

SCHOOL ENERGY COALITION

**CROSS-EXAMINATION
MATERIALS**

EB-2016-0160

BENCHMARKING PANEL

School Energy Coalition (SEC) INTERROGATORY #043

Reference:

B2/2/1, Attachment 2, p. 33

Interrogatory:

Please provide a table showing each of the comparators actually used in the benchmarking study, and for each, show how they meet the comparator characteristics referred to on this slide.

Response:

Table shown below:

Company	Gross Transmission Assets (\$000)	Customers	Service Territory (sq. km)	KM of Transmission Lines	MWH Transmitted	Ownership*	Regulatory Regime**	Susceptible to Storms
Baltimore Gas & Electric	1,179,098,656	1,351,891	3,701	2,090	30,562,078	IOU		Yes
B.C. Hydro	5,111,155,732	1,945,599	42,370	18,508	54,637,557	Provincial		Yes
CenterPoint Energy	2,059,764,178	2,299,248	8,045	5,984	101,741,203	IOU	Open	Yes
Commonwealth Edison	3,389,679,995	3,842,198	18,388	8,656	89,977,031	IOU	Open	Yes
CPS Energy	877,775,489	771,603	2,438	2,407	26,334,008	Municipal	Open	
East Kentucky Power Coop.	569,099,123		N/A	4,728	22,790,243	Cooperative		
Kansas City Power & Light	1,297,124,005	903,776	28,838	4,273	24,731,534	IOU		Yes
Manitoba Hydro	1,055,000,000	555,760	650,000	12,800	30,000,000	Provincial		
Oncor Electric Delivery	7,005,354,033	3,310,530	86,032	25,776	114,905,829	IOU	Open	Yes
PECO Energy	1,439,589,112	1,234,338	3,379	1,757	37,501,023	IOU	Open	Yes
PPL Electric Utilities	2,408,545,384	1,400,118	26,000	8,771	40,599,247	IOU	Open	Yes
PSE&G	5,845,024,497	2,259,205	2,011	2,317	40,746,702	IOU		Yes
Southern California Edison	11,071,660,300	4,967,691	80,450	26,206	88,986,000	IOU	Open	
Tucson Electric Power	936,496,126	414,748	1,617	3,114	18,278,352	IOU		
Westar Energy	2,053,092,375	695,972	16,251	9,952	30,436,785	IOU		Yes

1 excluded. In the case of candidate companies who declined participation, each was contacted
 2 multiple times, through more than one individual.
 3

Original List	Proposed Additions - Stakeholder Session 1	Final Participants
Austin Energy	Altalink	Baltimore Gas and Electric
B.C. Hydro	Emera (Nova Scotia Power)	BC Hydro
CenterPoint Energy – Electric (Houston, TX)		CenterPoint Energy
CPS Energy (San Antonio, TX)		Commonwealth Edison
East Kentucky Power Coop.		CPS Energy
Exelon – Baltimore Gas and Electric		East Kentucky Power Coop.
Exelon – ComEd (Chicago)		Hydro One Networks
Exelon – PECO Energy (Philadelphia)		Kansas City Power & Light
Hydro-Quebec Provincial		Manitoba Hydro
Kansas City Power and Light		Oncor Electric Delivery
Manitoba Hydro		PECO Energy
New Brunswick Power		PPL Electric Utilities
Oncor Electric Delivery (Dallas, TX)		Public Service Electric & Gas
PPL Electric Utilities (Central Pennsylvania)		Southern California Edison
Public Service Electric and Gas (New Jersey)		Tucson Electric Power
SaskPower		Westar Energy
Southern California Edison		
Tucson Electric Power		
Westar Energy (Kansas)		

4
 5 **Performance Metrics**

6
 7 Navigant and First Quartile proposed four major groupings of metrics, and these remained the
 8 same throughout the Study. The first three of these were performance metrics, and the fourth is
 9 better defined as a “practice” metric. The four major groupings were the following:

- 10
 11
- 12 • Cost
 - 13 • Reliability
 - 14 • Safety
 - 15 • Staffing

Witness: Oded Hubert

- 1 i. [p. 31] For each of the recommendations on Figure 32, please provide details of the
2 information arising out of the benchmarking analysis that caused the experts to make the
3 recommendation, and how the recommendation and the data are linked or related.
4
- 5 j. [p. 33] Please confirm that Figure 33 provides 20-14 data for each company. Please
6 reproduce Figure 33 with two more columns, one for total transmission revenue for 2014,
7 and one for weighted average age of assets. Please provide the revised Figure 33, with
8 existing and additional information requested, in Excel format.
9
- 10 k. [p.33] Please provide a table showing the comparators proposed by parties during the
11 stakeholder process, and for each, either confirm that the comparator was included in the
12 final peer group or explain why it was not. Please provide a separate table showing a list of
13 the comparators that were added by the experts and were not proposed by parties during the
14 stakeholder process.
15
- 16 l. [p.35] Please reproduce Figure 36 indicating where Hydro One would be located on the chart
17 had it not been excluded.
18

19 **Response:**

- 20 a) The RFP has been filed as Attachment 1 to this response.
21
- 22 b) Since the gross asset value is used as a denominator any metric calculated using it would also
23 be equally affected by the selected numerator. Therefore, the stated presumption cannot be
24 confirmed.
25
- 26 c) The metrics referenced in the question were not used to compare the companies included in
27 the study.
28
- 29 d) The information filed with FERC is general accounting information according to specific
30 accounting guidelines issued by FERC. This accounting information does not constitute a
31 benchmarking study nor is it normalized by FERC.
32
- 33 e) The study prepared for Hydro One by Navigant did not include the weighted average age of
34 all transmission assets. The study did, however, include a look at the age of various assets in
35 terms of the percent installed by decade.

