EB-2025-0252
Alectra Utilities Corporation 2027 Rebasing

Interrogatories of Environmental Defence

Interrogatory # 1-ED-1

Reference: Exhibit 1

Question(s):

a) Please describe how Alectra will address situations where, mid-term, it is able to defer or avoid a capital expenditure included in the capital budget with a NWS that involves an alternative capital investment, increased operational costs (e.g. payments to an aggregator), or a combination of both. Please provide examples with sample figures to explain the impacts.
b) Please discuss a mechanism to reallocate costs between capital and operational budgets as necessary to reflect an NWS that reduces capital costs but increases operational costs.
c) Please provide the criteria for NWS that can be implemented mid-term without seeking OEB approval. Please also provide the criteria or checklist that Alectra believes would trigger the need for OEB approval. Please explain the response.

Interrogatory # 1-ED-2

Reference: Exhibit 1, Tab 6, Schedule 2

Question(s):

a) The evidence indicates that over 90% of micro-generation projects were connected within the prescribed time frame or at an agreed-upon date with the customer. Please indicate for each year the percent connected (i) within the prescribed time frame and (b) an agreed-upon date. For the five most recent projects connected on an agreed-upon date, please provide the correspondence in which the customer agreed upon an alternative date (with personal information redacted).
b) Please provide the same information for other DER categories (small, mid-sized, large).

Interrogatory # 1-ED-3

Reference: Exhibit 1, Tab 9, Schedule 6

Question(s):

a) Does Alectra agree that consolidation is beneficial for efforts to address the energy transition because fixed costs relating to planning and efforts to address the energy transition can be spread over a larger number of customers?

b) What additional relief could be granted by the OEB in this proceeding to facilitate further consolidation with respect to Alectra and its contiguous LDCs?

Interrogatory # 1-ED-4

Reference: Exhibit 1

Question(s):

a) Does Alectra survey its customers regarding the likelihood that they will purchase a cold climate heat pump in the near future? If yes, please provide the results. If not, why not, and is Alectra willing to do so in the future? For an example of survey questions, see the Burlington Hydro customer engagement survey.
b) Please summarize the results of all surveys on EV adoption and compare those to the EV adoption assumptions underlying Alectra's load forecast.

Interrogatory # 2-ED-5

Reference: Exhibit 2A, 5.2.3 (DSP - NWS)

Question(s):

a) Please confirm that Ontario's Integrated Energy Plan includes a DER Strategy.
b) Please discuss potential additional performance measures that would be aligned with Ontario's DER strategy.

Interrogatory # 2-ED-6

Reference: Exhibit 2A, 5.5.3 (DSP - NWS)

Question(s):

a) If the NWSDVA were not to be implemented (e.g. due to an OEB order or a settlement), what incremental O&M costs would Alectra include in its rates application? Please provide an annual breakdown. To account for the uncertainty, please include a high and low estimate.
b) Is the NWSDA important in part because likely O&M costs for NWS are minimal for the test year and much greater for the later years in the rate term? If yes, please discuss.
c) What are the total estimated deferral savings over the rate term for deferring the 5 stations via NWSs.
d) Please discuss potential additional performance measures that would be aligned with Ontario's DER strategy.

Interrogatory # 2-ED-7

Reference: Exhibit 2A (DSP - NWS)

Question(s):

a) Please provide all underlying documentation relating to NWS assessments Alectra has undertaken with respect to each project during the rate term over $2 million. If it is not clear from that underlying documentation, please indicate each of the NWSs explored for each project and why each was ruled out.
b) Has Alectra already completed a full NWS assessment for each project over $2 million planned during the rate term? If not, please list the projects for which an NWS assessment has not yet been completed and the value of each.
c) Please provide a table with a row for each project over $2 million and columns to indicate whether each of the following NWSs was considered: demand response, energy efficiency, storage, solar/storage, and a combination of those solutions. Please also include a column to indicate whether one or more third party NWS developers or aggregators were approached to assess whether they could meet the distribution needs at a lower cost.
d) In assessing NWSs, did Alectra approach one or more third party NWS developers or aggregators were approached to assess whether they could meet the distribution needs at a lower cost? If yes, please indicate which ones were approached and provide the documentation provided to them (e.g. a request for proposal or equivalent).
e) For each, please also indicate, if Alectra decides that a NWS would be appropriate during the rate period, will it request OEB approval or do so via its existing funding envelopes?

Interrogatory # 2-ED-8

Reference: Exhibit 2A (DSP - NWS)

Question(s):

a) At least arguably, the proposal for an NWSDVA coupled with the proposed Margin on Payments does not create an incentive to minimize the cost of non-wires solutions. Please respond to this.
b) Please identify additional options to address the concern noted above while still addressing the drivers for those proposals, including uncertainty regarding the cost of non-wires solutions and the need to remove disincentives to replace capital spending (on traditional solutions) with O&M spending (on non-wires solutions).
c) What would Alectra's next preferred option be to address the uncertainty of NWS costs if it is not allowed to adopt the NWSDVA and/or proposed Margin on Payments?
d) Would Alectra consider only including costs in that will be competitively procured in the NWSDVA and include other costs in the standard O&M budget?
e) What is the approximate percentage of anticipated NWSDVA costs that will be (a) competitively procured versus (b) non-competitively procured costs (e.g. Alectra staffing or programmatic approaches to DER procurement)? We understand that precision is impossible at this stage – please provide an approximate estimate on a best-efforts basis.
f) What steps will Alectra take to ensure that it secures NWSs at the lowest cost?

Interrogatory # 2-ED-9

Reference: Exhibit 2A, 5.5.3 (DSP - NWS)

Question(s):

a) Please provide a copy of Alectra's internal NWS screening methodology and any other internal NWS guidance documents.
b) Page 338 states: "The preliminary BCA results indicated positive economics under conservative assumptions, 20 supporting a deferral path during the DSP Period." Please provide the results/BCA underlying this statement.

