B2 - POWER WORKERS' UNION INTERROGATORY - 001

Reference:

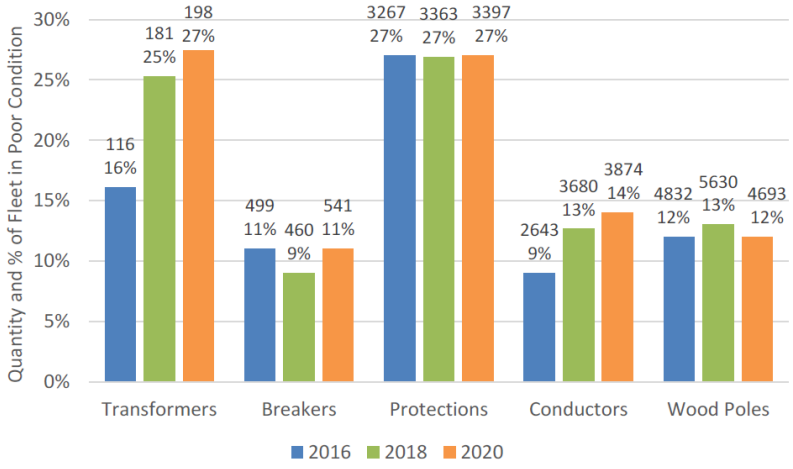
Exhibit B-2-1, TSP Section 2.1, Page 3

System Renewal investments have been reasonably paced to address assets that are in poor condition, have inadequate performance or are obsolete including 3.3% of the transformer fleet per year, 2.5% of the breaker fleet, 3.4% of the protection fleet per year, 1.1% of the conductor fleet per year, 3.3% of the insulator fleet per year, 2.7% of the wood pole fleet, and to coat 1.0% of the steel structure fleet per year to extend their useful life. Investments continue the replacement of obsolete and poor performing air-blast circuit breakers that are installed at critical network stations connecting hydroelectric and nuclear generators.

Exhibit B-2-1, TSP Section 2.3, Page 4

During the last five years, on average Hydro One replaced 2.1% of its wood poles annually. The comparator group mean was 2 .6%. Hydro One expects to replace 2.9% of its poles per year over the next five years compared to the comparator group mean of 2/2%/ Given the age and condition of Hydro One's wood poles, "a marginally higher replacement rate is expected"

Exhibit B-2-1, TSP Section 2.8, Page 14



Interrogatory:

a) Ref 1 indicates that Hydro One plans to replace 2.7% of the wood pole fleet per year whereas Ref 2 states Hydro One plans to replace 2.9% of its poles per year over the next five years. Please explain the discrepancy.

b) For each asset category listed in Ref 1, provide a chart that shows the number and share (%) in total asset that are in poor condition, inadequate performance and obsolete. For guidance, please use a chart similar to the following:

	Transformer		Breaker		Protection		Conductor		Insulator		Wood Poles	
	#	%	#	%	#	%	#	%	#	%	#	%
In Poor Condition*												
Inadequate Performance												
Obsolete												

c) For each asset category listed in Ref 1, please conform whether or not the indicated annual replacements are directed at addressing assets in poor condition only OR a combination of assets in poor condition, assets with poor/inadequate performance and assets that are obsolete.

d) For the most recent 5 years with historical and forecast data, please fill out the following chart

Asset	Share of assets in poor condition (Base Year)	Average Annual Replacement Rate of Assets in Poor Condition	Share of Assets in Poor Condition				
			Year 1	Year 2	Year 3	Year 4	Year 5
Transformers							
Breakers							
Protections							
Conductors							
Wood poles							

e) On best efforts basis, please fill out the chart below assuming that the proposed spending on replacements of assets in poor condition is approved by the Board

Share of Assets in Poor Condition Assuming Replacement Plans are Approved by the Board as proposed

		Expected Share of Assets in Poor Condition					
	Proposed Average Annual	2023	2024	2025	2026	2027	

	Replacement Rate											
		#	%	#	%	#	%	#	%	#	%	
Transformers												
Breakers												
Protections												
Conductors												
Wood Poles												

f) For each asset category above, and assuming the proposed plan is approved and the planned work is actually undertaken, please confirm whether the share of assets in poor condition at the end of 2027 will be higher or lower than the share of assets in poor condition at the end of 2022?

Response:

a) The wood pole replacement rate for 2023-2027 is 2.7%. Please see Interrogatory B2-Staff-059.

b) Please see the requested table below.

	Transformer		**Breaker**		**Protection**		**Conductor**		**Insulator**		**Wood Poles**	
	#	%	#	%	#	%	#	%	#	%	#	%
In Poor Condition[1]	198	27	541	11	3,397[2]	27	3,874	14	20,339	17	4,693	12
Inadequate Performance[1]	-	-	-	-	-	-	-	-	-	-	-	-
Obsolete[1]	-	-	2,228	47	5,669	45	464[3]	2	-	-	-	-

[1] Equipment that is in poor condition may also be performing inadequately. For example, damaged insulators are more prone to flashovers causing circuit outages. Obsolete equipment may also negatively affect performance. For example, obsolete equipment with no manufacturer support may take longer to replace/repair resulting in a longer unplanned outage.

[2] Please see Interrogatory B2-Staff-039 for further information regarding protection equipment replacements. For protections, poor condition represents protections beyond ESL. All protection equipment beyond ESL are also obsolete (i.e. poor condition is a subset of obsolete).

[3] All obsolete conductors are also in poor condition (i.e. obsolete is a subset of poor condition).

c) For each of the asset categories noted in the reference, the driver for replacement is as follows:

- Transformers: combination of condition, performance, and obsolescence
- Breakers: combination of condition, performance, and obsolescence
- Protection: combination of poor condition and obsolescence
- Conductor: combination of poor condition and obsolescence
- Insulators: poor condition
- Wood Poles: poor condition

d) Please see Interrogatory B2-AMPCO-024 and B2-SEC-067.

e) Hydro One does not forecast condition over time. The condition data presented in the TSP is taken as of December 31, 2020. The table below represents the total number of remaining assets both in poor condition and obsolete (using 2020 as the baseline). However, as discussed in part f) we expect to discover additional assets in poor condition every year.