- 1 f) A specific calculation was not performed. The additional period of time that is needed to
2 replace older assets, absent a significant increase in capital funding, is driven by the much
3 higher cost of assets today than when the same assets were originally installed.
4
- 5 g) Refer to response to Exhibit I, Tab 3, Schedule 11, part b.
6
- 7 h) Study participants were asked to provide the number of full-time project managers.
8 Although specific job titles can vary between companies, participants understand that their
9 responses should include staff that is directly managing projects. The study did not include
10 an evaluation of the staffing costs associated with managing projects.
11
- 12 i) Each of the recommendations proposed in Figure 32 was generated by the experts and is
13 based on a balanced review of Hydro One costs and other operating performance factors as
14 well as by drawing on the deep experience of the experts. The intent of the recommendations
15 is to provide actions that can be taken to begin driving improvements in areas where Hydro
16 One might be lagging other companies and where the experts believe that there is reasonable
17 opportunity to realize improvement.
18
- 19 j) The data shown in Figure 33 is 2014 data. Transmission revenue was not reported as part of
20 the study. The study prepared for Hydro One by Navigant did not include the weighted
21 average age of all transmission assets. The study did, however, include a look at the age of
22 various assets in terms of the percent installed by decade.
23
- 24 k) The comparators proposed during the stakeholder process were each approached and invited
25 to participate in the study. The ones who agreed to participate by gathering and submitting
26 the required data are all represented in the report. Those that are not included in the study
27 chose not to participate by submitting data.
28

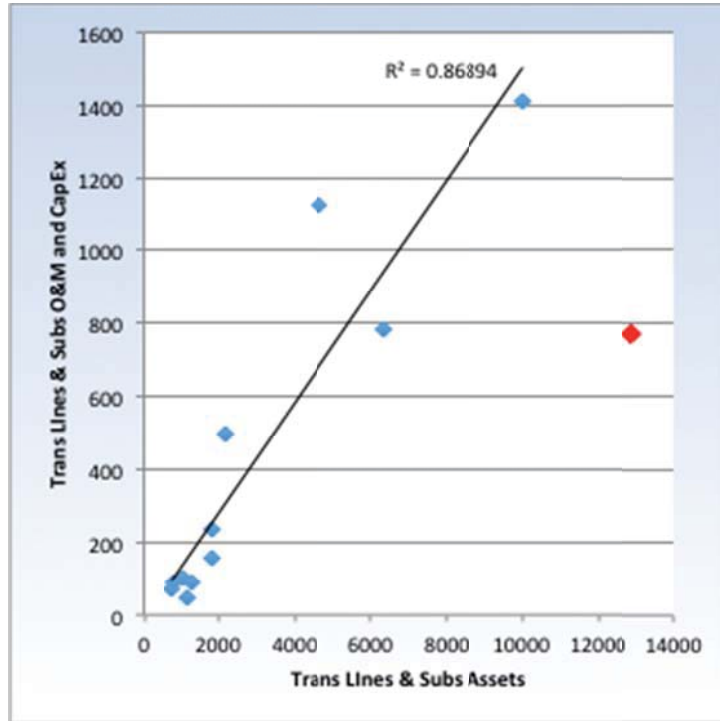
Proposed by Parties or by Experts	In Study?
Altalink	
BC Hydro	Yes
Canadian Utilities Limited (ATCO)	
Commonwealth Edison	Yes
Energie NB Power	
EPCOR Utilities Inc.	
Florida Power & Light	
Hydro Quebec	
Manitoba Hydro	Yes
National Grid	
New Brunswick Power	
Northeast Utilities	
Nova Scotia Power	
Pacific Gas & Electric	
SaskPower	
Southern California Edison	Yes
Xcel Energy	

1

Added by Experts	In Study?
Baltimore Gas & Electric	Yes
CenterPoint Energy	Yes
CPS Energy	Yes
East Kentucky Power Cooperative	Yes
KCP&L	Yes
Oncor Electric Delivery	Yes
PECO Energy	Yes
PPL Electric Utilities	Yes
Public Service Electric & Gas	Yes
Tucson Electric	Yes
Westar Energy	Yes

2

- 1 l) The chart has been reproduced with Hydro One placed on it.
- 2



3

1 **School Energy Coalition (SEC) INTERROGATORY #045**

2
3 **Reference:**

4 B2/2/1, Attachment 3, p. 18 and Attachment 4, p. 54

5
6 **Interrogatory:**

7 Please confirm that the best practices goal was not included in the Settlement Agreement. Please
8 confirm that the “balanced panel” was used in order to deliver best practices information. Please
9 confirm that a “homogeneous panel” is the optimal approach when selecting a peer group for
10 benchmarking purposes.

11
12 **Response:**

13 It is confirmed that the best practices goal was not included in the Settlement Agreement.

14
15 A balanced pool was used for the transmission study. A balanced pool offers a variety of
16 companies with some similar characteristics, and some differences. A balanced pool includes
17 companies with many different characteristics, which provides a broader range of operating
18 practices that can be used to determine the drivers affecting the overall performance of a
19 company as well as to generate best practices which can be leveraged by other companies. The
20 experts have not suggested that a “homogeneous panel” is the optimal approach when selecting a
21 peer group for benchmarking purposes.

how does that help to inform the efficacy. We have this data already showing sustaining versus total growth and we'll make sure that it shows up in the final report. We also looked at O&M plus the sustaining capital and we determined it did not shift our conclusions. This data will also be available in the final report.

