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Ontario

BY E-MAIL

August 16, 2019

Kirsten Walli
Board Secretary
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Dear Ms. Walli:

Re: Alectra Utilities Corporation (Alectra Utilities)
Application for 2020 Electricity Distribution Rates
OEB Staff Interrogatories
Ontario Energy Board (OEB) File Number: EB-2019-0018

In accordance with Procedural Order No. 1, please find attached OEB staff's interrogatories on the M-factor elements (including the Distribution System Plan, the M-factor proposal and related deferral accounts) in the above noted proceeding. Alectra Utilities and all intervenors have been copied on this filing.

Alectra Utilities' responses to the interrogatories are due by September 13, 2019.

Yours truly,

Original Signed By

Katherine Wang
Advisor
Incentive Rate-setting and Accounting

Attach.

OEB Staff Interrogatories
2020 Electricity Distribution Rates Application
Alectra Utilities Corporation (Alectra Utilities)
EB-2019-0018
August 16, 2019

General for all Rate Zones

G-Staff-1
Ref 1: Exhibit 2, Tab 1, Schedule 3, Page 16 of 21
Ref 2: Exhibit 5, Attachment 3, M-factor Revenue Requirement

On page 16 of 21, Alectra Utilities states that "The cumulative 5-year capital revenue requirement associated with the M-factor funding request of $286,036,835 is $27,891,068."

OEB staff is unable to reconcile the M-factor request amount and the associated revenue requirement above. In the M-factor spreadsheet (attachment 3) and other parts of Exhibit 2, Tab 1, Schedule 3, OEB staff notes the total requested M-factor funding to be $264,962,171 and the associated revenue requirement to be $21,845,661.

a) Please reconcile the total amount of Alectra Utilities' M-factor funding request.

b) Please reconcile the total revenue requirement associated with the M-factor funding request.

G-Staff-2
Ref 1: Exhibit 2, Tab 1, Schedule 3, Table 5
Ref 2: Exhibit 2, Tab 1, Schedule 3, Page 3 of 21
Ref 3: Exhibit 4, Tab 1, Schedule 1, Pages 367-368 of 438

Alectra Utilities provided the following table to show the breakdown of M-factor capital expenditures per the Distribution System Plan (DSP) priority needs:

Table 5 – 2020 - 2024 M-factor Capital Projects by Investment Need ($MM)

DSP Priority Needs	2020-2024 M-Factor Capital Expenditures
Enhancing the resilience of its overhead system to adverse weather events	$62.4
Mitigating the need to rebuild or construct new stations by enhancing the use of monitoring technologies, investing in environmental protection measures and strategically managing inventory on a consolidated basis	$43.9
Preventing further decline in reliability due to deteriorating underground assets	$35.2
Responding to anticipated needs in areas of new greenfield development and urban redevelopment/intensification	$123.6
Total M-factor Capital Expenditure	**$265.0**

a) Please explain how Alectra Utilities determined the amounts allocated to each DSP priority need.

b) Please explain how "mitigating the need to rebuild or construct new stations" creates a net cost increase to Alectra Utilities ratepayers rather than a cost savings.

c) Please explain what is driving the increase in investment in "environmental protection measures" and explain why that driver was previously unknown to Alectra Utilities (or its predecessor utilities).

d) Please explain how "strategically managing inventory on a consolidated basis" leads to higher inventory costs (i.e. increases rather than reduces inventory).

In reference 2, Alectra Utilities states that it has "… a total of approximately $275MM of unfunded capital expenditures over the five-year DSP period."

e) Given that the M-factor request is for $265 million in funding, please explain how Alectra Utilities arrived at $265 million from $275 million and how Alectra Utilities will deal with the shortfall of approximately $10 million in capital funding.

In reference 3, Alectra Utilities notes that the increases between the five year average net capital expenditure from 2015-2019 and the five year forecast from 2020-2024 are:

- For system access, $2.1 million ($64.7 million to $66.8 million). Alectra Utilities also describes the "forecast spend per year [as] relatively consistent with the historical average."
- For system service, $1.2 million ($36.9 million to $38.1 million).
- For system renewal, $25.9 million ($127.8 million to $153.7).

OEB staff notes that, relatively, the increase in average net capital expenditure spending for system renewal is significantly higher than system access or system service.

OEB staff notes that in Table 5 above, items 1 and 3 would be considered system renewal work totalling $97.6 million, while items 2 and 4 would be considered system access and system service work totalling $167.5 million.

f) Please reconcile the above. Specifically, please explain why Table 5 implies a large amount of incremental spending on system access and system service, which seems to contradict reference 3, which states that system renewal accounts for the bulk of Alectra Utilities' increased capital spending.

G-Staff-3
Ref: Exhibit 4, Tab 1, Schedule 1, Pages 7-9 of 438

Regarding the priority needs reflected in its DSP, Alectra Utilities states:

> **(iii) Be responsive to anticipated needs in areas of new greenfield development and urban redevelopment intensification**.
>
> **(iv) Take advantage of opportunities to establish additional linkages between legacy systems and balance loads across its entire service area so as to mitigate the need for system expansions.**
>
> Alectra Utilities plans to make targeted investments in establishing additional connections between adjacent legacy systems to assist it in balancing loads more effectively, thereby enabling it to defer the need for most costly system expansions. For example, Erindale TS capacity relief was proposed by constructing a new station as indicated in the DSP for the Enersource Rate Zone, as filed in Alectra Utilities EDR application on July 07, 2017 (EB-2017-0024). In the Enersource DSP, the construction of a station, Mini-Britannia MS, was proposed. However, as a result of planning capital investments on an integrated and system-wide basis, a more prudent option was identified, linking two of the

predecessor Enersource's and Brampton Hydro's distribution systems and will result in capital savings from mitigating the need to build the new MS.

(v) Mitigate the need to rebuild or construct new stations by enhancing the use of monitoring technologies, investing in environmental protection measures and strategically managing inventory on a consolidated basis.

In respect of priority need iii):

a) Are all capital costs driven by this "priority need" contained within the proposed System Access capital projects?

    i. If no, please identify which projects and programs categorized under other capital spending categories are driven by this "priority need".

In respect of priority need iv):

b) Please describe Alectra Utilities' process for identifying opportunities to establish additional linkages and to balance loads across its service area.

    i. As part of the process described in b), does Alectra Utilities perform a cost comparison between projects that take advantage of linkages versus the projects that would have taken place absent linkages? If yes, please provide the cost comparisons. If no, why not?

c) Has Alectra Utilities' identified O&M savings from taking advantage of the additional linkages within its service area? If yes, please provide the amount quantified. If no, please explain why no O&M savings were identified.

d) Has Alectra Utilities accounted for the savings identified in parts b) and c) in its incremental capital needs? Please explain why or why not.

In respect of priority need v):

e) Will this "priority need" enable Alectra Utilities to reduce overall stations capital spending?

    i. If yes, what is the amount of spending reduced, and has this been reflected in Alectra Utilities' proposed stations capital spending?

ii. If no, why not?

f) Has Alectra Utilities identified OM&A savings resulting from the investments in this priority need?

i. If yes, please provide the amount quantified.

ii. If no, please explain why Alectra Utilities has not identified OM&A savings in light of: additional monitoring, increased environmental protection measures and better inventory management strategies.

G-Staff-4
Ref: Exhibit 5, Attachment 3, M-factor Revenue Requirement

Alectra Utilities provided the following table in the "Summary by RZ" tab within the Attachment 3 excel workbook:

Capex	2020	2021	2022	2023	2024	2020-2024
Horizon	11,863,042	10,953,468	9,264,384	3,521,255	11,814,192	47,416,342
Brampton	9,696,860	2,188,555	6,646,395	3,730,434	3,765,279	26,027,522
PowerStream	23,015,003	16,054,205	15,402,786	32,752,595	23,331,583	110,556,171
Enersource	6,591,094	5,532,703	8,810,404	7,760,537	23,132,111	51,826,849
Guelph	133,500	1,278,753	1,336,164	612,820	745,233	4,106,470
Multiple	1,374,474	7,646,447	10,563,570	3,691,393	1,752,933	25,028,816
	52,673,973	**43,654,130**	**52,023,703**	**52,069,034**	**64,541,330**	**264,962,171**

a) Please provide a breakdown by rate zone of all the individual projects that are to be funded by the M-factor.

b) Please explain how Alectra Utilities determined which projects would be funded through the M-factor and which projects would be funded through Alectra Utilities' base rates.

c) If the M-factor is not approved, please confirm that the projects listed in part a) are the projects that would not proceed absent M-factor funding. Otherwise, absent any M-factor funding, please explain Alectra Utilities' methodology for choosing the projects it would defer.

G-Staff-5
Ref: Exhibit 2, Tab 1, Schedule 3, Page 15 of 21

On page 15 of 21, Alectra Utilities states that:

> While the M-factor riders are calculated based on the specific investments contemplated by the DSP, they are not tied to those specific investments. Unlike other funding mechanisms during an IRM term, the M-factor provides an envelope of capital funding to fund prudent investments during the 2020-2024 period and is comparable in its approach to Custom IR treatment made in conjunction with a five year DSP.

a) Please confirm that Alectra Utilities intends to treat M-factor funding as an envelope of funds not tied to any specific investments. In other words, that the M-factor funding will not necessarily be used to fund the projects that make up the capital expenditures shown in Attachment 3, but rather that it will be used as Alectra Utilities sees fit to accommodate the entirety of capital work comprising the DSP.

    i. If yes, please explain how Alectra Utilities will ensure that M-factor revenues collected from one rate zone are not used to fund capital expenditures within other rate zones.

    ii. If no, please explain how Alectra Utilities will maintain rate fairness when M-factor rate riders have been calculated per rate zone, but actual revenues collected in one rate zone might be used to fund capital expenditures in other rate zones.

G-Staff-6
Ref: Exhibit 2, Tab 1, Schedule 3, Table 1

Under the “Flexibility” section in Table 1, Alectra Utilities states that, under the M-factor, “Capital investments are funded on an envelope basis, allowing specific projects to be replaced modified or shifted between years depending on system needs and priorities.”

In the event that Alectra Utilities defers a portion of its capital investments from an earlier year to a later year (in effect underspending M-factor funding for one year and spending it in the next), would Alectra Utilities be over-collecting one year’s worth of depreciation expense and return on capital? Please discuss why or why not. If yes, please discuss if Alectra Utilities intends to refund customers and the mechanism to do so.

G-Staff-7
Ref 1: Exhibit 2, Tab 1, Schedule 3, Pages 18-19 of 21
Ref 2: Exhibit 5, Attachment 3, M-factor Revenue Requirement

Alectra Utilities is requesting OEB approval for its M-factor rate riders as identified in Attachment 3 and reproduced in tables 7-11 in Exhibit 2.

a) Please confirm that Alectra Utilities is seeking OEB approval for all the rate riders covering the DSP period of 2020-2024.

b) Please confirm that Alectra Utilities is proposing for its rate riders to be effective until its next rebasing application.

c) Please confirm that, if approved, the new rate riders will take effect year after year and will be in addition to the rate riders of the previous year (e.g. in 2021, both the 2021 and 2020 rate riders will be in effect).

d) Please explain whether Alectra Utilities intends to make annual updates to its rate riders, if approved, in its future rate applications.

G-Staff-8
Ref 1: Exhibit 5, Attachment 3, M-factor Revenue Requirement
Ref 2: Exhibit 2, Tab 1, Schedule 3, Page 13 of 21

Attachment 3 contains the M-factor threshold calculations per rate zone. OEB staff notes that the distribution revenues used for calculating the growth factor don't match the rate year. The calculation for the PowerStream rate zone is reproduced below as an example:

Price Cap Index	**1.20%**	PCI
Growth Factor Calculation		
2017 Actual Distribution Revenues	**$208,214,383**	
2013 Board-Approved Distribution Revenues	**$203,517,916**	
Growth Factor	**2.31%**	$g\ (Note\ 1)$
Dead Band	**10%**	

In the example shown for PowerStream above, OEB staff notes that the $208,214,383 amount appears to be 2018 Actual Distribution Revenues and the $203,517,916 amount appears to be for 2017 Board-Approved Distribution Revenues.

a) Please confirm the correct distribution revenue years for all rate zones and provide an updated model with the corrections.

b) Please provide the calculations Alectra Utilities' used to determine the distribution revenues for each rate zone.

It appears that the threshold calculations for the PowerStream rate zone are incorrect. The "Threshold CAPEX" in the model does not match the numbers presented on page 13 of 21 of Exhibit 2, Tab 1, Schedule 3. The inconsistent tables are reproduced below:

The model shows:

Threshold CAPEX	
Price Cap IR Year 2018	**$ 42,668,564**
Price Cap IR Year 2019	**$ 42,869,478**
Price Cap IR Year 2020	**$ 43,074,036**
Price Cap IR Year 2021	**$ 43,282,305**
Price Cap IR Year 2022	**$ 43,494,353**
Price Cap IR Year 2023	**$ 43,710,248**
Price Cap IR Year 2024	**$ 43,930,059**

Exhibit 2 shows:

Table 3 – Threshold Capital Expenditure Calculation ($MM)

Description	ERZ	BRZ	GRZ	PRZ	HRZ	ALECTRA
Inflation	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Less: Productivity Factor	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Less: Stretch Factor	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%
Price Cap Index	1.20%	1.20%	1.20%	1.20%	1.20%	1.20%
Growth Factor	-0.05%	1.84%	1.60%	2.31%	3.04%	
Rebasing Year	2013	2015	2016	2017	2019	
# Years since rebasing	7	5	4	3	1	
Price Cap Index	1.20%	1.20%	1.20%	1.20%	1.20%	
Growth Factor	-0.05%	1.84%	1.60%	2.31%	3.04%	
Dead Band	10%	10%	10%	10%	10%	
Rate Base	$610.5	$404.6	$151.4	$1,082.8	$555.7	$2,805.0
Depreciation	$28.7	$15.2	$6.3	$52.3	$23.9	$126.4
Threshold Capital Expenditure 2020	$39.1	$30.7	$11.6	$98.5	$50.0	**$230.0**
Threshold Capital Expenditure 2021	$39.2	$31.2	$11.7	$100.0	$51.1	**$233.1**
Threshold Capital Expenditure 2022	$39.3	$31.6	$11.8	$101.5	$52.1	**$236.3**
Threshold Capital Expenditure 2023	$39.4	$32.1	$12.0	$103.0	$53.2	**$239.7**
Threshold Capital Expenditure 2024	$39.4	$32.5	$12.1	$104.7	$54.4	**$243.1**
Threshold Capital Expenditure 2020-2024	**$196.3**	**$158.2**	**$59.2**	**$507.7**	**$260.9**	**$1,182.2**

c) Please reconcile the two tables and provide an updated model.

G-Staff-9
Ref: Exhibit 2, Tab 1, Schedule 4, Page 2 of 18

Alectra Utilities describes the true-up of the Capital Investment Variance Account (CIVA) as follows:

> Subject to the OEB's approval of the M-factor, Alectra Utilities proposes a symmetrical CIVA for the 2020-2024 term of the DSP. Alectra Utilities proposes to track variances between the actual and forecast capital related revenue requirement for the DSP term. The capital related revenue requirement is used to calculate the M-factor for riders applicable in each rate zone.
>
> Consistent with the determination of the maximum M-factor eligible capital at the time of this filing, the CIVA true-up amount must fall within Alectra Utilities' maximum M-factor eligible capital at the time of the true-up based on Alectra Utilities' actual five-year in-service additions. By way of example, Alectra Utilities' total capital envelope, as provided in Table 4, is $0.3B. This is based on total forecasted capital expenditures of $1.5B less the materiality threshold of $1.2B. If actual capital expenditures are $1.3B, then Alectra Utilities' capital envelope is $0.1B (Total capital costs of $1.3B, less the materiality threshold of $1.2B). Therefore, CIVA true-up cannot exceed the capital envelope of $0.1B, determined at the time of the true-up.

a) Is OEB staff's understanding correct that the CIVA true-up will be calculated as the difference between the actual five-year in-service additions related to M-factor and the forecast M-factor capital related revenue requirement?

b) Based on Alectra Utilities' description in the reference above, OEB staff understands that Alectra Utilities proposes that the CIVA true-up amount cannot exceed the difference between the actual capital expenditures at the time of the true-up and the materiality threshold (calculated in Exhibit 2, Tab 1, Schedule 3 for the M-factor) of $1.2 billion. Please confirm if OEB staff's understanding is correct. If yes, please explain the rationale for the proposed calculation for the maximum eligible CIVA true-up amount.

c) Please confirm that Alectra Utilities does not intend to track M-factor variances on a project level.

d) Based on Alectra Utilities' example above, is OEB staff's understanding correct that the CIVA true-up will be based on actual five-year in-service additions, regardless of whether Alectra Utilities' spending has exceeded the $265 million it has requested through the M-factor?

   i. Please confirm if OEB staff's example is correct: if Alectra Utilities' actual capital expenditure is $1.8 billion, then $1.8 billion less the materiality threshold of $1.2 billion gives Alectra Utilities a maximum capital envelope of $0.6 billion that would be eligible for a true-up.

   ii. If the example in i) is correct, please explain why it is appropriate for Alectra Utilities to collect any true-up when the actual M-factor capital spending is in excess of the amount being requested in this application ($265 million).

   iii. If Alectra Utilities spends in excess of the amount being requested in this application ($265 million) and requests a subsequent true-up for the excess spending, please explain what evidence Alectra Utilities will provide to the OEB to assess the prudence of the excess spending. Specifically, please explain on what basis the OEB could assess the prudence of Alectra Utilities' excess spending given that there are no set M-factor projects given the proposed "flexible" nature of the M-factor.

Alectra Utilities proposes calculating the annual CIVA amount on a company-wide basis and proposes disposing of the CIVA balance using class specific rate riders that are applied to all rate zones.

e) Please confirm Alectra Utilities is intending to have one set of class specific rate riders applied equally across all rate zones.

   i. If yes to e), please explain how this is equitable to all customers given that the original M-factor rate riders are rate zone specific. Furthermore, please explain how Alectra Utilities will prevent subsidization across rate zones if Alectra Utilities does not track variances within rate zones and proposes calculating the CIVA amounts on a company-wide basis.

f) Please explain the apparent disconnect between Alectra Utilities' proposal to dispose of the variance account at the end of the five year term, and Alectra Utilities' proposal to calculate the CIVA amount and dispose of positive and negative balances annually.

G-Staff-10
Ref: Exhibit 2, Tab 1, Schedule 3, Page 3 of 21

On page 3 of 21, Alectra Utilities states: "If Alectra Utilities is unable to execute a capital plan at the level contemplated in the DSP, there will be significant, long-term negative consequences for the utility's distribution system and its customers."

a) Please elaborate what are the "significant, longer-term negative consequences" that would arise in the absence of M-factor funding. In particular, please provide quantifiable reliability impacts and the methodology Alectra Utilities used to arrive at its conclusions.

b) Do the negative consequences affect all of Alectra Utilities' rate zones equally? If not, what are the differences, and what are the reasons for the differences?

