

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO SCHOOL ENERGY COALITION

JT1.8

EVIDENCE REFERENCE:

2-Staff-72

UNDERTAKING(S):

To provide the figure a from 2-Staff-72 in the tabular format, and to clarify whether the actuals and weather-corrected information actually provided in MVA instead of megawatts; and if not, is there a power conversion that was used.

RESPONSE(S):

Figure A in the initial interrogatory response 2-Staff-72 ~~was initially given with actuals and weather corrected values in MVA, whereas the forecasts were given in MW~~ provided actuals and weather corrected values in MW but were incorrectly labeled as MVA. The forecast values were consistently in MW. During the preparation of the original Undertaking JT1.8, a factor of 0.9 was incorrectly applied as a multiplier to both the actual and weather-corrected MW values. ~~Tables A and B below provide actuals and weather corrected values in MW, using a standard power factor of 0.9, along with the decarbonization scenario forecasts in MW.~~ Table A, Table B and Figure 1 have been revised to present actual and weather-corrected peak MW values. Note that the system peak provided within Tables A and B for the decarbonization scenarios is the higher value of either the summer or winter peak. The information presented is derived from the summation of loading at each transmission connected station to represent the system level peak.

Hydro Ottawa clarifies that the 1,348MW weather-corrected peak load reported in the Decarbonization Study (Attachment F, Pg (ix)) was a data error within the figure. The 1,348MW is the actual, non-weather corrected peak load. The weather-corrected peak load value used in the study was 1,365MW. These values were calculated using a distinct methodology from the system peak load data presented in Tables A and B, and therefore will not match the values presented in the tables within this undertaking.

The Decarbonization Study specifically derived its value by:

- Aggregating the 2022 weather-corrected hourly electric load profile for all end-use customer types to determine the system-level baseload.
- Adjusting this baseload profile for system losses to arrive at the weather-corrected system peak load.

This calculation method results in a slightly different outcome than the 'Actual' and 'Weather Corrected' values in Tables A and B. This distinction is further explained in Section 2.1, Page 1-2 of the Decarbonization Study.

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Table A - 2002-2016 Actuals, weather corrected, and forecast(s) in MW

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Actuals	1,290 1,434	1,278 1,420	1,134 1,256	1,292 1,436	1,346 1,495	1,283 1,425	1,220 1,355	1,227 1,364	1,366 1,518	1,352 1,502	1,313 1,459	1,287 1,430	1,177 1,308	1,265 1,406	1,252 1,391
Weather Corrected	1,284 1,427	1,310 1,456	1,280 1,422	1,357 1,507	1,283 1,425	1,289 1,432	1,277 1,419	1,275 1,417	1,327 1,474	1,389 1,544	1,272 1,413	1,294 1,437	1,311 1,457	1,265 1,406	1,250 1,389
Policy-Guided															
High															
Reference															
Dual Fuel															
Low															

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Table B - 2017-2050 Actuals, weather corrected, and forecast(s) in MW

