RESPONSES TO BUILDING OWNERS AND MANAGERS ASSOCIATION INTERROGATORIES

INTERROGATORY 2A-BOMA-1

References:

1. [Ex. 2A-1-1, page 89]
   "….Alectra Utilities' peak demand load forecast is representative of normalized weather conditions (hot weather scenario is assumed once every 10 years, and normal weather is assumed once every 2 years), historical load patterns, and expected service growth informed by long-term customer, municipal regional and provincial plans. The peak demand load forecast methodology also considers other relevant factors, such as the expected impact of Distributed Generation (DG), Distributed Energy Resources (DERs), Global Adjustment (GA) Impact, and Conservation and Demand Management (CDM)."

2. [Ex. 2A-1-1, Appendix K, page 13]
   "*2.7 Energy Load Forecast*
   "Hatch also reviewed the assumptions used to develop Alectra's energy load forecast model against the assumptions used in the system peak load forecast model. The energy load forecast model was prepared by Alectra's consultant, Itron. The energy load forecast serves a different purpose than the peak load forecast. The end result of the energy load forecast is an estimate of the energy consumption in kilowatt-hours for each rate zone, by month and by customer type. It is understood that the energy load forecast model is developed to support estimates of sales revenue and inform rate setting. Itron's model used proprietary software to generate a forecast of the future baseload. Because of this, Hatch was only able to perform a limited review the baseload forecast. The energy usage growth anticipated to result from electrification, decarbonization and EVs was modelled separately using spreadsheet software. Hatch's review of Itron's energy usage growth model found that the assumptions used aligned well with those used for the peak load

forecast model. Both models include sensitivity analysis and model similar high, medium, and low scenarios."

3. [Ex. 2A-1-1, page 91]
"Alectra Utilities has developed its system peak demand load forecast utilizing an end-use analysis methodology. This methodology incorporates historical system data, economic growth indicators (population, housing, employment) for each of the six Alectra planning zones (York, Simcoe, Central North - Brampton, Central South - Mississauga, West and Southwest) and identified emerging demand drivers (e.g. Artificial Intelligence - Data Centre expansion, transportation electrification)."

4. [Ex. 2A-1-1, page 341]
"Alectra Utilities will support the IESO's eDSM Framework by:

- *Promoting IESO energy-efficiency programs, particularly for Industrial Conservation Initiative customers, to serve as building blocks for future Alectra 9 Utilities-led NWS offerings*
- *Advancing customer-engagement and marketing activities (Stream 1) to increase awareness, brand, and trust*
- *Working toward the IESO energy-efficiency target of 280GWh set for all LDCs over the framework term"*

5. [Ex. 3-1-6, page 1]
"6. SYSTEM PLANNING LOAD FORECAST
Alectra Utilities System Planning peak demand load forecast and this load and customer forecast for revenue purposes share a common foundation. Both are developed using the same set of planning assumptions, input factors, and methodological considerations. Doing so ensures consistency across different planning and regulatory applications. While the revenue forecast focuses on customer growth and energy consumption trends for rate-setting purposes, and the capacity forecast is intended to assess system

infrastructure needs to ensure the reliability and adequacy of the grid in meeting future demand, both forecasts are fundamentally aligned in their approach."

Questions:

a) Please list and describe in detail (beyond what has been listed in references 2 and 5) the differences in assumptions, data sources and methodologies used in Alectra's peak demand load forecast (for system planning purposes) and Alectra's charge determinant forecast (for rate setting purposes).

b) Please explain the rationale of using different assumptions, data sources and methodologies in the two forecasts.

c) In Reference 3, "Data Centre expansion" is listed as one of the emerging demand drivers. Please explain why "Data Centre expansion" (425MW to be connected over the 2025-2031 period) is not listed as one of the demand drivers of Alectra's charge determinant forecast (for rate setting purposes).

d) Which rate class will these new data centres be mapped to?

e) Please confirm if the eDSM support provided by Alectra (as described in reference 4) is incorporated in both the peak demand load forecast (for system planning purposes) and the charge determinant forecast (for rate setting purposes). If yes, please provide the impact (both consumption and peak demand) by year and by rate class. If not, please explain.

