

Exhibit No.:
Issue: Weather Normalization;
365-day Year Adjustment;
Rate Switchers and
Customer Growth; Energy
Efficiency Annualization
Witness: Albert R. Bass, Jr.
Type of Exhibit: Direct Testimony
Sponsoring Party: Evergy Missouri West
Case No.: ER-2024-0189
Date Testimony Prepared: February 2, 2024

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO.: ER-2024-0189

DIRECT TESTIMONY

OF

ALBERT R. BASS, JR.

ON BEHALF OF

EVERGY MISSOURI WEST

**Kansas City, Missouri
February 2024**

DIRECT TESTIMONY

OF

ALBERT R. BASS, JR.

Case No. ER-2024-0189

1 **Q: Please state your name and business address.**

2 A: My name is Albert R. Bass, Jr. My business address is 1200 Main, Kansas City, Missouri
3 64105.

4 **Q: By whom and in what capacity are you employed?**

5 A: I am employed by Evergy Metro, Inc. I serve as Sr. Manager of Energy Forecasting and
6 Analytics for Evergy Missouri West, Inc. d/b/a Evergy Missouri West (“Evergy Missouri
7 West”).

8 **Q: On whose behalf are you testifying?**

9 A: I am testifying on behalf of Evergy Missouri West.

10 **Q: What are your responsibilities?**

11 A: My responsibilities include supervising three employees with responsibility for short-term
12 electric load forecasting, long-term electric load forecasting, weather normalization, and
13 various other analytical tasks.

14 **Q: Please describe your education, experience, and employment history.**

15 A: I received a Bachelor of Science in Business Administration degree with emphasis in
16 Marketing from Missouri Western State University in 1989. I earned a Master of Business
17 Administration degree from William Woods University in 1995.

18 Prior to joining Evergy, I worked for APS Technologies developing product
19 forecast models and conducting market analysis. In June 1998, I joined Evergy as a

1 Technical Professional. In this role, I conducted market analysis, developed market options
2 studies, and research. In May 2000, I assumed the responsibilities for short-term budget
3 forecasting, long-term load forecasting for the Integrated Resource Plan, monthly kilowatt-
4 hour (“kWh”) sales and peak weather normalization, and weather normalization for rate
5 case filings. As part of these duties, I assisted with the creation of the weather
6 normalization testimony filed by Evergy. In July 2013, I was promoted to Manager of
7 Market Assessment. In March 2017, I was promoted to my current position as Sr. Manager
8 of Energy Forecasting and Analytics.

9 **Q: Have you previously testified in a proceeding before the Missouri Public Service**
10 **Commission (“Commission” or “MPSC”) or before any other utility regulatory**
11 **agency?**

12 A: Yes, I have provided written testimony in multiple rate cases, both before the MPSC and
13 the Kansas Corporation Commission (“KCC”).

14 **Q: What is the purpose of your testimony?**

15 A: The purpose of my Direct Testimony is to support:

16 I. Test-year weather normalized kWh sales and peak loads for the test-year
17 period of July 2022 through June 2023. This includes the development of
18 rate class and system weather normalization models and the estimation of
19 weather impacts.

20 II. Impact of COVID-19 on test year sales.

21 III. Test year adjustment to a 365-day year.

22 IV. Rate switchers and customer growth.

23 V. Energy efficiency annualization.

1 **Q: Are you sponsoring any schedules with your testimony?**

2 A: Yes, I am sponsoring Schedules ARB 1 through ARB 5, which include weather
3 normalization, COVID-19 adjustment, annualization of sales to 365-day, rate switching,
4 customer growth, Large Power (LP) adjustment, and energy efficiency adjustment of test
5 year monthly kWh sales and peak loads. I recommend that the Commission adopt these
6 results in the current case.

7 **I. Weather Normalization**

8 **Q: Please describe the purpose of weather normalization in the ratemaking context.**

9 A: The purpose of weather normalization is to adjust test-year sales and load for abnormal
10 weather conditions that may increase or decrease a utility company's revenues,
11 corresponding fuel costs, and rate of return. Accordingly, revenues and expenses are
12 adjusted to reflect the Company's future rates in relation to the weather (i.e. "weather
13 normalization"). These adjustments are made by first adjusting kWh sales and hourly loads
14 and then using those results to adjust test-year revenues and incremental costs (i.e., fuel
15 and purchased power). Sales are weather normalized at the rate level, which accounts for
16 differences in rate specific weather and load responses. Both monthly and hourly kWh sales
17 are adjusted to reflect normal weather conditions. This is called a weather normalization
18 adjustment.