G-Staff-11
Ref 1: EB-2016-0025, Applicant's Reply Submissions, October 18, 2016, Page 22
Ref 2: EB-2016-0025, Decision and Order, December 8, 2016, Page 10

In the mergers, acquisitions, amalgamation and divestitures (MAADs) application that formed Alectra Utilities (the MAADs application), the applicant's (Alectra Utilities) final reply submission stated that "The Applicants [Alectra Utilities] have confirmed that [Incremental Capital Module (ICM)] applications during the rebasing deferral period will be made in accordance with the applicable policies of the Board."

The Decision and Order issued on December 8, 2016[1] noted that the applicants (Alectra Utilities) estimated to seek $587.7 million through ICMs over the course of its deferred rebasing period.

a) At the time of the MAADs application, did the applicants (Alectra Utilities) review the OEB's ICM policies on what projects would be eligible for ICM funding?

b) Please explain if the $587.7 million estimate was based on projects that the applicants (Alectra Utilities) determined would be eligible for ICM funding.

[1] Decision and Order, EB-2016-0025, issued December 8, 2016

c) During the MAADs proceedings, did the applicants (Alectra Utilities) explain the reason for needing $587.7 million in ICM funding? If yes, please provide the reasons.

d) At the time of the MAADs application, were the applicants (Alectra Utilities) aware that ICM funding would not be available for typical annual capital programs?

    i. If yes to d), please explain why Alectra Utilities chose a ten year deferred rebasing period despite the apparent shortfall in funding for its typical annual capital programs.

e) Did the applicants (Alectra Utilities) assess the regulatory risk of the OEB denying any of Alectra Utilities ICM requests?

    i. If yes to e), what plans did the applicants (Alectra Utilities) have to mitigate or deal with the risks.

    ii. If no to e), why not?

G-Staff-12
Ref 1: Exhibit 4, Tab 1, Schedule 1, Appendix A12, Page 36 of 42
Ref 2: Transcript_Alectra Utilities Presentation_20190807, Page 51

During Alectra Utilities' presentation day on August 7, 2019, in response to a question about the differences between Alectra Utilities current DSP and the DSPs of the predecessor utilities, Mr. Cananzi said:

> […] What we've also experienced, though, is accelerating degradation. And to the extent that some of the needs weren't properly addressed within the former years, what we are seeing is obviously a reactive replacement which is costing us significantly more, anywhere from, you know, three to four times more than what you would expend on a planned basis […]

a) Please explain why the needs as described above were not addressed in past years.

Further regarding the accelerated deterioration of Alectra Utilities' assets, Mr. Cananzi said:

In some cases, it's inadequate funding as a result of, you know, the capital envelope that has been approved by the OEB. In other respects, it's also a matter of utilities trying to pace the investment for the benefit of customers and, in some cases, not getting that pacing quite right, so adjustments need to be made.

b) During the MAADs application, were the applicants (Alectra Utilities) aware of the issues with adequate funding and incorrect pacing as described above?

   i. If yes to b), what steps did the applicants (Alectra Utilities) take to mitigate the risks arising from inadequate funding or incorrect pacing?

   ii. If yes to b), why did the applicants (Alectra Utilities) select a 10 year deferral period?

   iii. If no to b), why were the applicants (Alectra Utilities) not aware?

c) Please provide the annual total amount of forecasted capital expenditures for 2020 to 2024 based on the sum of forecasted capital for each predecessor utility at the time of the MAADs application.

   i. Please explain any differences between the amount provided in part c), and the total amount of capital forecasted in the current DSP.

G-Staff-13
Ref: EB-2016-0025, Decision and Order, December 8, 2016, Page 10

The Decision and Order issued on December 8, 2016[2] noted that the applicants (Alectra Utilities) chose a deferred rebasing period of ten years, which the applicants (Alectra Utilities) stated is consistent with the OEB's consolidation policies. The applicants (Alectra Utilities) argued that any deviation from the ten year rebasing deferral period "[…] could fundamentally alter the proposed transaction and the basis on which it has been accepted by the shareholders as providing adequate incentive for entering into the transaction." The Decision and Order further noted that the ICM would be available during the deferred rebasing period, which the applicants (Alectra Utilities) indicated that they intend to use.

[2] Decision and Order, EB-2016-0025, issued December 8, 2016

Please detail specifically what has changed since the creation of Alectra Utilities that makes the ICM during the ten year rebasing deferral period no longer suitable for Alectra Utilities.

G-Staff-14
Ref: KP1.1 – Alectra Utilities August 7, 2019 Presentation Slides, Pages 17-20

Alectra Utilities' identifies declining reliability due to deteriorating underground assets and adverse weather, and significant development and intensification as key focus areas of its DSP.

a) Please explain why none of these risks were identified as part of the due diligence done at the time of the MAADs application.

b) Please explain what steps, if any, the applicants of the MAADs application (now Alectra Utilities) took to mitigate these risks.

G-Staff-15
Ref: EB-2016-0025, Application, Exhibit B, Tab 6, Schedule 1, Page 1-2 of 4

The MAADs application stated that "The total anticipated savings net of transaction costs over a ten year rebasing deferral period […] total approximately $312 [million] in operating costs and approximately $114 [million] in avoided capital costs, which represent $426 [million] in total cash savings." The following table was provided to show the annual breakdown of net synergies:

Figure 25 – Total Net Synergies

($MMs)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Gross Synergies											
Operating	7.2	20.1	31.7	40.6	42.5	42.5	42.5	42.5	42.5	42.5	354.6
Capital	23.0	22.6	28.8	23.2	30.0	8.0	8.0	8.0	8.0	8.0	167.6
Total Synergies	30.2	42.7	60.5	63.8	72.5	50.5	50.5	50.5	50.5	50.5	522.2
Transition Costs											
Charged to Operating	20.9	11.1	8.2	2.3	0.5	-	-	-	-	-	43.0
Charged to Capital	33.7	15.2	4.4	-	-	-	-	-	-	-	53.3
Total Transition Costs	54.6	26.3	12.6	2.3	0.5	-	-	-	-	-	96.3
Net Synergies											
Operating	(13.7)	9.0	23.5	38.3	42.0	42.5	42.5	42.5	42.5	42.5	311.6
Capital	(10.7)	7.4	24.4	23.2	30.0	8.0	8.0	8.0	8.0	8.0	114.3
Total Net Synergies	(24.4)	16.4	47.9	61.5	72.0	50.5	50.5	50.5	50.5	50.5	425.9

a) Please provide the actual amount of synergies achieved to date by Alectra Utilities.

b) Please explain why Alectra Utilities has not proposed applying the net synergies amounts in excess of transaction costs towards its capital funding gap.

G-Staff-16
Ref 1: OEB Handbook to Electricity Distributor and Transmitter Consolidations, January 19, 2016, Pages 14-15
Ref 2: OEB Chapter 3 Filing Requirements, Pages 30-31

The OEB's Handbook on MAADs policy dictates that, during the deferred rebasing period:

- A distributor on Price Cap IR would continue on Price Cap IR.
- A distributor on Custom IR would transition to a Price Cap IR once its Custom IR plan expires.
- A distributor on Annual IR would continue on Annual IR.

OEB staff notes that Annual IRs are not relevant to Alectra Utilities as it has no predecessor distributors on Annual IR and, further, that all of its predecessor distributors have now transitioned to Price Cap IR.

The Chapter 3 filing requirements on Price Cap IR applications states that:

> The IRM application process is intended to be mechanistic in nature. For this reason, the OEB has determined that the IRM process is not the appropriate way for a distributor to seek relief on issues which are specific to only one or a few distributors, more complicated relative to issues typical of an IRM application, or potentially contentious.

The filing requirements further state that "…distributors seeking adjustments that are inconsistent with OEB policy should consider whether one of the other rate-setting options is more appropriate."

a) Given that Alectra Utilities has filed an incentive rate-setting mechanism (IRM) application on a Price Cap IR plan, please discuss whether the M-factor is consistent with OEB policy. In particular, please explain how the M-factor is mechanistic and is not an "[issue that is] specific to one or a few distributors,

more complicated relative to issues typical of an IRM application, or potentially contentious."

b) Please discuss whether Alectra Utilities has considered requesting early termination of its deferred rebasing period, as is allowed under MAADs policy, in order to apply for a Custom IR.

c) Please discuss if Alectra Utilities has considered proposing capital funding mechanisms other than the M-factor (e.g. use of an Advanced Capital Module (ACM), or multi-year ICM).

    i. Please provide a list of projects over the DSP period 2020-2024 that Alectra Utilities considers eligible for ACM/ICM treatment.

d) What are Alectra Utilities' plans in the event that its M-factor proposal is denied?

G-Staff-17
Ref 1: Exhibit 2, Tab 1, Schedule 3, Page 5 of 21
Ref 2: OEB Handbook for Utility Rate Applications, October 13, 2016, Page 27

On page 5 of 21, in describing the impetus for the M-factor, Alectra Utilities states that it "… has capital expenditure needs materially in excess of the level that which is presently funded in existing rates." Additionally, Alectra Utilities notes that the Custom IR option is not available during its deferred rebasing period, but that its "…evolving capital needs are analogous to those distributors whose capital programs have been funded through custom IR frameworks, accepted by the OEB."

The OEB's Handbook for Utility Rate Applications notes that: "The ICM and ACM mechanisms for funding capital for electricity distributors… are not available for utilities setting rates under Custom IR."

a) If M-factor funding is approved, please confirm that Alectra Utilities will not be seeking ICMs during the remainder of this DSP term (2020-2024).

b) If Alectra Utilities does intend to seek ICMs during this DSP term (2020-2024), please explain why this is appropriate given the nature of the M-factor and the similarities with the Custom IR option as described by Alectra Utilities.

c) If yes to a), please explain Alectra Utilities' plans in the event of large unforeseen capital spending needs.

G-Staff-18
Ref 1: EB-2018-0016, Decision and Order, January 31, 2019 Decision on Alectra Utilities' request for ICM funding.
Ref 2: Exhibit 2, Tab 1, Schedule 3, Page 2 of 21

In the OEB's decision on Alectra Utilities' request for ICM funding for the 2019 rate year, the OEB approved $26.27 million out of the $31.57 million originally proposed by Alectra Utilities.

In the current application, Alectra Utilities states that "The ICM does not provide the flexibility or the longer-term availability of funding needed to execute a DSP."

a) Given that the OEB approved 83% ($26.27 million of $31.57 million) of Alectra Utilities' total ICM request for the 2019 rate year, please explain why Alectra Utilities considers the ICM unable to provide sufficient funding for its capital needs.

b) Please explain why Alectra Utilities incremental capital needs increased by 74% from the $31.57 million requested in 2019 to the approximately $55 million in annual funding requested through the M-factor.

OEB staff notes that in Alectra Utilities' 2019 application EB-2018-0016, Alectra Utilities did not make any requests for capital funding related to underground asset renewal or rear lot conversion work.

c) Please describe how Alectra Utilities prioritized underground asset renewal and rear lot conversion work in the absence of ICM funding.

G-Staff-19
Ref 1: EB-2017-0024, 2018 EDR Application, Attachment 33, July 7, 2017, Pages 26, 33
Ref 2: Exhibit 4, Appendix B, Pages 111-114, 121-123 of 490

OEB staff notes two ICM projects proposed during Alectra Utilities' 2018 rates application, and that were subsequently denied by the OEB, have material business cases submitted in the current application. The budgets proposed for each project are summarized below.

Project Name	Total Budget (ICM)	Total Budget (M-factor)	Variance
Rear Lot Supply Remediation – Royal Orchard (150047)	$4,833,622	$4,009,063	-$824,559
Cable Replacement M49 – Steeles Avenue and Fairway Heights Drive (150141)	$1,749,769	$2,925,454	$1,175,685

a) Please explain why the Royal Orchard remediation project is now forecasted to cost $824,559 less than what was indicated previously during the 2018 rates application.

b) Has Alectra Utilities experienced any further outages in the Royal Orchard area between 2018 and now?

OEB staff notes that the scope for the M49 cable replacement project is 3.76km in both the 2018 business case and the current business case.

c) Given that the scope of this cable replacement project remains the same between 2018 and now, please explain why the budget has increased by $1,175,685 ($1,749,769 increased to $2,925,454).

d) Has Alectra Utilities experienced any further outages in this area between 2018 and now?

G-Staff-20
Ref 1: EB-2017-0024, 2018 EDR Application, Attachment 33, July 7, 2017, Pages 44-52
Ref 2: Exhibit 4, Appendix B, Pages 45-47 of 490

The business case for Project #100909 – "Rebuild 27.6 kV pole line for 4 Ccts on Warden Ave from Major Mack to Elgin Mills" states that:

> This project is the third part of a multiple year project of rerouting two feeders 12M10/12M11 to Markham Future Urban Area. The first part is to add two ccts on Warden Ave from Hwy 7 to 16th Ave that has been completed in 2017. The second part is to extend the two ccts on Warden Ave f [sic] from 16th Ave to Major Mack Dr, and the fourth part is to extend 2 ccts on Warden Ave from Elgin Mills to 19th Ave. The total length is 8km from Hwy 7 to 19th Ave. The timing of the fourth part depends on the progress of the FUA development.

The business case indicates the cost of the project to be $2,180,514.

OEB staff notes that, as part of Alectra Utilities' 2018 rates application, Alectra Utilities submitted the business case (Project #100229) for the first and second parts of this multi-year project because Alectra Utilities was requesting ICM funding for this project. The business case provides the following budget allocation:

Table 13 - Budget Allocation

2017	2018	Total Budget
$1.01MM	$1.30MM	$2.38MM

a) Please confirm that, despite OEB denial of ICM funding for this project in the 2018 rates application, Alectra Utilities was able to fund and complete the first and second parts of this multi-year project.

b) Please explain why the project costs for the third part of the project, the portion included in the current DSP, is almost equal to the budget of the first and second parts combined. In other words, why is the third part almost double the cost of the individual first or second parts?

c) What is the progress of the FUA development and has Alectra Utilities experienced growth already in this area of its distribution system?

G-Staff-21
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A10, Pages 52-53 of 58

On pages 52-53 of 58, Alectra Utilities discusses the replacement strategy for underground civil structures and states that "There is no historical expenditure for this investment because failures of these assets were previously addressed reactively."

Alectra Utilities further states that:

> Depending on the vintage of the structure there will be a variety of structural/condition factors… These legacy installations do not meet current design requirements in comparison to modern pre-cast structures which use rebar and have lids rated for vehicular traffic.

a) Please explain why Alectra Utilities chose to switch from a reactive to proactive replacement strategy.

b) Has Alectra Utilities experienced any failures of its underground civil structures? Please provide all instances of failures.

c) As described above, please explain if any of Alectra Utilities' "legacy installations" fail to meet any technical or safety standards i.e. CSA standards.

d) How does Alectra Utilities identify degraded underground civil structures that are suitable for intervention? Does Alectra Utilities perform routine inspections?

e) In light of the risks that are associated with the failure of these assets as described by Alectra Utilities, please explain why Alectra Utilities did not begin proactive replacement of these assets sooner.

f) Once the DSP period concludes, under Alectra Utilities' proposed levels of capital funding, will Alectra Utilities have fully addressed all degraded assets? If not, what percentage of degraded assets will Alectra Utilities have addressed by the end of the DSP period, and what is Alectra Utilities' plan to deal with the remainder of degraded assets?

G-Staff-22
Ref: Exhibit 04, Tab 1, Schedule 1, Appendix A02, Page 4 of 33

Loop feed configurations can provide backup supply to customers when equipment fails and can continue to supply customers even while the failed equipment is isolated and repaired or replaced. Alectra Utilities indicates it installs "looped supply" configurations for all new residential subdivisions with fault indicators installed at each transformer, underground switch and riser pole.

a) Does Alectra Utilities currently employ loop feed configurations in the parts of its distribution system currently fed by underground cables?

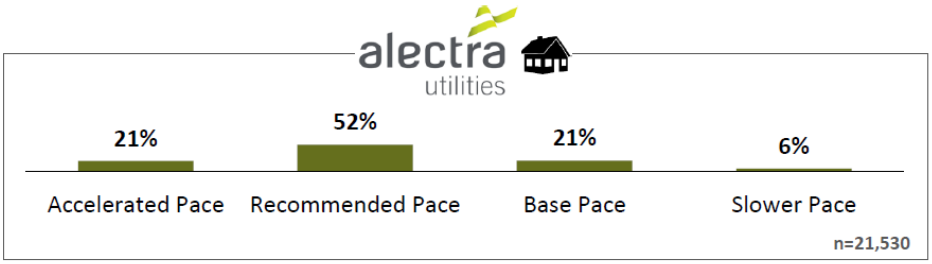
    i. If yes to a), please explain whether Alectra Utilities has been able to leverage its loop feed configurations to reduce the amount of prolonged and persistent outages.

    ii. If no to a), please discuss if Alectra Utilities has considered the possibility of converting its underground system to loop feed configurations and changing its replacement strategy for cables to reactive. Particularly, please discuss the possibility of maintaining a reactive replacement strategy while relying on loop feed to reduce outage duration by maintaining supply to customers when equipment fails.

G-Staff-23
Ref 1: Exhibit 4, Tab 1, Schedule 1, Appendix A10, Page 16 of 58
Ref 2: Exhibit 4, Tab 1, Schedule 1, Appendix C, Page 41

Alectra Utilities chose the accelerated pace for its cable replacement program citing strong customer preference for underground system renewal: "…73% of residential customers that participated in the second phase of customer engagement indicated support for the recommended or accelerated pace of the renewal."

The following chart and table is a percentage breakdown of customer preferences on the pacing of cable replacement found on page 41 of Appendix C:



Rate Zone Breakdown	ERZ	HRZ	PRZ
Accelerated Pace	21%	26%	17%
Recommended Pace	53%	52%	51%
Base Pace	21%	17%	24%
Slower Pace	6%	6%	7%

Although the aggregate sum of customers preferring the accelerated or recommended pace is 73%, the number of customers preferring the accelerated pace is only 21%. The majority of customers prefer the recommended pace. OEB staff notes that, by Alectra Utilities' methodology, the aggregate sum of recommended pace or base pace is also 73%.

a) Given that the majority of customers chose the recommended pace, please explain why Alectra Utilities elected to proceed with the accelerated pace.

b) Given that 73% of customers also prefer the recommended or base pace, did Alectra Utilities consider proceeding with the base pace? If not, why not, and how is this different from the scenario where Alectra Utilities considered the accelerated pace?

c) Please explain why Brampton rate zone customers were not consulted when there are material projects listed in Appendix A10 that pertain to the Brampton Rate Zone (e.g. Project #151286).

G-Staff-24
Ref 1: Exhibit 4, Tab 1, Schedule 1, Appendix A10, Pages 5-6 of 58
Ref 2: Exhibit 4, Tab 1, Schedule 1, Appendix D, Page 59

Alectra Utilities describes cable rejuvenation as a "lower-cost solution that can extend the life of cross-linked polyethylene (XLPE) cables by injecting a fluid into the core of a buried XLPE cable." In particular, Alectra Utilities states:

> Alectra Utilities has been accelerating the underground cable replacement where possible, has introduced cable injection to slow down the rate of deterioration of cables and spent considerable time and effort to understand, document and track cable condition. Despite all of this Alectra Utilities' efforts are being overwhelmed. Reliability is worsening. That is a fact.

