# EPCOR Natural Gas Limited Partnership

## Cost of Service Application

EB-2024-0130

July 18, 2024

## Exhibit 3 – Operating Revenue

PROVIDING MORE

# Contents

## 3.0 Operating Revenues

ENGLP's operating revenue is divided into three components – gas distribution and transportation revenue, and other operating revenue.

Gas distribution and transportation revenues do not include the gas supply charge related to the system gas supply fee, PGCVA reference price, the GPRA recovery or the gas commodity recovery charge. Further, in this Application, transportation revenues and costs have been removed from the distribution revenue requirement and are instead categorized as a stand-alone cost/recovery basis. Additional detail can be found further in section 3.3 of this Exhibit.

ENGLP revenues are currently collected from six rate classes:

- Rate 1 – General Service Rate;
- Rate 2 – Seasonal Service;
- Rate 3 – Special Large Volume Contract Rate;
- Rate 4 - General Service Peaking;
- Rate 5 - Interruptible Peaking Contract Rate; and,
- Rate 6 - Integrated Grain Processor Co-Operative Aylmer Ethanol Production Facility ("**IGPC**").

As explained further in Exhibit 8, ENGLP is proposing in this application to segregate the Rate 1 Class into two distinct rate structures:

- Rate 1 – Residential
- Rate 1 – General Service (Combined Commercial & Industrial)

For the purpose of this Exhibit, the Commercial and Industrial categories are presented separately in order to compare to the previous filing.

## 3.1 Throughput and Revenue Forecast

ENGLP engaged Power Advisory LLC ("**Power Advisory**") to complete the 2025 Test Year load forecast. Power Advisory provided forecasts by rate class for consumption and demand (if applicable), and the number of customers and connections. The sales and energy forecast utilized actual data from January 2012 to December 2023. An excel version of this load forecast has been included with this application as attachment *ENGLP_EB-2024-0130_Load Forecast.*

ENGLP has also filed a Gas Supply Plan (EB-2024-0139), which has been used as the basis for preparation of the volume and customer count forecast used in this Application. A copy of the detailed report completed by Power Advisory is included as *Appendix A* in this Exhibit. All economic assumptions and data sources used in the preparation of the volume and customer count forecast, including expansions and the impact of any demand side management, cap and trade or other greenhouse gas ("**GHG**") reduction-related activities are included in the report. Note this version has been updated in comparison to the version filed in the Gas Supply Plan to include the expected expansion of the large agricultural customer as described in Exhibit 2.

The methodology outlined in this report is consistent with the methodology used in ENGLP's last four load forecast updates and is largely consistent with the methodology used in ENGLP's 2020 Cost of Service application (EB-2018-0336) and the methodology used by Natural Gas Resources Limited ("**NRG**") in previous rates applications. Parties agreed to the results of the 2020 throughput forecast in settlement and the overall methodology was last approved by the OEB in EB-2010-0018. Alternate methods were tested but were generally found to be inferior to the previously approved methodology.

The regression equations used to normalize and forecast ENGLP's weather sensitive load use monthly heating degree days as measured at Environment Canada's London CS weather station to take into account temperature sensitivity. This location is the closest weather station to ENGLP's service territory with strong historical weather data. ENGLP experiences peak loads in winter months, though certain rate classes are not weather sensitive. Environment Canada defines heating degree days as the difference between the average daily temperature and 18°C

for each day.[1] Heating degree days is 0 when the average temperature is above 18°C. Heating degree day data with alternate temperature thresholds other than 18°C were considered, consistent with the OEB's electricity distributor load forecast filing requirements.

**Table 3.1-1**
**Summary - Distribution Revenue ($)**

| Rate Class | 2023 Actual | 2024 Bridge | 2025 Test |
|---|---|---|---|
| Rate 1 - Residential | $4,169,322 | $4,679,120 | $5,124,352 |
| Rate 1 - Commercial | $782,634 | $879,222 | $866,356 |
| Rate 1 - Industrial | $175,645 | $199,477 | $311,017 |
| Rate 2 | $114,058 | $96,256 | $102,790 |
| Rate 3 | $91,601 | $246,983 | $292,022 |
| Rate 4 | $250,950 | $265,764 | $294,535 |
| Rate 5 | $52,859 | $50,704 | $54,610 |
| Rate 6 | $795,064 | $830,046 | $893,989 |
| **Total Revenue** | **$6,432,131** | **$7,247,572** | **$7,939,671** |

**Revenues have been reduced by the equivalent of the approved PGTVA reference $0.023724 per $m^3$ for consistent presentation as the Transportation revenue is being proposed to be removed from the revenue requirement in 2025.*

**Table 3.1-2**
**Summary – Load Forecast ($m^3$)**

| Rate Class | 2023 Actual | 2024 Bridge | 2025 Test |
|---|---|---|---|
| Rate 1 - Residential | 17,466,767 | 19,394,143 | 19,778,416 |
| Rate 1 - Commercial | 5,823,050 | 6,119,454 | 6,193,869 |
| Rate 1 - Industrial | 3,013,707 | 2,579,897 | 2,686,373 |
| Rate 2 | 869,131 | 832,281 | 832,281 |
| Rate 3 | 1,335,618 | 2,740,988 | 3,918,036 |
| Rate 4 | 2,227,329 | 2,023,938 | 2,334,616 |
| Rate 5 | 980,160 | 647,586 | 647,586 |
| Rate 6 | 65,345,852 | 65,345,852 | 65,345,852 |
| **Total Usage** | **97,061,614** | **99,684,139** | **101,737,029** |

**Table 3.1-2**
**Summary – Mid-Year Customer Count**

| Rate Class | 2023 Actual | 2024 Bridge | 2025 Test |
|---|---|---|---|
| Rate 1 - Residential | 9,318 | 9,448 | 9,578 |
| Rate 1 - Commercial | 580 | 585 | 590 |
| Rate 1 - Industrial | 79 | 80 | 81 |
| Rate 2 | 51 | 50 | 50 |
| Rate 3 | 4 | 5 | 5 |
| Rate 4 | 43 | 45 | 46 |
| Rate 5 | 4 | 4 | 4 |
| Rate 6 | 1 | 1 | 1 |
| **Total Customer Count** | **10,080** | **10,218** | **10,355** |

[1] Government of Canada, Environment and Natural Resources, online at: https://climate.weather.gc.ca/glossary_e.html

## 3.2 Accuracy of Throughput Forecast and Variance Analyses

Tables 3.2-1 to 3.2-9 below, provide the schedule of throughput volumes, revenues, and customer count by rate class.

### Throughput Volumes

**Table 3.2-1**
**Summary – Throughput Volumes ($m^3$)**

| Rate Class | 2020T Approved | 2020 Actual | 2021 Actual | 2022 Actual | 2023 Actual | 2024 Bridge | 2025 Test |
|---|---|---|---|---|---|---|---|
| Rate 1 - Residential | 17,043,677 | 16,837,081 | 17,299,257 | 18,760,439 | 17,466,767 | 19,394,143 | 19,778,416 |
| Rate 1 - Commercial | 4,851,704 | 5,028,438 | 5,306,940 | 6,163,726 | 5,823,050 | 6,119,454 | 6,193,869 |
| Rate 1 - Industrial | 1,743,215 | 2,067,358 | 2,226,121 | 2,377,452 | 3,013,707 | 2,579,897 | 2,686,373 |
| Rate 2 | 1,280,413 | 784,724 | 829,096 | 839,041 | 869,131 | 832,281 | 832,281 |
| Rate 3 | 1,721,684 | 1,361,184 | 1,372,372 | 1,551,993 | 1,335,618 | 2,740,988 | 3,918,036 |
| Rate 4 | 1,149,006 | 1,534,283 | 1,793,580 | 1,601,474 | 2,227,329 | 2,023,938 | 2,334,616 |
| Rate 5 | 685,748 | 554,438 | 791,530 | 585,954 | 980,160 | 647,586 | 647,586 |
| Rate 6 | 59,243,876 | 59,599,950 | 60,410,748 | 62,040,423 | 65,345,852 | 65,345,852 | 65,345,852 |
| **Total Usage** | **87,719,322** | **87,767,455** | **90,029,645** | **93,920,502** | **97,061,614** | **99,684,139** | **101,737,029** |
| *YOY Variance* | | *0.05%* | *2.58%* | *4.32%* | *3.34%* | 2.70% | 2.06% |

**Table 3.2-2**
**Summary – Throughput Volumes ($m^3$) – Weather Normalized**

| Rate Class | 2020T Approved | 2020 Actual | 2021 Actual | 2022 Actual | 2023 Actual | 2024 Bridge | 2025 Test |
|---|---|---|---|---|---|---|---|
| Rate 1 - Residential | 17,043,677 | 17,620,844 | 18,272,944 | 18,633,571 | 18,312,844 | 19,394,143 | 19,778,416 |
| Rate 1 - Commercial | 4,851,704 | 5,344,470 | 5,648,018 | 6,979,306 | 4,642,450 | 6,119,454 | 6,193,869 |
| Rate 1 - Industrial | 1,743,215 | 2,241,827 | 2,736,619 | 2,399,540 | 1,538,982 | 2,579,897 | 2,686,373 |
| Rate 2 | 1,280,413 | 785,475 | 829,096 | 838,908 | 838,908 | 832,281 | 832,281 |
| Rate 3 | 1,721,684 | 1,390,907 | 1,414,518 | 1,554,954 | 1,525,544 | 2,740,988 | 3,918,036 |
| Rate 4 | 1,149,006 | 1,556,748 | 1,793,580 | 1,601,181 | 1,601,181 | 2,023,938 | 2,334,616 |
| Rate 5 | 685,748 | 554,438 | 791,530 | 585,954 | 585,954 | 647,586 | 647,586 |
| Rate 6 | 59,243,876 | 59,599,950 | 60,410,748 | 62,040,423 | 62,040,423 | 65,345,852 | 65,345,852 |
| **Total Usage** | **87,719,322** | **89,094,659** | **91,897,053** | **94,633,837** | **91,086,285** | **99,684,139** | **101,737,029** |
| *YOY Variance* | | *1.57%* | *3.15%* | *2.98%* | *-3.75%* | *9.44%* | *2.06%* |

**Table 3.2-3**
**Summary – Distribution Revenue ($)**

| Rate Class | 2020T Approved | 2020 Actual | 2021 Actual | 2022 Actual | 2023 Actual | 2024 Bridge | 2025 Test |
|---|---|---|---|---|---|---|---|
| Rate 1 - Residential | $3,673,758 | $3,905,269 | $3,749,449 | $4,224,947 | $4,169,322 | $4,679,120 | $5,124,352 |
| Rate 1 - Commercial | $648,927 | $679,594 | $651,309 | $734,072 | $782,634 | $879,222 | $866,356 |
| Rate 1 - Industrial | $99,831 | $107,582 | $93,340 | $99,901 | $175,645 | $199,477 | $311,017 |
| Rate 2 | $121,735 | $141,948 | $135,492 | $154,285 | $114,058 | $96,256 | $102,790 |
| Rate 3 | $126,858 | $144,729 | $138,507 | $155,225 | $91,601 | $246,983 | $292,022 |
| Rate 4 | $122,116 | $121,276 | $109,819 | $133,063 | $250,950 | $265,764 | $294,535 |
| Rate 5 | $49,705 | $56,487 | $48,518 | $61,649 | $52,859 | $50,704 | $54,610 |
| Rate 6 | $734,759 | $734,759 | $747,985 | $769,676 | $795,064 | $830,046 | $893,989 |
| **Total Revenue** | **$5,577,690** | **$5,891,643** | **$5,674,418** | **$6,332,817** | **$6,432,131** | **$7,247,572** | **$7,939,671** |
| *YOY Variance* | | *5.63%* | *-3.69%* | *11.60%* | *1.57%* | *12.68%* | *9.55%* |

*Revenues have been reduced by the equivalent of the approved PGTVA reference $0.023724 per $m^3$ for consistent presentation as the Transportation revenue is being proposed to be removed from the revenue requirement in 2025.

## Comparison of Year-over-Year Normalized Actuals

Variances in Table 3.2-4 reflect differences between the 2020 Approved forecast and 2020 Actual and weather normalized volumes. The 2020 forecast was based on customer count and load data up to August 2018. The three Rate 1 rate classes and Rate 3 are weather-sensitive, meaning weather-normal volumes differ from actuals based on heating volumes. Weather-normalization is done on a monthly basis, so it does not necessarily impact each rate class in the same way. The Rate 1 – Residential and Rate 1 – Commercial classes are more sensitive to weather in the coldest months of the year, but Rate 1 – Industrial is more sensitive to weather in the late summer and early fall. Consequently, weather normalizing Rate 1 – Residential and Rate 1 – Commercial volumes in a mild winter year, for example, would lead to higher weather-normalized volumes than actual volumes, but weather normalizing Rate 1 – Industrial may decrease volumes if temperatures were lower than average in the late summer and early fall.

Year-over-year variances in volumes for the Rate 2, Rate 4, and Rate 5 rate classes are primarily caused by differences in annual crop yields and the changing composition of customers.

**Table 3.2-4**
**Variances 2020 Approved to 2020 Actual & Weather Normal**

| Rate Class | Customers | | | Actual Volumes | | | Weather Normal Volumes | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2020T Approved | 2020 Actual | Diff. | 2020T Approved | 2020 Actual | Diff. | 2020 Approved | 2020 Normal | Diff. |
| Rate 1 - Residential | 8,877 | 8,805 | -0.8% | 17,045,597 | 16,837,081 | -1.2% | 17,045,597 | 17,634,113 | 3.5% |
| Rate 1 - Commercial | 494 | 535 | 8.3% | 4,851,704 | 5,028,438 | 3.6% | 4,851,704 | 5,348,179 | 10.2% |
| Rate 1 - Industrial | 68 | 75 | 10.0% | 1,743,215 | 2,067,358 | 18.6% | 1,743,215 | 2,213,080 | 27.0% |
| Rate 2 | 50 | 48 | -3.5% | 1,280,413 | 784,724 | -38.7% | 1,280,413 | 784,724 | -38.7% |
| Rate 3 | 6 | 6 | 0.0% | 1,721,684 | 1,361,184 | -20.9% | 1,721,684 | 1,384,060 | -19.6% |
| Rate 4 | 38 | 40 | 6.4% | 1,149,006 | 1,534,283 | 33.5% | 1,149,006 | 1,534,283 | 33.5% |
| Rate 5 | 4 | 4 | 0.0% | 685,748 | 554,438 | -19.1% | 685,748 | 554,438 | -19.1% |
| Rate 6 | 1 | 1 | 0.0% | 59,243,876 | 59,599,950 | 0.6% | 59,243,876 | 59,599,950 | 0.6% |
| **Total** | **9,538** | **9,514** | **-0.2%** | **87,721,243** | **87,767,455** | **0.1%** | **87,721,243** | **89,052,827** | **1.5%** |

The Rate 1 - Commercial and Rate 1 - Industrial rate classes had higher than typical customer count increases in 2019, so the actual 2020 counts are higher than forecast. Volumes for these classes are also higher than forecast due primarily to the increased customer count. The heating load in 2020 was lower than forecast (3,577 HDD in 2020 vs. 3,789 HDD forecast), so weather normal volumes are higher than actual. Additionally, consumption per Rate 1 – Industrial customer increased at a faster rate beginning in 2018, and as a result, actual and weather-normal volumes were higher than forecast total 2020 volumes. Average consumption per Rate 2 customer decreased considerably in 2020 and has remained low, so actual volumes were materially lower than forecast. Average Rate 2 consumption per customer was 25,775$m^3$ on average from 2014 to 2019 and declined to an average of 16,456$m^3$ from 2020 to 2023. Rate 3 consumption per customer was forecast to decline in 2020 relative to previous years and the actual decline in consumption per customer was more significant than forecast. Consumption per Rate 3 customer was 40% lower in 2020 than 2017 – the most recent full year of data when the 2020 forecast was produced. Rate 4 and Rate 5 volumes vary considerably from year to year so forecasts are based on average consumption in prior years.

**Table 3.2-5**
**Variances 2020 to 2021 Actual & Weather Normalized**

| Rate Class | Customers | | | Actual Volumes | | | Weather Normal Volumes | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2020 Actual | 2021 Actual | Diff. | 2020 Actual | 2021 Actual | Diff. | 2020 Normal | 2021 Normal | Diff. |
| Rate 1 - Residential | 8,805 | 8,983 | 2.0% | 16,837,081 | 17,299,257 | 2.7% | 17,634,113 | 18,312,844 | 3.8% |
| Rate 1 - Commercial | 535 | 552 | 3.2% | 5,028,438 | 5,306,940 | 5.5% | 5,511,640 | 5,659,391 | 2.7% |
| Rate 1 - Industrial | 75 | 75 | 0.1% | 2,067,358 | 2,226,121 | 7.7% | 2,213,080 | 2,654,845 | 20.0% |
| Rate 2 | 48 | 50 | 4.0% | 784,724 | 829,096 | 5.7% | 784,724 | 829,096 | 5.7% |
| Rate 3 | 6 | 6 | -5.6% | 1,361,184 | 1,372,372 | 0.8% | 1,384,060 | 1,420,006 | 2.6% |
| Rate 4 | 40 | 41 | 0.6% | 1,534,283 | 1,793,580 | 16.9% | 1,534,283 | 1,793,580 | 16.9% |
| Rate 5 | 4 | 4 | 0.0% | 554,438 | 791,530 | 42.8% | 554,438 | 791,530 | 42.8% |
| Rate 6 | 1 | 1 | 0.0% | 59,599,950 | 60,410,748 | 1.4% | 59,599,950 | 60,410,748 | 1.4% |
| **Total** | **9,514** | **9,712** | **2.1%** | **87,767,455** | **90,029,645** | **2.6%** | **89,216,288** | **91,872,040** | **3.0%** |

The heating load in 2021 was marginally lower than 2020 and lower than normal weather, which means that weather normalized volumes are higher than actual volumes. Increases in weather-normal volumes are generally in line with increases in customer counts for each rate class. The exceptions are Rate 1 – Industrial, which continued its relatively high annual increase in consumption per customer, and Rate 4 and Rate 5 that are generally unpredictable.

