Part 1 - Appendix 3B
Evergy Missouri West Reports

Missouri 4 CSR 240-22.030 (7)(A)(6) Reporting Reguirements
Load Analysis and Forecasting

(7)(A)(6) For each major class specified pursuant to subsection (2)(A), the utility shall provide plots of class monthly energy and coincident peak demand at the time of summer and winter system peaks. The plots shall cover the historical database period and the forecast period of at least (20) years. The plots of coincident peak demands for the historical period shall include both actual and weather-normalized peak demands at the time of peak of summer and winter system peaks. The plots of coincident peak demand for the forecast period shall show the class coincident demands for the base-case forecast at the time of summer and winter systems peaks.

Compliance: See Plots 3B-1 through 3B-8 for base-case GMOC forecast reports designed to comply with section (7)(A)(6) reporting requirements.

Linked Files:

Work Files
WN PeakSumWin.xls
Act PeakSumWin.xls
IRP_7.1.6_West_Peaks
IRP_7.1.6_West_MWh

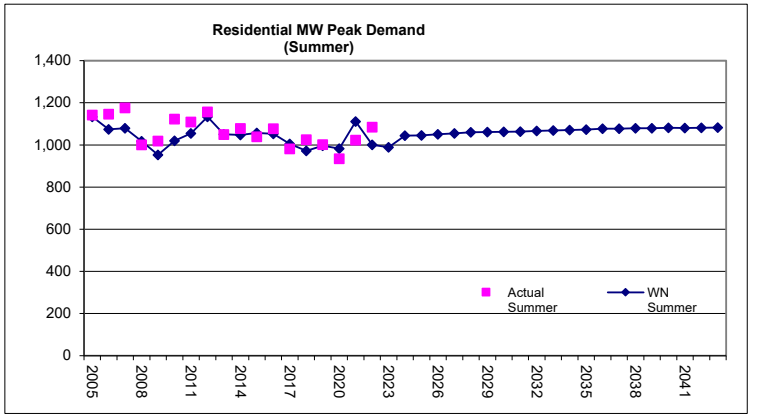
Plot 3B-1 Evergy Missouri West Resiential MW Peak Demand
(Actual vs. Weather Normalized)

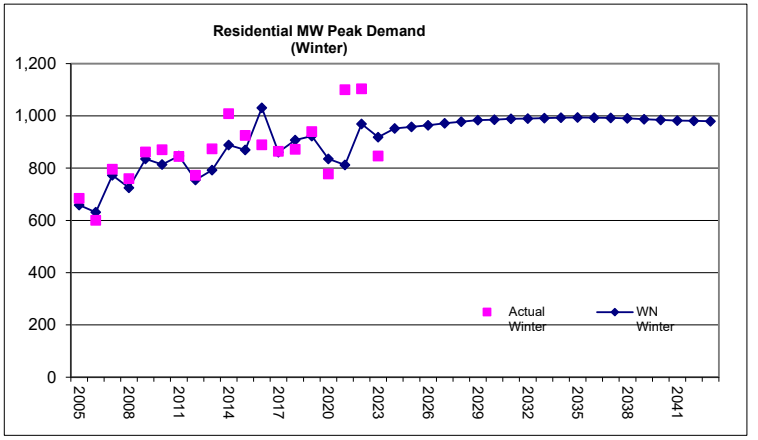
Year	Actual Summer	WN Summer	Actual Winter	WN Winter	Actual Year	WN Year
2005	1,142.4	1,134.0	684.8	658.8	1,142.4	1,134.0
2006	1,146.1	1,073.8	600.3	631.0	1,146.1	1,073.8
2007	1,175.6	1,079.2	796.3	773.1	1,175.6	1,079.2
2008	1,000.5	1,018.1	759.8	725.2	1,000.5	1,018.1
2009	1,019.1	953.0	861.8	835.3	1,019.1	953.0
2010	1,123.4	1,020.2	870.4	813.6	1,123.4	1,020.2
2011	1,109.2	1,054.6	845.0	846.9	1,109.2	1,054.6
2012	1,157.0	1,133.7	772.9	754.6	1,157.0	1,133.7
2013	1,049.8	1,050.5	874.0	792.3	1,049.8	1,050.5
2014	1,077.9	1,047.1	1,008.3	888.8	1,077.9	1,047.1
2015	1,039.3	1,057.5	925.1	870.1	1,039.3	1,057.5
2016	1,077.3	1,052.7	889.4	1,030.9	1,077.3	1,052.7
2017	981.7	1,004.7	864.1	860.8	981.7	1,004.7
2018	1,025.1	972.5	872.1	907.4	1,025.1	972.5
2019	1,001.2	996.2	939.7	922.8	1,001.2	996.2
2020	934.7	982.4	777.7	835.5	934.7	982.4
2021	1,023.0	1,111.0	1,100.7	812.3	1,023.0	1,111.0
2022	1,084.6	1,001.0	1,103.3	969.3	1,084.6	1,001.0
2023		988.8	846.1	918.9		988.8
2024		1,044.2		952.2		1,044.2
2025		1,045.7		957.9		1,045.7
2026		1,050.5		963.9		1,050.5
2027		1,055.2		971.7		1,055.2
2028		1,060.2		978.0		1,060.2
2029		1,061.2		984.0		1,061.2
2030		1,062.3		985.8		1,062.3
2031		1,063.7		988.6		1,063.7
2032		1,066.2		989.4		1,066.2
2033		1,068.5		991.1		1,068.5
2034		1,070.8		992.8		1,070.8
2035		1,073.1		993.8		1,073.1
2036		1,077.1		992.7		1,077.1
2037		1,077.6		991.9		1,077.6
2038		1,079.6		990.7		1,079.6
2039		1,079.5		987.3		1,079.5
2040		1,081.7		984.5		1,081.7
2041		1,080.5		982.2		1,080.5
2042		1,081.0		981.4		1,081.0
2043		1,082.3		979.1		1,082.3

