

1 **A - CANADIAN MANUFACTURERS AND EXPORTERS INTERROGATORY - 001**

2

3 **Reference:**

4 Exhibit A-2-3, Page 4

5

6 **Interrogatory:**

7 HONI has proposed a supplemental stretch factor on capital of 0.15%.

8

- 9 a) Please describe any analysis HONI has performed to determine whether 0.15% is the
10 appropriate supplemental stretch factor to apply in this instance.

11

12 **Response:**

- 13 a) The proposed Supplemental Stretch factor aligns with the OEB's decisions in Hydro One's
14 recent Custom IR proceedings (EB-2017-0049, Decision and Order, p. 32 and EB-2019-0082,
15 Decision and Order, p 39), in which the OEB ordered a 0.15% supplemental stretch on capital
16 in order to further incent Hydro One to seek productivity gains.

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1 **A - CANADIAN MANUFACTURERS AND EXPORTERS INTERROGATORY - 002**

2
3 **Reference:**

4 Exhibit A-3-1, Page 24

5
6 **Interrogatory:**

7 At page 24, HONI states that it also considers factors such as “load forecasts, equipment ratings,
8 operating restrictions, security incidents, environmental risks and requirements, compliance
9 obligations equipment defects, obsolescence, and health and safety considerations to help ensure
10 that capital expenditures target the appropriate mix of assets”. These are in addition to the ARA
11 process.

- 12
13 a) With respect to the ARA factors, are these quantitative or qualitative factors?
- 14
15 b) With respect to criticality, how does HONI define the impact on the system? Is it by the
16 number of people affected (without power), the size of the load of the impacted customers,
17 etc.?
- 18
19 c) With respect to the additional factors listed by HONI that it considers to ensure the
20 appropriate mix of assets, how are these factors integrated into the existing ARA decision
21 making process. For instance, with respect to “compliance obligations” or “health and safety”,
22 these factors suggest that they would replace the normal ARA considerations and make
23 certain investments mandatory. In contrast, a factor such as load forecast might already be
24 captured in the “utilization” ARA component.

25
26 **Response:**

- 27 a) These are quantitative factors.
- 28
29 b) Criticality considers the role and impact the asset has in the system, the type and size of
30 connected customers, power flow, and the single point of vulnerability.
- 31
32 c) These additional factors are considered as part of the asset needs assessment and may
33 influence the development of a candidate investment; certain elements may also inform the
34 risk assessment process undertaken through investment planning.

Filed: 2021-11-29
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Witness: JESUS Bruno

1 **A - CANADIAN MANUFACTURERS AND EXPORTERS INTERROGATORY - 003**

2
3 **Reference:**

4 Exhibit A-3-1, Page 24

5
6 **Interrogatory:**

7 At page 24, HONI states “many system renewal investments are informed by the asset needs
8 assessment process.”

9
10 a) Please confirm which system renewal investments are not informed by the asset needs
11 assessment process, and why they are not.

12
13 **Response:**

14 a) The interrogatory contains an incomplete reference. As stated in A-03-01 Pg.24, “Many
15 system renewal investments are informed by the asset needs assessment process, largely
16 driven by asset condition”. All of Hydro One’s investments, including System Renewal, are
17 informed by a needs assessment as stated on pg.23 of the same Exhibit. The asset needs
18 assessment process, as it pertains to System Renewal investments, is largely driven by asset
19 condition. However, asset condition is not the only driver, with other considerations including
20 customer needs, system needs, operational needs, and/or other external influences. System
21 Renewal investments not driven by condition include the following:

- 22 • D-SR-05 – Distribution Lines Trouble Calls and Storm Response: informed by historic
23 demand
- 24 • D-SR-01 / T-SR-09 – Stations Demand Capital / Transmission Spares: informed by historic
25 demand
- 26 • D-SR-06 – Distribution Lines PCB Equipment Replacement: mandated by compliance
27 requirements

Filed: 2021-11-29
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1 **A - CANADIAN MANUFACTURERS AND EXPORTERS INTERROGATORY - 004**

2
3 **Reference:**

4 Exhibit A-3-1, Page 54

5
6 **Interrogatory:**

7 At page 54, HONI proposes to modify the CISVA to provide an opportunity for HONI to “catch
8 up” on shortfalls in in-service additions.

- 9
10 a) In HONI’s proposal, please confirm whether there would be any mechanism to recompense
11 ratepayers for the time difference of in-service additions if there are shortfalls in the early
12 years and they are offset later on the term?