19 **Q: Are additional adjustments made to test-year kWh sales?**

20 A: Yes. The kWh sales are further adjusted for customer growth, that occurs between the test-
21 year and true-up date of June 2024 and for customers who were switched from one rate to
22 another rate during or after the test-year. These customers are known as rate switchers.

1 Then kWh sales are also adjusted for energy efficiency that occurs between the test-year
2 and two months prior to the true-up date of June 2024.

3 **Q: Please describe the test-year weather conditions relative to normal weather**

4 A: During the test year (July 2022 through June 2023) both the winter and summer months
5 were warmer than normal across Evergy’s service territory, causing lower than normal
6 heating load and higher than normal cooling load. Taken together, this results in a negative
7 weather adjustment or a reduction to test-period kWh sales. Table 1 & 2 below show the
8 weather variance as measured by heating and cooling degree days to normal.

9 *Table 1: Test-Year Weather Conditions*

Utility/Weather Station	Heating Degree Days	Cooling Degree Days
West/ Kansas City International Airport ("MCI")	12% below normal	13% above normal

10 *Table 2: Test-Year Weather Conditions by Class*

Class	Heating Degree Day	Cooling Degree Day
Res	10% below normal	16% above normal
Small GS	13% below normal	14% above normal
Large GS	15% below normal	11% above normal
Large Power	11% below normal	11% above normal

11 **Q: What are Heating Degree Days and Cooling Degree Days?**

12 A: Degree days are the difference between the daily temperature mean (high temperature plus
13 low temperature divided by two) and a specified temperature breakpoint. Heating Degree
14 Days (“HDD”) represent temperature below a specified temperature breakpoint and
15 Cooling Degree Days (“CDD”) represent daily temperature above a specified temperature
16 breakpoint. Here is an example: a day with a high temperature of 80 degrees and low
17 temperature of 66 degrees has a mean temperature of 73 degrees. If the temperature
18 breakpoint is 65 degrees, then that day has 8 CDDs because the mean temperature of 73

1 degrees for the day is 8 degrees warmer than 65 degrees. Degree days are calculated for
2 cooling and heating because load response to temperature is a non-linear relationship. This
3 non-linear relationship results in increased load due to space heating when temperatures
4 are very low, reduced load during mild temperatures when there is minimal space heating
5 or space cooling, and increased load during warm temperatures due to space cooling.

6 **Q: What temperature variable, or breakpoints, did the Company use for normal HDD
7 and CDD?**

8 A: The Company used the temperature breakpoints between 48-55 (Class dependent) degrees
9 for HDD and between 56-65 (Class dependent) degrees for CDD for all classes. Based on
10 Every customer load data, electric load is lowest when daily average temperatures are
11 between 55 degrees and 65 degrees, indicating minimal use of space heating and space
12 cooling. This is referred to as a dead zone. Once daily average temperatures rise above 65
13 degrees, electric load increases as cooling equipment is utilized. Conversely, once daily
14 average temperature falls below 50-55 degrees, electric load increase as heating equipment
15 is utilized. Table 3 shows the HDD variable, or breakpoint, and CDD variable, or
16 breakpoint, by class.

17 *Table 3: Test-Year Weather Variable and Conditions*

Class	HDD Variable	CDD Variable
Res	55	65
Small GS	50	62
Large GS	48	57
Large Power	N/A	56

18 **Q: What is the basis for normal HDD and CDD variables?**

19 A: Normal HDD and CDD are derived from National Oceanic and Atmospheric
20 Administration (NOAA) temperature data from Kansas City International Airport (KCI)

1 based on a 30-year average (1991-2020) of normal degree-days for the test-year period.
2 KCI weather station is utilized because it is the only Tier-1 weather station in the region.

3 **Q: Why does the Company use a 30-year time interval to define normal weather?**

4 A: A 30-year normal helps to eliminate any outlier years of extreme weather (unusually hot
5 summer or cold winter) from biasing the entire data set. Traditionally, public utility
6 commissions have recommended using the time period that is used by NOAA to compute
7 normal weather statistics. NOAA computes normal weather statistics using the last three
8 decades, which is currently 1991-2020. NOAA re-computes and publishes normal weather
9 statistics every ten years at the end of a decade.