Interrogatory # 2-ED-10

Reference: Exhibit 2A, Appendix A (DSP - REG)

Question(s):

a) Please provide a breakdown of forecasted DER facility connections over the rate term with a breakdown by generation type (e.g. solar, storage, gas, etc.). Please include both number and expected MW, and the total over the term.

Interrogatory # 2-ED-11

Reference: Exhibit 2, Tab 1, Schedule 1, (DSP – system access)

Question(s):

a) These questions concern the proposed system access spending, including the spending to connect new housing developments. Please provide a table showing the average connection costs per lot for residential developments. Please provide a breakdown showing the average costs for developments with and without gas heating. Please include the full costs, including the amounts that will be included in rate base and the amounts that will be covered by the developer. Please provide the information based on the previous 5 years of connections. If that is not feasible, please select a feasible timeframe.
b) Please provide a figure comparing the results in (a) to the figures on page 14 of the following PwC report prepared for the OEB: https://www.oeb.ca/sites/default/files/uploads/documents/reports/2024-10/Report-Back-to-Minister-on-System-Expansion-for-Housing-Developments-20241021.pdf.
c) Please discuss additional steps that Alectra could take to fulfill the Ontario Government's goal of reducing the cost of electrical connections for housing developments. Please address, in particular, steps that could be taken to reduce the costs of all-electric developments (i.e. those without gas heating).

Interrogatory # 2-ED-12

Reference: Exhibit 2, Tab 1, Schedule 1, (DSP – DER connection capacity)

Question(s):

a) Please provide the approximate number and percent of Alectra customers that are unable to connect a distributed energy resource (i.e. DERs or BTM generation) due to electricity system constraints (e.g. thermal or short circuit constraints). This can be estimated, for instance, by determining the number of customers on restricted/constrained feeders. If possible, please provide the number that are unable to connect due to (i) thermal constraints, (ii) short circuit constraints, or (iii) both.
b) Please provide the approximate number and percent of customers for whom a technical restriction (e.g. short circuit or thermal constraint) on connecting a DER will be removed due to investments that Alectra is planning.
c) Please describe the measures that Alectra is undertaking to reduce restrictions on its customers connecting DERs.
d) Does Alectra offer Flexible Interconnection Capacity Solutions?[1] If not, does it intend to do so in the future, and if yes, when?
e) Does Alectra have DER Management Systems (DERMS) in place to cost effectively monitor and, where appropriate, control DERs? If not, does it intend to do so in the future, and if yes, when?
f) Does Alectra have DER Management Systems (DERMS) in place to cost effectively monitor and, where appropriate, control micro-generation and small DERs (e.g. utilizing less expensive solutions such as PCS and TCP/IP)? If not, does it intend to do so in the future, and if yes, when?

Interrogatory # 2-ED-13

Reference: Exhibit 2a (DSP – DER connection capacity)

Preamble: Hydro Ottawa exhibit JT2.6-ED-2 states as follows:

> Hydro Ottawa currently has one station with short-circuit limitations and consequently all stations fed downstream of this station are short-circuit constrained. More details on these stations can be found in Section 9.3.3 of Schedule 2-5-4 - Asset Management Process. To alleviate the technical constraints for DER connections in stations with short-circuit limitations Hydro Ottawa is evaluating the option of running the substation with bus-tie open. This approach isolates the two bus sections, reducing the fault current and enabling safer DER integration. A significant outage will occur if a transformer or incoming feeder fails while the bus-tie is open, as the entire bus section it serves will lose power. This is the primary disadvantage of operating with an open bus-tie.
>
> Fast-switching protective devices can be used to minimize this reliability impact. These devices are designed to detect a fault and switch the load from the faulted source to a healthy one in a matter of milliseconds. This offers a significantly faster response time compared to conventional mechanical circuit breakers. By incorporating these devices, a substation can operate with an open bus-tie, achieving the lower fault levels necessary for

[1] For a description of Flexible Interconnection Capacity Solutions and their benefits see https://restservice.epri.com/publicdownload/000000003002022432/0/Product.

DER connection, while simultaneously maintaining a high level of service reliability. If this solution is implemented, Hydro Ottawa will be able to remove limitations to connect DERs in its short-circuit constrained stations.

Hydro Ottawa is in the early planning stages of implementing fast switching devices to enable DERs and has not finalized equipment manufacturers or cost details for such devices. This is something that Hydro Ottawa will explore in the near future, and as such, cannot comment on these details at this time.

Question(s):

a) Please comment on the above-noted option to resolve DER connection capacity constraints and its potential application to Alectra service territory. If this has not been explored, please comment on whether/when it will be. Please also comment in relation to both Alectra's and Hydro One's stations.

Interrogatory # 2-ED-14

Reference: Exhibit 2a, Appendix X (DSP – DER connection capacity)

Question(s):

a) We have trouble understanding the tables on pages 397 to 401 regarding connection capacity constraints. For the restricted/constrained feeders, please provide a table with additional columns to show the underlying calculations and to separately account for thermal and short circuit constraints. Please indicate for each the number of Alectra customers connected to the feeder downstream.

Interrogatory # 2-ED-15

Reference: Exhibit 2a, Appendix B14 (DSP – DER connection capacity)

Question(s):

a) Please provide, on a best-efforts basis, an estimate of the monetized benefits of the investments outlined in Parts II and IV of Appendix B14. For instance, where the benefit is improved reliability, please estimate the quantum of reduced outages and outage duration and the dollar value thereof. Or where the benefit is fewer truck rolls, please estimate the value thereof. Please provide the response on an annual benefits basis as well as the total benefits over the lifetime of the equipment to be installed. Please include any necessary caveats. We understand that the response will need to involve significant simplifications and assumptions.