**Table 3.2-6**
**Variances 2021 to 2022 Actual & Weather Normalized**

| Rate Class | Customers | | | Actual Volumes | | | Weather Normal Volumes | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2021 Actual | 2022 Actual | Diff. | 2021 Actual | 2022 Actual | Diff. | 2021 Normal | 2022 Normal | Diff. |
| Rate 1 - Residential | 8,983 | 9,131 | 1.6% | 17,299,257 | 18,760,439 | 8.4% | 18,312,844 | 18,631,763 | 1.7% |
| Rate 1 - Commercial | 552 | 567 | 2.6% | 5,306,940 | 6,163,726 | 16.1% | 5,654,094 | 6,123,993 | 8.3% |
| Rate 1 - Industrial | 75 | 77 | 2.6% | 2,226,121 | 2,377,452 | 6.8% | 2,654,845 | 2,421,872 | -8.8% |
| Rate 2 | 50 | 51 | 2.5% | 829,096 | 839,041 | 1.2% | 829,096 | 839,041 | 1.2% |
| Rate 3 | 6 | 5 | -11.8% | 1,372,372 | 1,551,993 | 13.1% | 1,420,006 | 1,552,971 | 9.4% |
| Rate 4 | 41 | 42 | 2.5% | 1,793,580 | 1,601,474 | -10.7% | 1,793,580 | 1,601,474 | -10.7% |
| Rate 5 | 4 | 4 | 0.0% | 791,530 | 585,954 | -26.0% | 791,530 | 585,954 | -26.0% |
| Rate 6 | 1 | 1 | 0.0% | 60,410,748 | 62,040,423 | 2.7% | 60,410,748 | 62,040,423 | 2.7% |
| **Total** | **9,712** | **9,878** | **1.7%** | **90,029,645** | **93,920,502** | **4.3%** | **91,866,744** | **93,797,491** | **2.1%** |

Heating load was higher in 2022 than 2021 and higher than normal weather, meaning weather normalized volumes are generally lower than actual volumes. The Rate 3 class lost one customer in 2022, but total volumes increased relative to 2021, despite lower heating volumes.

**Table 3.2-7**
**Variances 2022 to 2023 Actual & Weather Normalized**

| Rate Class | Customers | | | Actual Volumes | | | Weather Normal Volumes | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2022 Actual | 2023 Actual | Diff. | 2022 Actual | 2023 Actual | Diff. | 2022 Normal | 2023 Normal | Diff. |
| Rate 1 - Residential | 9,131 | 9,318 | 2.0% | 18,760,439 | 17,466,767 | 2.2% | 18,631,763 | 19,043,524 | 2.2% |
| Rate 1 - Commercial | 567 | 580 | 2.4% | 6,163,726 | 5,823,050 | -0.6% | 6,123,993 | 6,364,791 | 3.9% |
| Rate 1 - Industrial | 77 | 79 | 2.4% | 2,377,452 | 3,013,707 | 18.7% | 2,421,872 | 2,874,546 | 18.7% |
| Rate 2 | 51 | 51 | -1.1% | 839,041 | 869,131 | 3.6% | 839,041 | 869,131 | 3.6% |
| Rate 3 | 5 | 4 | -20.0% | 1,551,993 | 1,335,618 | -10.5% | 1,552,971 | 1,389,910 | -10.5% |
| Rate 4 | 42 | 43 | 4.2% | 1,601,474 | 2,227,329 | 39.1% | 1,601,474 | 2,227,329 | 39.1% |
| Rate 5 | 4 | 4 | 0.0% | 585,954 | 980,160 | 67.3% | 585,954 | 980,160 | 67.3% |
| Rate 6 | 1 | 1 | 0.0% | 62,040,423 | 65,345,852 | 5.3% | 62,040,423 | 65,345,852 | 5.3% |
| **Total** | **9,878** | **10,080** | **2.1%** | **93,920,502** | **97,061,614** | **5.3%** | **93,797,491** | **99,095,244** | **5.6%** |

Heating load was lower in 2023 than 2022 and lower than normal weather, so weather normalized volumes are generally higher than actual volumes. Rate 1 – Industrial weather normalized volumes increased by 18.7% in 2023, which is partly a reversal of the decline in 2022. Additionally, crop yields were particularly high in November and December 2023. Which makes the volumes of this class materially higher in 2023 than 2022. This is also the primary reason Rate 4, Rate 5, and total system volumes are higher in 2023 than 2022. Rate 3 lost another customer, though it was a smaller than average customer, so volumes did not decline to the same extent.

**Table 3.2-8**
**Variances 2023 Actual & Weather Normalized to 2024 Bridge Year Forecast**

| Rate Class | Customers | | | Actual/Forecast Volumes | | | Weather Normal Volumes | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2023 Actual | 2024 Bridge | Diff. | 2023 Actual | 2024 Bridge | Diff. | 2023 Normal | 2024 Bridge | Diff. |
| Rate 1 - Residential | 9,318 | 9,448 | 1.40% | 17,466,767 | 19,394,143 | 11.03% | 19,043,524 | 19,394,143 | 1.84% |
| Rate 1 - Commercial | 580 | 585 | 0.86% | 5,823,050 | 6,119,454 | 5.09% | 6,364,791 | 6,119,454 | -3.85% |
| Rate 1 - Industrial | 79 | 80 | 1.27% | 3,013,707 | 2,579,897 | -14.39% | 2,874,546 | 2,579,897 | -10.25% |
| Rate 2 | 51 | 50 | -1.96% | 869,131 | 832,281 | -4.24% | 869,131 | 832,281 | -4.24% |
| Rate 3 | 4 | 5 | 25.00% | 1,335,618 | 2,740,988 | 105.22% | 1,389,910 | 2,740,988 | 97.21% |
| Rate 4 | 43 | 45 | 4.65% | 2,227,329 | 2,023,938 | -9.13% | 2,227,329 | 2,023,938 | -9.13% |
| Rate 5 | 4 | 4 | 0.00% | 980,160 | 647,586 | -33.93% | 980,160 | 647,586 | -33.93% |
| Rate 6 | 1 | 1 | 0.00% | 65,345,852 | 65,345,852 | 0.00% | 65,345,852 | 65,345,852 | 0.00% |
| **Total** | **10,080** | **10,218** | **1.37%** | **97,061,614** | **99,684,139** | **2.70%** | **99,095,243** | **99,684,139** | **0.59%** |

As explained above, heating volumes in 2023 were lower than average. The 2024 forecast is based on normal weather so forecast 2024 volumes are generally higher than 2023 volumes. Forecast 2024 volumes for the Rate 1 – Industrial, Rate 4, and Rate 5 classes are lower than 2023 volumes because 2023 volumes were abnormally high due to high crop yields that are not forecast to continue to the test year. ENGLP connected a large new customer in Rate 3 with forecast consumption that is higher than the rest of the class combined.

**Table 3.2-9**
**Variances 2024 Bridge Year Forecast to 2025 Test Year Forecast**

| Rate Class | Customers | | | Forecast Volumes | | |
|---|---|---|---|---|---|---|
| | 2024 Bridge | 2025 Test | Diff. | 2024 Bridge | 2025 Test | Diff. |
| Rate 1 - Residential | 9,448 | 9,578 | 1.38% | 19,394,143 | 19,778,416 | 1.98% |
| Rate 1 - Commercial | 585 | 590 | 0.85% | 6,119,454 | 6,193,869 | 1.22% |
| Rate 1 - Industrial | 80 | 81 | 1.25% | 2,579,897 | 2,686,373 | 4.13% |
| Rate 2 | 50 | 50 | 0.00% | 832,281 | 832,281 | 0.00% |
| Rate 3 | 5 | 5 | 0.00% | 2,740,988 | 3,918,036 | 42.94% |
| Rate 4 | 45 | 46 | 2.22% | 2,023,938 | 2,334,616 | 15.35% |
| Rate 5 | 4 | 4 | 0.00% | 647,586 | 647,586 | 0.00% |
| Rate 6 | 1 | 1 | 0.00% | 65,345,852 | 65,345,852 | 0.00% |
| **Total** | 10,218 | 10,355 | 1.34% | 99,684,139 | 101,737,029 | 2.06% |

The increase in loads from the 2024 bridge year to the 2025 test year is due primarily to increased customer counts. The new Rate 3 customer in 2024 is forecast to increase its volumes in 2025. The Rate 4 rate class has one known new customer with forecast volumes that are higher than the average customer in the class. Additionally, consumption per Rate 1 customer for each of the Rate 1 rate classes is forecast to increase each year, so the increase in forecast volumes exceeds the increase in customer counts.

## 3.3 Transactional Services / Storage and Transportation Revenue

ENGLP incurs gas transportation costs (to/from Enbridge) for storage, load balancing, and transportation across Enbridge's system to ENGLP's distribution system. ENGLP currently contracts for an annual Contract Demand in the amount of 186,100 $m^3$ for its System Gas customers.

ENGLP evaluates its Contract Demand requirements with Enbridge on an annual basis and will balance the need to maximize its usage and minimize over run charges under this contract. For the November 2023 renewal, Enbridge proposed no changes to the Contract Demand for SA1550 (for system gas customers) and SA25050 (for direct purchase customers). ENGLP plans to increase the Contract Demand with the Lakeview contract in 2024 and 2025 to meet expected system gas peak day requirements. ENGLP also plans to increase the Contract Demand with the Enbridge contract in 2025 onwards to meet additional system gas peak day requirements.

Historically, these costs are recovered in ENGLP's delivery charges as reflected in the EB-2018-0336 cost of service rate filing through an embedded reference price. Any variance from that reference price are captured in the Purchased Gas Transportation Variance Account ("**PGTVA**"). Additional information on the PGTVA is available in Exhibit 9.1.1.

### Transportation Revenue & Rate

ENGLP is projected the need for $1,061,196 in Transportation Revenue in 2025 in order to recover the costs described above.

ENGLP is proposing to create a stand-alone Purchased Gas Transportation rate for Rate 1-5 customers, which would remove the requirement for an embedded reference price within distribution rates, and allow for a more transparent view of the transportation costs as part of the IRM filing. This is a consistent treatment with the current ENGLP Southern Bruce rate structure (EB-2018-0264) and could also be compared to the treatment of Transmission rates for embedded electricity distributors (most recently approved in EB-2023-0222).

**Table 3.3 – Historical Transportation Costs**

| | 2020T | 2021A | 2021A | 2022A | 2023A | 2024B | 2025T |
|---|---|---|---|---|---|---|---|
| Purchase Cost | $675,544 | $773,297 | $834,054 | $1,018,535 | $957,123 | $1,039,369 | $1,061,196 |
| Volumes (000's $m^3$) | 28,475 | 28,756 | 29,877 | 32,935 | 31,889 | 34,338 | 36,391 |
| Cost per $m^3$ | $0.023724 | $0.026891 | $0.027916 | $0.030925 | $0.030014 | $0.030269 | $0.029161 |
| YOY Variance | | 13% | 4% | 11% | -3% | 1% | -4% |

### Transmission Service

ENGLP has not historically or currently, earned any transportation revenue, as all local production that flows into the distribution system is used by ENGLP customers. As directed in EB-2010-0018, ENGLP currently is required to charge NRG. a transportation fee of $0.95 per MCF and an administrative charge of $250 per month for use of ENGLP's distribution system to transport gas.

ENGLP currently does not provide any transactional services, nor does it have any storage capabilities.

ENGLP requests to continue to include the transmission tariff as part of its approved tariff (with an expected $0 revenue requirement impact).

## 3.4 Other Revenue

Other Revenues includes items such as specific service charges, late payment charges, service work etc. Other revenues are treated as an offset to the distribution revenue requirement. A breakdown of these other revenues is as follows:

a) **Late Payment Charge**: In compliance with OEB guidelines, overdue bills are subject to a late payment charge at a rate of. 1.5% / month, 19.56% / year (effective rate of 0.04896% compounded daily);

b) **Collection & Non-sufficient Funds Fees**: Reconnection charges ($85) for disconnection for non-payment and Returned Cheque/Payment Fees ($20);

c) **Connection Fees**: Customer Transfer/Connection Charge: ($35); and,

d) **Miscellaneous Revenue:** This revenue includes customer contributions for installation of service laterals, charges for line breaks, along with other regulated services charges.

The table below shows ENGLP's historical Other Revenue amounts, along with a forecast for 2024B and 2025T. ENGLP is forecasting its Other Revenues to remain relatively flat for the 2024 Bridge and 2025 Test.

**Table 3.4-1 Other Revenue ($)**

| Description | 2020T | 2020A | 2021A | 2022A | 2023A | 2024B | 2025T |
|---|---|---|---|---|---|---|---|
| **Late Payment Charge** | $17,880 | $15,052 | $31,480 | $42,394 | $58,295 | $36,940 | $36,940 |
| **Collection & NSF Fees** | $3,060 | $1,560 | $2,660 | $3,280 | $3,235 | $2,976 | $2,976 |
| **Connection Fees** | $36,015 | $24,841 | $40,171 | $34,495 | $26,350 | $37,332 | $37,332 |
| **Misc Revenue** | $90,823 | $9,591 | $31,078 | $31,200 | $31,661 | $31,140 | $31,140 |
| **Total** | **$147,778** | **$51,044** | **$105,389** | **$111,368** | **$119,540** | **$108,388** | **$108,388** |
| YOY Variance | | -65% | 106% | 6% | 7% | -9% | 0% |

ENGLP is proposing only one change to its Miscellaneous and Services Charges currently approved in its existing rate order. However, this does not impact the distribution revenue offsets, as this is an impact to Capital/Depreciation amounts and not to Operating Expenses. The proposed change is as follows:

**Current:**

- *Installation of Service Lateral: $100 for the first 20 meters. Additional if pipe length exceeds 20 meters.*

**Revised:**

- *Installation of Service Lateral: $100 minimum for the first 20 meters for residential customers. Additional if pipe length exceeds 20 meters.*

As noted in Exhibit 1.3.16, ENGLP's Conditions of Service include a proposed revision to allocate connections costs in a more equitable way to avoid impact on existing ratepayers. The minimum fee for installation of a residential natural gas Service Lateral is $100.00. Additional fees may be

charged if the cost to bring the Service Lateral to the Meter location exceeds the maximum length that ENGLP uses to set this fee or for non-residential customers in alignment with ENGLP's customer connection policy.

# Appendix A – Power Advisory Report

# ENGLP Aylmer Weather Normalized Distribution System Throughput Forecast: 2024-2028

Prepared for: EPCOR Natural Gas Limited Partnership

Original: May 28, 2024

Revised: July 15, 2024

Submitted by:
Andrew Blair
Power Advisory

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## 1. INTRODUCTION

This report outlines the results of, and methodology used to derive, the 2024 to 2028 weather normal throughput forecast (or "load forecast") prepared for EPCOR Natural Gas Limited Partnership ("ENGLP").

The methodology outlined in this report is consistent with the methodology used in ENGLP's last four load forecast updates[1] and is largely consistent with the methodology used in ENGLP's 2020 COS application (EB-2018-0336) and the methodology used by Natural Gas Resources Limited ("NRG") in previous rates applications.[2] Parties agreed to the results of the 2020 throughput forecast in settlement and the overall methodology was last approved by the OEB in EB-2010-0018. Alternate methods were tested but generally found to be inferior to the previously approved methodology.

The regression equations used to normalize and forecast ENGLP's weather sensitive load use monthly heating degree days as measured at Environment Canada's London CS weather station to take into account temperature sensitivity. This location is the closest weather station to ENGLP's service territory with strong historical weather data. ENGLP experiences peak loads in winter months, though certain rate classes are not weather sensitive. Environment Canada defines heating degree days as the difference between the average daily temperature and 18°C for each day. Heating degree days is 0 when the average temperature is above 18°C. Heating degree day data with alternate temperature thresholds other than 18°C wee considered, consistent with the OEB's electricity distributor load forecast filing requirements.

ENGLP serves six rate classes, R1 to R6, one of which (R1) contains three sub-classes: Residential, Commercial, and Industrial. Each R1 sub-class and the R3 class are weather-sensitive. Consumption of the R2, R4, R5, and R6 rate classes are not correlated to heating degree days. Consumption per customer forecasts for the R1 sub-classes use a baseload and excess consumption methodology to examine the impact of temperature on consumption. The R3 class's baseload consumption has fluctuated in historic years so the regression for this uses total consumption with a time trend.

[1] The 2020-24 forecast update dated April 17, 2020, the 2021-25 forecast update dated April 23, 2021, the 2022-2026 forecast update dated April 23, 2022, and the 2023-2027 forecast update dated April 17, 2023.