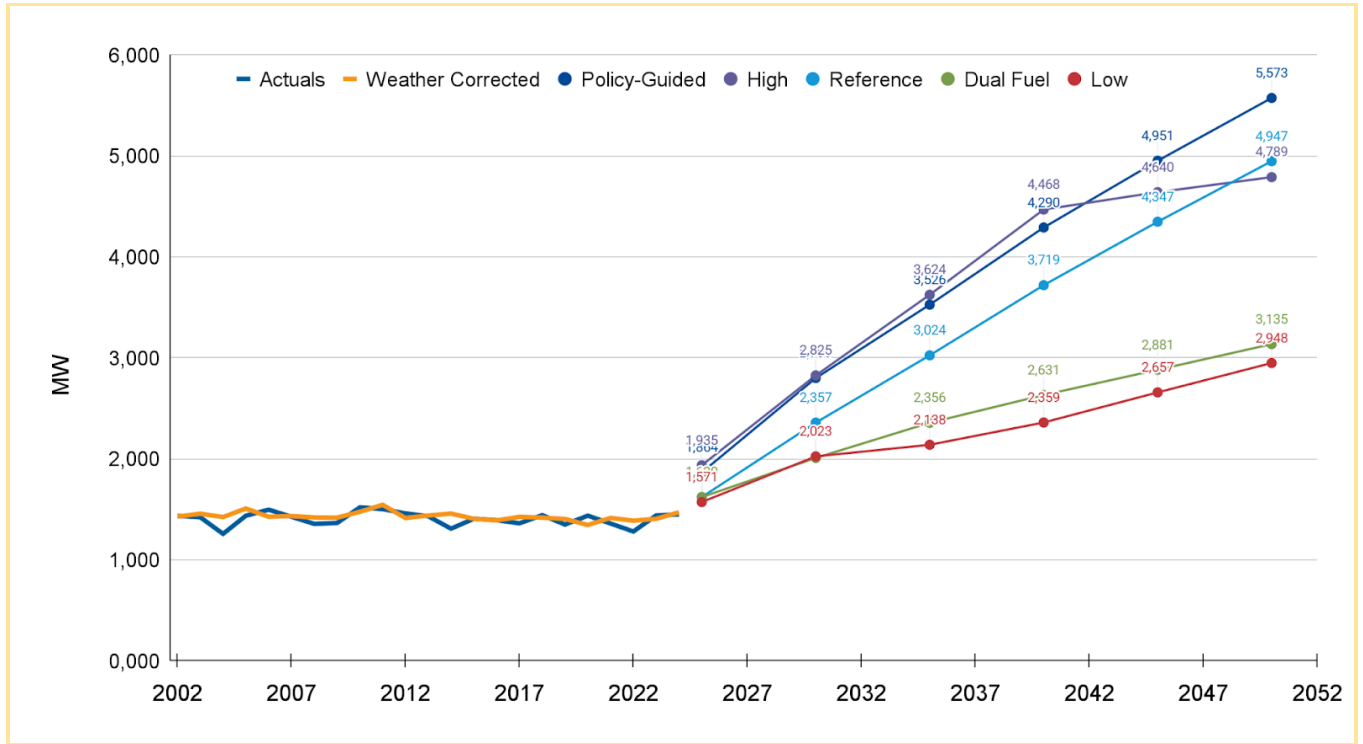
Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2030	2035	2040	2045	2050
Actuals	1,224 1,360	1,297 1,441	1,213 1,348	1,292 1,436	1,222 1,358	1,152 1,280	1,295 1,439	1,304 1,449						
Weather Corrected	1,282 1,424	1,275 1,417	1,263 1,403	1,210 1,344	1,273 1,414	1,247 1,386	1,265 1,405	1,322 1,469						
Policy-Guided									1,864	2,799	3,526	4,290	4,951	5,573
High									1,935	2,825	3,624	4,468	4,640	4,789
Reference									1,620	2,357	3,024	3,719	4,347	4,947
Dual Fuel									1,620	2,008	2,356	2,631	2,881	3,135
Low									1,571	2,023	2,138	2,359	2,657	2,948

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Figure 1, provides an update to the reference Figure A from response to interrogatory 2-Staff-72 including 2024 actuals and all values in MW provides the graphical representation of the data provided in Table A and Table B.

Figure 1 - Updated Figure A in MW Actuals, weather corrected, and forecast(s) in MW





TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

JT1.14-VECC-6.0

EVIDENCE REFERENCE:

- 3-VECC 15 d) and Attachment 3.0-VECC-15(A)
- 3-SEC 64 a)
- 3-Staff 127 b)
- 3-VECC 29 c)

UNDERTAKING(S):

6.1 Attachment 3.0-VECC-15(A) provides tabs setting out the initial forecast for each class, the reclassification adjustments for each class, the electrification impacts by class and final forecast by customer class. However, for the GS<50, GS5—999, GS1500- 5000 and LU classes – the results in the Initial Forecast, Reclassification and Electrification tabs don't sum to the results set out in the final forecast tab. Please explain why and provide a revised response that reconciles the values in the four tabs.

6.2 It is understood that the customer count forecast also includes the impact of a LU customer being disaggregated into a number of smaller GS customers (per Exhibit 3-1-1, Attachment B, page 17 of 40). Please indicate: When this disaggregation is forecast to occur, and How many GS customers result from this disaggregation by GS customer class?