Interrogatory # 2-ED-16

Reference: Exhibit 2a, Appendix B14 (DSP – DER connection capacity)

Question(s):

a) Do rear lot poles raise issues related to Aletra's right to have a pole on private property?
b) Does Alectra have formal easements on title for each home where it has a backyard electricity poll?
c) If not, what is the basis of Alectra's right to have a pole placed thereon?
d) Is Alectra also seeking to move poles placed in backyards that are directly adjacent to laneways, or only those where there is no laneway? If the former, do those situations raise different issues in relation to land rights and access?

Interrogatory # 2-ED-17

Reference: Exhibit 2, Tab 5, Schedule 1, (DSP – general plant, buildings)

Question(s):

a) Whenever Toronto Hydro is replacing fossil fuel heating equipment, it is replacing it with electric heat pumps (per EB-2023-0195, 1B-ED-3). Is Alectra planning and committing to do the same? If yes, the remaining parts in this question need not be answered.
b) Please provide a table listing each building owned by Alectra, how they are heated, their approximate annual gas consumption, the age of any fossil fuel heating equipment, the approximate life left in any fossil fuel heating equipment, the annual fossil fuel costs (all inclusive, including commodity, delivery, and fixed charges), and the annual incremental electricity costs that would arise were the fossil fuel equipment with an appropriate electric heat pump.
c) Please provide a table showing all fossil fuel heating equipment in its buildings that is at the end of its expected useful life or will reach the end of its useful life within the rate term. For each piece of equipment, please indicate whether Alectra expects to replace it with fossil fuel or electric equipment, and why.

Interrogatory # 2-ED-18

Reference: Exhibit 2, Tab 1, Schedule 1, (DSP – asset sizing)

Question(s):

a) How many kms of conductors does Alectra expect to replace or install in each of the rate term years? How many transformers does Alectra expect to purchase and install over the rate term? What is the average physical lifetime of the conductors and transformers that Alectra is currently installing?
b) How will Alectra ensure that the conductors and transformers that it will install over the rate term will not need to be replaced before the end of their lives due to demand growth outstripping their capacity?
c) If all homes heated with gas were to be electrified by 2050, approximately what percent of the conductors and transformers that Alectra expects to install over the rate term would need to be replaced by 2050 to meet the increased demand (with all other aspects of Alectra's load

forecast remaining unchanged)? Please provide as much of a specific answer to this question as possible and make and state assumptions as necessary. For instance, Alectra could assume that homes are electrified via 50% air-source and 50% ground-source heat pumps.

d) If all transportation were to be electrified by 2050, approximately what percent of the conductors and transformers that Alectra expects to install over the rate term would need to be replaced by 2050 to meet the increased demand (with all other aspects of Alectra's load forecast remaining unchanged)? Please provide as much of a specific answer to this question as possible and make and state assumptions as necessary.

Interrogatory # 2-ED-19

Reference: Exhibit 2, Tab 1, Schedule 1, (DSP, system access)

Question(s):

a) Please provide a table showing the number of residential service upgrades in the past five years and a forecast for the rate term. Please provide columns for the total costs for service upgrades, the proportion covered by the homeowners whose service is being increased, and the proportion covered by ratepayers. Please include both capital costs (e.g. new conductors or transformers) and O&M costs (e.g. costs to de-energize and energize the home).
b) Please discuss the feasibility and potential savings from offering customers seeking a service upgrade an alternative option via a load sharing device (e.g. circuit pauser or smart panel).[2]
c) Please discuss the feasibility and potential savings from offering customers seeking a service upgrade an alternative option via a SPAN Edge.[3]
d) If Alectra has not considered the steps outlined in (b) and (c), will it commit to doing so? If yes, by when?
e) If customers are able to avoid a service upgrade, how does that impact the need for potential upstream capacity increases? For example, can upgrades to street-level transformers that may be needed if multiple homes upgrade their service be avoided if those service upgrades are avoided via the technologies noted above? What, if any, electricity infrastructure is built based on the size of residential services?

Interrogatory # 2-ED-20

Reference: Exhibit 2, Tab 1, Schedule 1, (DSP, system access) also Exhibit 8 (service charges)

Question(s):

a) Please confirm whether the proposed capital investments are sufficient to ensure that each Alectra residential customer would be able to install an EV charger or electric heat pump without delay in any part of Alectra's system. If not, please indicate where on its system there would be insufficient capacity.

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[2] https://www.passivehousecanada.com/wp-content/uploads/2023/08/20231026-Electrification-without-a-service-upgrade-report.pdf

[3] https://www.span.io/blog/span-expands-beyond-smart-electrical-panels-creating-new-category-of-at-the-meter-products

b) What does Alectra charge to facilitate upgrading a residential customer's service to 200 amps? Please provide a breakdown of the costs (e.g. application fee, disconnect/connection costs, conductor upgrade where necessary, transformer upgrade where necessary).
c) Please create a table to compare the charges in (b) to those charged by Hydro One, Toronto Hydro, and Elexicon Energy.
d) Please provide excerpts from the Alectra conditions of service and the DSC that allow Alectra to levy the charges/fees described above.
e) Please provide all studies and calculations justifying the fixed fees for a panel upgrade charged by Alectra.
f) On average, how long does it take for Alectra to carry out a service upgrade once requested by a customer?

Interrogatory # 2-ED-21

Reference: Exhibit 2, Tab 1, Schedule 1, (DSP, system access)

Question(s):

a) Please provide a table showing, for each year from 2025 to 2029, the forecast number of new connections, the forecast contribution to co-incident system peak demand (summer and winter) for those that are gas heated, the forecast contribution to co-incident system peak demand (summer and winter) for those that are electrically heated, the forecast total demand for those that are electrically heated and those that are gas heated.
b) Please provide the information requested in (a) but for the most recent year of historical data.
c) Please provide a list of all expected connection requests during the rate period, the forecast peak (summer and winter) and annual demand of each, and how each is forecast to be heated.
d) If all new construction in the Alectra service area over 2025 to 2029 were to be heated with efficient heat pumps (i.e. no fossil fuels), would Alectra be able to provide the required electrical service? If not, what would the shortfall be and how would it arise?
e) Please provide a sample of the Appendix B DCF calculations for a typical new condominium construction with geothermal heating versus gas heating? Please indicate (i) the electricity connection capital costs for each heating scenario and (ii) the 25-year revenue offset for the connection costs under Appendix B (i.e. how much more distribution revenue would be paid and thus be used to offset the contribution in aid of construction).