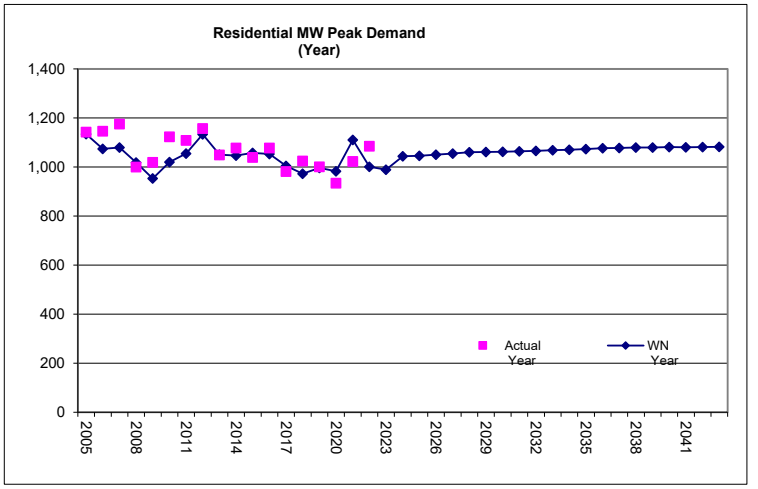
'18-'23	-100.0%	0.3%	-0.6%	0.3%	-100.0%	0.3%
'23-'28		1.4%		1.3%		1.4%
'28-'33		0.2%		0.3%		0.2%
'33-'38		0.2%		0.0%		0.2%
'38-'43		0.1%		-0.2%		0.1%

* 2023 Summer peaks are not include since they are projections.
The peak month occurred after the June 2023 cut off.
Winter values are include since the peak occurred in January 2023.

* 2016 winter peak spike is due to peak occuring on a Sunday with an average dry bulb temp of -1.
This was the coldest weekend day temperature since 1996.
Weather normalized and actual peaks occur on different days.





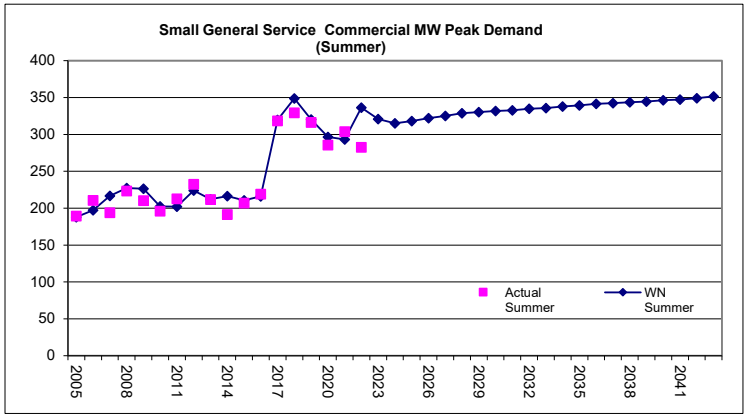


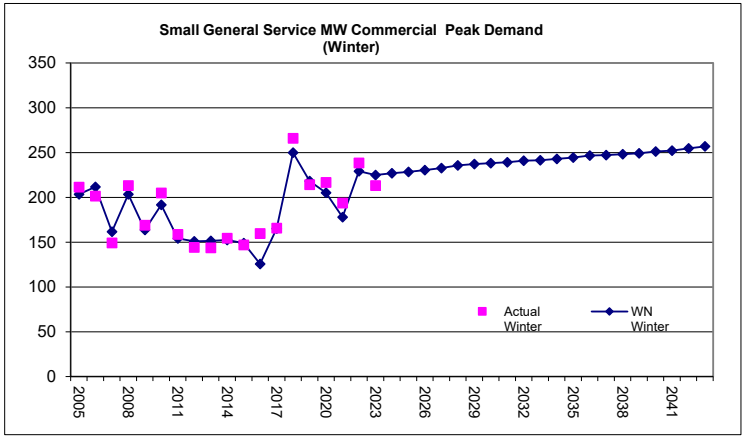
Plot 3B-2 Evergy Missouri West Small Commercial MW Peak Demand (Actual vs. Weather Normalized)