10 **Q: How are class hourly loads produced?**

11 A: The Company utilizes Advanced Metering Infrastructure (“AMI”) hourly load data. AMI
12 utilizes a convenience sample load for all customers with interval-capable meters in each
13 class (99+% sample for each class during the test year), scaled up to the total number of
14 class customers.

15 **Q: What process did the Company use?**

16 A: The Company used hourly AMI data to derive the weather normalization adjustment. AMI
17 data provides finer granularity in determining monthly consumption. The Company used
18 AMI data in its previous rate case.¹

19 **Q: Does AMI data accurately represent the Company’s load to support your weather
20 normalization analysis?**

21 A: Yes. The data is accurate and representative of the Company’s load data. Load research
22 utilized only a small sample of customer loads (less than 1%) to derive the weather

¹ File Nos. ER-2022-0129/0130.

1 normalization adjustment. Whereas, the use of AMI increased our sample size to over 99%
2 for all customer classes.

3 **Q: Describe how the cost-of-service class hourly load data was extracted from AMI.**

4 A: Metered hourly kWh were extracted for each of Evergy Missouri West cost of service
5 classes for the period of July 1, 2022 through June 30, 2023. The hourly kWh's were
6 adjusted each month for any customers without interval capable meters by multiplying the
7 class hourly kWh by the following factor: $[\text{Billed Customer Count} - \text{AMI Customer Count}]$
8 \div AMI Customer Count.

9 **Q: What method was used to weather-normalize kWh sales?**

10 A: The method used to weather-normalize kWh sales was based on AMI data, which was
11 derived by measuring hourly loads for Evergy Missouri West's customers representing the
12 Residential, Small General Service ("GS"), Large GS, and Large Power (LP) classes. The
13 hourly loads were grossed up by the ratio of the total number of customers to the number
14 of customers with AMI interval meters. There are seven steps to the process:

- 15 (1) The hourly AMI loads are validated.
- 16 (2) Hourly loads for the AMI data are calibrated to the annual billed sales of
17 all customers in each class. The ratio of the billed sales divided by the sum
18 of the hourly loads were multiplied by the load in each hour.
- 19 (3) The hourly loads are then estimated for lighting tariffs, and the loads for all
20 tariffs including full requirement (sales for resale) are grossed up for losses
21 and compared to the Net System Input ("NSI"). The difference between this
22 sum and the NSI was then allocated back to the AMI data in proportion to
23 the hourly class AMI data.

- 1 (4) Regression analysis was used to model the hourly loads for each rate class.
2 These models included a piecewise linear temperature response function of
3 a two-day weighted mean temperature.
- 4 (5) The temperature response function was used to compute daily weather
5 adjustments as the difference between loads predicted with normal weather
6 and loads predicted with actual weather. Weather data for normal and actual
7 weather are from NOAA. Normal weather represents average weather
8 conditions from 1991-2020.
- 9 (6) The daily weather adjustments were split into hourly adjustments and these
10 were added to NSI to weather-normalize that series.
- 11 (7) Finally, the daily weather adjustments were split into billing months based
12 on the percentage of sales on each billing cycle and the meter reading
13 schedule for the test year period. These weather adjustments then are used
14 to create a weather factor for each class for each month, which are
15 multiplied by billed kWh sales to weather-normalize monthly class billed
16 kWh sales. The Large Power (“LP”) tariff weather factor is used to weather-
17 normalize each individual customer within that class.

18 **Q: What is the weather impact on test-year sales?**

19 A: During the test year, Evergy Missouri West saw an average of 2,138 HDD compared to the
20 normal 2,433 HDD and 2,364 CDD compared to the normal 2,102 CDD. Table 4 below
21 shows the test-year weather normalized sales for the customer classes whose usage is
22 weather sensitive. Normalized sales reflect an adjustment to actual sales impacted by
23 weather during the billing month period.

1

Table 4: Test-Year Weather Adjustments (MWh)

Class	Actual	Weather Normal	Weather Adjustment	Percent Weather Adjustment
Res	3,669,646	3,645,245	(24,401)	-0.7%
Small GS	1,334,004	1,328,928	(5,077)	-0.4%
Large GS	1,248,895	1,241,799	(7,096)	-0.6%
Large Power	1,981,879	1,972,809	(9,070)	-0.5%
Total	8,234,424	8,188,781	(45,644)	-0.6%

2

The total weather adjustment over the test year period reduced actual billed sales by 0.6%

3

(45,644 MWh). The effects of weather resulted in an upward adjustment due to a warmer

4

than normal winter and a downward adjustment for a warmer than normal summer.