Interrogatory # 2-ED-22

Reference: Exhibit 2, Tab 1, Schedule 1, (DSP, system access)

Question(s):

a) If customer connection costs are higher than forecast, how would Alectra manage the cost?
b) Please confirm that DSC allows utilities to apply a longer revenue horizon beyond the standard horizon for calculating contributions in aid of construction. Has Alectra ever done this? Would Alectra consider doing this where the customer implements technology that

lowers its impact on the system peak (such as geothermal, which lowers summer cooling requirements)?
c) Please compare the co-incident peak summer electricity demand from a typical commercial or residential tower that is cooled with geothermal versus traditional air conditioning.
d) Please provide the 20 highest winter demand hours and summer demand hours for each of the past five years for Alectra's system, including the date, hour, and demand.
e) On average, what is the peak demand on Alectra's system in the summer versus the winter?

Interrogatory # 2-ED-23

Reference: Exhibit 2, Tab 1, Schedule 1, (DSP)

Question(s):

a) What barriers exist to installing EV chargers in existing multi-residential buildings?
b) What roles does Alectra typically play with respect to the installation of EV chargers in the parking area of multi-residential buildings.
c) Please provide a breakdown of the number of and percent of multi-residential buildings in each rate class, with a description of how distribution charges are levied in each class (fixed, per kWh, or per kVA?).
d) If distribution system upgrades are required to allow a multi-residential building to install EV chargers, how are the costs to be paid by the building customer calculated? Is the forecast incremental revenue from the incremental load considered as part of those calculations? If not, why not. Please describe two cases: (i) with individual meters for each unit and (ii) a single meter for the property.
e) How many and what percent of multi-residential buildings have a meter for each unit?
f) What additional steps could Alectra take to ease the connection of EV chargers in multi-residential buildings?

Interrogatory # 2-ED-24

Reference: Exhibit 2, Tab 1, Schedule 1, (DSP)

Question(s):

a) What number and percent of residential meters does Alectra plan to replace with an AMI 2.0 meter over the rate term?
b) What percentage of Alectra meters already have bi-directional capabilities such that no meter replacement is needed for a customer to move to net metering?
c) Are the AMI 2.0 meters that Alectra will be installing bi-directional such that customers moving to net metering would not need a meter replacement?
d) Would Alectra agree to prioritize the rollout of AMI 2.0 meters for customers installing a DER by installing AMI 2.0 meters for those customers out of the AMI 2.0 meter replacement budget versus cost recovery from the customer?

Interrogatory # 2-ED-25

Reference: Exhibit 2, Tab 1, Schedule 1, p. 103 (DSP)

Question(s):

a) Please discuss emerging AMI 2.0 meters that are able to act as a DERMS (i.e. monitor and control a DER.
b) Will the Alectra AMI 2.0 meters have that capability?
c) If that capability is still emerging, when does Alectra believe it will be commercially available at a cost-effective price.

Interrogatory # 2-ED-26

Reference: Exhibit 2a, Tab 1, Appendix J&K (DSP, decarbonization)

Question(s):

a) Please confirm that the Cost-Effective Pathways Study prepared for the Ontario Government[4] used a cost optimization model to assess the most cost-effective pathways to decarbonize the province.
b) Does Alectra agree that this study prepared for the Ontario Government is credible?
c) Please confirm that the most cost-effective pathway to reach net zero resulted in almost a complete elimination of gas as a source of energy for residential customers (as shown on page 56).
d) Please compare this cost-optimal pathway with the forecasts used by Alectra.

Interrogatory # 2-ED-27

Reference: Exhibit 2a, Tab 1, Appendix J&K (DSP, decarbonization)

Question(s):

a) Please confirm that the Canadian Climate Institute used a cost optimization model to assess the most cost-effective pathways to decarbonize the country and each province.[5]
b) Does Alectra agree that this study is credible?
c) Please confirm that this study concludes that the most cost-effective path to net zero would result in a 96% decline in gas use in Ontario (see page 17).
d) The study concludes as follows: "Feedstock constraints are an important limiting factor for biomethane production. Recent studies estimate that, given current feedstock availability and existing production technologies, Canada could feasibly produce between 90 and 218 petajoules of biomethane per year (Abboud et al. 2010; Kelleher Environmental 2013; Stephen et al. 2020). This is equivalent to only 2 to 5 per cent of Canada's total 2021 gas demand (CER 2023)." (p. 30) Does Alectra and its experts agree?

[4] https://www.ontario.ca/files/2025-06/mem-cost-effective-energy-pathways-study-for-ontario-en-2025-06-10.pdf
[5] https://climateinstitute.ca/wp-content/uploads/2024/06/Heat-Exchange-Report-Canadian-Climate-Institute.pdf

e) Please comment on the following conclusion from this study: "Likewise, low-carbon gases like hydrogen and biomethane will not serve as replacement fuels on a scale that can justify continued gas network expansion. Our modelling and numerous other studies find that these gases are either too scarce or too costly to heat more than a small fraction of Canada's buildings, and are instead taken up by other sectors such as heavy industry. Even under lower-cost assumptions for these fuels, electrification of building heat still dominates." (p. III)

Interrogatory # 2-ED-28

Reference: Exhibit 2a, Tab 1, Appendix J&K (DSP, decarbonization)

Question(s):

a) Please provide a copy of any studies, calculations, or analysis underlying Alectra's forecasts relating to the electrification of heating and transportation.

Interrogatory # 2-ED-29

Reference: Exhibit 2, Tab 1, Schedule 1 (DSP, NWS)

Question(s):

a) How many Alectra customers have EVs?
b) How many Alectra customers have EVs that are capable of bi-directional charging?