RESPONSE:

a) Please refer to response to 2A-Sec-26.

b) Please refer to response to 2A-Sec-26.

c) The added load in Table 3-1-21 includes Large Use (re: data centres) customers, as described in Exhibit 3, Tab 1, Schedule 4, pp. 12-14. The load addition for data centres was based on the information available at the time Alectra Utilities prepared its application. Alectra Utilities recognizes that these types of projects are continuously evolving; they introduce many uncertainties into the billing determinants forecast, as their size, timing, and even likelihood of proceeding can change quickly as proponents refine their business plans, construction, and development timelines. As these projects are forecasted to contribute to overall load growth for rate-setting purposes in a gradual manner, they were not listed as one of the material demand drivers.

d) Rate class assignments are determined by load size. Data centres with peak demand above 5 MW are classified in the Large User rate class, while data centres with peak demand below 5 MW are assigned to the General Service >50 kW class.

e) The peak demand forecast does not explicitly model the eDSM program; however, peak demand reductions attributable to CDM initiatives were incorporated into the forecast, as described in Exhibit 2A Tab1 Schedule 1 Appendix J (p. 30).

Similarly, no explicit DSM variable is included in the forecast for rate-setting purposes. Efficiency gains are captured in the end-use intensities that are part of the program model variables. The incorporation of linear trend variables in the initial forecast models indicated that the models were adequately capturing historical CDM savings and by extension that projected end-use intensities are assumed to adequately capture future CDM savings.

RESPONSES TO BUILDING OWNERS AND MANAGERS ASSOCIATION INTERROGATORIES

INTERROGATORY 3-BOMA-2

Reference:

1. [Ex. 3-1-1, Attachment 3-2, page 9]

"The residential, GSL50, and GSP50 rate classes are based on models that incorporate economics, weather, and a structural component that captures change in end-use saturation, end-use efficiency, and improvements in structural integrity."

Question:

a) Please explain what "improvements in structural integrity" are.

RESPONSE:

Response prepared by Itron

The statement about improvements in structural integrity refers to the structural index variable that is part of the XHeat and XCool variables. Appendix A to the Itron Report shows how the structure index impacts heating and cooling variables. For heating (and cooling), the structural index adjusts the heating end-uses (heating end-uses include resistant heat, heat pumps, room heaters, and furnace fans) for changes in square footage and improvements in thermal shell efficiency:

$$HeatIndex_y = StructuralIndex_y \times \sum_{Type} Weight^{Type} \times \frac{\left(Sat_y^{Type} / Eff_y^{Type} \right)}{\left(Sat_{15}^{Type} / Eff_{15}^{Type} \right)} \qquad (4)$$

The structual index is based on a starting value in 2015. Its calculated as the ratio of the built shell efficiency index and surface area to its value in 2015:

$$StructuralIndex_y = \frac{BuildingShellEfficiencyIndex_y \times SurfaceArea_y}{BuildingShellEfficiencyIndex_{15} \times SurfaceArea_{15}} \quad (5)$$

The building shell efficiency index is based on the Energy Information Administration (EIA) 2023 end-use forecast for the East North Central (ENC) census division. The surface area is also based on the default residential square footage forecast. There are separate heating and cooling efficiency indices.

In the commercial sector, while not explicit, the EIA model (National Energy Modeling System, NEMS) considers building codes. As a result of new building codes, there is a significant decline in both ventilation and lighting intensities.

RESPONSES TO BUILDING OWNERS AND MANAGERS ASSOCIATION INTERROGATORIES

INTERROGATORY 3-BOMA-3

References:

1. [Ex. 3-1-1, Attachment 3-2, pages 12 to 13]

"CDM Impacts. Historical and future CDM impacts are captured in the sales data used to estimate the model and end-use intensity trends…….Efficiency improvements captured in the end-use intensity trends combined with the sales trend that incorporates CDM activity, adequately capture future CDM savings.

The SAE model is widely used by utilities across North America largely as it has proved to be a consistent modeling framework that has worked well to explain historical usage trends and present reasonable customer use forecasts..."