[2] This report and the throughput forecast model were prepared by Andrew Blair, who prepared the throughput forecast used in EB-2018-0336 and subsequent throughput forecast updates for ENGLP as a member of Elenchus Research Associates. In February 2021 Power Advisory LLC and Elenchus Research Associates announced a strategic alliance between the two firms.

Forecasts for non-weather sensitive classes are derived with average consumption per customer figures in recent years, consistent with previously approved forecasts. The number of years used on the average consumption per customer calculations is reassessed in each load forecast to account for changes in consumption patterns over time. Consumption forecasts for non-weather sensitive classes is further described in Section 6 of this report.

In addition to the weather variables, other variables such as economic variables, time trend variable, number of days and number of working days in each month, number of customers, and month of year variables, have been examined for weather sensitive rate classes. A COVID variable and COVID/weather interaction variables were considered for weather-sensitive classes but found not to be statistically significant. More details on the individual class specifications are provided in the next section. ENGLP does not have a DSM plan so no adjustments were made to the class forecasts to account for DSM savings.

## 1.1 Summarized Results

The following table summarizes the historic and weather normalized consumption.

Table 1. Consumption Forecast by Class

**Normal Forecast**

| | 2022 Actual | 2023 Actual | *2023 Normalized* | 2024 Forecast | 2025 Forecast | 2026 Forecast | 2027 Forecast | 2028 Forecast |
|---|---|---|---|---|---|---|---|---|
| **R1 Residential** | 18,760,439 | 17,466,767 | *19,043,524* | 19,394,143 | 19,778,416 | 20,165,775 | 20,556,215 | 20,949,733 |
| **R1 Industrial** | 2,377,452 | 3,013,707 | *2,654,845* | 2,579,897 | 2,686,373 | 2,795,837 | 2,908,361 | 3,024,023 |
| **R1 Commercial** | 6,163,726 | 5,823,050 | *5,659,391* | 6,119,454 | 6,193,869 | 6,268,637 | 6,343,760 | 6,419,235 |
| **R2 Seasonal** | 839,041 | 869,131 | *869,131* | 832,281 | 832,281 | 832,281 | 832,281 | 832,281 |
| **R3** | 1,551,993 | 1,335,618 | 1,389,910 | 2,740,988 | 3,918,036 | 3,895,600 | 3,875,300 | 3,856,801 |
| **R4** | 1,601,474 | 2,227,329 | *2,227,329* | 2,023,938 | 2,334,616 | 2,408,833 | 2,485,410 | 2,564,421 |
| **R5** | 585,954 | 980,160 | *980,160* | 647,586 | 647,586 | 647,586 | 647,586 | 647,586 |
| **R6** | 62,040,423 | 65,345,852 | 65,345,852 | 65,345,852 | 65,345,852 | 65,345,852 | 65,345,852 | 65,345,852 |
| **Total** | **93,920,502** | **97,061,614** | ***98,170,143*** | **99,684,138** | **101,737,027** | **102,360,400** | **102,994,765** | **103,639,931** |

The following table summarizes the historic and forecast customer/connections for 2020-2028:

Table 2. Customer Forecast for 2022-2028

**Customers**

| | 2022 Actual | 2023 Actual | 2024 Forecast | 2025 Forecast | 2026 Forecast | 2027 Forecast | 2028 Forecast |
|---|---|---|---|---|---|---|---|
| **R1 Residential** | 9,131 | 9,318 | 9,448 | 9,578 | 9,708 | 9,838 | 9,968 |
| **R1 Industrial** | 77 | 79 | 80 | 81 | 83 | 84 | 86 |
| **R1 Commercial** | 567 | 580 | 585 | 590 | 595 | 600 | 605 |
| **R2 Seasonal** | 51 | 51 | 50 | 50 | 50 | 50 | 50 |
| **R3** | 5 | 4 | 5 | 5 | 5 | 5 | 5 |
| **R4** | 42 | 43 | 45 | 46 | 48 | 49 | 51 |
| **R5** | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| **R6** | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Total** | **9,878** | **10,080** | ***10,218*** | **10,355** | **10,494** | **10,631** | **10,770** |

Forecasts of 2025 consumption by tier, for the classes billed based on volume tiers, is provided below.

Table 3. 2025 Consumption Forecast by Tier

**2025 Tier Forecast**

| | Period | Tier 1 | Tier 2 | Tier 3 | Total |
|---|---|---|---|---|---|
| **R1 Residential** | | 19,647,131 | 131,285 | | **19,778,416** |
| **R1 Industrial** | | 658,242 | 2,028,131 | | **2,686,373** |
| **R1 Commercial** | | 2,898,065 | 3,295,803 | | **6,193,869** |
| **Seasonal** | **Apr-Oct** | 55,415 | 462,870 | 88,427 | **606,711** |
| **Seasonal** | **Nov-Mar** | 43,005 | 171,246 | 11,319 | **225,569** |
| **R4** | **Jan-Mar** | 36,580 | 7,406 | | **43,986** |
| **R4** | **Apr-Dec** | 191,609 | 2,099,021 | | **2,290,630** |

## 2. METHODOLOGY

Energy use for R1 Residential, R1 Industrial, R1 Commercial and R3 rate classes are forecast with multivariate regressions. Regressions were not selected for R2 Seasonal, R4, R5 and R6 rate classes as these classes do not exhibit sufficient sensitivity to the explanatory variables available for a statistical regression approach.

### 2.1 Consumption of Weather Sensitive Classes

Consumption of the three R1 rate classes are forecast using a base load and excess consumption method. Average monthly consumption per customer is first calculated for each class. The amounts are then reduced by the base load consumption, which is considered the average consumption in the summer months of July and August. The remaining consumption is considered the weather-sensitive load (or "excess" load). A baseline trend is applied to certain classes that have ongoing increasing consumption per customer that is not related to heating.

The excess load is regressed by the actual heating degree days in each month to determine the impact of cold weather on average consumption. A time-series (Prais-Winsten) regression is used to determine the coefficient, consistent with the methodology used in prior NRG throughput forecasts. A simple Ordinary Least Squares ("OLS") model is not appropriate as the errors exhibit a high level of autocorrelation (as demonstrated by Durbin-Watson statistics close to, or below, 1).

Alternate heating degree days data were also considered for each weather-sensitive class. Heating degree day figures were considered for a range of reference temperatures from 10°C to 20°C. Using alternate HDD temperatures considers the possibility that classes, on average, begin consuming natural gas for their heating load at temperatures other than 18°C.

Actual heating degree days are then multiplied by the coefficients and base load consumption is added back to determine the average predicted consumption in each month. Predicted total consumption of a class is determined by multiplying this sum by the actual number of customers.

The methodology is similar for the R3 class, but the base load is not removed before the regression. While the calculated base load consumption is generally consistent from year to year for the R1 classes, the base load appears to have declined in historic years.

To forecast 2024-2028 consumption, forecast heating degree days figures, as described in section 4, are used in place of actual heating degree days. Weather normalized consumption in historic years is determined by removing the deviations from average weather from consumption. This is done by multiplying the coefficients by the difference between actual and average heating degree days and applying the difference to actual consumption.

A set of interaction COVID/Weather variables were considered for the weather-sensitive classes but found to be not statistically significant. The values for this variable were set to 0 in all months before March 2020 and set equal to the applicable heating degree day variable for the months of March 2020 to December 2021. This variable was intended to capture potential incremental heating load for the Residential class, and reduced heating load for non-residential classes, resulting from people staying and working from home. This indicates that COVID did not have a material impact on heating load. A COVID variable, equal to 1 from March 2020 to December 2021 and 0 in all other months, was also tested and found not to be statistically significant.

### 2.2 Consumption of Non-Weather Sensitive Classes

Consumption of four rate classes (R2 Seasonal, R4, R5 and R6) are not weather-sensitive and do not exhibit sensitivity to the explanatory variables. Total and monthly volumes fluctuate from year to year, so a rolling average is used to forecast monthly consumption for these classes, with the exception of R4 in which a trend is also applied. The number of years used in the average calculations is explained in Section 6.

### 2.3 Customer Counts

Annual customer counts for 2024-2028 are forecast by applying a geometric mean annual growth rate to the 2023 average customer count for the R1 Industrial, R2 Seasonal and R4 rate classes. The R1 Residential forecast is based on 130 new attachments each year. The R1 Commercial forecast is based on 5 new customers per year. The customer counts for rate classes R3, R5, and R6 are unchanged through the 2024-2028 period except for known new customers in these rate classes. Calculations for each class are provided in section 5 and 6 of this report. Monthly customer counts are derived by applying equal percentage increases in each month such that the annual average of monthly forecasts is equal to the annual forecast.

### 2.4 Consumption Tiers

The R1 classes, R2 Seasonal Class, and R4 classes are billed according to consumption tiers (also known as volume blocks). Historic tiered data from January 2017 to November 2018 was used to derive weather-normal tiered forecasts. The allocation from total class throughput to tiered throughput has not been updated for this forecast.

The R1 classes are billed different rates on consumption above and below a 1,000 $m^3$ threshold. As these classes are weather-sensitive, the share of energy consumed in each tier is determined by adjusting actual consumption in each month for each individual customer to weather normal consumption. This method allows a class's forecast consumption to be consistent with the weather normalized total volume while maintaining the consumption profile of the rate

classes. The weather-normalized consumption split between Tier 1 and Tier 2 in historic years is determined for each month and used to forecast the monthly splits in the forecast months. When two years of data was available, an average of the 2017 and 2018 splits was used. The R2 Seasonal and R4 classes are not weather-sensitive so the average of 2017 and 2018 tier splits were applied to total annual consumption.

# 3. CLASS SPECIFIC CONSUMPTION REGRESSIONS

## 3.1 R1 Residential

For the R1 Residential Class consumption the equation was estimated using 120 observations from 2014:01 to 2023:12. The natural logarithm of heating degree days at 18°C for the months of September to June were used, as measured at the London CS weather station as described in the introduction.

Several other variables were examined and found to not show a statistically significant relationship to energy usage. Those included alternate reference temperatures, economic indicators of full-time employment and GDP, days in each month, workdays in each month, a time trend, a COVID binary variable, and COVID/weather interaction variables.

A baseload trend was used to remove from 34.2$m^3$ in 2014 to 42.6$m^3$ in 2023 from the average consumption variable in each month. This amount is added back to the predicted values.

The following table outlines the resulting regression model:

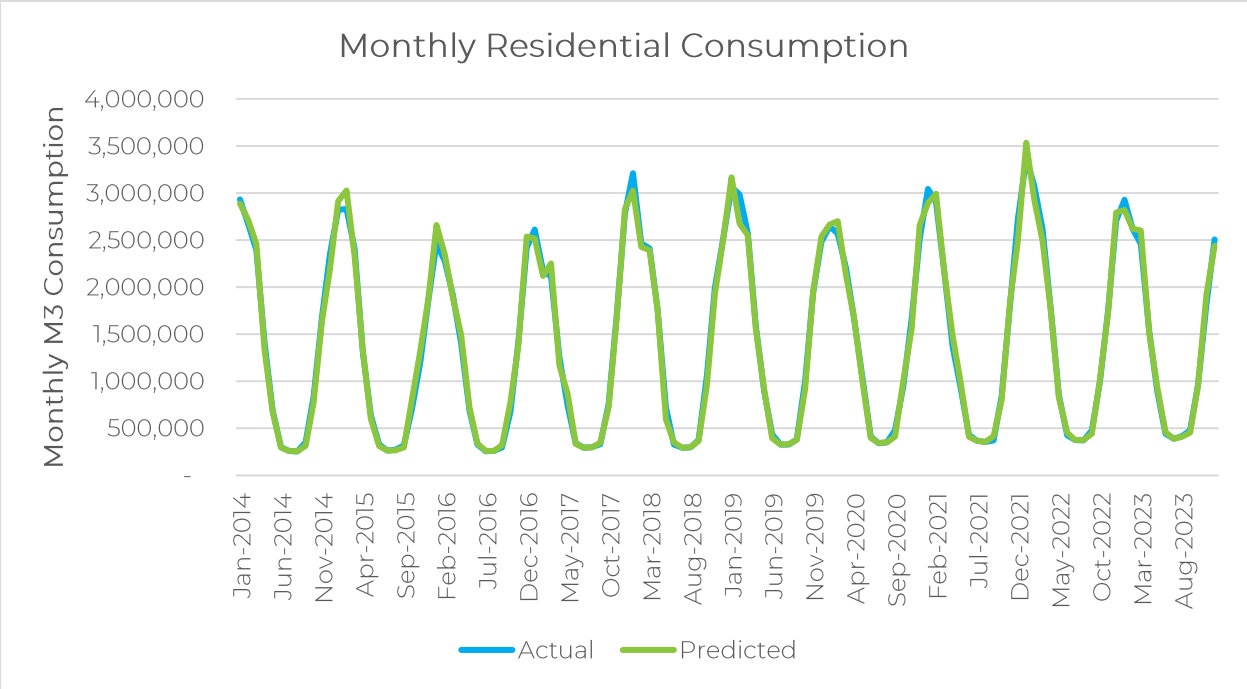
Table 4. R1 Residential Regression Model

| Model 1: Prais-Winsten, using observations 2014:01-2023:12 (T = 120) | | | | |
|---|---|---|---|---|
| Dependent variable: ExLNResAverageTrend | | | | |
| rho = 0.046263 | | | | |
| | coefficient | std. error | t-ratio | p-value |
| const | 0.13371 | 0.0599 | 2.23 | 2.8E-02 |
| LNHDDJanuary18 | 0.85304 | 0.0156 | 54.61 | 5.2E-81 |
| LNHDDFebruary18 | 0.85055 | 0.0159 | 53.59 | 3.8E-80 |
| LNHDDMarch18 | 0.84640 | 0.0162 | 52.10 | 7.3E-79 |
| LNHDDApril18 | 0.82457 | 0.0176 | 46.92 | 4.0E-74 |
| LNHDDMay18 | 0.78817 | 0.0206 | 38.28 | 5.0E-65 |
| LNHDDJune18 | 0.53653 | 0.0304 | 17.62 | 1.1E-33 |
| LNHDDSeptember18 | 0.43248 | 0.0251 | 17.25 | 6.2E-33 |
| LNHDDOctober18 | 0.74184 | 0.0188 | 39.38 | 2.8E-66 |
| LNHDDNovember18 | 0.81395 | 0.0169 | 48.14 | 2.8E-75 |
| LNHDDDecember18 | 0.85124 | 0.0162 | 52.61 | 2.6E-79 |
| | | | | |
| Statistics based on the rho-differenced data | | | | |
| Sum squared resid | 7.53328 | S.E. of regression | | 0.263 |
| R-squared | 0.98525 | Adjusted R-squared | | 0.98389 |
| F(10, 109) | 675.834 | P-value(F) | | 0.00000 |
| rho | 0.00136 | Durbin-Watson | | 1.99706 |

In the above table, and all regression results tables in the section, LN denotes natural logarithm, HDD denotes heating degree days, the month name denotes a dummy variable representing 1 in the labeled month and 0 in all other months, and the '18' denotes the reference HDD temperature of 18°C. The values within the LNHDDJanuary variable, for example, includes the natural logarithm of the number of heating degree days for each January, and 0 in all other months. The label for the dependent variable includes "Ex" denoting the values of this variable are the excess consumption above the class's base load.

Actual consumption and predicted consumption using the above model coefficients are compared in Figure 1.

Figure 1. R1 Residential Predicted vs Actual Observations




Annual estimates using actual weather are compared to actual values in the table below. Mean absolute percentage error (MAPE) for annual estimates for the period is 1.5%. The MAPE calculated monthly over the period is 4.1%.

Table 5. R1 Residential Model Error

| | Residential | | Absolute |
|---|---|---|---|
| Year | Actual | Predicted | Error (%) |
| 2014 | 16,127,158 | 15,785,716 | 2.1% |
| 2015 | 14,948,329 | 15,337,184 | 2.6% |
| 2016 | 14,417,053 | 14,993,968 | 4.0% |
| 2017 | 15,400,135 | 15,417,551 | 0.1% |
| 2018 | 17,442,260 | 16,900,849 | 3.1% |
| 2019 | 18,000,452 | 17,699,947 | 1.7% |
| 2020 | 16,837,081 | 16,909,964 | 0.4% |
| 2021 | 17,299,257 | 17,196,811 | 0.6% |
| 2022 | 18,760,439 | 18,717,450 | 0.2% |
| 2023 | 17,466,767 | 17,549,250 | 0.5% |
| Total | 166,698,932 | 166,508,692 | 0.1% |
| | | | |
| Mean Absolute Percentage Error (Annual) | | | 1.5% |
| Mean Absolute Percentage Error (Monthly) | | | 4.1% |

### 3.2 R1 Industrial

For the R1 Industrial Class consumption the equation was estimated using 120 observations from 2014:01 to 2023:12. The natural logarithm of heating degree days at 16°C for the months from August to May were used, as measured at the London CS weather station. Consumption in November and December 2023 was anomalously high due to high crop yields. The crop yields, and associated grain drying load, is uncharacteristic of typical class consumption and ENGLP's expectations of the class's load in the future so an alternate version of the regression was run using November and December 2022 consumption per customer in place of November and December 2023 volumes. Absent this adjustment, heating degree days in November and December would overstate the influence of weather on class loads.

Several other variables were examined and found to not show a statistically significant relationship to energy usage. Those included alternate reference temperatures, economic indicators of full-time employment and GDP, days in each month, workdays in each month, and a time trend.