Interrogatory # 2-ED-30

Reference: Exhibit 2, Tab 1, Schedule 1 (DSP)

Question(s):

a) Please provide a list of all capital investments that are predominantly driven by efforts to facilitate and benefit from the installation of DERs. For each, please provide the amounts budgeted annually and over the rate term. Please also include a column explaining how the investment will facilitate DERs. Please do not include investments that are required in order to meet load growth or reliability, with DERs facilitation as an ancillary benefit that is irrelevant to the decision to pursue the investment.

Interrogatory # 2-ED-31

Reference: Exhibit 2, Tab 1, Schedule 1 (DSP)

Question(s):

b) Please provide a list of all capital investments that are predominantly driven by efforts to enable non-wires solutions. For each, please provide the amounts budgeted annually and over the rate term. Please also include a column explaining how the investment will enable non-wires solutions. Please include the investments described in the following passage: "Further, Alectra Utilities' ability to deploy these and future NWS is contingent on funding and technical implementation of enabling technologies proposed in this application, including Advanced Distribution Management System, Integrated Network Management, Planning Tools and Automation, and DER Wholesale Market Preparedness…" (DSP s. 5.3.5, p. 326)

Interrogatory # 3-ED-32

Reference: Exhibit 3, Customer and Load Forecast

Question(s):

a) Please list the differing assumptions and methodologies used when forecasting peak load for the purposes of billing determinants and for assessing capital needs at the various levels of the electricity system (e.g. transmission, large scale distribution, street-level distribution). For each, please ensure that assumptions regarding distributed energy resources (e.g. whether they are assumed to be generating, not generating, or otherwise).
b) If a residential customer increases their service (e.g. from 40 amp to 200 amp), how will that impact the various peak load forecasts (if at all). For the purpose of this question, please assume that the customer's peak and annual load remains the same. The purpose of this question is to determine whether efforts to help customers avoid service upgrades when electrifying heating or transportation can help reduce costs driven by peak demand in any part of the electricity system.
c) Please provide a table showing for each customer class: the number of customers, the annual demand, and the peak demand, including historical figures for the past 5 years and forecast figures for as long as is available. If possible, please include a breakdown of summer and winter peak demand.

Interrogatory # 4-ED-33

Reference: Exhibit 4 (DER facilitating costs)

Question(s):

a) Please provide a list of all forecast O&M costs that will facilitate the installation of DERs. For each, please provide the amounts budgeted annually and over the rate term. Please also include a column explaining how the line item will facilitate DERs.

Interrogatory # 8-ED-34

Reference: Exhibit 8 and Exhibit 7 (cost causality)

Preamble: These questions relate to the issue of cost causality to provide examples of how cost causality is not and cannot be 100% achieved with standard postage stamp rates.

Question(s):

a) Does Alectra charge customers a fee to remain with paper billing?
b) How many and what percent of Alectra customers still maintain paper billing? Please provide the response to residential customers and all customers.
c) What is the cost of paper billing overall and on a per-customer basis? Please provide a breakdown by rate class, or at least for residential customers versus other customers.

Interrogatory # 8-ED-35

Reference: Exhibit 8 and Exhibit 7 (cost causality)

Preamble: These questions relate to the issue of cost causality to provide examples of how cost causality is not and cannot be 100% achieved with standard postage stamp rates.

a) Does Alectra propose to charge residential customers different rates depending on whether they live in a rural versus an urban area (i.e. more or less population dense area)?
b) Please provide a high-level comparison between the population density in the most and least population dense portions of Alectra's service territory.
c) Please confirm, generally speaking, that less population dense areas require more poles and wires to serve on a per customer basis?
d) Please provide a high-level, best-efforts, order-of-magnitude comparison between the cost to serve a singe residential customer in the highest population dense area within Alectra territory versus a single residential customer in the lowest population dense area within Alectra territory. Please provide a quantitative answer using an expedient approach. Please account for capital costs and operational costs. If Alectra is unsure how to calculate an answer, please contact us for suggestions.

Interrogatory # 8-ED-36

Reference: Exhibit 8 and Exhibit 7 (cost causality) and Exhibit 4 (O&M)

Preamble: These questions relate to the issue of cost causality to provide examples of how cost causality is not and cannot be 100% achieved with standard postage stamp rates.

a) Does Alectra charge customers to use the call centre for issues that can be dealt with online?
b) Approximately what percentage of calls to the call centre are for issues that can be dealt with online? Please provide a rough best-estimate based on the professional judgement of those managing the call centre.
c) What is the annual cost of running the call centre, both as an overall total and per call received?
d) Are customers with paper billing more likely than other customers to use the call centre for issues that can be dealt with online?

e) How many calls does the call centre receive each year on average?

Interrogatory # 8-ED-37

Reference: Exhibit 8, Tab 2, Schedule 2 (standby rates)

Preamble: These questions explore potential alternatives on the current/proposed standby rates with the aim of encouraging DERs that lower total system costs. An alternative could be applied to all standby customers or just new customers with load displacement.

Question(s):

a) What alternatives has Alectra considered to charging standby rates?
b) Please discuss the pros and cons of charging coincident demand charges to all customers instead of the current/proposed standby charges (see EB-2015-0043, Staff Discussion Paper, March 31, 2016 for details).
c) Please discuss the pros and cons of charging a Capacity Reserve Charge as described in Ontario Energy Board, Staff Report to the Board, *Rate Design for Commercial and Industrial Electricity Customers,* EB-2015-0043 (February 21, 2019).
d) Please discuss the pros and cons of a Capacity Allocation approach (i.e., Capacity Contracted for capacity) where the load customer would pay the Capacity Allocation each month and would pay a rachet charge if they ever consume above that. The rachet would also increase the Capacity Allocation for some time period (e.g., 12/24/36 months) to further incentivize the customer to not overconsume during peak demand periods.