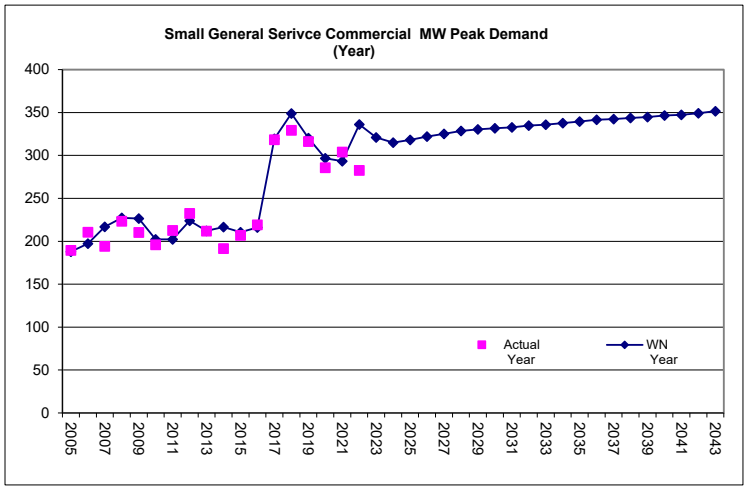
Year	Actual Summer	WN Summer	Actual Winter	WN Winter	Actual Year	WN Year
2005	189.3	187.9	211.3	203.3	189.3	187.9
2006	210.5	197.3	201.3	211.6	210.5	197.3
2007	194.0	216.8	149.2	161.7	194.0	216.8
2008	223.3	227.2	213.1	203.4	223.3	227.2
2009	210.4	226.4	168.8	163.6	210.4	226.4
2010	196.1	202.3	205.0	191.6	196.1	202.3
2011	212.6	202.2	158.6	154.2	212.6	202.2
2012	232.5	224.0	144.2	150.9	232.5	224.0
2013	211.9	212.0	143.7	151.3	211.9	212.0
2014	191.6	216.5	154.4	152.3	191.6	216.5
2015	207.0	210.6	146.9	148.9	207.0	210.6
2016	219.1	216.0	159.6	125.7	219.1	216.0
2017	318.5	319.5	165.7	165.1	318.5	319.5
2018	329.3	348.9	265.8	249.9	329.3	348.9
2019	316.2	320.3	214.1	218.2	316.2	320.3
2020	285.7	296.6	216.7	205.2	285.7	296.6
2021	304.0	293.3	193.6	177.8	304.0	293.3
2022	282.5	336.2	238.3	229.2	282.5	336.2
2023		321.0	213.2	225.0		321.0
2024		315.0		226.9		315.0
2025		318.2		228.5		318.2
2026		321.9		230.4		321.9
2027		325.1		232.7		325.1
2028		328.6		235.8		328.6
2029		330.4		237.1		330.4
2030		331.7		238.1		331.7
2031		332.7		239.3		332.7
2032		334.7		240.8		334.7
2033		335.8		241.5		335.8
2034		337.7		243.0		337.7
2035		339.4		244.3		339.4
2036		341.5		246.6		341.5
2037		342.4		247.1		342.4
2038		343.7		248.2		343.7
2039		344.6		249.2		344.6
2040		346.5		251.3		346.5
2041		347.3		252.3		347.3
2042		349.2		254.6		349.2
2043		351.6		256.8		351.6
'18-'23	-100.0%	-1.7%	-4.3%	-2.1%	-100.0%	-1.7%
'23-'28		0.5%		0.9%		0.5%
'28-'33		0.4%		0.5%		0.4%
'33-'38		0.5%		0.6%		0.5%
'38-'43		0.5%		0.7%		0.5%

* 2023 Summer peaks are not include since they are projections.
The peak month occurred after the June 2023 cut off.
Winter values are include since the peak occurred in January 2023.