A baseload trend was used to remove from 523.9$m^3$ in 2014 to 1,024.9$m^3$ in 2023 from the average consumption variable in each month. This amount is added back to the predicted values.

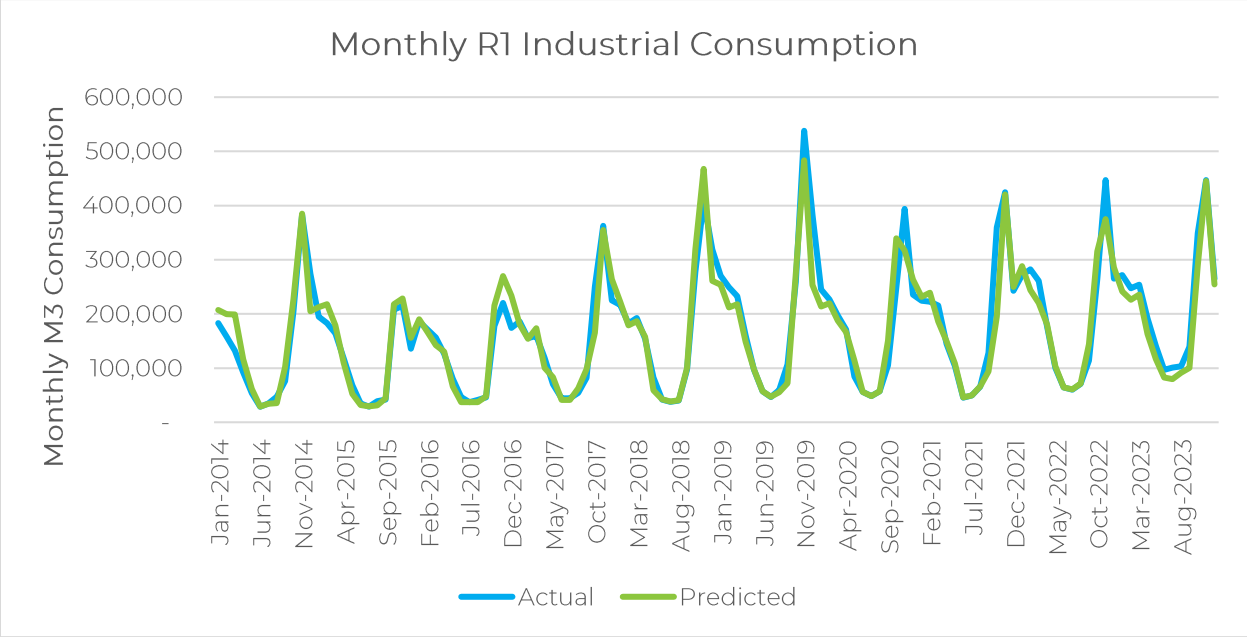
The following table outlines the resulting regression model:

Table 6. R1 Industrial Regression Model

| Model 3: Prais-Winsten, using observations 2014:01-2023:12 (T = 120) | | | | |
|---|---|---|---|---|
| Dependent variable: ExLNR1AverageTrend | | | | |
| rho = 0.341842 | | | | |
| | coefficient | std. error | t-ratio | p-value |
| const | 1.874 | 0.256 | 7.308 | 4.76E-11 |
| LNHDDJanuary16 | 0.917 | 0.066 | 13.806 | 1.11E-25 |
| LNHDDFebruary16 | 0.913 | 0.068 | 13.522 | 4.69E-25 |
| LNHDDMarch16 | 0.926 | 0.069 | 13.455 | 6.57E-25 |
| LNHDDApril16 | 0.935 | 0.073 | 12.784 | 2.03E-23 |
| LNHDDMay16 | 0.927 | 0.080 | 11.606 | 9.23E-21 |
| LNHDDAugust16 | 1.984 | 0.388 | 5.110 | 1.38E-06 |
| LNHDDSeptember16 | 1.328 | 0.116 | 11.449 | 2.09E-20 |
| LNHDDOctober16 | 1.176 | 0.081 | 14.599 | 2.10E-27 |
| LNHDDNovember16 | 1.103 | 0.072 | 15.279 | 7.37E-29 |
| LNHDDDecember16 | 0.963 | 0.069 | 13.982 | 4.58E-26 |
| | | | | |
| Statistics based on the rho-differenced data | | | | |
| Sum squared resid | 116.6562 | S.E. of regression | | 1.0345 |
| R-squared | 0.8626 | Adjusted R-squared | | 0.8499 |
| F(10, 109) | 41.6800 | P-value(F) | | 1.01E-32 |
| rho | -0.0328 | Durbin-Watson | | 2.0654 |

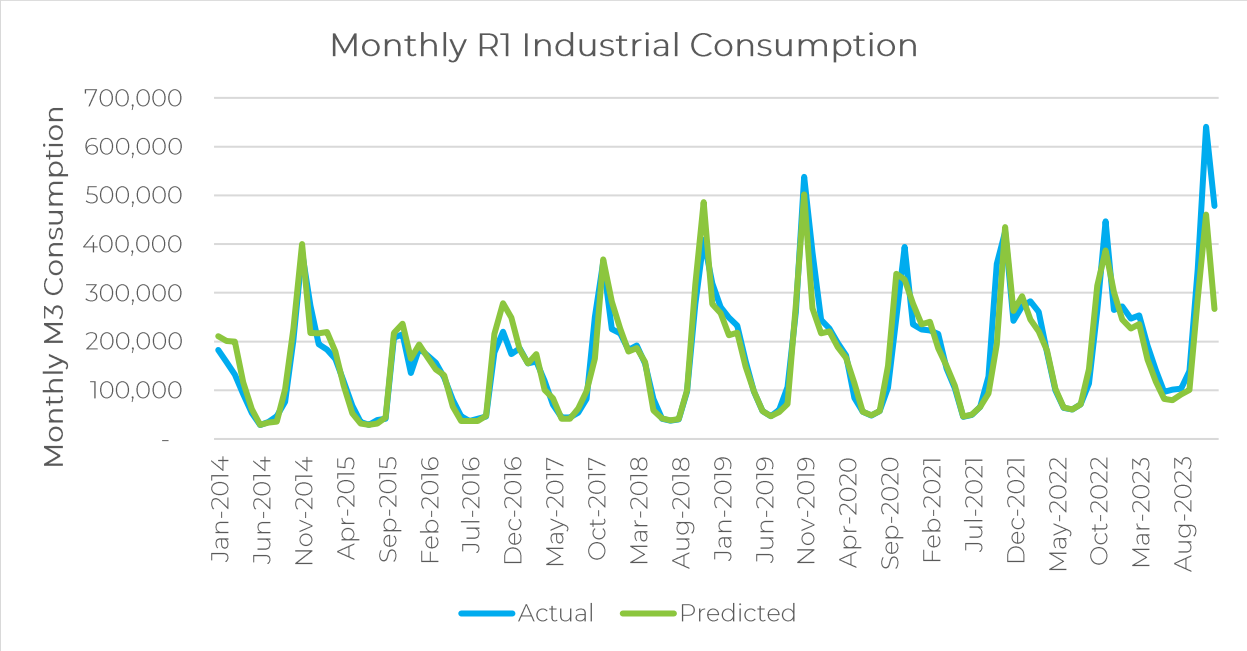
Actual consumption and predicted consumption using the above model coefficients are compared in Figure 2.

Figure 2. R1 Industrial Predicted vs Actual Observations
(with November and December 2023 actuals adjustment)




For reference, the predicted volumes without adjusting for November and December 2023 volumes is provided below.

Figure 3. R1 Industrial Predicted vs Actual Observations



Annual estimates using actual weather are compared to actual values in the table below. Mean absolute percentage error (MAPE) for annual estimates for the period is 6.0%. The MAPE calculated monthly over the period is 12.6%.

Table 7. R1 Industrial Model Error

| | R1 Industrial | | Absolute |
|---|---|---|---|
| Year | Actual | Predicted | Error (%) |
| 2014 | 1,666,209 | 1,799,840 | 8.0% |
| 2015 | 1,430,900 | 1,511,044 | 5.6% |
| 2016 | 1,462,707 | 1,573,628 | 7.6% |
| 2017 | 1,752,123 | 1,719,182 | 1.9% |
| 2018 | 2,050,371 | 2,072,474 | 1.1% |
| 2019 | 2,461,420 | 2,173,569 | 11.7% |
| 2020 | 2,067,358 | 2,133,667 | 3.2% |
| 2021 | 2,226,121 | 2,034,437 | 8.6% |
| 2022 | 2,377,452 | 2,352,264 | 1.1% |
| 2023 | 2,606,905 | 2,325,035 | 10.8% |
| Total | 20,101,567 | 19,695,140 | 2.0% |
| | | | |
| Mean Absolute Percentage Error (Annual) | | | 6.0% |
| Mean Absolute Percentage Error (Monthly) | | | 12.6% |

### 3.3 R1 Commercial

For the R1 Commercial Class consumption the equation was estimated using 120 observations from 2014:01 to 2023:12. The natural logarithm of heating degree days at 18°C for the months from September to June were used, as measured at the London CS weather station.

Several other variables were examined and found to not show a statistically significant relationship to energy usage. Those included alternate reference temperatures, economic indicators of full-time employment and GDP, days in each month, workdays in each month, and a time trend.

A baseload trend was used to remove from 198.0$m^3$ in 2014 to 239.9$m^3$ in 2023 from the average consumption variable in each month. This amount is added back to the predicted values.

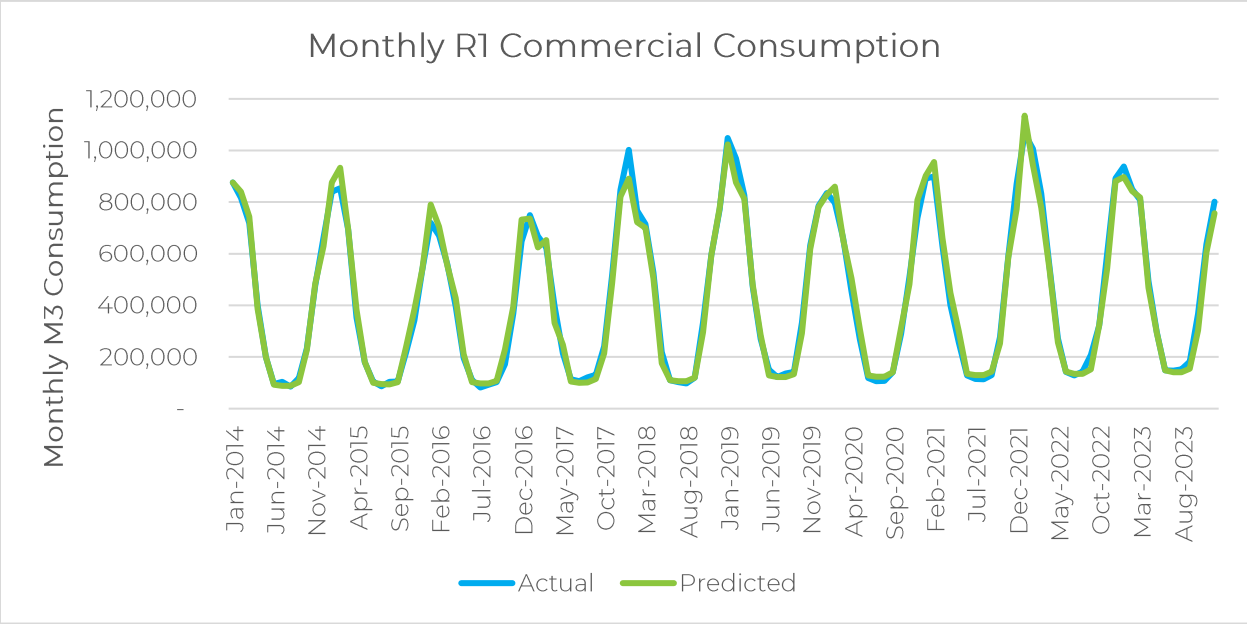
The following table outlines the resulting regression model:

Table 8. R1 Commercial Regression Model

| Model 3: Prais-Winsten, using observations 2014:01-2023:12 (T = 120) | | | | |
|---|---|---|---|---|
| Dependent variable: ExLNComAverageTrend | | | | |
| rho = 0.315543 | | | | |
| | coefficient | std. error | t-ratio | p-value |
| const | 1.31720 | 0.2201 | 5.98 | 2.8E-08 |
| LNHDDJanuary18 | 0.91950 | 0.0532 | 17.29 | 5.2E-33 |
| LNHDDFebruary18 | 0.92001 | 0.0542 | 16.99 | 2.1E-32 |
| LNHDDMarch18 | 0.91238 | 0.0553 | 16.50 | 2.1E-31 |
| LNHDDApril18 | 0.88818 | 0.0593 | 14.99 | 3.1E-28 |
| LNHDDMay18 | 0.85187 | 0.0674 | 12.63 | 4.5E-23 |
| LNHDDJune18 | 0.40485 | 0.0904 | 4.48 | 1.8E-05 |
| LNHDDSeptember18 | 0.51957 | 0.0744 | 6.98 | 2.4E-10 |
| LNHDDOctober18 | 0.80927 | 0.0617 | 13.11 | 3.9E-24 |
| LNHDDNovember18 | 0.88207 | 0.0570 | 15.47 | 3.0E-29 |
| LNHDDDecember18 | 0.91448 | 0.0549 | 16.66 | 9.9E-32 |
| | | | | |
| Statistics based on the rho-differenced data | | | | |
| Sum squared resid | 73.03951 | S.E. of regression | | 0.819 |
| R-squared | 0.89337 | Adjusted R-squared | | 0.88358 |
| F(10, 109) | 54.32262 | P-value(F) | | 0.00000 |
| rho | -0.05334 | Durbin-Watson | | 2.10666 |

Actual consumption and predicted consumption using the above model coefficients are compared in Figure 4.

Figure 4. R1 Commercial Predicted vs Actual Observations




Annual estimates using actual weather are compared to actual values in the table below. Mean absolute percentage error (MAPE) for annual estimates for the period is 4.1%. The MAPE calculated monthly over the period is 7.1%.

Table 9. R1 Commercial Model Error

| Year | R1 Commercial Actual | Predicted | Absolute Error (%) |
|---|---|---|---|
| 2014 | 4,788,282 | 4,757,288 | 0.6% |
| 2015 | 4,420,443 | 4,624,892 | 4.6% |
| 2016 | 4,117,374 | 4,451,110 | 8.1% |
| 2017 | 4,734,213 | 4,535,876 | 4.2% |
| 2018 | 5,363,288 | 5,107,807 | 4.8% |
| 2019 | 5,890,482 | 5,675,491 | 3.6% |
| 2020 | 5,028,438 | 5,276,100 | 4.9% |
| 2021 | 5,306,940 | 5,419,823 | 2.1% |
| 2022 | 6,163,726 | 5,961,613 | 3.3% |
| 2023 | 5,823,050 | 5,570,130 | 4.3% |
| Total | **51,636,234** | **51,380,129** | **0.5%** |
| | | | |
| Mean Absolute Percentage Error (Annual) | | | 4.1% |
| Mean Absolute Percentage Error (Monthly) | | | 7.1% |

### 3.4 R3

For the R3 Class consumption the equation was estimated using 120 observations from 2014:01 to 2023:12. The natural logarithm of heating degree days at 20°C for the months from September to May were used, as measured at the London CS weather station. A natural log of a time trend is also included, beginning at ln(10) in January 2014 (increasing to ln(121) in December 2023) is used as this class exhibits declining average consumption over time.

A dummy variable for June was included as consumption in June was typically greater than what was expected based on the weather in that month. A dummy variable for the shoulder months of March, April, May, September, October, and November was also used to reflect lower consumption in those months than could be explained by heating degree days.

Several other variables were examined and found to not show a statistically significant relationship to energy usage. Those included alternate weather variables, economic indicators of full-time employment and GDP, days in each month, and workdays in each month.