- **You mention a couple of times the economy of scale versus size. You show that Hydro One is the biggest utility and is one of the most efficient. Are you saying that the economy of scale is not a factor here because they are all big enough?** *The short answer is that the economy of scale is set so that all the utilities are big enough. Economies of scale do exist, but there are a number of factors that impact overall performance. In the work we have done around this over the years we have not found that the bigger utilities are more efficient than smaller ones.*
- **How consistent are amortization rates across utilities, generally?** *We have not looked at this in great detail.*
- **Is there evidence of significant differences in the accounting practices around depreciation rates?** *This is not something that we studied in detail, for the few we have looked at they are within a reasonable range.*

System Age

- **How did you determine age of the system?** *We looked at the big buckets of assets, poles, cables, transformers, towers, etc. and we looked at when they were installed.*
- **Do you have age data for the individual utilities?** *Yes, for all the companies that provided age data. The ones that did not provide this data are not included in the chart.*
- **If you have two utilities with similar, but not the same depreciation rates, would the book value versus the total value of assets ratio provide you with an age of the system?** *Possibly. It could be meaningful if the depreciation rates were the same, if not then it would not.*
- **Would there be any value in showing age based on book value versus gross value?** *We have used this in other studies and it gives you a proxy for the age of the assets. We can look to see if we have this data and present it in the final report.*

Total Cost Approach

- **For your total cost you have done CAPEX plus OM&A, of the benchmarking studies that I have seen on the distribution side it is usually OM&A plus depreciation, why have you done CAPEX plus OM&A?** *Historically, we've looked at a straight CAPEX and OPEX, this is the way that our participants in our benchmark studies have asked us to do it. To your point, a look at a depreciation rate would be tighter with how rates are set, we're trying to look at costs of operations not how they are translated to rates. If you are looking at numbers of multiple jurisdictions, then the depreciation plus cost of capital method you can run into some challenges. You are either using individual values for each jurisdiction in which case you are now taking into account not just the cost structure of the utilities but also the regulatory regime and the cost recovery mechanisms within each jurisdiction, which could vary. If you use the same depreciation schedule and the same, cost structure then you get to the same answer and you just get a smaller CAPEX number.*
- **I'm not sure your conclusion is right because depreciation can start taking account of historical spending and CAPEX is the current. As you indicated, CAPEX is going down but you get a bigger number and you compare the magnitude of CAPEX versus the operating expenses yearly. CAPEX is a bigger number, therefore if you define your CAPEX as growth or non-growth related you would say the utility is very efficient because it didn't spend money over the last few years. If you use the historical depreciation that includes all the years you have data for.**

- **Do you collect depreciation for the utilities in your panel?** *This something that we do not generally collect. We have total depreciation, the net book value but we do not track annual depreciation.*

Measuring Efficiencies

- **When you are looking at total dollars spent, unless you know units of work, it conceals as much as it reveals. For example, if a utility is spending half as much as another utility but only doing 10% of the work they are not more efficient. Is there a measurable way you can get at this in a meaningful way?** *At the highest level we looked at this through the replacement rates of poles and transformers.*
- **Have you integrated replacement rates with total dollars spent to determine overall efficiency of spend?** *Not for this study but we have started gathering data to be able to do this.*

Data Inclusion and Exclusion

- **What is not included in the data you are using?** *When you look at the total OM&A and the CAPEX the only thing that is not included is the line item customer care. This is not included because US utilities measure customer care separately. Customer care only represents 5 to 10 million Hydro One's transmission business, which is a relatively small line item. When we start to break down into direct O&M and direct transmission we are removing the corporate and common costs as well as some of the costs that are allocated to CAPEX.*
- **Are pension and other benefits included?** *When we are looking at OM&A pension is included, when we are looking at O&M it is not included because it is part of administration costs.*
- **Are you able to show the ratio for CAPEX over depreciation?** *We were not able to do this for this study because of a lack of data. We do not have the annual appreciation data. We will go back and look at the data we have to see if there is anything we can add regarding this.*
- **When calculating the median is Hydro One excluded?** *Yes, Hydro One is excluded.*
- **Is the median weighted by the size of the utility or is it a simple average?** *For this study it is a simple average. Based on work we have done in previous studies we have found that there isn't a significant difference in the aggregate. We also account for this by normalizing for gross assets.*

End-customer Cost

- **One of the outputs with respect to costs is how they translate to the actual costs customers pay; have you ever done benchmarking in terms of whether it is a percentage of the total transmission amounts?** *For this study we did not look at this metric specifically.*

Peer Group Selection & Comparisons

- **When picking peer groups for your sample, how did you test to ensure your sample did include a bias, e.g. every company is either low cost or high cost?** *We did a comparison against the entire FERC population to see if our group, on aggregate, is higher or lower on average costs against the whole panel. We also did statistical testing around the means between the two panels and our subset is slightly higher cost than the average of the FERC population. We also found that where Hydro One sits next to the FERC panel does not materially change the outcome. This will be explained in the final report.*
- **Are you comparing the US peer group versus the FERC or all the utilities you have in your panel?** *We are comparing our entire panel against the FERC panel. We haven't looked to see if you drop the*

1 **School Energy Coalition (SEC) INTERROGATORY #047**

2
3 **Reference:**

4 B2/2/1, Attachment 4, p. 5

5
6 **Interrogatory:**

7 Please provide all studies in the possession of the experts supporting their opinion that
8 transmission companies do not have economies of scale past a certain size, and supporting their
9 opinion that all the comparators in this study are larger than that threshold size.

10
11 **Response:**

12 The studies completed by the experts for their clients are confidential and were not provided to
13 Hydro One as part of this study.