Asset	Total Population	Share of assets in poor and obsolete condition (Base Year) (2020 Actual)	Average Annual Replacement Rate of Assets in Poor and Obsolete Condition (2021-2027)	Expected Share of Assets in Poor Condition at Year-end													
				Year 1 2021F		Year 2 2022F		Year 3 2023F		Year 4 2024F		Year 5 2025F		Year 6 2026F		Year 7 2027F	
				#	%	#	%	#	%	#	%	#	%	#	%	#	%
Transformers	721	198	3.2%	177	25%	158	22%									38	5%
Breakers	4756	2,769	2.7%	2,601	55%	2,471	52%									1,878	39%
Protections[1]	12,494	5,669	3.5%	5,148	41%	4,736	38%									2,639	21%
Conductors	28552	3,874	1.1%	3,856	14%	3,341	12%									1,770	6%
Wood Poles	40,041	4,693	2.7%	3,671	9%	2,647	7%									0	0%

[1] *Please see Interrogatory B2-Staff-039 for further information regarding protection equipment replacements.*

f) Hydro One does not forecast asset condition however over the 2023-2027 period new poor condition transmission assets will be identified through Hydro One's preventive maintenance and inspection programs described in Exhibit E-02-02.

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B2 - POWER WORKERS' UNION INTERROGATORY - 002

Reference:

Exhibit B-2-1, TSP Section 2.9, Page 6

Interrogatory:

2.9.2.2 SYSTEM RENEWAL

Table 3 - System Renewal

OEB Category	Historical (Previous Plan and Actual / Forecast)						Bridge		
	2020			2021			2022		
	OEB Approved	Actual	Variance	OEB Approved	Forecast	Variance	OEB Approved	Forecast	Variance
	$M	$M	%	$M	$M	%	$M	$M	%
System Renewal	810.1	804.0	-1%	982.8	739.6	-25%	958.2	971.5	1%

Over the 2020-22 period, System Renewal investments are forecasted to be approximately $236M (9%) below approved levels, however the variance reflects decreased expenditures due to productivity initiatives and other adjustments (e.g., OPEB, pension and compensation directive adjustments). The variance is primarily driven by redirections across OEB categories to accommodate emerging, mandatory system growth investments and required system upgrades as well as to enable improved business outcomes through General Plant investments. The redirections primarily account for $21M variance to System Access and a $53M variance to System Service and General Plant investment categories.

a) Please provide a list, if any, of System Renewal projects/work that have been cancelled, deferred or materially reduced as a result of the redirection of resources to System Access, System Service and General Plant categories.

Response:

As discussed in TSP Section 2.9 contributors to the variance include:

- Revised costs and timing for underground cable replacements in downtown Toronto, reflecting a lower total cost relative to the prior application resulting in decreased spending of $30M over 2020-2022;

- Bundling of transmission line refurbishment work coordinated with customer upgrades in northern Ontario, reflecting a comparable increase to System Access and decrease to System Renewal in 2022 (i.e. the $21M of redirection);

- Revised cost and timing of line refurbishment projects and lower spend for the transmission line component replacement program, including shieldwire and insulator replacements; and

- Refined maturity and pacing of station reinvestments, including investments to replace air blast circuit breakers at critical facilities interfacing with nuclear generators, such as Bruce A/B and Pickering resulting reduced expenditures in 2021.

Please refer to Interrogatory B2-SEC-094, Attachment 1 for details on the category level variances.

B3 - POWER WORKERS' UNION INTERROGATORY - 003

Reference:

Exhibit B-3-1, DSP Section 3.2, Page 7

Interrogatory:

The current average age of Hydro One's distribution transformer fleet is 39 years (Figure 2). Currently, 33% of the fleet are beyond their ESL of 50 years, and an additional 17% (if no capital replacements are undertaken) will reach or exceed their ESL by 2027, which would bring the total to 50%.

a) For the 2023-2027 plan period, please provide a chart showing the share of distribution transformer fleet that would be beyond their ESL under two scenarios:
   1. Planned replacements are undertaken as proposed, and

   2. No replacements are undertaken;

b) Assuming that the work plan anticipated in the application with respect to transformers replacement for 2023-2027 is actually undertaken, would the average age of transformers beyond ESL in 2027 be older or younger than the average age of transformers beyond ESL at the end of 2022? What are the average ages for each cohort at those two points in time?

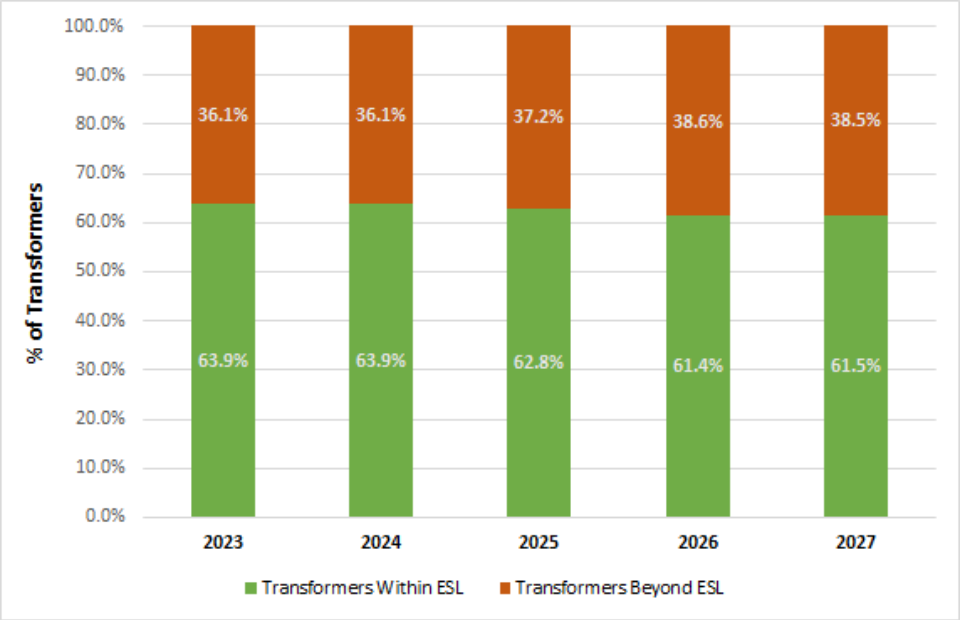
c) What additional funding in capital and OM&A would be required in order to execute a workplan which would result in:
   i. The total number of transformers beyond expected service life at the end of 2027 being no greater than the total number of transformers beyond expected service life at the end of 2022; and

   ii. The average age of transformers beyond expected service life at the end of 2027 being no older than the average age of transformers beyond expected service life at the end of 2022.