The Asset Condition Assessment (ACA) states that the "Health index of primary XLPE cables is calculated using age."

a) Which specific activities has Alectra Utilities undertaken "to understand, document, and track cable condition"? Please provide the results.

b) Has Alectra Utilities concluded that the only variable input required to determine asset condition for XLPE cable is age?

    i. If yes, does that mean the process of understanding, documenting, and tracking cable condition is a desktop exercise?

c) On average, how much cheaper is rejuvenation over replacement per km of cable?

d) To date, how many km of cable has undergone rejuvenation in Alectra Utilities' service territory?

e) How many years does cable rejuvenation add to a cable's life?

f) Given that the health index of XLPE cables is based off age, please explain how the extended life of rejuvenated cables is reflected in the health index.

g) Will renewed cable assets require less maintenance than aged and deteriorating assets?

   i. If yes to g), what is the amount of reduction in system operating and maintenance (O&M) spending and is this reflected in Alectra Utilities O&M forecasts?

   ii. If no to g), why not?

h) What is the basis for the claim that reliability is worsening? Please provide the evidence for this claim.

   i. On what basis was the timeframe for the above data selected?

i) Is the reliability and performance of XLPE cable deviating from the expected reliability and performance that can be inferred from the asset condition assessments undertaken on these assets?

j) Please provide statistics of cable failures for the past 10 years.

G-Staff-25
Ref: Exhibit 4, Tab 1, Schedule 1, Page 3 of 438

Regarding deterioration of underground cables, Alectra Utilities states:

> A recent specific example underlying these trends is the York Hill/Hilda neighbourhood in Vaughan, which was scheduled for underground cable replacement in 2019 however from June 22 to July 13, 2018, approximately 250 customers starting experiencing an outage approximately once every three days during this period. Cables which Alectra Utilities repaired would fail again within a short duration. Alectra Utilities was ultimately forced to replace the cable in the area on an emergency basis at a higher cost and with greater disruption, causing further impacts to the affected customers.

a) What were the initial causes of the failures, and were the subsequent causes of failures different from the initial causes?

b) Were the failures in close proximity to one another? Please provide details.

c) Were the cable segments that experienced these failures all of the same age?

d) Did Alectra Utilities do any additional analysis on the retired cable once it had been removed from service? If yes, what were the findings?

e) Did the performance of the cable correspond with the expected performance that Alectra Utilities models in its asset management program?

f) Please quantify the difference in cost of replacing the cable in 2018 rather than the estimated cost of the planned replacement in 2019.

g) Please compare the actual outage duration in 2018 versus the estimated outage duration had the replacement taken place as planned in 2019.

G-Staff-26
Ref 1: Exhibit 4, Tab 1, Schedule 1, Page 3 of 438
Ref 2: Exhibit 4, Tab 1, Schedule 1, Page 5 of 438

In reference 1, regarding underground cable failures, Alectra Utilities states:

> Figure 5.0 - 2 and Figure 5.0 - 3 illustrate underground systems in neighbourhoods at Rathburn/ Creditview, as well as Bough Beeches/ Claypine which have experienced a high number of recent underground cable failures, which require urgent replacement.

In reference 2, Alectra Utilities states:

> While in the York Hill/Hilda example Alectra Utilities was fortunate to be able to work within its capital investment portfolio to substitute and defer other capital work to accommodate this emergency cable replacement, this is not a sustainable solution for Alectra Utilities going forward. Alectra Utilities is facing a large capital asset bubble specifically with underground cables that are now coming due. These cables were installed during a period in time when Alectra Utilities' municipalities experienced significant growth (1960s to 1980s). The required replacement of these underground cables, now 40 to 60 years old, is far and above anything that would have been contemplated in Alectra Utilities' base rates. This issue is further exasperated by an even larger looming demand coming from installed cables between 1980 to 1990 that are starting to reach end of life and it is absolutely imperative that Alectra Utilities secure funding and get under control this renewal investment and address the large inventory of end of

life cable that must be replaced now before Alectra Utilities needs to deal with the even larger population of cables installed 30 to 40 years comes due.

a) What does Alectra Utilities consider a “high number” of recent underground cable failures? Please quantify the number of failures actually experienced and compare that to the number of failures predicted by Alectra Utilities’ asset management plan or ACA process.

b) What replacement rate did Alectra Utilities “contemplated in Alectra Utilities' base rates” when the predecessor utilities were merged?

c) Was Alectra Utilities aware of the “underground cables that are now coming due” when the predecessor utilities were merged?

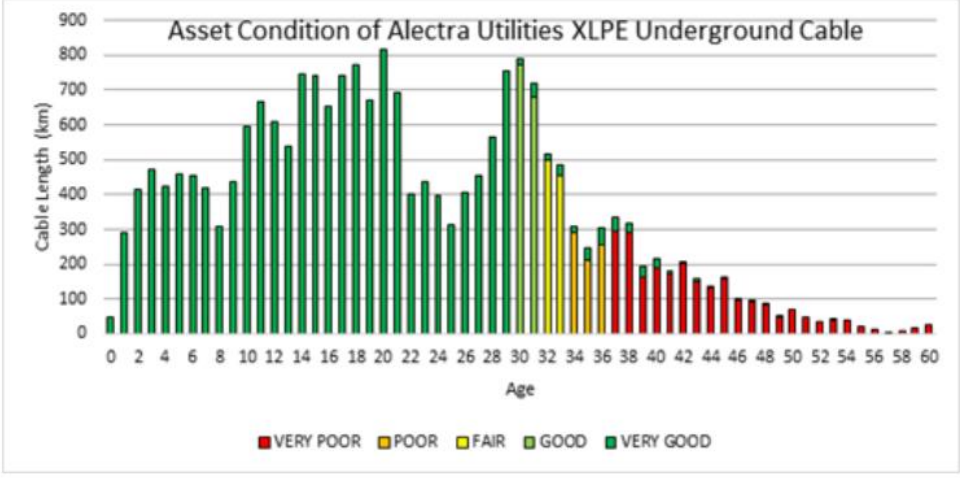
d) Please confirm that Alectra Utilities uses age to determine asset condition for underground cable, which implies that planned replacement of underground cable can be accurately forecast many years in advance of replacement.

    i. If yes to d), please explain how it is that “[T]he required replacement of these underground cables … is far and above anything that would have been contemplated in Alectra Utilities' base rates”.

G-Staff-27
Ref 1: Exhibit 4, Tab 1, Schedule 1, Page 6 of 438
Ref 2: Exhibit 4, Tab 1, Schedule 1, Appendix D, Pages 957 and 992
Ref 3: Exhibit 4, Tab 1, Schedule 1, Appendix A10, Page 4 of 58

The following figure is taken from reference 1:

Figure 5.0 - 4: Asset Condition of Alectra Utilities XLPE Underground Cable



Alectra Utilities states in reference 2 that the Health Index of primary XLPE cables is calculated using age and provides the following figure showing the XLPE cables age distribution:

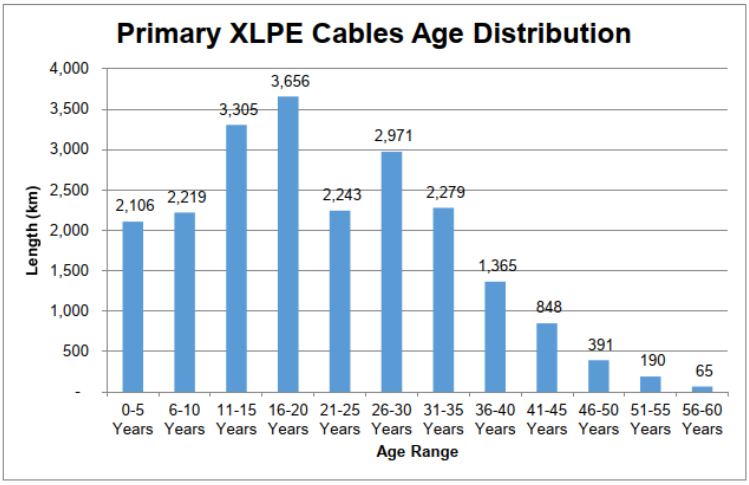


Figure 24 Primary XLPE Cables Age Distribution

In reference 3, Alectra Utilities states:

> Alectra Utilities' service area currently contains an extensive population of underground cables totalling approximately 22 million linear meters of cable, which are continuing to degrade. Almost all of these cables are XLPE (either the first generation XLPE cable, or the subsequent tree-resistance XLPE cable).

a) Please confirm that XLPE cables were first used in the late 1960's[3] (i.e., the assets over 50 years of age do not represent XLPE cables).

    i. If yes, please explain why Figure 5.0 - 4 contains XLPE cabled labeled as over 50 years of age and provide a revised figure with correct labels.

b) Has Alectra Utilities analyzed the actual lifespan of its underground cable assets vs. expected lifespan?

    i. If yes, please provide the results of the analysis.

c) Are underground cables ever treated as run to fail, or are they always replaced at a given age?

d) Does Alectra Utilities replace failed cable segments without replacing adjacent segments? I.e. if one phase of a circuit needs to be replaced on an emergency basis, are all three phases replaced at that time?

G-Staff-28
Ref: Exhibit 4, Tab 1, Schedule 1, Pages 27 and 98 of 438

On page 27 of 438, Alectra Utilities states:

> It is particularly important for Alectra Utilities to focus on its underground systems to address the significant declining reliability customers have experienced as a result of underground cable failures.[8]
> …
> [8]An average annual 8% increase in outage frequency, as well as the average annual increase in outage duration.

On page 98 of 438, Alectra Utilities states

> In order to track performance, relative to the company's Financial AM Strategic Principle of prudently investing in and maintaining assets to provide sustainable value, Alectra Utilities has established two performance measures:
>
> - Cost Control – Planned Capital versus Actual Expenditures
> - Asset Condition – Health Index of Cable Assets

[3] "Long-Life XLPE Insulated Power Cable", N Hampton, 2007 (Retrieved from neetrac.gatech.edu/publications/jicable07_C_5_1_5.pdf)

a) Is Alectra Utilities asserting that underground cable failures have increased 8% per year?

b) Which specific year over year period (or periods) is being referenced as experiencing "significant declining reliability"?

   i. Please provide a breakdown of the number of cable failures in each of the referenced years, as well as the number of customers impacted by each failure and the duration of the resulting outage.

c) Please define "Cable Assets" and provide a list of assets included in this category.

d) What fraction of overall Alectra Utilities asset value does this category comprise?

G-Staff-29
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A10, Page 1 and 16 of 58

Alectra Utilities provides the following table showing its historical and forecasted expenditures in its underground asset renewal program:

Table A10 - 1: Underground Asset Renewal Summary

	Historical Spending				Bridge	Forecast Spending				
Year	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
CAPEX ($MM)	$44.3	$43.3	$51.8	$43.6	$45.5	$61.1	$74.5	$82.2	$88.5	$95.5
Primary Driver:	Failure Risk									
Secondary Drivers:	Reliability, Functional Obsolescence, Safety									
Outcomes:	Improved Reliability, Improved Efficiency and Improved Safety									

For its underground asset renewal program, Alectra Utilities states that it considered three different investment strategies to manage the aging and deteriorating underground cable infrastructure in its service area:

- Strategy 1: Accelerated pace (Improve cable reliability by 8%)
- Strategy 2: Moderate pace (Maintain cable reliability at 2018 level)
- Strategy 3: Reduced pace (Allow cable reliability to worsen by 10%)

a) What is the expected impact on Alectra Utilities' average annual System Average Interruption Durations Index (SAIDI) and System Average Frequency Index (SAIFI) performance if the proposed underground cable projects are completed under each of the three strategies above?

b) Please provide a table similar to Table A10 – 13 showing the cost per unit improvement of SAIDI and SAIFI for each underground facility replacement project and program identified in this filing.

c) How were the claimed reliability outcomes for the different capital investment levels quantitatively derived? Please provide all assumptions and calculations.

G-Staff-30
Ref: Exhibit 4, Tab 1, Schedule 1, Pages 231-233 of 438

Alectra Utilities describes its asset replacement strategy for primary underground XLPE cables in the following table:

Asset Class	Primary Replacement Strategy	Comments
Underground conductors and accessories - primary Cross-linked polyethylene ("XLPE") cables	Planned	Alectra Utilities implements two types of strategies in managing its XLPE cable population: (i) cables which are beyond end of useful life (i.e. 35 years) will undergo planned replacements; and (ii) cables which are less than 35 years of age will be considered for cable rehabilitation. In the event that a cable fails while in service, Alectra Utilities will repair the cable by splicing out the faulted segment.

a) Does Alectra Utilities conduct post-removal destructive testing on its retired XLPE cables in order to determine actual condition at the time of retirement?

   i. If yes, does Alectra Utilities update the typical useful life (TUL) and end of useful life (EUL) estimates based on the results of these tests?

   ii. If no, why not?

b) If Alectra Utilities updates its TUL and EUL estimates, will this change the planned pacing of the XLPE replacement program?

   i. If no, why not?

G-Staff-31
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A10, Pages 24-37 of 58

Alectra Utilities identifies its pad-mounted switchgears as a critical component of its underground distribution system. Alectra Utilities provides the following table to summarize its historical and forecasted spending for switchgear renewal:

Table A10 - 7: Switchgear Summary

	Historical Spending				Bridge	Forecast Spending				
Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
CAPEX ($MM)	$3.8	$5.4	$4.0	$2.5	$5.8	$7.4	$7.6	$7.9	$8.1	$8.3
Primary Driver:	Failure Risk									
Secondary Drivers:	Reliability, Functional Obsolescence, Safety and Environmental risks									
Outcomes:	Better Reliability, Expedient Fault Finding and Restoration, Safety and Environmental Risk Mitigation									

a) Given that Alectra Utilities considers its pad-mounted switchgears to be critical components requiring a steady level of investment, please explain the decreased spending in 2017 and 2018.

b) How many legacy switchgear units will be replaced in each year 2020 to 2024?

c) How many legacy switchgear units requiring replacement will remain in Alectra Utilities' system after 2024?

d) What is the reliability improvement cost-effectiveness of the planned switchgear replacements in comparison with the planned underground cable replacements? Please provide any relevant analysis and calculations.

Regarding the air-insulated switchgear population, Alectra Utilities states that as the deteriorated assets are replaced, it will "… eventually allow for a reduction in O&M costs with a lower amount of dry ice cleaning."

e) When does Alectra Utilities expect to see the reduction in O&M and what is the amount expected?

G-Staff-32
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A10, Page 34 of 58

Figure A10 – 18 forecasts the number of pad-mounted switchgear failures in 2019 to be 230. Please provide the actual number of pad-mounted switchgear unit failures between January 1 and June 30, 2019.

G-Staff-33
Ref 1: Exhibit 4, Tab 1, Schedule 1, Appendix C, Page 22
Ref 2: Exhibit 4, Tab 1, Schedule 1, Appendix C, Page 14

On page 22, Alectra Utilities states that "Within current rates, the reliability of underground cable is expected to further worsen by approximately 4% from current 2018 levels."

On page 14, Alectra Utilities states that:

> The average number of outages (excluding major event days) has increased by an average of 6% per year from 2014-2018, rising from 1.27 to 1.53 over this period.
>
> The average duration of outages (excluding major event days) has increased by an average of 8% per year from 2014-2018, rising from 0.88 hours to 1.14 hours over this period.

a) Please clarify how the 4% reliability deterioration rate was determined. Please clarify which metric is being quantified.

b) Does this imply that reliability will drop by 4% per year, or by 4% in total through 2027?

c) Given the statement that the number of outages is increasing by 6% and the duration by 8% on page 14, does a 4% decrease in reliability due to underground cables imply that underground cables are deteriorating at a lower rate than aggregate system assets?

d) What steps did Alectra Utilities take to ensure that none of the above questions caused confusion to the survey respondents?

G-Staff-34
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix B, Pages 145-147 of 490

The business case for Project #150263 – "Cable Replacement Project – East Left Behind Cable" states that the proposed annual budget for the project for 2019 and onwards is a continuation of the project at the same budget levels performed in past years 2014-2018.

The business case provides the following table outlining the annual budgets for this project:

	2019	2020	2021	2022	2023	2024
2019-2024 - Optimized for DSP CE v2: $11,758,778	$1,234,223	$1,304,394	$2,703,182	$1,567,248	$3,374,731	$1,575,000
Actuals: $0	$0	$0	$0	$0	$0	$0

a) Please provide the actual capital expenditures for this project for 2014-2018.

b) Please explain why there is a spike in spending in 2021 and 2023 if spending levels are expected to remain level.

G-Staff-35
Ref 1: Exhibit 4, Tab 1, Schedule 1, Appendix B
Ref 2: EB-2015-0003, PowerStream Inc. IRRs, II-1-Staff-16

Based on the information provided in the business cases in Appendix B, OEB staff has compiled the following table summarizing the recent historical unit costs of cable replacement in each of Alectra Utilities' rate zones:

Rate Zone	**Historical Cable Replacement Unit costs (2016-2018)**
Enersource	$250/m
PowerStream	$389/m
Horizon	$328/m
Brampton	$389/m
Guelph	N/A

a) Please confirm if the table above is correct and please provide corrections if necessary.

b) Please explain why PowerStream, Horizon and Brampton have significantly higher unit costs than Enersource.

The following table is taken from PowerStream's responses to interrogatories from its 2016 rates application showing PowerStream historical cable replacement unit costs:

Assets		Actual			
		2011	2012	2013	2014
Underground Cable (Injection)	length (m)	9,570	25,100	85,363	106,976
	$	$315,776	$810,310	$4,319,470	$6,006,747
	$/m	$33	$32	$51	$56
Underground Cable (Replacement)	length (m)	10,330	9,060	49,539	54,499
	$	$2,829,932	$1,931,017	$14,722,080	$14,982,276
	$/m	$274	$213	$297	$275

OEB staff calculates the 2011-2014 five-year average unit cost of underground cable replacement to be $265/m and calculates the 2016-2018 historical unit costs of $389/m to be a 47% increase.

c) Please explain the reason for the large increase in unit costs for the PowerStream rate zone.

G-Staff-36
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix B

OEB staff notes the following cable remediation projects have significantly higher unit costs for cable replacement compared to historical unit costs:

- Project #150138 (PowerStream) - $712/m vs. $389/m historical.
- Project #150141 (PowerStream) - $778/m vs. $389/m historical.
- Project #150262 (PowerStream) - $555/m vs. $389/m historical.
- Project #150255 (PowerStream) - $760/m vs. $389/m historical.

a) Please explain the reasons for the higher than average unit costs.

b) Please describe Alectra Utilities' methodology for quantifying the impact on unit costs of the reasons discussed in part a).

G-Staff-37
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix B

OEB staff notes that the business cases for the following projects are missing unit cost information: Project #151146, Project #151176, Project #151144, Project #151465, Project #151143, Project #151066 and Project #151141.

a) For each project listed above, please provide the unit costs for the cable replacement.

b) For the projects that include transformer replacement, please separate the total budget into the budget for cables and the budget for transformers. Also, please provide the unit costs for the transformer replacements.

    i. Please explain why budget for transformer replacements is being included in cable renewal projects rather than under transformer renewal programs.

G-Staff-38
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix B

OEB staff notes that the business plans for cable replacement projects within the Enersource rate zone include budget for the replacement of assets other than cables. The business cases mention deteriorating assets and transformers that will be replaced as part of the project.