1 *Association of Major Power Consumers in Ontario (AMPCO)*
2 *INTERROGATORY #064*

3
4 *Reference:*

5 B2/2/1 Attachment 1
6

7 *Interrogatory:*

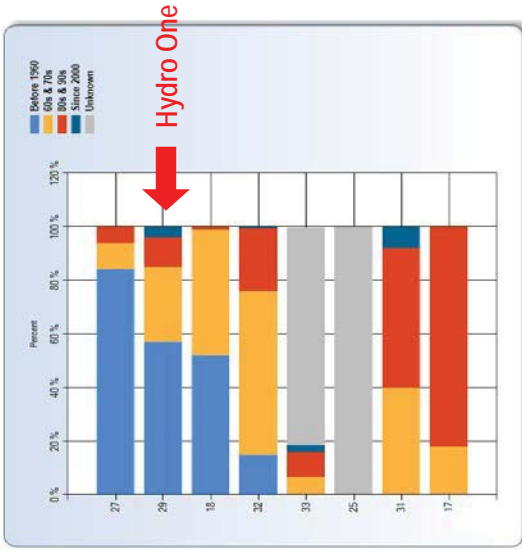
8 Preamble: Hydro One has, in all its rate hearings, repeatedly suggested that sustainment CAPEX
9 and OM&A needs are significantly driven by asset condition considerations and that
10 furthermore, asset condition is substantially driven by age.
11

12 a) In this study, did Navigant compare the relative ages of the assets in the peer group?
13

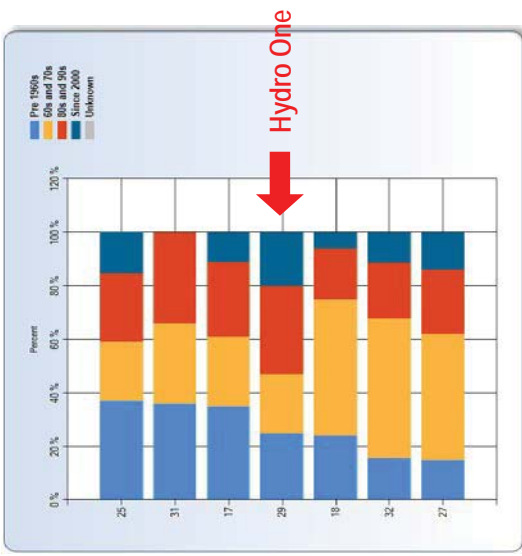
14 *Response:*

15 a) Although a direct comparison of asset age was not performed, the study did include a look at
16 the age of various assets in terms of the percent installed by decade.

Transmission Towers



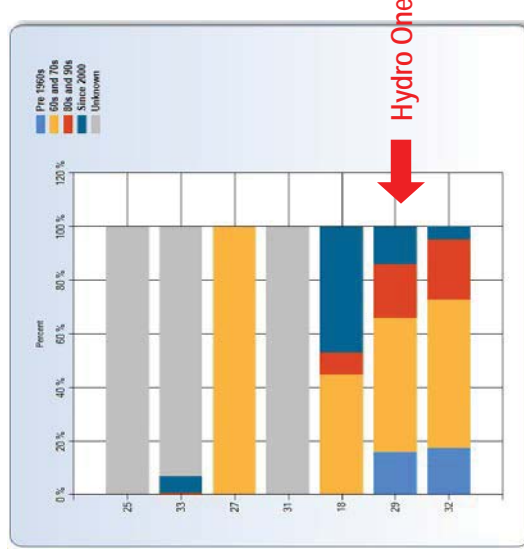
Transmission Wood Poles



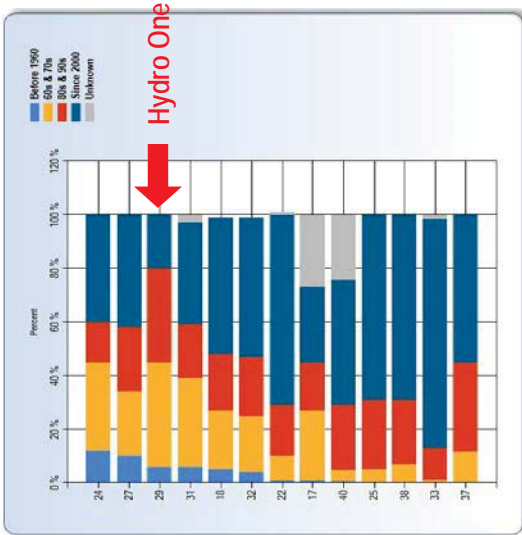
>> Hydro One's transmission towers are amongst the oldest in the peer group (~60% installed before 1960)

>> The age of Hydro One's transmission cable and transmission wood poles are closer to the median

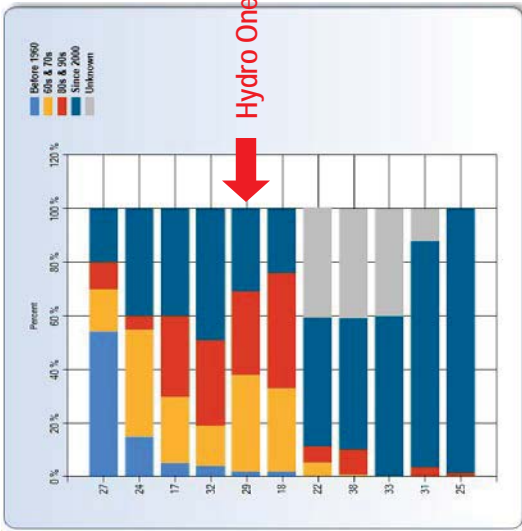
Transmission Cable



Circuit Breakers



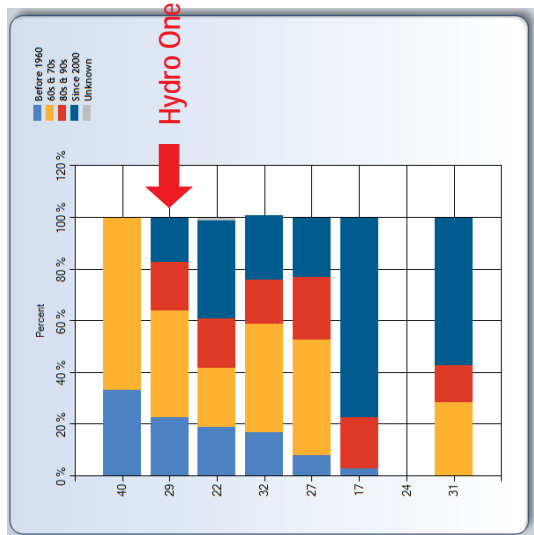
Relays



» Similarly, Hydro One's circuit breakers and power transformers are amongst the oldest in the peer group