13
14 **Response:**

- 15 a) Hydro One does not confirm that there would be any such mechanism. The CISVA as
16 currently approved for Transmission, as well as under the proposed modification in
17 respect of Transmission, is asymmetrical to the benefit of ratepayers. As such, the
18 account provides protection to ratepayers from variances between the revenue
19 requirement associated with approved in-service capital additions and actual in-
20 service capital additions, as further described in Exhibit A-04-01, pp. 5-6. This is to
21 align Hydro One’s interests with the interests of customers and to provide additional
22 elements of protection for customers. The asymmetrical nature of the account will
23 not change. As such, Hydro One does not believe it is necessary to recompense
24 ratepayers for time differences that occur during the rate period in the
25 circumstances described. Consistent with this, Hydro One would not benefit from
26 any in-service addition surpluses that it may achieve in the early years. Moreover, it
27 would it be burdensome to track and calculate the impacts of any such time
28 differences throughout the rate term, and the introduction of such a mechanism
29 would undermine the flexibility that is intended to be provided in the context of
30 delivering a five-year capital plan under a Custom IR framework. Additionally, as
31 further explained in Exhibit G-01-02, Hydro One believes this modification ensures
32 that if there are projects that are delayed outside of Hydro One’s control, Hydro One
33 would not be unfairly penalized.

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1 **A - CANADIAN MANUFACTURERS AND EXPORTERS INTERROGATORY - 005**

2
3 **Reference:**

4 Exhibit A-3-1, Page 54-56

5
6 **Interrogatory:**

7 At page 54, HONI proposes to add two additional transmission variance and deferral accounts as
8 well as five new distribution variance and deferral accounts.

9
10 a) Please provide HONI's view on whether the proliferation of variance and deferral accounts
11 undercuts the purpose of incentive regulation. Please describe fully.

12
13 **Response:**

14 Hydro One does not agree with CME's characterization of the Application as resulting in the
15 "proliferation" of regulatory accounts. While CME is correct that Hydro One is proposing two
16 new Transmission accounts and five new Distribution accounts, as described in Exhibit G-01-02,
17 Tables 1 and 2, Hydro One is also proposing to discontinue four Transmission accounts and four
18 Distribution accounts. As such, Hydro One's proposals result in a net *reduction* of one regulatory
19 account.

20
21 In Hydro One's view, deferral and variance accounts do not undercut the purpose of incentive
22 regulation but rather are an integral part of a utility's overall rate framework. Hydro One's CIR
23 Application includes robust incentives to drive its performance, and its proposals for new
24 regulatory accounts represent measured and appropriate means for addressing specific
25 circumstances where certain amounts are not yet known or where, generally for reasons
26 outside of Hydro One's control, there is a significant level of uncertainty associated with a
27 particular forecast involving a material amount. Moreover, some of the requested accounts are
28 directly for the benefit of ratepayers. It is therefore important to look not at the number of
29 regulatory accounts but rather at the specific purpose and nature of each account being
30 requested.

31
32 Furthermore, for each of the proposed new regulatory accounts, Hydro One has provided
33 detailed evidence as to why the account is being requested and should be approved, having
34 regard to the OEB's well-established eligibility criteria of Causation, Materiality and Prudence.

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Witness: CHHELAVDA Samir

1 **A - CANADIAN MANUFACTURERS AND EXPORTERS INTERROGATORY - 006**

2

3 **Reference:**

4 Exhibit A-3-1, Page 60-61

5

6 **Interrogatory:**

7 At pages 60-61 HONI provides its forecast transmission and distribution load forecasts. HONI
8 states that it forecasts transmission load to grow .2% over the 2023-2027 period. According to
9 HONI's evidence, this increase results from lower CDM assumptions, higher housing starts, and
10 growth in southwestern Ontario.

11

12 a) In CME's experience, there is increasing discussion regarding electrification, whether of
13 commercial vehicles, such as Tesla cars or space heating alternatives. When forecasting
14 Transmission load over the plan period, did HONI incorporate any increases to load as a result
15 of electrification, why or why not?

16

17 **Response:**

18 a) Yes; for details, please see VECC 43, part c).

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Witness: ALAGHEBAND Bijan

1 As noted on page 14 of the Customer Engagement Report, the Phase II workbooks included
2 open-ended comment boxes for each specific question to allow customers to provide
3 unrestricted feedback on each individual question. In reviewing this feedback, few customers
4 expressed any concerns with the content or structure of any particular question.

5

6 As noted on page 16 of the Customer Engagement Report, the Phase II workbooks also
7 provided diagnostic questions at the end of the workbook to assess how well the workbook
8 worked for participants. While results vary by rate class, roughly four out of five had a
9 favourable impression of the Phase II workbook and a similar number said the workbook had
10 the right amount of information. This indicates that Hydro One was able to find the right
11 balance of information, as well as provide an engagement that was favourably received by
12 the customers that took the time to complete the workbook.

