,572,282,028 | \$ 1,644,843,841 | |
| Current Spend | \$ 713,166,507 | \$ 805,524,832 | \$ 902,501,074 | \$ 1,004,326,127 | \$ 1,111,242,434 | \$ 1,223,504,555 | \$ 1,341,379,783 | \$ 1,465,148,772 | \$ 1,595,106,211 | \$ 1,731,561,522 | \$ 1,874,839,598 | |
| 5% | \$ 87,960,310 | \$ 92,358,325 | \$ 96,976,242 | \$ 101,825,054 | \$ 106,916,306 | \$ 112,262,122 | \$ 117,875,228 | \$ 123,768,989 | \$ 129,957,439 | \$ 136,455,311 | \$ 143,278,076 | \$ 1,611,355,653 |
| Projected Budget (System Renewal) | \$ 71,359,035 | \$ 71,525,158 | \$ 71,693,872 | \$ 71,861,222 | \$ 72,024,191 | \$ 72,184,262 | \$ 72,344,240 | \$ 72,504,398 | \$ 72,668,052 | \$ 72,832,111 | \$ 72,996,183 | \$ 1,414,138,286 |
| Projected Budget (System Service) | \$ 9,400,000 | \$ 6,000,000 | \$ 3,500,000 | \$ 6,500,000 | \$ 5,000,000 | \$ - | \$ - | \$ 5,500,000 | \$ 5,500,000 | \$ - | \$ - | \$ 234,374,815 |
| Actual Budget (System Renewal) | | | | | | | | | | | | |
| Actual Budget (System Service) | | | | | | | | | | | | |
| Cumulative Values | | | | | | | | | | | | |
| 5% | \$ 713,166,507 | \$ 805,524,832 | \$ 902,501,074 | \$ 1,004,326,127 | \$ 1,111,242,434 | \$ 1,223,504,555 | \$ 1,341,379,783 | \$ 1,465,148,772 | \$ 1,595,106,211 | \$ 1,731,561,522 | \$ 1,874,839,598 | |
| Projected Budget (System Renewal) | \$ 692,209,266 | \$ 763,734,424 | \$ 835,428,296 | \$ 907,289,518 | \$ 979,313,710 | \$ 1,051,497,972 | \$ 1,123,842,212 | \$ 1,196,346,610 | \$ 1,269,014,662 | \$ 1,341,576,473 | \$ 1,414,138,286 | |
| Projected Budget (System Service) | \$ 198,705,556 | \$ 204,705,556 | \$ 208,205,556 | \$ 214,705,556 | \$ 219,705,556 | \$ 219,705,556 | \$ 219,705,556 | \$ 225,205,556 | \$ 230,705,556 | \$ 230,705,556 | \$ 230,705,556 | |
| Actual Budget (System Renewal) | | | | | | | | | | | | |
| Actual Budget (System Service) | | | | | | | | | | | | |

| | 2017 | 2018 | 2019 | 2020 |
|-----------------------------------|----------------|----------------|----------------|----------------|
| Projected Budget (System Renewal) | \$ 263,406,135 | \$ 334,607,108 | \$ 405,941,324 | \$ 477,422,382 |
| Projected Budget (System Service) | \$ 121,705,556 | \$ 155,705,556 | \$ 168,605,556 | \$ 175,105,556 |
| Actual Budget (System Renewal) | \$ 150,200,000 | \$ 186,700,000 | \$ 222,700,000 | \$ 258,400,000 |
| Actual Budget (System Service) | \$ 96,300,000 | \$ 125,800,000 | \$ 156,300,000 | \$ 189,600,000 |

Assets
 Capacity
 System Need
 Current Spend (proposed 5% increase)

System Need
 Current Spend

5%
 Projected Budget (System Renewal)
 Projected Budget (System Service)
 Actual Budget (System Renewal)
 Actual Budget (System Service)

Cumulative Values
 5%
 Projected Budget (System Renewal)
 Projected Budget (System Service)
 Actual Budget (System Renewal)
 Actual Budget (System Service)

| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|-----------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Projected Budget (System Renewal) | \$ 549,057,135 | \$ 620,850,231 | \$ 692,209,266 | \$ 763,734,424 | \$ 835,428,296 | \$ 907,289,518 |
| Projected Budget (System Service) | \$ 180,605,556 | \$ 189,305,556 | \$ 198,705,556 | \$ 204,705,556 | \$ 208,205,556 | \$ 214,705,556 |
| Actual Budget (System Renewal) | 0 | 0 | 0 | 0 | 0 | 0 |
| Actual Budget (System Service) | 0 | 0 | 0 | 0 | 0 | 0 |

Assets
 Capacity
 System Need
 Current Spend (proposed 5% increase)

System Need
 Current Spend

5%

Projected Budget (System Renewal)
 Projected Budget (System Service)
 Actual Budget (System Renewal)
 Actual Budget (System Service)

Cumulative Values

5%

Projected Budget (System Renewal)
 Projected Budget (System Service)
 Actual Budget (System Renewal)
 Actual Budget (System Service)

| | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 |
|-----------------------------------|----------------|------------------|------|------------------|------------------|------------------|------------------|
| Projected Budget (System Renewal) | \$ 979,313,710 | \$ 1,051,497,972 | ### | \$ 1,196,346,610 | \$ 1,269,014,662 | \$ 1,341,576,473 | \$ 1,414,138,286 |
| Projected Budget (System Service) | \$ 219,705,556 | \$ 219,705,556 | ### | \$ 225,205,556 | \$ 230,705,556 | \$ 230,705,556 | \$ 230,705,556 |
| Actual Budget (System Renewal) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Actual Budget (System Service) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



1 **Undertaking JTC2.11**

2

3 a) To provide a sample of both the enterprise risk management report and a
4 monthly report with respect to reliability reporting, in the event that both of those
5 reports are not already provided in answers to interrogatories; and if they are
6 provided in answers to interrogatories, to provide the interrogatory number.

7

8 b) ADDITIONAL): To provide a copy of the ERM report and president's report as
9 the best illustration of what the executive uses to determine reliability

10

11

12

13

14 **Response:**

15

16 Please see attachments,

17 ATT-JTC2.11- A for the Enterprise Risk Management report

18 ATT-JTC2.11-B Monthly Reliability Report for the month of June 2015

19 ATT-JTC2.11-C Monthly Reliability Report for year-end 2014.

Hydro Ottawa Limited

Enterprise Quarterly Risk Assessment - 3 - Organizational Effectiveness
as at June 30, 2015

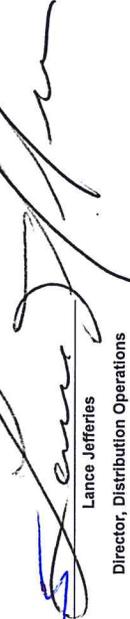
| METRICS / INDICATORS | Type D = Detective P = Predictive | Status of Metrics | | | | Actuals | | | | Budget | | | |
|---|---|-------------------|-------------------|-------------------|-------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-----------|
| | | Q1 | Q2 | 2015 Outlook | Q1 | Q2 | YTD | Q1 | Q2 | Q1 | Q2 | YTD | Full Year |
| 2.2 Metering and Billing | | | | | | | | | | | | | |
| M208 Commercial Metering Inspections (Target 650 Accounts with Billing Multiplier Equal to or Greater Than 120) By End Of Q4 | D | Measured Annually | Measured Annually | Measured Annually | 0 | Measured Annually | ≥ 650 |
| M209 Discrepancies Between Meter Physical Inventory Counts and Book Value as % of Value (Based on Perpetual Inventory Count) BY End Of Q4 | D | Measured Annually | Measured Annually | Measured Annually | 0% | Measured Annually | < 5% |
| M210 Completion of Annual Meter Inventory Count and Reconciliation | P | Measured Annually | Measured Annually | Measured Annually | 0 | Measured Annually | 1 |
| M854 Number of Legacy Crossed Meters Identified In Last Quarter - No Tolerance Stated | | | | | 62 | 37 | 25 | 0 | 0 | 62 | 37 | 25 | ≤ 0 |
| M365 Number of Crossed Meters Identified That Were Installed Within 1.5 Year Threshold - Actionable Through Operations Managers & Supervisors | | | | | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 0 | ≤ 4 |
| 2.3 Reliability | | | | | | | | | | | | | |
| M218 Duration of Planned and Unplanned Interruptions Including LoS (SAIDI) | P | Measured Annually | Measured Annually | Measured Annually | 1.44 | 1.42 | 1.44 | 1.44 | 1.44 | 1.44 | 1.44 | 1.44 | ≤ 1.6 |
| M219 Frequency of Planned and Unplanned Interruptions Including LoS (SAIFI) | P | Measured Annually | Measured Annually | Measured Annually | 1.08 | 0.94 | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 | ≤ 1.4 |
| M220 SAIDI - 3 Year Moving Average Including LoS | D | Measured Annually | Measured Annually | Measured Annually | 1.61 | 1.66 | 1.61 | 1.61 | 1.61 | 1.61 | 1.61 | 1.61 | ≤ 1.9 |
| M221 SAIFI - 3 Year Moving Average Including LoS | D | Measured Annually | Measured Annually | Measured Annually | 1.41 | 1.45 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | ≤ 1.6 |
| M222 Feeders - FEM1 | D | Measured Annually | Measured Annually | Measured Annually | 10 | 7 | 10 | 10 | 10 | 10 | 10 | 10 | ≤ 12 |
| 3.1 Efficiency of Operations and Assets | | | | | | | | | | | | | |
| M301 Distribution Capital Project Schedule (% of Completion) | D | Measured Annually | Measured Annually | Measured Annually | 34% | 16% | 18% | 18% | 18% | 34% | 16% | 18% | > 25% |
| M300 Status of Completion of Stations Capital Projects (Budgeted > \$1 Million) (% of Work Completed) | P | Measured Annually | Measured Annually | Measured Annually | 31% | 16% | 15% | 15% | 15% | 31% | 16% | 15% | > 15% |
| M304 Periodic Physical Inspection of Stations (64 Stations) | D | Measured Annually | Measured Annually | Measured Annually | 379 | 207 | 172 | 172 | 172 | 379 | 207 | 172 | > 170 |
| M302 Incidents of Damage to Assets | D | Measured Annually | Measured Annually | Measured Annually | 37 | 17 | 20 | 20 | 20 | 37 | 17 | 20 | < 26 |
| Metrics - Projects | | | | | | | | | | | | | |
| M354 Maintenance Programs Unit Projects | D | Measured Annually | Measured Annually | Measured Annually | 50.0% | 22.0% | 28.0% | 28.0% | 28.0% | 50.0% | 22.0% | 28.0% | > 25.0% |
| Metrics - Strategic | | | | | | | | | | | | | |
| Good Shape ● Needs Attention ▲ Action Time ✘ | | | | | | | | | | | | | |

Detective Metrics are indicators of risk and would therefore carry a larger impact ("weight") in the overall risk assessment model. Predictive Metrics monitor and alert about potential risk, and therefore are "early warning" mechanisms (Lead Indicators). They do not necessarily indicate actual occurrence of risk.

| RISK ASSESSMENT | | |
|---|-----|-----|
| | QTR | YTD |
| 2.2 Metering and Billing | | |
| 2.3 Reliability | | |
| 3.1 Efficiency of Operations and Assets | | |



 Bill Bennett
 Director, Distribution Asset Management
 July 31, 2015



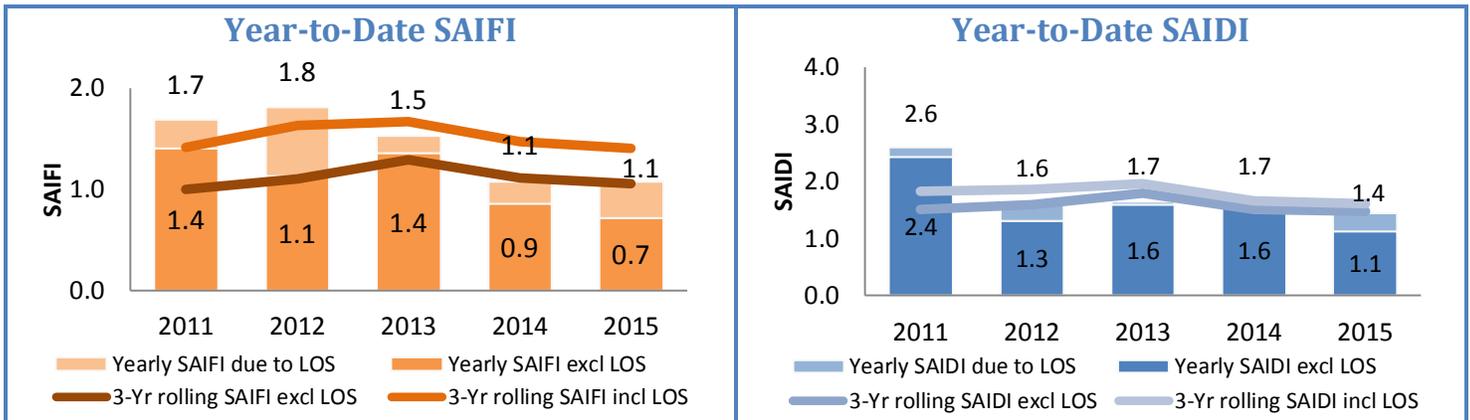
 Lance Jeffries
 Director, Distribution Operations
 July 31, 2015

HYDRO OTTAWA LIMITED

Risk Analysis Report – Metering, Reliability and Efficiency of Ops
 Director Distribution Asset Management - Bill Bennett
 Risk Status as of June 30, 2015

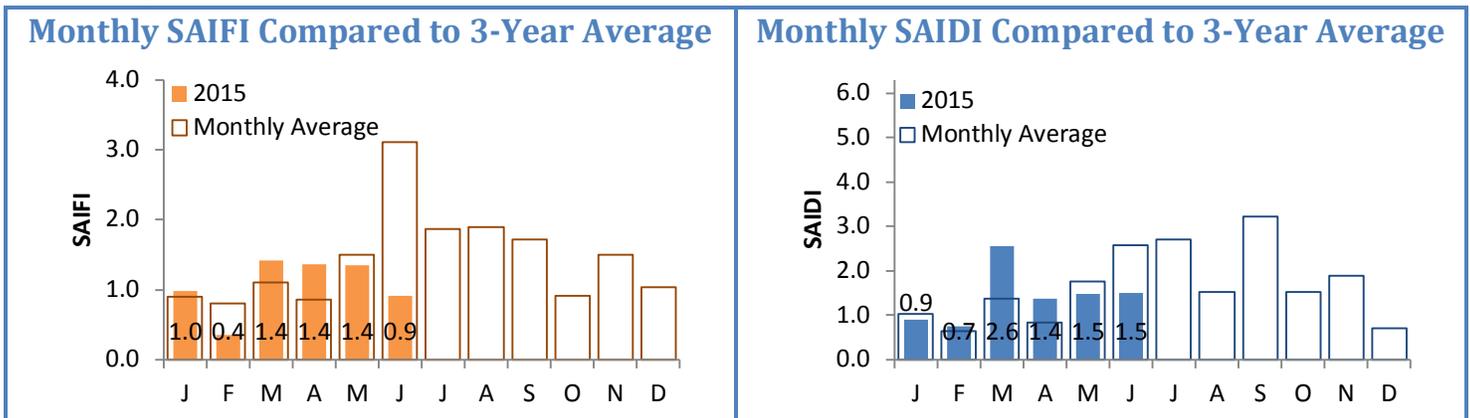
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|------------|---|--------|---|--------|---|---|---|---------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---------------------|--|--|--|--|--|--|--|---|--|--|--|--|--|--|--|---|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|
| <p>Metric exceeding tolerance</p> | <p>Name and Number</p> <p>M301 - Distribution Capital Project Schedule (% of completion)</p> <p>Description</p> <p>Q3 tolerance is greater than 25% of quarter's planned work that completed while actual annual planned work completed was 34% compared to target of 40%.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Potential Risks</p> | <p>Not all planned work is completed on time thus causing budget variance. Potential for some projects to deviate from schedule.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Risk Management Plan / Clarification</p> | <table border="1"> <tr> <td data-bbox="885 1633 917 1948">Likelihood</td> <td data-bbox="885 1333 917 1633">L</td> <td data-bbox="885 1144 917 1333">M</td> <td data-bbox="885 955 917 1144">H</td> <td data-bbox="885 766 917 955">Impact</td> <td data-bbox="885 583 917 766">L</td> <td data-bbox="885 394 917 583">M</td> <td data-bbox="885 205 917 394">H</td> </tr> <tr> <td colspan="8">Cause:</td> </tr> <tr> <td colspan="8">Spend in Q1 was above target, however the YTD is below due to a lower than expected spend in the first 2 quarters of 2015. The year end spend is expected to be within target.</td> </tr> <tr> <td colspan="8">Action Plan:</td> </tr> <tr> <td colspan="8">Closely manage and monitor projects to ensure planned work is completed on time and within budget. Adjust overall Sustainment schedule as necessary to optimize work completed in the current year.</td> </tr> <tr> <td colspan="8">Expected time for metrics to turn green:</td> </tr> <tr> <td colspan="8">Q4</td> </tr> </table> | Likelihood | L | M | H | Impact | L | M | H | Cause: | | | | | | | | Spend in Q1 was above target, however the YTD is below due to a lower than expected spend in the first 2 quarters of 2015. The year end spend is expected to be within target. | | | | | | | | Action Plan: | | | | | | | | Closely manage and monitor projects to ensure planned work is completed on time and within budget. Adjust overall Sustainment schedule as necessary to optimize work completed in the current year. | | | | | | | | Expected time for metrics to turn green: | | | | | | | | Q4 | | | | | | | |
| Likelihood | L | M | H | Impact | L | M | H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cause: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spend in Q1 was above target, however the YTD is below due to a lower than expected spend in the first 2 quarters of 2015. The year end spend is expected to be within target. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Action Plan: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Closely manage and monitor projects to ensure planned work is completed on time and within budget. Adjust overall Sustainment schedule as necessary to optimize work completed in the current year. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Expected time for metrics to turn green: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Q4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Annual Performance



The 2015 year-to-date reliability performance has shown improvement over previous years. It is important to note that spring and summer months are when the majority of our outages occur, primarily due to weather. The SAIFI and SAIDI contributions from the outages experienced in the month of June were significantly lower than 3-year historical data for the month.

Monthly Performance

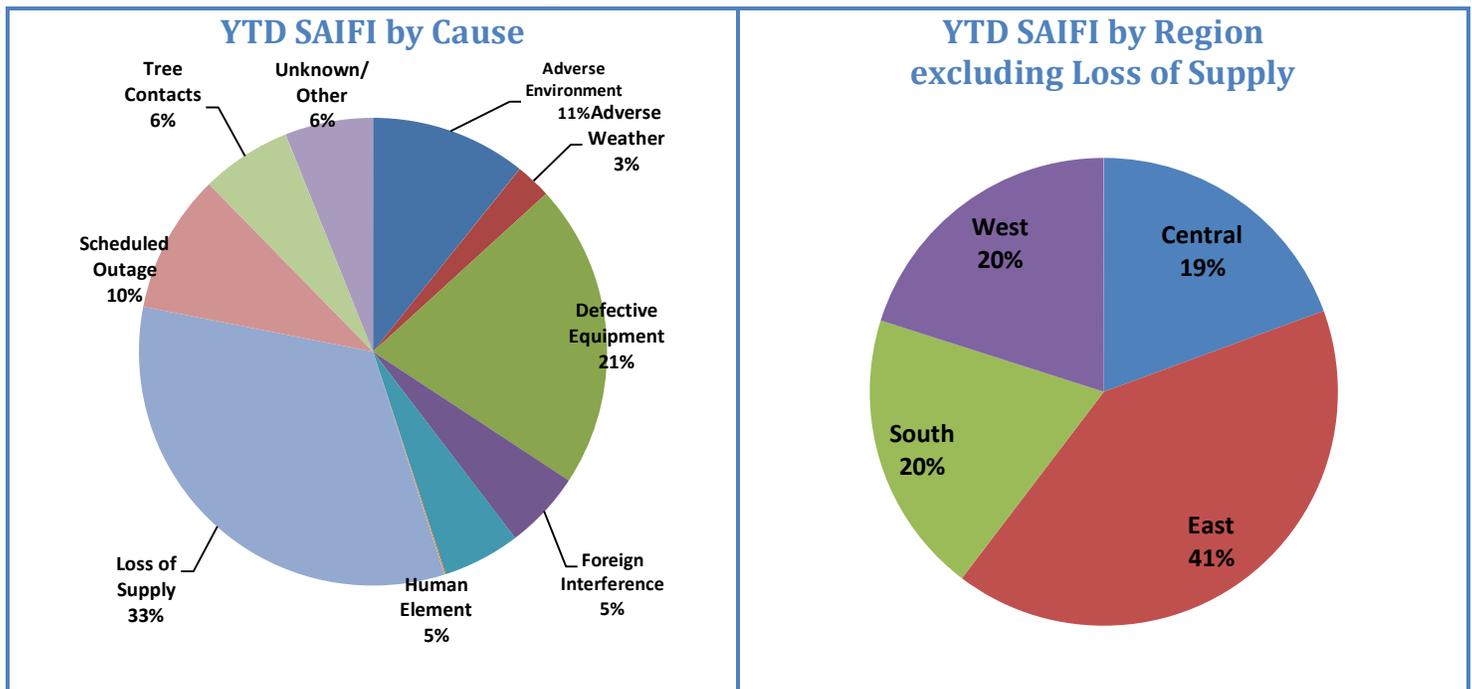


The monthly SAIFI & SAIDI performance in 2015 began on par with the average monthly performance seen from 2012-2014, but experienced an increased frequency and duration of outages compared to the 3-year monthly average during March and April. May was in line with the 3-year monthly average and June was significantly below the average.