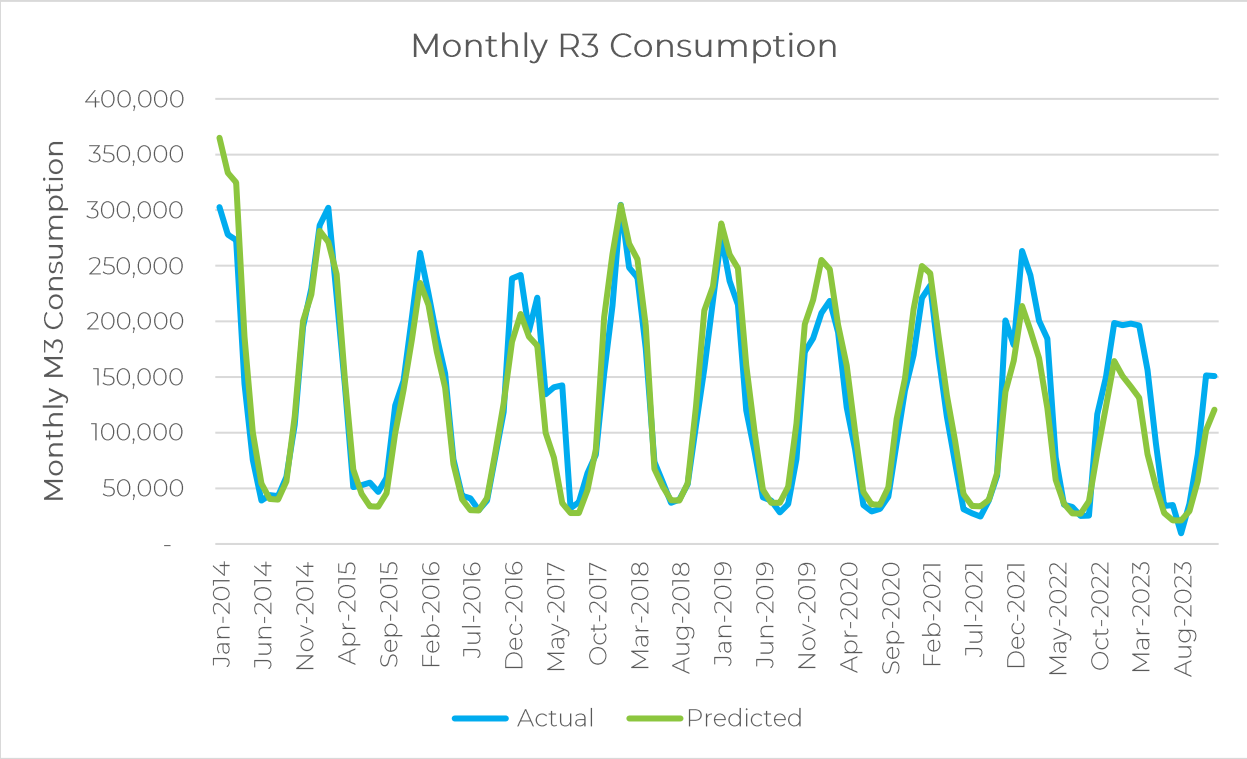
The following table outlines the resulting regression model:

Table 10. R3 Regression Model

| Model 4: Prais-Winsten, using observations 2014:01-2023:12 (T = 120) | | | | |
|---|---|---|---|---|
| Dependent variable: LNContractR3Average | | | | |
| rho = 0.460215 | | | | |
| | coefficient | std. error | t-ratio | p-value |
| const | 10.10331 | 0.2616 | 38.63 | 1.2E-64 |
| LNHDDJanuary20 | 0.30081 | 0.0167 | 18.06 | 2.9E-34 |
| LNHDDFebruary20 | 0.29498 | 0.0170 | 17.37 | 6.3E-33 |
| LNHDDMarch20 | 0.71034 | 0.1592 | 4.46 | 2.0E-05 |
| LNHDDApril20 | 0.69684 | 0.1703 | 4.09 | 8.3E-05 |
| LNHDDMay20 | 0.68227 | 0.1935 | 3.53 | 6.2E-04 |
| LNHDDSeptember20 | 0.07438 | 0.0186 | 3.99 | 1.2E-04 |
| LNHDDOctober20 | 0.66846 | 0.1804 | 3.71 | 3.4E-04 |
| LNHDDNovember20 | 0.69591 | 0.1650 | 4.22 | 5.2E-05 |
| LNHDDDecember20 | 0.27867 | 0.0170 | 16.42 | 5.2E-31 |
| lnTrend | -0.31692 | 0.0613 | -5.17 | 1.1E-06 |
| Shoulder | -2.73990 | 1.0214 | -2.68 | 8.5E-03 |
| June | 0.27118 | 0.0855 | 3.17 | 2.0E-03 |
| | | | | |
| Statistics based on the rho-differenced data | | | | |
| Sum squared resid | 6.15956 | S.E. of regression | | 0.23993 |
| R-squared | 0.92379 | Adjusted R-squared | | 0.91525 |
| F(12, 107) | 74.27188 | P-value(F) | | 3.56E-46 |
| rho | -0.07971 | Durbin-Watson | | 2.15382 |

Actual consumption and predicted consumption using the above model coefficients are compared in Figure 5.

Figure 5. R3 Predicted vs Actual Observations



Annual estimates using actual weather are compared to actual values in the table below. Mean absolute percentage error (MAPE) for annual estimates for the period is 10.6%. The MAPE calculated monthly over the period is 22.6%. The MAPEs are relatively high for this class but more variance can be expected in a class with only 4 to 6 customers.

Table 11. R3 Model Error

| | R3 | | Absolute |
|---|---|---|---|
| Year | Actual | Predicted | Error (%) |
| 2014 | 1,792,006 | 2,040,828 | 13.9% |
| 2015 | 1,692,328 | 1,588,739 | 6.1% |
| 2016 | 1,492,346 | 1,366,848 | 8.4% |
| 2017 | 1,653,466 | 1,438,890 | 13.0% |
| 2018 | 1,711,013 | 1,842,900 | 7.7% |
| 2019 | 1,510,164 | 1,756,983 | 16.3% |
| 2020 | 1,361,184 | 1,600,908 | 17.6% |
| 2021 | 1,372,372 | 1,423,148 | 3.7% |
| 2022 | 1,551,993 | 1,251,421 | 19.4% |
| 2023 | 1,335,618 | 935,681 | 29.9% |
| Total | 15,472,490 | 15,246,345 | 1.5% |
| | | | |
| Mean Absolute Percentage Error (Annual) | | | 13.6% |
| Mean Absolute Percentage Error (Monthly) | | | 22.2% |

## 4. WEATHER NORMALIZATION

It is not possible to accurately forecast weather for months or years in advance. Therefore, one can only base future weather expectations on what has happened in the past. Individual years may experience unusual spells of weather (unusually cold winter, unusually warm summer, etc.). However, over time, these unusual spells "average" out. While there may be trends over several years (e.g., warmer winters for example), using several years of data rather than one particular year filters out the extremes of any particular year. While there are several different approaches to determining an appropriate weather normal, ENGLP has adopted the 10-year trend of 10-year monthly degree day averages.

Various methods were analysed to determine the most appropriate methodology to forecast monthly heating degree days from 2024 to 2028. A 5-year average, 10-year average, 20-year trend, 5-year weighted average, 10-year trend of 5 year averages, 10-year trend of 10-year averages, and the midpoint of the 10-year average and 20-year trend were considered.

Data from 1984 to 2023 was used to evaluate each method's predicted heating degree days against the actual heating degree days for each month since January 2004. Data from Environment Canada's London Airport weather station was used for the period from 1984 to 2002. London Airport's temperature data is only provided until 2002, which is approximately when temperature data for London CS begins. Data from the London A weather station (another London Airport weather station with temperature data as of March 2012) is used in place of London CS when data from that station is unavailable.

Each method was ranked according to the magnitude of the deviations between predicted and actual heating degree days, with 1 being the closest predicted value and 7 being the furthest. The rankings were done on monthly and annual bases. The following table shows the annual rankings, average annual and monthly rankings, and variance of the deviations on monthly and annual bases.

Table 12. HDD Rankings and Variance

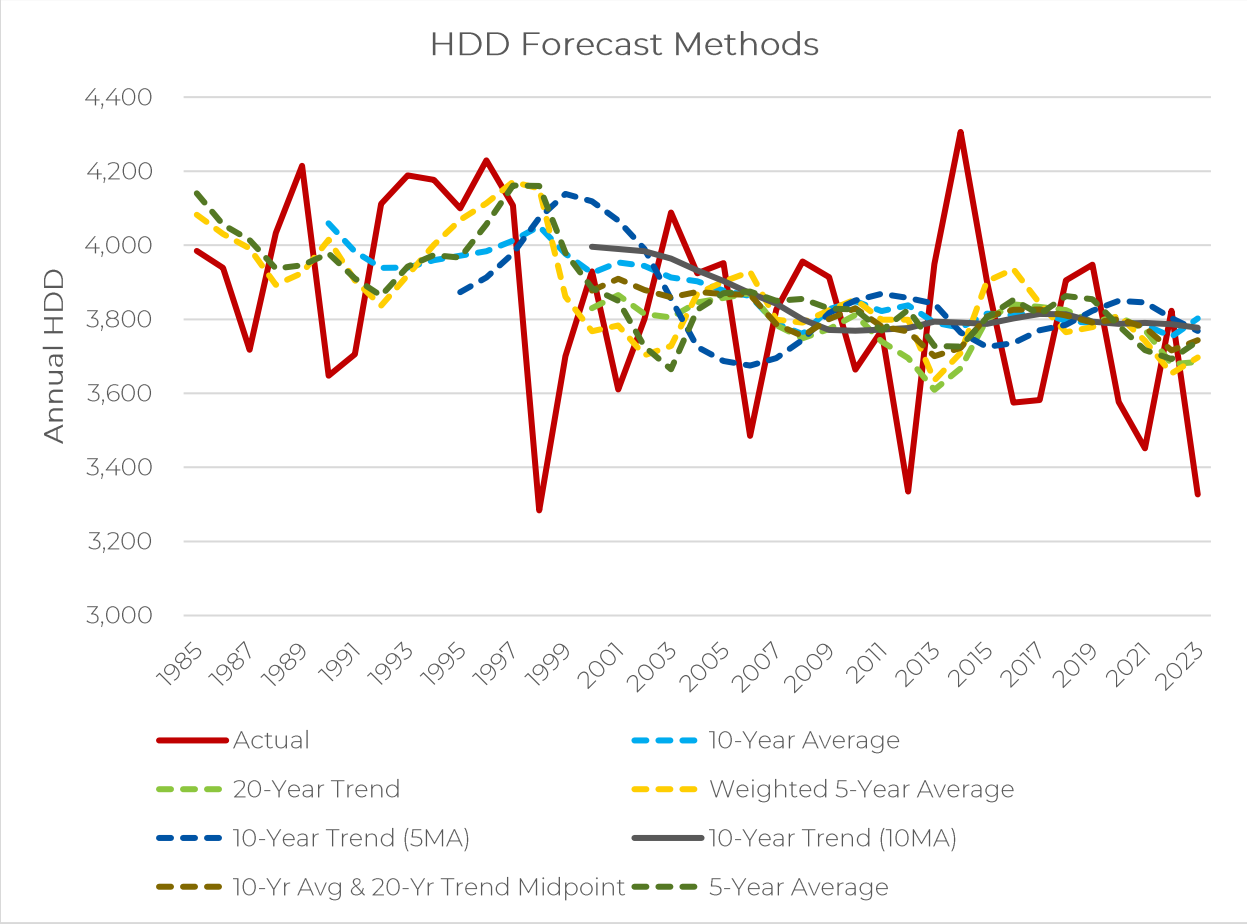
| Year | 5-Year Average | 10-Year Average | 20-Year Trend | Weighted 5-Year Average | 10-Year Trend (5MA) | 10-Year Trend (10MA) | 10-Yr Avg & 20-Yr Trend Midpoint |
|---|---|---|---|---|---|---|---|
| 2004 | 6 | 2 | 5 | 4 | 7 | 1 | 3 |
| 2005 | 4 | 3 | 6 | 2 | 7 | 1 | 5 |
| 2006 | 6 | 2 | 4 | 7 | 1 | 5 | 3 |
| 2007 | 2 | 4 | 6 | 3 | 7 | 1 | 5 |
| 2008 | 1 | 4 | 6 | 3 | 7 | 2 | 5 |
| 2009 | 1 | 2 | 6 | 3 | 4 | 7 | 5 |
| 2010 | 3 | 5 | 2 | 7 | 6 | 1 | 4 |
| 2011 | 1 | 6 | 5 | 4 | 7 | 2 | 3 |
| 2012 | 5 | 6 | 1 | 4 | 7 | 3 | 2 |
| 2013 | 4 | 3 | 7 | 6 | 1 | 2 | 5 |
| 2014 | 4 | 2 | 7 | 6 | 3 | 1 | 5 |
| 2015 | 4 | 2 | 5 | 1 | 7 | 6 | 3 |
| 2016 | 6 | 3 | 5 | 7 | 1 | 2 | 4 |
| 2017 | 2 | 4 | 6 | 7 | 1 | 3 | 5 |
| 2018 | 1 | 5 | 2 | 7 | 6 | 3 | 4 |
| 2019 | 5 | 7 | 1 | 4 | 2 | 6 | 3 |
| 2020 | 1 | 3 | 5 | 6 | 7 | 2 | 4 |
| 2021 | 1 | 5 | 3 | 2 | 7 | 6 | 4 |
| 2022 | 5 | 3 | 6 | 7 | 1 | 2 | 4 |
| 2023 | 3 | 7 | 1 | 2 | 5 | 6 | 4 |
| Average Rank | | | | | | | |
| Monthly | 3.99 | 3.85 | 4.19 | 4.23 | 3.96 | 3.85 | 3.93 |
| Annual | 3.25 | 3.90 | 4.45 | 4.60 | 4.70 | 3.10 | 4.00 |
| Variance between Predicted and Actual | | | | | | | |
| Monthly | 3,977 | 3,642 | 4,047 | 4,301 | 3,886 | 3,586 | 3,805 |
| Annual | 65,664 | 67,132 | 72,586 | 76,701 | 72,477 | 60,791 | 68,958 |

The rankings and variance analysis reveals that the 10-year trend of the 10-year average is the best methodology for predicting future heating degree days. On a monthly and annual basis, the predicted heating degree days using this methodology is closest to actual heating degree days and the deviations from actual weather have the lowest variance among the methods analysed.

For clarity, the 10-year trend of the 10-year moving average is the annualized trend of one 10-year period to the next 10-year period. For example, the 2004 predicted value uses the trend from the average heating degree days from 1984 and 1993 to the average from 1994 and 2003.

This method is the best predictive method as it accounts for trends in heating degree days over time without being over-reliant on data of any one year. Simple averages do not consider weather trends over time and typical trend forecasts can be significantly impacted by single data points.

Figure 6. Weather Forecast for Various Methods




In Figure 6, actual HDD and the selected 10-year trend of 10-year moving averages metric are in solid lines and the dotted lines represent the other methods considered.

The monthly predicted and forecast heating degree days are detailed in the following tables for heating degree days at 18°C.

Table 13. Forecast HDD 18°C

| 18°C | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total | Actual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2014 | 720 | 661 | 543 | 307 | 156 | 31 | 6 | 11 | 68 | 253 | 406 | 633 | 3,794 | 4,306 |
| 2015 | 719 | 667 | 545 | 310 | 151 | 29 | 6 | 10 | 72 | 250 | 416 | 630 | 3,804 | 3,904 |
| 2016 | 722 | 677 | 548 | 313 | 144 | 28 | 7 | 10 | 74 | 249 | 422 | 618 | 3,813 | 3,575 |
| 2017 | 727 | 682 | 547 | 318 | 138 | 28 | 7 | 11 | 74 | 246 | 424 | 611 | 3,813 | 3,582 |
| 2018 | 727 | 676 | 547 | 319 | 133 | 29 | 7 | 11 | 74 | 243 | 424 | 608 | 3,798 | 3,905 |
| 2019 | 732 | 668 | 547 | 325 | 126 | 29 | 7 | 11 | 74 | 241 | 427 | 604 | 3,792 | 3,947 |
| 2020 | 733 | 662 | 549 | 332 | 124 | 29 | 6 | 10 | 73 | 239 | 435 | 601 | 3,793 | 3,577 |
| 2021 | 729 | 655 | 552 | 341 | 126 | 29 | 6 | 10 | 71 | 239 | 437 | 593 | 3,789 | 3,452 |
| 2022 | 722 | 650 | 550 | 348 | 132 | 29 | 5 | 10 | 68 | 237 | 442 | 588 | 3,780 | 3,829 |
| 2023 | 722 | 649 | 552 | 354 | 137 | 29 | 4 | 9 | 65 | 236 | 442 | 584 | 3,783 | 3,327 |
| 2024 | 717 | 639 | 551 | 359 | 143 | 29 | 3 | 9 | 59 | 231 | 443 | 572 | 3,754 | |
| 2025 | 715 | 636 | 551 | 363 | 144 | 29 | 3 | 9 | 57 | 229 | 444 | 567 | 3,747 | |
| 2026 | 714 | 632 | 551 | 367 | 145 | 29 | 2 | 9 | 55 | 228 | 446 | 563 | 3,741 | |
| 2027 | 713 | 629 | 551 | 372 | 146 | 29 | 2 | 8 | 53 | 226 | 448 | 558 | 3,734 | |
| 2028 | 712 | 625 | 551 | 376 | 147 | 28 | 1 | 8 | 52 | 224 | 450 | 553 | 3,727 | |