** Jump is due to consolidation.





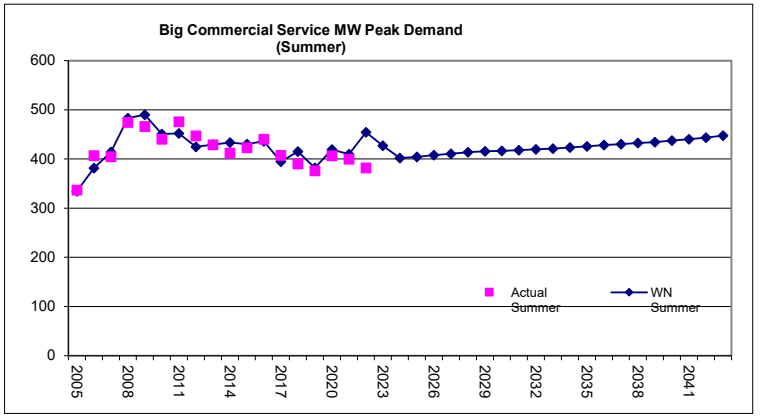


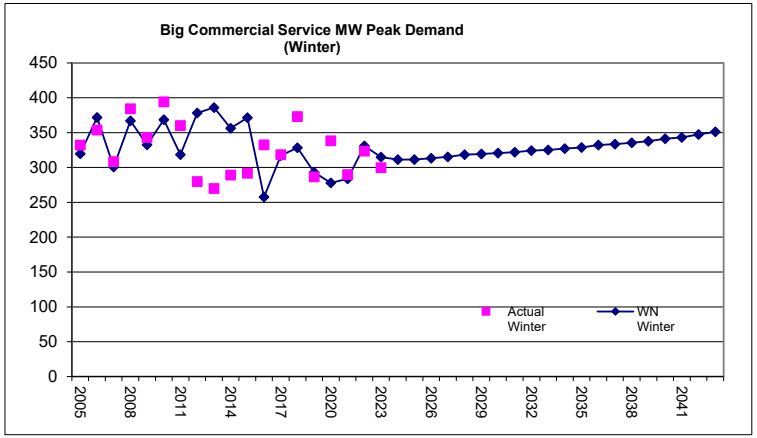
Plot 3B-3 Evergy Missouri West Big Commercial MW Peak Demand (Actual vs. Weather Normalized)

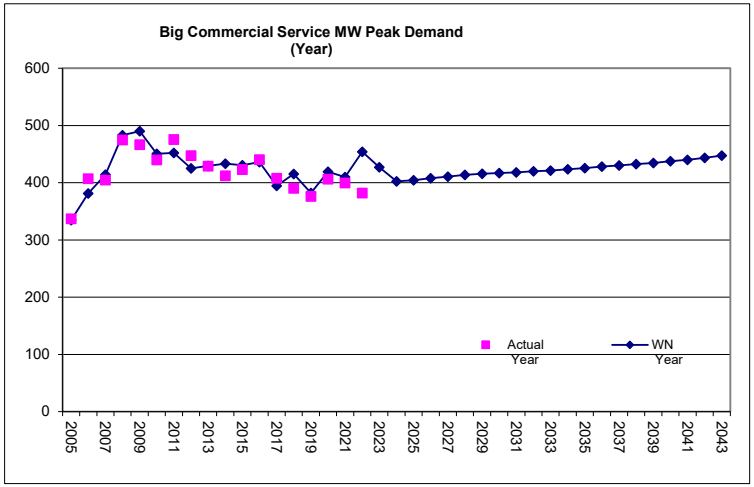
Year	Actual Summer	WN Summer	Actual Winter	WN Winter	Actual Year	WN Year
2005	337.0	334.5	332.4	319.8	337.0	334.5
2006	407.0	381.4	353.8	371.9	407.0	381.4
2007	404.6	414.1	308.4	300.7	404.6	414.1
2008	474.6	483.0	384.3	366.8	474.6	483.0
2009	466.4	490.0	343.1	332.6	466.4	490.0
2010	440.1	450.6	394.4	368.7	440.1	450.6
2011	475.6	452.2	360.2	318.6	475.6	452.2
2012	447.3	424.9	279.8	378.1	447.3	424.9
2013	429.0	429.3	269.8	386.1	429.0	429.3
2014	412.0	433.5	289.3	356.2	412.0	433.5
2015	423.0	430.4	291.6	371.4	423.0	430.4
2016	440.2	436.0	332.6	257.6	440.2	436.0
2017	407.7	394.6	318.3	317.1	407.7	394.6
2018	390.3	415.4	373.1	328.5	390.3	415.4
2019	376.2	381.9	286.7	293.1	376.2	381.9
2020	406.4	419.3	338.4	277.9	406.4	419.3
2021	399.6	409.8	289.7	283.6	399.6	409.8
2022	382.0	454.2	323.6	330.8	382.0	454.2
2023		427.1	299.7	314.9		427.1
2024		402.2		311.4		402.2
2025		404.4		311.4		404.4
2026		407.8		313.3		407.8
2027		410.7		315.2		410.7
2028		413.7		318.4		413.7
2029		415.5		319.4		415.5
2030		416.8		320.6		416.8
2031		418.0		321.9		418.0
2032		420.0		324.1		420.0
2033		421.3		325.0		421.3
2034		423.4		327.0		423.4
2035		425.6		328.9		425.6
2036		428.3		332.2		428.3
2037		430.1		333.5		430.1
2038		432.4		335.6		432.4
2039		434.4		337.7		434.4
2040		437.6		341.2		437.6
2041		440.1		343.2		440.1
2042		443.5		347.2		443.5
2043		447.4		351.3		447.4
'18-'23	-100.0%	0.6%	-4.3%	-0.8%	-100.0%	0.6%
'23-'28		-0.6%		0.2%		-0.6%
'28-'33		0.4%		0.4%		0.4%
'33-'38		0.5%		0.6%		0.5%
'38-'43		0.7%		0.9%		0.7%

* 2023 Summer peaks are not include since they are projections.
The peak month occurred after the June 2023 cut off.
Winter values are include since the peak occurred in January 2023.