As an example, Project #151409 – "Cable Replacement Project – Central Parkway & Bloor (29), Mississauga" has a total cost of $10.9 million. The business case states that $3.12 million is to be spent on cable replacement, and the remaining $7.78 million is to be spent on deteriorating assets and back-lot transformers in the area.

a) Please explain what deteriorating assets other than cables and transformers will be replaced.

b) Please explain why Alectra Utilities is proposing to replace transformers despite Alectra Utilities' reactive, "run-to-failure" replacement strategy for distribution class pad mount, pole mount and vault mount transformers.

c) Please explain why Alectra Utilities included capital for transformer replacements under the cable remediation category when Alectra Utilities has separate investment categories and funds for transformer replacement and reactive capital (in the event that the transformer fails).

d) Please explain why Alectra Utilities included capital on deteriorating assets other than cables as part of cable remediation projects.

e) Please explain if the deteriorating assets and transformers mentioned above contribute to Alectra Utilities' reliability metrics to the same degree as underground cables (i.e. do those assets cause as many outages as cables)?

f) Please explain why Enersource is the only rate zone with this approach to its business cases.

g) If any investment capital described above has been categorized incorrectly, please provide updated business cases and total forecasted capital expenditures for each affected investment subgroup in Appendix A.

G-Staff-39
Ref: Exhibit 4, Tab 1, Schedule 1, Pages 6-7 of 438

Regarding its overhead assets, Alectra Utilities states:

> … a key focus for investment is on replacing and remediating overhead assets that are deteriorated or otherwise prone to failure from adverse weather conditions. A particular area of focus will be on renewing, through reinforcement or replacement, deteriorated poles that have been assessed as being in Poor or Very Poor condition based on the 2018 Asset Condition Assessment. Reinforced and replacement poles are more resilient to ice and wind loading. Alectra Utilities will specifically target a particular population of wood poles in circumstances where they are carrying four circuits. This is a scenario that has been found to be particularly susceptible to failure during storm and high wind events.

a) Please provide a list of multi-pole failure events that have occurred in the service areas of Alectra Utilities or its predecessor utilities over past 5 years, indicating the number of poles that failed in each event and providing the causes of the failures.

   i. For wind and/or ice related failures, does Alectra Utilities believe that the wind and ice loads that caused the failures are good proxies for future ice loads and wind loads? Please provide rationale.

   ii. Were the failed poles originally designed to meet CSA standards?

   iii. Have CSA standards been updated since the poles were initially designed, and would poles conforming to the new standard be able to withstand the types of wind and ice loads that caused the past multi-pole failure events?

   iv. If CSA standards are not sufficient, how has Alectra Utilities determined what design standards will be sufficient for its poles?

b) Did any of the Alectra Utilities predecessor utilities apply different meteorological loading standards for single circuit vs. multiple circuit overhead line designs?

    i. If yes, please provide the different design standards and the rationales for applying them.

c) Is Alectra Utilities proposing to adopt new design standards that exceed historical design standards?

    i. If yes, do the new proposed Alectra Utilities standards exceed typical utility practice in Ontario or for other Canadian jurisdictions?

    ii. If yes, is Alectra Utilities proposing to upgrade existing facilities to meet the new standards, or will the new standards only be applied to new build or replacement projects driven by asset condition?

    iii. If yes, what is the per unit cost consequence of applying the new standards? I.e. what is the average incremental capital cost of applying the new standards to poles carrying one, two, three and four circuits?

    iv. If yes, what is the aggregate cost consequence of applying the new standards? In other words, what is the incremental cost per year of applying the proposed new standards to the planned pole replacements identified in this filing?

d) Has Alectra Utilities completed a multi-year analysis that shows a correlation between the age of poles and increasing probability of pole failure during adverse weather conditions?

    i. If yes, please provide the analysis.

e) Has the probability of multiple structure failures been increasing over time in Alectra Utilities' service area over the historical period of 2014-2018?

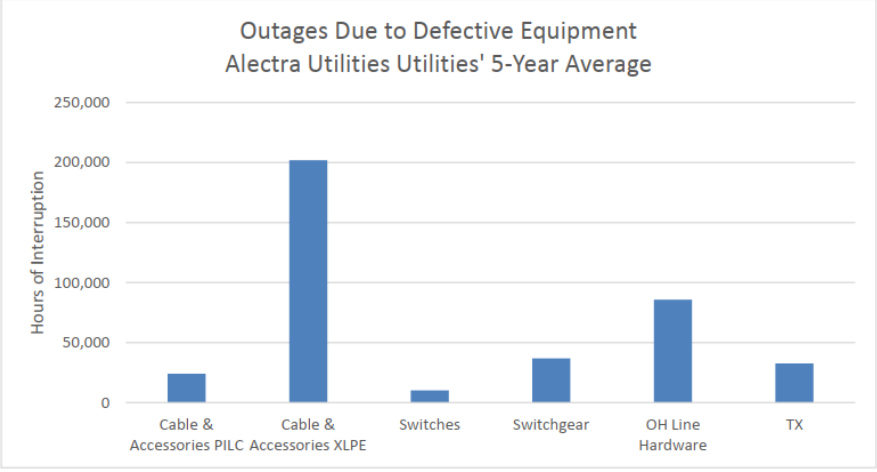
    i. If yes, please provide quantified evidence demonstrating the relationship between the specific cause and the total number of structure failures in Alectra Utilities' service area over the historical period.

G-Staff-40
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A05, Pages 2-3 of 53

On pages 2-3 of 53, Alectra Utilities states:

> Deteriorated overhead infrastructure also negatively affects customers' reliability. As shown in Figure A05 - 2, failing overhead distribution hardware is the second largest contributor to equipment related failures. This fact reflects both a large amount of overhead equipment in Alectra Utilities' distribution system, and the condition of those assets. The planned expenditures are necessary to maintain reliability near current levels.

Figure A05 - 2: Outages Due to Defective Equipment, Alectra Utilities' 5-Year Average (2014-2018)



a) What specific asset types comprise the class "overhead distribution hardware"?

b) Is there a high probability that overhead distribution hardware will spontaneously fail due to deteriorated state, or is failure of deteriorated overhead distribution hardware typically triggered by external factors?

   i. If typically triggered by external factors, please list the most common factors.

c) Please provide the proportional and absolute 2014-2018 trends for outages caused by overhead distribution hardware failures, i.e. trends should be shown as the percentage of total annual outages and the total number of outages caused by overhead distribution hardware failures.

d) Please provide a chart showing the 2014 - 2018 outage hour trends caused by each of the asset categories listed in Figure A05 – 2.

G-Staff-41

Please provide the proportional and absolute 2014-2018 trends for outages caused by wood pole and concrete pole failures (i.e. trends should be shown as both the percentage of total annual outages and the total number of outages caused by wood and concrete pole failures).

G-Staff-42
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix D, Page 19

Regarding planned replacement, Alectra Utilities states:

> Planned replacement approach applies to critical assets that carry significant risk to the safe and reliable operation of the distribution system and protection of the environment. For example, failure of wood poles carries significant safety risk to the public; therefore, a planned replacement strategy is prudent. In the case of concrete poles, if maintenance is not an option, a planned replacement strategy is applicable.

a) What is the expected consequence (financial, safety and environmental) for a typical wood pole failure?

b) What is the reasonable worst-case consequence for a typical wood pole failure?

c) What is the consequence that Alectra Utilities uses when calculating the risk for its population of typical wood poles?

d) Please provide evidence (financial, safety, environmental) supporting the selection of this consequence for risk calculation purposes.

G-Staff-43
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix K, Pages 14-15, 45, 53, 56 and 61

On pages 14-15, the CIMA+ report states:

> Trees magnify the impact of ice storms. Tree management near distribution lines is an important adaptation action needed to reduce risks of power distribution system outages.

On page 45, regarding a paper on Best Practice Vegetation Management, CIMA+ states:

> The report recommends […] using condition based scheduling of vegetation management to optimize the value of funds expended (Reliability Centered Vegetation Management).

On page 53, regarding PowerStream staff experiences and thoughts on the key issues of the 2013 ice storm, key observation were:

- Hazard trees/limbs outside the trim zone need to be addressed.
- Overhead secondaries are not part of the tree trimming program; this is where a number of the problems were.
- Most failures were in heavily treed side streets and rural areas.

On page 56, regarding reliability good utility practice in vegetation management, the CIMA+ report states, amongst other things:

- PowerStream has adopted a 3 years tree trimming cycle to standard trim clearances including rear lot easements.
- PowerStream has adopted an annual vegetation management focus on worst performing feeders.

On page 61, the CIMA+ report states:

> Very little if any PowerStream plant was brought down by ice accumulation that one would expect from an ice storm.

a) Please confirm that during an ice storm, trees are a larger factor in causing outages than direct loading on structures.

b) Please indicate if Alectra Utilities has plans to implement reliability centered vegetation management programs in lieu of increased capital spending.

    i. If yes, please provide the details of the vegetation management program.

ii. If no vegetation reliability-centered management programs are being proposed in lieu of capital programs, please provide the business case of the decision not to increase the vegetation management program.

c) Please confirm that Alectra Utilities will implement good utility practice in vegetation management, equivalent to that which is described in the CIMA+ report for Powerstream.

d) If not, please describe what vegetation management practice Alectra Utilities will implement in terms of planning, timing and rationale.

G-Staff-44
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix K, Page 68

Regarding composite poles, the CIMA+ report states:

> Compared to wood poles, composite poles are lighter, stronger and have lower conductive properties and are more fire resistant. They are not as vulnerable to rot and insect damage as wood poles are. They also do not lose strength as they age, so require minimal maintenance and inspection needs.

a) What is the expected useful life of a composite pole?

b) What is the typical driver for replacement of a composite pole, if they do not lose strength as they age?

c) Has Alectra Utilities considered the use of composite poles in its service area? Please explain why or why not.

G-Staff-45
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix K, Page 75

Regarding suggested practices for design PowerStream should consider adopting, the CIMA+ report lists:

1. Consider installing periodic ground anchors in the direction of the line in long straight sections to act as dead-end structures (i.e. HQ uses every 10 poles)
2. Consider adapting designs to be able to withstand wind gusts of up to 120 km/h in strategic locations (rail and highway crossings, station egress riser poles, 4 circuit poles at corners of major intersections, corner poles, dead end poles, 407

ramp poles, other locations deemed critical by PowerStream) and that require a minimum of guying.
3. Consider having poles containing 2 or more primary circuits to be designed to Grade 1 construction standards (Safety factor = 2.0). This is the standard practice in major utilities such as Hydro Quebec, BC Hydro and ATCO.
4. Consider using non-wood poles for 3 or more primary circuits based on the advantages previously mentioned and the increased load at risk
5. Consider a 70% strength replacement target for Grade 1 construction.
6. Consider moving existing flood sensitive equipment above grade in existing stations.

a) Have economic optimizations been carried out to determine which of these adaptations provides the greatest performance benefit for the least cost?

    i. If yes, please provide the analysis/optimizations that have been carried out.

b) Which, if any, of these adaptations are proposed to be implemented in the present DSP? Please provide references to the DSP projects or programs under which the selected adaptations will be implemented.

G-Staff-46
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A05, Page 49 of 53

Alectra Utilities states that its future voltage conversion expenditures between 2020-2024 total $49.4 million. Further, Alectra Utilities states that, starting in 2020, its voltage conversion spending is expected to remain relatively consistent year-over-year and will continue its level of investment until completion of voltage conversion work.

a) How many remaining kilometers of low voltage lines will exist in Alectra Utilities' service area at the end of 2019, by voltage class?

b) How many kilometers of low voltage lines will be converted in each year from 2020 to 2024, by voltage class?

c) In what year does Alectra Utilities expect to complete its voltage conversion work?

Alectra Utilities notes reliability improvements and efficiencies as outcomes of voltage conversion. In particular for efficiencies, Alectra Utilities states that "Converting to

modern voltages will also create efficiencies, since this eliminates the need for having a utility owned substation, hence, avoiding ongoing capital and maintenance costs."

d) What is the impact of voltage conversion on reliability? Please quantify the impact in terms of SAIDI and SAIFI metrics.

e) Has Alectra Utilities quantified the cost savings arising from the efficiencies identified above?

   i. If yes to e), please provide the amount of savings in capital and O&M. Also please indicate whether the savings have been reflected in Alectra Utilities' forecasted capital and O&M spending.

   ii. If no to e), why has Alectra Utilities not quantified the amount of cost savings?

G-Staff-47
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A05, Page 14 of 53

As part of Overhead Asset Renewal, Alectra Utilities has included investments for the replacement of switches. The following table shows the three pacing options Alectra Utilities considered for its switch renewal.

Table A05 - 12: Overhead switches pacing options

Strategy	Plan period (years)	Switches Remediated Per Year			Total Switch Renewal Plan Cost per year ($MM)
		Total	Through Other Investments	Through Switch Renewal	
Strategy 1: Accelerated pace	5	66	9	57	$3.0
Strategy 2: Moderate pace	7.5	44	9	35	$2.2
Strategy 3: Reduced pace	10	33	9	24	$1.3

a) Please indicate the anticipated annual impact on reliability in terms of SAIDI and SAIFI metrics of each of the three pacing options.

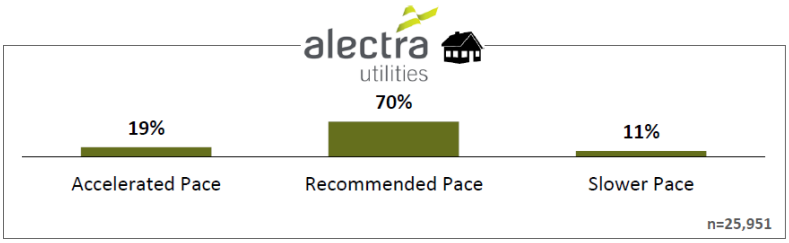
Using the values provided in the table above, OEB staff calculates the following unit costs of switch replacement:

Strategy 1: $3,000,000 / 57 = $52,632 per switch
Strategy 2: $2,200,000 / 35 = $62,857 per switch
Strategy 3: $1,300,000 / 24 = $54,167 per switch

b) Please explain why strategy 2 has a significantly higher unit cost compared to strategies 1 and 3.

G-Staff-48
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix C, Page 43

Alectra Utilities collected the follow customer preferences for overhead system renewal through its customer engagement efforts:



Rate Zone Breakdown	ERZ	BRZ	HRZ	PRZ
Accelerated Pace	19%	23%	21%	14%
Recommended Pace	71%	63%	70%	73%
Slower Pace	10%	14%	9%	13%

Please explain why Guelph rate zone customers were not consulted on overhead system renewals.

G-Staff-49
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix C, Voluntary Online Workbook, Page 24

On page 24 of the voluntary online workbook, Alectra Utilities communicated to customers that the expected outcome of its overhead system renewal is to “Address all of the poor and very poor poles in system by 2024, as well as all the poles prone to catastrophic failures under adverse weather conditions.”

a) Did Alectra Utilities provide customers with context to define what is meant by "catastrophic failures under adverse weather conditions"?

b) What evidence was presented to customers explaining the probability of "catastrophic failures"?

c) How does Alectra Utilities determine which poles that are not in poor or very poor condition are "prone to catastrophic failures"?

G-Staff-50
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A07, Pages 3, 13 and 15 of 21

The following tables are taken from Appendix A07:

Table A07 - 1: Investment Subgroup Drivers and Outcomes Summary

	Historical Expenditure				Bridge		ForecasteExpenditure			
Year	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
CAPEX ($MM)	$4.0	$4.6	$3.4	$0.0	$5.1	$4.8	$1.2	$1.2	$4.2	$8.5
Primary Driver:	Functional Obsolescence									
Secondary Drivers:	Reliability, Safety									
Outcomes:	Customer Value, Reliability, Safety, Environment, Efficiency									

Table A07 - 4: Average SAIFI/SAIDI Statistics (2015-2017) for Proposed Project Areas

	Project	Year	Average SAIDI (min) 2015-2017	Average SAIFI 2015-2017
150399	Rear Lot Conversion - Richlieu Dr and Trelawne Dr	2023-2024	87	40
150044	Rear Lot Supply Remediation - Blake/Kempenfelt	2020	132	0.66
150043	Rear Lot Supply Remediation - East of Queen St. to Eastern Ave./North of Greenway St.	2020	582	1.7
150047	Rear Lot Supply Remediation - Royal Orchard – North	2020-2022	243.60	3.21
150378	Rear Lot - East of Queen Street/North of Mill Street	2023	516	1
150330	Rear Lot Conversion – Marsdale	2023-2027	67.4	19.2
150380	Rear Lot - Gunn/Oakley Park/St.Vincent	2024	780	1
150329	Rear Lot Supply Remediation - Main Street / Unionville / Carlton	2024-2026	100.8	0.50
150397	Rear Lot Conversion - Riverview Blvd and Northcliffe	2024	70.1	16.9
150398	Rear Lot Conversion - Strathcona Dr	2024	21	44
			260	12.82

a) Per Tables A07 – 1, what is driving the significant inter-annual variability in the rear lot investment subgroup?

b) Per Table A07 – 4:

   i. What is the expected improvement in Average SAIDI and SAIFI for each of the listed projects?

   ii. What is the total capital cost of each of the listed projects?

   iii. Is this the complete list of projects covered under Tables A07 – 1? If no, please provide the complete list.

c) What is the overall expected impact of completing the planned 2020 - 2024 rear lot conversions on Alectra Utilities' overall SAIDI and SAIFI performance?

G-Staff-51
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A07, Pages 4-5 of 21

Alectra Utilities states that rear lot conversion will limit operational constraints making it easier for its crews to perform maintenance. Furthermore, Alectra Utilities expects the conversion to eliminate tree trimming activities at these locations as a result of the conversion from overhead to underground.

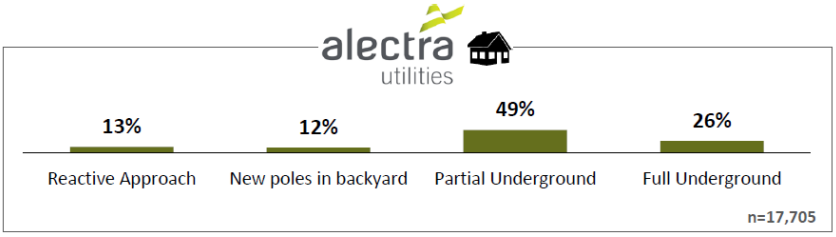
a) Has Alectra Utilities quantified the amount of O&M savings it expects to achieve through its rear lot conversion projects? If yes, how much. If no, why not?

b) Are the efficiencies identified above reflected in Alectra Utilities' forecasted O&M spending?

G-Staff-52
Ref 1: Exhibit 4, Tab 1, Schedule 1, Appendix A07, Page 21 of 21
Ref 2: Exhibit 4, Appendix C, Page 50

Alectra Utilities identifies seven material rear lot conversion projects that it intends to undertake during the DSP period.