5

Residential is the class most sensitive to weather, with a downward adjustment of 0.7%,

6

due to the warmer than normal summer. The other classes are less sensitive to weather and

7

have a downward adjustment of less than 0.6% due to the warmer than normal summer.

8

Schedules ARB-1 through ARB-5 show Evergy Missouri West's monthly weather

9

impacts, energy efficiency impacts, normalized peaks, normalized coincident peak, and

10

summary of all adjustments, per class.

11

II. COVID-19 Impact

12

Q: Based on your analysis, did COVID-19 impact electricity sales in the test year?

13

A: No, COVID-19 did not materially impact the test year sales. However, COVID-19 did

14

impact load, for estimating class load models, during the historical period of 2021.

15

Q: Was there an adjustment made to the historical data for the impact of COVID-19?

16

A: Yes. Google Mobility data was used as a control variable in the class load models to

17

estimate the impact of the COVID-19 related behaviors on the class load to improve model

18

fit.

1 **Q: How was the Google Mobility data used in your analysis?**

2 A: The Google Mobility reports provide daily device location estimates compared to a pre-
3 pandemic baseline for residences and workplaces, as well as other types of community
4 locations. Residence location was compared to the baseline to estimate the COVID-19
5 impact on residential electricity consumption. Workplace location was compared to the
6 pre-pandemic baseline to estimate the COVID-19 impact on non-residential electricity
7 consumption.

8 **Q: Were any adjustments made to the Google Mobility data?**

9 A: Yes. I made three key adjustments to the two Google Mobility data series:

10 (1) The data was adjusted for changes in locational behaviors due to major
11 holidays, such that holiday locational behaviors would not be attributed to
12 the pandemic.

13 (2) The data series were converted to a seven-day moving average so that
14 locational behaviors related to the day of the week would not be attributed
15 to the pandemic.

16 (3) Values prior to March 1, 2020, were changed to zero, representing no
17 difference from the baseline because the baseline difference prior to that
18 date likely was not pandemic related.

19 The Google Mobility variables used within the weather normalization models are
20 significant and explain the increase in residential usage and drop in commercial and
21 industrial historical usage during 2021.

1 **III. 365 Day Adjustment**

2 **Q: Was an adjustment made to the test year sales to normalize them to a 365-day year?**

3 A: Yes. An adjustment was made to the test year sales to normalize them for a 365-day test
4 year. The Company's sales during the test year do not directly coincide with the dates July
5 1, 2022, through June 30, 2023, due to the different billing dates for each customer's billing
6 cycle. The kWh sales billed during the test year billing months were adjusted to represent
7 a 365-day test year. The method employed by the company is the same as Staff's method,
8 whereby, test year billing days are summed across customer bill cycles. A factor is
9 computed to adjust sales upward or downward for billing days different from 365. The
10 365-day adjustment is shown in Schedule ARB-5

11 **IV. Rate Switchers and Customer Growth**

12 **Q: What adjustment did you make for rate switchers?**

13 A: Each year a small percentage of customers are switched from their current tariff to another
14 that is expected to reduce their electric bills. The Company adjusted kWh sales for the LP
15 tariff for customers that switched into or out of this tariff. There was one LP customer who
16 switched rates during the test year. The customer growth adjustment accounted for rate
17 switchers in the other tariffs. The rate switcher and customer growth adjustment are shown
18 in Schedule ARB-5

19 **Q: What adjustment did you make for customer growth?**

20 A: For each month in the test year, the weather-normalized sales per customer were multiplied
21 by the number of customers projected for the true-up date of June 2024. This adjustment
22 is made to weather-normalized sales to the Residential, Small GS, and Large GS classes.

1 When the numbers become available, the Company will revise this adjustment using the
2 actual number of customers as of the true-up date of June 2024.

3 **Q: What adjustment did you make for LP?**

4 A: Sales to LP customers are adjusted by plotting each customer's monthly kWh sales and
5 looking for any changes in sales that appear to be, or are known to be, permanent, resulting
6 in an annualization by account on an individual customer basis. If any such changes are
7 identified, sales during the test year are adjusted to reflect the change.