2. [IESO webpage: 2025-2036 Electricity Demand Side Management Framework (https://www.ieso.ca/Sector-Participants/Energy-Efficiency/2025-2036-Electricity-Demand-Side-Management-Framework)

"To capture the opportunities and grow the savings from energy efficiency, the IESO is continuing to lead the way in energy-efficiency programming in North America through a $10.9 billion, 12-year funding commitment from the Ontario government, beginning January 2025, that will provide continued and expanded opportunities for residential and business electricity consumers across the province to manage their electricity use and electricity costs.

Questions:

a) In Reference 1, Alectra states that historical and future CDM impacts are captured in the sales data used to estimate the model and end-use intensity trends. The SAE model, without separate CDM variables, adequately captures future CDM savings.

i) Given the IESO's 2025-2036 Electricity Demand Side Management Framework (as listed in Reference 2) is starting and it has stated that this framework will provide continued and expanded opportunities for consumers to manage their electricity use and costs, please explain why Alectra believes future CDM impact can be appropriately captured by historical CDM impact, which was a result of different CDM frameworks (e.g. IESO's 2021-2024 Conservation and Demand Management Framework and 2019-2020 Interim Framework).

ii) Other electricity distributors (e.g. EB-2023-0195 Toronto Hydro's 2025-2029 Rates Application and EB-2024-0115 Hydro Ottawa's 2026-2030 Rates Application) developed CDM variables or additional CDM analyses to forecast CDM impacts on their sales forecast (kWh and kW). Did Alectra and Itron consider developing a separate CDM variable or CDM analysis to forecast CDM impacts on its sales forecast (kWh and kW) in this application? If yes, please explain why Alectra chose to not use a separate CDM variable or CDM analysis to forecast CDM impacts on its sales forecast.

RESPONSE:

a) **Response prepared by Itron**

i) Please see response to 3-Staff-161(a).

ii) Alectra and Itron did not develop a separate CDM variable for the billing determinant forecast. Further, modeling efforts by Itron indicated that the SAE model and end-use intensity trends calibrated to NRCan survey data adequately capture the customer usage and sales trends.

RESPONSES TO BUILDING OWNERS AND MANAGERS ASSOCIATION INTERROGATORIES

INTERROGATORY 3-BOMA-4

Reference:

1. [Ex. 3-1-1, Attachment 3-2, page 19]

"LARGE C&I DEMAND FORECASTS
Baseline billing demand forecasts are calculated for rate schedules General Service greater than 50 kW (GSP50) and higher (those rates that have billing demands). The billing demand forecasts are based on a billing demand load factor which relates monthly billing demand to monthly sales. The billing demand factor is calculated as the ratio of monthly average hourly use to monthly billed demand. The forecast is based on an average of the historical monthly load factors (usually set as an average of the prior three years)"

Question:

a) In Reference 1, Alectra states that billing demand forecasts are based on a billing demand load factor which relates monthly billing demand to monthly sales. Average historical monthly load factors are usually set as an average of the prior three years. Given the recent "return to the office full-time trend", including the Ontario government's mandate - that all Ontario Public Service employees return to the office full-time (five days a week), effective January 5, 2026, does Alectra believe this recent "return to the office full-time" trend will have a significant impact on the usage profiles of its customers that would make future load factors materially different (when compared to the prior three years)? Please provide explanations.

RESPONSE:

Response prepared by Itron

a) The demand charge is the customer's maximum demand, regardless of the time it occurs. What is modeled is the aggregation of the individual customer's maximum monthly demand that is across a spectrum of business activities and can peak at any hour across the month. Given the wide diversity of businesses within each tariff and the fact that the maximum demand could occur at any hour over the billing period, there is no reasonable method to assess whether the billing demand load factor will be significantly different in the future from the recent average.

RESPONSES TO BUILDING OWNERS AND MANAGERS ASSOCIATION INTERROGATORIES

INTERROGATORY 3-BOMA-5

Reference:

1. [Ex. 3-1-1, Attachment 3-2, pages 32-33]

"*BUILDING ELECTRIFICATION*
Building electrification is another contributor to sales growth. Alectra's system planning department has developed low, medium, and high case scenarios. The sales and revenue forecasts are based on the medium adoption scenario. In the medium case, the percentage of new residential customers that are all-electric homes start at 1% and ramp up to 100% by 2035; this results in roughly 9,100 new all-electric homes by 2031. In the medium case retrofit market, the number of homes that convert to electric heat and water increases from 1% of the housing stock to 3% by 2031. This translates into roughly 21,800 homes converting from fossil fuel heat to electric heat by 2031."