13

14 b) Response provided by Innovative

15

16 Please refer to part a)

1 Customer priorities can be seen as having two dimensions: direction and hierarchy.
2
3 The first way of assessing customer priorities shows the direction of priorities. Page 17 of the
4 Customer Engagement Report notes that reliability, affordability and safety were all seen as
5 extremely important.
6
7 The second way of assessing customer priorities explores the hierarchy of priorities, relative
8 to each other, in the abstract. This helps to understand how customers may “break the tie”
9 among the top three stated priorities of reliability, affordability, and safety. In this case,
10 relative to other priorities, affordability ranks the highest.
11
12 However, previous work by INNOVATIVE showed that when customers consider specific
13 investments, cost becomes less important and benefits such as reliability, environment or
14 safety become higher priorities. As such, Phase I of this engagement also included a third way
15 of testing priorities - illustrative choices to assess whether the trend seen in the past still holds
16 true for Hydro One customers at this time. It did.
17
18 For Phase II of the engagement, the specific investment choices to be included in the
19 Application were available. As a result, when it came to understanding priorities, the Phase II
20 workbooks focused on testing trade-offs in specific investment decisions.
21
22 **b) Response provided by Innovative:**
23 Practically, there is no conflict to resolve. The first two approaches to assessing direction and
24 hierarchy are used in the Phase I workbooks to provide guidance to planners before specific
25 investment choices are developed. The Phase II workbooks only include measures of trade-
26 offs related to specific investment choices. The findings of the second workbook are most
27 relevant to assessing the Application.

Filed: 2021-11-29
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Witness: JABLONSKY Donna

Filed: 2021-11-29
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Witness: JABLONSKY Donna

Filed: 2021-11-29
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Witness: JABLONSKY Donna

Filed: 2021-11-29
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Witness: JABLONSKY Donna

Filed: 2021-11-29
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Witness: JABLONSKY Donna

- 1 **Response:**
2 a) Yes, it is confirmed.
3
4 b) Please see Interrogatory B2-SEC-076.
5
6 c) Hydro One plans to replace all 36 transformers.
7
8 d) Please see part c).
9
10 e) EPRI was provided with data for all 198 transformers in the poor condition category. However,
11 the PTX tool (Transformer Fleet Management software) developed by EPRI is limited to main
12 tank oil analysis only and the other factors were not evaluated by EPRI.
13
14 f) There are no data issues. The 36 transformers were deemed to be in poor condition based on
15 factors other than main tank oil analysis as outlined on TSP Section 2.2. pages 12-14.

Filed: 2021-11-29
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Witness: FRENCH Teri

1 remote areas), Hydro One estimates that the cost to replace this population of meters would
2 be approximately equal to the cost of mass replacing any meter which would be equal to the
3 meter and labour costs (i.e., 6.5% of approximately \$389 million).

4

5 d) Yes, Hydro One has done analysis to estimate the number of meters it expects to reliably
6 communicate to enable Time-of-Use billing (i.e., operate as smart meters) as a result of the
7 implementation of AMI 2.0.

8

9 First, and most importantly as identified in D-SR-12 Section C.3, AMI 2.0 will employ a
10 communication network utilizing the 900 MHz frequency band (as opposed to the 2.4 GHz
11 band utilized by AMI 1.0). The 900 MHz band has the advantage of improved range even with
12 obstacles (e.g., foliage, hills, buildings, etc.). This is because radio signals with longer
13 wavelengths travel a greater distance and penetrate through and around objects better than
14 signals with shorter wavelengths. More specifically, the wavelength of the radio signal is
15 inversely proportional to the frequency and therefore the wavelength for a 900 MHz device
16 is longer ($\lambda = 0.33$ meters) than that of a 2.4 GHz ($\lambda = 0.125$ meters) device. Employing the Friis
17 transmission equation below shows that a 900 MHz module will have 2.64 times more range
18 than that of a 2.4 GHz module.