8 There were 192 customers in the LP class at the beginning of the test year: Two customers
9 ended service, three customers switched from Small General Service to the LP class, two
10 customers switched from Large General Service to LP, and three new customers were
11 added to the LP class. This results in 187 LP customers annualized for the test period.
12 Customers that moved in or out of the LP class with partial data during the test year are
13 annualized for the full test year. The adjustments for growth to LP sales will be revised
14 using the most current data for the true-up.

15 **V. Energy Efficiency Annualization**

16 **Q: Were any other adjustments made besides the adjustment for rate switchers and**
17 **customer growth?**

18 A: Yes, an additional adjustment is made to annualize the impact of the Company's energy
19 efficiency programs on test year sales. During the test year, Evergy Missouri West invested
20 significantly in programs designed to help customers use energy more efficiently. The
21 result of this investment in energy efficiency programs is a decline in the sales made by the
22 Company relative to the level of sales that would have been made absent the programs.
23 Because the Company programs generated customer savings during the test year and true

1 up period, the impact of those efficiency measures installed during the test year should be
2 annualized to reflect the full impact of the measures on the Company's sales.

3 **Q: Do installed efficiency measures in the test year effect the test year sales, and why is**
4 **it necessary to further adjust sales to fully reflect the impact of the programs?**

5 A: Yes, if a residential customer, who is not participating in any Company energy efficiency
6 programs, has an annual average usage of 10,500 kWh and then decides to participate in
7 the Company's programs with four months left in the test year, which now reduces their
8 actual test year usage to 10,000 kWh, the Company would only see a reduction of 500 kWh
9 in the test year. In this example on an annual basis going forward, the customer's true
10 annual average consumption is reduced by 1,500 kWh due to the energy efficiency actions
11 promoted by the Company. The reason is that the change took place during the test year,
12 but the impacts of the installed measures are only reflected in one-third of the test year
13 load. The effect can be extreme when you start looking at all customer participation rates
14 because they sign up and participate in various programs throughout the test year. Since
15 the Company has documented participation rates and measures installed in the test year,
16 the annualized energy savings of those measures and the installation dates of the measures,
17 it is appropriate to reflect the full energy impact of the measures in the test year. This is a
18 known and measurable change in the energy consumption that occurred before the end of
19 the test year, which will continue going forward and should be annualized.

20 **Q: What are the adjustments to annualize the impact of Company's energy efficiency**
21 **programs on the test year's sales?**

22 A: Upon filing a rate case, the cumulative, annualized, normalized kWh, and kilowatt ("kW")
23 savings will be included in the unit sales and sales revenues used in setting rates as of an

1 appropriate time where actual results are known prior to the true-up period, to reflect
2 energy and demand savings in the billing determinants and sales revenues used in setting
3 the revenue requirements and tariffed rates in the case.

4 **Q: Describe how you calculated the energy efficiency adjustment.**

5 A: The calculation of the energy efficiency adjustment is based on the Commission's
6 Amended Report and Order, File No. EO-2019-0132, March 11, 2020.

7 In the first step, Evergy MO West takes test period weather-normalized kWh usage
8 for each customer class by billing month and adjusts it by adding back the monthly kWh
9 energy savings by customer class incurred during the test period from all active Missouri
10 Energy Efficiency Investment Act ("MEEIA") programs, excluding Home Energy Reports
11 and Income-Eligible Home Energy Reports programs which have a one-year measure life,
12 determined using the same methodology as described in Tariff Sheets 138.4 and 138.5
13 (Evergy Missouri West) except that calendar month load shape percentages by program by
14 month will be converted to reflect billing month load shape percentages by program by
15 computing a weighted average of the current and succeeding month percentages.

16 In the second step, the adjusted test period sales from above are annualized for
17 customers and additionally adjusted further by subtracting the cumulative annual kWh
18 energy savings from the first month of the test period through the month ending where
19 actual results are available (most likely two months prior to the true-up date) by customer
20 class from all active MEEIA programs, excluding Home Energy Reports and Income-
21 Eligible Home Energy Reports, determined using the same methodology as described in
22 Tariff Sheets 138.4 and 138.5 (Evergy Missouri West) except that calendar month load
23 shape percentages by program by month are converted to reflect billing month load shape

1 percentages by program, calculated by computing a weighted average of the current and
2 succeeding month percentages.