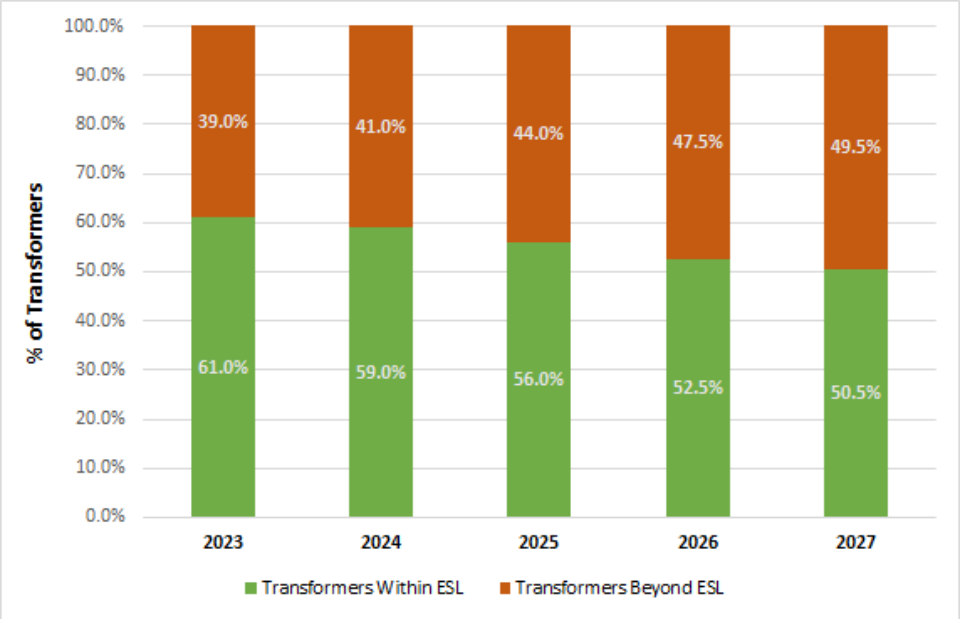
Response:

a)

1. The following graph represents the transformer fleet ESL demographics if planned replacements are undertaken as proposed:



2. The following graph represents the transformer fleet ESL demographics if no replacements are undertaken:



b) Assuming that the proposed work plan to replace transformers is implemented, the average age of the transformer fleet that is beyond their ESL in 2022 and 2027 would be 58.5 years and 58.3 years respectively. Therefore, the average age of transformers beyond ESL in 2027 would be approximately the same as the average age of transformers beyond ESL in 2022.

c)

i. Hydro One does not replace transformers solely to maintain a specific demographic parameter (such as total number of transformers beyond expected service life). In a hypothetical scenario where such an age-based replacement strategy is implemented ignoring condition data, Hydro One would need to replace approximately 32 transformers per year to maintain the same volume of transformers over the ESL in 2027 as in 2022. The specific solutions to replace the additional transformers has not been evaluated and therefore Hydro One cannot provide the incremental capital to address these transformers.

ii. If the proposed plan is implemented, the average age of transformers beyond their expected service life at the end of 2027 is 0.2 years less than the average age of transformers beyond expected service life at the end of 2022. No additional funding would be required.

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B3 - POWER WORKERS' UNION INTERROGATORY - 004

Reference:

Exhibit B-3-1, DSP Section 3.2, Page 8

Interrogatory:

Approximately 20% (237) of Hydro One's distribution station transformers fall into the poor condition category.

a) For each year since 2018 (5 years) prepare and provide a chart which provides (i) the average annual rate of replacement of transformers and the corresponding number and (ii) share of transformers in "poor" condition for the year;

b) What is the average annual rate of replacement being proposed for distribution station transformers in poor condition in the current application for the 2023-2027 Plan period?

c) At the proposed rate of replacement for the 2023-2027 period, please provide, on best effort basis, the number and share of transformers that would be in poor condition requiring replacement or corrective measure, assuming the proposed replacement plan is approved.

d) Assuming that the proposed capital spending for replacement is approved, would the share of transformers in poor condition at the end of 2027 be higher or lower than at the end of 2022?

Response:

a)

	Year	2018	2019	2020	2021 Q3	2022
(i)*	# of transformers replaced	20	15	12	15	0**
(ii)	Transformer population at year-end in poor condition	24%	28%	20%	25%	NA

**(i) includes unplanned (demand) transformer replacements due to failure*

***2022 Forecast does not include demand (unplanned) replacements.*

Note: The change in transformer population in poor condition from year to year is a factor of planned and unplanned replacements as well as corrective repairs.

b) The average annual rate of replacement being proposed for distribution station transformers in poor condition in the current application for the 2023-2027 Plan period is 23.6 transformers per year. From ISD D-SR-04, page 5 of 14. “This translates to 118 poor condition transformers over the 5 year period.”

c) Please see ISD D-SR-04, p.5 lines 18-20.

d) The percentage of poor condition transformers cannot be forecast on a yearly basis and is unknown for 2022. It is expected that the percentage of poor condition transformers at the end of 2027 will be approximately in line with the percentage of poor condition transformers in 2020.

B3 - POWER WORKERS' UNION INTERROGATORY - 005

Reference:

Exhibit B-3-1, DSP Section 3.2, Page 11

Interrogatory:

With planned replacements, Hydro One expects the number of Class 1 and Class 2 failures over the 2023 to 2027 planning period to be consistent with historical years. In the absence of planned replacements, the number of failures would significantly increase, and Hydro One would not have enough MUS to temporarily bypass the failed transformers and supply customers. Once the MUS fleet has been depleted, subsequent failures would result in customer interruptions, which would take more than 24 hours to restore load.

a) Given the criticality of transformers, and in particular of Class 1 failures, please explain why Hydro One is not proposing an accelerated replacement?

b) What would be the incremental capital (over and above the proposed spending) that would be required to replace all transformers in poor condition?