** Drop is due to consolidation.



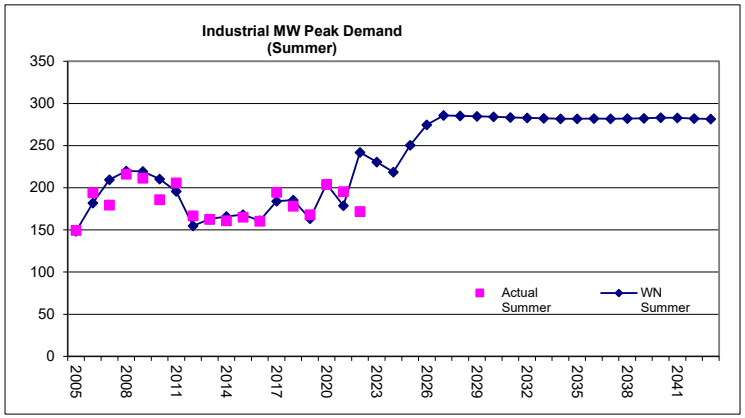


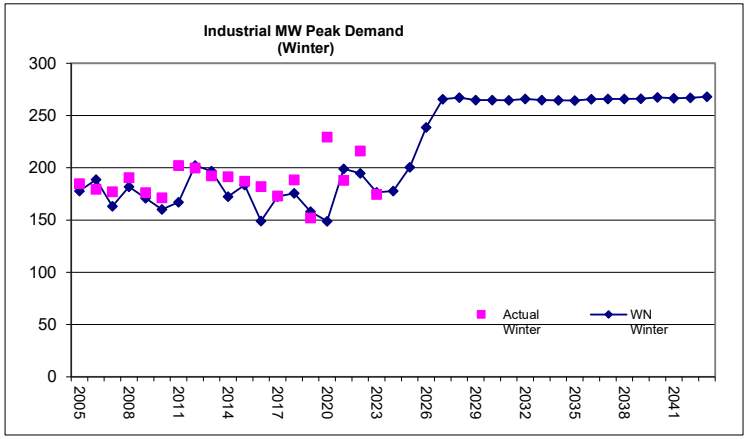


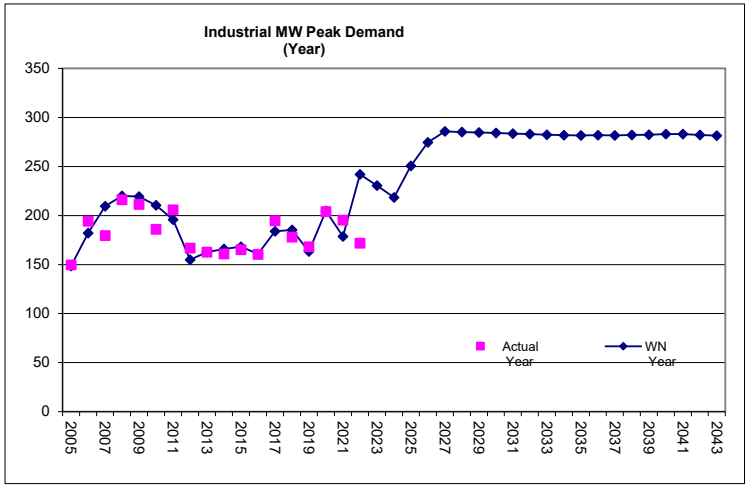
Plot 3B-4 Evergy Missouri West Industrial MW Peak Demand (Actual vs. Weather Normalized)