Alectra Utilities collected the follow customer preferences for rear lot conversions through its customer engagement efforts:



Rate Zone Breakdown	HRZ	PRZ	GRZ
Reactive Approach	11%	15%	14%
New poles in backyard	11%	13%	9%
Partial Underground	54%	46%	45%
Full Underground	24%	26%	33%

a) The table above presents the customer preferences taken from a sample of all of Alectra Utilities' customers, not just customers serviced through rear lots. Has Alectra Utilities consulted directly with the customers affected by these projects? If so, what kind of customer engagement efforts has Alectra Utilities undertaken?

b) Please explain why Alectra Utilities chose the option of full underground conversion despite a majority of customers choosing the partial underground option.

G-Staff-53
Ref 1: Exhibit 4, Tab 1, Schedule 1, Appendix A18
Ref 2: Exhibit 4, Tab 1, Schedule 1, Page 369 of 438

Alectra Utilities provides the following table outlining its historical and forecast capital spending on Information Technology Systems:

Table A18 - 1: Information Technology Systems Investment Plan, Drivers and Outcomes

	Historical Spending				Bridge	Forecast Spending				
Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
CAPEX ($MM)	$24.8	$9.2	$5.0	$4.8	$10.2	$15.1	$18.2	$19.8	$12.3	$8.4
Primary Driver:	System Capital and Maintenance Investment Support									
Secondary Drivers:	Functional Obsolescence									
Outcomes:	Efficiency, Customer Value, Reliability, Safety, Cyber Security and Privacy, Coordination and Interoperability, Environment									

On page 369 of 438, Alectra Utilities notes that the increase in forecast spending on Information Technology in comparison to historical expenditures is "…related to the deferral of projects in historical years so such investments could be further evaluated,

prioritized and executed by Alectra Utilities as a consolidated entity to maximize efficiency gains and value creation."

a) What studies or analysis did Alectra Utilities perform to re-evaluate its Information Technology Systems investment plan?

b) Please discuss specific efficiency gains and value creation achieved through Alectra Utilities' re-evaluation and re-prioritization.

c) Has Alectra Utilities achieved cost savings through post-consolidation reprioritization compared to pre-consolidation investment plans? If yes, what is the amount of savings? If not, why has Alectra Utilities not been able to achieve cost savings?

On page 6 of Appendix A18, Alectra Utilities indicates that $10.4 million of its IT investments will be used to improve its Customer Care and Billing (CC&B) system in order to comply with regulatory requirements and enhance customer experience.

d) What regulatory requirements are the improvements to CC&B intended to meet?

e) Has Alectra Utilities engaged customer feedback for preferences on capital spending to improve customer experiences with CC&B systems? If yes, what feedback did Alectra Utilities receive? If no, why not?

On page 28 of Appendix A18, Alectra Utilities indicates that $10 million was spent in 2015 on replacing the CC&B system in Alectra Utilities' eastern operating area.

f) Please explain why additional investment is needed in the CC&B system given the 2015 investment and please explain what the differences are between the new proposed system and the 2015 system.

G-Staff-54
Ref: Exhibit 4, Tab 1, Schedule 1, Page 168 of 438

On page 168, Alectra Utilities states that it "…executes capital project design and construction through a combination of internal resources and external contractors."

OEB staff notes that Alectra Utilities has included external contractors in most of its investment summary execution plans.

a) Given that Alectra Utilities expects a steady, but significant, increase to its annual capital expenditures, has Alectra Utilities considered hiring additional internal staff instead of leveraging external contractors?

b) Has Alectra Utilities performed any analysis on the cost effectiveness of using external contractors versus hiring additional internal staff? If yes, please provide the analysis. If no, why not?

G-Staff-55
Ref 1: Exhibit 4, Tab 1, Schedule 1, Appendix A06, Page 1 of 13
Ref 2: Exhibit 4, Appendix G, Page 31

Alectra Utilities forecasts its reactive capital spending based on historical levels of reactive capital spending. Alectra Utilities forecasts increases in reactive capital spending, despite its proposed increases in system renewal spending, because of the backlog of deteriorated assets and the increasing frequency and intensity of weather events.

a) Please explain why Alectra Utilities expects increases in reactive capital spending if Alectra Utilities' proposed levels of system renewal will maintain or improve asset condition and reliability and if Alectra Utilities is undertaking storm-hardening initiatives.

b) Please discuss the appropriateness of using historical reactive capital spending to forecast future spending in light of the fact that Alectra Utilities has proposed system renewal spending at levels significantly greater than historical levels.

c) Please explain if Alectra Utilities' system renewal programs prioritizes assets that are determined to have a high probability of imminent failure. If so, please explain why reactive spending would not decrease as compared to historical given the increase in system renewal spending that would address equipment prone to failure.

Vanry Associates notes in its DSP Assurance Review Report that:

> As Alectra Utilities works through the backlog of equipment slated for replacement, we anticipate that the trending increase in reactive spending will slow or possibly reverse, provided that Alectra Utilities invests sufficient resources (financial and human) to ensure that the volume of planned

replacements stay ahead of the expected level of deterioration and unplanned failures.

d) When does Alectra Utilities expect its reactive capital spending to slow and decrease?

G-Staff-56
Ref 1: Exhibit 4, Tab 1, Schedule 1, Page 49 of 438
Ref 2: Exhibit 4, Tab 1, Schedule 1, Pages 51-52 of 438
Ref 3: Exhibit 4, Tab 1, Schedule 1, Page 374 of 438

Alectra Utilities states that it is committed to achieving efficiencies that will drive cost savings in operating, maintenance and administration (OM&A) spending. Alectra Utilities expects that asset lifecycle optimization activities and enhanced asset management planning will result in savings for OM&A.

Alectra Utilities provides the following table showing its historical and forecasted system O&M costs:

Table 5.4.2 - 8: System O&M Costs 2015-2024

in $MM	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Actual	Actual	Actual	Actual	Bridge	Planned	Planned	Planned	Planned	Planned
O&M	$104.4	$108.0	$101.9	$99.2	$102.6	$103.5	$104.9	$106.4	$108.7	$110.9

a) Please quantify:

i. The amount of OM&A savings by year from synergies achieved through the formation of Alectra Utilities (i.e. efficiencies arising from the merger and consolidation of Alectra Utilities' predecessor utilities).

ii. The amount of OM&A savings by year from the proposed increase in capital spending to be funded by the M-factor.

b) Please identify the sources of the savings described in part a).

c) Have the savings quantified in part a) been reflected in the O&M forecast above?

i. If yes to c), please explain why significant decreases in O&M have not occurred despite the savings.

ii. If no to c), please update the O&M forecast or explain why these savings have not been included in the O&M forecast?

d) Please explain why Alectra Utilities has not proposed to use the OM&A savings from a) ii. above associated with the incremental M-factor capital spending to offset the revenue requirement of the M-factor.

On pages 51-52 of 438, Alectra Utilities has identified productivity savings in the areas of:

- Work planning and scheduling ($2 million annually)
- Job costing analysis ($1.5 to $3 million annually)
- Electronic timesheets and inventory ordering ($1 million annually)
- Customer central intake process ($0.75 million)

e) Have the productivities above been captured in 1) capital project costs and/or 2) forecast O&M costs above, and 3) in response to part a) above?

i. If yes to e), please quantify the amounts and explain why significant decreases in O&M have not occurred despite the savings.

ii. If no to e), why have these savings not been included?

G-Staff-57
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A11

Alectra Utilities states that its Supervisory Control and Data Acquisition (SCADA) and Automation investments will allow it to defer near-term capital investments and reduce the amount of work performed by field crews.

a) Please explain what capital investments have been deferred as a result of SCADA and Automation investments and indicate the amount of deferred capital.

b) Does Alectra Utilities expect a decrease in O&M spending as a result of automation reducing the amount of field crew work needed?

i. If yes, please provide the amount and indicate whether this is included in Alectra Utilities' forecasted O&M spending.

ii. If no, please explain why not.

G-Staff-58
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A19, Page 6 of 25

On page 6, Alectra Utilities indicates that it has retained Mercury Associates to produce a vehicle utilization study.

a) When does Alectra Utilities expect the vehicle utilization study to be completed?

b) How will Alectra Utilities use the vehicle utilization study to inform its fleet renewal investments?

c) If the conclusion of the vehicle utilization study is to reduce the size of Alectra Utilities' fleet, how will this be accomplished given that Alectra Utilities is already making investments to renew its fleet?

G-Staff-59
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A14, Page 1 of 28

On page 1, Alectra Utilities indicates that its proposed investments in monitoring equipment "… will be able to defer significant capital investments."

Please discuss what significant capital investments Alectra Utilities has been able to defer and how this has been reflected in Alectra Utilities' proposed capital expenditures.

G-Staff-60
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix B, Pages 121-123 of 490

OEB staff notes that, for the purposes of calculating quantitative customer impacts, Alectra Utilities' methodology uses a generic frequency of failure for all of its business cases, rather than using the actual frequency of failure specific to the project area.

As an example, the business case for Project #150141 – M49 Cable Replacement uses the following methodology for calculating the quantitative customer impacts:

> Frequency of Failure is: 0.25 failures per 1000 m of cable per year
> For 3762 m of cable in the whole area:
> Frequency of Failure is: 0.25 x 3762 /1000 = 0.9 failure(s) [annually]

The business case also states that "There was 1 failure in 2014 (Total of 1 failure from 2012 to 2017)."

a) Given that the actual annual rate of failure is 0.2 failure(s) (1 failure / 5 years), as opposed to 0.9 failure(s), please explain how Alectra Utilities' methodology above is an appropriate or accurate way of calculating the quantitative customer impacts.

b) Does Alectra Utilities use the quantitative customer impacts shown in its business cases as an input to its optimization software for prioritizing its projects?

c) Please explain why Alectra Utilities does not use the actual historical number of outages specific to the project area to calculate the quantitative customer impacts.

G-Staff-61
Ref: Exhibit 4, Tab 1, Schedule 1, Pages 11 and 19 of 438

Alectra Utilities states the following about its DSP:

> As the 2015 and 2016 capital expenditure decisions were not made by Alectra Utilities but, rather, by separate corporate entities, that historical capital expenditure information does not provide an appropriate basis for comparison or from which reasonable conclusions can be drawn.

Alectra Utilities further states that "As historical system performance data remains valid when presented on a consolidated basis, this is included in the DSP."

a) If historical system performance data remains valid when presented on a consolidated basis, please explain why consolidated historical capital spending by predecessor utilities does not provide an appropriate basis for evaluating the company's spending plans for the forecast period.

b) Will Alectra Utilities' increased system renewal spending over the forecast period relative to the consolidated historical system renewal spending of the predecessor utilities produce a proportional improvement in reliability performance of the aggregate service area? Please quantify.

G-Staff-62
Ref: Exhibit 4, Tab 1, Schedule 1, Page 13 of 438

Alectra Utilities states that if it does not receive sufficient funds to implement system renewal as proposed in its DSP, it expects "a projected worsening of reliability by 50% over the next five years, and a further deterioration of 112% over the next ten years, relative to the most recent five-year outage duration average."

a) Please provide the analysis used to derive the forecasted decreases in reliability (i.e. 50% over 5 years and 112% over 10 years).

b) Has Alectra Utilities advised its customers of the anticipated decline in reliability? Please provide details.

G-Staff-63
Ref: Exhibit 4, Tab 1, Schedule 1, Page 16 of 438

Regarding its distribution assets, Alectra Utilities states:

> Alectra Utilities' assets include… over 38,000 km of distribution line assets. The distribution line assets include approximately 16,400 km of overhead conductors… [and] over 22,000 km of underground primary cables.

a) Has Alectra Utilities undertaken lifecycle cost/benefit comparisons of overhead versus underground distribution systems, with respect to reliability and life cycle cost per km?

    i. If yes, how has the analysis informed and impacted Alectra Utilities' planning decisions?

    ii. If yes, has Alectra Utilities presented the analysis to its customers?

b) If no, why not?

c) Has Alectra Utilities investigated replacing any of its underground distribution systems with overhead distribution systems?

    i. If yes, what were the results?

    ii. If no, why not?

G-Staff-64
Ref: Exhibit 4, Tab 1, Schedule 1, Page 23 of 438

Regarding its customer engagement, Alectra Utilities states:

> The DSP process and the resulting Capital Investment Plan have been informed by a comprehensive customer engagement process to ensure Alectra Utilities' investments are planned to address customer identified needs, priorities, and preferences. As described in more detail further below, Alectra Utilities' Asset Management Process began with an independent assessment of customers' needs and priorities, before specific investments are identified by Alectra Utilities project owners. Once potential investments were identified, Alectra Utilities returned to customers for a second time to assess their preferences between specific investment options and outcomes. In that second phase of customer engagement, the utility's customers identified strong preference for Alectra Utilities to invest in system renewal, specifically the underground asset renewal, transformer replacement, rear lot and voltage conversion.

a) Were the “specific investment options and outcomes” presented to customers quantitative?

    i. If yes, please provide examples and explain how Alectra Utilities analyzed different investment scenarios to determine the quantitative outcomes that were presented to customers.

    ii. If no, how were the outcomes developed?

b) What is Alectra Utilities’ confidence level that it will achieve the outcomes as presented to customers under each of the different investment scenarios evaluated?

G-Staff-65
Ref 1: Exhibit 4, Tab 1, Schedule 1, Page 29 of 438
Ref 2: Exhibit 4, Tab 1, Schedule 1, Appendix D, Page 10

Regarding its ACA program, Alectra Utilities stated:

> In order to ensure distribution system needs are considered consistently and objectively, Alectra Utilities undertakes risk management, system capacity and Asset Condition Assessment ("ACA") reviews. Starting in 2017, Alectra Utilities

harmonized and consolidated its ACA practices for distribution and station assets.

Regarding ACA of legacy utilities, Alectra Utilities stated:

> Legacy utilities that formed Alectra Utilities had different maintenance, inspection and data management practices. The harmonization process adopted asset specific Health Index models that can accommodate the data of legacy utilities.

a) Did the adoption of uniform ACA practices lead to a step-change in overall assessed condition of assets in any of the major asset classes relative to the assessed condition of those same assets by the predecessor utilities?

    i. If yes, please provide the pre- and post-uniform process adoption results for all asset classes that demonstrate material assessed condition changes.

    ii. If no, please explain what has changed to drive the proposed System Renewal capital spending increases.

b) Are the Health Index distributions for the different asset classes generally similar across the legacy utilities?

    i. If no, please identify which asset classes exhibit significant assessed condition disparity between legacy utilities, and explain the reasons for these disparities.

c) Is the input condition data quality for all asset classes similar across all legacy utilities?

    i. If no, how did Alectra Utilities adapt its Health Index calculations to account for these data quality differences? Please provide an explanation for each asset class exhibiting input data quality differences between legacy utilities.

G-Staff-66
Ref 1: Exhibit 4, Tab 1, Schedule 1, Page 29 of 438
Ref 2: Exhibit 4, Tab 1, Schedule 1, Appendix A

Alectra Utilities developed its Asset Management Process after its formation in 2017 by consolidating and harmonizing the asset management processes of its predecessor utilities. OEB staff notes that a common theme within Alectra Utilities' investment summaries is ensuring that new investments meet Alectra Utilities' consolidated safety and equipment standards. For example, on page 4 of Appendix A02, Alectra Utilities states that "The design of customers connections must follow Alectra Utilities' **current standards**" and on page 3 of Appendix A05, Alectra Utilities states that it will "[…] replace deteriorated assets and obsolete infrastructure with infrastructure constructed to **present day standards**." **[Emphasis added]**

a) Please describe the process Alectra Utilities employed to consolidate the safety standards, equipment standards and engineering practices of its predecessor utilities. In particular, please indicate whether the new standards and practices are in response to regulatory requirements, updated CSA standards or just as part of consolidation efforts.

b) Has Alectra Utilities identified economic efficiencies in using best practices to consolidate the engineering standards and practices of its predecessor utilities?

    i. If yes, what efficiencies were identified, and what is the amount of capital and O&M savings from the efficiencies?

    ii. If no, please explain why Alectra Utilities was not able to identify any sources of efficiencies.

c) What is the incremental capital and O&M cost/cost savings associated with implementing the new standards as opposed to previous standards?

d) Has Alectra Utilities evaluated the impact on reliability of its new standards?

    i. If yes to c), please provide the analysis.

    ii. If no to c), why not?

G-Staff-67
Ref: Exhibit 4, Tab 1, Schedule 1, Pages 100 and 170 of 438

Alectra Utilities provides the following table on cost control performance measures:

Table 5.2.3 - 2(A): Finance: Cost Control Custom Performance Measure

Measure Category	2020-2024 Performance Measure	Historical Performance (2018)	Target (2020-2024)
Finance	Cost-Control: Planned Capital (Actual vs. Budget)	84%	100%

On Page 170 of 438, Alectra Utilities states:

> Where required, projects can be scaled back, cancelled, or otherwise adjusted to reflect the new circumstances and up-to-date information. The utility's senior management reviews program variances on a monthly basis and considers the approval of resource allocation adjustment s may be required.

a) Please clarify: does Table 5.2.3 – 2(A) imply that for 100% of the budget, Alectra Utilities completes 84% of the planned projects, or that there was an overspend in 2018?

   i. If neither, please explain the performance measure.

   ii. If overspent, how much did Alectra Utilities overspend?

   iii. What steps is Alectra Utilities taking to improve actual project delivery from 84% to 100%?

   iv. Are these metrics available for the predecessor utilities? If yes, please provide the metrics for the years 2015 to 2018 with a forecast for 2019.

b) When Alectra Utilities' expenditures reach the budget cap in a calendar year, what happens to the uncompleted projects?

c) Please describe how uncompleted projects are reprioritized against projects in the following year's plans.

d) What activities are undertaken to accommodate these spending changes (e.g. scaling back, cancelling or adjusting projects)?

G-Staff-68
Ref: Exhibit 4, Tab 1, Schedule 1, Page 102 of 438

Alectra Utilities provides the following table on cost control performance measures:

Table 5.2.3 - 3: Finance: Asset Condition Custom Performance Measure

Measure Category	2020-2024 Performance Measure	Historical Performance (2018)	Target (2020-2024)
Finance	% of Cable in Poor and Very Poor (Health Index) Condition	14%	Monitor

a) Please provide a 10 year chart of historical performance.

b) Please explain why Alectra Utilities does not report on asset condition performance for all its major asset classes.

   i. In the absence of such measures, how does Alectra Utilities ensure its assets other than underground cables are maintained and kept in good health?

G-Staff-69
Ref: Exhibit 4, Tab 1, Schedule 1, Pages 107-110 of 438

Alectra Utilities provides the following tables on SAIDI and SAIFI metrics:

Table 5.2.3 - 5: Alectra Utilities' SAIDI, SAIDI Excluding MEDs, LOS Results from 2014 to 2018

Metric (Hours)	2014	2015	2016	2017	2018
SAIDI	1.30	1.42	1.66	1.10	1.87
SAIDI - Excluding MEDs	0.88	1.05	0.96	0.87	1.14
SAIDI - Excluding LOS	1.12	1.35	1.24	1.03	1.66
SAIDI - Excluding MEDs and LOS	0.84	1.00	0.83	0.80	1.04

Table 5.2.3 - 7: Alectra Utilities' SAIFI, SAIFI Excluding MEDs, LOS results from 2014 to 2018

Metric (Number of Outages)	2014	2015	2016	2017	2018
SAIFI	1.51	1.59	1.43	1.34	1.8
SAIFI - Excluding MEDs	1.27	1.41	1.24	1.23	1.53
SAIFI - Excluding LOS	1.40	1.38	1.24	1.22	1.57
SAIFI - Excluding MEDs and LOS	1.21	1.23	1.09	1.11	1.33

Regarding the two tables, Alectra Utilities states:

> Figure 5.2.3 - 2 and Table 5.2.3 - 5 illustrate an increasing system average interruption duration trend at Alectra Utilities (including its predecessors) since 2014. The five year SAIDI measure indicates a 16% increase on annual average system outage duration that Alectra Utilities customers' service was interrupted. When MEDs are excluded, the 2018 SAIDI measure indicate a 8% increase in annual outage duration since 2014. This trend is not acceptable to Alectra Utilities.