6.3 In Attachment 3.0-VECC-15(A), the changes in the Reclassification tab net to zero and the changes in the Electrification tab all show increases in the LU customer count. As a result, please explain where the impact of the LU customer disaggregation is captured and provide a revised file that explicitly sets out the impact of the LU disaggregation as part of the response.

6.4 SEC 64 a) states that the “requests included in the revenue load forecast are from current customers”. However, in Staff 127 b) (Table A) – the changes in each year do not net out to zero which suggests that the electrification does change the total number of customers. Please reconcile these two responses and revise as necessary.

6.5 The customer class changes due to electrification as set out in Staff 127 b) don’t line up with the changes in Attachment 3.0-VECC15(A). For example:

- VECC 15 shows no customers being reclassified from GS 1500-4999 to the LU class whereas Staff 127 shows one customer being reclassified starting in 2027.
- VECC 15 shows one customer in GS 50-999 class being reclassified due to LU starting in 2026 whereas Staff 127 does not show any.
- VECC 15 shows one customer in the GS<50 class being reclassified to LU starting in 2029 whereas Staff 127 does not show any. Please reconcile the two responses and provides revised versions as necessary.

6.6 In VECC 29 c) the results for 2025 and 2026 suggest that electrification resulted in some increase in GS 1000-1500 loads whereas VECC 15 indicates that only LU class load increases due to electrification. Please reconcile and provide revised responses as necessary.

RESPONSE(S):

As part of the update to this undertaking, please note the following three new Attachments, as detailed below:

- Attachment JT1.14-VECC-6.0(B) - Revised 3.0-VECC-29
- Attachment JT1.14-VECC-6.0(C) - Revised Large Load Electrification kW by Month (Excel file)
- Attachment JT1.14-VECC-6.0(D) - Original Large Load Electrification kW by Month (Excel file)

6.1 In Attachment 3.0-VECC-15(A) the sum of Initial Forecast, Reclassification and Electrification tabs did not add up to the final forecast tab as further adjustments were made to the final forecast for the following reasons:

- An additional large user was removed starting in 2025 to account for the one customer that disaggregated as of January 1, 2025. The kWh and kW impact was accounted for in the baseline load forecast and is explained in the 6.2 and 6.3 responses below.
- An additional GS 1500-4999 kW was removed starting in 2026 as this customer was reclassified at the end of 2024.
- The GS 50-999 rate class count was held constant with the January 2025 forecast count to avoid further decreases based on historical trending.
- Elected to not remove the one GS 50 rate class customer due to electrification; however, its kWh and kW impact was reflected in the revenue load forecast.

In review of this data set, Hydro Ottawa confirms that our current revenue load forecast contains a duplication impact related to one large load in the forecast of kWh and kW. For clarity, Hydro Ottawa had forecasted one of the large load customers transitioning to a large user rate class in 2026 during the initial analysis, however the large load materialized earlier than anticipated and was captured as part of the 2024 rate reclassification adjustments in the original forecast. The duplication move has been removed from the electrification kW by month, as provided as Attachment JT1.14-VECC-6.0(C) - Revised Large Load Electrification kW by Month. In addition and for reference, Attachment JT 1.14-VECC-6.0(D) - Original Large Load Electrification kW by month details the monthly large load kW billing determinants from the original revenue load forecast submitted as part of Schedule 3-1-1: Revenue Load and Customer Forecast.

6.2 The customer disaggregation began in Q4 2023 with the majority of the activity taking place in 2024. The large user account was disaggregated into 13 separate services. The disaggregation completed in 2025. Table A provides the breakdown by rate class, the customer count for the new accounts below are included in the historical baseline counts.

Table A - Customer Disaggregation

Rate Class	Count
General Service 50-1,000 kW	7
General Service 1,000-1,499 kW	1
General Service 1,500-4,999 kW	5

6.3 The original large user account was reclassified in January 2025 however the new disaggregated accounts started in 2023 or 2024 and are captured in the historical count data. Response to undertaking JT1.14-VECC-7.0 provides further detail of the treatment of historical kWh and kW billing determinants.

6.4 Hydro Ottawa confirms all large load requests incorporated into the revenue load and customer forecast are from current customers. Please find an update to Table A from 3-Staff-127, expanded by including 2024 and 2025 and the GS < 50 rate class in Attachment JT1.14-VECC-6.0(A) - Revised 3-Staff-127.