- Approximately 45% of circuit breakers and 60% of power transformers were installed before 1970 (45 years ago)

Power Transformers



Ontario Energy Board (Board Staff) INTERROGATORY #104

Reference:

Exhibit B2/Tab 2/Sch1, p. 4

Table 1 provides the 8 best practice recommendations from the Transmission Cost Benchmarking Study and indicates the section of the evidence where the recommendations are addressed.

Interrogatory:

Please provide an expanded table which includes the specific actions taken by Hydro One in addressing each best practice, the specific evidence reference (exhibit/tab/schedule/page) and an estimate or target of the \$ impact of the action taken.

Response:

Best Practice Recommendation	Impact	Exhibit	Actions
Reassess and adjust performance indicators across all levels of the organisation	Reduce costs, improve performance, build culture of continuous improvement	Cost Efficiency, Productivity and Key Performance Indicators B2-01-01, section 3.0, page 3 and section 5.0, page 7	Hydro One reviewed the applications of other utilities and has tried to leverage best practices in terms of KPI selection. Significant focus was placed on selecting KPIs which appropriately measure productivity in the deployment of capital and execution of operations, maintenance and administrative activities, in order to evaluate cost efficiency progress and the delivery of increasing customer value. As part of the scorecard development process, Hydro One took the opportunity to re-evaluate the use of KPIs in measuring performance across the organization and to develop more robust KPIs to facilitate performance management. Hydro One will continue to develop a performance management system in which KPIs for the lines of business are aligned with the OEB scorecard and business objectives, to actively drive cost reductions and productivity improvement.

Best Practice Recommendation	Impact	Exhibit	Actions
Continue building on use of external resources for engineering, to create a pipeline of construction-ready projects	Reduced underspend, improved schedule performance	Work Execution Strategy – Capital B1-04-01, section 5.5, pages 12 and 13	The portion of the engineering portfolio completed externally has continued to grow over recent years, from roughly 14% in 2012 to roughly 25% in 2015. This has assisted in advancing engineering deliverables earlier in the project lifecycle to create an intentional backlog of construction-ready projects.
Manage the contingency budgets at the portfolio / corporate level	Frees funds for other priority investment opportunities	Work Execution Strategy – Capital B1-04-01, section 7.2.4, page 20	In assessing this recommendation, Hydro One is developing the tools necessary to analyze and manage contingency dollars at a portfolio level. Senior management discretion will determine the size of the contingency pool available to line managers and the establishment of a management reserve to enable strategic decision making.
Target a corrective maintenance spend that is ~25% of total corrective and preventative	Eventually anticipate better (lower cost) results if more is preventative than corrective.	O&M Work Execution Strategy C1-02-06, section 3.1.3, page 8 and section 3.2.3, page 11	<p>Hydro One is aware of Transmission Total Cost Benchmarking Study recommendation with respect to ratio of corrective maintenance to total maintenance. At present time we are going through a process of rationalizing this target considering our system design philosophy and demographics of our asset base (which has been noted in the quoted Benchmarking Study).</p> <p>However, Hydro One is actively working on decreasing its corrective maintenance spend in stations. Initiatives include:</p> <ul style="list-style-type: none"> • A new integrated planning and scheduling tool will facilitate more preventative work being completed in a timely manner to reduce the amount of corrective maintenance; • A decrease in corrective maintenance will also be realized with the replacement of assets in poor condition through the sustainment capital program; • Asset Management staff are working towards identifying the criteria for opting to replace equipment that has high maintenance costs through a more in-depth detailed analysis; <p>Investment in a new integrated planning and scheduling tool will also assist in preventative maintenance being performed in a timely manner which should also reduce</p>

Best Practice Recommendation	Impact	Exhibit	Actions
			corrective maintenance costs.
Work to reduce administrative costs	Eventually identify opportunities for cost reduction	Cost Efficiency, Productivity and Key Performance Indicators B2-01-01, section 10.2	Hydro One is currently investigating areas of opportunity to reduce administrative costs. The Procurement initiatives are part of this strategy along with IT initiatives to automate some reporting. Hydro One is also reviewing legacy processes of storing and backing up files and documents.
Allocate project management resources to improve effectiveness	Improve project cost and schedule performance	Capital Work Execution Strategy B1-04-01, section 7.1, page 18	Several organizational re-alignments have occurred to improve lateral integration throughout the capital project process, providing increased visibility for the management team to identify potential efficiencies. Examples include: Engineering resources have been consolidated into a single division; reallocation of Project Management resources to provide optimal support for projects; and Project Managers and Project Schedulers have been re-assigned to projects based on geographical zones rather than project magnitude and complexity.
Formalise a rolling two year capital budget and project portfolio and reporting framework, including projected earned value analysis	Provide the flexibility needed to reschedule projects within a two-year rolling window; improves ability to achieve planned annual investments	Capital Work Execution Strategy B1-04-01, section 7.2.1, page 19	As recommended in the Transmission Total Cost Benchmarking Study, Hydro One is working to formalise a rolling two-year capital budget and project portfolio with a reporting framework that includes parameters, authorizations and associated key performance indicators to promote continuous improvement.
Refresh formal driver training program	Reinforces driver safety and provides employees with focused behind-the-wheel training	Transmission Business Performance B1-01-03, section 3.2.2.2, page 9	Defensive driving and driver safety program training programs are being revised in 2016 and delivered to staff.