Additionally:

> Figure 5.2.3 - 3 and Table 5.2.3 - 7 illustrate a trend of increasing system average interruption frequency at Alectra Utilities (including its predecessors) over the five year period from 2014 to 2018. The five year SAIFI measure indicates a 6% increase on annual average system outage frequency that Alectra Utilities customers' service was interrupted. When MEDs are excluded, the SAIFI measure also indicate a 6% increase in annual outage duration since 2014. This trend is not acceptable to Alectra Utilities.

a) The 2018 reported SAIFI and SAIDI figures are higher than the previous years shown in the table. If a start date of 2014 and end date of 2017 are used, all reliability trends appear to be improving. In which year did the alleged trends in deteriorating reliability begin?

b) What factors caused the 2017 SAIDI and SAIFI measures to be low, and what factors caused the 2018 SAIFI and SAIDI measures to be high (relative to the 5 year average)?

c) How does Alectra Utilities account for the variance in reliability metrics around the multi-year mean and the alleged signaling of an upwards trend?

d) Please provide 10 years of historical SAIFI and SAIDI data for Alectra Utilities and its predecessor utilities.

G-Staff-70
Ref 1: Exhibit 4, Tab 1, Schedule 1, Pages 119-120 of 438
Ref 2: Exhibit 4, Tab 1, Schedule 1, Appendix C, Page 33

Alectra Utilities provides the following figures on customer hours of interruption due to defective equipment:

Figure 5.2.3 - 9: Customer Hours of Interruption Due to Defective Equipment at Alectra Utilities from 2014 to 2018

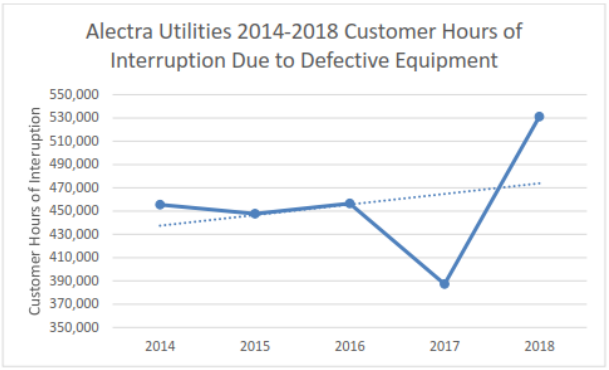
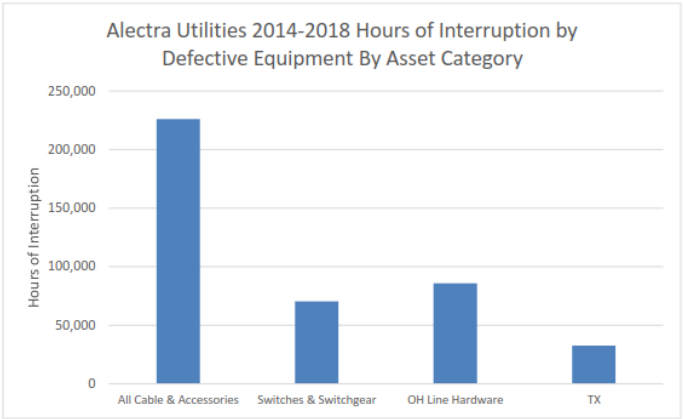


Figure 5.2.3 - 10: Alectra Utilities 2014-2018 Sub-Causes of Defective Equipment



Alectra Utilities further notes in its customer engagement survey that "Defective equipment accounted for 30% of customer hours interruption between 2014-2018."

a) Please provide a graph of the number of interruptions by defective equipment by year (for the period of 2014-2018).

b) Please provide a graph of the number of interruptions by defective equipment by asset category (for the period of 2014-2018).

G-Staff-71
Ref: Exhibit 4, Tab 1, Schedule 1, Page 124 of 438

Alectra Utilities provides the following table on unit cost metrics:

Table 5.2.3 - 11: Unit cost Metrics for Performance Measurements

Metric Category	Metric	Measures	
		(2018) 1 Year	2014-2018 (5 Year) Average
Cost	Total Cost per Customer	384	412
	Total Cost per km of Line	19,077	20,215
	Total Cost per MW	74,352	80,809
CAPEX[41]	Total CAPEX per Customer	294	313
	Total CAPEX per km of Line	14,597	15,350
O&M[42]	Total O&M per Customer	90	99
	Total O&M per km of Line	4,480	4,865

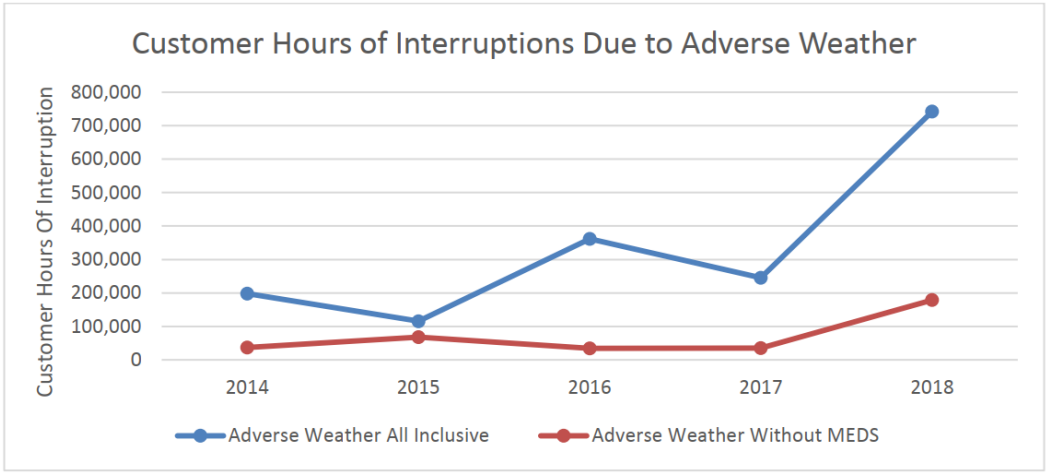
a) Please provide this table with separate columns for 2014, 2015, 2016, 2017 and 2018.

b) Please provide a table showing Alectra Utilities' projected unit cost metrics for the budge year and 5 forecast years (2019-2024).

G-Staff-72
Ref 1: Exhibit 4, Tab 1, Schedule 1, Appendix A06, Page 8 of 13
Ref 2: Exhibit 4, Tab 1, Schedule 1, Appendix M

Alectra Utilities provides the following table on customer hours of interruptions due to adverse weather:

Figure A06 - 5: Customer Hours of Interruptions Due to Adverse Weather (2014-2018) with and without MEDs



In Appendix M, Alectra Utilities provides the following tables M01-1, M01-2, M01-3, M01-4, and M01-5 showing total customer hours of interruption for 2018, 2017, 2016, 2015, and 2014 respectively on all Major Event Days.

Table M01 - 1: Summary of Outages on Major Event Days in 2018

Date	Zone	Number of Interruptions	Number of Customer Interruptions	Customer Hours of Interruption
12-Mar-18	Central-North	2	7,038	13,480
4-Apr-18	Central-South	29	13,408	18,429
14-Apr-18	West	5	15,715	38,487
15-Apr-18	Central-South	23	5,854	10,403
4-May-18	Central-South	69	72,926	132,543
4-May-18	Central-North	20	3,616	9,819
4-May-18	West	59	60,993	218,163
4-May-18	East	57	91,371	315,856
4-May-18	Guelph	20	13,025	11,300
	Total	**284**	**283,946**	**768,480**

Table M01 - 2: Summary of Outages on Major Event Days in 2017

Date	Zone	Number of Interruptions	Number of Customer Interruptions	Customer Hours of Interruption
11-Jan-17	Central-North	9	3,779	11,795
8-Mar-17	West	44	29,386	59,843
7-Apr-17	East	24	27,857	54,070
15-Oct-17	Central-South	17	12,497	19,575
15-Oct-17	East	17	41,081	90,512
	Total	**111**	**114,600**	**235,795**

Table M01 - 3: Summary of Outages on Major Event Days in 2016

Date	Zone	Number of Interruptions	Number of Customer Interruptions	Customer Hours of Interruption
24-Mar-16	West	14	12,815	31,711
24-Mar-16	East	23	136,252	592,779
24-Mar-16	Guelph	21	13,274	13,602
25-Mar-16	East	49	28,402	78,891
	Total	**107**	**190,743**	**716,982**

Table M01 - 4: Summary of Outages on Major Event Days in 2015

Date	Zone	Number of Interruptions	Number of Customer Interruptions	Customer Hours of Interruption
3-Mar-15	Central-North	20	36,852	35,993
3-Mar-15	East	38	78,607	113,906
14-Mar-15	East	34	58,740	174,408
28-Jun-15	West	26	12,549	50,299
	Total	**118**	**186,748**	**374,606**

Table M01 - 5: Summary of Outages on Major Event Days in 2014

Date	Zone	Number of Interruptions	Number of Customer Interruptions	Customer Hours of Interruption
20-Mar-14	West	7	24,345	121,830
19-Apr-14	West	8	30,212	38,185
1-Jun-14	Central-North	1	21,424	27,354
17-Jun-14	Central-South	12	13,296	15,376
17-Jun-14	East	25	23,200	37,479
22-Jul-14	West	10	13,126	33,274
24-Nov-14	Central-South	32	19,697	14,107
24-Nov-14	East	27	56,485	41,574
27-Nov-14	West	59	37,138	91,258
	Total	181	238,923	420,437

a) Please clarify how Alectra Utilities and its predecessor utilities categorize an outage as due to adverse weather. For example, if a wind storm blows a tree over which in turn falls on transmission lines, is this considered an adverse weather outage or a tree contact? Please provide other examples to illustrate how different outages that occur during adverse weather conditions are categorized.

b) Please provide 10 years of adverse weather outage data for Alectra Utilities and its predecessor utilities.

c) Comparing Figure A06 - 5 to tables M01-1 through to M01-5, there appears to be an inconsistency in the data used to generate this Figure and generate conclusions on trends. Years 2017 and 2018 correspond to the data shown in Tables M01-2 and M01-1 respectively while years 2014-2016 seem to be using only a subset of the data shown in their respective tables. Please clarify.

d) Please provide data for Tables M01-1 through to M01-5 specific to adverse weather outages.

e) For Figure A06 – 5, please provide the prorated results to date for 2019.

G-Staff-73
Ref: Exhibit 4, Tab 1, Schedule 1, Page 235 of 438

Alectra Utilities describes its asset replacement strategy for submersible load break devices switches in the following table:

Asset Class	Primary Replacement Strategy	Comments
Submersible Load Break Devices ("LBD") Switches	Reactive	Alectra Utilities primarily manages its submersible LBD switches through reactive replacement. However, units that are no longer functioning as intended and no longer receive vendor support (e.g. vac-pac units) will be targeted for planned replacement.

a) Please provide the Health Index with and without the Condition Flag for Obsolescence.

b) If the units are functioning, why not wait for failure before replacing units, because the impact of failure is the same as if they were reactively replaced? What is the business case / rationale for not deriving the maximum service life out of these units?

G-Staff-74
Ref: Exhibit 4, Tab 1, Schedule 1, Pages 237-238 of 438

Alectra Utilities states that its Subject Matter Experts (SMEs) evaluate ACA results of its distribution assets to determine investment needs in system renewal. Alectra Utilities further states that SME reviews forms the basis for identifying technical solutions and developing business cases and provides the following table describing the overall process:

Figure 5.3.3 - 5: Distribution Assets Condition Assessment

a) Do SMEs quantitatively account for consequence of failure when identifying investment needs?

   i. If yes, please provide the methodology.

G-Staff-75
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix D, Page 21

On page 21, Alectra Utilities states:

Distribution assets SMEs use quantities of Very Poor and Poor assets as the needs driver for business cases[…]
Station asset investments follow a risk-based approach incorporating a station centric approach to identify specific asset sustainment initiatives. SMEs consider multiple factors along with the HI results for individual components. The sustainment strategies for station assets are guided by risk mitigation and not pacing/timing.

a) For distribution assets, please explain if this approach ignores the consequence of failure of the assets being evaluated for replacement. In other words, are all Very Poor condition assets replaced first, even if the consequence of failure is greater for certain Poor (or better condition) condition assets?

b) For Station assets, are replacement projects triggered by exceeding specified risk thresholds, regardless of pacing and timing considerations?

    i. If no, how are replacement projects triggered?

c) How is risk determined for station assets? Is risk different than Health Index results?

G-Staff-76
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix L, Page 16

Regarding worst performing feeders, Alectra Utilities states:

> Reliability Value is computed from the Reliability Cost. A 25% premium is added to the Reliability Cost if: a feeder has been identified on the worst performing feeder report in the past 2 years, OR the area been identified by the Key Accounts Manager as an area of concern.

a) What are the criteria applied by Key Accounts Managers to identify “areas of concern”?

b) Is the 25% reliability cost premium added to all lines within all “areas of concern”? Please explain.

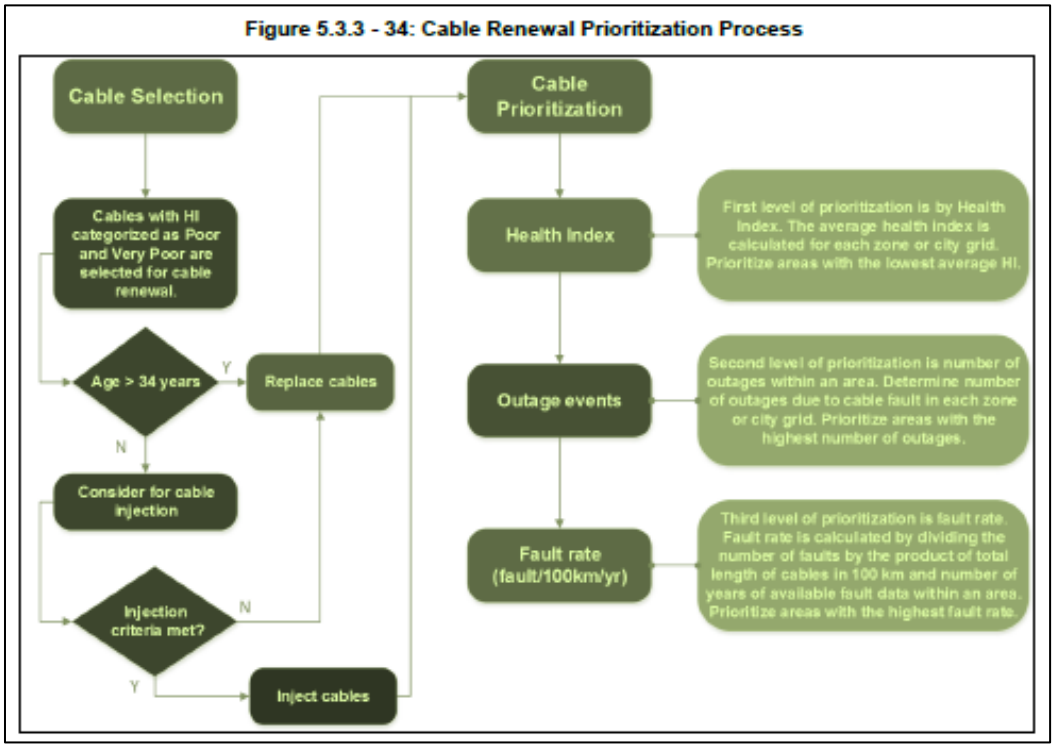
G-Staff-77
Ref: Exhibit 4, Tab 1, Schedule 1, Pages 247 and 272 of 438

On pages 247 of 438, Alectra Utilities describes its selection and prioritization of pole replacements as follows:

> Alectra Utilities' selection and prioritization of pole replacement candidates begin with the identification of deteriorated poles (i.e. those in Very Poor or Poor condition, as determined through the ACA). Pole HI is condition based, and computed based on specific forms of degradation identified through inspections and pole testing. Remaining pole strength test results and visual indicators of condition (e.g., rot, decay, splitting, insect infestation, bending, and leaning) factor into the HI models, which provide a means to differentiate asset condition across the entire pole population. Once the utility identifies poles in the Very Poor and Poor condition for further action, it prioritizes poles for replacement or reinforcement starting with poles having the lowest HI scores.

On page 272 of 438, Alectra Utilities describes its prioritization of its cable renewal process with the following figure:

Figure 5.3.3 - 34: Cable Renewal Prioritization Process



a) Does Alectra Utilities evaluate Risk (Risk = Probability X Consequence) or Probability of Failure when considering which poles to replace?

b) Please discuss why is it prudent to use decision parameters related solely to probability of failure (i.e. Health Index, Number of Outage Events, Fault Rate)

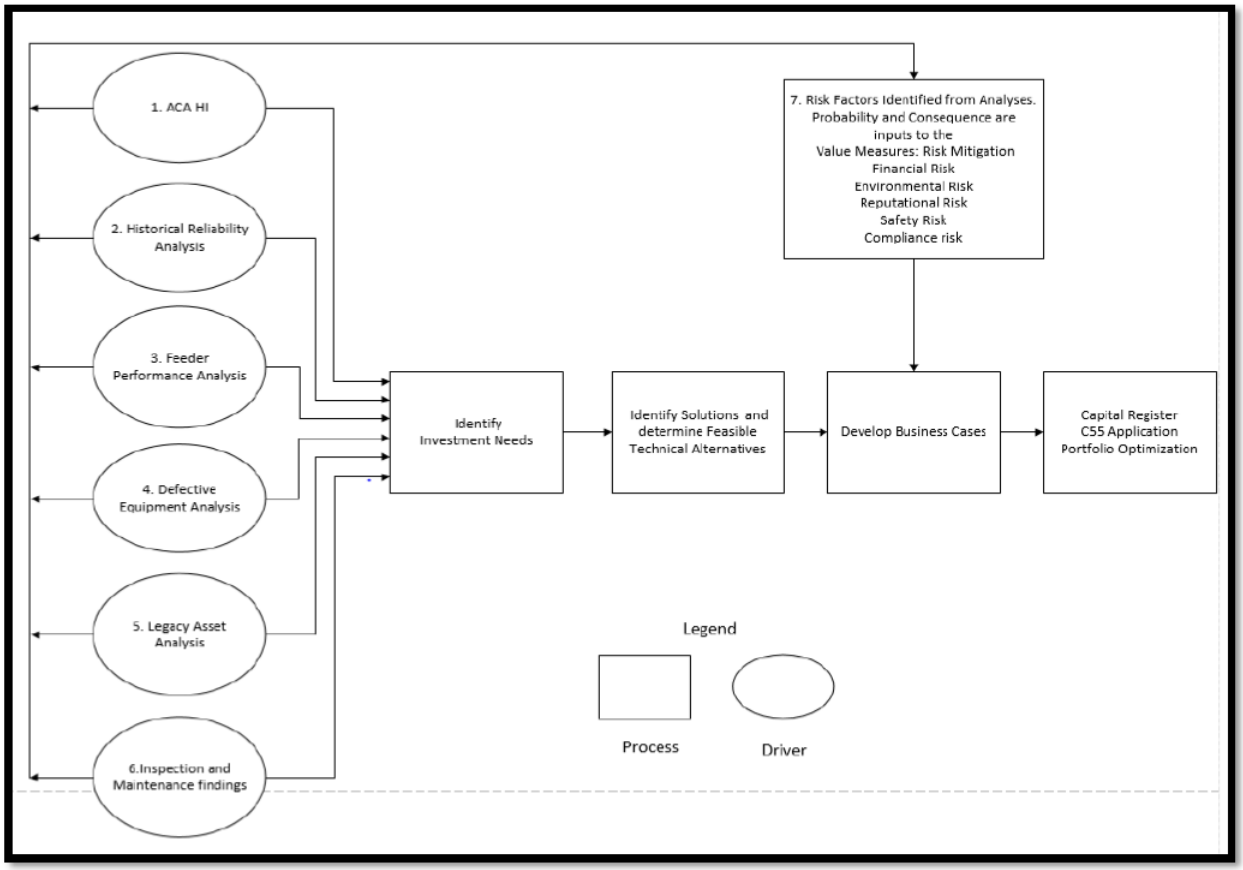
and not include an evaluation of Risk (Risk = Probability of Failure x Consequence of Failure)?

c) How does Alectra Utilities ensure that it is optimizing risk mitigation if it is using only probability-based parameters to inform decision making?