6.5 Please refer to response 6.4.

6.6 Electrification is not expected in the GS 1000-1500 kW class. Table B in 3-VECC-29 c) was derived from removing the LDEV MWh (Table 3-3 from Attachment 3-1-1(B) - Hydro Ottawa Long Term Energy and Demand Forecast) from the Total Electrification and Large Load MWh forecast. Hydro Ottawa notes there are discrepancies when removing the LDEV MWh from the Total Electrification and Large Load MWh forecast and has confirmed with Itron there was an error in Table 3-3 as originally submitted. ~~is investigating further and will provide an update.~~ Table 3-3 has been corrected below and a revised response to 3-VECC-29 is attached as Attachment JT 1.14-VECC-6.0(B) - Revised 3-VECC-29.

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Revised Table 3-3 - Light Duty Vehicle Electrification Forecast¹

Light-Duty Vehicle Electrification (MWh)						
Year	Residential	GS50	GS1000	GS1500	GS5000	GSLarge User
2024	2,210	60	146	22	15	5
2025	25,607	771	1,855	282	196	60
2026	42,226	1,272	3,062	463	323	100
2027	61,388	1,849	4,453	672	469	145
2028	83,095	2,502	6,028	909	635	196
2029	107,515	3,238	7,800	1,176	821	254
2030	134,648	4,055	9,769	1,472	1,029	318

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¹ Attachment 3-1-1(B) - Hydro Ottawa Long-Term Energy and Demand Forecast (April 15, 2025), page 25.

INTERROGATORY RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

3.0-VECC-29

EVIDENCE REFERENCE:

Exhibit 3-1-1, pages 9 and 14-15

Exhibit 3, Attachment 3-1-1(B), pages 24-25 (of 40)

Exhibit 1-3-1, page 2

Preamble:

The Application states:

“Hydro Ottawa's revenue load forecast includes electrification and large load requests based on future customer initiatives aimed at decarbonization and electrification, as well as anticipated commercial and residential transportation electrification.” (page 9)

And

“This surge in public sector electrification is evident in Hydro Ottawa's observed increase in incremental load demand from federal entities including Crown corporations and agencies projected for the 2024 to 2035 timeframe. Prior to specific large load requests, these customers are in the General Service (GS) > 50 to 4,999 kW class; after an extensive service upgrade request, these Customers are anticipated to be reclassified to the Large Use rate class. As noted above, this reclassification is observed in Tables 7 and 8 of the Electrification and Large Load energy and demand sales forecast.” (page 14)

Attachment 3-1-1(B) states:

“Commercial electrification impacts customers in every commercial class from GS<50 to Large User. With electrification and significant increases in demand, these customers all move into the Large Use rate class.”

QUESTION(S):

a) Exhibit 1-3-1 (page 2) sets out three different categories of large load requests: i) Signed Offer to Connect, ii) Submitted Load Summary Form and iii) Inquiries. Which categories has Hydro Ottawa included in its forecast commercial electrification impacts?

i. Please provide a revised version of Figure 1 (Exhibit 1-3-1, page 2) that reflects the load requests incorporated in the 2026-2030 load forecast.

b) Does the Large User electrification forecast set out in Table 3-4 (Exhibit 3-1-1(B), page 25 (of 40)) include not only the incremental load due to electrification but the “baseline” load for the associated customers that will now be Large Use load as a result of the customers’ reclassification.

i. If confirmed, please indicate for each of the years 2024-2030 how much of the load shown in Table 3-4 is: i) additional load due to electrification versus ii) load reclassified to the Large Use class.

ii. If not confirmed, provide a schedule that sets out for each of the years 2024-2030: i) the additional load due to electrification, ii) the load reclassified to the Large Use class and iii) the total increase in Large Use load.