19

20 Friis Path Loss = $20 \cdot \log(4 \cdot \pi \cdot r / \lambda)$ dB (Eq. 1), where
21 r = distance between transmitter and receiver
22 λ = wavelength

23

24 Friis Path Loss for 900 MHz = $20 \cdot \log(4 \cdot \pi \cdot r_1 / 0.33)$
25 Friis Path Loss for 2.4 GHz = $20 \cdot \log(4 \cdot \pi \cdot r_2 / 0.125)$

26

27 Setting both equations to be equal to determine ratio for equal path loss:

28 $20 \cdot \log(4 \cdot \pi \cdot r_1 / 0.33) = 20 \cdot \log(4 \cdot \pi \cdot r_2 / 0.125)$

29 $20 \cdot \log(38.01799r_1) = 20 \cdot \log(100.531r_2)$

30 $20 \cdot \log(38.01799r_1) / 20 \cdot \log(100.531r_2) = 1$

31 $\log(38.01799r_1) / \log(100.531r_2) = 1$

32 $\log 100.531r_2 (38.01799r_1) = 1$

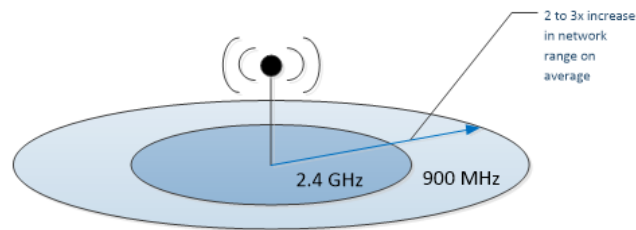
33 $100.531r_2^1 = 38.01799r_1$

34 $100.531 / 38.01799 = r_1 / r_2$

35 $r_1 / r_2 = 2.64$

1 In a mesh network, the 2.64 times extended range allows for meters to reliably communicate
2 further distances which will increase the number of meters that will reliably communicate for
3 Time-of-Use billing. This extended range is illustrated in the figure below.

4



5

6

7 The conversion of this improved range into the number of additional meters which will
8 reliably communicate under AMI 2.0, however, is difficult to quantify with certainty given the
9 nature of the service territory (topography and foliage cover) and Hydro One's experience.
10 Nevertheless, AMI 2.0 RFP respondents submit an approximately 50% improvement (41,000
11 meters) on the 88,000 meters currently not covered by network (see response to a) above).
12 This improvement, it should be noted, is with 50% less network equipment than AMI 1.0
13 which substantiates our assertion above of improved network range.

14

15 Considering the information above and Hydro One's experience in extending reliable network
16 reach to customers, Hydro One has taken a conservative approach and estimates an
17 additional 25,000 meters (30% of the current 88,000 non-time-of-use meters) will reliably
18 communicate under the AMI 2.0 network.

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Witness: PAISH David

1 **E - CANADIAN MANUFACTURERS AND EXPORTERS INTERROGATORY - 018**

2
3 **Reference:**

4 Exhibit E-6-1, Schedule 1, Attachment 1, Page 7

5
6 **Interrogatory:**

7 At page 7, Mercer discusses how an organization that deploys a cost effective and efficient work
8 team to any project will generally save costs.

- 9
10 a) In Mercer's view, does the opposite hold true? If an organization were to deploy an ineffective
11 or cost inefficient work team, would that generally cause additional costs?
12
13 b) Would this potential inefficiency be captured as part of Mercer's report?
14

15 **Response:**

- 16 a) Response provided by Mercer:

17 In Mercer's view, the opposite generally does hold true. An organization that deploys
18 ineffective or cost inefficient work teams on a project will likely incur additional costs, all other
19 relevant factors being equal. These relevant factors may include: work site location and
20 conditions; the availability of optimal skills, equipment, and materials; and flexibility to plan
21 and schedule the work in advance, for example.

- 22
23 b) Response provided by Mercer:

24 The Mercer Study does not and was not intended to measure the cost effectiveness or
25 efficiency of work teams.

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Witness: LILA Sabrin, MERCER

1 **E - CANADIAN MANUFACTURERS AND EXPORTERS INTERROGATORY - 019**

2
3 **Reference:**

4 Exhibit E-6-1, Attachment 1, Page 8

5
6 **Interrogatory:**

7 At page 8, Mercer describes the impact of high morale and loyalty in terms of costs.

- 8
9 a) Please provide a reference in the evidence to HONI's employees' morale and loyalty.
10
11 b) Has HONI's employees' morale and loyalty been compared to that of the comparator group?
12 If so, please provide that analysis.
13

14 **Response:**

15 a) Response from Hydro One:

16
17 The statement in Exhibit E-06-01 Attachment 1 in the Mercer Benchmarking Study at page 8
18 refers to the fact that market aligned compensation results in increased employee morale and
19 loyalty which contributes to lower turnover rates. Hydro One's turnover (excluding
20 retirements) ranges from 1% to 2% which aligned with the statement from the study.
21

22 Response from Mercer:

23
24 Low turnover rates are often correlated with positive employee morale and loyalty, as
25 discussed in the Compensation Benchmarking Study. Other inferences to HONI's employees'
26 morale and loyalty can include common industry effectiveness metrics including strong health
27 and safety records, low talent acquisition costs (i.e. hiring, sourcing, training), and industry
28 leading CAIDI & SAIDI scores. These metrics signal the benefits of having a tenured and/or
29 highly competent workforce.
30

31 b) Response from Mercer:

32
33 HONI's employees' morale and loyalty has not been compared to that of the comparator
34 group.