G-Staff-78
Ref: Exhibit 4, Tab 1, Schedule 1, Page 300 of 438

On page 300 of 438, Alectra Utilities provides the following figure describing its Lifecycle Risk Management Process:

Figure 5.3.3 - 41: Asset Lifecycle Risk Management Processes



OEB staff prepared the following table to summarize the primary risk parameters utilized in the 6 analyses shown in the figure above:

Analysis	Primary Risk Parameter
ACA HI	Probability
Historical Reliability	Probability and Consequence
Feeder Performance	Probability and Consequence
Defective Equipment	Probability
Legacy Asset	Consequence
Inspection and Maintenance	Probability

a) Please confirm that the table describes the primary risk parameters utilized in these 6 analyses.

    a. If not, please provide an amended table.

b) How does Alectra Utilities ensure that probability of failure is not double counted when evaluating risk using ACA Health Index, Historical Reliability, Feeder Performance, Defective Equipment and Inspect and Maintenance Findings?

c) Why doesn't Alectra Utilities separate Probability of Failure from Consequence of Failure when developing parameters used to calculate risk?

G-Staff-79
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix D, Page 16

Alectra Utilities uses condition multipliers as an input to its assets' health index and provides the following examples:

> **Field inspection multiplier** is applied to assets that exhibit major degradation or imminent failure as determined by field inspection.
>
> **Measurement multiplier** is applied to assets that exhibit major degradation or imminent failure as determined by a measurement.
>
> **Safety hazard multiplier** is applied to assets that pose a safety hazard or in a condition that is below the acceptable industry safety standards, guidelines and practices.
>
> **Obsolescence multiplier** is applied to assets that are no longer supported by vendors, have limited or no parts availability and/or no longer meet current safety

or performance standards. Obsolescence is largely driven by specification changes, compatibility, and/or manufacturer/supplier.

a) Does the use of Conditions Multiplier imply that the Health Index formula does not accurately reflect Health of the Asset without resorting to an external factor? Please explain.

b) Please explain how a consequence of failure (e.g., Safety Hazard or Obsolescence) is able to impact an asset probability of failure parameter (i.e., Health Index).

c) Please provide examples of Health Index values before and after the listed multipliers are applied.

G-Staff-80
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix D, Tables 1, 2 and 3

OEB staff created the following table summarizing Alectra Utilities' health index categorizations using Tables 1, 2 and 3 of Appendix D:

Category from Table 1	Range from Table 1	Category from Table 2	Range from Table 2	Category from Table 3	Range from Table 3
Excellent	100%	Excellent	100%	Very Good	HI ≥ 85%
Good	80%	Good	75%	Good	70% ≤ HI < 85%
Fair-Moderate	40-60%	Fair	50%	Fair	50% ≤ HI < 70%
Poor	20%	Poor	25%	Poor	25% ≤ HI < 50%
Very Poor	0%	Very Poor	0%	Very poor	HI < 25%

a) Please clarify the apparent overlaps/ambiguity in possible categorization based upon Health Index Range classification (e.g., 40% may be categorized as Fair or Poor depending on which asset class is being evaluated).

b) How does Alectra Utilities determine Health Indexes in a consistent manner when classification thresholds are not consistent across asset classes?

G-Staff-81
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix D, Pages 15, 26, 32 and 38

On page 15, Alectra Utilities notes that its asset age scoring formula is calibrated such that the formula yields 1% at the EUL of an asset.

On pages 26, 32 and 38, Alectra Utilities provides EUL data for vault transformers, switchgears and overhead switches. OEB staff has summarized the EUL data below:

- Vault transformers: EUL at 45 years, currently 568 out of 13,345 (4.3%) remain in-service beyond EUL.
- Pad-mounted switchgears: EUL at 35 years, currently 126 out of 3,389 (3.7%) remain in-service beyond EUL.
- Overhead switches: EUL at 55 years, currently 140 out of 3,889 (3.6%) remain in-service beyond EUL.

Although Alectra Utilities stated that EUL is calibrated to indicate the service life at which 1% of assets remain in service. Vault Transformers, Switchgear and Overhead Switches units that are beyond EUL and remain in service represent more than 1% of Alectra Utilities' assets in these categories. Has EUL been mis-calibrated for these asset types? Please explain the apparent mismatch between the stated calibration threshold and actual asset demographics.

G-Staff-82
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix D, Page 31

On page 31, Alectra Utilities describes failures of its switchgear assets as "most often not directly related to the age of the equipment, but are associated instead with outside influences." Alectra Utilities' deemed EUL of pad-mounted switchgears is 45 years of age.

a) Please confirm that age is a not a direct contributing factor in switchgear failures.

b) At EUL, does Alectra Utilities replace assets or does Alectra Utilities continue to let assets operate as long as their condition warrants?

G-Staff-83
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix D, Pages 27, 33, 48 and 54

Alectra Utilities provides the inputs to the health index of its various asset classes in the ACA. OEB staff has summarized certain asset classes below:

- Distribution transformers: “Health index of distribution transformers assesses the condition of the transformer according to three components: Corrosion, Oil leak, and Age.”
- Pad-mounted switchgears: “Health index of pad-mounted switchgears assesses the condition according to five components: corrosion, component failure, insulation, oil leak (for oil types) and age.”
- Wood Poles: “Health Index of wood poles assesses the condition of the pole according to three components: Pole remaining strength, Overall condition and Age.”
- Concrete Poles: “Health Index of concrete poles assesses the condition of the pole according to two inputs: Overall condition and Age.”

a) Please explain why age is used as an input factor to calculate a Health Index for a run-to-fail asset.

b) What useful additional Health Index information is obtained or derived by using Age as an input for calculating the Health Index of assets?

c) If there is no other information available for a specific asset, is its Health Index calculated solely using the Age parameter?

d) What percentage of assets are missing non-age data?

G-Staff-84
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix D, Pages 28-29, 49 and 55

Alectra Utilities provides the health index distributions of pad-mounted transformers, pole-mounted transfers, vault transformers, wood poles and concrete poles in Figures 11, 12, 13, 21 and 23 of Appendix D respectively.

Please provide a revision of Figures 11, 12, 13, 21 and 23 showing the condition distribution without using Age as a Health Index input.

G-Staff-85
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix D, Pages 53-54

Alectra Utilities considers concrete poles to be EUL at 80 years of age and provides the following graph showing the age distribution of its concrete pole population:

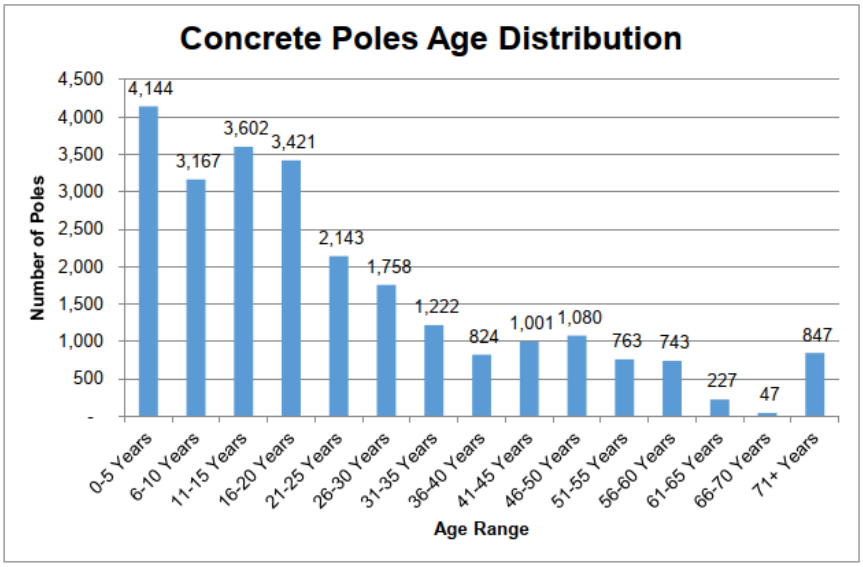


Figure 22 Concrete Poles Age Distribution

When assessing the health index of a concrete pole, Alectra Utilities states that it uses overall condition and age as inputs. Further, Alectra Utilities applies a 25% field inspection multiplier if a concrete pole exhibits major degradation or imminent failure as determined by a field inspection.

a) Please provide a revised Figure 22 showing the number of poles over 80 years of age.

b) Please explain whether a field inspection multiplier is redundant, given that a post-field inspection condition rating should reflect an assessment of major degradation or imminent failure.

G-Staff-86
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix D, Pages 37-39

Alectra Utilities considers overhead switches to be EUL at 55 years of age. According to Alectra Utilities' overhead switches age distribution, 140 switches would be considered EUL.

Alectra Utilities provides the following figure showing the health index distribution of its overhead switches:

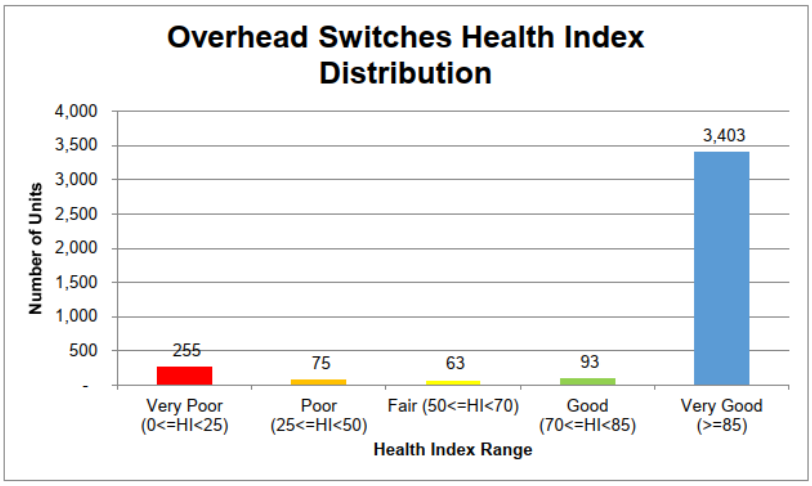


Figure 17 Overhead Switches Health Index Distribution

a) Given that the Health Index for overhead switches is calculated using only age as an input, and 140 switches are beyond EUL, why have 255 switches been rated as having a Very Poor Health Index?

b) Please show how the Health Index results in Figure 17 were calculated.

G-Staff-87
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix D, Page 78

Alectra Utilities provides the following figure showing the health index distribution of its circuit breaker assets:

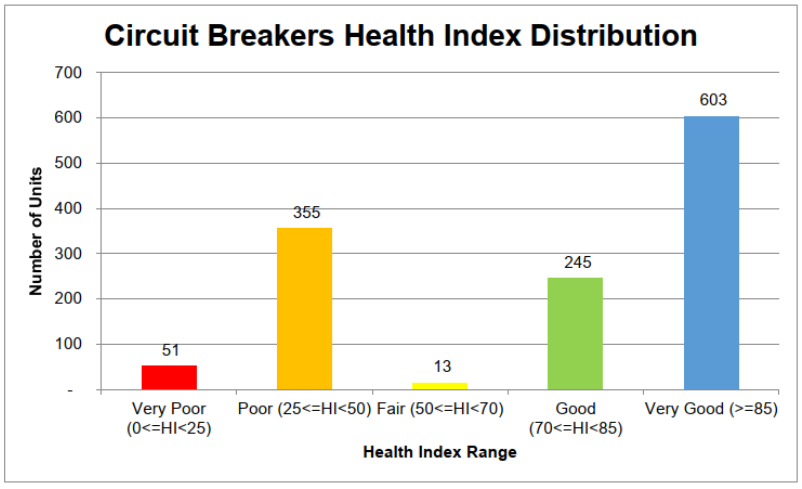


Figure 34 Circuit Breakers Health Index Distribution

a) What is the primary input driving the Poor Health Index rating for the 355 circuit breakers shown in Figure 34?

b) Please provide a revision of Figure 34 without the obsolescence multiplier applied.

G-Staff-88
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix D, Page 73

Alectra Utilities' health index distribution for power transformers indicate that 34 power transformers have a "poor" health index rating.

What is the primary parameter driving the poor health index rating for the 34 power transformers shown in the health index distribution?

G-Staff-89
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix E, Page 9

Kinetrics Inc. (Kinetrics) gave Alectra Utilities recommendations to improve its ACA methodology and practices as part of its ACA assurance review.

a) Please provide the timing and implementation plan for incorporating Kinectrics' recommendations into Alectra Utilities' harmonized ACA program.

b) Please quantify how implementing the Kinectrics recommendations will impact Alectra Utilities' future capital expenditure plans.

c) Please confirm that:

   i. Alectra Utilities does not have asset degradation curves; and

   ii. Alectra Utilities' adopted scoring approach is commonly used by utilities with limited failure statistics.

G-Staff-90
Ref: Exhibit 4, Tab 1, Schedule 1, Page 337 of 438

On page 337 of 438, Alectra Utilities describes its reliability benefits as follows:

Reliability Benefit computes the cost of an outage to the customer, and is based on variables such as peak load lost, duration of the outage, duration for which redundancy is lost and the **type of the customer** affected. Additional reliability benefits are allocated to projects which affect worst performing feeders. **[Emphasis added]**

a) Please discuss the appropriateness of using peak load rather than average load as a measure of consequence.

b) How many hours per year does the typical peak load occur?

c) Given that the probability of failure of an asset is the expected probability of failure, how does Alectra Utilities ensure that using peak load (i.e. maximum rather than average consequence) as a measure of consequence does not overstate risk?

d) Please define the quantitative basis for valuing one customer class more than another.

e) Please provide the Alectra Utilities customer communication that clearly describes Alectra Utilities' approach to valuing one customer class more than another with regards to system reliability.

f) How does Alectra Utilities ensure that cross subsidization of reliability benefits doesn't occur from one customer class to another?

g) Is Alectra Utilities calculating the maximum consequence or the expected consequence (if you use peak load rather than average load you are over stating the consequence)?

h) Please define "duration," i.e. is duration the expected duration or the maximum reasonable duration of the outage?

i) From a risk assessment standpoint, is the outage duration and duration for which redundancy is lost valued the same for the same outage measure?

    i. If yes, why is this prudent from a ratepayer perspective where one risk (i.e. outage duration) negatively impacts the ratepayer (i.e. electricity supply is lost), and the other (i.e. duration for which redundancy is lost) does not (i.e. has zero consequence).

ii. If no, what is the relative weighting between the two durations, and why was this relative weighting chosen?

G-Staff-91
Ref 1: Exhibit 4, Tab 1, Schedule 1, Page 351 of 438
Ref 2: Exhibit 4, Tab 1, Schedule 1, Page 353 of 438

On page 351 of 438, Alectra Utilities describes its Efficiency Frontier tool as follows:

> Through the Efficiency Frontier tool, fifteen investment portfolio scenarios were developed at incremental investment levels starting at $200M per year up to $550M per year. Portfolio scenarios that resulted in values below the Efficiency Frontier lower boundary were considered sub-optimal because such scenarios did not result in sufficient expected value for the level of investment. Portfolios scenarios that resulted in values above the Efficiency Frontier upper boundary were also considered sub-optimal because such scenarios did not result in sufficient incremental expected value for the incremental level of investment (i.e., demonstrated diminishing returns).

On page 353 of 438, Alectra Utilities provides the following description of its Maximum Capital Expenditure:

> As described above, the Efficiency Frontier function in CopperLeaf C55 provided Alectra Utilities with the set of optimal portfolios that offer the highest expected value for a defined level of investment. The outcome of the Efficiency Frontier process guided the Capital Investment Steering Committee through the identification of investment levels that resulted in expected portfolio values above the Efficiency Frontier upper boundary, which established the Maximum Capital Expenditure optimization bounds.

a) Please confirm that the Efficiency Frontier tool was used to evaluate entire investment portfolios rather than individual projects.

   i. If yes, does this imply that the process allows sub-optimal projects to be included in investment portfolios as long as the aggregate value of the entire portfolio met Alectra Utilities' Efficiency Frontier criteria?

b) Please explain the mechanism of the Efficiency Frontier tool and why portfolios above the Efficiency Frontier is also considered sub-optimal.

c) For its “investment portfolio optimization,” did Alectra Utilities separately develop a total annual capital envelope, against which the project list was prioritized and abridged?

    i. If yes, how was the capital envelope size determined?

G-Staff-92
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A01

Using Table A01 – 1, OEB staff calculates the total forecast spending for Network Metering from 2020-2024 to be $63.1 million. Using Table A01 – 8, OEB staff calculates the total capital of material investments in Network Metering to be $33.2 million.

Please explain what other expenditures make up the remaining $29.9 million of Network Metering capital.

G-Staff-93
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A02

Alectra Utilities provides the historical and forecasted levels of new customer connections in Table A02 – 9.

a) Is Figure A02 – 11 intended to reflect the data in Table A02 – 9? If yes, please reconcile the table with the graph as they do not appear to match (e.g. 2020 new subdivisions is 8775 according to the table, but the graph shows the data point as being above 10000).

b) Please explain why the amount of forecast spending in Table A02 – 14 for new subdivisions is increasing every year despite a decreasing number of new subdivision connections as shown in Table A02 – 9.

c) Please explain why the forecasted spending in Table A02 – 14 for new layouts has more than doubled compared to historical spending in 2015-2018 despite a relatively level and consistent amount of new layout connections as shown in Table A02 – 9.