The month of June experienced a reduced amount of outages compared to the last three years. The leading outage causes were defective equipment and tree contacts.

| Date | Duration | Region | Primary Cause | Details |
|-----------------------|----------|--------|---------------------|--|
| June 6 th | 1.3 hrs | East | Tree Contacts | Tree fell on primary causing 249F1 breaker to open |
| June 2 nd | 4.3 hrs | West | Defective Equipment | A9M1 insulator pin broke causing circuit to fall into BRDF4 and 200F1 circuits |
| June 16 th | 2.1 hrs | West | Defective Equipment | RX2010 on ALXF3 tripped due to lead coming loose on downstream switch |

Year-to-Date Customer Interruption Contribution



The top five Year-to-Date contributors to SAIFI, in order, are:

| | Date | Region | Primary Cause | Details |
|---|-------------------------|---------|---------------------|--|
| 1 | April 17 th | East | Loss of Supply | Contractor made contact with 115kV L2M circuit |
| 2 | March 14 th | West | Loss of Supply | Hydro One Pole Fire |
| 3 | January 7 th | West | Loss of Supply | Hydro One 230 kV Line interruption on the M29C |
| 4 | March 17 th | South | Adverse Environment | Hydro Ottawa Pole Fire |
| 5 | January 6 th | Central | Loss of Supply | Hydro One Relay Problem |

Interruption Causes

| | |
|-----------------------------|---|
| Unknown / Other | interruptions with no apparent cause that contributed to the outage |
| Scheduled Outage | interruptions due to the disconnection at a selected time for the purpose of construction or preventive maintenance |
| Loss of Supply | interruptions due to problems associated with assets owned and/or operated by another party and or/ in the bulk electricity supply system, based upon ownership demarcation |
| Tree Contacts | interruptions caused by faults resulting from tree contact with energized circuit |
| Lightning | interruptions due to lightning striking the distribution system |
| Defective Equipment | interruptions resulting from equipment failures due to deterioration from age, incorrect maintenance, or imminent failures detected by maintenance |
| Adverse Weather | interruptions resulting from rain, ice storms, snow, winds, extreme temperatures, freezing rain, frost, or other extreme weather conditions (exclusive of Tree Contacts and Lightning events) |
| Adverse Environment | interruptions due to equipment being subject to abnormal environments, such as salt spray, industrial contamination, humidity, corrosion, vibration, fire, or flowing |
| Human Element | interruptions due to the interface of distributor staff with the system |
| Foreign Interference | interruptions beyond the control of the distributor, such as animals, vehicles, dig-ins, vandalism, sabotage, and foreign objects |

Glossary

Interruption

A sustained loss of voltage/electrical supply on all phases to the customer’s supply point. Notwithstanding, if the customer’s system is not able to accept electricity from Hydro Ottawa’s system, this is not considered an outage. This does not include Partial Power (loss on some of the phases supplying a customer), or sags/deformations, these are power quality events.

Loss of Supply

An interruption due to problems associated with assets owned and/or operated by another part, and/or the bulk electricity supply system.

System Average Interruption Frequency Index (SAIFI)

SAIFI is an index of system reliability that expresses the number of times per reporting period that the supply to a customer is interrupted. It is determined by dividing the total number of interruptions experienced by all customers, by the average number of customers served. In words, the definition is:

$$SAIFI = \frac{\text{Total number of customer interruptions}}{\text{Total number of customers served}}$$

This index is reported both including and excluding Loss of Supply (LoS). *SAIFI including LoS* provides information as to the total interruptions which are seen by the ‘average’ customer. *SAIFI excluding LoS* indicates the ‘average’ customer interruptions which are the result of causes under the direct control of Hydro Ottawa.

System Average Interruption Duration Index (SAIDI)

SAIDI is an index of system reliability that expresses the average amount of time supply to a customer is interrupted. It is determined by dividing the total monthly duration of all interruptions experienced by all customers, in hours, by the average number of customers served. In words, the definition is:

$$SAIDI = \frac{\text{Total hours of customer interruptions}}{\text{Total number of customers served}}$$

This index is reported both including and excluding Loss of Supply (LoS). As with SAIFI, the *SAIDI including LoS* provides information as to the total duration of interruptions which are seen by the ‘average’ customer whereas *SAIDI excluding LoS* provides an indication as to the duration which the ‘average’ customer is interrupted as the result of causes under the control of Hydro Ottawa.

3-Year Rolling Average

The average performance of the previous 36 months.

Reliability Report Excluding the Major Event Day

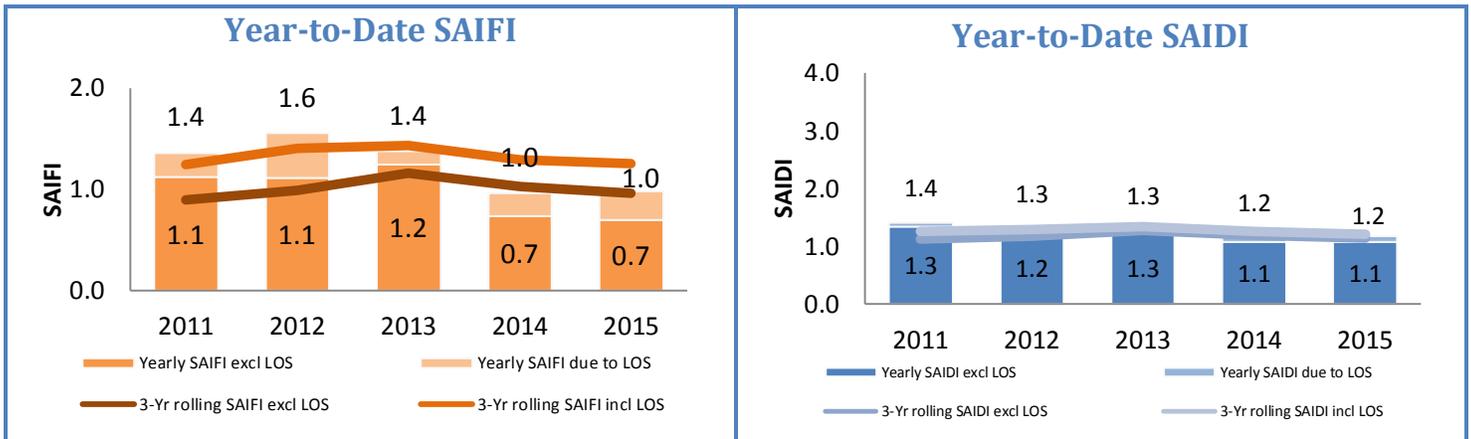
Major Event Days (MED) are calculated in concordance with the IEEE Standard 1366 – Beta 2.5 Method.

There were no Major Event Days in June.

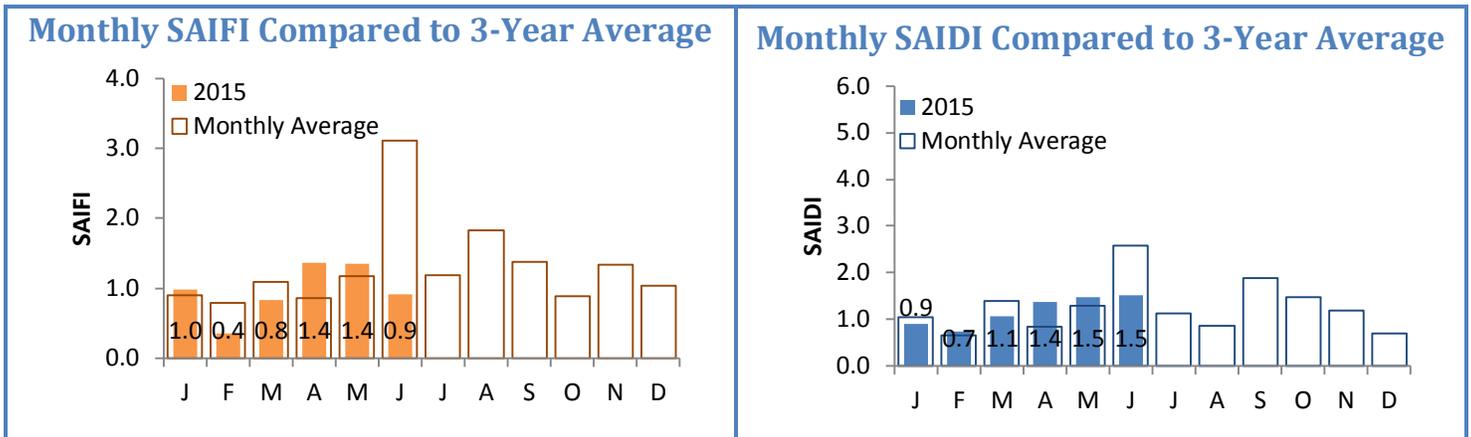
On Saturday, March 14th, Hydro Ottawa experienced a major event day due to pole fires that caused 2 large outages and affected 17,141 customers for a combined total of 40,487 customer hours. The larger of the two outages was a result of a Hydro One pole that caught fire and caused a loss of supply for 12,275 Hydro Ottawa customers in the south end of the City. The second outage was a result of a Hydro Ottawa pole catching fire in the core of the City resulting in 4,866 customer interruptions. Both outages were restored within 5 hours. This was the first major event day of 2015.

The following figures illustrate reliability indices excluding the MED.

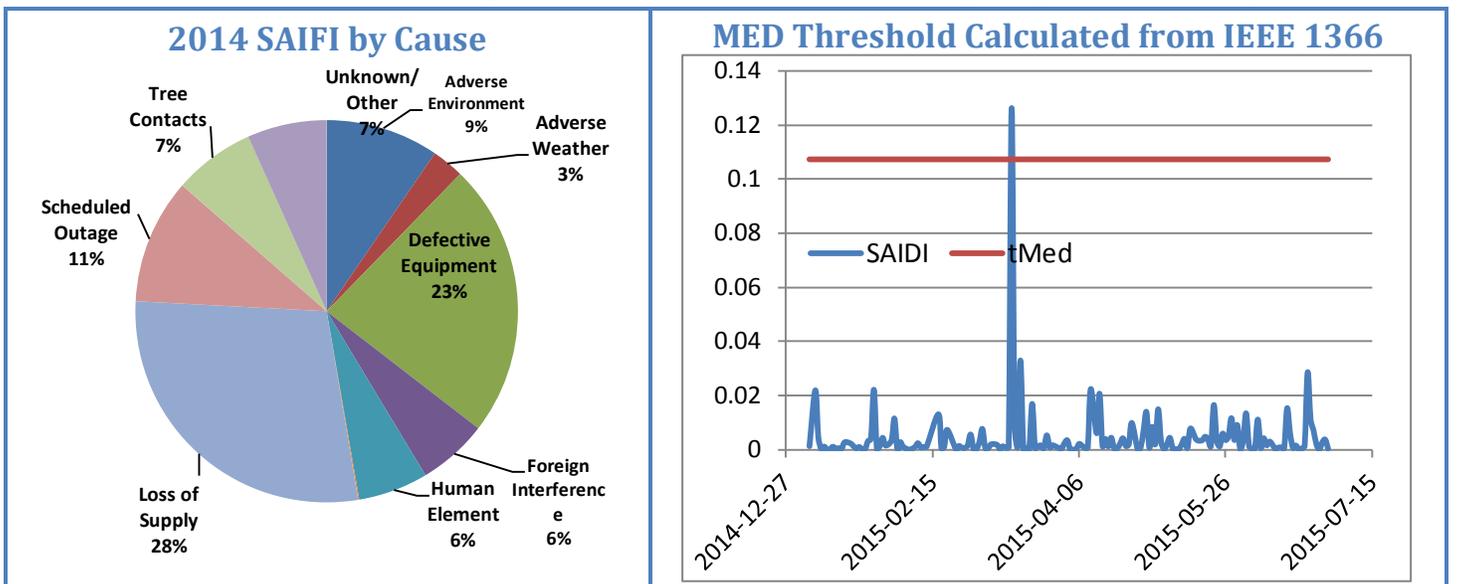
Annual Performance Excluding Major Event Day



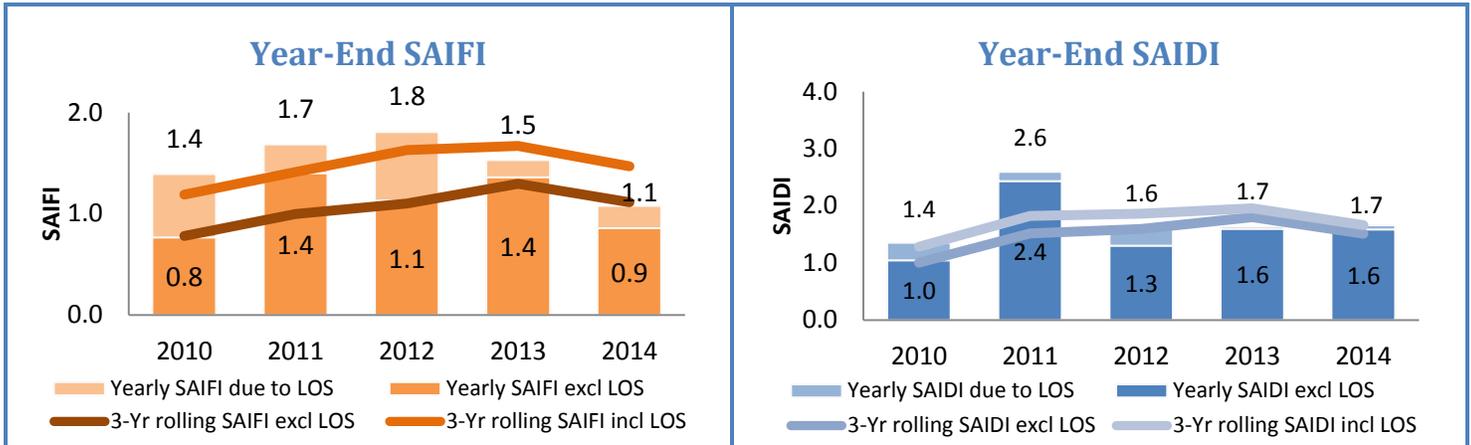
Monthly Performance Excluding Major Event Day



Year-End Customer Interruption Contribution Excluding Major Event Day

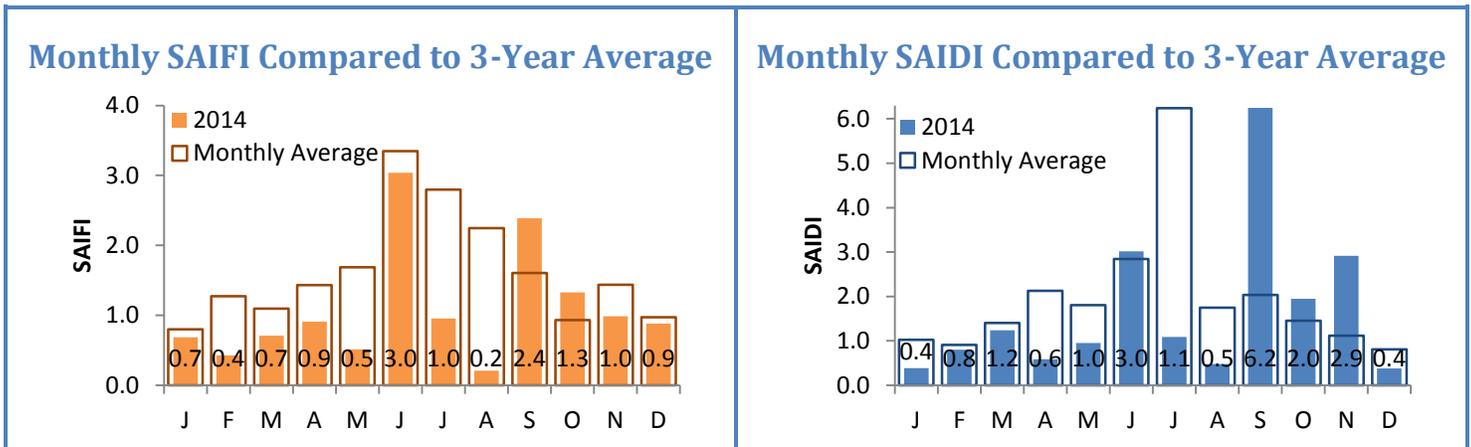


Annual Performance



The 2014 year-end reliability performance has shown improvement over the last 3 years. Historically, the spring and summer months have been the time of increased outage activity. This year, we experienced a major event day early in September and in late November which increased SAIDI and SAIFI in 2014; however there is still an overall improvement.

Monthly Performance

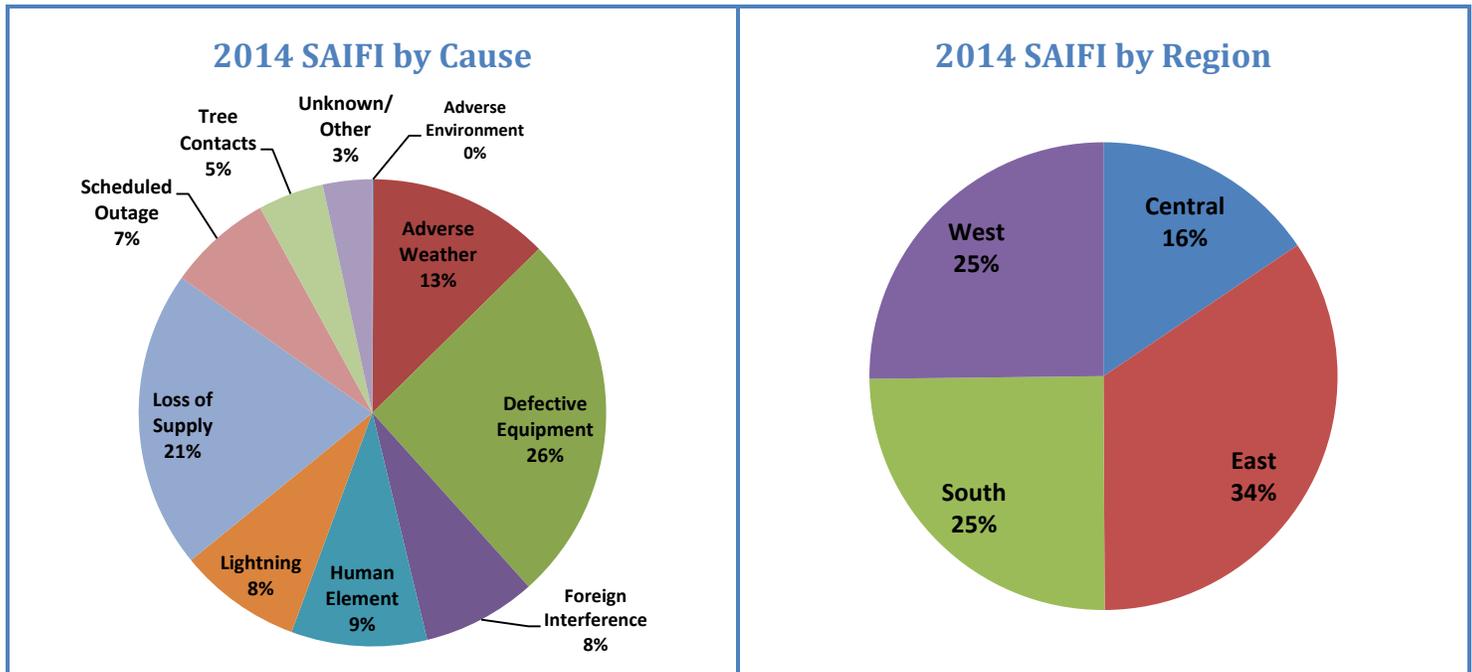


The monthly SAIFI and SAIDI performance in 2014 has, for the most part, been better than the average monthly performance seen from 2011-2013. In December, Ottawa's east end experienced the largest outages of the month due to a loss of supply from the provincial grid on December 4th which affected approximately 16,000 customer and on December 25th, when approximately 4,000 customers experienced interruptions due to extreme winds conditions.

The most significant outages in the month of December are:

| Date | Duration | Region | Primary Cause | Details |
|----------------------|----------|--------|----------------------|--|
| Dec 4 th | 1.7 hrs | East | Loss of Supply | Loss of supply from provincial grid M31A - Albion. |
| Dec 6 th | 7.2 hrs | East | Foreign Interference | Vehicle hit pole |
| Dec 25 th | 0.1 hrs | East | Adverse Weather | Extreme winds caused AAT1 and AA03 to trip |

Year-End Customer Interruption Contribution



The top five Year-to-Date contributors to SAIFI, in order, are:

| | Date | Duration | Region | Primary Cause | Details |
|---|------------------------|----------|--------|---------------------|--|
| 1 | Dec 4 th | 0.1 hrs | East | Loss of Supply | Loss of supply from provincial grid M31A - Albion. |
| 2 | April 10 th | 1.58 hrs | South | Adverse Weather | High winds cause a tree to fall onto wires, Greenbank. |
| 3 | June 4 th | 1.28 hrs | West | Loss of Supply | Hydro One defective equipment, Kanata. |
| 4 | March 24 th | 4.12 hrs | West | Defective Equipment | Broken overhead insulator, Stittsville & Kanata. |
| 5 | March 21 st | 2.23 hrs | West | Defective Equipment | Failed cable termination, Kanata. |

*This list is comprised of individual outages which affected many customers and had a large effect on SAIFI. Note that the major event days on September 5th and November 24th were comprised of several smaller outages, none of which ranked as a top contributor to SAIFI on their own.

Interruption Causes

| | |
|-----------------------------|---|
| Unknown / Other | interruptions with no apparent cause that contributed to the outage |
| Scheduled Outage | interruptions due to the disconnection at a selected time for the purpose of construction or preventive maintenance |
| Loss of Supply | Interruptions due to problems on the bulk electricity supply system. Typically these events are caused by Hydro One's transmission system. |
| Tree Contacts | interruptions caused by faults resulting from tree contact with energized circuit |
| Lightning | interruptions due to lightning striking the distribution system |
| Defective Equipment | interruptions resulting from equipment failures due to deterioration from age, incorrect maintenance, or imminent failures detected by maintenance |
| Adverse Weather | interruptions resulting from rain, ice storms, snow, winds, extreme temperatures, freezing rain, frost, or other extreme weather conditions (exclusive of Tree Contacts and Lightning events) |
| Adverse Environment | interruptions due to equipment being subject to abnormal environments, such as salt spray, industrial contamination, humidity, corrosion, vibration, fire, or flooding. |
| Human Element | interruptions due to the interface of distributor staff with the system |
| Foreign Interference | interruptions beyond the control of the distributor, such as animals, vehicles, dig-ins, vandalism, sabotage, and foreign objects |

Definitions

Interruption

A sustained loss of voltage/electrical supply on all phases to the customer's supply point. If the customer's system is not able to accept electricity from Hydro Ottawa's system, this is not considered an outage. This does not include Partial Power (loss on some of the phases supplying a customer), or sags/deformations, these are power quality events.