# 5. WEATHER-NORMALIZED CLASS FORECASTS

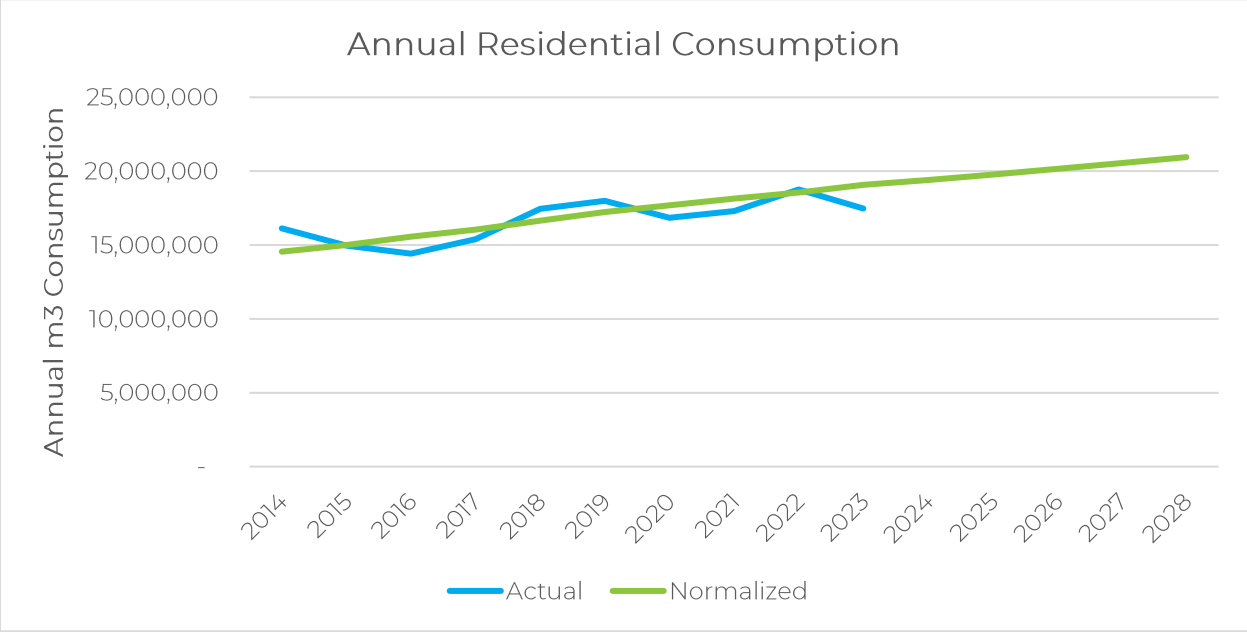
## 5.1 R1 Residential

Incorporating the normalized and forecast heating degree days the following weather corrected consumption and forecast values are calculated:

Table 14. Actual vs Normalized R1 Residential

| R1 Residential | | | | | | |
|---|---|---|---|---|---|---|
| Year | Customers | Consumption | | Actual | Normalized | |
| | | Per Customer | Total | | Per Customer | Total |
| 2014 | 7,470 | 2,162 | 16,150,603 | 16,127,158 | 1,950 | 14,551,718 |
| 2015 | 7,726 | 1,938 | 14,974,492 | 14,948,329 | 1,942 | 15,001,278 |
| 2016 | 7,956 | 1,813 | 14,425,323 | 14,417,053 | 1,959 | 15,572,288 |
| 2017 | 8,110 | 1,892 | 15,347,218 | 15,400,135 | 1,973 | 16,047,138 |
| 2018 | 8,400 | 2,075 | 17,426,321 | 17,442,260 | 1,982 | 16,658,300 |
| 2019 | 8,657 | 2,083 | 18,035,211 | 18,000,452 | 1,994 | 17,230,177 |
| 2020 | 8,805 | 1,911 | 16,828,031 | 16,837,081 | 2,009 | 17,698,028 |
| 2021 | 8,983 | 1,927 | 17,311,669 | 17,299,257 | 2,022 | 18,146,276 |
| 2022 | 9,131 | 2,055 | 18,768,709 | 18,760,439 | 2,033 | 18,557,330 |
| 2023 | 9,318 | 1,875 | 17,474,225 | 17,466,767 | 2,049 | 19,083,780 |
| 2024 | 9,448 | | | | 2,055 | 19,394,143 |
| 2025 | 9,578 | | | | 2,067 | 19,778,416 |
| 2026 | 9,708 | | | | 2,079 | 20,165,775 |
| 2027 | 9,838 | | | | 2,092 | 20,556,215 |
| 2028 | 9,968 | | | | 2,104 | 20,949,733 |

Figure 7. Actual vs Normalized R1 Residential




A tiered forecast was produced using actual individual customer data adjusted to weather-normal consumption.

Table 15. Forecasted R1 Residential Tiered Consumption

| | R1 Residential | | |
|---|---|---|---|
| | Tier 1 | Tier 2 | Total |
| 2022 | 18,633,590 | 126,849 | 18,760,439 |
| 2023 | 18,914,526 | 128,998 | 17,466,767 |
| 2024 | 19,265,019 | 129,124 | 19,394,143 |
| 2025 | 19,647,131 | 131,285 | 19,778,416 |
| 2026 | 20,032,319 | 133,456 | 20,165,775 |
| 2027 | 20,420,578 | 135,637 | 20,556,215 |
| 2028 | 20,811,906 | 137,828 | 20,949,733 |

The R1 Residential customer count is forecast to increase by 130 customers per year through the 2024-2028 period.

Table 16. Forecasted R1 Residential Customer Count

| Year | Residential Customers | Percent of Prior Year |
|---|---|---|
| 2014 | 7,470 | |
| 2015 | 7,726 | 103.4% |
| 2016 | 7,956 | 103.0% |
| 2017 | 8,110 | 101.9% |
| 2018 | 8,400 | 103.6% |
| 2019 | 8,657 | 103.1% |
| 2020 | 8,805 | 101.7% |
| 2021 | 8,983 | 102.0% |
| 2022 | 9,131 | 101.6% |
| 2023 | 9,318 | 102.0% |
| 2024 | 9,448 | 101.4% |
| 2025 | 9,578 | 101.4% |
| 2026 | 9,708 | 101.4% |
| 2027 | 9,838 | 101.4% |
| 2028 | 9,968 | 101.4% |

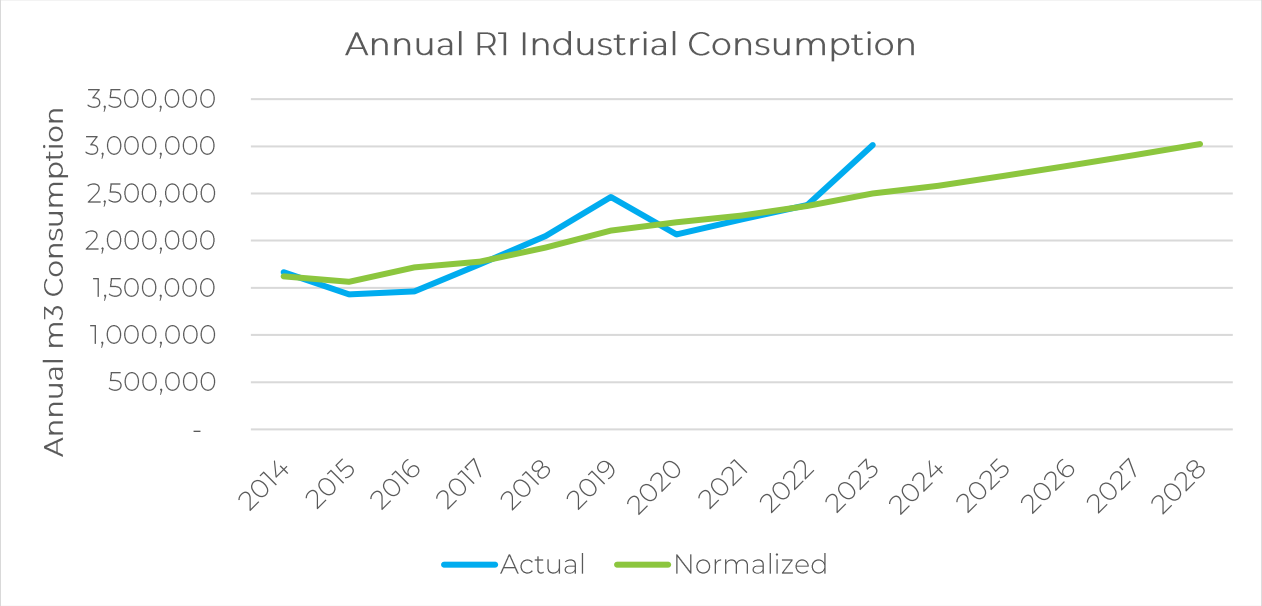
### 5.2 R1 Industrial

Incorporating the normalized and forecast heating degree days the following weather corrected consumption and forecast values are calculated:

Table 17. Actual vs Normalized R1 Industrial

| R1 Industrial | | | | | | |
|---|---|---|---|---|---|---|
| Year | Customers | Consumption | | Actual | Normalized | |
| | | Per Customer | Total | | Per Customer | Total |
| 2014 | 63 | 26,306 | 1,659,456 | 1,666,209 | 25,679 | 1,622,173 |
| 2015 | 62 | 23,186 | 1,439,435 | 1,430,900 | 25,414 | 1,564,050 |
| 2016 | 65 | 22,433 | 1,461,881 | 1,462,707 | 26,264 | 1,716,903 |
| 2017 | 66 | 26,620 | 1,752,499 | 1,752,123 | 27,027 | 1,778,490 |
| 2018 | 68 | 29,425 | 2,005,771 | 2,050,371 | 27,741 | 1,927,753 |
| 2019 | 73 | 33,281 | 2,440,611 | 2,461,420 | 28,530 | 2,105,215 |
| 2020 | 75 | 27,629 | 2,067,592 | 2,067,358 | 29,345 | 2,196,313 |
| 2021 | 75 | 29,576 | 2,215,758 | 2,226,121 | 30,141 | 2,267,564 |
| 2022 | 77 | 31,039 | 2,384,840 | 2,377,452 | 30,893 | 2,367,134 |
| 2023 | 79 | 38,124 | 2,999,059 | 3,013,707 | 31,654 | 2,499,328 |
| 2024 | 80 | | | | 32,207 | 2,579,897 |
| 2025 | 81 | | | | 32,954 | 2,686,373 |
| 2026 | 83 | | | | 33,700 | 2,795,837 |
| 2027 | 84 | | | | 34,447 | 2,908,361 |
| 2028 | 86 | | | | 35,195 | 3,024,023 |

Figure 8. Actual vs Normalized R1 Industrial




A tiered forecast was produced using actual individual customer data adjusted to weather-normal consumption.

Table 18. Forecasted R1 Industrial Tiered Consumption

| | R1 Industrial | | |
|---|---|---|---|
| | Tier 1 | Tier 2 | Total |
| 2022 | 561,145 | 1,816,307 | 2,377,452 |
| 2023 | 798,103 | 2,541,872 | 3,013,707 |
| 2024 | 628,492 | 1,951,405 | 2,579,897 |
| 2025 | 658,242 | 2,028,131 | 2,686,373 |
| 2026 | 688,855 | 2,106,981 | 2,795,837 |
| 2027 | 720,354 | 2,188,007 | 2,908,361 |
| 2028 | 752,761 | 2,271,262 | 3,024,023 |

The Geometric mean of the annual growth from 2019 to 2023 was used to forecast the growth rate from 2024 to 2028. The number of customers in this class grew at a higher rate from 2014 to 2019 than since 2019 so the growth rates from these years was excluded as they do not reflect the current customer growth trend.

The following table includes the customer Actual / Forecast customer count on this basis:

Table 19. Forecasted R1 Industrial Customer Count

| Year | R1 Industrial Customers | Percent of Prior Year |
|---|---|---|
| 2014 | 63 | |
| 2015 | 62 | 98.4% |
| 2016 | 65 | 105.0% |
| 2017 | 66 | 101.0% |
| 2018 | 68 | 103.5% |
| 2019 | 73 | 107.6% |
| 2020 | 75 | 102.0% |
| 2021 | 75 | 100.1% |
| 2022 | 77 | 102.6% |
| 2023 | 79 | 102.4% |
| 2024 | 80 | 101.8% |
| 2025 | 81 | 101.8% |
| 2026 | 83 | 101.8% |
| 2027 | 84 | 101.8% |
| 2028 | 86 | 101.8% |

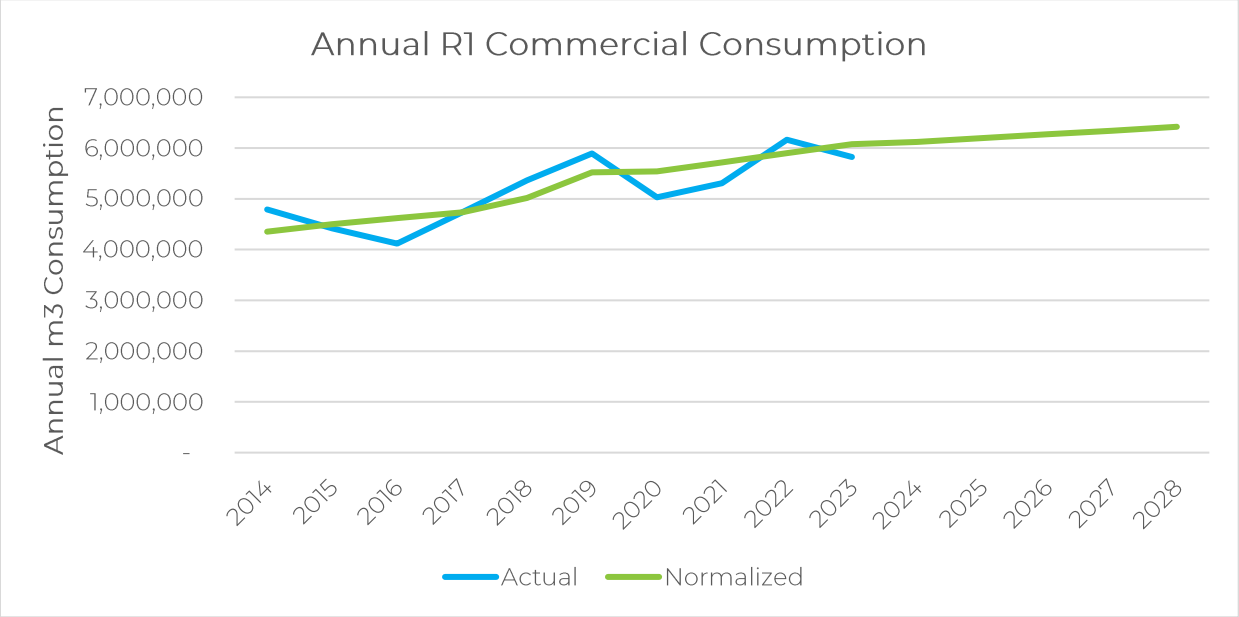
### 5.3 R1 Commercial

Incorporating the normalized and forecast heating degree days the following weather corrected consumption and forecast values are calculated:

Table 20. Actual vs Normalized R1 Commercial

| R1 Commercial | | | | | | |
|---|---|---|---|---|---|---|
| Year | Customers | Consumption | | Actual | Normalized | |
| | | Per Customer | Total | | Per Customer | Total |
| 2014 | 437 | 10,964 | 4,795,706 | 4,788,282 | 9,965 | 4,352,936 |
| 2015 | 445 | 9,935 | 4,421,983 | 4,420,443 | 10,109 | 4,500,547 |
| 2016 | 453 | 9,065 | 4,102,131 | 4,117,374 | 10,172 | 4,619,881 |
| 2017 | 462 | 10,219 | 4,716,893 | 4,734,213 | 10,222 | 4,732,258 |
| 2018 | 487 | 10,958 | 5,332,657 | 5,363,288 | 10,242 | 5,017,159 |
| 2019 | 536 | 10,970 | 5,880,685 | 5,890,482 | 10,279 | 5,519,688 |
| 2020 | 535 | 9,378 | 5,017,149 | 5,028,438 | 10,331 | 5,539,888 |
| 2021 | 552 | 9,615 | 5,309,753 | 5,306,940 | 10,371 | 5,719,789 |
| 2022 | 567 | 10,869 | 6,157,559 | 6,163,726 | 10,402 | 5,899,372 |
| 2023 | 580 | 10,024 | 5,817,409 | 5,823,050 | 10,459 | 6,076,900 |
| 2024 | 585 | | | | 10,462 | 6,119,454 |
| 2025 | 590 | | | | 10,499 | 6,193,869 |
| 2026 | 595 | | | | 10,536 | 6,268,637 |
| 2027 | 600 | | | | 10,574 | 6,343,760 |
| 2028 | 605 | | | | 10,611 | 6,419,235 |

Figure 9. Actual vs Normalized R1 Commercial




A tiered forecast was produced using actual individual customer data adjusted to weather-normal consumption.