3 In the third step, the test period kW demand for each customer class is adjusted by²
4 adding back the monthly kW demand savings by customer class incurred during the test
5 period from all active MEEIA programs, excluding Home Energy Reports, Income-
6 Eligible Home Energy Reports and Demand Response Incentive programs, determined
7 using the same methodology as described for kWh savings in Tariff Sheets 138.4 and 138.5
8 (Evergny Missouri West) and then subtracting the cumulative annual kW demand savings
9 from the first month of the test period through the month ending where actual results are
10 available (most likely two months prior to the true-up date) by customer class from all
11 active MEEIA programs, excluding Home Energy Reports, Income-Eligible Home Energy
12 Reports and Demand Response Incentive programs, determined using the same
13 methodology as described for kWh savings in Tariff Sheets 138.4 and 138.5 (Evergny
14 Missouri West).

15 In the fourth step, after the energy efficiency adjustment for kWh and kW has been
16 determined, weather-normalized kWh and kW are rebased with the energy efficiency
17 adjustment. kWh sales are rebased by subtracting the energy efficiency adjustment from
18 the weather normalized kWh and kW (demand) is determined by taking the monthly kWh
19 and spreading it across an hourly load shape to determine the monthly peak demand.

² Step 1. Begin with kW demand per class provided by Company. Step 2. Compute Monthly kW demand per program in the same manner as used for TD calculation. Step 3. kW demand before application of Energy Efficiency (EE) adjustment. Step 4. Cumulative Annual kW demand per program computed in the same manner as TD calculation as of Rebase Date. Step 5. Monthly Load Shape percentage per program converted to billing month equivalent by using a weighted average calendar month Load Shape percentage based on billing cycle information of the rate case. Step 6. Monthly EE Rebase Adjustment. Step 7. kW demand rebased for EE.

1 The impacts that are applied to the weather-normalized and customer-adjusted kWh
2 used to rebase the weather normalized sales are shown in Schedule ARB-2.

3 **Q: What are the results of these normalizations?**

4 A: Schedule ARB-1 shows the monthly adjustments for normalization on kWh sales.
5 Schedule ARB-2 shows the annualized kWh energy efficiency impact. Schedule ARB-3
6 shows weather-normalized customer annualized monthly peaks by class. Schedule ARB-
7 4 shows weather-normalized customer annualized loads by class at the time of the monthly
8 system peak load. Schedule ARB-5 shows a step through of adjustments made to test year
9 period sales.

10 **Q: How are these results used?**

11 A: Weather-normalized, customer-annualized kWh sales are used to calculate test year
12 revenues and fuel costs.

13 **Q: Does Company plan to update the data series and weather normalization through the
14 update period ending December 2023.**

15 A: Yes. The Company plans to perform the same steps as in the direct filing for the update
16 filing.

17 **Q: Does that conclude your testimony?**

18 A: Yes, it does.

WEATHER ADJUSTMENTS TO MONTHLY BILLED SALES OF EVERGY WEST

WEATHER ADJUSTMENTS TO MONTHLY MWH SALES

Weather Adjustment to Monthly Billed Sales														
Class		Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Test Year
WEST	Residential	-19,261	-14,069	-26,465	-11,835	-1,361	-4,527	19,861	44,727	6,524	-5,826	-1,291	-10,877	-24,401
	Small GS	-2,972	-2,516	-4,590	-2,619	-1,403	-892	3,835	7,432	1,262	-396	-449	-1,768	-5,077
	Large GS	-1,819	-1,605	-2,904	-2,043	-1,558	-531	1,645	3,106	730	73	-710	-1,479	-7,096
	Large Power	-908	-1,242	-2,012	-1,737	-1,296	-131	0	0	187	244	-1,029	-1,145	-9,070
	Total	-24,961	-19,432	-35,971	-18,234	-5,618	-6,082	25,341	55,265	8,703	-5,906	-3,479	-15,270	-45,644

ANNUALIZED ENERGY EFFICIENCY IMPACTS FOR EVERGY WEST

ENERGY EFFICIENCY ADJUSTMENT TO MONTHLY MWH SALES

Energy Efficiency Adjustment to Monthly Billed Sales														
State	Class	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Test Year
West	Residential	-4,249	-4,312	-3,326	-2,425	-2,034	-1,573	-1,254	-1,188	-1,203	-1,245	-1,196	-1,302	-25,307
West	Small GS	-1,278	-1,298	-1,230	-1,190	-1,163	-941	-787	-768	-760	-763	-747	-727	-11,653
West	Large GS	-2,088	-2,030	-1,791	-1,615	-1,361	-1,022	-914	-891	-880	-888	-874	-859	-15,215
West	Large Power	-843	-861	-839	-834	-834	-675	-554	-540	-540	-553	-553	-547	-8,175
	Total	-8,458	-8,502	-7,186	-6,064	-5,392	-4,212	-3,509	-3,388	-3,383	-3,449	-3,370	-3,435	-60,349