1 MR. NETTLETON: Mr. Millar, one other thing, too, is I
2 would point out that some of the costs that you were
3 referring the witnesses to had been updated in Exhibit I-4-
4 12.

5 MR. MILLAR: Okay. Thank you. Switching gears, I
6 think I can fit one more thing in here before the break.
7 Can we turn to page 22, please?

8 This is one of the pages from your proposed scorecard;
9 is that correct?

10 MR. VELLS: Apologies, I am on the wrong page. Did you
11 say --

12 MR. MILLAR: Sorry, page 22 of the Staff compendium.
13 Yes, right there. It should be on your screen.

14 MR. VELLS: Thank you.

15 MR. MILLAR: And you will see there is the proposed
16 cost control metrics that you have identified there.

17 MR. VELLS: Yes.

18 MR. MILLAR: And I wanted to ask you about those. I
19 suppose one of the purposes, at least as I see it, of the
20 scorecard is it's kind of an easy way for people to have a
21 quick overview of the company and how it's doing. Would
22 you accept that?

23 MR. VELLS: Yes.

24 MR. MILLAR: Okay. If I am a typical Hydro One
25 transmission customer, how helpful are these cost control
26 metrics to me in assessing how you are doing?

27 Just take the middle one, sustainment capital for
28 gross fixed assets. You and I would probably agree that's

1 an interesting and a useful measure, but if we are trying
2 to communicate to typical ratepayers, is that something
3 that is likely going to mean a lot of them?

4 MR. VELLS: By its nature, and given the size and
5 complexity of the company, top-level metrics are difficult
6 -- it's difficult to understand the moving parts on any of
7 them; I absolutely accept that.

8 These particular cost control metrics were recommended
9 to us by Navigant, who are the experts that looked at our -
10 - and made recommendations on our KPIs and conducted the
11 benchmarking study.

12 So it does -- over time, our ability to reduce costs
13 would be reflected in these metrics. But, to your point,
14 they are very high level.

15 MR. MILLAR: So could I ask you to go back to page 19
16 of the compendium? And this is Board Staff 91.

17 In this interrogatory, Staff proposed a couple of
18 metrics that you could consider. One is dollars per
19 megawatt hour, the other being a capacity measure, dollars
20 per megawatt, and you were unenthusiastic to those ideas.

21 If you look to your response, for example at line 15:

22 "Costs based on unit volume do not account for
23 differences in the geography, topography,
24 customer density."

25 Et cetera.

26 And, first, I didn't quite follow that. Transmission
27 is charged -- the UTR, the "U" stands for uniform. What
28 difference do geography, topography, density make in that

1 context?

2 MR. VELLS: I think this question might have been
3 better answered by Mr. Penstone. I think it was yesterday
4 when he noted that, regardless of changes in our unit
5 volume, our fixed costs really don't change very much, and,
6 as such, it's not a metric that would be comparable for
7 period over period.

8 MR. HUBERT: Mr. Millar, sorry. If I could add to
9 that, I think the particular reference here to geography
10 and those other demographic type elements is with the
11 intention of being able to use the scorecard for
12 comparability to other entities. So similar to the way the
13 distribution scorecard is used to compare among
14 distributors, at some point we would want to use these
15 metrics to compare among other transmitters. Therefore, we
16 think the per megawatt hour or per megawatt metric is not
17 as informative as an asset-based one.

18 MR. MILLAR: Okay. But distributors have these
19 scorecards, and they obviously have different geography,
20 different density and -- they probably don't like it, but
21 they have some measures where they probably think they are
22 treated unfairly.

23 MR. HUBERT: I think you may meet some distributors
24 who feel that way, yes. We are trying to be as objective
25 as possible in terms of a proposed transmitter scorecard
26 for the Board's consideration here.

27 MR. MILLAR: And, in your view, that makes both the
28 megawatt hour and the dollar per megawatt measure

1 unhelpful?

2 MR. HUBERT: I would say less desirable than the gross
3 book value one, in our view, yes.

4 MR. MILLAR: Okay. You know, I think rather than
5 belabour this point, we have your answers on that. So we
6 will see where we go with our argument, but I think I
7 understand your position on it.

8 MR. HUBERT: It really is a proposed scorecard exactly
9 for the sake of it being evaluated, and even by Hydro One
10 as it evolves over time.

11 MR. MILLAR: Mr. Chair, would this be an appropriate
12 time for a break?

13 MR. QUESNELLE: Sure. Why don't we do that? Thank
14 you, Mr. Millar. Let's resume at 3:50. Thank you.

15 --- Upon recess at 3:29 p.m.

16 --- On resuming at 3:54 p.m.

17 MR. QUESNELLE: Please be seated. Thank you.

18 Okay. Maybe just before we get started, we will talk
19 about logistics, what our expectations are for the rest of
20 the day, before you start up again, Mr. Millar, if we can
21 do that.