Year	Actual Summer	WN Summer	Actual Winter	WN Winter	Actual Year	WN Year
2005	149.6	148.5	184.8	177.8	149.6	148.5
2006	194.2	182.0	179.6	188.8	194.2	182.0
2007	179.5	209.5	177.1	163.1	179.5	209.5
2008	216.2	220.0	190.6	181.9	216.2	220.0
2009	211.4	219.4	176.4	171.0	211.4	219.4
2010	186.0	210.3	171.4	160.2	186.0	210.3
2011	205.9	195.7	202.3	167.0	205.9	195.7
2012	166.8	154.8	199.8	202.3	166.8	154.8
2013	162.6	162.7	192.5	196.9	162.6	162.7
2014	160.9	165.9	191.4	172.5	160.9	165.9
2015	165.3	168.1	187.3	183.5	165.3	168.1
2016	160.4	160.9	182.0	149.0	160.4	160.9
2017	194.6	184.0	173.1	172.4	194.6	184.0
2018	178.1	185.4	188.5	175.7	178.1	185.4
2019	168.1	163.3	152.1	158.2	168.1	163.3
2020	204.1	204.6	229.5	149.0	204.1	204.6
2021	195.4	178.8	188.2	198.9	195.4	178.8
2022	171.8	242.0	216.1	194.7	171.8	242.0
2023		230.4	174.6	176.4		230.4
2024		218.5		177.8		218.5
2025		250.5		200.5		250.5
2026		274.6		238.7		274.6
2027		285.8		265.7		285.8
2028		285.2		267.1		285.2
2029		284.7		264.8		284.7
2030		284.1		264.7		284.1
2031		283.5		264.6		283.5
2032		283.0		266.0		283.0
2033		282.3		264.7		282.3
2034		281.9		264.6		281.9
2035		281.7		264.3		281.7
2036		282.0		265.7		282.0
2037		281.8		265.8		281.8
2038		282.1		265.8		282.1
2039		282.3		266.1		282.3
2040		283.1		267.3		283.1
2041		283.0		266.6		283.0
2042		282.2		267.0		282.2
2043		281.5		268.0		281.5

'18-'23	-100.0%	4.4%	-1.5%	0.1%	-100.0%	4.4%
'23-'28		4.4%		8.7%		4.4%
'28-'33		-0.2%		-0.2%		-0.2%
'33-'38		0.0%		0.1%		0.0%
'38-'43		0.0%		0.2%		0.0%



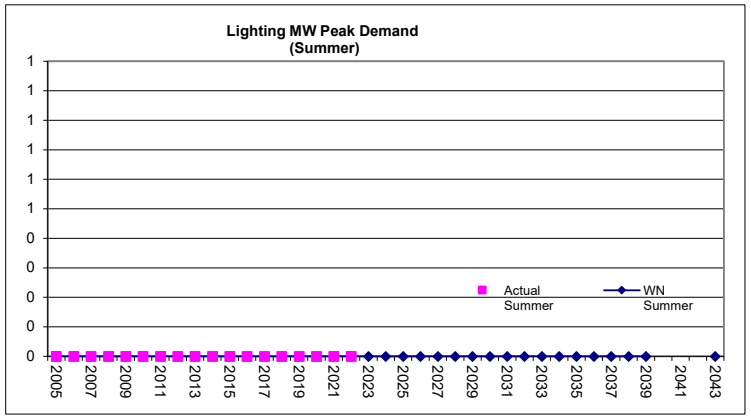


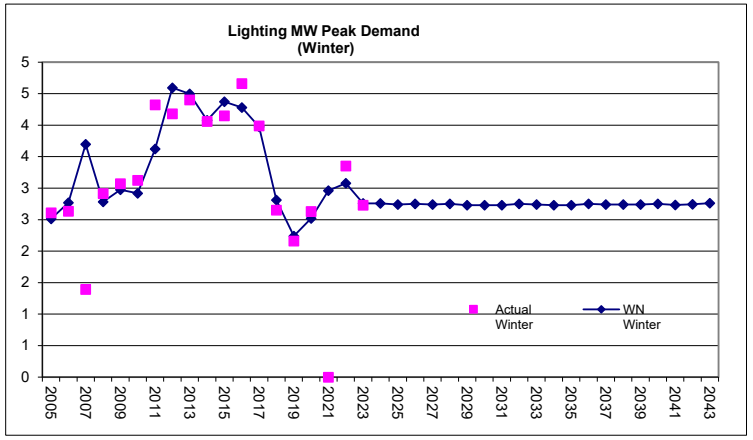


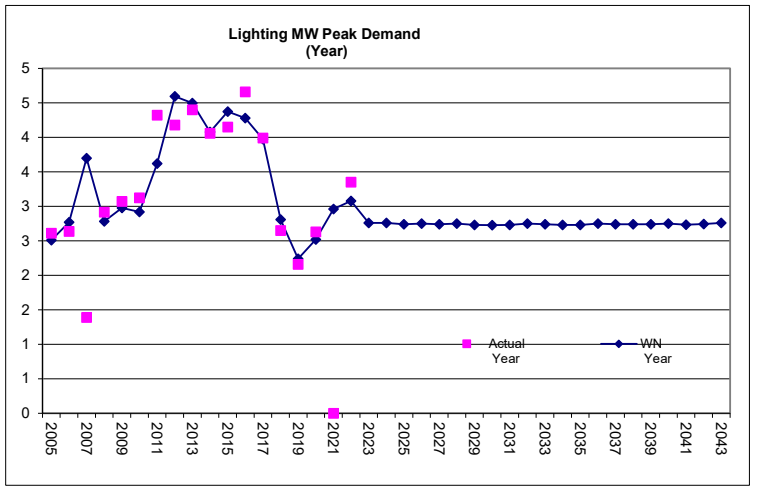
Plot 3B-5 Evergy Missouri West Lighting MW Peak Demand
(Actual vs. Weather Normalized)