System Average Interruption Frequency Index (SAIFI)

SAIFI is an index of system reliability that expresses the number of times per reporting period that the supply to a customer is interrupted. It is determined by dividing the total number of interruptions experienced by all customers, by the average number of customers served. In words, the definition is:

$$SAIFI = \frac{\text{Total number of customer interruptions}}{\text{Total number of customers served}}$$

This index is reported both including and excluding Loss of Supply (LoS). *SAIFI including LoS* provides information as to the total interruptions which are seen by the 'average' customer. *SAIFI excluding LoS* indicates the 'average' customer interruptions which are the result of causes under the direct control of Hydro Ottawa.

System Average Interruption Duration Index (SAIDI)

SAIDI is an index of system reliability that expresses the average amount of time supply to a customer is interrupted. It is determined by dividing the total monthly duration of all interruptions experienced by all customers, in hours, by the average number of customers served. In words, the definition is:

$$SAIDI = \frac{\text{Total hours of customer interruptions}}{\text{Total number of customers served}}$$

This index is reported both including and excluding Loss of Supply (LoS). As with SAIFI, the *SAIDI including LoS* provides information as to the total duration of interruptions which are seen by the 'average' customer whereas *SAIDI excluding LoS* provides an indication as to the duration which the 'average' customer is interrupted as the result of causes under the control of Hydro Ottawa.

3-Year Rolling Average

The average performance of the previous 36 months.

Reliability Report Excluding the Major Event Day

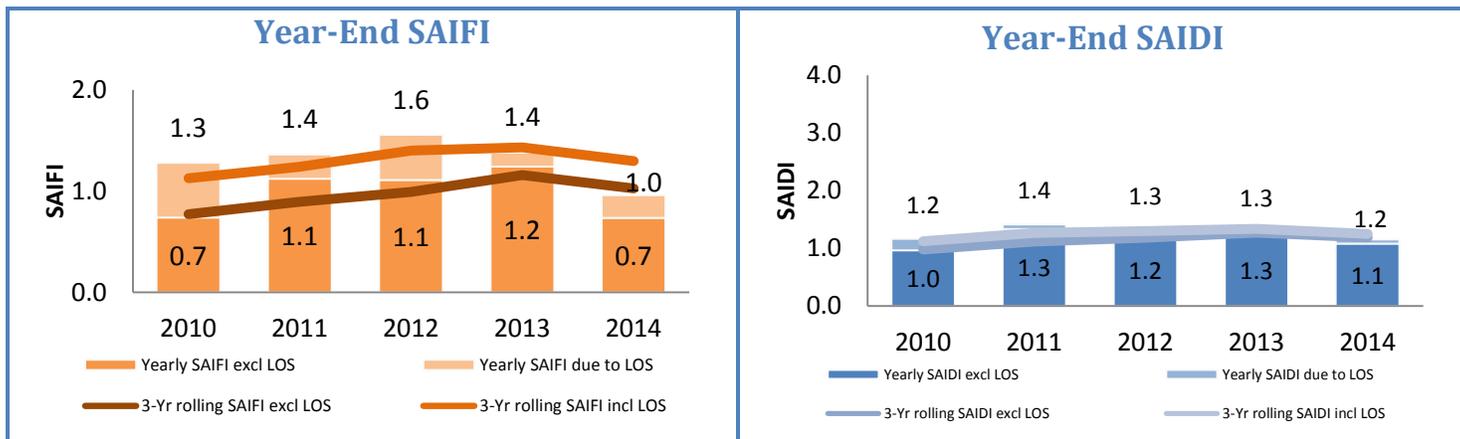
Major Event Days (MED) are calculated in concordance with the IEEE Standard 1366 – Beta 2.5 Method.

On Friday, September 5th, Hydro Ottawa experienced a major event day due to a lightning storm that caused 91 outages and affected 26,713 customers for a combined total of 105,409 customer hours. Customers were affected city-wide, with many outages being caused by lightning, extreme wind and fallen trees. Another storm occurred the following day, Saturday, September 6th, which caused additional outages in the south and in the downtown core, but these outages did not classify as a major event day. All customers affected by both of these storms were restored within the weekend. This was the first major event day of 2014.

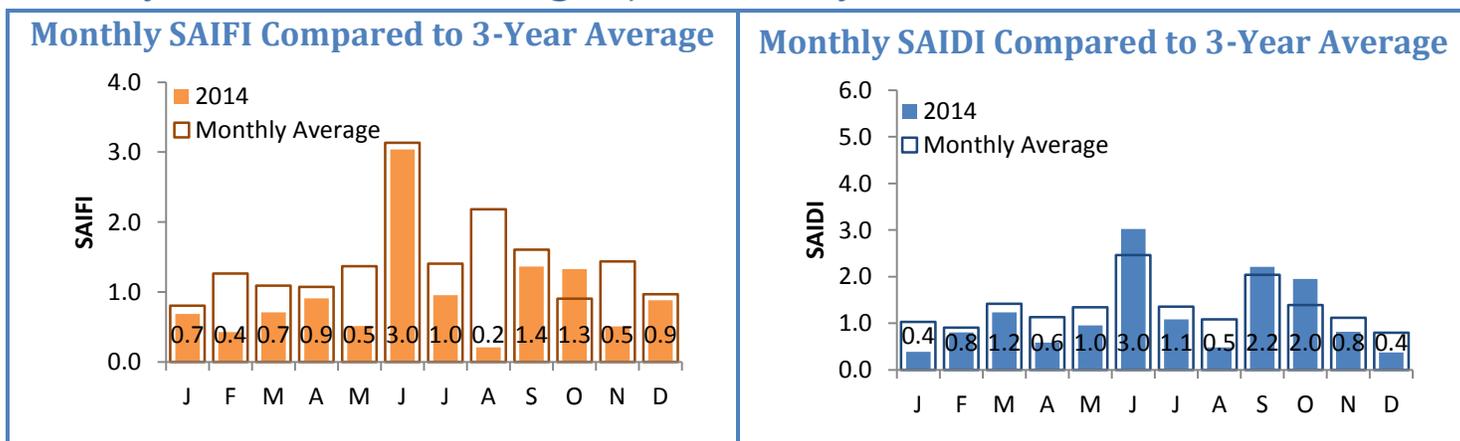
On Monday, November 24th, Hydro Ottawa experienced a major event day due to extreme winds that caused 23 outages and affected 12,601 customers for a combined total of 55,125 customer hours. Customers were affected city-wide, with outages being caused by extreme winds causing trees and braches to fall on the overhead lines and in many cases, caused lines to fall to the ground. Extreme winds continued through the following day, Tuesday, November 25th, which caused additional outages across the city, but these outages did not classify as a major event day. All customers affected by the extreme wind conditions were restored by end of day on November 25th. This was the second major event day of 2014.

The following figures illustrate reliability indices excluding the MED.

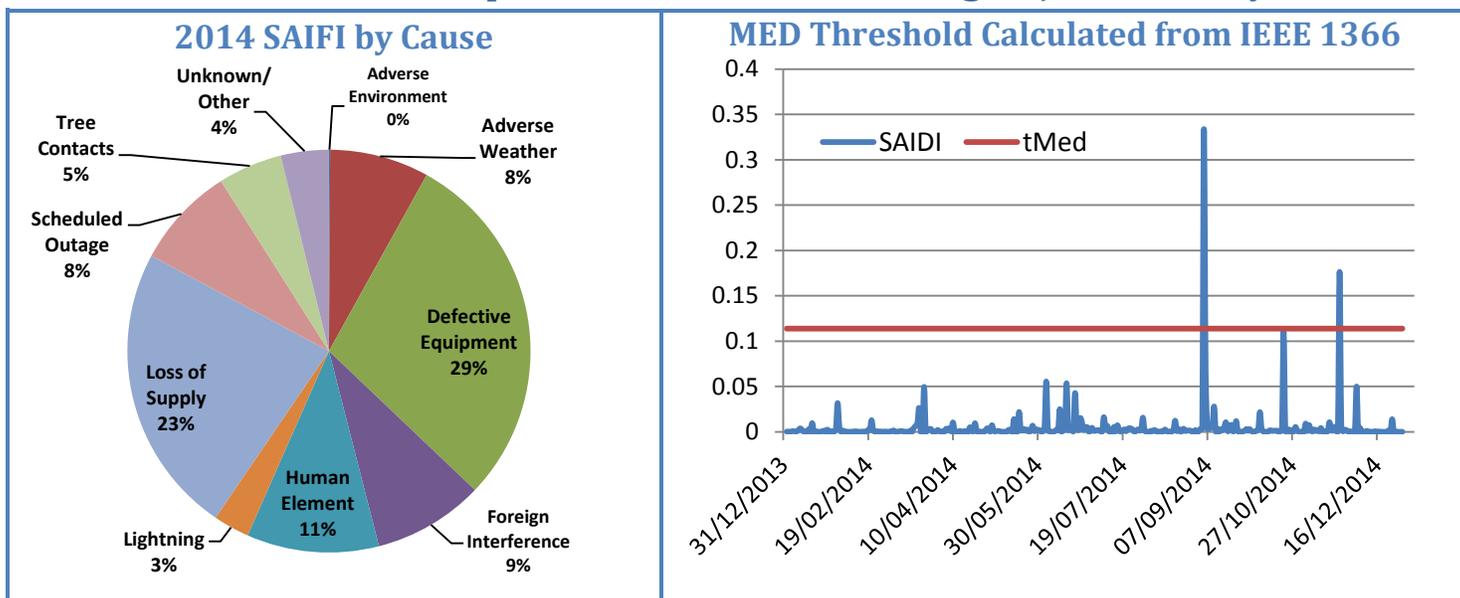
Annual Performance Excluding Major Event Day



Monthly Performance Excluding Major Event Day



Year-End Customer Interruption Contribution Excluding Major Event Day





1 **Undertaking JTC2.12**

2

3 To provide a list of the reliability first utilities, the npcc utilities, and the midwest reliability
4 organization utilities to which the company has been compared for each of those tables
5 and provide the data underlying the figures.

6

7

8

9 **Response:**

10

11 Please see attachment Att-JTC2.12-A.

12

| Figure | Title | Difference | name | Rank | NREC Region Membership |
|--------|---|------------|---|------|------------------------|
| 1-2 | Total Cost Rankings ReliabilityFirst Utilities | -0.68 | Ohio Edison Co (First Energy) | 1 | RF |
| | | -0.54 | Commonwealth Edison Co | 2 | RF |
| | | -0.48 | Cleveland Electric Illuminating Co (First Energy) | 3 | RF |
| | | -0.37 | HYDRO OTTAWA LIMITED | 4 | RF |
| | | -0.35 | Pennsylvania Power Co | 5 | RF |
| | | -0.33 | West Penn Power Co (Allegheny Power) | 6 | RF |
| | | -0.31 | Indianapolis Power & Light Co | 7 | RF |
| | | -0.25 | Indiana Michigan Power Co | 8 | RF |
| | | -0.20 | Wisconsin Electric Power Co | 9 | RF |
| | | -0.19 | Dayton Power & Light Co | 10 | RF |
| | | -0.06 | Appalachian Power Company | 11 | RF |
| | | -0.06 | Monongahela Power Co | 12 | RF |
| | | -0.03 | Cincinnati Gas & Electric Co (Duke Energy OH) | 13 | RF |
| | | -0.02 | Southern Indiana Gas and Electric Co (Vectern) | 14 | RF |
| | | -0.02 | PSI Energy Inc (Duke Energy IN) | 15 | RF |
| | | -0.01 | Jersey Central Power & Light Co | 16 | RF |
| | | 0.00 | Atlantic City Electric Co | 17 | RF |
| | | 0.01 | Kentucky Power Co (AEP) | 18 | RF |
| | | 0.02 | Duquesne Light Co | 19 | RF |
| | | 0.02 | Detroit Edison | 20 | RF |
| | | 0.03 | PP&L Inc | 21 | RF |
| | | 0.05 | Metropolitan Edison Co | 22 | RF |
| | | 0.10 | Delmarva Power & Light Co | 23 | RF |
| | | 0.11 | Duke Energy Corp | 24 | RF |
| | | 0.13 | Consumers Energy Company | 25 | RF |
| | | 0.14 | Baltimore Gas & Electric Co | 26 | RF |
| | | 0.24 | Northern Indiana Public Service Co | 27 | RF |
| | | 0.27 | Pennsylvania Electric Co | 28 | RF |
| | | 0.33 | Potomac Electric Power Co | 29 | RF |
| 1-2 | Total Cost Rankings Northeast Power Utilities | -0.37 | HYDRO OTTAWA LIMITED | 1 | NPCC |
| | | -0.17 | Central Maine Power Co | 2 | NPCC |
| | | -0.04 | Consolidated Edison Co of New York Inc | 3 | NPCC |
| | | 0.01 | Public Service Co of new Hampshire | 4 | NPCC |
| | | 0.10 | New York State Electric & Gas Corp | 5 | NPCC |
| | | 0.11 | United Illuminating Co | 6 | NPCC |
| | | 0.17 | Connecticut Light & Power Co | 7 | NPCC |
| | | 0.18 | Western Massachusetts Electric Co (Northeast Utilities) | 8 | NPCC |
| | | 0.21 | Orange and Rockland Utilities Inc | 9 | NPCC |
| | | 0.22 | Rochester Gas and Electric Corp | 10 | NPCC |
| | | 0.24 | Central Hudson Gas & Electric Corp | 11 | NPCC |
| | | 0.49 | Niagara Mohawk Power Corp (National Grid) | 12 | NPCC |
| 1-2 | Total Cost Rankings Midwest Reliability Utilities | -0.37 | HYDRO OTTAWA LIMITED | 1 | MRO |
| | | -0.32 | MDU Resources Group, Inc. | 2 | MRO |
| | | -0.15 | Northern States Power Co (XCEL) | 3 | MRO |
| | | -0.07 | Wisconsin Public Service Co | 4 | MRO |
| | | 0.04 | Wisconsin Power and Light Co | 5 | MRO |
| | | 0.10 | Madison Gas and Electric Co | 6 | MRO |

| Figure | Title | RELIABILITY | Total Cost | Utility | NERC Region | | |
|--------|-------------------------------------|-------------|---------------------------------|---|-------------|---|------|
| 1-5 | SAIFI ReliabilityFirst Utilities | -0.36 | 0.02 | Duquesne Light Co | RF | | |
| | | -0.33 | -0.68 | Ohio Edison Co (First Energy) | RF | | |
| | | -0.25 | -0.19 | Dayton Power & Light Co | RF | | |
| | | -0.16 | -0.31 | Indianapolis Power & Light Co | RF | | |
| | | -0.13 | -0.48 | Cleveland Electric Illuminating Co (First Energy) | RF | | |
| | | -0.09 | 0.02 | Detroit Edison | RF | | |
| | | -0.08 | -0.25 | Indiana Michigan Power Co | RF | | |
| | | -0.08 | 0.24 | Northern Indiana Public Service Co | RF | | |
| | | -0.07 | -0.35 | Pennsylvania Power Co | RF | | |
| | | -0.02 | -0.54 | Commonwealth Edison Co | RF | | |
| | | 0.00 | 0.03 | PP&L Inc | RF | | |
| | | 0.00 | -0.02 | Southern Indiana Gas and Electric Co (Vectern) | RF | | |
| | | 0.08 | 0.13 | Consumers Energy Company | RF | | |
| | | 0.12 | -0.03 | Cincinnati Gas & Electric Co (Duke Energy OH) | RF | | |
| | | 0.15 | 0.14 | Baltimore Gas & Electric Co | RF | | |
| | | 0.15 | 0.11 | Duke Energy Corp | RF | | |
| | | 0.15 | 0.05 | Metropolitan Edison Co | RF | | |
| | | 0.16 | -0.33 | West Penn Power Co (Allegheny Power) | RF | | |
| | | 0.26 | -0.37 | Hydro Ottawa Limited | RF | | |
| | | 0.26 | 0.27 | Pennsylvania Electric Co | RF | | |
| | | 0.32 | -0.02 | PSI Energy Inc (Duke Energy IN) | RF | | |
| | | 0.37 | 0.33 | Potomac Electric Power Co | RF | | |
| | | 0.54 | 0.10 | Delmarva Power & Light Co | RF | | |
| | | 0.70 | 0.01 | Kentucky Power Co (AEP) | RF | | |
| | | 1-5 | SAIFI Northeast Power Utilities | -2.12 | -0.04 | Consolidated Edison Co of New York Inc | NPCC |
| | | | | -0.31 | 0.49 | Niagara Mohawk Power Corp (National Grid) | NPCC |
| | | | | -0.31 | 0.22 | Rochester Gas and Electric Corp | NPCC |
| | | | | -0.30 | 0.11 | United Illuminating Co | NPCC |
| | | | | -0.16 | 0.17 | Connecticut Light & Power Co | NPCC |
| | | | | -0.07 | 0.24 | Central Hudson Gas & Electric Corp | NPCC |
| | | | | -0.02 | 0.10 | New York State Electric & Gas Corp | NPCC |
| | | | | -0.02 | 0.21 | Orange and Rockland Utilities Inc | NPCC |
| | | | | 0.04 | 0.18 | Western Massachusetts Electric Co (Northeast Utilities) | NPCC |
| | | | | 0.26 | -0.37 | Hydro Ottawa Limited | NPCC |
| | | | | 0.49 | -0.17 | Central Maine Power Co | NPCC |
| 1-5 | SAIFI Midwest Reliability Utilities | | | -0.65 | 0.10 | Madison Gas and Electric Co | MRO |
| | | | | 0.26 | -0.37 | Hydro Ottawa Limited | MRO |
| 1-6 | SAIDI ReliabilityFirst Utilities | -0.57 | -0.68 | Ohio Edison Co (First Energy) | RF | | |
| | | -0.43 | -0.19 | Dayton Power & Light Co | RF | | |
| | | -0.30 | -0.31 | Indianapolis Power & Light Co | RF | | |
| | | -0.28 | -0.02 | Southern Indiana Gas and Electric Co (Vectern) | RF | | |
| | | -0.25 | -0.48 | Cleveland Electric Illuminating Co (First Energy) | RF | | |
| | | -0.23 | 0.02 | Duquesne Light Co | RF | | |
| | | -0.17 | -0.54 | Commonwealth Edison Co | RF | | |
| | | -0.13 | 0.11 | Duke Energy Corp | RF | | |
| | | -0.07 | 0.24 | Northern Indiana Public Service Co | RF | | |
| | | 0.05 | -0.03 | Cincinnati Gas & Electric Co (Duke Energy OH) | RF | | |
| | | 0.05 | 0.05 | Metropolitan Edison Co | RF | | |
| | | 0.07 | -0.37 | Hydro Ottawa Limited | RF | | |
| | | 0.09 | -0.35 | Pennsylvania Power Co | RF | | |
| | | 0.13 | 0.03 | PP&L Inc | RF | | |
| | | 0.14 | 0.27 | Pennsylvania Electric Co | RF | | |
| | | 0.15 | -0.25 | Indiana Michigan Power Co | RF | | |
| | | 0.27 | 0.13 | Consumers Energy Company | RF | | |
| | | 0.28 | 0.01 | Kentucky Power Co (AEP) | RF | | |
| | | 0.35 | -0.33 | West Penn Power Co (Allegheny Power) | RF | | |
| | | 0.41 | -0.02 | PSI Energy Inc (Duke Energy IN) | RF | | |
| | | 0.48 | 0.14 | Baltimore Gas & Electric Co | RF | | |
| | | 0.51 | 0.02 | Detroit Edison | RF | | |
| | | 0.56 | 0.10 | Delmarva Power & Light Co | RF | | |
| | | 0.66 | 0.33 | Potomac Electric Power Co | RF | | |
| | | 1-6 | SAIDI Northeast Power Utilities | -1.33 | -0.04 | Consolidated Edison Co of New York Inc | NPCC |
| | | | | -0.39 | 0.49 | Niagara Mohawk Power Corp (National Grid) | NPCC |
| | | | | -0.35 | 0.10 | New York State Electric & Gas Corp | NPCC |
| | | | | -0.27 | -0.17 | Central Maine Power Co | NPCC |
| | | | | -0.14 | 0.11 | United Illuminating Co | NPCC |
| | | | | 0.00 | 0.21 | Orange and Rockland Utilities Inc | NPCC |
| | | | | 0.04 | 0.24 | Central Hudson Gas & Electric Corp | NPCC |
| | | | | 0.07 | -0.37 | Hydro Ottawa Limited | NPCC |
| | | | | 0.08 | 0.22 | Rochester Gas and Electric Corp | NPCC |
| | | | | 0.16 | 0.17 | Connecticut Light & Power Co | NPCC |
| | | | | 0.29 | 0.18 | Western Massachusetts Electric Co (Northeast Utilities) | NPCC |
| 1-6 | SAIDI Midwest Reliability Utilities | | | -0.30 | 0.10 | Madison Gas and Electric Co | MRO |
| | | | | 0.07 | -0.37 | Hydro Ottawa Limited | MRO |



1 **Undertaking JTC2.13**

2

3 In light of the explanation as to the intent of STAFF IR 6(viii), to provide a fuller answer to
4 that question.

5

6 _____

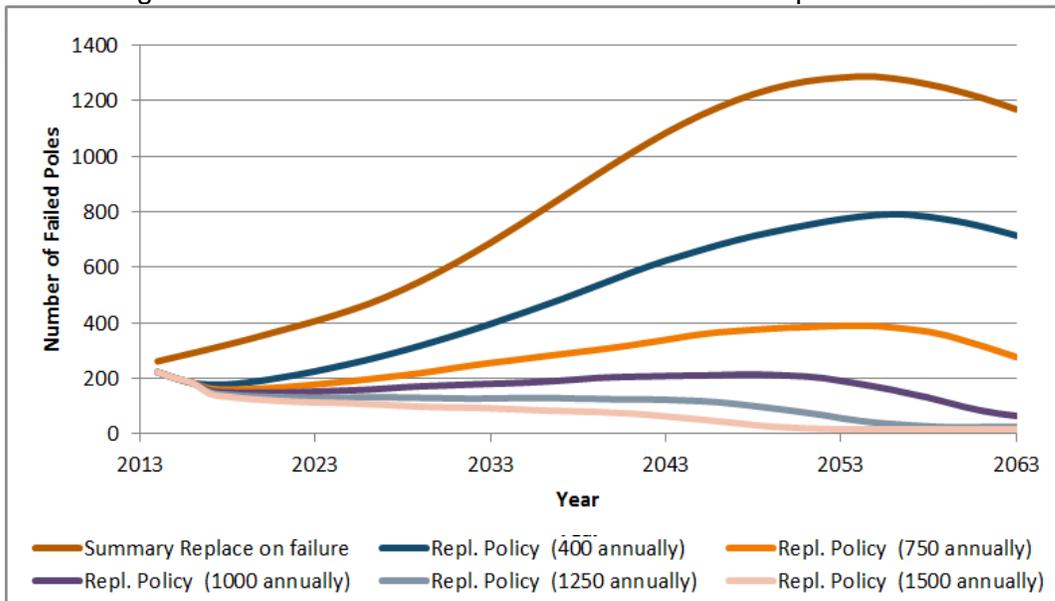
7

8 **Response:**

9 Hydro Ottawa Limited has not undertaken an analysis to derive the marginal cost
10 associated with SAIFI or SAIDI reliability metrics for all asset categories. Through the
11 identified replacement rates found in the 2014 Asset Management Plan (AMP) of
12 Attachment B-1(B)-Annual Planning Report Hydro Ottawa Limited has recommended the
13 optimal replacement rates to maintain existing levels of asset failures. It can be seen
14 from these figures that there are diminishing benefits as the replacement rate increase.
15 As seen in Figure JTC12.3-1 below, there are diminishing returns as the rate of
16 replacement of poles increases from 400 to 750 to 1000 etc.