22 Mr. Nettleton, any...

23 MR. NETTLETON: I can inform you that Mr. Buckstaff is
24 enjoying a turkey dinner south of the border, and he has
25 confirmed, though, that his schedule is such that he has to
26 be in Dallas on Tuesday, and so my concern is whether or
27 not Navigant would be -- whether it would be best to ensure
28 that Navigant is available from the beginning of the day on

Table 1: Proposed Transmission Scorecard

RRFE Principle	Category	Metric	Definition
Customer Focus	Service Quality	Satisfaction with Outage Planning Procedures	% satisfied in OGCC survey
	Customer Satisfaction	Customer Delivery Point Performance Standards Outliers (as % of total delivery points)	% of total delivery points designated as outliers
		Overall % satisfied in corporate survey	Transmission customers (Industrial, Generators, LDC) only
		# of recordable incidents per 200,000 hours	Average # of incidents per 200K hours
Operational Effectiveness	Safety	Average # of sustained interruptions per delivery point	T-SAIFI-S
		Average # of momentary interruptions per delivery point	T-SAIFI-M
		Average minutes that power to a delivery point is interrupted	T-SAIDI
	System Reliability	System unavailability (%)	% of system not available for use
		Unsupplied energy (minutes.)	Unsupplied MW-minutes/Peak MW
		In-service additions as % of OEB-approved plan	\$ ISA as percentage of Planned \$ Amounts
		Capital Expenditures as % of Budget	\$ Capital Expenditures as % of Budgeted \$ Capital Expenditures
	Asset Management	OM&A and Capital Expenditures/Gross fixed asset value	OM&A and Capital Expenditures/ Gross fixed assets
		Sustainment capital /Gross fixed asset value	Sustainment Capital Expenditures/ Gross fixed assets
		OM&A/Gross fixed asset value	OM&A/ Gross fixed assets
Cost Control	% of new connection impact assessments completed on time	Total assessments completed within expected time/Total connections requested	
	NERC & NPCC Standards Compliance – High impact issues	# of high impact compliance violations as defined by NERC/NPCC	
Policy Response	Renewables		
	Regulatory Compliance		

Witness: Michael Vels

	NERC & NPCC Standards Compliance – Medium/low impact issues	# of medium/low impact compliance violations as defined by NERC/NPCC
Regional Infrastructure	Regional Infrastructure Planning progress	% Deliverables met / Total deliverables expected
Leverage	Debt to Equity Ratio	Debt (including Short & Long Term)/Equity
Liquidity	Current Ratio	Current Assets/Current Liabilities
Financial Performance	Return on Equity (deemed)	Included in rates
	Return on Equity (achieved)	Actual return on equity

Witness: Michael Vels

Table 2: Tier 2 and Tier 3 Metrics

1
2

Performance Categories	Scorecard Metric	Preliminary Tier 2 Metrics	Preliminary Tier 3 Metrics
Service Quality	% Satisfaction with Outage Planning Procedures	% of outages cancelled Planned outages per Delivery Point	
	Overall % satisfied in customer survey		Customer satisfaction with Price (%) Customer Satisfaction with Relationship (%) Product Quality / Reliability Satisfaction (%) Customer Service
Safety	Recordable Incidents per 200,000 hours	OGCC Transmission Customer Satisfaction (%) Recordable Motor Vehicle Accidents (#1,000,000 km driven)	
	System Reliability	T-SAIFI	Interruption frequency for multi-circuit delivery points Interruption frequency for single-circuit delivery points
T-SAIDI		Interruption minutes for multi-circuit delivery points Interruption minutes per single circuit delivery point	
System Unavailability		Lines Unavailability Stations Unavailability	% of Forced outages caused by equipment type

Witness: Michael Vels

Asset Management	In-service Additions as % of OEB-approved plan	% of budgeted work completed on or ahead of schedule Km of line refurbished versus plan Number of transformers replaced versus plan Number of breakers replaced versus plan
	Capital Expenditures as % of budget	ECS Capital Expenditures/Project Management FTE Engineering Costs/ECS Capital \$ ECS CapEx/Construction FTE
Performance Categories	Scorecard Metric	Preliminary Tier 2 Metrics Supply Chain Value Realization % (Ratio of supply chain savings to procurement operations cost) Preliminary Tier 3 Metrics Sum of discounts and savings from strategic sourcing (\$) Sum of Costs of procurement operations (\$) Sum of revenues and savings from real estate initiatives (\$) Sum of costs of real estate operations (\$)
	Total Capital and OM&A/Gross Fixed Assets	Facilities & Real Estate value realization (Ratio of facility savings and revenues to real estate operations cost) Overhead as % of net Capital Expenditures Administrative Costs as % of OM&A & Capital Expenditures Actual costs versus estimated costs for completed capital projects (%) Fleet utilization (%) Transmission Wood Structure Condition Assessment (\$/pole) Transmission Wood Structure Replacement (\$/structure) Transmission Brush Control Cost per Hectares (\$/hectare) Transmission Line Clearing Cost per Km (\$/Km) Cost per 115kV Tower Coated (\$/tower) Cost per 230kV Tower Coated (\$/tower) Cost per Transmission Cable Locate (\$/locate, network operating only)
Cost Control	Sustainment Capital/Gross Fixed Assets	Lines RCE Stations RCE
	OM&A/Gross Fixed Asset Values	Ratio of unplanned work to planned work

Witness: Michael Vels

1 **Energy Probe INTERROGATORY #012**

2
3 **Reference:**

4 Exhibit B2 Tab 1 Schedule 1 Pages 18-20 Table 4 and Figures 5 and 6

5
6 **Interrogatory:**

- 7 a) Please Indicate the period when and areas where the RCE Metric has been/is used in the TX
8 Business--is it used by NERC, FERC and other Regulators in the US and Canada? Please
9 clarify and provide details.
- 10
11 b) Why has HO now decided to use RCE for Regulatory reporting? Has the OEB approved use
12 of the RCE as an appropriate Metric?
- 13
14 c) How does the RCE Metric compare to other Metrics HO TX is now using, including those
15 encompassed in the TX Scorecard.
- 16
17 d) With regard to the RCE formula, why is Gross Assets used, rather than Net/Book Value of
18 the TX Assets? Discuss why Assets placed in service many years ago will be lower in
19 original cost than recent assets and why net assets (cost less accumulated depreciation) would
20 not be an appropriate numerator. See Report Page 10 B2-1-1 in formulating your response.
- 21
22 e) With regard to the TX Total Cost Benchmarking Study, are RCE Metrics provided for the
23 peer group? If so, please provide references and a summary of the data.
- 24
25 f) If not, please request the Consultants to provide the available RCE data and explanatory
26 notes.
- 27
28 g) In addition, regardless of the availability of RCE metrics, please request the Consultants to
29 provide an expert opinion on the merits of RCE Metrics in conjunction with other TX
30 Metrics.