Year	Actual Summer	WN Summer	Actual Winter	WN Winter	Actual Year	WN Year
2005	-	-	2.6	2.5	2.6	2.5
2006	-	-	2.6	2.8	2.6	2.8
2007	-	-	1.4	3.7	1.4	3.7
2008	-	-	2.9	2.8	2.9	2.8
2009	-	-	3.1	3.0	3.1	3.0
2010	-	-	3.1	2.9	3.1	2.9
2011	-	-	4.3	3.6	4.3	3.6
2012	-	-	4.2	4.6	4.2	4.6
2013	-	-	4.4	4.5	4.4	4.5
2014	-	-	4.1	4.1	4.1	4.1
2015	-	-	4.1	4.4	4.1	4.4
2016	-	-	4.7	4.3	4.7	4.3
2017	-	-	4.0	4.0	4.0	4.0
2018	-	-	2.7	2.8	2.7	2.8
2019	-	-	2.2	2.2	2.2	2.2
2020	-	-	2.6	2.5	2.6	2.5
2021	-	-	0.0	3.0	0.0	3.0
2022	-	-	3.4	3.1	3.4	3.1
2023		-	2.7	2.8		2.8
2024		-		2.8		2.8
2025		-		2.7		2.7
2026		-		2.7		2.7
2027		-		2.7		2.7
2028		-		2.7		2.7
2029		-		2.7		2.7
2030		-		2.7		2.7
2031		-		2.7		2.7
2032		-		2.8		2.8
2033		-		2.7		2.7
2034		-		2.7		2.7
2035		-		2.7		2.7
2036		-		2.7		2.7
2037		-		2.7		2.7
2038		-		2.7		2.7
2039		-		2.7		2.7
2040				2.8		2.8
2041				2.7		2.7
2042				2.7		2.7
2043		-		2.8		2.8

'18-'23	#DIV/0!	#DIV/0!	0.6%	-0.4%	-100.0%	-0.4%
'23-'28		#DIV/0!		-0.1%		-0.1%
'28-'33		#DIV/0!		-0.1%		-0.1%
'33-'38		#DIV/0!		0.0%		0.0%
'38-'43		#DIV/0!		0.1%		0.1%





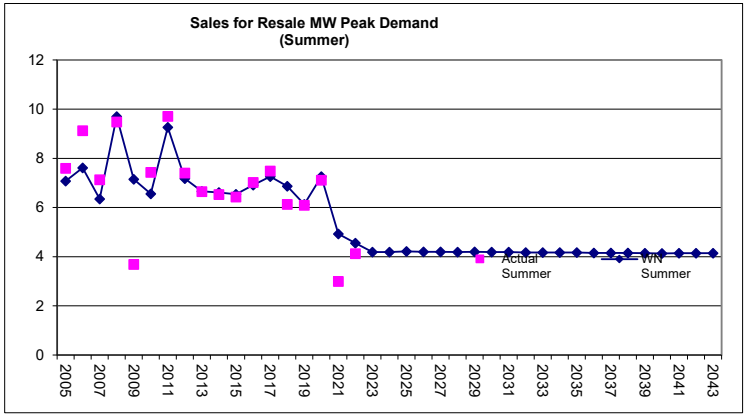


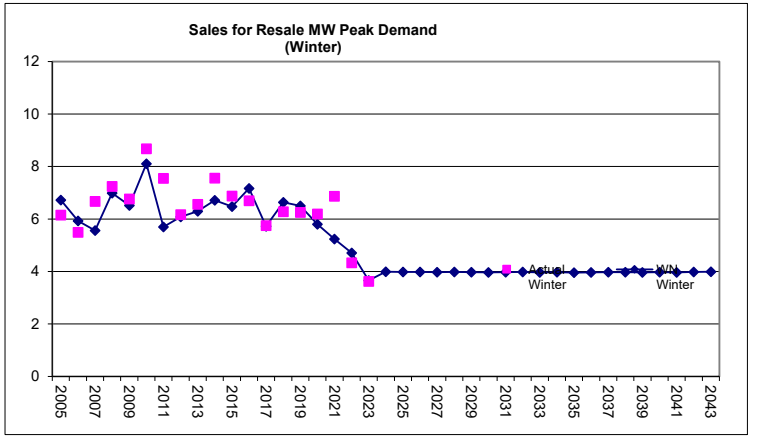
Plot 3B-6 Evergy Missouri West Sales for Resale MW Peak Demand (Actual vs. Weather Normalized)