Interrogatory # 8-ED-38

Reference: Exhibit 8, Tab 2, Schedule 2 (standby rates)

Preamble: These questions explore potential variations on the current/proposed standby rates with the aim of encouraging DERs that lower total system costs. A variation could be applied to all standby customers or just new customers with load displacement.

Question(s):

a) Please discuss the feasibility and pros and cons of only charging standby rates to the extent that a customer's demand exceeds their contracted demand at the time of the coincident system peak. Please discuss how this could encourage customers to refrain from conducting maintenance or other downtime at the time of the distribution system peak.
b) Please analyze three customers subject to standby charges. Please select the one with the largest DER, the smallest DER, and the mid-size DER.[6] For each, please indicate how much they paid in standby charges annually for the past three years. For each, please indicate the number of instances in which backup service was utilized (i) outside of the time of distribution system peak and (ii) at the time of distribution system peak.

[6] If necessary to assure anonymity, please randomly select examples from the top quartile, bottom quartile, and middle quartiles.

c) Please discuss other methods that could be used to encourage customers to refrain from conducting maintenance or other downtime at the time of the distribution system peak. Similarly, please discuss other adjustments to Alectra's standby rates proposals that would ensure they are charged only where there is a contribution to the system peak.
d) If Alectra were to wish to pilot alternative approaches to standby rates with a small number of new DER customers without rolling out those approaches across the full customer base, what regulatory approvals would be required in this proceeding to allow for the deviations from the standard rate structure required to said piloting? Please provide details.

Interrogatory # 8-ED-39

Reference: Exhibit 8, Tab 2, Schedule 2 (standby rates)

Question(s):

a) Please provide a table for the past five years and forecast for the next five years showing the revenue generated from standby rates. For at least the historic figures, please provide a breakdown by the type of charge.
b) How many customers will be subject to standby rates?
c) Please provide a breakdown of the customers subject to the proposed new standby rates (both # and MW capacity) by generator type (e.g. solar, gas co-generation, battery, gas other, etc.).

Interrogatory # 8-ED-40

Reference: Exhibit 8, Tab 2, Schedule 2 (standby rates)

Question(s):

a) Will all customers in the GS>50 kW rate class have a contracted demand amount, or only those with generating units?
b) Please confirm whether the contract demand amount in the standby rate proposal acts as a floor below which demand charges cannot drop.
c) If the answer to (a) is no, please explain why it is fair to require customers with generation to be charged based on a contract demand amount but not other customers in the GS > 50 kW rate class?
d) Please provide the estimated demand charges that would be levied on the following two customers in the GS >50 kW rate class:
    i) A customer with a generator whose demand is 100 kW for 6 months and 75 kW for 6 months;
    ii) A customer without a generator whose demand is 100 kW for 6 months and 75 kW for 6 months.
e) Please provide the estimated demand charges that would be levied on the following two customers in the GS >50 kW rate class:
    i) A customer with a generator whose demand is 100 kW for 11 months and 150 kW for 1 month;

ii) A customer without a generator whose demand is 100 kW for 11 months and 150 kW for 1 month.

Interrogatory # 8-ED-41

Reference: Exhibit 8, Tab 2, Schedule 2 (standby rates)

Preamble: Exhibit 3, Tab 1, Schedule 5 states: "Given the long-standing and widespread implementation of Conservation and Demand Management (CDM) and Non-Wires Solutions (NWS) initiatives across Ontario, including within Alectra Utilities' service territory, the historical effects of these initiatives are inherently reflected in the historical load and customer data that form the basis of Itron's regression models and forecasting methodologies."

Question(s):

a) Please discuss the degree to which distributed generation is accounted for in Itron's regression models and forecasting methodologies.
b) Please discuss the degree to which distributed generation is accounted for in determining when infrastructure upgrades are required.

Interrogatory # 8-ED-42

Reference: Exhibit 8, Tab 2, Schedule 2 (standby rates)

Question(s):

a) Please discuss the merits and feasibility of customers with generation being allowed to calculate their contract demand amount for the purposes of standby rates based on a coincident peak demand amount. The purpose of this adjustment to Alectra's proposal is to encourage customers to avoid generation outages during coincident peak periods (which would otherwise potentially trigger an increase in their contracted demand) and to better reflect true cost causality.

Interrogatory # 8-ED-43

Reference: Exhibit 8, Tab 2, Schedule 2 (standby rates)

Question(s):

a) For GS > 50 (or something equivalent), please provide the average deviation (kW) between the month with the highest demand and the month with the lowest demand, on average. We are trying to get a sense of the average variation in demand for customers with more than 50 kW of demand. If the exact information we are seeking is not available, please provide something as close as possible. If necessary to expedite and answer, random sampling can be used.

b) For GS > 50 (or something equivalent), please provide the average deviation (kW) between the month with the highest **coincident peak** demand and the month with the lowest **coincident peak** demand, on average. We are trying to get a sense of the average variation in coincident demand for customers with more than 50 kW of demand. If the exact information we are seeking is not available, please provide something as close as possible. If necessary to expedite and answer, random sampling can be used.
c) Please provide the same information as in (a) and (b) but for the subset of customers with generators.

Interrogatory # 8-ED-44

Reference: Exhibit 8 (fixed/variable split)

Question(s):

a) Please provide a table showing the proposed fixed monthly service charges and the ceiling (Minimum System with PLCC Adjustment) by rate class (excluding the residential rate class) for each year in the rate term. Please also provide the same information for the past five years (actuals).
b) For any where the proposal is above the ceiling, please justify the proposal.
c) For each year in the rate period, and as a 5-year total, for each proposed fixed charge above the ceiling, please provide the (i) the revenue that would be generated from fixed changes set at the ceiling, (ii) the revenue that would be generated from fixed charges as proposed, and (iii) the difference between them
d) Please provide all underlying calculations and studies justifying the fixed and variable rates for standby power.

Interrogatory # 8-ED-45

Reference: Exhibit 8 (RTSRs etc.)