17

18 **Figure JTC2.13-1: Pole Forecasts under Different Replacement Policies**



19

20



1 Based on the historical SAIFI and SAIDI contribution from pole asset failures, table
2 JTC2.13-1 attempts to estimate the change in reliability metrics based on level of
3 investment. The table further illustrates the diminishing returns as additional poles are
4 replaced.

5 Table JTC2.13-1: Pole Replacement Cost vs. Reliability

| Pole Annual Replacement Rate | Replace at Failure | 400 | 750 | 1000 | 1250 | 1500 |
|------------------------------|--------------------|--------|--------|---------|---------|---------|
| Annual Spend (\$M) | 0 | 8 | 15 | 20 | 25 | 30 |
| Annual Change in SAIFI (Avg) | 0.0048 | 0.0035 | 0.0011 | -0.0002 | -0.0007 | -0.0008 |
| Annual Change in SAIDI (Avg) | 0.0064 | 0.0047 | 0.0014 | -0.0003 | -0.0009 | -0.001 |

6
7 Although Hydro Ottawa Limited has not evaluated a cost metric to the reduction of
8 SAIFI/SAIDI for all of its replacement projects, continual investment in its distribution
9 system is required in order to maintain the reliability for its customers. Table JTC2.13-2
10 below shows the investments made in reliability driven projects and the yearly reliability
11 metrics. While reliability metrics can change with uncontrollable events (e.g. weather),
12 the contribution from defective equipment should reflect the investment made into
13 projects that aim to maintain reliability.

14
15 Table JTC2.13-2: Reliability Spend vs. SAIFI/SAIDI

| | 2010 | 2011 | 2012 | 2013 | 2014 |
|--|----------|----------|----------|----------|----------|
| Investment on Reliability Driven Projects (\$'000s)* | \$19,608 | \$28,975 | \$30,393 | \$29,452 | \$37,150 |
| Yearly SAIFI incl LOS | 1.39 | 1.68 | 1.81 | 1.53 | 1.08 |
| Yearly SAIDI incl LOS | 1.35 | 2.6 | 1.64 | 1.67 | 1.66 |
| Defective Equipment SAIFI | 0.25 | 0.41 | 0.3 | 0.42 | 0.28 |
| Defective Equipment SAIDI | 0.41 | 0.5 | 0.35 | 0.54 | 0.38 |

16 *Summation of System Renewal categories Stations Assets, Stations Refurbishment, and Distribution Asset & System Service category
17 Automation

18
19 Some system service projects benefit reliability, however, for the purpose of this analysis
20 they were not considered.

21
22 From Table JTC2.13-2 there is no obvious correlation between the spend amount and
23 defective equipment's contribution to SAIFI/SAIDI. Due to the continued aging of Hydro



- 1 Ottawa Limited's assets, the investments in reliability driven projects are not always seen
- 2 in the year of investment, but rather they are seen in the distribution system over the life
- 3 of the asset.



1 **Undertaking JTC2.15**

2

3 To confirm whether the list of U.S utilities is the same as in the Toronto Hydro case.

4

5

6 **Response:**

7

8 Hydro Ottawa confirms.

9



1 **Undertaking JTC2.16**

2

3 To provide the numbers that support the table found at page 25 at the pse report. Also,
4 to provide the numbers supporting the table 7.2 on page 38 of the pse report.

5

6

7

8 **Response:**

9

10 Please see the attached files titled, "Model Output for Table 3-3 page 25.txt" and "Model
11 Output for Table 7-2 page 38.txt".

» run C:\work\HydroOttawa\Specification\TC.prg2;

Date: 4/04/15 ***** SUR ESTIMATION RESULTS ***** Time: 19:54:51

DEFINITIONS OF OUTPUT VARIABLES:

Y1 is Retail Customers (yn)

Y2 is peak demand

DEFINITIONS OF BUSINESS CONDITION VARIABLES:

Z1 is % forestation using GIS area1

Z2 is % residential deliveries

Z3 is % electric customers in gas + electric customers

Z4 is % electric dx in total electric gross plant

Z5 is elevation stdev

Z6 is urban population above 1M

Model includes time trend.

Time period used: 2001 through 2012

888

888

=====

SEEMINGLY UNRELATED REGRESSION WITH HETEROSKEDASTICITY 4/04/2015 7:54 pm

=====

Data Set: C:\work\HydroOttawa\Temp_3.dat

DIVISOR USING N IN EFFECT

RESTRICTIONS IN EFFECT

| | | |
|-------------|-------------------------------|------------|
| ITER. # = 0 | LOG OF DETERMINANT OF SIGMA = | 0.05074973 |
| ITER. # = 1 | LOG OF DETERMINANT OF SIGMA = | 0.02067549 |
| ITER. # = 2 | LOG OF DETERMINANT OF SIGMA = | 0.02049757 |
| ITER. # = 3 | LOG OF DETERMINANT OF SIGMA = | 0.02049659 |
| ITER. # = 4 | LOG OF DETERMINANT OF SIGMA = | 0.02049658 |
| ITER. # = 5 | LOG OF DETERMINANT OF SIGMA = | 0.02049658 |
| ITER. # = 6 | LOG OF DETERMINANT OF SIGMA = | 0.02049658 |

Equation: 1
 Dependent variable: C

 Total cases: 881 Valid cases: 881
 Total SS: 690.295 Degrees of freedom: ----
 R-squared: 0.950 Rbar-squared: 0.950
 Residual SS: 34.364 Std error of est: 0.197
 Durbin-Watson: 1.643 N_Firms: 78.000

| Variable | Estimated Coefficient | Standard Error | t-ratio | Prob > t |
|----------|-----------------------|----------------|----------|----------|
| CONST | 20.08610559 | 0.01346039 | 1492.238 | 0.0000 |
| WK | 0.57173082 | 0.00372762 | 153.377 | 0.0000 |
| Y1 | 0.80280256 | 0.02599741 | 30.880 | 0.0000 |
| Y2 | 0.17023960 | 0.02627531 | 6.479 | 0.0000 |
| WKWK | 0.06145900 | 0.01781111 | 3.451 | 0.0006 |
| Y1Y1 | 0.57371281 | 0.08934800 | 6.421 | 0.0000 |
| Y2Y2 | 0.44689792 | 0.09893360 | 4.517 | 0.0000 |
| WKY1 | -0.05670851 | 0.01137531 | -4.985 | 0.0000 |
| WKY2 | 0.05970975 | 0.01164870 | 5.126 | 0.0000 |
| Y1Y2 | -0.47612263 | 0.09121471 | -5.220 | 0.0000 |
| Z1 | 0.01647922 | 0.00541918 | 3.041 | 0.0024 |
| Z2 | 0.04422247 | 0.01962600 | 2.253 | 0.0245 |
| Z3 | 0.19398229 | 0.02473905 | 7.841 | 0.0000 |
| Z4 | 0.08379626 | 0.01739544 | 4.817 | 0.0000 |
| Z5 | 0.01138351 | 0.00613007 | 1.857 | 0.0637 |
| Z6 | 0.01446194 | 0.00226234 | 6.392 | 0.0000 |
| TREND | 0.00181139 | 0.00114273 | 1.585 | 0.1133 |

 Equation: 2
 Dependent variable: SK

 Total cases: 881 Valid cases: 881
 Total SS: 6.516 Degrees of freedom: ----
 R-squared: 0.097 Rbar-squared: 0.098
 Residual SS: 5.887 Std error of est: 0.082
 Durbin-Watson: 1.537 N_Firms: 78.000

| Variable | Estimated Coefficient | Standard Error | t-ratio | Prob > t |
|----------|-----------------------|----------------|---------|----------|
| CONST | 0.57173082 | 0.00372762 | 153.377 | 0.0000 |
| WK | 0.06145900 | 0.01781111 | 3.451 | 0.0006 |
| Y1 | -0.05670851 | 0.01137531 | -4.985 | 0.0000 |
| Y2 | 0.05970975 | 0.01164870 | 5.126 | 0.0000 |

 Equation: 3

Dependent variable: SLM

Valid cases: 881

Degrees of freedom: ----

| Variable | Estimated Coefficient | Standard Error | t-ratio | Prob > t |
|----------|-----------------------|----------------|---------|----------|
| CONST | 0.42826918 | 0.00372762 | 114.891 | 0.0000 |
| WK | -0.06145900 | 0.01781111 | -3.451 | 0.0007 |
| Y1 | 0.05670851 | 0.01137531 | 4.985 | 0.0000 |
| Y2 | -0.05970975 | 0.01164870 | -5.126 | 0.0000 |

MEASURES OF GOODNESS-OF-FIT

AN UNCENTERED SYSTEM R-SQUARE 0.960

A CENTERED SYSTEM R-SQUARE 0.961

OUT-OF-SAMPLE PREDICTION OF TOTAL COST LEVEL PERFORMANCE by Year

Year Actual Predicted Difference t_ratio p_value

Hydro Ottawa:

| | | | | | |
|----------|---------------|---------------|--------|--------|-------|
| 2002.000 | 116503568.000 | 192808880.379 | -0.504 | -2.601 | 0.005 |
| 2003.000 | 113250248.000 | 198649787.996 | -0.562 | -2.903 | 0.002 |
| 2004.000 | 116228848.000 | 202631669.306 | -0.556 | -2.870 | 0.002 |
| 2005.000 | 121088368.000 | 210774603.635 | -0.554 | -2.862 | 0.002 |
| 2006.000 | 129495544.000 | 214343244.710 | -0.504 | -2.602 | 0.005 |
| 2007.000 | 136969632.000 | 221804401.617 | -0.482 | -2.489 | 0.007 |
| 2008.000 | 152930400.000 | 230879402.690 | -0.412 | -2.127 | 0.017 |
| 2009.000 | 150637024.000 | 236124017.232 | -0.449 | -2.321 | 0.010 |
| 2010.000 | 159021632.000 | 249456288.216 | -0.450 | -2.326 | 0.010 |
| 2011.000 | 159185520.000 | 255079242.636 | -0.472 | -2.435 | 0.008 |
| 2012.000 | 176952320.000 | 251126356.703 | -0.350 | -1.807 | 0.036 |
| 2013.000 | 189107424.000 | 252955469.434 | -0.291 | -1.501 | 0.067 |
| 2014.000 | 208939616.000 | 259535884.243 | -0.217 | -1.118 | 0.132 |
| 2015.000 | 219329216.000 | 268685761.792 | -0.203 | -1.046 | 0.148 |
| 2016.000 | 232349728.000 | 278698645.529 | -0.182 | -0.937 | 0.175 |
| 2017.000 | 244652256.000 | 289578195.319 | -0.169 | -0.868 | 0.193 |
| 2018.000 | 257471776.000 | 300879861.893 | -0.156 | -0.802 | 0.211 |
| 2019.000 | 267416160.000 | 311890730.524 | -0.154 | -0.791 | 0.214 |
| 2020.000 | 282078560.000 | 324096676.372 | -0.139 | -0.714 | 0.238 |

OUT-OF-SAMPLE PREDICTION OF TOTAL COST LEVEL PERFORMANCE 2016-2020

| Year | Actual | Predicted | Difference | t_ratio | p_value |
|------|--------|-----------|------------|---------|---------|
|------|--------|-----------|------------|---------|---------|

HOL 2016-2020:

| | | | | | |
|----------|--------|--------|--------|--------|-------|
| 2019.000 | 19.104 | 19.264 | -0.160 | -1.778 | 0.038 |
|----------|--------|--------|--------|--------|-------|

OUT-OF-SAMPLE PREDICTION OF TOTAL COST LEVEL PERFORMANCE 2018-2020

| Year | Actual | Predicted | Difference | t_ratio | p_value |
|------|--------|-----------|------------|---------|---------|
|------|--------|-----------|------------|---------|---------|

HOL 2018-2020:

| | | | | | |
|----------|--------|--------|--------|--------|-------|
| 2019.000 | 19.127 | 19.276 | -0.150 | -1.308 | 0.096 |
|----------|--------|--------|--------|--------|-------|

» run C:\work\HydroOttawa\Specification\TC.prg2;

Date: 5/29/15 ***** SUR ESTIMATION RESULTS ***** Time: 22:54:33

OUTPUT FILE:C:\work\HydroOttawa\results\TC

DATA FILE:C:\work\HydroOttawa\HOL_dataset_5_28_2015_Celsius.xlsx

DEFINITIONS OF OUTPUT VARIABLES:

Y1 is Retail Customers (yn)

Y2 is peak demand

DEFINITIONS OF BUSINESS CONDITION VARIABLES:

Z1 is % forestation using GIS area1

Z2 is % residential deliveries

Z3 is % electric customers in gas + electric customers

Z4 is % electric dx in total electric gross plant

Z5 is elevation stdev

Z6 is urban population above 1M

Z7 is absolute sum of temps below minus 15 degrees Celsius + CEL35

Model includes time trend.

Time period used: 2001 through 2012

888

888

=====

SEEMINGLY UNRELATED REGRESSION WITH HETEROSKEDASTICITY 5/29/2015 10:54 pm

=====

Data Set: C:\work\HydroOttawa\Temp_3.dat

DIVISOR USING N IN EFFECT
RESTRICTIONS IN EFFECT

| | | |
|-------------|-------------------------------|------------|
| ITER. # = 0 | LOG OF DETERMINANT OF SIGMA = | 0.08365164 |
| ITER. # = 1 | LOG OF DETERMINANT OF SIGMA = | 0.05719889 |
| ITER. # = 2 | LOG OF DETERMINANT OF SIGMA = | 0.05706785 |
| ITER. # = 3 | LOG OF DETERMINANT OF SIGMA = | 0.05706722 |
| ITER. # = 4 | LOG OF DETERMINANT OF SIGMA = | 0.05706722 |

ITER. # = 5 LOG OF DETERMINANT OF SIGMA = 0.05706722
 ITER. # = 6 LOG OF DETERMINANT OF SIGMA = 0.05706722

 Equation: 1
 Dependent variable: C

Total cases: 881 Valid cases: 881
 Total SS: 690.295 Degrees of freedom: ----
 R-squared: 0.949 Rbar-squared: 0.948
 Residual SS: 35.525 Std error of est: 0.201
 Durbin-Watson: 1.624 N_Firms: 78.000

| Variable | Estimated Coefficient | Standard Error | t-ratio | Prob > t |
|----------|-----------------------|----------------|----------|----------|
| CONST | 20.07007377 | 0.01302983 | 1540.317 | 0.0000 |
| WK | 0.57250719 | 0.00370604 | 154.479 | 0.0000 |
| Y1 | 0.81959285 | 0.02519345 | 32.532 | 0.0000 |
| Y2 | 0.14819665 | 0.02554011 | 5.803 | 0.0000 |
| WKWK | 0.05173241 | 0.01794836 | 2.882 | 0.0040 |
| Y1Y1 | 0.62446079 | 0.08969331 | 6.962 | 0.0000 |
| Y2Y2 | 0.46193449 | 0.10061576 | 4.591 | 0.0000 |
| WKY1 | -0.05813382 | 0.01127390 | -5.156 | 0.0000 |
| WKY2 | 0.06208663 | 0.01156692 | 5.368 | 0.0000 |
| Y1Y2 | -0.50825200 | 0.09219739 | -5.513 | 0.0000 |
| Z1 | 0.01673726 | 0.00552324 | 3.030 | 0.0025 |
| Z2 | 0.04713603 | 0.02021333 | 2.332 | 0.0199 |
| Z3 | 0.21440460 | 0.02481715 | 8.639 | 0.0000 |
| Z4 | 0.09872060 | 0.01736390 | 5.685 | 0.0000 |
| Z5 | 0.00353829 | 0.00613813 | 0.576 | 0.5645 |
| Z6 | 0.01435502 | 0.00229564 | 6.253 | 0.0000 |
| Z7 | 0.00218194 | 0.00081194 | 2.687 | 0.0073 |
| TREND | 0.00363699 | 0.00102422 | 3.551 | 0.0004 |

 Equation: 2
 Dependent variable: SK

Total cases: 881 Valid cases: 881
 Total SS: 6.516 Degrees of freedom: ----
 R-squared: 0.106 Rbar-squared: 0.107
 Residual SS: 5.828 Std error of est: 0.081
 Durbin-Watson: 1.539 N_Firms: 78.000

| Variable | Estimated Coefficient | Standard Error | t-ratio | Prob > t |
|----------|-----------------------|----------------|---------|----------|
| CONST | 0.57250719 | 0.00370604 | 154.479 | 0.0000 |
| WK | 0.05173241 | 0.01794836 | 2.882 | 0.0040 |
| Y1 | -0.05813382 | 0.01127390 | -5.156 | 0.0000 |

Y2 0.06208663 0.01156692 5.368 0.0000

 Equation: 3
 Dependent variable: SLM

Degrees of freedom: -----
 Valid cases: 881

| Variable | Estimated Coefficient | Standard Error | t-ratio | Prob > t |
|----------|-----------------------|----------------|---------|----------|
| CONST | 0.42749281 | 0.00370604 | 115.350 | 0.0000 |
| WK | -0.05173241 | 0.01794836 | -2.882 | 0.0044 |
| Y1 | 0.05813382 | 0.01127390 | 5.156 | 0.0000 |
| Y2 | -0.06208663 | 0.01156692 | -5.368 | 0.0000 |

 MEASURES OF GOODNESS-OF-FIT

AN UNCENTERED SYSTEM R-SQUARE 0.959

A CENTERED SYSTEM R-SQUARE 0.959

OUT-OF-SAMPLE PREDICTION OF TOTAL COST LEVEL PERFORMANCE by Year

Year Actual Predicted Difference t_ratio p_value

Hydro Ottawa:

| | | | | | |
|----------|---------------|---------------|--------|--------|-------|
| 2002.000 | 116503568.000 | 197975347.555 | -0.530 | -2.638 | 0.004 |
| 2003.000 | 113250248.000 | 207477273.067 | -0.605 | -3.014 | 0.001 |
| 2004.000 | 116228848.000 | 212846962.223 | -0.605 | -3.011 | 0.001 |
| 2005.000 | 121088368.000 | 221542186.051 | -0.604 | -3.007 | 0.001 |
| 2006.000 | 129495544.000 | 224932644.266 | -0.552 | -2.748 | 0.003 |
| 2007.000 | 136969632.000 | 235765603.361 | -0.543 | -2.703 | 0.004 |
| 2008.000 | 152930400.000 | 246613523.205 | -0.478 | -2.379 | 0.009 |
| 2009.000 | 150637024.000 | 254113554.619 | -0.523 | -2.603 | 0.005 |
| 2010.000 | 159021632.000 | 266586260.048 | -0.517 | -2.573 | 0.005 |
| 2011.000 | 159185520.000 | 275825695.397 | -0.550 | -2.738 | 0.003 |
| 2012.000 | 176952320.000 | 272732990.753 | -0.433 | -2.155 | 0.016 |
| 2013.000 | 189107424.000 | 277950689.827 | -0.385 | -1.918 | 0.028 |
| 2014.000 | 208939616.000 | 286662171.077 | -0.316 | -1.574 | 0.058 |
| 2015.000 | 219329216.000 | 298000217.164 | -0.307 | -1.526 | 0.064 |
| 2016.000 | 232349728.000 | 310770339.656 | -0.291 | -1.447 | 0.074 |
| 2017.000 | 244652256.000 | 324676484.629 | -0.283 | -1.408 | 0.080 |
| 2018.000 | 257471776.000 | 339120105.564 | -0.275 | -1.370 | 0.085 |

| | | | | | |
|----------|---------------|---------------|--------|--------|-------|
| 2019.000 | 267416160.000 | 353357247.886 | -0.279 | -1.386 | 0.083 |
| 2020.000 | 282078560.000 | 369124886.418 | -0.269 | -1.338 | 0.091 |

OUT-OF-SAMPLE PREDICTION OF TOTAL COST LEVEL PERFORMANCE 2016-2020

| Year | Actual | Predicted | Difference | t_ratio | p_value |
|------|--------|-----------|------------|---------|---------|
|------|--------|-----------|------------|---------|---------|

HOL 2016-2020:

| | | | | | |
|----------|--------|--------|--------|--------|-------|
| 2019.000 | 19.104 | 19.383 | -0.279 | -3.042 | 0.001 |
|----------|--------|--------|--------|--------|-------|

OUT-OF-SAMPLE PREDICTION OF TOTAL COST LEVEL PERFORMANCE 2018-2020

| Year | Actual | Predicted | Difference | t_ratio | p_value |
|------|--------|-----------|------------|---------|---------|
|------|--------|-----------|------------|---------|---------|

HOL 2018-2020:

| | | | | | |
|----------|--------|--------|--------|--------|-------|
| 2019.000 | 19.127 | 19.401 | -0.274 | -2.338 | 0.010 |
|----------|--------|--------|--------|--------|-------|



1 **Undertaking JTC2.17**

2

3 To provide the first calculation of high-level bill impacts, end of June 2014

4

5

6 **Response:**

7

8 The first calculation of high-level bill impacts is included in Attachment B to Interrogatory
9 Response CCC #3 (Att-CCC-Q3-B), slide 15.