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Witness: LILA Sabrin, MERCER

1 **E - CANADIAN MANUFACTURERS AND EXPORTERS INTERROGATORY - 020**

2

3 **Reference:**

4 Exhibit E-6-1, Attachment 1, Page 8

5

6 **Interrogatory:**

7 At page 8, Mercer describes the impact of unionized work forces, and states that the comparator
8 group has unionized and non-unionized organizations.

9

10 a) Of the comparator group for the study, how many of the participant organizations are
11 unionized and how many are non-unionized?

12

13 **Response:**

14 a) Response from Mercer:

15

16 For the organizations that participated in the study, 19 have a unionized workforce and 1 does
17 not have a unionized workforce in Canada. However, of the 19 organizations that have a
18 unionized workforce, 3 did not match any of their unionized jobs in the study.

19

20 When looking specifically at the representation of unionized matches for the benchmark jobs,
21 Mercer notes that across the list of 23 unionized Hydro One Energy Professional and Trades
22 and Technical jobs, peer group data for 16 of them included data from non-unionized
23 employees.

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Witness: LILA Sabrin, MERCER

1 **E - CANADIAN MANUFACTURERS AND EXPORTERS INTERROGATORY - 021**

2
3 **Reference:**

4 Exhibit E-6-1, Attachment 1, Page 26

5
6 **Interrogatory:**

7 At page 26, Mercer's table shows that for Energy Professionals, HONI's compensation compared
8 to the market average has been increasing, from 5% in 2008 to 10% in 2020.

9
10 a) Please describe the drivers of the increase from 2008 to 2020 and if HONI believes that those
11 drivers will continue to drive a further increase in compensation above market average
12 through the plan term.

13
14 **Response:**

15 a) Response from Mercer:

16 By way of clarification, the results of the 2020 Study are 11% above P50 for Energy
17 Professionals and not 10% as stated in the question (which represents an improvement
18 compared to the 2017 Study result of 12%).

19
20 A number of compensation elements contribute to the position of Hydro One's Energy
21 Professional group's total compensation relative to the market. We note that given the
22 unionized nature of the Energy Professional workforce and the criticality of the services they
23 provide, it may be challenging for Hydro One to negotiate changes to the compensation
24 program in comparison to other organizations. Similarly, it is important to note that Hydro
25 One's relative total compensation position is impacted by both its negotiated compensation
26 actions and by compensation actions taken in the market.

27
28 Three primary drivers are the following:

- 29 **1. Higher than market median base salaries** - Base salaries "flow through" other
30 compensation elements, pension and certain benefits, so that higher than market
31 base salaries drive even high market positioning for total compensation.
- 32 **2. Other non-pension post-retirement employee benefits (aka OPEB)** - Organizations
33 have made efforts to either eliminate or make reductions to their Retiree benefits.
34 As such, the provision of OPEB within Hydro One contributes to the above market
35 median positioning for total compensation.
- 36 **3. Pension** - Many participating organizations have, over time, reduced the value of
37 pension arrangements. The design and value of the comparable Hydro One Energy
38 Professional pension plans have not changed significantly (cost savings) over the
39 same period leading to higher relative values for Hydro One when compared to the

1 market. We also note that the 2005 change to the defined benefit pension plan only
2 affected newly hired employees.

3

4 Response from Hydro One:

5 The confidential labour relations strategy (Exhibit E-6-1, Attachment 5) speaks to Hydro
6 One's collective bargaining plans to address the drivers identified above over the rate
7 period. The Mercer forecast (Exhibit E-06-01, Attachment 1.1) offers insights on how the
8 market position of the energy professionals may be impacted by certain bargaining
9 outcomes, as well as the natural delay in seeing the effect of changes to compensation
10 elements, such as pension changes, which only impact future service.

11

12 As noted by Mercer above in respect of the Energy Professional group of employees, we also
13 note that the benchmarking results improved somewhat between the 2017 and 2020 Study.
14 Hydro One will continue to pursue further progress in upcoming rounds of bargaining over
15 the rate period in respect of the Energy Professional group. Further, on an overall (all
16 employee groups) total compensation basis, Mercer forecasts improvement in Hydro One's
17 benchmarking results as of the end of the rate period (2027) compared to 2020 as shown in
18 Exhibit E-06-01, Attachment 1.1.