Question(s):

a) Please provide the total transmission charges (i.e. UTRs) paid by Alectra over the past five years and a forecast over the next five years. Please also provide a table showing, if those charges were levied on a net load basis (instead of a gross load basis) how much less would they be (approximately, $ and %)?
b) Please list the transmission system upgrades made to serve The Alectra service area over the past 10 years and forecast over the next 10 years. For each, please indicate the in-service date and the portion of Alectra's system that is served by the upgrade.
c) To the extent that Alectra's service territory is growing quickly, how can it be said that gross load billing is justified for the UTRs is pays? For example, how can it be said that that distributed generation in Alectra territory is causing stranded assets (i.e. assets built for Alectra customers that are unused due to load displacement).
d) Please provide excerpts from OEB document justifying gross load billing for UTRs.

e) The OEB has said that Hydro One can seek case-by-case exemptions for gross load billing. Will Alectra consider seeking such an exemption in order to lower the UTRs that it is required to pay to Hydro One?

Interrogatory # 8-ED-46

Reference: Exhibit 8 (RTSRs etc.)

Question(s):

a) Please confirm whether Alectra proposes to charge RTSRs to its customers on a gross load basis (versus a net load basis)? Please explain why or why not.
b) If yes, please provide the following:
   i) The breakdown of customers subject to gross load billing for RTSRs by generator type (i.e. solar, gas, etc.) for both the amount and capacity (# & MW).
   ii) The amount that Alectra collected annually for each of the past five years, and forecasts to collect over the next five years, that is attributable to gross load billing of RTSRs (i.e. gross load amounts minus net load amounts).
   iii) Will Alectra consider exemptions from gross load billing on a case-by-case basis? If yes, what criteria will it apply?

Interrogatory # 8-ED-47

Reference: Exhibit 8, Tab 2, Schedule 1 (RTSRs etc.)

Question(s):

a) Please confirm whether Alectra proposes to charge rates aside from RTSRs to its customers on a gross load basis (versus a net load basis)? Please explain why or why not.
b) Please provide the total transmission charges paid by Alectra over the past five years and a forecast over the next five years. If those charges were levied on a net load basis (instead of a gross load basis) how much less would they be (approximately, $ and %).

Interrogatory # 8-ED-48

Reference: Exhibit 8 (service charges) & Exhibit 2 (NWS)

Question(s):

a) Please provide a list of all existing and proposed service charges that are related to or triggered by DER connections.
b) Please provide a list of all charges that Alectra levies on customers connecting distributed energy resources (i.e. BTM generation). Please divide the charges by DER category (i.e. micro, small, medium, etc.) and include a breakdown by type of charge (application fees, meter replacement, connection impact assessments, commissioning, etc.). For each category, please indicate whether it is a fixed fee or a variable fee (i.e. payment for work at cost). For

variable fees, please provide the average amount charged over a convenient period of applications (e.g. the past five years).

c) Please provide the total amounts charged to generation connection customers in the small facility category for each year in the past five years, the kW of generation connected, and the $/kW on average each year
d) Please provide copies of the regulatory documents authorizing the various fees referenced in (a) and (b) and indicate the relevant section.
e) Please provide a copy of the Alectra interconnection procedures applicable to distributed energy resources. Please prepare a table comparing those procedures with the Interstate Renewable Energy Council's Model Interconnection Procedures (2023).[7]
f) Does Alectra anticipate changing the fees it charges for DER connections (e.g. CIA fees) within the rate term?

Interrogatory # 8-ED-49

Reference: Exhibit 8 (service charges) & Exhibit 2 (NWS)

Question(s):

a) What changes to its connections procedures, costs, and thresholds is Alectra implementing (or considering to implement) in order to meet the province's DER goals and DER strategy as set out in its Integrated Energy Plan?
b) Please confirm that Alectra is able to treat DERs with a nameplate capacity of above 10kW as a micro-generation connection. Please provide the relevant DSC section.
c) Is Alectra willing to implement (or consider implementing) a policy to treat all DERs with a nameplate capacity of up to 20 kW as a micro-generation connection? Please explain, including a discussion of whether this would be directionally consistent with IREC recommendations[8], consistent with the system impacts of smaller DERs, and improving the ratio of connection costs to total project costs for small DERs.
d) If not, is Alectra willing to consider otherwise raising the threshold/criteria for micro-generation connections?

Interrogatory # 1-ED-50

Reference: Exhibit 8 (fees for residential service upgrades needed for electrification)

Question(s):

a) Please provide the typical fees/charges that Alectra would charge for a residential service upgrade, with a full breakdown of the costs. Please include examples with and without a conductor replacement.

[7] https://irecusa.org/wp-content/uploads/2023/08/IREC-Model-Interconnection-Procedures-2023-FINAL-8.23.23.pdf
[8] https://irecusa.org/wp-content/uploads/2023/08/IREC-Model-Interconnection-Procedures-2023-FINAL-8.23.23.pdf

b) Alectra proposes a fee of $295 for "Disconnect/reconnect at meter – during regular hours" (Ex. 8-3-2, p. 2). Please confirm whether this involves one fee of $295 for disconnection and a second fee $295 for reconnection where a service upgrade is required?
c) Please provide a breakdown of the reasons/drivers for charging customers for disconnect/reconnect in the most recent year with data. We are particularly interested in assessing the percent of the total that is due to service upgrades.
d) Please provide a table showing the service fees for connection/disconnect for Alectra, Toronto Hydro, Hydro Ottawa, and Hydro One. If Alectra's are higher, please justify the higher fees.
e) What options can Alectra offer to customers seeking to upgrade a service panel due to electrification (or another reason) to avoid or reduce the disconnect/reconnect fee.
f) Alectra calculates the fee based on 1.8 hours of personnel and truck time. Does this assume the average time for a technician to travel to and from the customer premises? Could the costs be reduced by stringing calls together, and thus reducing overall travel time?
g) Can AMI 2.0 meter be remotely switched off to allow for disconnect/reconnect without the need for a visit from an Alectra employee when a customer panel is being swapped out?
h) In what instances is a connection/reconnection required at the pole/transformer versus the meter for a service upgrade?