1 **Undertaking JTC2.19**

2

3 To confirm whether Board of Directors were advised what Horizon actually got

4

5

6 **Response:**

7

8 The Board of Directors were not advised of Horizon's final rate impacts.



1 **Undertaking JTC2.20**

2

3 With respect to CCC No. 3, page 18, to advise the nature and the type of city councillor
4 input and what, if any, process is there for obtaining city councillor input

5

6

7

8 **Response:**

9

10 Hydro Ottawa solicits feedback from its city councillors via regular push communications
11 vehicles such as (i) a monthly e-newsletter highlighting Hydro Ottawa's programs and
12 initiatives, (ii) periodic e-mail updates for planned outages and/or planned maintenance
13 work in their ward, and (iii) memos regarding major initiatives.

14

15 With specific regard to Hydro Ottawa's planned customer engagement plans related to
16 its 2016-2020 rate application, Hydro Ottawa advised its city councillors via memo of its
17 planned engagement and updated the councillors of its customer engagement polling
18 activities in Hydro Ottawa's monthly e-newsletter to the councillors.

19

20 In addition to these mechanisms, Hydro Ottawa is able to receive input from two city
21 councillors who serve on Hydro Ottawa Holding Inc.'s Board of Directors, formally
22 representing the interests of both the shareholder (City of Ottawa) and the people of
23 Ottawa as a whole. Finally, Hydro Ottawa is able to receive city councillor feedback at its
24 Annual General Meeting.

25



1 **Undertaking JTC2.21**

2

3 To provide the attachment referred to in SEC No. 13

4

5

6 **Response:**

7

8 Refer to Att-SEC-Q13-A (JTC2.21).

Hydro Ottawa Limited
2015 Business Plan Priorities and Budget

JOINT BOARD OF DIRECTORS MEETING
NOVEMBER 27, 2014

Presentation Outline

- 2015 Business Plan and Budget Guidelines - Summary
 - As approved August 28, 2014
- 2015 Budget
 - Key Strategic Priorities
 - Operating
 - Balance Sheet and Cash Flow
 - Capital Program

Hydro Ottawa Limited

2015 Business Plan and Budget Guidelines - Summary

AS APPROVED BY THE HOL BOARD AUGUST 28, 2014

2015 Business Plan & Budget Guidelines

- The 2015 Hydro Ottawa Limited business plan and supporting budget will contribute to achieving the commitment to the Shareholder in the *2012–2016 Strategic Direction and Financial Outlook*

- All spending must align to and help achieve enterprise business plan priorities and approved performance targets for the four key areas of focus:
 - *Customer Value*
 - *Financial Strength*
 - *Organizational Effectiveness*
 - *Corporate Citizenship*

2015 Business Plan & Budget Guidelines (cont.)

Revenue

- Hydro Ottawa Limited electricity distribution rates and revenue will be guided by the 4th Generation Incentive Rate Mechanism (4GIRM)

Expenses

- Compensation estimates will be based on the renewed 2013 collective agreement and required premiums for OMERS, benefits, and statutory employment contributions
- All new headcount requests must be offset by identification of a corresponding headcount reduction, supported by the Strategic Workforce Plans and approved by Executive Management Team prior to inclusion in the budget
- Spending on non-compensation OM&A will be adjusted for an inflationary factor not to exceed 2.13% and contract pricing will be updated with the latest agreements
- Strategic priorities and revenue generating programs will be funded in accordance with Executive Management Team approval

2015 Budget Guidelines (continued)

Strategic Priorities

- All new, or expansion of existing funding for key strategic priorities must be approved by the Executive Management Team prior to inclusion in the 2015 Budget
- Hydro Ottawa Limited operating and capital budget spending will include mandated *Grid Transformation Action Plan*, and *Conservation Demand Management (CDM)* compliance requirements

Capital Program

- Capital investment will provide for customer growth and the replacement of aging infrastructure to maintain plant reliability as per the needs analysis documented in the Asset Management Plan, and other key business initiatives

2015 Budget Guidelines Summary

- *2015 is the fourth year in the 2012-2016 Strategic Direction and Financial Outlook*
 - *Original projection of net income is lowest in planning horizon, as electricity distribution rates were last rebased for 2012.*
- *Previous assumptions have been reviewed and updated, and key developments in the business environment have been and will be comprehended, including but not limited to:*
 - Known changes in the Business and Regulatory environment
 - Revised assumptions from changes in contracts/programs
 - Potential for recognition of CDM 2011-2014 program incentives
 - Capital Cost Allowance tax impacts on significant projects
 - Identified needs for continued funding for Strategic Priorities arising from customer demands, aging resources, business growth, and regulatory and technological changes
- *Productivity improvements will be identified and measured in each Division*

2015 Budget

KEY STRATEGIC PRIORITIES
OPERATING
BALANCE SHEET AND CASH FLOW
CAPITAL PROGRAM

2015 Budget Summary

- 2015 is the fourth year of the current *Strategic Plan and Financial Outlook*
 - Commitment to Shareholder achieved
- Revenue growth is minimal
 - Distribution revenue rate increase 1.3%
- Cost controls include organizational rightsizing strategy, without sacrificing programs and priority initiatives
 - Staffing levels reduced
- Conservation & Demand Management (CDM) program estimates revised based on the new 2015 to 2020 conservation plan
- Capital investment to maintain and replace aging infrastructure increased

Key Strategic Priorities

Included in 2015 Business Plan and Budget

Financial Strength – grow revenues from new sources and enhance / protect revenues from existing business lines

- Net Income - Deliver on commitment to the Shareholder presented in the *2012-2016 Strategic Direction and Financial Outlook*.
- Rate Application - File 2016 cost of service electricity distribution rate application and achieve optimal OEB decision.
- Conservation and Demand Management - Develop six-year strategy for management of approved program spending to achieve GWh reductions.

Customer Value – assist customers in managing their energy consumptions and electricity costs; deliver on customer expectations for service quality and responsiveness; and maintain overall distribution system reliability

- Distribution System Reliability - Continue improvements in maintenance and capital program execution and develop a five-year reliability plan leveraging recently formed Reliability Council.
- Customer Experience Strategy - Continue implementation of initiatives / solutions with a focus on modernization, customer communications and customer self-serve.
- Light Rail Transit (LRT) – Deliver on commitment to City's light rail project – provide temporary services, plant relocations and permanent power supply as per agreed schedule.

Key Strategic Priorities (cont'd)

Included in 2015 Business Plan and Budget

Organizational Effectiveness – *continue to enhance operational performance and productivity; maintain leading health and safety record; and enhance organizational and employee capability*

- Facilities Implementation Plan – Complete the Main Office and Operation Centres design, site plan approval and permitting.
- Operational Performance and Productivity - Continue commitment to prioritizing and controlling spending, eliminating non-value added steps in processes, and leveraging innovation and technology to improve efficiency and enhance service. Continue implementation of multi-year Organizational Rightsizing Strategy as a complement to productivity initiatives.
- IM & IT Operational Programs and Business Projects – Ensure continued security, availability, reliability and integrity of operational, administrative, and customer-facing technology infrastructure and information assets; implement business projects to support business process and productivity improvements / innovation, including support for customer experience and grid modernization initiatives.
- Talent Management Strategy – Continue implementation of initiatives including strategic workforce planning, apprenticeship and intern programs, succession planning, training and development, reward and recognition, safety programs, and employee and retiree engagement to help ensure operational capacity and continuity.
- Strengthen Emergency Response and Business Continuity

Corporate Citizenship – *enhance our brand image in the community and the industry; improve our environmental performance and reduce our impact on the environment*

- Stakeholder Engagement and Community Investment – Reinforce and/or establish relationships with key stakeholders to foster a deeper understanding of the issues and 'Tell the Hydro Ottawa Story'.

Hydro Ottawa Limited

2015 Budget Summary

- 2015 net income contributes to achieving commitment in the 2012-2016 Strategic Direction and Financial Outlook
- 2015 total revenue increased 2% from 2014 Forecast
- Expenses contained in accordance with Budget Guidelines
 - Net 3% increase over 2014 Forecast
- Return on Equity 8.6%
- 2015 net capital investments \$94 million
- Inter-company loan of \$60 million anticipated in 2015
- Debt equity ratio reaches 63% in 2015 exceeding OEB deemed 60:40

Hydro Ottawa Limited

2015 Statement of Income

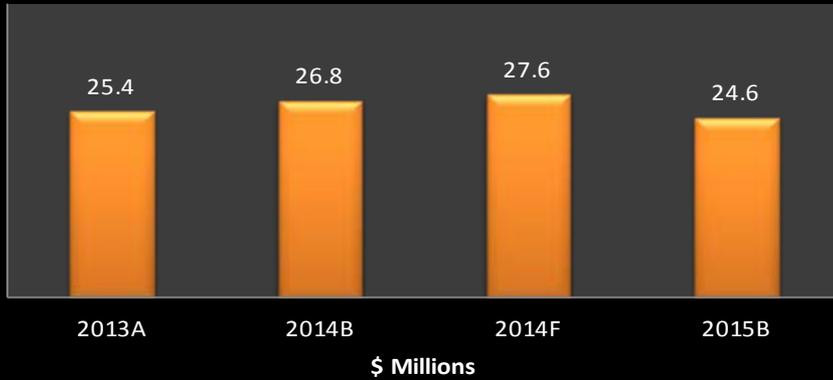


| <i>\$Millions</i> | FY13 | FY14 | FY14 | FY15 | Var 15P - 14B | |
|---|--------------|--------------|--------------|--------------|---------------|--------------|
| | Actual | Budget | Forecast | Budget | \$ | % |
| Revenue | | | | | | |
| Distribution Revenue | 152.4 | 156.7 | 157.2 | 159.5 | | |
| Other Distribution | 14.4 | 11.0 | 11.2 | 11.6 | | |
| | 166.7 | 167.7 | 168.4 | 171.1 | 2.7 | 2% |
| Expenses | | | | | | |
| Compensation | 67.0 | 70.3 | 69.5 | 70.9 | | |
| Other Operating Expenses | 44.5 | 42.9 | 44.9 | 46.4 | | |
| Gross expenses | 111.5 | 113.2 | 114.4 | 117.2 | | |
| Allocations | (29.0) | (28.7) | (29.9) | (30.0) | | |
| Net expenses | 82.5 | 84.5 | 84.5 | 87.2 | 2.8 | 3% |
| Conservation & Demand Management | | | | | | |
| Program Revenue | 16.5 | 16.4 | 17.4 | 15.8 | | |
| Program Expenses | 15.8 | 16.3 | 17.2 | 15.8 | | |
| | 0.7 | 0.1 | 0.2 | 0.0 | | |
| Light Rail Transit | | | | | | |
| Program Revenue | 1.5 | 1.1 | 0.8 | 0.7 | | |
| Program Expenses | 1.4 | 1.1 | 0.8 | 0.7 | | |
| | 0.1 | - | - | 0.0 | | |
| EBITDA | 85.0 | 83.3 | 84.1 | 83.9 | (0.2) | 0% |
| Amortization | 37.1 | 36.2 | 35.7 | 38.5 | | |
| EBIT | 47.9 | 47.1 | 48.4 | 45.5 | (2.9) | (6%) |
| Interest | 15.7 | 17.3 | 17.8 | 17.8 | | |
| Corporate Taxes | 6.8 | 3.0 | 3.0 | 3.1 | | |
| Net Income | 25.4 | 26.8 | 27.6 | 24.6 | (3.1) | (11%) |

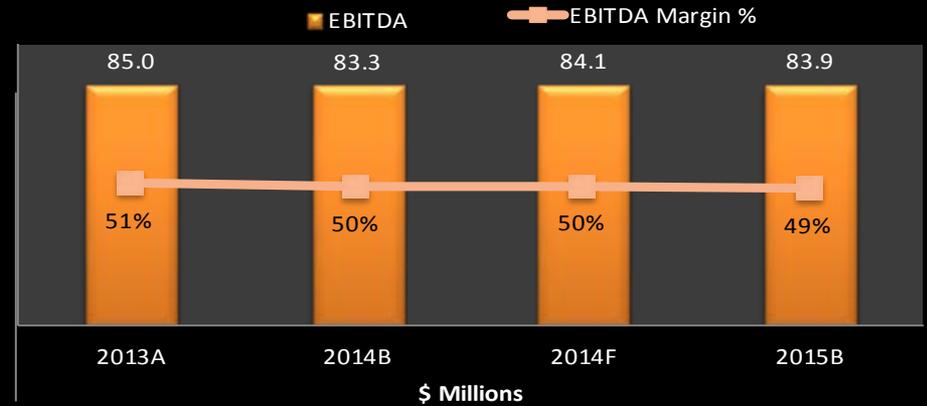
No variance between CGAAP and IFRS

Financial Summary

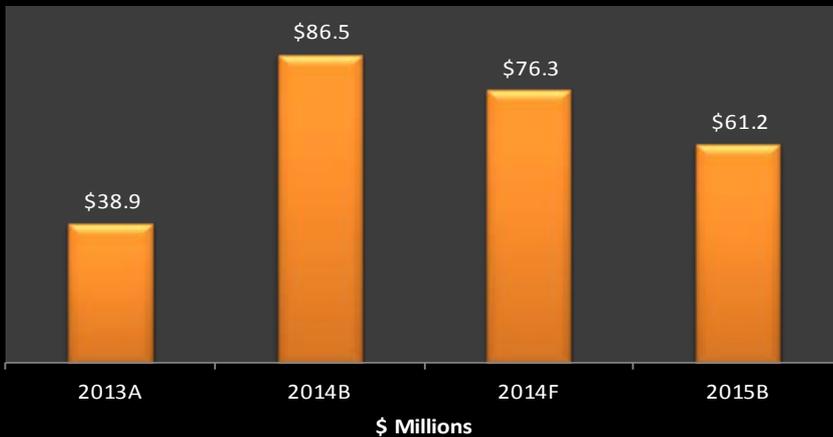
Net Income



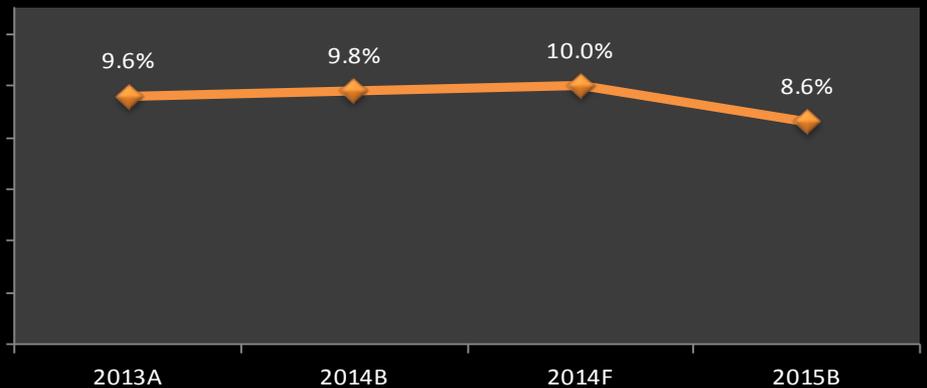
EBITDA



Cash Flow from Ops

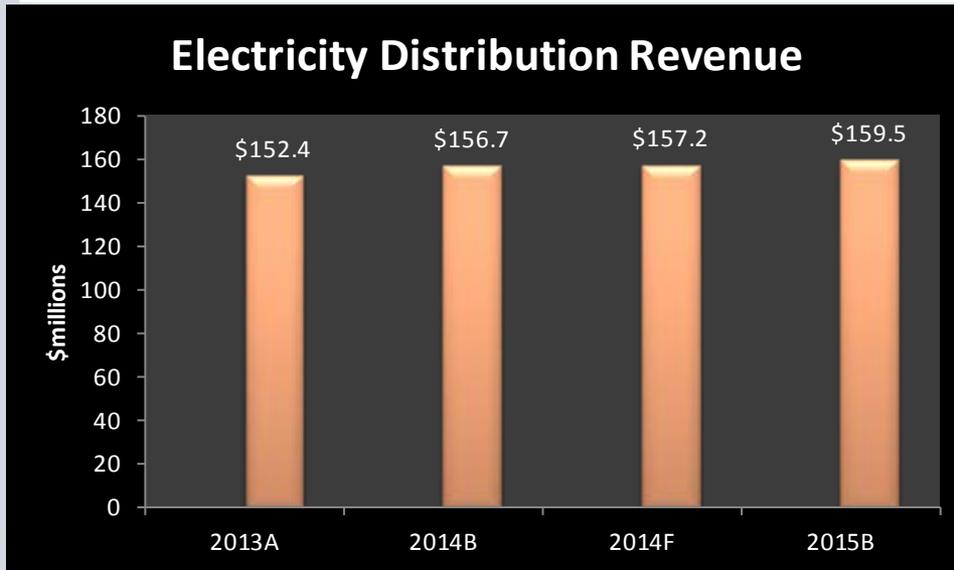


ROE



Distribution Revenue

Electricity Distribution Revenue



Distribution revenue represents 80% of total revenue, excluding Conservation Demand Management and Light Rail Transit recoveries

A typical residential customer's total electricity bill will increase by approximately 1.2% in 2015

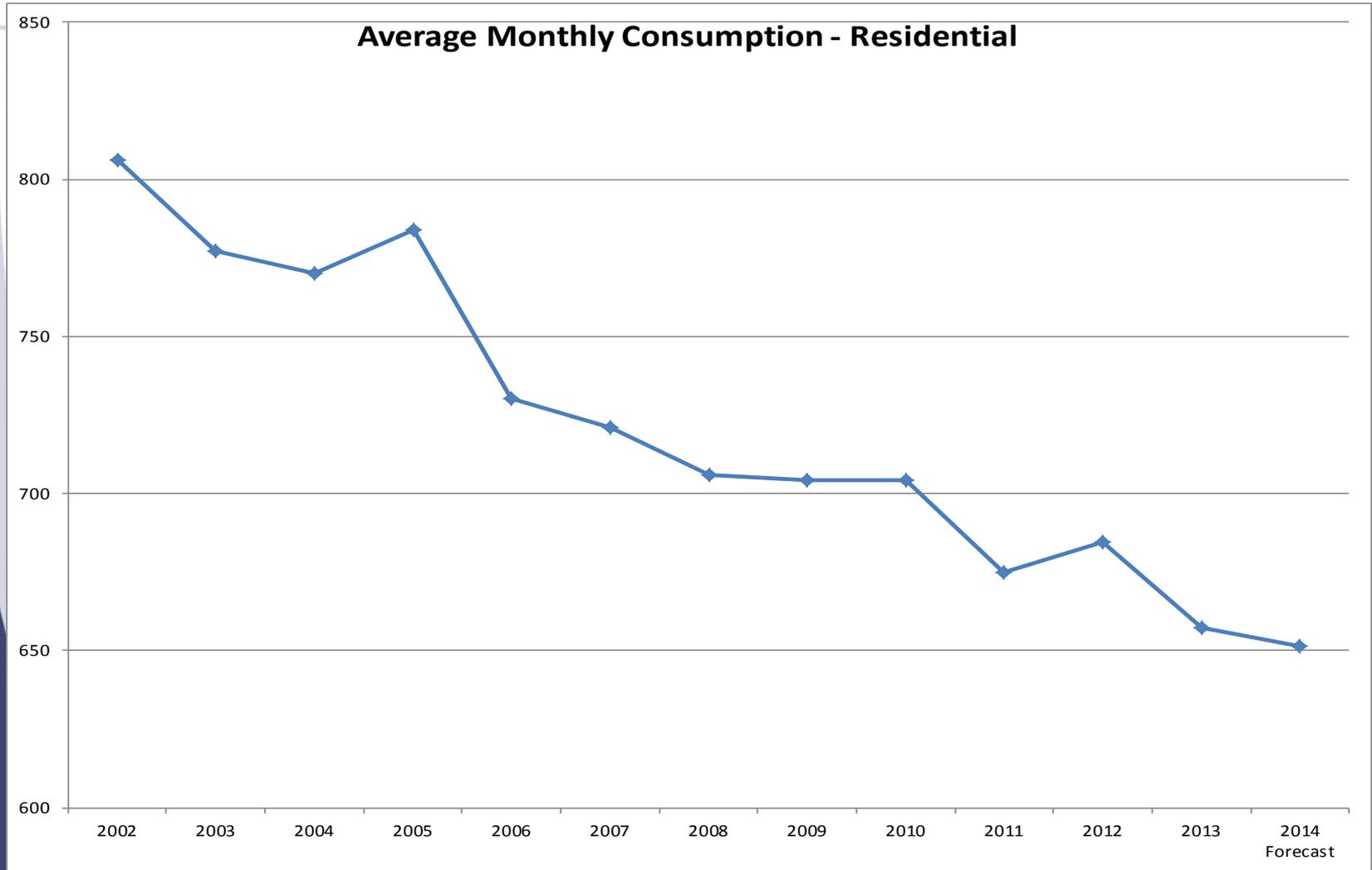
2015 Electricity Distribution rates are guided by Fourth Generation Incentive Rate Mechanism (4GIRM):

- Inflated by an OEB approved Price Escalator of 1.6% less productivity factor and stretch factor of 0.3%
- Net inflationary increase 1.3% effective Jan 1
- Growth in customer numbers offset by load forecast decrease due to reduced consumption per customer (*See next slide*)



Distribution Revenue (cont'd)

Reduced consumption = Revenue risk



Conservation and Demand Management (CDM)

| \$Millions | 2013A | 2014B | 2014F | 2015B |
|--------------------------|------------|------------|------------|------------|
| CDM Revenue | 16.5 | 16.4 | 17.4 | 15.8 |
| CDM Non-Consol Costs | 15.8 | 16.3 | 17.2 | 15.8 |
| CDM Direct Margin | 0.7 | 0.1 | 0.2 | 0.0 |
| CDM Headcount * | 15 | 15 | 15 | 15 |

*excludes OPA funded temporary positions



- The existing CDM contract with Ontario Power Authority (OPA) expires at the end of 2014. No assumption of incentive revenue budgeted for 2015.
- The final version of conservation framework for the 2015 to 2020 period has been released. The Hydro Ottawa CDM target is set at 395 GWh with total funding of \$105M over the 6 years.
- The Hydro Ottawa 2015 to 2020 conservation plan will be developed and submitted to the OPA for approval in early 2015 with a mid-year effective date.
- 2015 Budget assumes the continuation of many existing programs with the addition of some new programs in late 2015 (transition year).