Table 21. Forecasted R1 Commercial Tiered Consumption

| | R1 Commercial | | |
|---|---|---|---|
| | Tier 1 | Tier 2 | Total |
| 2022 | 2,874,696 | 3,289,030 | 6,163,726 |
| 2023 | 3,161,469 | 3,522,151 | 5,823,050 |
| 2024 | 2,860,705 | 3,258,749 | 6,119,454 |
| 2025 | 2,898,065 | 3,295,803 | 6,193,869 |
| 2026 | 2,935,634 | 3,333,004 | 6,268,637 |
| 2027 | 2,973,410 | 3,370,349 | 6,343,760 |
| 2028 | 3,011,395 | 3,407,840 | 6,419,235 |

The Geometric mean of the annual growth from 2014 to 2023 was used to forecast the growth rate from 2024 to 2028.The following table includes the customer Actual / Forecast customer count on this basis:

Table 22. Forecasted R1 Commercial Customer Count

| Year | R1 Commercial Customers | Percent of Prior Year |
|---|---|---|
| 2014 | 33 | |
| 2015 | 34 | 102.5% |
| 2016 | 35 | 103.7% |
| 2017 | 36 | 101.4% |
| 2018 | 37 | 101.9% |
| 2019 | 37 | 100.5% |
| 2020 | 40 | 110.2% |
| 2021 | 41 | 100.6% |
| 2022 | 42 | 102.5% |
| 2023 | 43 | 104.2% |
| 2024 | 45 | 103.2% |
| 2025 | 46 | 103.2% |
| 2026 | 48 | 103.2% |
| 2027 | 49 | 103.2% |
| 2028 | 51 | 103.2% |

## 5.4 R3

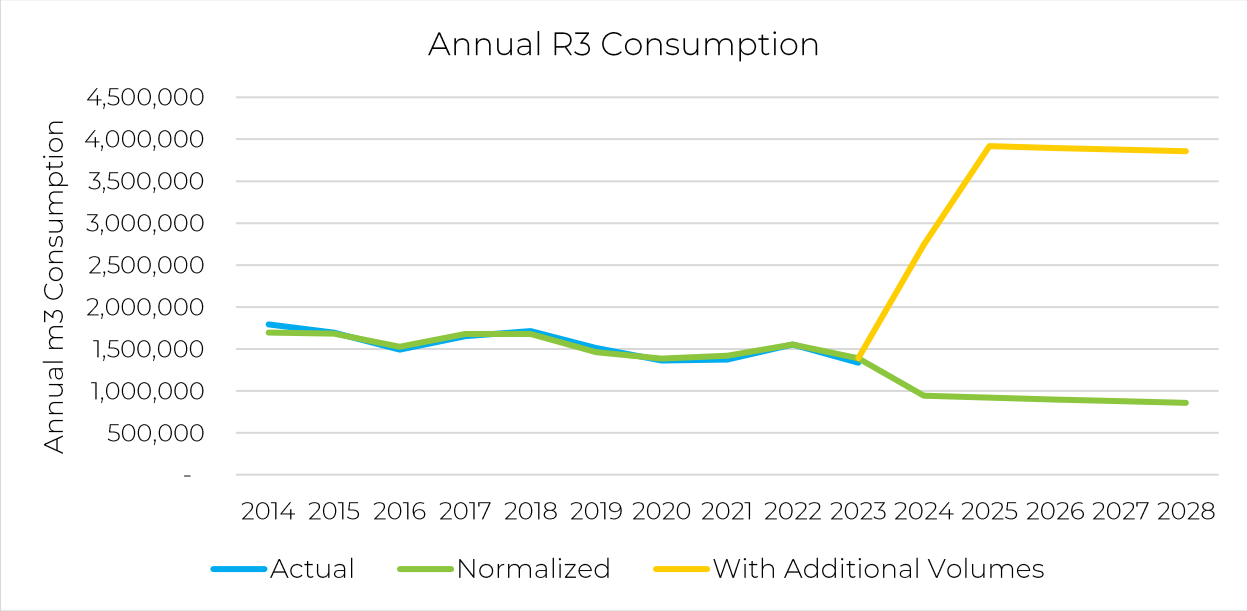
The R3 rate class is gaining one large customer with forecast volumes of 1,797,950m$^3$ in 2024 and 3,000,000m$^3$ annual volumes annually beginning in 2025. The R3 forecast is based on forecast volumes of the four customers in the class plus the additional volumes of this customer. Incorporating the normalized and forecast heating degree days, continuing time trend and calendar dummy variables, the following weather corrected consumption and forecast values are calculated:

Table 23. Actual vs Normalized R3

| R3 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Year | Cust. | Consumption | | Normalized | | | |
| | | Per Customer | Total / Actual | Per Customer | Total | Additional Volumes | Total w/ Additional |
| 2014 | 4 | 448,002 | 1,792,006 | 423,716 | 1,694,865 | | |
| 2015 | 4 | 423,082 | 1,692,328 | 420,181 | 1,680,722 | | |
| 2016 | 4 | 373,087 | 1,492,346 | 381,386 | 1,525,544 | | |
| 2017 | 5 | 375,566 | 1,690,049 | 381,871 | 1,676,985 | | |
| 2018 | 6 | 285,169 | 1,711,013 | 279,581 | 1,677,487 | | |
| 2019 | 6 | 251,694 | 1,510,164 | 243,342 | 1,460,052 | | |
| 2020 | 6 | 226,864 | 1,361,184 | 230,677 | 1,384,060 | | |
| 2021 | 6 | 244,734 | 1,386,823 | 253,437 | 1,420,006 | | |
| 2022 | 5 | 310,399 | 1,551,993 | 310,594 | 1,552,971 | | |
| 2023 | 4 | 333,905 | 1,335,618 | 347,477 | 1,389,910 | | |
| 2024 | 5 | | | 235,759 | 943,038 | 1,797,950 | 2,740,988 |
| 2025 | 5 | | | 229,509 | 918,036 | 3,000,000 | 3,918,036 |
| 2026 | 5 | | | 223,900 | 895,600 | 3,000,000 | 3,895,600 |
| 2027 | 5 | | | 218,825 | 875,300 | 3,000,000 | 3,875,300 |
| 2028 | 5 | | | 214,200 | 856,801 | 3,000,000 | 3,856,801 |

For clarify, the total normalized forecast excluding the new large customer is the forecast per customer multiplied by the four existing customers.

Figure 10. Actual vs Normalized R3




The R3 class has fluctuated between 4 and 6 customers since 2009. The current count of 4 customers is expected to increase to 1 in January 2024 with one known new customer.

# 6. NON-WEATHER SENSITIVE CLASS FORECASTS

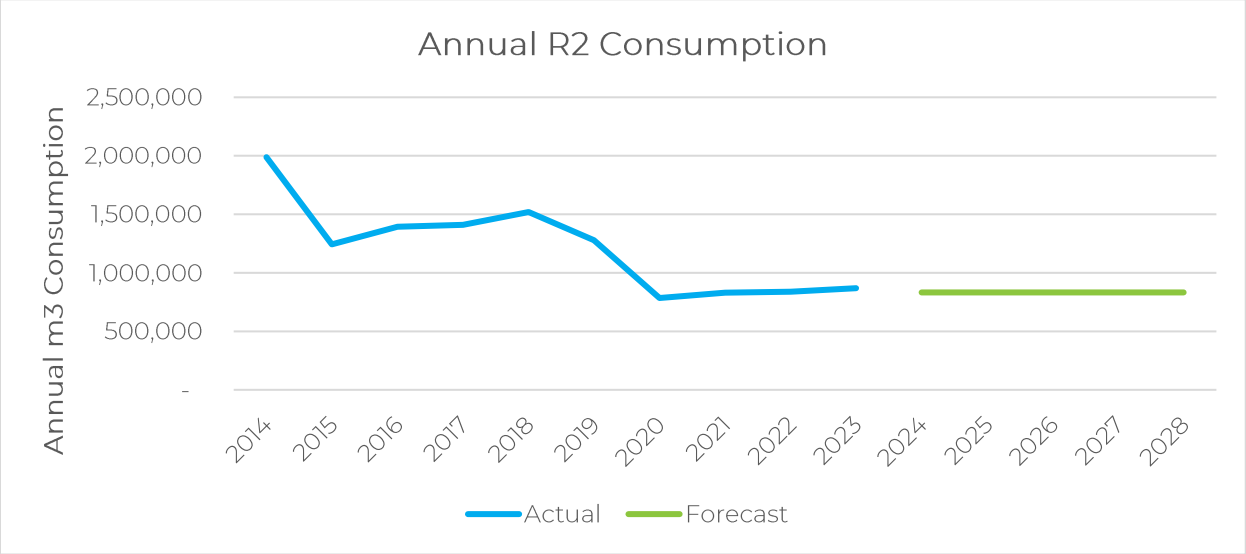
## 6.1 R2 Seasonal

Monthly consumption is forecast using a three-year average of consumption per customer in each month. The sum of monthly forecast values per customer are used to calculate annual total consumption as follows:

Table 24. Actual vs Normalized R2 Seasonal

| R2 Seasonal | | | | | | |
|---|---|---|---|---|---|---|
| Year | Customers | Consumption | | Actual | Normalized | |
| | | Per Customer | Total | | Per Customer | Total |
| 2014 | 65 | 30,594 | 1,980,940 | 1,988,124 | | |
| 2015 | 63 | 20,017 | 1,256,038 | 1,242,867 | | |
| 2016 | 59 | 23,524 | 1,382,013 | 1,394,132 | | |
| 2017 | 55 | 26,211 | 1,435,062 | 1,410,653 | | |
| 2018 | 54 | 28,488 | 1,526,500 | 1,520,647 | | |
| 2019 | 49 | 25,819 | 1,267,264 | 1,279,499 | | |
| 2020 | 48 | 16,202 | 781,723 | 784,724 | | |
| 2021 | 50 | 16,464 | 825,967 | 829,096 | | |
| 2022 | 51 | 16,249 | 835,459 | 839,041 | | |
| 2023 | 51 | 16,910 | 859,570 | 869,131 | | |
| 2024 | 50 | | | | 16,541 | 832,281 |
| 2025 | 50 | | | | 16,541 | 832,281 |
| 2026 | 50 | | | | 16,541 | 832,281 |
| 2027 | 50 | | | | 16,541 | 832,281 |
| 2028 | 50 | | | | 16,541 | 832,281 |

Figure 11. Actual vs Normalized R2 Seasonal




An average of tiered consumption shares in 2017 and 2018 was used to forecast tiered consumption in future years. The R2 seasonal class has three tiers with different rates in April to October and November to March. Tier 1 consumption is consumption up to 1,000 $m^3$, tier 2 applies to consumption between 1,000 $m^3$ and 25,000 $m^3$, and all consumption above 25,000 $m^3$ is considered Tier 3.

Table 25. Forecasted R2 Seasonal Tiered Consumption

| | R2 Seasonal | | | | | | |
|---|---|---|---|---|---|---|---|
| | April 1 to Oct 31 | | | Nov 1 to Mar 31 | | | |
| | Tier 1 | Tier 2 | Tier 3 | Tier 1 | Tier 2 | Tier 3 | Total |
| 2022 | 55,865 | 466,630 | 89,145 | 43,354 | 172,637 | 11,411 | 839,041 |
| 2023 | 57,868 | 483,364 | 92,342 | 44,909 | 178,828 | 11,820 | 869,131 |
| 2024 | 55,415 | 462,870 | 88,427 | 43,005 | 171,246 | 11,319 | 832,281 |
| 2025 | 55,415 | 462,870 | 88,427 | 43,005 | 171,246 | 11,319 | 832,281 |
| 2026 | 55,415 | 462,870 | 88,427 | 43,005 | 171,246 | 11,319 | 832,281 |
| 2027 | 55,415 | 462,870 | 88,427 | 43,005 | 171,246 | 11,319 | 832,281 |
| 2028 | 55,415 | 462,870 | 88,427 | 43,005 | 171,246 | 11,319 | 832,281 |

The R2 customer count declined from 2014 to 2019 and has been stable around 50 customers since 2019. The number of R2 customers is forecast to remain at 50 from 2024 to 2028. The following table includes the customer Actual / Forecast customer count on this basis:

Table 26. Forecasted R2 Seasonal Customer Count

| Year | R2 Seasonal Customers | Percent of Prior Year |
|---|---|---|
| 2014 | 65 | |
| 2015 | 63 | 96.9% |
| 2016 | 59 | 93.6% |
| 2017 | 55 | 93.2% |
| 2018 | 54 | 97.9% |
| 2019 | 49 | 91.6% |
| 2020 | 48 | 98.3% |
| 2021 | 50 | 104.0% |
| 2022 | 51 | 102.5% |
| 2023 | 51 | 98.9% |
| 2024 | 50 | 98.1% |
| 2025 | 50 | *100.0%* |
| 2026 | 50 | *100.0%* |
| 2027 | 50 | *100.0%* |
| 2028 | 50 | *100.0%* |

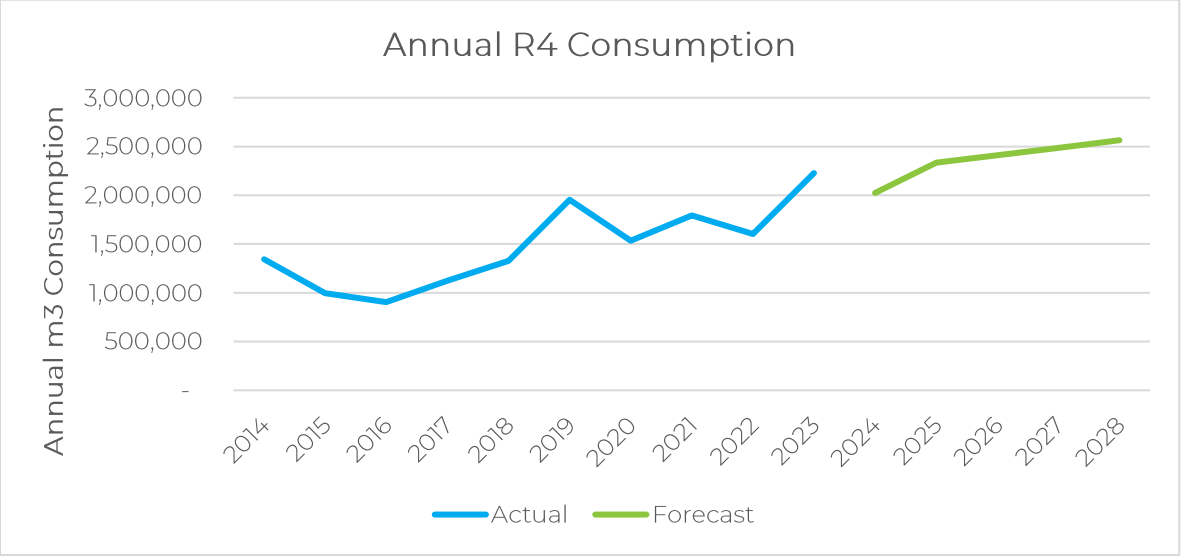
## 6.2 R4

Monthly consumption is forecast using a three-year average of consumption per customer in each month, with two adjustments. Consumption in November and December 2023 was anomalously high due to high crop yields. The crop yields, and associated grain drying load, is uncharacteristic of typical class consumption and ENGLP's expectations of the class's load in the future so November and December 2023 monthly volumes are excluded from average consumption forecast calculations. Forecast consumption in November and December of each year is calculated based on November and December 2021-2022 volumes. There is one known new customer in 2024 with forecast consumption that is materially higher than the average customer in the class. The increasing in consumption per customer resulting from this additional customer is included in the per customer forecast. The customer is forecast to attach in July 2024 so half of its incremental loads are added in 2024 and the remaining half is added in 2025.

Table 27. Actual vs Forecast R4

| R4 | | | | | | |
|---|---|---|---|---|---|---|
| Year | Customers | Consumption | | Actual | Normalized | |
| | | Per Customer | Total | | Per Customer | Total |
| 2012 | 25 | 23,036 | 575,898 | 678,458 | | |
| 2014 | 33 | 39,661 | 1,318,721 | 1,345,169 | | |
| 2015 | 34 | 29,232 | 996,339 | 994,710 | | |
| 2016 | 35 | 25,140 | 888,266 | 904,160 | | |
| 2017 | 36 | 31,238 | 1,119,348 | 1,124,029 | | |
| 2018 | 37 | 35,029 | 1,278,561 | 1,327,953 | | |
| 2019 | 37 | 50,232 | 1,841,844 | 1,953,378 | | |
| 2020 | 40 | 37,145 | 1,501,271 | 1,534,283 | | |
| 2021 | 41 | 43,427 | 1,766,026 | 1,793,580 | | |
| 2022 | 42 | 37,551 | 1,564,633 | 1,601,474 | | |
| 2023 | 43 | 50,688 | 2,200,708 | 2,227,329 | | |
| 2024 | 45 | | | | 44,732 | 2,023,938 |
| 2025 | 46 | | | | 50,012 | 2,334,616 |
| 2026 | 48 | | | | 50,012 | 2,408,833 |
| 2027 | 49 | | | | 50,012 | 2,485,410 |
| 2028 | 51 | | | | 50,012 | 2,564,421 |

Figure 12. Actual vs Normalized R4




An average of tiered consumption shares in 2017 and 2018 was used to forecast tiered consumption in future years. The R4 class has two tiers with different rates in January to March

and April to December. Tier 1 consumption is consumption up to 1,000 $m^3$ and all consumption above 1,000 $m^3$ is considered Tier 2.

Table 28. Forecasted R4 Tiered Consumption

| | R4 | | | | |
|---|---|---|---|---|---|
| | Jan 1 to Mar 31 | | Apr 1 to Dec 31 | | |
| | Tier 1 | Tier 2 | Tier 1 | Tier 2 | Total |
| 2022 | 25,093 | 5,080 | 131,438 | 1,439,863 | 1,601,474 |
| 2023 | 34,899 | 7,065 | 182,804 | 2,002,561 | 2,227,329 |
| 2024 | 31,712 | 6,420 | 166,111 | 1,819,695 | 2,023,938 |
| 2025 | 36,580 | 7,406 | 191,609 | 2,099,021 | 2,334,616 |
| 2026 | 37,743 | 7,641 | 197,700 | 2,165,749 | 2,408,833 |
| 2027 | 38,943 | 7,884 | 203,985 | 2,234,598 | 2,485,410 |
| 2028 | 40,181 | 8,135 | 210,470 | 2,305,636 | 2,564,421 |

The Geometric mean of the annual growth from 2014 to 2023 was used to forecast the growth rate from 2024 to 2028.