Response:

a) The methodology for the selection of investments that comprised the various investment plan levels is explained in Exhibit B-3-1, Section 3.7 - DSP – Investment Planning Process. This alternative was developed in response to the customer engagement results. The alternative is at a level between the accelerated and draft plans as residential customers favoured the accelerated pace, while commercial, industrial and LDA customers mainly supported the draft plan, see the IRG Report for additional details, Exhibit B-01-01, Section 1.6, Attachment 1, page 23.

b) Solutions to address the remaining poor condition transformers may include but are not limited to like-for–like transformer replacement, station refurbishment, corrective repair, replacement with a Padmount Distribution Station (PDS), station elimination/voltage conversion, and capacity right sizing. The specific alternatives to address the remaining transformers in poor condition have not been sufficiently evaluated and therefore Hydro One cannot provide the incremental capital to address these transformers.

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B3 - POWER WORKERS' UNION INTERROGATORY - 006

Reference:

Exhibit B-3-1, DSP Section 3.1, Page 4, Table 1

The reference indicates that the Pole Sustainment Program (D-SR-07) projects to replace 51,500 wood poles (66%) and refurbishing an additional 14,000 (18%) of poor condition wood poles.

Exhibit B-3-1, DSP Section 3.2, Page 4

The average age of poles is 40.2 years. There are currently 378,000 poles (23%) that are 60 years of age or older. Over the 2023 to 2027 planning period, the number of poles 60 years or older would increase to 500,000 poles (31%) in the absence of pole replacements.

Exhibit B-3-1, DSP Section 3.3, Attachment 1, Page 12

Figure 9 – Average Age of Distribution Wood Poles

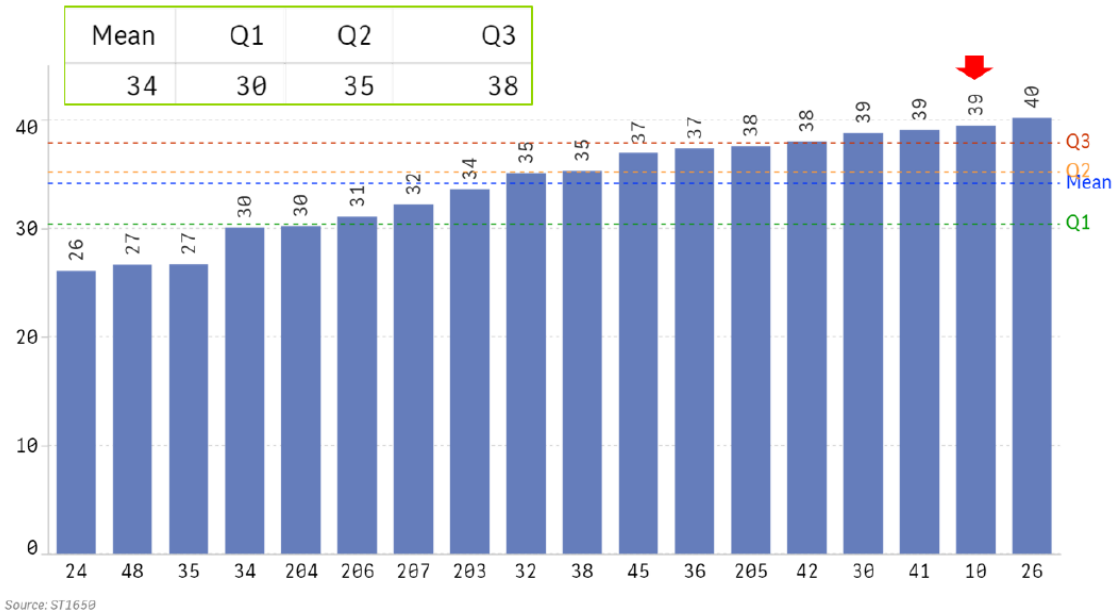


Exhibit B-3-1, DSP Section 3.3, Attachment 1, Page 17

A final observation is that the industry as represented by the comparator group appears to be replacing or refurbishing its poles at a rate that is insufficient to sustain it over the long term. The stated expected service life for wood poles for most utilities is an average of 47 years. The average wood pole is 34 years old, with many older than that, indicating that in 13 years, the average pole will reach its expected lifespan. The comparator utilities' actions are more consistent with an

expected 75-100 year lifespan for the average pole, yet it is clear to industry observers that achieving this lifespan is unlikely. The gap between the expected service life for poles and the current replacement rates is cause for concern for the industry.

Interrogatory:

a) Please confirm if the statement in Ref (1) means that 84% of would poles in poor condition (66,500 poles) will be replaced or refurbished under the Pole Sustainment Program;

b) Does the number of poles proposed for replacement or refurbishment include red pine poles? How many red pine poles are included?

c) In Ref (3) the ESL of a wood pole is stated as 47 years. Is that the ESL that Hydro One uses for planning purposes? If yes, what is the number and share of poles that are beyond their ESL?

d) What is the significance of "60 years" as a statistical benchmark in Ref (2) to describe the age profile of Hydro One distribution's wood poles?

e) Given that only 51, 500 wood poles that are in poor condition are planned for replacement, and that poles in poor condition don't necessarily include all poles that are 60 years or older, what is Hydro One's projection of wood poles 60 years or older by the end of the 2023-2027 Plan, assuming the Board approved the replacement program as proposed.

f) How many of Hydro One's wood poles are both:

   i. above the ESL of 47 years; and

   ii. categorized as being in better than "poor" condition?

g) Given that the average age of HONI's poles is the second highest within the comparison panel at 39 years (Ref (3)), compared to the group average of 34 years, does Hydro One believe its proposed rate of replacement would be enough to address the concern cited in Ref (4) in regard to the gap between the ESL for poles and the current replacement rates by the industry?

h) Prepare and provide a chart which provides the following information for each year of the last 5 years for which there is data:

i. The number of wooden poles beyond expected service life?
ii. The number and share (%) of wooden poles in "poor" condition;
iii. The average annual rate of replacement of poles in poor condition that was applied
iv. The number of poles replaced as part of a planned work program; and
v. The number of poles replaced outside of a planned work program.

i) For the 2023-2027 plan period, please provide a chart showing the number and share of wooden poles that would be in poor condition under two scenarios:

1. Planned replacements/refurbishments are undertaken as proposed, and

2. No replacements/refurbishments are undertaken

j) What additional funding in capital and OM&A would be required in order to execute a workplan which would result in:

i. The total number of poles beyond expected service life at the end of 2027 being no greater than the total number of poles beyond expected service life at the end of 2022; and

ii. The average age of poles beyond expected service life at the end of 2027 being no older than the average age of poles beyond expected service life at the end of 2022?