Light Rail Transit

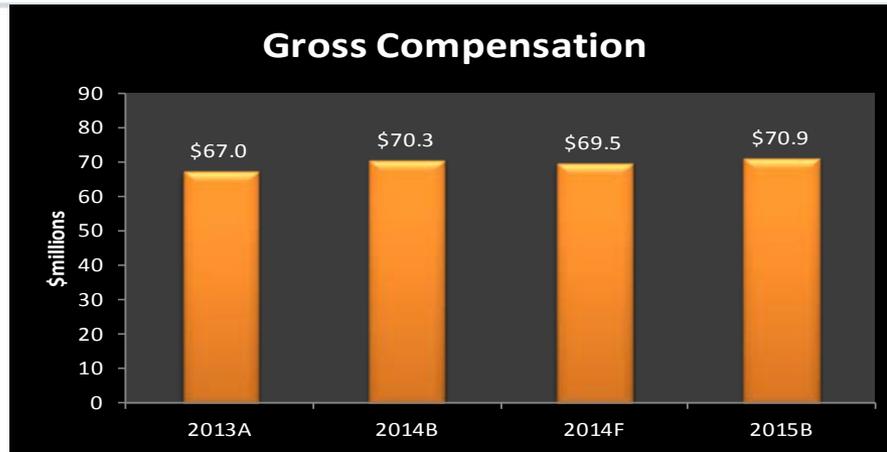


- The total 2012-2017 gross cost to Hydro Ottawa Limited to support the Light Rail construction program is now anticipated to be \$25 million, with the City of Ottawa and Rideau Transit Group funding anticipated at \$16 million
- Total project costs have been reduced due to reduction in number of relocations required throughout the downtown core and refined cost estimates
- Lower contributions in aid due to the anticipated economic evaluation credits
- Total project net costs \$9 million

For 2015:

- Capital investments for system expansion, commercial services and relocation
 - \$2.3 million offset by \$1.9 million contribution in aid of construction
- Temporary supply, relocation and other operating costs
 - \$0.7 million fully recovered
- Capital and temporary costs include headcount and associated expenses

Compensation



Overall Compensation Budget increased by \$1.4M or 2% from 2014 Forecast

The benefit plan re-tendering and commencement of organizational rightsizing in 2014 leads to year over year compensation budget increase of only \$0.6M or 1%

Historical increases from 2010 to 2013 have been approximately \$4M or 8% per annum

Compensation represents approximately 60% of gross operating expenses

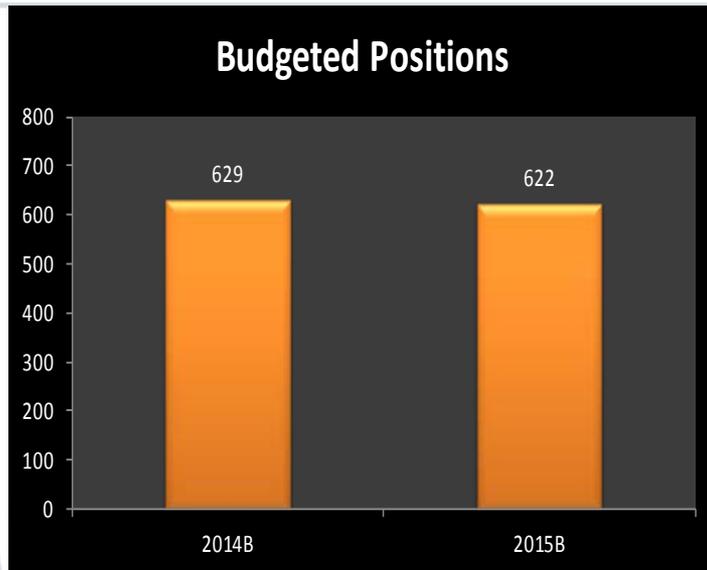
Cost Increases:

- Economic, step and performance increases
- Statutory benefits

Mitigated through:

- Decrease in Health, Dental, Life and LTD insurance premiums due to successful re-tendering of benefit plans
- OMERS rate remains the same as 2014 actuals, rates have remained flat since 2013
- Budgeted positions reduced by 7 as part of the organizational rightsizing strategy (see next slide)

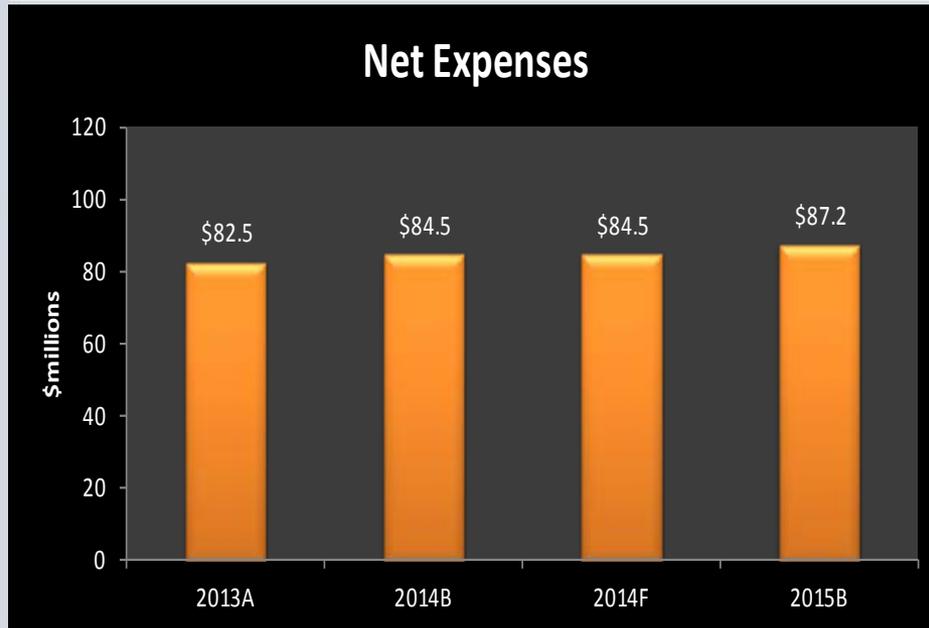
Organizational Rightsizing Strategy



- *Budgeted positions decreased by 7 from 2014 and 5 positions have been set aside for trades hiring as part of the organizational rightsizing strategy*
- *3% vacancy allowance applied*

- As a complement to ongoing Productivity Initiatives, in June 2014, a multi-year Organizational Rightsizing Strategy was developed and implementation began to:
 - Drive incremental changes to workforce composition, with the aim of controlling headcount and associated costs
 - Enable redistribution of positions to the trades in alignment with workforce modelling and demand forecasting; and
 - Put mechanisms in place to address increasing compensation trends, including:
 - Challenging historic business mechanisms, jobs and structures
 - Integrating functions where it will streamline execution and rationalize operations

Net Expenses



Net expenses including compensation, increase 3.3% over 2014 Forecast,

Cost Increases from 2014 Forecast:

- Existing compensation increases as per previous slide \$1.4M
 - Increase in IT maintenance and licenses \$0.5M
 - Bad Debt expense \$0.4M
 - Increase in underground locates due to higher rates and volume \$0.3M
 - General inflationary increases \$0.8M
-
- Tree Trimming included Storm Hardening in 2014 Forecast and 2015 Budget for a total of \$1.5M

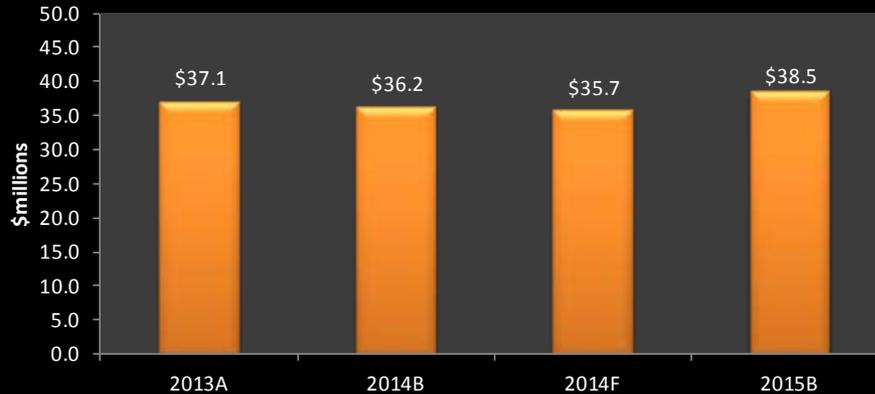
Productivity and Cost Control

- Headcount reduced. Incremental requirements more than offset by identified vacancies
- Reduction of 7 positions; redeployment of 5 to prepare for growth in trades
- Successful re-tendering of health, dental, life and LTD benefit plans, annual savings of \$0.8M
- New internal scorecard and OEB scorecard developed to drive continuous improvements in costs and service
- Productivity effort from contract re-negotiation and business initiatives in every division
- Call centre contract negotiated with 7% lower rate per minute than the current contract
- Go Paperless initiative continues in 2015 to reduce paper use, postage, and bill production costs
- Reconfigured and streamlined the HOHI and HOL Board of Directors to reduce duplication and redundancies, resulting in savings and efficiency gains

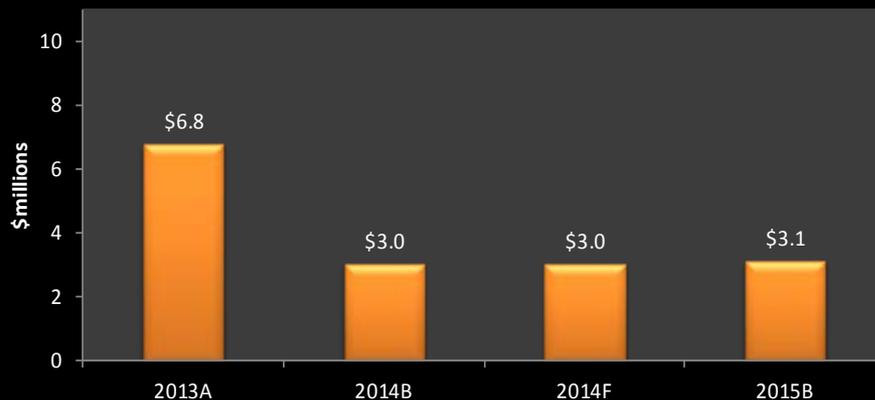


Amortization and Corporate Taxes

Amortization



Corporate Taxes



Amortization:

- Amortization increased by \$2.8M due to the cumulative effect of increased capital spending on the distribution system as well as the large increase in technology investments including Customer Care and Billing system (CC&B) and other computer software
 - In general the software useful life is 5 years, except CC&B and SCADA Upgrade

Corporate Taxes:

- Corporate taxes assume the second year of Capital Cost Allowance impacts from implementation of CC&B system and continuing IT related investments

Hydro Ottawa Limited

2015 Balance Sheet Summary



| <i>\$ Millions</i> | FY13 Actual | FY14 Budget | FY14 Forecast | FY15 Budget |
|---|------------------------|------------------------|--------------------------|------------------------|
| Current Assets | 181.7 | 149.2 | 159.3 | 151.0 |
| Property, Plant & Equipment and Intangible Assets | 696.3 | 751.9 | 752.2 | 807.7 |
| Other Long-Term Assets | 32.3 | 36.9 | 35.0 | 27.7 |
| Total Assets | 910.3 | 938.1 | 946.5 | 986.4 |
| Current Liabilities | 198.8 | 167.5 | 180.8 | 167.0 |
| Long-Term Debt | 387.2 | 417.2 | 417.2 | 477.2 |
| Other Long-Term Liabilities | 54.7 | 72.1 | 66.3 | 50.4 |
| Equity | 269.6 | 281.4 | 282.2 | 291.8 |
| Total Liabilities and Shareholder's Equity | 910.3 | 938.1 | 946.5 | 986.4 |

Hydro Ottawa Limited

2015 Balance Sheet Summary converted to IFRS



| <i>\$ Millions</i> | CGAAP FY15 Budget | IFRS Adj | IFRS FY15 Budget |
|---|----------------------------------|---------------------|---------------------------------|
| Current Assets | 151.0 | - | 151.0 |
| Property, Plant & Equipment and Intangible Assets | 807.7 | 48.5 | 856.2 |
| Other Long-Term Assets | 27.7 | - | 27.7 |
| Total Assets | 986.4 | 48.5 | 1,034.9 |
| Current Liabilities | 167.0 | - | 167.0 |
| Long-Term Debt | 477.2 | - | 477.2 |
| Other Long-Term Liabilities | 50.4 | 48.5 | 98.9 |
| Equity | 291.8 | - | 291.8 |
| Total Liabilities and Shareholder's Equity | 986.4 | 48.5 | 1,034.9 |

IFRS Adjustment: Capital contribution is recognized as deferred revenue

Hydro Ottawa Limited

2015 Cash Flow Summary



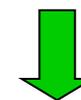
| <i>\$ Millions</i> | FY13 Actual | FY14 Budget | FY14 Forecast | FY15 Budget |
|---|----------------|----------------|------------------|----------------|
| Cash / (Indebtedness) - opening | 1.6 | 5.0 | 5.0 | - |
| Cash from continuing operations | | | | |
| - net income | 25.4 | 26.8 | 27.6 | 24.6 |
| - non-cash expenses | 35.7 | 34.5 | 34.7 | 37.3 |
| - working capital * | (22.2) | 25.2 | 14.0 | (0.7) |
| | 38.9 | 86.5 | 76.3 | 61.2 |
| Cash from investing activities | | | | |
| - Acquisition of assets | (128.4) | (119.4) | (111.7) | (118.2) |
| - Contributions in aid of construction | 21.4 | 29.3 | 19.4 | 25.4 |
| | (107.0) | (90.1) | (92.3) | (92.8) |
| Cash from financing activities | | | | |
| - Customer deposits | 0.4 | 3.6 | 3.6 | 3.6 |
| - Proceeds from cash advances from parent | 26.0 | (20.0) | (7.6) | (17.0) |
| - Intercompany Notes Payable | 60.0 | 30.0 | 30.0 | 60.0 |
| - Dividends paid to Shareholder | (15.0) | (15.0) | (15.0) | (15.0) |
| | 71.4 | (1.4) | 11.0 | 31.6 |
| Increase / (decrease) in cash | 3.3 | (5.0) | (5.0) | - |
| Cash / (Indebtedness) - closing | 5.0 | - | - | - |

* 2014 Assume one time cash influx due to the implementation of monthly billing

No variance between CGAAP and IFRS

Hydro Ottawa Limited

2015 Capital Program



| <i>(\$Millions)</i> | 2013 Actual | 2014 Budget | 2014 Forecast | 2015 Budget | Variance 15B - 14F |
|---------------------------------------|------------------------|------------------------|--------------------------|------------------------|-------------------------------|
| Sustainment - Distribution | 54.3 | 56.7 | 52.6 | 57.8 | 5.2 |
| Sustainment - Plant Failure | 5.3 | 3.0 | 6.2 | 3.0 | (3.2) |
| Telecom Master Plan | - | - | - | 2.4 | 2.4 |
| General Plant | 8.8 | 14.4 | 13.9 | 14.1 | 0.3 |
| Customer Care & Billing | 12.4 | - | 2.4 | - | (2.4) |
| Facilities Implementation Plan | 12.9 | 4.7 | 0.5 | 4.9 | 4.4 |
| | 93.8 | 78.9 | 75.6 | 82.3 | 6.7 |
| Demand (Gross) | 34.5 | 29.6 | 30.3 | 33.0 | 2.6 |
| Light Rail Transit (LRT) | 3.4 | 11.1 | 7.7 | 2.3 | (5.4) |
| | 131.7 | 119.5 | 113.6 | 117.5 | 3.9 |
| Contributions in aid | (20.1) | (19.5) | (15.9) | (21.5) | (5.6) |
| Contributions in aid - LRT | (2.2) | (8.0) | (4.3) | (1.9) | 2.4 |
| Total | 109.4 | 92.1 | 93.4 | 94.1 | 0.7 |



1 **Undertaking JTC2.23**

2

3 With reference to CCC no. 14, to provide a response to the question that more focuses
4 just on the activities Mr. Shepherd described.

5

6

7 **Response:**

8

9 The response to Interrogatory Question CCC #14 included all of the costs associated
10 with Hydro Ottawa's call center as well as communication costs, as these are considered
11 to be touch points with the customer and thus customer engagement activities.
12 However, for the purposes of this undertaking, Hydro Ottawa has listed in Table 1 below
13 more specific and direct Customer Engagement activities.

14

Table 1 2012-2016 Customer Engagement Expense - OM&A (\$'000)

| | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Budget | 2016 Budget |
|--|------------------------|------------------------|------------------------|------------------------|------------------------|
| Customer Service Surveys | 26 | 27 | 40 | 28 | 29 |
| Web Site Costs | 90 | 103 | 196 | 538 | 549 |
| Customer Experience | 980 | 885 | 677 | 1,220 | 1,381 |
| Key Accounts | 110 | 114 | 166 | 254 | 262 |
| Social Media & E-Billing Promotion | 205 | 226 | 222 | 225 | 225 |
| Other Community Relations | 58 | 148 | 158 | 227 | 232 |
| Conditions of Service Stakeholder Outreach | - | - | 21 | 34 | - |
| Hosting for MyHydroLink | 46 | 49 | 51 | 55 | 56 |
| Custom IR Application Consultation ("Innovative") | - | - | 5 | 135 | - |
| Total Customer Engagement - OM&A | 1,515 | 1,552 | 1,536 | 2,715 | 2,732 |

15



1 **Undertaking JTC2.24**

2
3 To select two groups of assets and explain those six various sub-categories or issues
4 that Mr. Heimlich raised in his question, step by step.

- 5 a) What end-of-life criteria would you use to generate your health indices? For
6 example, age, but there are a number of other health indices, of course, so we
7 would be looking at more than one.
- 8 b) How would you develop or plan to develop the health indices? For example,
9 selection of the parameters based on the end-of-life criteria, but representing
10 their relative importance, for example, defining ranges of numerical values for the
11 critical scores, combining criteria score of weighting factors.
- 12 c) How would you use the health indices for work prioritizations and for asset
13 replacements?
- 14 d) Whether you plan to use this approach for all asset categories?
- 15 e) Whether the health-indices criteria would be applied consistently for each asset
16 category?
- 17 f) Are there any assets which Hydro Ottawa doesn't plan to apply this procedure
18 to?

19
20
21 **Response:**

22
23 The two groups of assets selected are poles and station transformers; the responses
24 describe the methods currently in use. Presently, Hydro Ottawa Limited is working on
25 revising and validating the Health Index formulation and risk model to be completed by
26 end of 2015.

27 **Poles**

- 28 a) The health index for poles is based on determining the percentage of remaining
29 strength left in the pole. HOL uses CSA criteria that once a pole's ultimate
30 strength has been reduce to 60% of its original design, it will be considered to be
31 at end of life for purposes of assessing risk. An IML Resistograph Drill is used for



1 the detection and measurement of internal decay and measurement of the
 2 remaining shell thickness with minimal damage to the pole. The results are then
 3 used to estimate the pole remaining strength.

- 4 b) The following parameters are used in the calculation of poles Health index,
 5 (1) Maximum and minimum ground line circumference to determine the extent of
 6 surface rot and mechanical damage due to vehicles and snow plows;
 7 (2) Width and depth of pocket holes along the pole caused by rot or woodpecker;
 8 and;
 9 (3) Width of the external shell of a pole, measured from the center, which can be
 10 reduced due to internal rot.

11 These inputs are then used in the calculation of the health index for poles. To
 12 assess the remaining strength, we must first have a value for the original (C_o)
 13 and measured pole circumference (C_m). The impact of additional pole damage
 14 on remaining strength is used to decrease the measured circumference (C_m) to
 15 calculate the effective circumference (C_{eff}), in the following formula as described
 16 in Att-OEB-Q17-A.

$$C_{eff} = C_m - C_{Ext} - C_{IP} - C_{Rot}$$

17
 18

Table JTC2.24-1: Remaining Strength

| % Remaining Circumference | % Remaining Strength |
|---------------------------|----------------------|
| 100% | 100% |
| 98% | 93% |
| 95% | 86% |
| 93% | 79% |
| 90% | 73% |
| 88% | 67% |
| 85% | 61% |
| 83% | 56% |
| 80% | 51% |

19



1 The remaining pole strength can be assessed from the ration of C_{eff} to C_o .

$$\%Remaining\ Circumference = \frac{C_{eff}}{C_o} \times 100\%$$

2

3 c) Poles Health Indices are used in the Asset Condition Assessment to develop
4 pole replacement projects within the System Renewal Investment Category by
5 identifying specific areas where numerous poles in a degraded state have been
6 found. Poles are grouped in 4 categories based on the condition assessment:

7

Table JTC2.24-2: Pole Condition

| Group | Remaining Strength |
|----------|--------------------|
| Critical | Less than 25% |
| Poor | 25-60% |
| Fair | 60-75% |
| Sound | 75-100% |

8

9 Each pole replacement project goes through the Project Evaluation phase of the
10 Asset Management Process, where they are reviewed and evaluated for the
11 development of possible alternatives. Projects are then scored by identifying
12 their risk and/or benefit using the risk matrix described in Exhibit B-1-2, Section
13 2.1.2.2. Once all pole projects have been scored, they are prioritized within all
14 other projects in the project repository. The project Prioritization method is
15 explained in Exhibit B-1-2, Section 2.1.2.3

16 d) Hydro Ottawa uses this approach for all major asset classes. Projects related to
17 the replacement of minor asset classes and components are derived on a case-
18 by-case basis and follow the same prioritization process as the major asset
19 classes without the use of health indexes.