Questions:

a) Please provide detailed assumptions, data sources and rationale of the three (low, medium and high) building electrification scenarios developed by Alectra's system planning department.

b) Please explain why the sales and revenue forecasts are based on the medium adoption scenario.

RESPONSE:

a) In accordance with section 5.4.5 Input from Municipal Energy Plans and Community Energy Plans as outlined in OEB's Load Forecasting Guideline for Ontario (October 13, 2022), Alectra Utilities has incorporated input from municipal energy and climate action plans into Alectra Utilities demand forecast. Alectra Utilities provides a detailed explanation of electrification assumptions in Exhibit 2A Tab 1 Appendix J Load Forecast section 3.8.3. Furthermore, Alectra Utilities has aligned inputs related to electrification for the system peak demand forecast with the customer and load forecast (i.e. revenue forecast) as provided in Exhibit 3.

The data sources for the municipal energy plans are listed below:

1. City of Barrie Climate Action Plan (2020):
   Inspiring Climate Action in Barrie Part 2: Big Moves

2. Town of New Tecumseh 2019-2024 Energy Conservation and Demand Management Plan:
   https://www.newtecumseth.ca/en/business-and-development/resources/Documents/2019-2024-EnergyConservation-and-Demand-Management-Plan.pdf

3. Town of Aurora Community Energy Plan (2021):
   https://www.aurora.ca/en/your-government/resources/Environment-and-Sustainability/Aurora-CEPFinal-05.02.21.pdf

4. City of Markham Municipal Energy Plan:
   Markham Municipal Energy Plan | City of Markham

5. City of Richmond Hill Community Energy and Emission Plan (2021):
   Richmond Hill's Path to a Low-Carbon Future

6. City of Vaughan Community Sustainability Plan (2019): 2019Green Directions Vaughan FINAL.pdf

7. City of Brampton Community Energy and Emissions Reduction Plan (2020): https://www.brampton.ca/EN/residents/GrowGreen/Community-Energy-and-EmissionsReduction/Documents/CEERP/CEERP_Combined_20200921.pdf

9. City of Mississauga Climate Change Action Plan (2019): https://www.mississauga.ca/wpcontent/uploads/2020/09/20144905/City-of-Mississauga-Climate-Change-Action-Plan.pdf

10. City of Guelph Energy and Greenhouse Gas Emissions (2018): https://guelph.ca/wp-content/uploads/cow_agenda_050718.pdf

11. City of Hamilton - ReCharge Hamilton, A Prosperous, Equitable, Post-Carbon City, Our Community Energy + Emissions Plan (2022): https://pub-hamilton.escribemeetings.com/filestream.ashx?DocumentId=335400

b) Alectra Utilities revenue projections were aligned with the peak demand forecast which adopted the medium building electrification scenario. Further details on the electrification assumptions and the selection of the medium scenario are provided in Exhibit 2A, Tab 1, Appendix J Load Forecast, section 3.8.3.

RESPONSES TO BUILDING OWNERS AND MANAGERS ASSOCIATION INTERROGATORIES

INTERROGATORY 3-BOMA-6

Reference:

1. [Ex. 3-1-4, page 3, Tables 3-1-8 and 3-1-9]

Questions:

In reference 1, Tables 3-1-8 and 3-1-9 provide 2025-2031 EV and Building Electrification Consumption and Billed Demand Forecast by Rate class.

a) Please split Table 3-1-8 into two tables. One for EV only (MWh by year and by rate class) and the other one for Building Electrification only (MWh by year and by rate class)

b) Please split Table 3-1-9 into two tables. One for EV only (MW by year and by rate class) and the other one for Building Electrification only (MW by year and by rate class

RESPONSE:

a) and b) Please see response to 3-VECC-37.

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