WEATHER NORMALIZED MONTHLY PEAK LOADS (MW) for EVERGY WEST

WEATHER NORMALIZED MONTHLY PEAK LOADS WITH CUSTOMER GROWTH THROUGH June 2024 (MW) & EE Impact

Class		Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Test Year
West	Residential	1,187	1,134	989	533	683	1,167	950	869	696	524	882	1,111	1,187
	Small GS	302	301	284	219	234	255	276	262	250	220	265	303	303
	Large GS	248	268	255	225	206	203	219	215	203	212	226	241	268
	Large Power	327	333	313	299	288	283	281	284	296	291	303	319	333
	EV	0.23	0.41	0.35	0.18	0.61	0.64	0.33	0.57	0.42	0.34	0.46	0.36	0.64
	SpecContr	41	39	41	38	39	39	41	40	40	40	40	43	43
	Lighting	10	10	10	10	10	10	10	10	10	10	10	10	10

Note: These numbers include losses.

WEATHER NORMALIZED MONTHLY COINCIDENT PEAK LOADS (MW) for EVERGY WEST

WEATHER NORMALIZED MONTHLY COINCIDENT PEAK LOADS WITH CUSTOMER GROWTH THROUGH June 2024 (MW) & EE Impact, COVID

Class		Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Test Year
West	Residential	1,160	1,134	959	533	676	1,167	950	865	680	486	848	1,111	1,167
	Small GS	274	258	274	168	218	246	267	254	250	183	250	278	278
	Large GS	226	225	239	185	199	183	216	212	203	183	213	223	239
	Large Power	312	310	308	287	274	246	267	270	272	274	298	302	312
	EV	0	0.03	0	0	0	0	0.04	0.02	0	0.14	0.1	0.16	0.16
	SpecContr	30	24	37	37	32	11	34	33	34	37	36	39	39
	Lighting	0	2	0	10	0	10	2	0	0	0	0	0	10
	Total Retail	2,001	1,953	1,817	1,222	1,399	1,863	1,737	1,632	1,439	1,162	1,645	1,952	2,001
	Sales for Resale	4	2	3	2	3	4	4	3	3	1	3	4	4
	Total System	2,005	1,955	1,820	1,224	1,401	1,868	1,740	1,636	1,442	1,164	1,648	1,956	2,005

Note: These numbers include losses.

EVERGY WEST TEST YEAR ADJUSTMENTS

July 2022 - June 2023											
Missouri West											
kWh by Rate Schedule	kWh As Billed	Billing Adjustments	Test Year Billed kWh	Large Customer Annualization	Weather Normalization	365 Day	Rate Switcher	Energy Efficiency	Customer Growth	Total Adjustments	MO Adjusted Jurisdictional
Res	3,669,645,644	-	3,669,645,644		(24,400,615)	31,399,194	-	(25,307,061)	75,005,246	56,696,764	3,726,342,407
Small GS	1,334,004,500	-	1,334,004,500		(5,076,813)	9,850,593	(4,826,410)	(11,652,558)	(29,509,659)	(41,214,846)	1,292,789,654
Large GS	1,248,894,768	-	1,248,894,768		(7,095,948)	5,217,018	(6,546,654)	(15,214,826)	(1,109,892)	(24,750,302)	1,224,144,467
Large Power	1,981,879,312	-	1,981,879,312	(36,395)	(9,070,175)	-	11,373,063	(8,174,788)	-	(5,908,294)	1,975,971,018
NUCOR	228,654,583	-	228,654,583		-	-	-	-	-	-	228,654,583
EV	472,728	-	472,728		-	-	-	-	-	-	472,728
TOD	108,607	-	108,607		-	-	-	-	-	-	108,607
Lighting	40,661,628	-	40,661,628		-	-	-	-	-	-	40,661,628
Total Rate Revenue	8,504,321,770	0	8,504,321,770	(36,395)	(45,643,550)	46,466,805	0	(60,349,232)	44,385,694	(15,176,678)	8,489,145,092