Response:

a) The statement indicates that a number of poles equal to 84% of the currently known poles in poor condition (66,500) will be replaced or refurbished during the planned period.

b) Yes, see B3-AMPCO-90 part c).

c) 47 years is the average ESL observed across all utilities in the benchmarking survey. Hydro One's ESL for distribution poles is 62 years. Hydro One does not use expected service life when planning the number of poles for replacement and refurbishment. Currently, the number of poles beyond ESL is 310,000 or approximately 20%.

d) 60 years is used for illustrative purposes and has no statistical significance. As filed in EB-2017-0049 Hydro One's expected service life for poles is 62 years.

e) Number of pole 60 years of age or older will be 457,000, assuming that the age profile of poles in poor condition remains the same throughout the plan and that poles replaced in other projects and programs are similar age profile to the current demographics which are aged annually.

f) Hydro One does not utilize ESL as a driver for replacement decision nor is Hydro One's ESL for wood poles 47 years.

1. There are 615,489 poles older than 47 years as of the end of 2020.

2. 578,319 of these poles are in good or fair condition.

g) The concern at reference 4 is a general observation on the industry. Hydro One's pole sustainment program will continue to focus on poles in poor condition.

h)

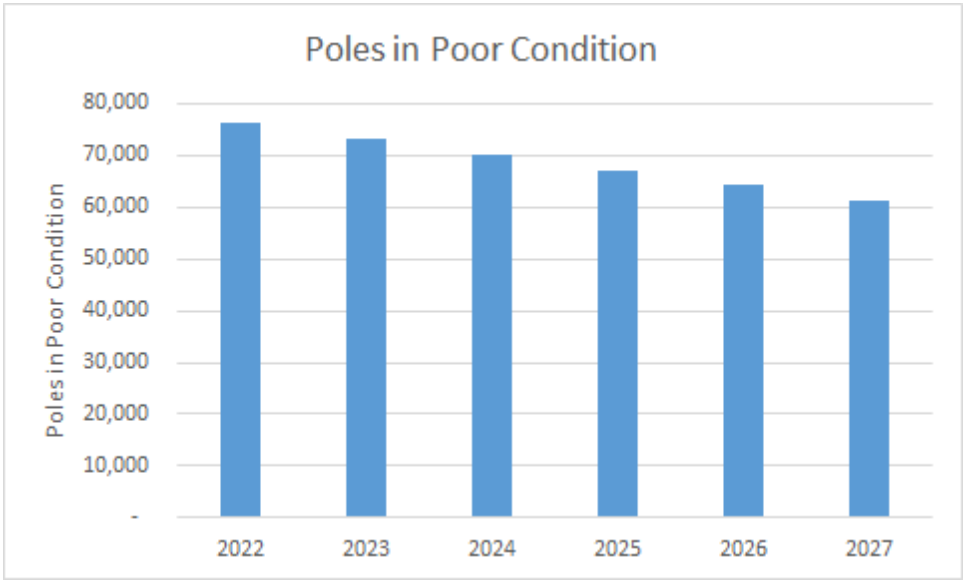
	2016	**2017**	**2018**	**2019**	**2020**
The number of poles beyond expected service life (ESL = 62 years)	222,812	246,778	273,234	289,434	311,395
The number and share (%) of poles in "poor" condition;	83,225 5%	94,291 6%	82,140 5%	79,200 5%	79,241 5%
The rate of replacement of poles in poor condition	0.8%	0.6%	0.4%	0.2%	0.3%
The number of poles replaced as part of a planned work program;*	12,299	9,654	5,982	3,984	4,519
The number of poles replaced outside of a planned work program.**	9,348	8,639	9,992	10,508	10,077

**Planned work program refers to the pole replacement program.*

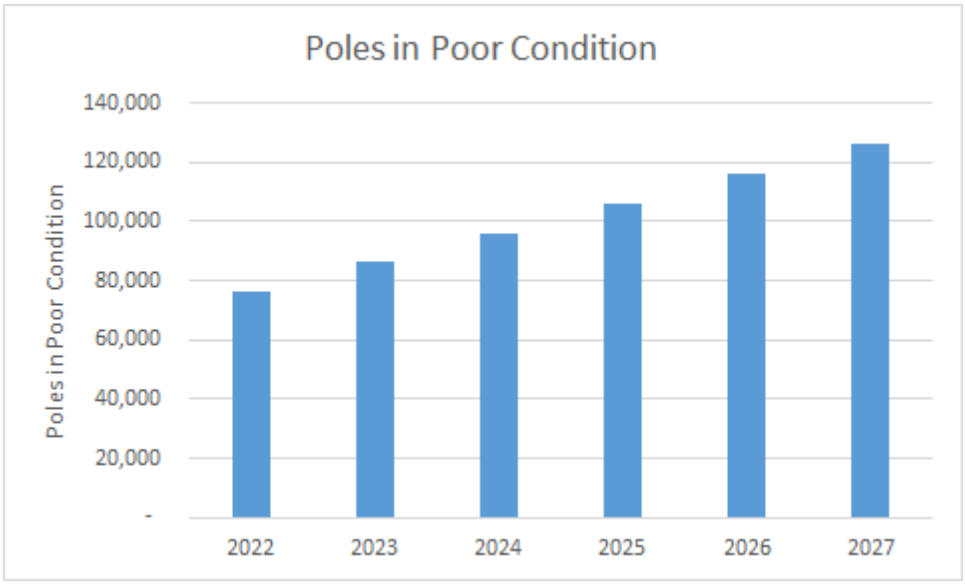
*** These values represent poles purchased outside of the pole replacement program*

i)

1. See Chart below.



2. The following graph provides the forecast of the poles in poor condition if no planned replacements or refurbishments occur.



j) Hydro One does not replace poles solely to maintain a specific demographic parameter (such as total number of poles beyond expected service life). In a hypothetical scenario where such an age based replacement strategy is implemented ignoring condition data:

i. To maintain the number of poles beyond ESL, an additional $486M Net Captial would be required to replace approximately 50 000 poles.

ii. To maintain the average age of a pole beyond ESL an additional $1505M Net Capital would be required to replace approximately 155 000 poles.