20 e) Asset condition is based upon health index calculations which are unique for
21 each asset class. Attachment B-1(B)-Annual Planning Report, Asset
22 Management provides detailed information on the assessment done for each
23 asset class. Exhibit B-1-2 Table 2.2.6 shows a list of the major assets that make
use of asset condition for a proactive replacement strategy.



1 f) Minor asset classes and components that typically get replaced with the project
 2 to replace the major asset class do not get a health index applied to them. These
 3 assets are typically run-to-failure unless a specific issues or trend needs to be
 4 addressed. Examples: Bushings on Transformers; Insulators attached to Poles.

5
 6 Station Transformers

7 a) Hydro Ottawa currently tracks the health index of Station Transformers through
 8 results obtained from dissolved gas and oil quality analysis. The health index is
 9 currently formulated as:

$$Health\ Index = \left(\frac{Gas\ Score + Rate\ Score + Fluid\ Score}{3} \right) \times 5$$

10 The gas score, rate score, and fluid score are discussed below. Each score
 11 varies between 0 and 1, with 1 being the worst score and 0 being the ideal score.
 12 Thus, the overall station transformer health index varies between 0 and 5, with 5
 13 being the worst score and 0 being the ideal score.

14 b)

15 Gas Score:

16 Station transformers are tested for gas concentration, namely hydrogen (H₂),
 17 methane (CH₄), acetylene (C₂H₂), ethylene (C₂H₄), ethane (C₂H₆), carbon
 18 monoxide (CO), and carbon dioxide (CO₂). The concentration of total dissolved
 19 combustible gases (TDCG) is also measured. A gas condition between 1 and 4
 20 is assigned for each gas based on the measured part per million (ppm), as
 21 summarized in Table JTC2.24-3.

22 Table JTC2.24-3: Dissolved gas concentration limits, in ppm

| Condition | H ₂ | CH ₄ | C ₂ H ₂ | C ₂ H ₄ | C ₂ H ₆ | CO | CO ₂ | TDCG |
|-------------|----------------|-----------------|-------------------------------|-------------------------------|-------------------------------|----------|-----------------|-----------|
| Condition 1 | 100 | 120 | 1 | 50 | 65 | 350 | 2500 | 686 |
| Condition 2 | 101-700 | 121-400 | 2-9 | 51-100 | 66-100 | 351-570 | 2500-4000 | 687-1879 |
| Condition 3 | 701-1800 | 401-1000 | 10-35 | 101-200 | 101-150 | 571-1400 | 4001-10000 | 1880-4585 |
| Condition 4 | >1800 | >1000 | >35 | >200 | >150 | >1400 | >10000 | >4585 |

23



1 The gas score is calculated based on the highest condition:

$$\text{Gas Score} = \frac{\text{Max Condition} - 1}{3}$$

2 Rate Score:

3 The rate of change of the gas concentration (in ppm/day) determines the
4 sampling interval, operation rates, and gas rate score of the station transformer.
5 For a gas rate below the low limit, a gas rate score of 0 is assigned; for a gas rate
6 above the high limit, a gas rate score of 1 is assigned; and for a gas rate in
7 between the two limits, a gas rate score of 0.5 is assigned. The rate of change in
8 gas concentration limits are summarized in Table JTC2.24-4. CO₂ is excluded
9 from the gas rate score calculation since it is not a combustible gas.

10 Table JTC2.24-4: Gas generation rate limits, in ppm/day

| Gas | Lower Limit | Higher Limit |
|-------------------------------|-------------|--------------|
| H ₂ | 1.46 | 4.37 |
| CH ₄ | 1.75 | 5.25 |
| C ₂ H ₂ | 0.01 | 0.04 |
| C ₂ H ₄ | 0.73 | 2.19 |
| C ₂ H ₆ | 0.95 | 2.84 |
| CO | 5.10 | 15.31 |
| TDCG | 10.00 | 30.00 |

11 Fluid Score:

12 Finally, fluid analysis is used assess the condition of the paper insulation of the
13 transformer. The following tests are performed: acid neutralization number (Acid
14 Num), interfacial tension (IFT), dielectric breakdown voltage (KVD877), insulation
15 power factor (PF25), water ppm, and degree of polymerization (Furan). The
16 result of each test is assigned a fluid score between 0 and 1 and the test with the
17 maximum fluid score is used as the overall fluid score, as shown in Table
18 JTC2.24-5.



1

Table JTC2.24-5: Fluid score based on test results

| Test | Fluid Score | | | | |
|-----------|-------------|------|-------|------|-------|
| | 0 | 0.25 | 0.5 | 0.75 | 1 |
| Acid Num | <0.2 | | >=0.2 | | >=0.5 |
| IFT | >25 | | <=25 | | <=16 |
| KVD877 | >=26 | | | | <26 |
| PF25 | <=0.5 | | <=0.7 | | >0.7 |
| Water ppm | <=25 | | | | >25 |
| Furan | >500 | >340 | >280 | >240 | <=240 |

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- Note that in the above context “Furan” actually refers to the degree of polymerization, which measures the average length of anhydro-β-glucose (C₆H₁₀O₅) molecule chains in the transformer insulation paper.
- c) The health index for station transformers creates a prioritized list of transformers that require attention. A business case is developed to determine the best course of action; to repair, to refurbish, to replace, or to decommission. The project Prioritization method is explained in Exhibit B-1-2, Section 2.1.2.3
 - d) Large projects such station transformer and switchgear replacements go through an individual business case process.
 - e) Asset condition is based upon health index calculations which are unique for each asset class. Attachment B-1(B)-Annual Planning Report, Asset Management provides detailed information on the assessment done for each asset class. Exhibit B-1-2 Table 2.2.6 shows a list of the major assets that make use of asset condition for a proactive replacement strategy.
 - f) Minor asset classes and components that typically get replaced with the project to replace the major asset class do not get a health index applied to them. These assets are typically run-to-failure unless a specific issues or trend needs to be addressed. Examples: Bushings on Transformers; Insulators attached to Poles.



1 **Undertaking JTC2.25**

2

3 To provide the actual depreciation expense in each of the historical years 2012 through
4 2014 for the aggregate of the assets where the in-month service methodology was used;
5 then calculate the depreciation if the half-year rule had been used on those assets; and
6 then do the same thing for 2015 through 2020.

7

8

9

10 **Response:**

11

12 Table 1 below shows the actual depreciation of discrete assets for years 2012 to 2014
13 using the in service depreciation method and then the last line of the table shows what
14 the depreciation would have been had the half-year rule been used.

15

16

Table 1: 2012-2014 depreciation of discrete assets ('000)

| Depreciation method | 2012 | 2013 | 2014 |
|---------------------|------|------|-------|
| In-service * | 74 | 268 | 2,395 |
| Half year rule | 100 | 186 | 1,566 |

17

*method used by Hydro Ottawa for discrete assets

18

19 Table 2 below shows the forecasted depreciation of discrete assets for years 2016 to
20 2020 using the in service depreciation method and then the last line of the table shows
21 what the depreciation forecast would be had the half-year rule been used.

22

23

Table 2: Forecast depreciation of discrete assets ('000)

| Depreciation method | 2016 | 2017 | 2018 | 2019 | 2020 |
|----------------------|------|-------|------|------|-------|
| In-service * | 540 | 1,489 | 479 | 104 | 567 |
| Using half year rule | 594 | 1,245 | 626 | 215 | 1,155 |

24

*method used by Hydro Ottawa for discrete assets

25



1 **Undertaking JTC2.26**

2

3 With reference to the continuity schedule for 2015 in the update, to explain why the
4 contributions have fallen

5 .

6

7

8 **Response:**

9

10 Hydro Ottawa forecasted a decrease in 2015 contributions as a project that was
11 originally scheduled to be capitalized in 2015 (with \$3.7M in contribution) was finalized
12 and capitalized in 2014. Per Appendix 2-BA, there is an increase in contribution for
13 2014 when compared to original 2014 forecast.

14



1 **Undertaking JTC2.27**

2
3 To provide a mapping for 2015 and 2016 of payments to honi for those two substations,
4 as well as to provide a mapping of the payments set out in table 3.4.11, which is found at
5 exhibit b, tab 1, schedule 2, with table 3.4.12.

6
7
8
9 **Response:**

10
11 There are four distinct payments that are made to HONI with regards to CCRAs.

- 12 • The first being a study agreement with is a preliminary review completed by
13 HONI for HOL to determine the estimated costs and technical issues to complete
14 a project requested by HOL. These costs will be included in the final CCRA
15 agreement when the project moves forward.
- 16 • SIA/CIA application costs are required by IESO and HONI for any project which
17 is connected to the transmission system. These projects may or may not include
18 any capital work by Hydro One. The costs for this are separate from any costs
19 included the final CCRA agreement.
- 20 • Up front CCRA payments are to cover the estimated capital costs incurred by
21 HONI for work requested by HOL. These payments are only required if the load
22 forecast over the period of the CCRA agreement (25 years for HOL) does not
23 provide enough revenue to HONI to recuperate the costs HONI incurs to
24 complete the work. These payments typically make up the majority of CCRA
25 costs paid by HOL. If HOL's load over the period of the agreement generate
26 sufficient revenue for HONI to exceed the estimated capital investment by HONI,
27 there is no initial payment made by HOL, the true-up dates outlined below will still
28 apply.
- 29 • The final payments are true-up payments made at 30 days, 5, 10 and if required
30 15 years from the in service date.



- 1 ○ The true-up at 30 days is to allow for HONI to reconcile any differences
2 between the estimated and actual costs of the work completed for HOL.
3 This could adjust the final payment made by HOL, laid out in CCRA
4 agreement up or down. This could also adjust the capital investment that
5 HOL is liable to cover if no initial payments were required in the CCRA.
6 ○ The payments at 5, 10 and 15 years are mandated dates outlined in the
7 section 6.5 of the Ontario Energy Board Transmission System Code.
8 HONI will review if the actual load used by HOL and compare if there is
9 any discrepancy for the forecast included in the CCRA, HOL will update
10 their load forecast at each of the dates. If there is a shortfall in the actual
11 load

12

13 The Hawthorne TS and Overbrooke TS projects outlined in table 3.4.12 of Exhibit
14 B, Tab 1, Schedule 2 are for capacity increases of HONI owned transformers.
15 These transformers were scheduled for replacement by HONI and the costs that
16 HOL is responsible for are only to increase the transformation capacity. In both of
17 these projects, the revenue generated by HOL over the 25 year contracts exceed
18 the capital costs to HONI and no initial payments are required at this time. The
19 Hawthorne TS project is scheduled to be in service in 2015, and the 30 day true-
20 up date is expected in 2015, with a 5 year true-up in 2020. At this point HOL has
21 no reason to expect any payment will be required with either of these true-ups.
22 The Overbrooke TS project is scheduled to be in service in 2016, and the 30 day
23 true-up date is expected in 2016. At this point HOL has no reason to expect any
24 payment will be required with this true-up.

25

26 The projects and true-up dates outlined in 3.4.12 of Exhibit B, Tab 1, Schedule 2
27 are not expecting to generate any payments to HONI as we believe our forecasts
28 included in the CCRAs to be accurate. This table simply identifies dates in which
29 the true-up dates occur and if a variance exists at that time a payment could be
30 required as per the contract. The true-up payment accrued in 2014 for the
31 Hawthorne 115kV Lines Upgrade is not expected to be repeated on any of the



1 other agreements between HOL and HONI. The Hawthorne TS project is a
 2 separate project from the Hawthorne 115kV Lines Upgrade project.

3
 4 The Hydro One Payments costs outlined in table 3.4.11 of Exhibit B, Tab 1,
 5 Schedule 2 are associated with study agreements, SIA/CIA applications and new
 6 CCRA's. Table JTC2.27-1 below is a list of projects planned for 2016 through
 7 2020 that are associated with transmission connected stations and may require a
 8 CCRA and associated costs, although the specific details are unknown at this
 9 time, \$5M per annum is included as per table 3.4.11 of Exhibit B-1-2.

10
 11 Table JTC2.27-1: Hydro Ottawa's Transmission Connected Station Projects Executing in
 12 2016 to 2020

| Capital Program | Budget Program | Project | Start Date |
|--------------------------|----------------------------------|--|------------|
| Stations Capacity | Stations New Capacity | Lisgar Transformer Upgrade | Q1 2014 |
| | | Richmond South DS | Q1 2015 |
| | | New South 28KV Substation | Q1 2015 |
| | | Uplands 2nd Transformer | Q1 2017 |
| | | Bridlewood Station Rebuild | Q1 2018 |
| | | Limebank 4th Transformer | Q1 2020 |
| | | Overbrook Transformer Upgrade | Q1 2015 |
| Stations Assets | Stations Transformer Replacement | Merivale DS Rebuild | Q1 2014 |
| | | Beaverbrook Rebuild | Q1 2018 |
| | Stations Switchgear Replacement | Prim Fuse to C-Switcher - Epworth T1 | Q1 2014 |
| | | Overbrook TO Switchgear Rep | Q1 2015 |
| | | Woodroffe TW - 13kV SG Replace | Q2 2016 |
| | | Riverdale Switchgear Replacement | Q1 2020 |
| | Stations Refurbishments | 2 nd 230 kV Supply to Terry Fox | Q2 2016 |

13



1 **Undertaking JTC2.28**

2

3 To expand Table 1 to include actuals for 2012 through 2014 and the forecast for 2015,
4 the split of the fully allocated depreciation expenses.

5

6 **Response:**

7

8 The Interrogatory response to Energy Probe #17 has been expanded to include 2012 to
9 2015 data as shown in Table 1 below.

10

11

12 **Table 1: Allocation of Fleet Depreciation (\$ '000)**

13

| | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Budget | 2016 Budget |
|---|----------------|----------------|----------------|----------------|----------------|
| Fleet Depreciation | 900 | 1,059 | 1,160 | 1,315 | 1,444 |
| Amount allocated to Capital | 653 | 709 | 816 | 837 | 897 |
| Amount allocated to Expense (Operating and Maintenance) | 247 | 350 | 344 | 478 | 546 |

14

15



1 **Undertaking JTC2.31**

2

3 In relation to VECC-10, to provide all station asset investments by year for projects
4 started in-service dates as currently planned

5

6 _____

7

8 **Response:**

9 Planned System Renewal & System Service projects that start or are taking place in the
10 years 2015 to 2020 are represented in the tables below.

11

12 Table JTC2.31-1: Hydro Ottawa's Station System Service Projects Executing in 2015 to
13 2020

| System Service Forecasted Spend | | | | |
|--|-----------------------|-------------------------------|-------------------|------------------------|
| Capital Program | Budget Program | Project | Start Date | In-Service Date |
| Stations Capacity | Stations New Capacity | Casselman T1 | Q1 2012 | Q3 2015 |
| | | Hinchey New Switchgear | Q2 2012 | Q4 2015 |
| | | Lisgar Transformer Upgrade | Q1 2014 | Q4 2017 |
| | | TFX New Leitrim T1 (Island) | Q1 2015 | Q4 2017 |
| | | Richmond South DS | Q1 2015 | Q3 2019 |
| | | New South 28KV Substation | Q1 2015 | Q4 2020 |
| | | Overbrook Transformer Upgrade | Q1 2015 | Q4 2016 |
| | | Uplands 2nd Transformer | Q1 2017 | Q4 2018 |
| | | Bridlewood Station Rebuild | Q1 2018 | Q4 2021 |
| | | Limebank 4th Transformer | Q1 2020 | Q4 2021 |

14



1 Table JTC2.31-2: Hydro Ottawa's Station System Renewal Projects Executing in 2015 to
 2 2020

| System Renewal Forecasted Spend | | | | |
|--|----------------------------------|---------------------------------------|-------------------|------------------------|
| Capital Program | Budget Program | Project | Start Date | In-Service Date |
| Stations Assets | Stations Transformer Replacement | Startup Protection Upgrade | Q1 2013 | Q4 2015 |
| | | Longfields XFRM Base Rpl- Incl | Q1 2015 | Q4 2016 |
| | | TFX Repl-13/4kV AlbionUA T1&T2 | Q1 2015 | Q4 2016 |
| | | XFRM Repl. Bronson SBT1 & SBT2 | Q1 2016 | Q4 2017 |
| | | Merivale DS Rebuild | Q1 2014 | Q3 2018 |
| | | Bells Corners Transformer Replacement | Q1 2018 | Q4 2020 |
| | | Beaverbrook Rebuild | Q1 2018 | Q4 2021 |
| | | Overbrook SO Rebuild | Q1 2018 | Q4 2020 |
| | Stations Switchgear Replacement | Bayshore Primary CS | Q1 2013 | Q2 2015 |
| | | Borden Farms Switchgear Replacement | Q1 2013 | Q4 2015 |
| | | Prim Fuse to C-Switcher - Epworth T1 | Q1 2014 | Q1 2016 |
| | | Overbrook TO Switchgear Rep | Q1 2015 | Q4 2018 |
| | | Munster Recloser | Q1 2016 | Q4 2016 |
| | | Casselman Reclosers | Q1 2016 | Q4 2016 |
| | | Henderson Switchgear Repl | Q1 2016 | Q4 2016 |
| | | Woodroffe TW - 13kV SG Replac | Q2 2016 | Q4 2017 |
| | | Walkley Switchgear Replacement | Q1 2017 | Q4 2019 |
| | | Riverdale Switchgear Replacement | Q1 2020 | Q4 2024 |

- 3
- 4 For additional information;
- 5 Please see Exhibit B Attachment B-(1)A Material Investments System Renewal:
- 6 • Section 1 – Station Transformer Replacement
- 7 • Section 2 – Station Switchgear Replacement
- 8 Please see Exhibit B Attachment B-(1)A Material Investments System Service:
- 9 • Section 1 – Stations New Capacity



1 **Undertaking JTC2.32**

2

3 To provide an explanation as to the budget deferrals.

4

5

6 **Response:**

7

8 Undertaking JTC 2.32 was to provide the cost of the IM&IT Strategies as noted in
9 Attachment B-1(E) of Exhibit B-1-3 on page 16 and 17. Table 1 below provides the cost
10 of such strategies. Some of the strategies are new initiatives in the 2016-2020 period
11 while others are a continuation and represent on-going initiatives and other strategies
12 have been deferred as part of the general plant capital reductions. In a number of cases
13 the same project addresses multiple strategies and benefits.

14

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Table 1: IM&IT Strategy costs (In \$000's)

| IM&IT Strategies / Potential Benefits | 2016 to 2020 Capital | 2016 Incremental OM&A Expense | Explanation |
|--|-----------------------------|--|---|
| Service Oriented Architecture | | | Part of the Enterprise Architecture Program below |
| Enterprise Service Bus | 2,036 | | See the Material Investment Enterprise Architecture Program Page 368 to 377 |
| Reduction of Point-to-point Interfaces | | | Part of the Enterprise Architecture Program |
| Process Re-engineering | | | Part of Enterprise Architecture Program and the JDE Application Upgrade |
| Paper Records Reduction (new facility) | | | Project deferred as part of the general plant capital reductions |
| Electronic Information Management | 1,741 | 42 | On-going |
| Enterprise Search | | | Part of SharePoint and Enterprise Architecture Program |
| Master Data Management | 404 | | |
| Information Security Classification | 315 | 23 | |
| Information Classification & Retention | 1,126 | 47 | SharePoint |
| Attack Surface Reduction | | | Project deferred as part of the general plant capital reductions |
| Security Information & Event Monitoring | 1,130 | 50 | |
| Data loss Prevention | 1,349 | 69 | |
| Virtualization | 341 | 25 | |
| Mobile Device Management | 800 | 34 | |
| Disaster Recovery | 313 | 6 | |
| Asset Management | 40 | 89 | In service end of 2015, small program enhancements 2017 to 2020 |
| Next Generation Technology | | | Part of Enterprise Architecture Program |
| ERP Strategy | 5,000 | | Refer to Material Investment JDE Application Upgrade Page 357 to 362 |
| Legacy Application Rationalization | | | Part of Enterprise Architecture Program |
| Mobile/Cloud Computing | | | Part of Enterprise Architecture Program |
| Business Intelligence | | | Part of Enterprise Architecture Program and JDE Application Upgrade |
| Business Solutions | | | Part of Enterprise Architecture Program and JDE Application Upgrade |
| Total | 14,595 | 385 | |

2



1 **Undertaking JTC2.33**

2

3 To provide the latest information available for hydro one payments in this five-year
4 period.

5

6

7 **Response:**

8

9 Please refer to Undertaking Response to JTC2.27.



1 **Undertaking JTC2.34**

2

3 To provide a list of all the assets expected to be taken out of service that have any
4 substantial book value, along with their net book value.

5

6

7 **Response:**

8

9 HOL takes assets out of service primarily through the System Renewal and System
10 Access investment categories.

11

12 As per Table 2.1.1 of Exhibit B-1-2, the primary driver for System renewal programs is
13 asset end of service life. It is expected that assets taken out of service for System
14 Renewal have insubstantial book value.

15

16 For the investment category of System Access, it is expected that some assets be taken
17 out of service with some remaining book value as a result of Plant Relocation and
18 Damage to Plant.