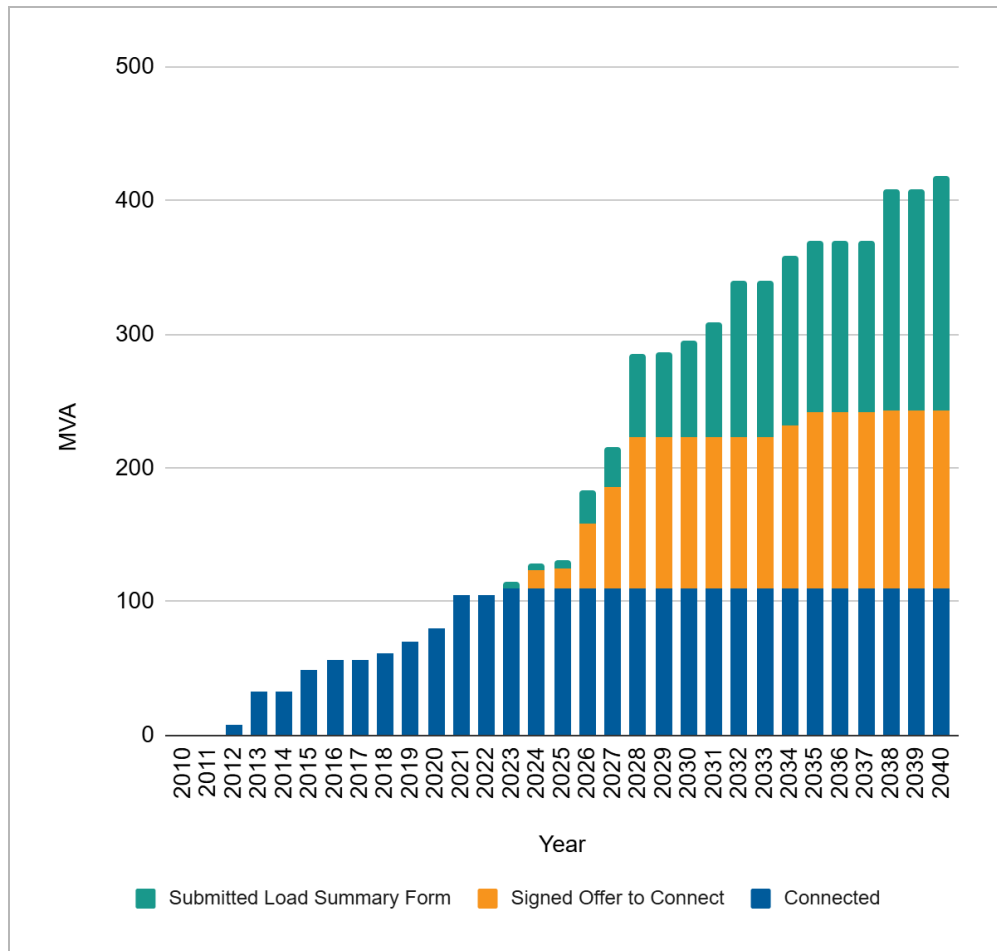
c) Please provide a schedule that breaks down the 2024-2030 Electrification And Large Load Energy Requests by Customer Class as set out in Table 7 (Exhibit 3-1-1, page 9) for each customer class as between: i) the impact due to LDEV load and ii) the impact due to commercial electrification.

RESPONSE(S):

a) Refer to part a) of Hydro Ottawa's response to interrogatory 2-CO-21 for a definition of each large load request category. Hydro Ottawa has considered projects in its planning forecast that have a Signed Offer to Connect and/or a Submitted Load Summary Form, as per the response in part c) of interrogatory 2-CO-21.

i) Please refer to Figure A below for a revised version of Figure 1 from Exhibit 1-3-1 - Rate Setting Framework that reflects the load requests incorporated in the 2026-2030 planning load forecast.

Figure A – Cumulative (MVA) Large Load Requests



b) Confirmed.

i) Refer to part (a) of the response to interrogatory 3.0-VECC-27.

c) Tables A and B show the breakdown of Table 7, from Schedule 3-1-1 - Revenue Load and Customer Forecast, showing both MWh for LDEV and MWh for Large Commercial Electrification.