B3 - POWER WORKERS' UNION INTERROGATORY - 007

Reference:

Exhibit B-3-1, DSP Section 3.5, Page 63

Interrogatory:

Advanced Meter Infrastructure 2.0 (AMI 2.0) (D-SR-12) – Replacing AMI 1.0 (1.4 million smart meters) with a modern AMI platform. Approximately 45% of the total meter population is projected to fail by the end of the plan period.

a) How many of the 1.4 million AMI 1.0 smart meters is Hydro One proposing to replace during the 2023 -2027 Plan?

Response:

a) As presented in ISD D-SR-12 Figure 10, Hydro One is proposing to replace 1,260,916 of its approximately 1.4M AMI 1.0 smart meters during the 2023-2027 period.

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E - POWER WORKERS' UNION INTERROGATORY - 008

Reference:

Exhibit E-2-1, Page 2

Interrogatory:

> *This includes a temporary, one-time reduction in Transmission OM&A in 2019 as a result of an inflationary adjustment application for that year, where Hydro One was required to manage within the approved revenue requirement (as that application did not rebase for either the required costs or the appropriate load forecast). The subsequent 2020-2022 transmission decision (EB-2019-0082) reduced the OM&A envelope for 2020 by $10.1M, which in turn similarly reduced 2021 and 2022 OM&A by virtue of the Custom IR formula.*

a) Please provide a list of projects and subsequent OM&A costs that were deferred as a result of the OEB Decision.

b) Please provide a list of projects that were deferred as a result of the previous OEB Decision and are now included in the 2023-2027 application.

c) Provide estimates, if available, of the difference in OM&A costs of projects that were deferred and are now included in the 2023-2027 application.

d) Is the recent increase in inflation – particularly with raw materials – expected to have a material impact on the overall cost of deferred work? If so, please provide a comparison of the original budget scope for deferred projects and the budget included in this application.

Response:

a) Please refer to Interrogatory E-Staff-210; please note that the deferral resulted in an impact to maintenance practices, and not specific projects.

b) Please refer to Interrogatory E-Staff-210; please note that the deferral resulted in an impact to maintenance practices, and not specific projects.

c) Hydro One has estimated the cost of deferred work from 2020-2022 to be approximately $25M ($8M/year). This work is composed of the specific stations power equipment preventive maintenance on assets such as transformers, circuit breakers, and switches, as well as transformer mid-life refurbishments. From a rate recovery perspective, the cost

amount related to the deferred work in 2023 is approximately $6M; the incremental cost associated with this amount is less that the inflationary impact of approximately 2% because of the productivity efforts of Hydro One over that period.

d) As noted in (c) above, from a rates perspective the only relevant year is 2023. Hydro One recognizes that certain essential commodities are experiencing price increases in 2020 and 2021. Hydro One's Supply Chain will continue to monitor and manage risks threatening the availability and price increases due to inflation of materials and equipment given the unprecedented global supply chain disruption and market volatility. The potential impact for 2023 is not yet known.

E - POWER WORKERS' UNION INTERROGATORY - 009

Reference:

Exhibit E-2-1, Page 7

Interrogatory:

> *Increased Sustainment OM&A costs of $18.7M necessary to: (i) address deferred stations maintenance that allowed Hydro One to continue funding PCB remediation work as planned in 2019-2022; and (ii) address security needs related to evolving security threats and NERC CIP standards (detailed in Exhibit E-02-02)*

a) Please provide a list and OM&A cost estimate of stations work that was deferred as result of PCB remediation work and is now included in the 2023-2027 application.

Response:

a) Please see Interrogatory E-PWU-008.

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E - POWER WORKERS' UNION INTERROGATORY - 010

Reference:

Exhibit E-2-2, Page 8

Interrogatory:

> *Hydro One plans to resume preventive maintenance on transmission power equipment that was deferred in 2019-2022, returning this work to historical levels.*

a) Please provide a list and OM&A cost estimate of the preventative maintenance on transmission power equipment that was deferred in 2019-2022.

b) Please provide any estimates on the whether the recent inflationary increase in materials and other cost has materially changed the overall cost of deferred work (capital and operating, if appropriate).

Response:

a) Please refer to E-Staff-204 and Staff 210.

b) Please refer to E-PWU-008 part d).

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E - POWER WORKERS' UNION INTERROGATORY - 011

Reference:

Exhibit E-2-2, Page 3

Interrogatory:

> *From 2018 to 2022, total sustainment OM&A funding declined by 9% (from $229.4M to $208.3M). To accommodate the reprioritization of maintenance activities while remaining within the OM&A funding envelope and completing necessary PCB remediation work (PCB expenditures increased from 3% of the budget in 2018 to 8% of the budget in 2022), Hydro One had to defer certain preventive maintenance activities and condition assessments on stations power equipment, as well as certain planned transformer refurbishments. Hydro One selected these deferrals by using updated asset condition data to determine which maintenance activities could be deferred for a short period of time without unduly jeopardizing the performance of Hydro One's transmission system. This deferred work must now be completed, as Hydro One's asset management approach relies on sustaining asset performance to maintain transmission system safety and reliability.*

a) Please provide a list of deferred work
    1. Stations power equipment
    2. Transformer equipment

b) Please provide details on how Hydro One defines "unduly jeopardizing" the performance of Hydro One's transmission system.

c) Please provide any estimates on the impact of deferred work on the reliability of the transmission network in terms of number and length of outages.

d) If Hydro One has not undertaken an analysis on deferred work and its reliability impact, please explain why.

Response:

a) Please refer to E-Staff-210 part a).

b) Please refer to Staff-204, part (c) and Staff-210 (a)

c) Hydro One did not perform the requested analysis.

d) Please refer to Staff-204 and Staff-210.