G-Staff-94
Ref 1: OEB 2017 Yearbook of Electrical Distributors, Page 53
Ref 2: Exhibit 4, Tab 1, Schedule 1, Page 17 of 438

Exhibit 5, Attachment 3, M-factor Revenue Requirement

According to the OEB's 2017 Yearbook of Electrical Distributors, Alectra Utilities served 889,842 residential customers as of December 31, 2017. At the time of filing of the current application, Alectra Utilities notes that it currently serves[4] approximately 950,000 residential customers. OEB staff notes that this is an increase of 6.8% in the number of residential customers served. Using similar calculations, OEB staff calculates an increase of 6.1% for General Service less than 50kW customers, 5.5% for General Service greater than 50kW customers and 10.3% for large use customers.

a) Please confirm that at the end of this rates application, all of Alectra Utilities' rate zones will have transitioned to fully fixed residential monthly distribution charges.

b) Please provide the forecasted percentage of annual growth for the number of customers in each of Alectra Utilities' rate classes for 2020 to 2027.

c) Please provide the forecasted percentage of annual growth for the amount of load in each of Alectra Utilities' rate classes for 2020 to 2027.

d) Are any increases to Alectra Utilities' revenue through customer and load growth accounted for in the M-factor mechanism? If yes, please explain how it is accounted for. If no, why not?

In reference 3, Alectra Utilities calculates the growth factor for each of its rate zones using 2017 actual distribution revenues versus the last OEB-approved distribution revenues.

e) Does Alectra Utilities expect greater annual growth to its revenue from its residential class now that residential rates are fully fixed, compared to if residential rates had not been fully fixed? Please explain why or why not.

    i. If yes to e), is the growth factor used in the M-factor threshold calculations still appropriate? Please discuss given that residential rates are now fully fixed, but Alectra Utilities calculated its growth factors using 2017 actual revenues when residential rates were not fully fixed.

[4] Alectra Utilities' current customer count is taken from the evidence filed in this proceeding as of May 28, 2019

G-Staff-95
Ref: Exhibit 4, Tab 1, Schedule 1, Page 48 of 438

Alectra Utilities notes in its application that "Other important investment drivers include needs for system expansion to prepare for and respond to areas of urban greenfield development and urban redevelopment/intensification."

a) Are the areas presently experiencing urban development and intensification undergoing greater than historical load growth? Please quantify.

b) Please provide load growth trends for the consolidated service area covering the historical period (starting at 2015) through the next 10 years (i.e. until 2030).

G-Staff-96
Ref 1: Exhibit 4, Tab 1, Schedule 1, Appendix A12, Page 36 of 42
Ref 2: Transcript_Alectra Utilities Presentation_20190807, Page 51

Alectra Utilities forecasts $110.2 million in lines capacity investments over 2020-2024. This is an increase of $33.2 million over the historical expenditures between 2015-2018 of $77 million.

During Alectra Utilities' presentation day on August 7, 2019, in response to a question about load growth, Ms. Butany-DeSouza said:

> […] And so we are not seeing an overall huge ramp-up in amount of load despite the fact that there may be an increase in numbers of customers or number of connections. And so the M-factor still is consistent with the load experience of Alectra Utilities to date, which is a declining – overall declining load or a minimal or nominal amount of load increase relative to the number of connections and ongoing expansion work that we need to accommodate. […] Load is pretty stable.

Please explain Alectra Utilities' need for increased capital expenditures in lines capacity investments above historical levels if Alectra Utilities is currently stable or declining levels of load.

G-Staff-97
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A03

In Appendix A03, Alectra Utilities discusses Road Authority projects governed by the Public Service on Highways Act (PSWHA) and Transit projects driven by provincially governed rail transit agencies.

Alectra Utilities proposes the creation of an Externally Driven Capital Variance Account (EDCVA) to track the differences between its revenue requirement in rates and externally-driven capital expenditures.

a) Please explain the need for the EDCVA if the CIVA already captures any differences between the level of actual investment and what is funded through Alectra Utilities' base rates plus M-factor funding.

b) What is Alectra Utilities' proposed effective date for this variance account? Please explain why the proposed effective date is appropriate.

c) Please indicate whether the true-up amounts will be on a per-project basis, or if the true-up will be based on the total account balance.

d) Please explain how Alectra Utilities intends to isolate its revenue requirement in rates for specifically Road Authority and Transit projects.

e) Please explain what steps Alectra Utilities has taken towards mitigating risks associated with third party driven projects (e.g. negotiating agreements with third parties).

G-Staff-98
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A03, Page 17 of 26

Alectra Utilities forecasts $91.3 million in capital expenditures on Road Authority projects over 2020-2024 as shown in the table below:

Table A03 - 5: Material Projects and Initiatives

Project Code	Project Name	CAPEX ($MM)
150645	Road Authority	$91.3
150343	Bathurst Street Widening	$3.4

Please provide a table of all Road Authority projects that have a capital expenditure over $1 million that Alectra Utilities is expecting to undertake between 2020-2024. Please include in the table the forecasted capital expenditures of each individual project.

G-Staff-99
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A03, Page 6 of 26

On page 6 of 26, Alectra Utilities states:

> At the request of the Road Authority, Alectra Utilities may be required for specific portions of the road widening project to relocate some sections underground, install concrete poles with specifications beyond existing standards and relocate assets at different spacing requirements. Alectra Utilities and the Road Authority may agree to reflect these incremental relocation costs by having the Road Authority bear greater portions of those costs.

Alectra Utilities further states:

> The most efficient way to relocate assets is initially established by Alectra Utilities. If the Road Authority wants to upgrade from the proposed solution to a more expensive approach, they are required to pay for 100% of the difference in cost between Alectra Utilities' initial solution and the Road Authority preferred approach.

Please explain why only a portion of the incremental costs in the first scenario is allocated to the Road Authority, but 100% of the incremental costs in the second scenario is allocated to the Road Authority. In other words, please explain why Alectra Utilities is expected to pay a portion of the incremental costs in the first scenario when, in both cases, the request for the incremental change is made by the Road Authority.

G-Staff-100
Ref: Exhibit 4, Tab 1, Schedule 1, Page 240 of 438

Regarding distribution transformer replacements, Alectra Utilities states:

> For larger three phase distribution transformers supplying commercial or industrial customers, the reliability impacts of transformer failures could be significant. These transformers may be replaced as they approach end-of-life or where frequent overloading is identified. In the latter case, the replacement

transformer would be sized according to relevant loading requirements. Together, these replacement practices help minimize the impacts of transformer failures on Alectra Utilities' customers.

a) At what distribution transformer size threshold does Alectra Utilities change from a run to failure strategy to a planned replacement strategy?

b) Please provide the business case that was carried out to determine the size threshold.

G-Staff-101
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A08, Page 18 of 32

On page 18 of 32, Alectra Utilities notes that “42 transformers are currently beyond their typical useful life of 45 years, including 9 units that are expected to exceed their maximum useful life of 60 years within the 2020-2024 period.”

a) Please provide the assessed asset condition for all transformers that have been in service for more than 45 years.

b) Does Alectra Utilities often keep assets in service beyond their Maximum Useful Lives?

    i. If yes, what does it actually mean when an asset exceeds its "Maximum Useful Life"?

G-Staff-102
Ref 1: Exhibit 4, Tab 1, Schedule 1, Appendix A09, Page 6 of 15
Ref 2: EB-2017-0024, Exhibit 2, Tab 4, Schedule 11, Page 16 of 49

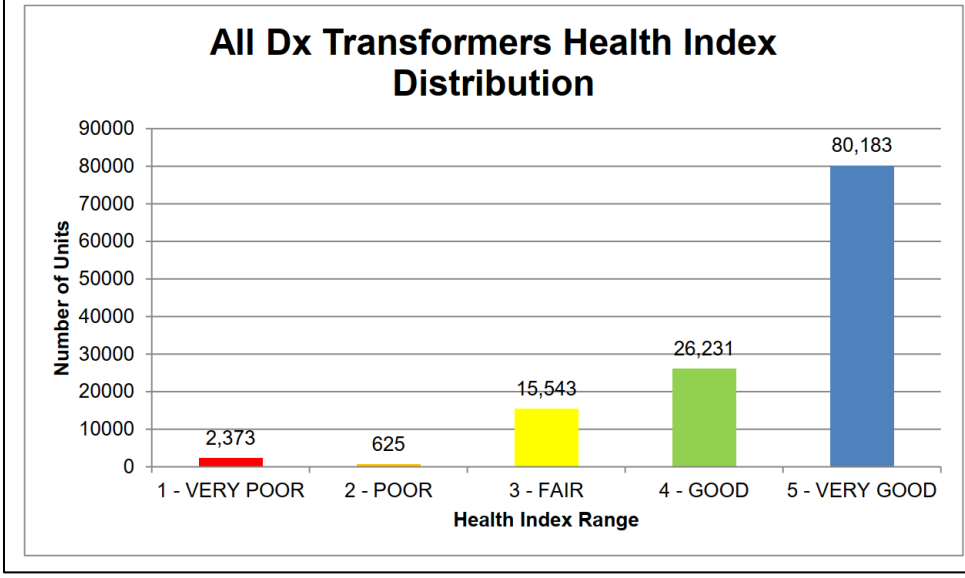
Alectra Utilities indicates that it expects proactively to replace transformers that are demonstrating possible risks to safety or environment. Further, Alectra Utilities states that it has, and expects to continue to, identify transformers eligible for proactive replacement:

> During the 2018 transformer inspections, 870 units were found to have moderate to major oil leak or corrosion out of 14,568 units inspected in the East service area. At this rate, Alectra Utilities projects to find more than 2,000 units exhibiting safety and environmental risks, when it completes the three-year inspection

cycle. Therefore, Alectra Utilities will target additional 2,000 units for proactive replacement during the five-year DSP period.

The following table is taken from Appendix A09 and shows the Health Index of distribution transformers:

Figure A09 - 1: Distribution Transformer Condition Demographics



a) How many poletop transformers does Alectra Utilities plan to replace prior to failure during forecast years 2020 - 2024?

b) What is the total cost of these predictive replacements?

Alectra Utilities received approval to reduce its backlog of leaky transformers in its 2018 and 2019 rate proceedings.[5] In particular, Alectra Utilities noted in its 2018 rate application that:

> The forecast expenditures associated with the transformer replacement project (i.e. to address units showing signs of leaks) is forecast to cost $8.4MM in each of 2017, 2018 and 2019, $6.4MM in 2020 and $4.3MM in 2021.

c) Did Alectra Utilities complete the leaky transformer replacements approved in these two proceedings? Please quantify actual results.

d) Are Alectra Utilities' planned spending levels for future leaky transformer replacements over the forecast period consistent with the historical rate of

[5] EB-2017-0024 and EB-2018-0016

transformer deterioration? In other words, does Alectra Utilities' proposed annual rate of leaky transformer replacements keep pace or exceed the expected occurrence of new transformer leaks? Please quantify and explain.

e) What proportion of Alectra Utilities' average annual poletop unit replacements have historically been undertaken prior to unit failure?

    i. What is that proportion expected to be over the forecast period?

f) Does any evidence of an oil leak have the same impact on the asset condition assessment, regardless of the severity of the leak? Please explain.

g) How many transformers does Alectra Utilities anticipate will fail prior to replacement during the five-year DSP period?

h) Are those replacements accounted for separately from the 2000 units that Alectra Utilities plans to pre-emptively replace over the period?

i) What is the health index distribution of transformers expected to be at the end of the five-year DSP period? Please show in the same format as Figure A09 – 1.

G-Staff-103
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix A09, Page 12 of 15

On page 12 of 15, Alectra Utilities provides the following discussion on the asset condition of its distribution transformers and its transformer renewal plans:

> Through the annual ACA, Alectra Utilities had identified 2,998 transformers in Very Poor or Poor condition. Based on present day assessment of system-wide renewals, Alectra Utilities' plans to replace 1,148 of the 2,998 transformers through other funded projects, leaving 1,850 transformers to be replaced through the Transformer Renewal portfolio.
>
> In addition, Alectra Utilities has identified 900 transformers that are required to be replaced due to functional obsolescence, inadequate redundancy and difficulty of access.
> As discussed in Section 3.1, over the next five years, with ongoing inspections, Alectra Utilities expects to find another 2,000 deteriorated and hazardous transformers that will require replacements as well.

These quantities form the three investment options shown in Table A09 - 5.

Table A09 - 5. Pacing Options for Transformer Renewal

Strategy	Plan Period (years)	Total Quantity	Quantity per year	Average Transformer Replacement Plan Cost per year
Strategy 1: Accelerated Pace	5	4,750	**950**	$11.5M
Strategy 2: Moderate Pace	5	2,750	**550**	$6.8M
Strategy 3: Reduced Pace	5	1,850	**370**	$4.5M

a) Please confirm that the accelerated pace of replacements would involve replacing over 1,750 transformers presently rated as being in Fair or better condition over the forecast period, assuming that all Very Poor and Poor condition transformers are replaced first. (i.e. 4,750 slated for replacement, vs 2,998 identified as “Poor” or “Very Poor” condition)

   i. Please explain how that pace would be compatible with a "run to fail" operating policy.

b) Do all three of the strategies outlined here represent a deviation from a “run to fail” policy?

   i. If yes, please provide justification for the policy change.

   ii. If no, please explain why not.

G-Staff-104
Ref 1: EB-2015-0003, PowerStream Inc. DSP
Ref 2: EB-2014-0002, Horizon Utilities Corp. DSP
Ref 3: EB-2017-0024, Enersource Hydro Missisauga DSP
Ref 4: EB-2014-0083, Hydro One Brampton Networks Inc. DSP
Ref 5: EB-2015-0073, Guelph Hydro Electric Systems Inc. DSP

OEB staff has prepared actual and forecast capital spending tables by extracting data from the most recent previous DSPs filed by Alectra Utilities’ predecessor utilities, as shown below. The tables show capital expenditure data for the years 2012 to 2019 for

System Renewal overall, underground cable replacements, wood pole replacements, and reactive & emergency capital programs. In these tables, blue text indicates actual expenditures and red text indicates forecasted or budgeted expenditures at the time of filing of the previous DSPs.

Capital Spending Actual/Forecast ($000,000's)

System Renewal - Overall	2012	2013	2014	2015	2016	2017	2018	2019
Powerstream	$16.97	$22.25	$39.19	$42.39	$48.72	$51.50	$52.05	$52.97
Horizon	$14.09	$18.43	$15.37	$18.07	$28.29	$33.17	$33.21	$34.71
Enersource	$16.22	$20.85	$31.24	$37.47	$35.20	$37.40	$40.90	$42.10
Brampton	$8.69	$12.12	$9.07	$8.80	$9.31	$10.33	$10.12	$9.01
Guelph	$2.54	$2.83	$3.73	$3.96	$4.48	$4.61	$4.75	$4.89
System Renewal Total	**$58.52**	**$76.49**	**$98.60**	**$110.69**	**$126.00**	**$137.01**	**$141.03**	**$143.68**

U/G Cable Replacement/Rehab	2012	2013	2014	2015	2016	2017	2018	2019
Powerstream	$2.99	$19.56	$20.95	$20.69	$21.60	$22.86	$23.78	$24.67
Horizon	$0.00	$1.57	$0.89	$2.57	$4.93	$8.87	$9.38	$10.27
Enersource						$18.47	$20.77	$21.92
Brampton	$3.50	$4.00	$3.86	$2.66				
Guelph	$2.14	$2.59	$3.17	$3.65	$4.16			
U/G Repl/Rehab Subtotal	**$8.63**	**$27.72**	**$28.87**	**$29.57**	**$30.69**	**$50.20**	**$53.93**	**$56.86**

Wood Pole Replacements	2012	2013	2014	2015	2016	2017	2018	2019
Powerstream	$4.11	$5.05	$4.87	$4.65	$4.93	$5.57	$5.87	$6.24
Horizon	$0.93	$0.72	$1.19	$1.23	$1.26	$1.30	$1.33	$1.37
Enersource						$9.00	$10.20	$10.20
Brampton	$1.06	$0.95	$1.20	$1.21				
Guelph	$0.30	$0.09	$0.24	$0.00	$0.00			
Wood Pole Repl. Subtotal	**$6.40**	**$6.81**	**$7.50**	**$7.09**	**$6.19**	**$15.87**	**$17.40**	**$17.81**

Reactive & Emergency Projects	2012	2013	2014	2015	2016	2017	2018	2019
Powerstream	$7.92	$8.22	$8.70	$8.42	$8.64	$8.73	$8.89	$8.93
Horizon	$4.03	$6.07	$4.84	$4.78	$4.34	$4.46	$4.54	$4.61
Enersource						$0.33	$0.33	$0.33
Brampton	$1.13	$2.43	$0.79	$0.82				
Guelph								
Reactive & Emerg Proj Subtotal	**$13.08**	**$16.72**	**$14.33**	**$14.02**	**$12.98**	**$13.52**	**$13.75**	**$13.86**

a) Since the predecessor utilities categorized project and program expenditures differently, it was not possible for OEB staff to homogenously sort and bin the projects and program expenditures. For each table above, please update the

annual actual and forecast values for each predecessor utility to reflect the correct values as known at the time of each respective filing.

b) Please fill in a second set of tables to show the annual actual spending for 2012 to 2018, latest estimated 2019 spending, and forecasted spending for 2020 to 2024 by rate zone for the categories above.

c) Please explain any discontinuities between the historical spending in each of the predecessor utilities and Alectra Utilities' forecast spending for 2020 to 2024 in each of the rate zones per the present DSP plan.

G-Staff-105
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix C, Voluntary Online Workbook, Pages 11-12

On page 11 of the voluntary online customer engagement workbook, Alectra Utilities states:

> Until rates are rebased in 2027, future rate increases will be limited by an OEB-set Price Cap Formula. Each year Alectra Utilities is permitted to increase rates to reflect inflation minus savings targets established by the OEB […] [T]he distribution charge for the typical bill is estimated to increase by 1.2% on average for the next five years.

On page 12 of the voluntary online customer engagement workbook, Alectra Utilities states:

> Planners have indicated the option that in their view provides the best balance between any potential rate increase with the intention to maintain reliability and to fix or avoid pockets of customers that are having significantly below average experiences […] At the end of these questions, you will have an opportunity to review your responses and total rate impact of those choices […] Alectra Utilities may apply for a rate increase under the rules established by the OEB. While the exact amount of any rate increase would consider the views collected in this consultation, the workbook will ask you for your views on a rate increase that will be sufficient to pay for the planners' recommended options.

a) Please confirm the preamble statement that rate increases are "set" until rebasing in 2027.

i. If confirmed, please clarify why page 12 implies that different spending programs may result in different rate increases.

b) What steps did Alectra Utilities take to ensure that the above question did not cause confusion with the survey respondents?

G-Staff-106
Ref: Exhibit 4, Tab 1, Schedule 1, Appendix C, Voluntary Online Workbook, Pages 13

The results of the respondent survey on the clarity of Alectra Utilities' customer consultation are 52% reporting feeling "somewhat clear" and 6% reporting feeling "not clear at all."

a) Given that a total of 58% of respondents were not "very clear" on the customer consultation, please explain whether Alectra Utilities views its customer consultation as an accurate representation of customer's desires.

b) How does Alectra Utilities intend to improve upon these results in future customer consultation efforts?