19

20 The System Access Expenditure Summary and System Access Forecasted Spend
21 including Plant Relocation and Damage to Plant are shown in Table 3.4.3 and Table
22 3.4.4 of Exhibit B-1-2, respectively. The Plant Relocation capital program is described in
23 Section 3.5.2.1.1 of Exhibit B-1-2.

24

25 As described in Section 3.1.7.1 of Exhibit B-1-2, System Access is driven by HOL's
26 mandate to connect customers to the distribution system and to meet the service
27 obligation of the Distribution System Code. While every attempt is made to predict and
28 budget the expenses, the actual implementation is not within HOL's control.

29

30 Table 3.5.7 of Exhibit B-1-2 lists currently under construction projects and planned
31 projects from 2014 to 2025 in the City of Ottawa's Transportation Master Plan. The



1 majority of these projects will require HOL Plant Relocation. It is expected that some
2 assets will be taken out of service with remaining book value, however it is not possible
3 to accurately estimate the net book value of these assets as their project details and
4 exact timelines have not been confirmed.

5

6 The Damage to Plant capital program is described in Section 3.5.2.1.4 of Exhibit B-1-2.
7 Damage to Plant is a largely unknown and variable in nature program. The vast majority
8 of damages consistently occur to overhead and underground transformers, and to
9 wooden poles. It is not possible to accurately estimate the net book value of the assets
10 being taken out of service for Damage to Plant due to the uncontrollable nature of the
11 program.

12

13 As described above, we do not have a list of specific assets identified to be taken out of
14 service that have substantial book values. The projected \$750K disposals are based on
15 the normalized historical trend.



1 **Undertaking JTC2.35**

2
3 With reference to the list entitled "retiree and older worker engagement strategy" in the
4 attachment to sec No. 11(A), to provide a table showing which are done are which are
5 not done, and for those not done, what the status is
6

7
8
9 **Response:**

10

| 1. Strategies to Delay Retirements Where Appropriate | | |
|---|--------------------|---------------------------|
| Recommendation | Implemented | Status if not Done |
| 1.1 Pursue work redesign opportunities for early dialogue with older workers to discuss and explore their interests and plan for their transition into retirement, as well as support knowledge transfer. | Yes | - |
| 1.2 Pursue Phased Retirement options through the OMERS Pension Plan. | No | Planned for 2016 |
| 1.3 Offer targeted training and development to support older workers in adapting to technological changes as they are introduced. | Yes | - |
| 1.4 Include aging and generational issues as components for diversity development, awareness and training. | Yes | - |

11

| 2. How to Best Engage Employees Transitioning into Retirement | | |
|--|--------------------|-----------------------------|
| Recommendation | Implemented | Status if not Done |
| 2.1 Better leverage ability for hiring overlaps with departing incumbents in unique positions. | Yes | - |
| 2.2 Enhance knowledge transfer channels to support information exchange and mitigate risk. | In Progress | Implementation in 2015/2016 |
| 2.3 Expand and formalize Pre-Retirement Planning Program and post-retirement offerings. | Yes | - |
| 2.4 Formalize and communicate transitional and flexible work opportunities. | No | Planned for 2016 |



| 3. Post Retirement Engagement - Keeping Retirees Part of the Family | | |
|--|--------------------|-------------------------------------|
| Recommendation | Implemented | Status if not Done |
| 3.1 Establish and support a Retiree Association. | In progress | Implementation in 2015 |
| 3.2. Provide formal opportunities for retirees to stay connected with Hydro Ottawa. | Yes | - |
| 3.3. Communicate directly with retirees through paper or electronic newsletters. | No | Concurrent with Retiree Association |
| 3.4 Implement a „Retiree Knowledge Network and On-Call Program.“ | Yes | - |
| 3.5. Allow employees the option of transferring their work cell phone numbers following retirement. | Yes | - |
| 3.6 Establish a „Retiree Resource Pool“ to identify retirees interested in post-retirement employment. | Yes | - |
| 3.7 Explore the development of a retiree link or portal as part of the Hydro Ottawa Internet Renewal Strategy. | No | Concurrent with Retiree Association |
| 3.8 Establish an “Alumni Room” for Retirees and provide Retirees access to Hydrofit Facilities. | No | Concurrent with Retiree Association |

1

| 4. Policy, Procedure and Practice Review and Recommendations | | |
|---|--------------------|-------------------------------------|
| Recommendation | Implemented | Status if not Done |
| 4.1 Return of Hydro Ottawa Property Form | Yes | - |
| 4.2 Memorial Donation and Floral Tribute Policy | Yes | - |
| 4.3 Vacation Carry Over Provisions | No | Planned for 2016 |
| 4.4 Retirement Recognition Policy | Yes | - |
| 4.5 Service Recognition Policy | Yes | - |
| 4.6 Notices of Bereavement for Retirees | No | Concurrent with Retiree Association |
| 4.7 Extend Employee Discount Offerings to Retirees | No | Concurrent with Retiree Association |
| 4.8 Ensure Hydro Ottawa Events are Older Worker Friendly | Yes | - |

2



1 **Undertaking JTC2.36**

2

3 To provide an Excel spreadsheet version of the attachment to SEC 15(a)

4

5

6

7 **Response:**

8

9 The excel spreadsheet version of the attachment to SEC 15(A) was filled as part of
10 Interrogatory Response to SEC #15 part e, and can be found on the OEB's website,
11 labeled as Att-SEC-Q15-A.

12 [http://www.rds.ontarioenergyboard.ca/webdrawer/webdrawer.dll/webdrawer/search/rec&](http://www.rds.ontarioenergyboard.ca/webdrawer/webdrawer.dll/webdrawer/search/rec&sm_udf10=EB-2015-0004&sortd1=rs_dateregistered&rows=200)
13 [sm_udf10=EB-2015-0004&sortd1=rs_dateregistered&rows=200](http://www.rds.ontarioenergyboard.ca/webdrawer/webdrawer.dll/webdrawer/search/rec&sm_udf10=EB-2015-0004&sortd1=rs_dateregistered&rows=200)



1 **Undertaking JTC2.38**

2

3 With reference to CCC no. 49, to break out the \$757,000 into the amounts for both
4 years, how much was expensed in 2014 and how much is left in 2015

5

6

7 **Response:**

8

9 Please see Table 1 below that shows the breakdown of the \$757K into 2014 Actual and
10 2015 Budget.

11

12

Table 1 – Regulatory Costs for 2016 Custom IR Application

| Description | 2014 Actual | 2015 Budget | Total Budget |
|----------------------|--------------------|--------------------|---------------------|
| Consulting | \$110,000 | \$439,000 | \$549,000 |
| Legal | 4,000 | 20,000 | 24,000 |
| Media Communications | 5,000 | 50,000 | 55,000 |
| Travel | 20,000 | 36,000 | 56,000 |
| Training | 14,000 | 25,000 | 39,000 |
| Copy and Printing | 8,000 | 26,000 | 34,000 |
| Total | \$161,000 | \$596,000 | \$757,000 |

13



1 **Undertaking JTC2.39**

2
3 To advise which econometric model Mr. Fenrick used in the Hydro Ottawa study.

4
5
6 **Response:**

7
8 Mr. Fenrick used the final PSE econometric model found in the “PSE Reply” report in the
9 Toronto Hydro case (EB-2014-0116) as the starting point for the Hydro Ottawa research.
10 PSE made only three changes to the Toronto Hydro model. The first one was to add
11 high voltage expenses to Hydro Ottawa’s cost definition. In the PSE Reply report, PSE
12 followed PEG’s cost definition in order to only focus on consequential disagreements
13 between the two benchmarking consultants within that proceeding. However, adding
14 high voltage expenses to Hydro Ottawa’s cost definition provides a more consistent cost
15 definition between the U.S. data and Hydro Ottawa.

16
17 Reverting to the treatment found in the Toronto Hydro case would slightly improve Hydro
18 Ottawa’s performance evaluation. However, the change is inconsequential as high
19 voltage expenses are less than one percent of total costs in 2013 and looking forward.
20 PSE has made this change to make the cost definitions more consistent but it does not
21 cause a meaningful difference.

22
23 The second and third changes to the PSE Reply model were to update the dataset to
24 2013 and update the future year input price projections. These changes were made to
25 provide a model based on the most recently available data and price projections.

26
27 Besides these three updates, no other changes were made to the final model
28 established by PSE in the Toronto Hydro case. The exact same utilities are included
29 and the same variables and model specification is used.



1 On page 1 of the PSE Report it describes the situation. “We started our study for Hydro
2 Ottawa by using PSE’s latest total cost benchmarking research within the Toronto Hydro
3 proceeding (as found in the “PSE Reply” report in Case EB-2014-0116). For the Hydro
4 Ottawa total cost study, PSE followed the Toronto Hydro total cost benchmarking
5 analysis, with the following three changes:

6

- 7 • Added high voltage expenses into Hydro Ottawa’s total cost definition,
- 8 • Updated the forecasted input prices for the projected years of the sample, and
- 9 • Expanded the data to include 2013.”

10



1 **Undertaking JTC2.40**

2

3 To update appendix 2-OB to reflect the responses to Energy Probe 40 and 41.

4

5

6 **Response:**

7

8 Appendix 2-OB has been updated in ATT-JTC2.40-A to reflect the April, 2015

9 Consensus Long Term Forecast as shown in the updated Table 2 in response to Energy

10 Probe Interrogatory Question #40 a), and to reflect the loans for 2015 as requested in

11 Energy Probe Interrogatory Question #41 a).

12

File Number: #REF!
 Exhibit:
 Tab:
 Schedule:
 Page:
 Date:

Appendix 2-OB Debt Instruments

This table must be completed for all required historical years, the bridge year and the test year.

Year

| Row | Description | Lender | Affiliated or Third-Party Debt? | Fixed or Variable-Rate? | Start Date | Term (years) | Principal (\$) | Rate (%) (Note 2) | Interest (\$) (Note 1) | Additional Comments, if any |
|--------------|----------------------|--------------------------|---------------------------------|-------------------------|------------|--------------|-----------------------|-------------------|------------------------|-----------------------------|
| 1 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 1-Jul-05 | 10 yrs | \$ 200,000,000 | 5.040% | \$ 10,080,000 | |
| 2 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 1-Jul-05 | Deemed LT | \$ 32,185,000 | 5.900% | \$ 1,898,915 | |
| 3 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 20-Dec-06 | 30 years | \$ 50,000,000 | 5.218% | \$ 2,609,000 | |
| 4 | Grid Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 21-Dec-09 | Deemed LT | \$ 15,000,000 | 5.750% | \$ 862,500 | |
| 5 | Grid Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 30-Apr-10 | Deemed LT | \$ 15,000,000 | 5.870% | \$ 880,500 | |
| 6 | Grid Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 5-Jul-11 | Deemed LT | \$ 15,000,000 | 5.550% | \$ 832,500 | |
| | | | | | | | | | | |
| Total | | | | | | | \$ 327,185,000 | 5.246% | \$ 17,163,415 | |

Notes

- 1 If financing is in place only part of the year, calculate the pro-rated interest and input in the cell.
- 2 Input actual or deemed long-term debt rate in accordance with the guidelines in *The Report of the Board on the Cost of Capital for Ontario's Regulated Utilities*, issued December 11, 2009, or with any subsequent update issued by the Board.
- 3 Add more lines above row 12 if necessary.

Year

| Row | Description | Lender | Affiliated or Third-Party Debt? | Fixed or Variable-Rate? | Start Date | Term (years) | Principal (\$) | Rate (%) (Note 2) | Interest (\$) (Note 1) | Additional Comments, if any |
|--------------|----------------------|--------------------------|---------------------------------|-------------------------|------------|--------------|-----------------------|-------------------|---------------------------------------|--|
| 1 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 1-Jul-05 | 10 years | \$ 200,000,000 | 5.040% | \$ 10,080,000 | |
| 2 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 20-Dec-06 | 30 years | \$ 18,219,178 | 5.218% | \$ 950,677 | \$50M Note - rate change May 14, 2015 |
| 3 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 20-Dec-06 | 30 years | \$ 31,780,822 | 4.968% | \$ 1,578,871 | |
| 4 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 1-Jul-05 | Deemed LT | \$ 11,727,685 | 5.900% | \$ 691,933 | The cumulative deemed debt (\$77.185M o/s end of 2012 and \$30M issued on Feb 1, 2013) was converted into a single promissory note of \$107.185M to reflect the actual HOHI bond issuance on May 14, 2015. |
| 5 | Grid Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 21-Dec-09 | Deemed LT | \$ 5,465,753 | 5.750% | \$ 314,281 | |
| 6 | Grid Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 30-Apr-10 | Deemed LT | \$ 5,465,753 | 5.870% | \$ 320,840 | |
| 7 | Grid Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 5-Jul-11 | Deemed LT | \$ 5,465,753 | 5.550% | \$ 303,349 | |
| 8 | Grid Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 1-Feb-13 | Deemed LT | \$ 8,383,562 | 4.220% | \$ 353,786 | |
| 9 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 14-May-13 | 30 years | \$ 68,128,548 | 4.144% | \$ 2,823,247 | |
| 10 | Grid Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 10-Dec-13 | Deemed LT | \$ 1,808,219 | 4.940% | \$ 89,326 | |
| | | | | | | | | | \$30M deemed debt - effective 22 days | |
| Total | | | | | | | \$ 356,445,274 | 4.911% | \$ 17,506,311 | |

Notes

- 1 If financing is in place only part of the year, calculate the pro-rated interest and input in the cell.
- 2 Input actual or deemed long-term debt rate in accordance with the guidelines in *The Report of the Board on the Cost of Capital for Ontario's Regulated Utilities*, issued December 11, 2009, or with any subsequent update issued by the Board.
- 3 Add more lines above row 12 if necessary.

Year

| Row | Description | Lender | Affiliated or Third-Party Debt? | Fixed or Variable-Rate? | Start Date | Term (years) | Principal (\$) | Rate (%) (Note 2) | Interest (\$) (Note 1) | Additional Comments, if any |
|-------|----------------------|--------------------------|---------------------------------|-------------------------|------------|--------------|----------------|-------------------|------------------------|---------------------------------------|
| 1 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 1-Jul-05 | 10 years | \$ 200,000,000 | 5.040% | \$ 10,080,000 | |
| 2 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 20-Dec-06 | 30 years | \$ 50,000,000 | 4.968% | \$ 2,484,000 | |
| 3 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 14-May-13 | 30 years | \$ 107,185,000 | 4.144% | \$ 4,441,746 | |
| 4 | Grid Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 10-Dec-13 | Deemed LT | \$ 30,000,000 | 4.940% | \$ 1,482,000 | |
| 5 | Grid Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 28-Oct-14 | Deemed LT | \$ 5,342,466 | 4.770% | \$ 254,836 | \$30M deemed debt - effective 65 days |
| Total | | | | | | | \$ 392,527,466 | 4.775% | \$ 18,742,582 | |

Notes

- 1 If financing is in place only part of the year, calculate the pro-rated interest and input in the cell.
- 2 Input actual or deemed long-term debt rate in accordance with the guidelines in *The Report of the Board on the Cost of Capital for Ontario's Regulated Utilities*, issued December 11, 2009, or with any subsequent update
- 3 Add more lines above row 12 if necessary.

Year 2015

| Row | Description | Lender | Affiliated or Third-Party Debt? | Fixed or Variable-Rate? | Start Date | Term (years) | Principal (\$) | Rate (%) (Note 2) | Interest (\$) (Note 1) | Additional Comments, if any |
|-------|-----------------|--------------------------|---------------------------------|-------------------------|------------|--------------|----------------|-------------------|------------------------|--|
| 1 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 20-Dec-06 | 30 years | \$ 50,000,000 | 4.968% | \$ 2,484,000 | \$50M actual debt |
| 2 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 14-May-13 | 30 years | \$ 107,185,000 | 4.144% | \$ 4,441,746 | \$107.185M actual debt |
| 3 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 1-Jul-05 | 10 years | \$ 21,369,863 | 5.040% | \$ 1,077,041 | The Feb 9, 2015 \$200M maturity plus the cumulative deemed debt of \$60M then outstanding (\$260M total) were converted into two promissory notes of \$138.7m and \$121.3m on Feb 9, 2015 to reflect the actual HOHI bond issuance on a prorata basis for the two terms. |
| 4 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 10-Dec-13 | Deemed LT | \$ 3,205,479 | 4.940% | \$ 158,351 | |
| 5 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 28-Oct-14 | Deemed LT | \$ 3,205,479 | 4.770% | \$ 152,901 | |
| 6 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 9-Feb-15 | 10 years | \$ 123,850,526 | 2.724% | \$ 3,373,688 | |
| 7 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 9-Feb-15 | 30 years | \$ 108,368,652 | 3.769% | \$ 4,084,414 | |
| 8 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 25-Jun-15 | 10 years | \$ 8,284,414 | 2.724% | \$ 225,667 | |
| 9 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 25-Jun-15 | 30 years | \$ 7,249,833 | 3.769% | \$ 273,246 | \$25M actual debt on a prorata basis for the two terms - effective 31 days |
| 10 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 30-Nov-15 | 10 years | \$ 1,132,349 | 2.724% | \$ 30,845 | |
| 11 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 30-Nov-15 | 30 years | \$ 990,938 | 3.769% | \$ 37,348 | |
| Total | | | | | | | \$ 434,842,534 | 3.758% | \$ 16,339,250 | |

Notes

- 1 If financing is in place only part of the year, calculate the pro-rated interest and input in the cell.
- 2 Input actual or deemed long-term debt rate in accordance with the guidelines in *The Report of the Board on the Cost of Capital for Ontario's Regulated Utilities*, issued December 11, 2009, or with any subsequent update
- 3 Add more lines above row 12 if necessary.

Year 2015 2016

| Row | Description | Lender | Affiliated or Third-Party Debt? | Fixed or Variable-Rate? | Start Date | Term (years) | Principal (\$) | Rate (%) (Note 2) | Interest (\$) (Note 1) | Additional Comments, if any |
|-------|----------------------|--------------------------|---------------------------------|-------------------------|------------|--------------|----------------|-------------------|------------------------|---|
| 1 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 20-Dec-06 | 30 years | \$ 50,000,000 | 4.968% | \$ 2,484,000 | \$50M actual debt |
| 2 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 14-May-13 | 30 years | \$ 107,185,000 | 4.144% | \$ 4,441,746 | \$107.185M actual debt |
| 3 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 9-Feb-15 | 10 years | \$ 138,667,000 | 2.724% | \$ 3,777,289 | \$260M actual debt |
| 4 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 9-Feb-15 | 30 years | \$ 121,333,000 | 3.769% | \$ 4,573,041 | |
| 5 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 25-Jun-15 | 10 years | \$ 15,999,000 | 2.724% | \$ 435,813 | \$55M actual debt |
| 6 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 25-Jun-15 | 30 years | \$ 14,001,000 | 3.769% | \$ 527,698 | |
| 7 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 30-Nov-15 | 10 years | \$ 13,332,500 | 2.724% | \$ 363,177 | |
| 8 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 30-Nov-15 | 30 years | \$ 11,667,500 | 3.769% | \$ 439,748 | |
| 9 | Grid Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 1-Jul-16 | 30 years | \$ 32,767,123 | 3.970% | \$ 1,300,855 | \$65M deemed rate per cost of capital report calculation - effective 184 days |
| Total | | | | | | | \$ 504,952,123 | 3.633% | \$ 18,343,367 | |

Notes

- 1 If financing is in place only part of the year, calculate the pro-rated interest and input in the cell.
- 2 Input actual or deemed long-term debt rate in accordance with the guidelines in *The Report of the Board on the Cost of Capital for Ontario's Regulated Utilities*, issued December 11, 2009, or with any subsequent update
- 3 Add more lines above row 12 if necessary.

Year 2015 2016

| Row | Description | Lender | Affiliated or Third-Party Debt? | Fixed or Variable-Rate? | Start Date | Term (years) | Principal (\$) | Rate (%) (Note 2) | Interest (\$) (Note 1) | Additional Comments, if any |
|-----|-----------------|--------------------------|---------------------------------|-------------------------|------------|--------------|----------------|-------------------|------------------------|-----------------------------|
| 1 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 20-Dec-06 | 30 years | \$ 50,000,000 | 4.968% | \$ 2,484,000 | \$50M actual debt |
| 2 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 14-May-13 | 30 years | \$ 107,185,000 | 4.144% | \$ 4,441,746 | \$107.185M actual debt |
| 3 | Promissory Note | Hydo Ottawa Holding Inc. | Affiliated | Fixed Rate | 9-Feb-15 | 10 years | \$ 138,667,000 | 2.724% | \$ 3,777,289 | \$260M actual debt |



1 **Undertaking JTC2.42**

2

3 To calculate the incremental cost in 2015 of monthly billing for the residential and the
4 majority of the GS under 50 customers.

5

6 _____

7

8 **Response:**

9

10 Monthly billing was implemented in April 2014. The incremental OM&A costs for 2014
11 reflect 4 additional bills, while 2015 and 2016 reflect full year impacts (i.e. 6 additional
12 bills). Table 1 below provides the estimated incremental costs included in each year
13 2014 to 2016.

14 **Table 1: Estimated incremental cost of monthly billing**

| <i>\$000s</i> | 2014 | 2015 | 2016 |
|--------------------------------|-------------|--------------|--------------|
| Bill Production | 142 | 203 | 195 |
| Postage | 664 | 974 | 962 |
| Total Incremental Costs | 806 | 1,177 | 1,157 |

15

16 The incremental costs were mitigated by successful e-billing program. As reference to
17 D-1-3 P.5, Hydro Ottawa has approximately 85,951 or 26.9% of its customers
18 subscribed to its e-billing program as of December 2014. Hydro Ottawa estimates an
19 annualized savings of approximately \$860K resulting from its move to implement e-
20 billing.

21

22 The implementation of monthly billing from bi-monthly billing is in response to Hydro
23 Ottawa's customer preferences for a more frequent bill cycle and for operational
24 efficiencies.

25



- 1 As also referenced in Exhibit D-1-3, page 9, in 2014, after the implementation of monthly
- 2 billing, bad debts also decreased by \$0.4M or 16%. Other added benefits include
- 3 improvement in cash flow and working capital.
- 4