E - POWER WORKERS' UNION INTERROGATORY - 012

Reference:

Exhibit E-2-2, Page 6

Interrogatory:

> *To accommodate the reprioritization of maintenance activities in order to remain within the OM&A funding envelope and support the PCB remediation program, Hydro One deferred certain preventive maintenance activities for transformers, circuit breakers, and switches. Using asset condition and maintenance data, Hydro One identified areas where specific time-based preventive maintenance activities could be deferred for a short period of time only.*

a) Please provide particulars of the deferred work in each of the following areas:
   1. Transformers
   2. Circuit Breakers
   3. Switches

b) Please describe what is meant by "short period of time only" in terms of deferring maintenance work.

c) Did any of the deferred work extend beyond Hydro One's definition of "short period of time?" If so, please provide a list of those projects and particulars of the deferrals.

d) Please provide any analysis that Hydro One has performed regarding the time-period impact of deferred maintenance work and its impact on reliability in terms of number and length of outages.

Response:

a) Please refer to E-Staff-210 part a).

b) Please refer to E-SEC-185.

c) Please refer to E-Staff-210 part c).

d) Please refer to E-Staff-210 and E-SEC-185.

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E - POWER WORKERS' UNION INTERROGATORY - 013

Reference:

Exhibit E-2-2, Page 16

Interrogatory:

> *As a result of the deferrals described above in 2019-2022, Hydro One has a backlog of preventive maintenance activities that need to be addressed through increased expenditures starting in the 2023 Test Year. These expenditures are in line with pre-2019 spending levels, notwithstanding the accumulated backlog that must be addressed.*

a) Please provide details, on an annual basis, of the cost of work that was deferred in the 2019-2022 time period and is now included in the 2023-2027 rate application;

b) Provide details on whether the costs associated with deferred work have changed from the 2019-2022 estimate to the current rate application.

Response:

a) Please refer to E-PWU-008 part c).

b) Please refer to E-PWU-008.

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E - POWER WORKERS' UNION INTERROGATORY - 014

Reference:

Exhibit E-2-2, Page 18

Interrogatory:

> *Hydro One approached the deferral of preventive maintenance activities by using updated asset condition data to identify assets for which certain preventive maintenance activities could be deferred for a short period of time with comparatively lower risk to system performance and reliability. The preventive maintenance activities that were deferred during 2019-2022 (e.g., breaker and transformer intrusive maintenance) need to be resumed to repair equipment deficiencies, and because the ongoing condition data from these activities is necessary to properly assess the need for, prioritize, and execute capital replacements. Thus, to mitigate the risk of unplanned equipment failure impacting the reliability of the transmission system, Hydro One must resume the proposed level of preventive maintenance to ensure that the necessary maintenance activities are completed in a timely manner and new capital replacements candidates are identified.*

a) Please provide details on the analysis that Hydro One performed on asset condition that allowed it to defer maintenance work that had a "comparatively lower risk to system performance and reliability".

b) Please explain how Hydro One defines an acceptable level of risk tolerance in this area;

c) Please provide details on what work was deferred compared to what work was considered a higher risk to system reliability.

d) Please provide details in the differential in impacts on system reliability work that was deferred compared to work that was considered high risk – i.e. what would the reliability impact had been if Hydro One performed all work or none of the high risk work?

Response:

a) Please refer to E-Staff-210.

b) Please refer to E-SEC-185.

c) Please refer to E-Staff-210 part a.

d) Please refer to E-Staff-210 and E-SEC-185.

E - POWER WORKERS' UNION INTERROGATORY - 015

Reference:

Exhibit E-2-2, Page 41

Interrogatory:

> *Current outsourced service providers are not able to access certain internal Hydro One systems and tools that help drive more effective and efficient triage, assessment, and response to physical and cyber alerts. Instead, these providers rely on existing Hydro One staff to provide input and perform these functions on their behalf.*

a) Please provide any estimates on the cost of Hydro One employees undertaking work on behalf of firms performing outsourced work?

b) If there are no details, please explain how Hydro One tracks this work?

Response:

The referenced language refers to the fact that the work contracted to outsourced providers is limited, and therefore requires Hydro One to maintain accountability for certain activities as described in the evidence. No work is done by Hydro One that was contracted to be performed by the outsourced service providers. Hydro One's portion of work is undertaken by staff in Hydro One's Security department and done on a demand basis so not tracked specifically. Therefore, there are no details available on the cost of this component of the work.

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E - POWER WORKERS' UNION INTERROGATORY - 016

Reference:

Exhibit E-3-2, Page 7

Interrogatory:

> *The marginal increase in the Stations Demand and Planned Corrective program is required to address an expected increase of station transformer related defects as the transformer population continues to age. As discussed in DSP Section 3.2 currently, 30% of the fleet is beyond their expected service life of 50 years, and an additional 20% will reach or exceed their expected service life by 2027 (in the absence of capital investment). Transformers that are in fair condition or poor condition which will not be addressed through capital investments must be addressed through corrective maintenance expenditures. Hydro One has been able to keep Distribution Stations Demand and Planned Corrective Maintenance OM&A expenses at a rate of growth generally in-line with inflation.*

a) Please provide any analysis on the cost impact of replacing transformers in poor condition compared to preventative maintenance;

b) Please provide any analysis on the reliability impact of replacing transformers in poor condition compared to preventative maintenance.

Response:

a) Preventive maintenance on station transformers, including visual inspections, oil testing, diagnostic testing and selective intrusive inspections are performed to assess the condition of transformers. Once a transformer is identified as being in poor condition, corrective maintenance or replacement is considered. Since preventive maintenance is performed on all transformers, regardless of condition, there is no relationship between replacing poor condition transformers and preventive maintenance.

b) When a transformer is identified as being in poor condition, replacement of the transformer mitigates the reliability risk of failure and customer interruptions. There is no reliability impact for performing preventive maintenance on transformers that are in poor condition.