1 **Table A - Revised - LDEV MWh by Customer Class**

	2024	2025	2026	2027	2028	2029	2030
Residential	2,210	25,607	42,226	61,389	83,095	107,515	134,648
GS > 50 kW	60	771	1,272	1,849	2,502	3,238	4,055
GS 50-1000KW	146	1,857 1,855	3,065 3,062	4,457 4,453	6,034 6,028	7,807 7,800	9,778 9,769
GS 1000-1500KW	22	284 282	460 463	668 672	902 909	1,169 1,176	1,463 1,472
GS 1500-5000 KW	15	196	323	469	635	821	1,029
Large User	5	60	100	145	196	254	318
Street Light	0	0	0	0	0	0	0
Sentinel	0	0	0	0	0	0	0
Standby	0	0	0	0	0	0	0
TOTAL	2,458	28,772	47,445	68,976	93,364	120,803	151,290

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3 **Table B - Revised - Large Commercial Electrification MWh**

	2024	2025	2026	2027	2028	2029	2030
Residential	0	0	0	(0)	0	0	0
GS > 50 kW	0	0	(0)	0	0	0	0
GS 50-1000KW	0	(2) 0	(3) 0	(4) 0	(6) 0	(7) 0	(9) 0
GS 1000-1500KW	0	2 0	3 0	(8,577) (8,581)	(16,610) (16,617)	(16,610) (16,617)	(16,608) (16,617)
GS 1500-5000 KW	0	(0)	(7,932)	(7,932)	(7,932)	(7,932)	(7,932)
Large User	0	6,155	37,732	65,216	115,269	175,387	214,955
Street Light	0	0	0	0	0	0	0
Sentinel	0	0	0	0	0	0	0
Standby	0	0	0	0	0	0	0
TOTAL	0	6,155	29,799	48,702	90,720	150,838	190,406

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TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

JT1.14-VECC-9.0

EVIDENCE REFERENCE:

3-VECC 19 a) – f)

3-VECC 21 c) – h)

3-VECC 22 b) – g)

3-VECC 23 c) – h)

3-VECC 24 b) – g)

UNDERTAKING(S):

9.1 The referenced interrogatories requested details regarding the determination of the actual 2013-2024 values as well as the forecast 2025-2030 values for the XHeat, XCool and XOther variables used in the various load forecast models. In each case the response stated: "Itron is unable to execute within the timelines for responding to interrogatories. With Itron's support, Hydro Ottawa will be prepared to provide the requested information by way of undertaking at the Technical Conference." Please provide the responses to cited interrogatories.

9.2 Do the forecast 2025-2030 XHeat, XCool and XOther variables used in the various models assumed further efficiency improvements after 2024?

9.2.1 If so, how is overlap avoided between these assumptions and the eDSM values subsequently used to subsequently adjust the customer class load forecasts?

9.2.2 If so, please separate out the impact of the additional efficiency improvements built into the various models for 2026-2030 and provide revised forecasts assuming these improvements are not made?

RESPONSE(S):

9.1 Hydro Ottawa has provided responses to the cited interrogatory questions as the following attachments:

- 3-VECC 19 a) – f) - Attachment JT1.14-VECC-9.0 (A) - Res XHeat, XCool, and XOther
- 3-VECC 21 c) – h) - Attachment JT1.14-VECC-9.0 (B) - GS50 XHeat, XCool, and XOther
- 3-VECC 22 b) – g) - Attachment JT1.14-VECC-9.0 (C) - GS1000 XHeat, XCool, and XOther
- 3-VECC 23 c) – h) - Attachment JT1.14-VECC-9.0 (D) - GS1500 XHeat, XCool, and XOther
- 3-VECC 24 b) – g) - Attachment JT1.14-VECC-9.0 (E) - GS5000 XHeat, XCool, and XOther

9.2 Yes, the forecasted XOther variable used in the Statistically Adjusted End-Use (SAE) modeling framework reflect continued efficiency improvements after 2024. These improvements are due to both market-driven changes and Federal codes and standards.

9.2.1 The eDSM variable represents additional efficiency not included in the XOther variable. The eDSM variable is capturing savings above and beyond the naturally market driven efficiency savings.

9.2.2 ~~Hydro Ottawa will update this undertaking response as soon as the information is available.~~

Please see a forecasts scenario assuming no additional industry efficiency improvements are made (in equipment such as air conditioners, lighting, dishwashers, refrigerators) and therefore not built into the various models for 2026-2030 in the following new Excel Attachment:

- Attachment JT1.14-VECC-9.0 (F) - Electrification, no eDSM & held XOther efficiency

Hydro Ottawa notes that this is for understanding what industry efficiencies are built into the revenue load forecast rather than introducing a forecast based on such assumptions.