The following table includes the customer Actual / Forecast customer count on this basis:

Table 29. Forecasted R4 Customer Count

| Year | R4 Customers | Percent of Prior Year |
|---|---|---|
| 2014 | 33 | |
| 2015 | 34 | 102.5% |
| 2016 | 35 | 103.7% |
| 2017 | 36 | 101.4% |
| 2018 | 37 | 101.9% |
| 2019 | 37 | 100.5% |
| 2020 | 40 | 110.2% |
| 2021 | 41 | 100.6% |
| 2022 | 42 | 102.5% |
| 2023 | 43 | 104.2% |
| 2024 | 45 | 103.2% |
| 2025 | 46 | 103.2% |
| 2026 | 48 | 103.2% |
| 2027 | 49 | 103.2% |
| 2028 | 51 | 103.2% |

## 6.3 R5

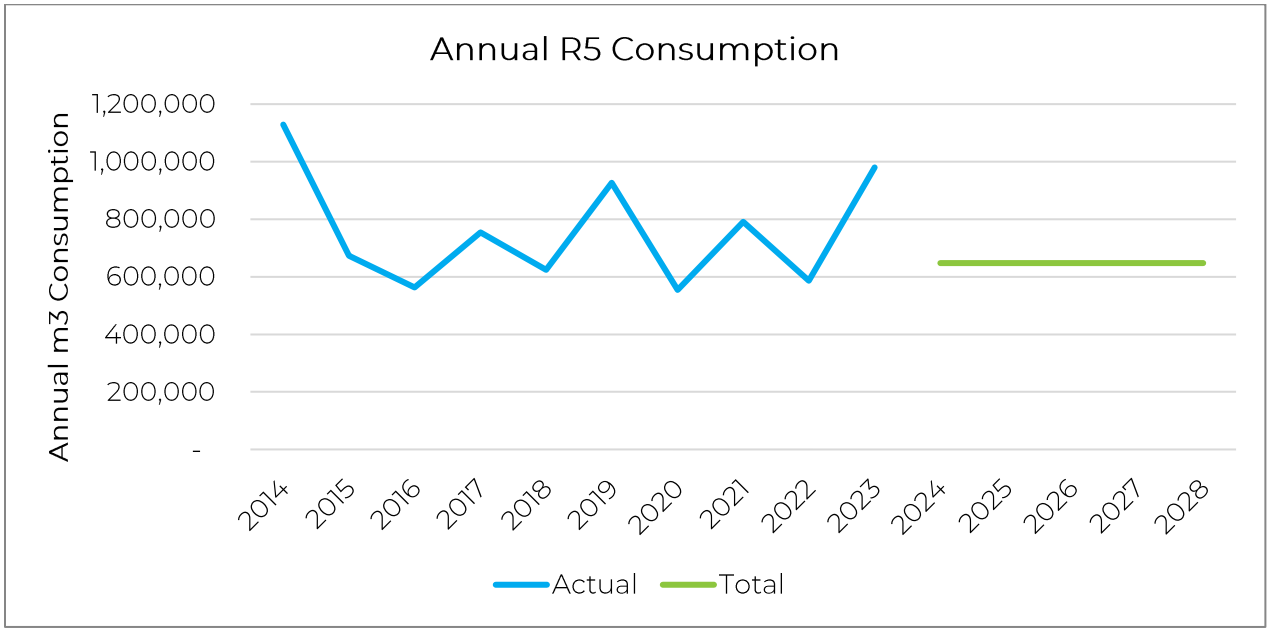
Consumption per R5 customer has fluctuated considerably since 2014. The 2024 to 2028 forecast is based on a 3-year average from 2021 to 2023, excluding anomalously high consumption in November and December 2023. As described in the forecast for the R4 rate

class, consumption in November and December 2023 was anomalously high because of high crop yields. The crop yields, and associated grain drying load, is uncharacteristic of typical class consumption and ENGLP's expectations of the class's load in the future so November and December 2023 monthly volumes are excluded from average consumption forecast calculations. Forecast consumption in November and December of each year is calculated based on November and December 2021-2022 volumes.

Table 30. Actual vs Forecast R5

| R5 | | | | | | |
|---|---|---|---|---|---|---|
| Year | Customers | Consumption | | Actual | Normalized | |
| | | Per Customer | Total | | Per Customer | Total |
| 2014 | 5 | 225,771 | 1,147,669 | 1,128,958 | | |
| 2015 | 5 | 134,524 | 672,622 | 672,622 | | |
| 2016 | 5 | 112,572 | 562,860 | 562,860 | | |
| 2017 | 5 | 186,530 | 870,472 | 753,900 | | |
| 2018 | 4 | 149,492 | 610,424 | 624,337 | | |
| 2019 | 4 | 231,801 | 927,203 | 927,203 | | |
| 2020 | 4 | 138,609 | 554,438 | 554,438 | | |
| 2021 | 4 | 197,882 | 791,530 | 791,530 | | |
| 2022 | 4 | 146,488 | 585,954 | 585,954 | | |
| 2023 | 4 | 245,040 | 980,160 | 980,160 | | |
| 2024 | 4 | | | | 161,896 | 647,586 |
| 2025 | 4 | | | | 161,896 | 647,586 |
| 2026 | 4 | | | | 161,896 | 647,586 |
| 2027 | 4 | | | | 161,896 | 647,586 |
| 2028 | 4 | | | | 161,896 | 647,586 |

Figure 13. Actual vs Normalized Large Use R5




The R5 class had 5 customers from 2014 to 2017 and had 4 customers from 2018 to 2023. The current customer count of 4 customers is forecast to continue through 2024 to 2028.

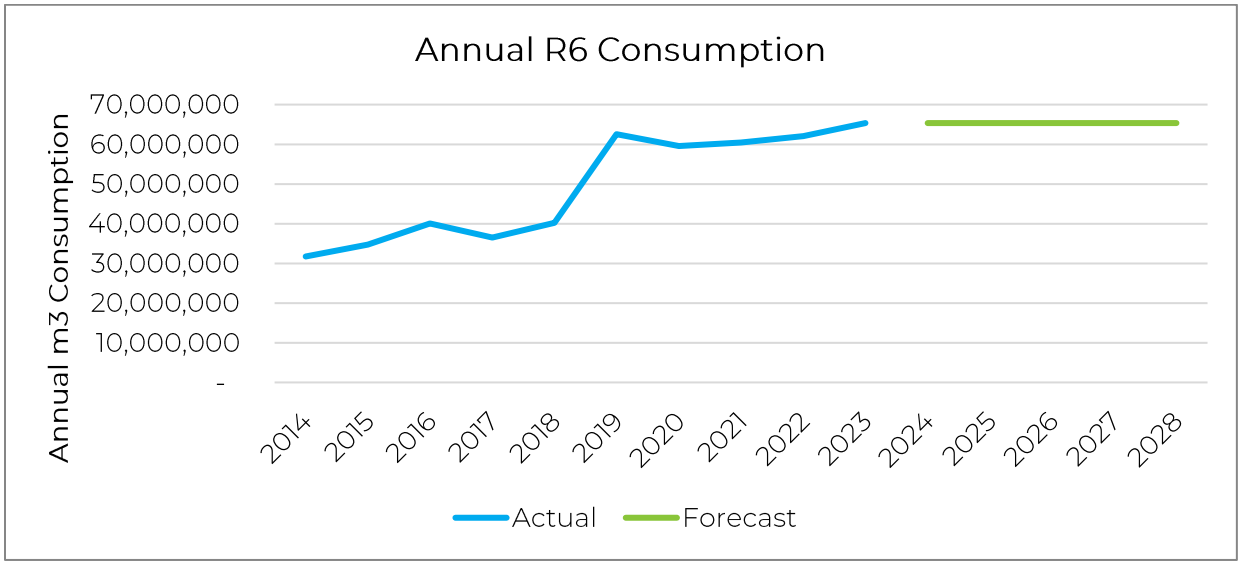
### 6.4 R6

R6 consumption increased significantly in 2019 over historic volumes. The 2024-2028 forecast uses 2023 consumption as forecast consumption in each year.

Table 31. Actual vs Forecast R6

| R6 | | | | | | |
|---|---|---|---|---|---|---|
| Year | Customers | Consumption | | Actual | Normalized | |
| | | Per Customer | Total | | Per Customer | Total |
| 2014 | 1 | 31,735,774 | 31,735,774 | 31,735,774 | | |
| 2015 | 1 | 34,710,609 | 34,710,609 | 34,710,609 | | |
| 2016 | 1 | 40,074,176 | 40,074,176 | 40,074,176 | | |
| 2017 | 1 | 36,485,139 | 36,485,139 | 36,485,139 | | |
| 2018 | 1 | 40,205,243 | 40,205,243 | 40,205,243 | | |
| 2019 | 1 | 62,525,354 | 62,525,354 | 62,525,354 | | |
| 2020 | 1 | 59,599,950 | 59,599,950 | 59,599,950 | | |
| 2021 | 1 | 60,410,748 | 60,410,748 | 60,410,748 | | |
| 2022 | 1 | 62,040,423 | 62,040,423 | 62,040,423 | | |
| 2023 | 1 | 65,345,852 | 65,345,852 | 65,345,852 | | |
| 2024 | 1 | | | | 65,345,852 | 65,345,852 |
| 2025 | 1 | | | | 65,345,852 | 65,345,852 |
| 2026 | 1 | | | | 65,345,852 | 65,345,852 |
| 2027 | 1 | | | | 65,345,852 | 65,345,852 |
| 2028 | 1 | | | | 65,345,852 | 65,345,852 |

Figure 14. Actual vs Normalized R6




The R6 class has one customer and is expected to persist with one customer through 2028.

## 7. WEATHER SENSITIVITY

This section provides alternate low forecasts for scenarios with mild winters and high forecasts for cold winters. The low forecast uses the warmest winter in the past 10 years, which was 3,327 HDD (at 18°C) in 2023. The high forecast uses the coldest winter in the past 10 years, 4,306 HDD in 2014. The derived 18°C HDD forecast temperatures from 2024 to 2028 are provided with the normal forecast for reference. Forecast and actual HDDs from 2014 to 2023 are provided in Table 13.

Table 32. Low HDD Forecast

| Low Forecast | HDD | 3,327.2 | 3,327.2 | 3,327.2 | 3,327.2 | 3,327.2 |
|---|---|---|---|---|---|---|
| | 2023 Actual | 2024 Forecast | 2025 Forecast | 2026 Forecast | 2027 Forecast | 2028 Forecast |
| R1 Residential | 17,466,767 | 18,016,051 | 18,397,611 | 18,782,792 | 19,171,595 | 19,564,019 |
| R1 Industrial | 3,013,707 | 2,408,443 | 2,515,833 | 2,626,270 | 2,739,830 | 2,856,588 |
| R1 Commercial | 5,823,050 | 5,666,677 | 5,742,852 | 5,819,497 | 5,896,612 | 5,974,197 |
| R2 Seasonal | 869,131 | 832,281 | 832,281 | 832,281 | 832,281 | 832,281 |
| R3 | 1,335,618 | 2,700,077 | 3,878,023 | 3,856,390 | 3,836,813 | 3,818,972 |
| R4 | 2,227,329 | 2,023,938 | 2,334,616 | 2,408,833 | 2,485,410 | 2,564,421 |
| R5 | 980,160 | 647,586 | 647,586 | 647,586 | 647,586 | 647,586 |
| R6 | 65,345,852 | 65,345,852 | 65,345,852 | 65,345,852 | 65,345,852 | 65,345,852 |
| Total | 97,061,614 | 97,640,905 | 99,694,653 | 100,319,501 | 100,955,979 | 101,603,916 |

Table 33. Normal HDD Forecast

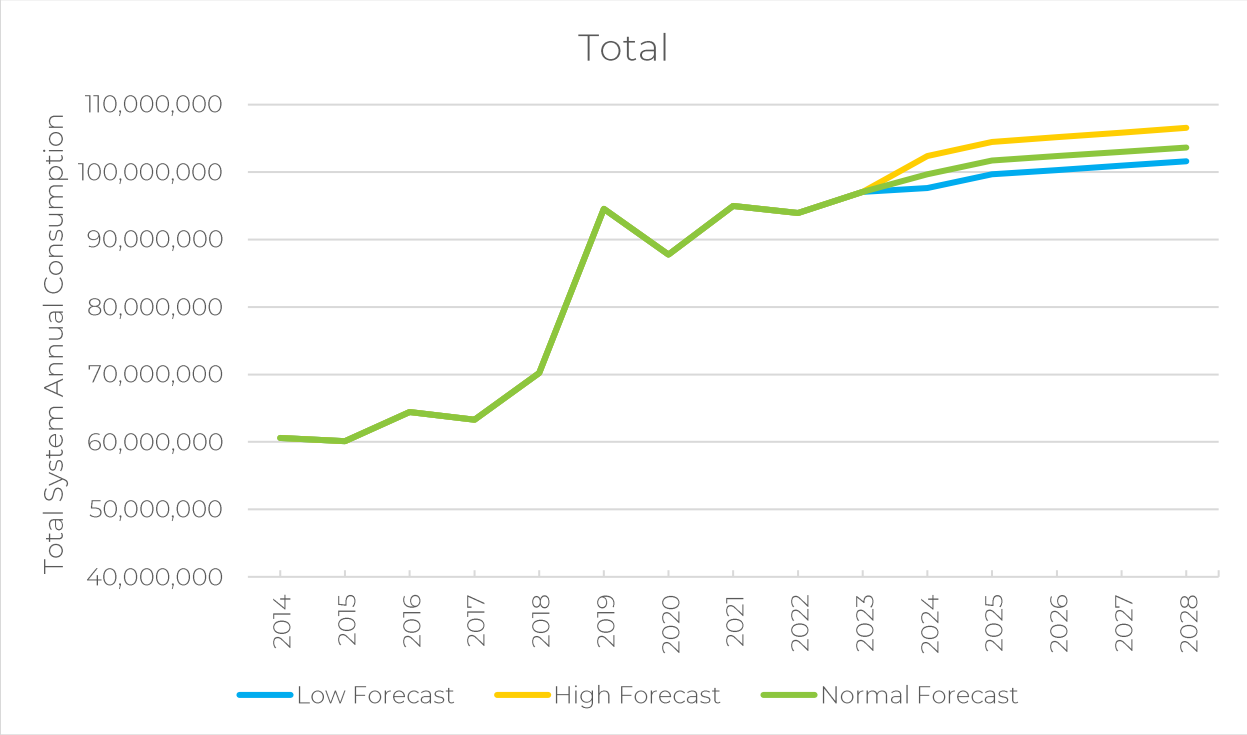
| Normal Forecast | HDD | 3,754.1 | 3,747.4 | 3,740.8 | 3,734.1 | 3,727.5 |
|---|---|---|---|---|---|---|
| | 2023 Actual | 2024 Forecast | 2025 Forecast | 2026 Forecast | 2027 Forecast | 2028 Forecast |
| R1 Residential | 17,466,767 | 19,394,143 | 19,778,416 | 20,165,775 | 20,556,215 | 20,949,733 |
| R1 Industrial | 3,013,707 | 2,579,897 | 2,686,373 | 2,795,837 | 2,908,361 | 3,024,023 |
| R1 Commercial | 5,823,050 | 6,119,454 | 6,193,869 | 6,268,637 | 6,343,760 | 6,419,235 |
| R2 Seasonal | 869,131 | 832,281 | 832,281 | 832,281 | 832,281 | 832,281 |
| R3 | 1,335,618 | 2,740,988 | 3,918,036 | 3,895,600 | 3,875,300 | 3,856,801 |
| R4 | 2,227,329 | 2,023,938 | 2,334,616 | 2,408,833 | 2,485,410 | 2,564,421 |
| R5 | 980,160 | 647,586 | 647,586 | 647,586 | 647,586 | 647,586 |
| R6 | 65,345,852 | 65,345,852 | 65,345,852 | 65,345,852 | 65,345,852 | 65,345,852 |
| Total | 97,061,614 | 99,684,138 | 101,737,027 | 102,360,400 | 102,994,765 | 103,639,931 |

Table 34. High HDD Forecast

| High Forecast | HDD | 4,306.0 | 4,306.0 | 4,306.0 | 4,306.0 | 4,306.0 |
|---|---|---|---|---|---|---|
| | 2023 Actual | 2024 Forecast | 2025 Forecast | 2026 Forecast | 2027 Forecast | 2028 Forecast |
| R1 Residential | 17,466,767 | 21,143,218 | 21,567,872 | 21,996,147 | 22,428,043 | 22,863,562 |
| R1 Industrial | 3,013,707 | 2,879,826 | 2,995,562 | 3,114,494 | 3,236,698 | 3,362,254 |
| R1 Commercial | 5,823,050 | 6,700,310 | 6,785,323 | 6,870,806 | 6,956,759 | 7,043,182 |
| R2 Seasonal | 869,131 | 832,281 | 832,281 | 832,281 | 832,281 | 832,281 |
| R3 | 1,335,618 | 2,796,600 | 3,971,969 | 3,948,022 | 3,926,352 | 3,906,603 |
| R4 | 2,227,329 | 2,023,938 | 2,334,616 | 2,408,833 | 2,485,410 | 2,564,421 |
| R5 | 980,160 | 647,586 | 647,586 | 647,586 | 647,586 | 647,586 |
| R6 | 65,345,852 | 65,345,852 | 65,345,852 | 65,345,852 | 65,345,852 | 65,345,852 |
| Total | 97,061,614 | 102,369,610 | 104,481,060 | 105,164,021 | 105,858,981 | 106,565,740 |

The graph below displays total forecast consumption for the three scenarios. The majority of consumption is not weather-sensitive so the range does not vary considerably on a total consumption basis.

Figure 15. Weather Sensitivity – Total Consumption




Consumption forecasts for only largest weather-sensitive class, R1 Residential, are displayed in the following graph. Note the y-intercept is non-zero in each graph.

Figure 16. Weather Sensitivity – R1 Residential