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E - POWER WORKERS' UNION INTERROGATORY - 017

Reference:

Exhibit E-3-5, Page 14

Interrogatory:

> *To execute planned work efficiently, Hydro One Distribution expects to continue strategically balancing staffing levels with the optimized use of overtime (OT) hours to manage demand. Distribution uses OT primarily to meet work requirements that bear a limited degree of predictability. Most OT within Distribution is classified as "demand overtime" and is associated with customer demand and emergency work such as Trouble Calls. This is distinct from "planned overtime" which is the planned scheduling of additional work to meet project or work-related completion schedules while managing the size of the workforce or perform work outside of regular working hours to minimize outage impact to customers. For Distribution, demand overtime is necessary to address trouble calls, equipment failure, high priority defect corrections, and storm response. The Distribution work execution plan for the 2023-2027 forecasting period assumes OT usage will remain static. These planning assumptions are based on an analysis of types of work that result in overtime hours as well as the average observed over the four year period prior to the filing of this application.*

a) Please provide any analysis that Hydro One has undertaken on previous forecasts for overtime compared to actuals;

b) Please provide any analysis that Hydro One has undertaken comparing the difference in costs in overtime compared to hiring full-time staff, particularly now that Hydro One has a policy of temporarily re-assigning full-time employees when needed.

Response:

a) As stated in Exhibit E-06-01, overtime cost projections are based on an assessment of historical usage. The majority of the overtime required in the Distribution organization is related to demand work as explained in Exhibit E-03-05 page 14 and in DSP Section 3.10, page 9. Distribution has not performed analysis on previous OT forecasts, because of the demand nature of the work that OT is mainly used to support.

b) As noted in Exhibit E-03-05, the purpose of overtime is to maintain the flexibility required to meet demand work levels that are difficult to predict (e.g. new connections, storms), and to

complete work in an efficient and productive manner. Hydro One has not conducted an analysis on the cost differential of OT versus adding full-time staff, as it is recognized and known that adding full-time employees increases Hydro One's costs over the longer term, given the types of compensation full-time represented employees receive.

Further, as identified by Mercer in its compensation benchmarking study, (page 21 of Exhibit E-06-01 Attachment 1), Hydro One's overtime rates are at or below the market median, and its overtime tracking and approval process are aligned with predominant market best-practice.

E - POWER WORKERS' UNION INTERROGATORY - 018

Reference:

Exhibit E-6-1, Page 17

Interrogatory:

The results of Hydro One's planning process are captured in Table 1, which shows Hydro One's actual and planned FTEs for both Transmission and Distribution, reflecting staffing levels appropriate for the type and volume of work to be performed and contracting out portions of incremental work. A significant portion of the growth shown in Table 1 during the 2023-2027 rate period is attributable to increases in the PWU HH to manage work that is not of an on-going nature. Where necessary, Hydro One plans to add a small number of regular and casual FTEs to the existing workforce. Between 2023 and 2027, the total number of FTEs is projected to increase by only 1.4% notwithstanding the significant increase in planned work. During this period, Hydro One has prioritized maximizing output from its existing workforce, and enabling the execution of greater amounts of work with existing staff across all lines of business.

a) Please provide a detailed cost estimate on the difference of meeting the "significant increase in planned work" using the current breakdown of casual workers compared to full-time employees.

Response:

a) On a best-efforts basis, using historical cost data (as captured in Exhibit E-06-01 Attachment 2A), Hydro One has estimated that the incremental costs of using regular employees versus casual labour (using the current FTE planning data) would be approximately between $48M to $61M over the course of the rate period, with the lower figure reflecting the incremental cost differential of using regular PWU-represented FTEs, and the higher figure reflecting the differential of using SUP-represented FTEs. Hydro One notes, given that workforce plans for the rate period have been optimized to balance the use of casual FTEs and Regular FTEs, the savings of using casual employees are reflected in the current application.

   This cost differential estimate, conducted on a best effort basis, was completed by comparing the average annual cost per FTE for regular represented employees to the cost of a casual employees (for the incremental casual employees by year between 2023 to 2027). The estimate assumes that each incremental casual employee between 2023-2027 was replaced by a represented employee.

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E - POWER WORKERS' UNION INTERROGATORY - 019

Reference:

Exhibit E-6-1, Attachment 2A, Page 1

Interrogatory:

Total compensation for Regular PWU employees has declined from $271 million in 2018 to $169 million in 2021 (budgeted).

a) Please provide the total compensation for PWU employees as a percentage of total spend for 2018 – 2027.

b) Please provide those numbers for both the DX and TX operations.

Response:

a) Hydro One notes that the numbers cited in the preamble represent only the Transmission organization. In the charts below, Hydro One has included Total Compensation of PWU regular FTEs for both transmission and distribution, given the integration of Hydro One's workforce.

The following table summarizes, Total Compensation for PWU Regular employees as a percentage of total Regular spend from Exhibit E-06-01 Attachment 2A. Note, PWU Hiring Hall is excluded from this analysis.

Tx + Dx

$M	2018 Actual	2019 Actual	2020 Actual	2021 Budget	2022 Plan	2023 Plan	2024 Plan	2025 Plan	2026 Plan	2027 Plan
Regular - PWU	573	551	574	568	609	624	637	651	663	673
Regular - Total	952	912	950	1003	1095	1126	1152	1179	1209	1238
PWU Reg as % of Reg	**60.2%**	**60.4%**	**60.5%**	**56.7%**	**55.7%**	**55.4%**	**55.3%**	**55.2%**	**54.8%**	**54.4%**

b) Total Compensation for PWU Regular employees as a percentage of total Regular spend for Tx and Dx

Tx

$M	2018 Actual	2019 Actual	2020 Actual	2021 Budget	2022 Plan	2023 Plan	2024 Plan	2025 Plan	2026 Plan	2027 Plan
Regular - PWU	272	171	176	169	183	186	189	192	193	194
Regular - Total	445	372	386	410	452	464	475	484	495	508
PWU Reg as % of Reg	**61.2%**	**45.9%**	**45.6%**	**41.4%**	**40.5%**	**40.0%**	**39.9%**	**39.7%**	**38.9%**	**38.1%**

Dx

$M	2018 Actual	2019 Actual	2020 Actual	2021 Budget	2022 Plan	2023 Plan	2024 Plan	2025 Plan	2026 Plan	2027 Plan
Regular - PWU	301	380	398	399	426	438	448	458	470	480
Regular - Total	507	540	564	593	643	662	677	695	714	730
PWU Reg as % of Reg	**59.4%**	**70.4%**	**70.7%**	**67.2%**	**66.3%**	**66.2%**	**66.1%**	**66.0%**	**65.9%**	**65.7%**