Interrogatory # 8-ED-51

Reference: Exhibit 8 (loss factors)

Question(s):

a) Please provide tables showing the (i) total distribution system losses (MWh) in Alectra's network for the past five years, forecast over the next five years, and total over the 10 years; (ii) losses at the co-incident peak (MW) for the same periods; (iii) the losses as a percent of throughput for each year and as a 10-year average; and (iv) the cost of those losses to Alectra customers in each year, and total. Please include the calculations, including how the monetary cost has been calculated.
b) Please list the steps taken by Alectra to cost-effectively reduce losses, including in relation to capital planning and operational measures (e.g. load balancing).
c) Does Alectra have a guideline to help planners decide whether it would be cost-effective to upsize a conductor to reduce losses when adding or replacing lines? If yes, please file it. If not, please explain in detail the practices used (if any).
d) Does Alectra have a guideline on how to assess trade-offs between cost and efficiency (i.e. less losses) when procuring transformers? If yes, please file it. If not, please explain in detail the practices used (if any).
e) Has Alectra conducted any studies or prepared any assessments or report on steps to take to cost-effectively reduce losses over the past 15 years? If yes, please file those.

Interrogatory # 8-ED-52

Reference: Exhibit 8 (loss factors & DER)

Question(s):

a) Please provide a table with the power injected into Alectra's system (MWh) from DERs in each of the past five year, in each of the next five years (forecast), and total over that 10-year period. Please add a row with an estimate of the reduction in distribution and transmission losses due to said power originating adjacent to customer load. Please add a row estimating the dollar value of those loss reductions.
b) Who does the value in (a) accrue to (e.g. all Alectra customers)?

Interrogatory # 8-ED-53

Reference: Exhibit 8 (loss factors)

Question(s):

a) Please estimate on a best efforts basis the reduction in losses (kWh and annual peak kW) and the savings to customers ($) arising from Alectra's actions taken as a direct result of any work done over the previous rate term to cost-effectively reduce system losses. Please include the underlying analysis and a description of any work undertaken.
b) What other incremental steps is Alectra planning with respect to losses over the upcoming rate term?

Interrogatory # 8-ED-54

Reference: Exhibit 8 (loss factors)

Question(s):

a) Please provide the forecast losses (kWh), losses at peak (kW), and cost of losses to customers for each year in the rate term and total over the full term. Please also provide the same information for the past five years (actuals). Please include the underlying calculations, inputs, and assumptions.

Interrogatory # 8-ED-55

Reference: Exhibit 8 (rates)

Question(s):

a) Please provide a table showing the load factor for the past five years and the forecast load factor for the next five years.
b) Does Alectra agree that the higher the load factor, the more efficiently its system is being used, and the lower the cost of the distribution and transmission system on a $/MWh basis? Please explain the answer.
c) Please discuss how increased off-peak electricity demand could potentially assist in lowering volumetric distribution charges (i.e. charges based on $/kWh).

d) What additional steps could Alectra take to increase the load factor, such as encouraging increased off-peak electricity demand (i.e. electrification of transportation, etc.)?

Interrogatory # 1-ED-56

Reference: Exhibit 8 (rate design)

Question(s):

a) Please discuss the benefits of co-incident peak demand charges in encouraging behaviour that lowers system costs, such as peak shaving and peak shifting.
b) Please provide a table listing the demand charges for each customer class and whether they are co-incident peak demand charges.
c) Would Alectra consider increasing the proportion of the rates that it charges through co-incident peak demand charges in order to encourage more efficient use of the electricity system?

Interrogatory # 1-ED-57

Reference: Exhibit 8 (rate design)

Question(s):

a) Does Alectra agree with the following conclusion of the following report: EB-2016-0004, Report by Dr. Stanley Reitsma, P. Eng.,[9] :

> "Though geothermal relies on electricity as an input (to power the pump), geothermal system actually reduces electricity demand in the summer, and increases it in the winter, relative to traditional methods of heating and cooling (heating with fossil fuels and cooling with traditional AC systems). For Ontario, a summer peaking jurisdiction, a greater reliance on geothermal would reduce peaking power needs and also reduce surplus baseload generation. Coincidentally, t the load profile of a geo system is similar to the production profiles of Ontario wind energy facilities."[10]
>
> "For the cooling of buildings, Geo HP's use about half the electricity to operate compared to air source heat pumps and AC systems, and, geo's electrical demand doesn't spike as it gets hot outside, since the ground loop temperature remains relatively unchanged. They can reduce the "heat wave" electricity system demand spikes by up to 75%."[11]

b) Does Alectra agree that the expansion of geothermal systems would reduce peak demand on Alectra's system, on which distribution system capacity is based?

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[9] Dr. Stanley Reitsma, P. Eng., *Ontario's Low Carbon Future: Geothermal Heat Pumps*, March 21, 2016 (http://www.rds.oeb.ca/HPECMWebDrawer/Record/521626/File/document).
[10] *Ibid*. p. 5.
[11] *Ibid*. p. 6.

c) Does Alectra agree that geothermal systems have the capacity to provide important benefits to the electricity distribution system, especially in comparison to traditional baseboard heating?
d) Does Alectra agree that the benefits of geothermal systems are not reflected in the distribution costs paid by residential consumers because those charges do not vary based on coincident peak demand?
e) Does Alectra agree that increases in heat pumps would assist the City in achieving its GHG reduction targets?
f) Would Alectra agree to study the possibility of offering customers with geothermal systems a reduction in their distribution charges that would approximately reflect the benefits those customers provide to the distribution system? Assume the overall rate structure would continue to make Alectra whole for its revenue requirement.
g) Please provide Alectra's best information on the number and proportion of its customers with (i) electrical, (ii) natural gas, (iii) propane, (iv) oil, (v) wood, and (vi) other kind of space heating.