31
32 **Response:**

- 33 a) Please see answer to Exhibit I, Tab 3, Schedule 61, part a). Hydro One is not aware of
34 whether this metric and formula have been presented to a regulatory body before this filing.
- 35
36 b) Hydro One believes that this metric is a useful measure of key data points that are relevant to
37 the assessment of its performance. The reduction of unplanned outages and maintenance

Witness: Michael Vels

1 costs on Hydro One assets are key objectives to running an efficient and reliable transmission
2 utility. The RCE allows external stakeholders a transparent view of the trend between these
3 data points.

4
5 As this is the first time the OEB has viewed this metric they have not yet provided
6 comments.

- 7
8 c) The RCE metric is a relational metric and is meant to measure the relationship between three
9 high level data points over time. The metric focuses on the investment in system assets as
10 well as the efficiency of the maintenance program in order to produce the outcome of
11 reducing unplanned outages. It is through reducing unplanned outages that Hydro One is
12 providing value for the customer for its maintenance and capital spending.

13
14 The RCE is the first relational metric that Hydro One has implemented, whereas the other
15 scorecard metrics are based on trends and lower level operational metrics such as cost per
16 unit.

- 17
18 d) Gross assets are used as even if an asset has been fully depreciated it will still require
19 maintenance and have the potential to cause an unplanned outage. As a result, by using net
20 assets there would be many assets that would be impacting only two of the three data points,
21 making the comparison between all three data points less correlated and less accurate.

22
23 By using net assets instead of gross assets, a transmitter would also be motivated to replace
24 any asset that has been fully depreciated rather than making smart investments in replacing
25 only assets that are causing unplanned outages. Tracking the RCE metric through gross
26 assets aligns Hydro One's interests to those of the rate payer.

- 27
28 e) The RCE metrics are not included in the Transmission Total Cost Benchmarking Study.
29
30 f) The RCE metric and any comparison to other utilities are outside of the scope of the
31 Transmission Total Cost Benchmarking study.
32
33 g) This request is outside of the scope of the Transmission Total Cost Benchmarking Study.

1 our work program.

2 So we are focused on a plus/minus tolerance, as
3 opposed to how far you can or how much less you can drive
4 your project. And the reason for that is accuracy in
5 engineering and accuracy in estimates, and the ability of
6 our company to better understand what it's going to cost to
7 put a capital program in and when is an improvement that in
8 fact we are driving and is a big part of our capital
9 efficiency project that we -- that we completed earlier
10 this year.

11 MR. JANIGAN: Okay. I believe you had a conversation
12 with one of my friends concerning the metric called RCE.
13 And it would appear on page 27 that -- and the page 29,
14 where it sets out Table 4, that this seems to be a metric
15 that you seem to be doing fairly well on. Am I correct?

16 MR. VELLS: Yes, that's right.

17 MR. JANIGAN: And, however, this is not part of the
18 scorecard. I believe it was indicated earlier it was
19 because of the fact that the data set was relatively new?
20 Was that what I took from...

21 MR. VELLS: Yes, that's right, it's a metric that we
22 have developed that we think can inform us in terms of how
23 successful we are being on our maintenance programs to
24 avoid outages related to the size of the fixed asset base
25 that we are managing.

26 It is a metric that has been improving sequentially.
27 We believe that is mostly related to improvements in our
28 maintenance programs, but the point was made earlier today

1 that increases in gross fixed assets, for example, can
2 cause that metric to improve, and without necessarily a
3 direct correlation to our maintenance program.

4 So it is something that we are tracking, we are
5 investigating and measuring, and if we believe it does
6 drive appropriate behaviour, it is likely a metric that we
7 would recommend in the future.

8 MR. JANIGAN: I wonder if you could turn up page 34 of
9 my compendium. And this deals with a criticism that was
10 levelled against Hydro One by the 2015 Auditor General's
11 report, and the auditor notes that under the inaccurate
12 data in OEB funding requests that similarly noted the 24 or
13 43 transformer inaccurately reported in the 2015/2016 rate
14 application as having a low or very low risk of failure
15 were already scheduled to be replaced during this period.

16 Isn't this particular metric something that could be
17 used to get a better measure of -- and respond to the
18 criticism of the Auditor General?

19 MR. PENSTONE: Before Mr. Vels talks about the
20 applicability of the metric, the planning panel will
21 describe the circumstances behind the decisions that led to
22 investments being made as opposed to the ones that were
23 previously identified.

24 MR. JANIGAN: Yes. But let's put aside the merits of
25 the particular objection. It seems to me that the use of
26 this metric may be one way to deal with the particular
27 complaint. Am I right, or am I wrong?

28 MR. VELS: I think the only answer I can provide you

1 **School Energy Coalition (SEC) INTERROGATORY #048**

2
3 **Reference:**

4 B2/2/1, Attachment 4, p. 32

5
6 **Interrogatory:**

7 Please provide a table, in the same format as this table, showing administrative costs alone.

8
9 **Response:**

10 The chart shown on page 32 was provided to give a relative or benchmarked view of Hydro
11 One's costs compared to a very large group of companies. Although the administrative cost data
12 for all of these companies is not readily available, a reasonable estimate of the administrative
13 costs for each of the companies can be made by comparing the O&M and OM&A charts
14 provided on the referenced page.