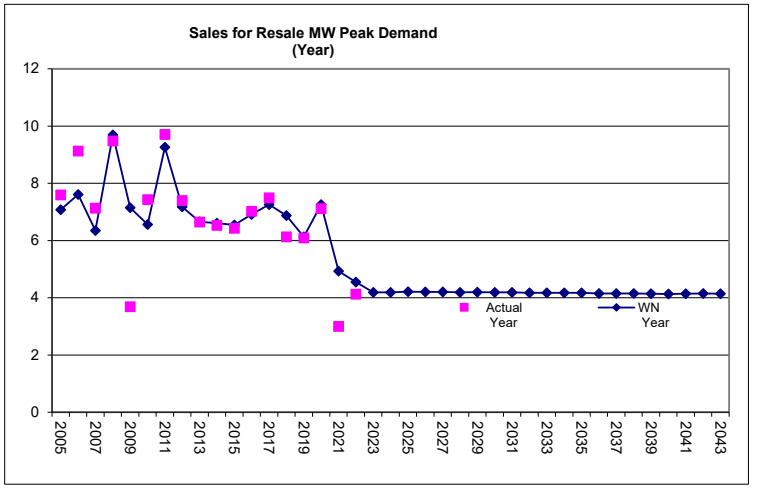
Year	Actual Summer	WN Summer	Actual Winter	WN Winter	Actual Year	WN Year
2005	7.6	7.1	6.2	6.7	7.6	7.1
2006	9.1	7.6	5.5	5.9	9.1	7.6
2007	7.1	6.3	6.7	5.6	7.1	6.3
2008	9.5	9.7	7.2	7.0	9.5	9.7
2009	3.7	7.1	6.8	6.5	3.7	7.1
2010	7.4	6.6	8.7	8.1	7.4	6.6
2011	9.7	9.3	7.6	5.7	9.7	9.3
2012	7.4	7.2	6.2	6.1	7.4	7.2
2013	6.7	6.7	6.6	6.3	6.7	6.7
2014	6.5	6.6	7.6	6.7	6.5	6.6
2015	6.4	6.5	6.9	6.5	6.4	6.5
2016	7.0	6.9	6.7	7.2	7.0	6.9
2017	7.5	7.3	5.7	5.7	7.5	7.3
2018	6.1	6.9	6.3	6.6	6.1	6.9
2019	6.1	6.1	6.2	6.5	6.1	6.1
2020	7.1	7.3	6.2	5.8	7.1	7.3
2021	3.0	4.9	6.9	5.2	3.0	4.9
2022	4.1	4.5	4.3	4.7	4.1	4.5
2023		4.2	3.6	3.7		4.2
2024		4.2		4.0		4.2
2025		4.2		4.0		4.2
2026		4.2		4.0		4.2
2027		4.2		4.0		4.2
2028		4.2		4.0		4.2
2029		4.2		4.0		4.2
2030		4.2		4.0		4.2
2031		4.2		4.0		4.2
2032		4.2		4.0		4.2
2033		4.2		4.0		4.2
2034		4.2		4.0		4.2
2035		4.2		4.0		4.2
2036		4.2		4.0		4.2
2037		4.1		4.0		4.1
2038		4.2		4.0		4.2
2039		4.1		4.0		4.1
2040		4.1		4.0		4.1
2041		4.1		4.0		4.1
2042		4.1		4.0		4.1
2043		4.1		4.0		4.1

'18-'23	-100.0%	-9.4%	-10.4%	-11.2%	-100.0%	-9.4%
'23-'28		0.0%		1.7%		0.0%
'28-'33		-0.1%		-0.1%		-0.1%
'33-'38		-0.1%		0.0%		-0.1%
'38-'43		-0.1%		0.1%		-0.1%

* 2023 Summer peaks are not include since they are projections.
The peak month occurred after the June 2023 cut off.
Winter values are include since the peak occurred in January 2023.

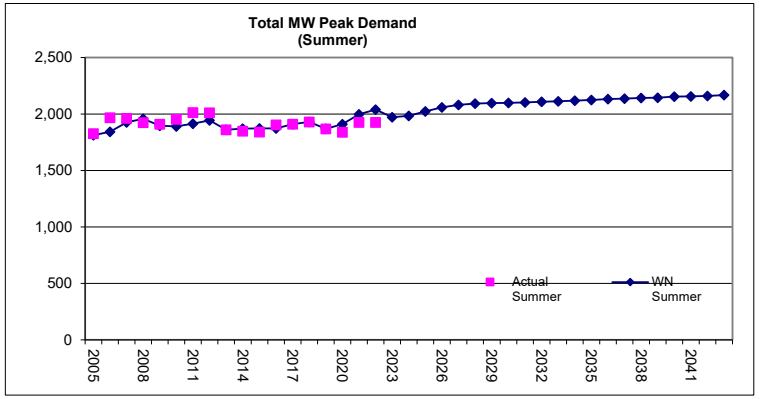


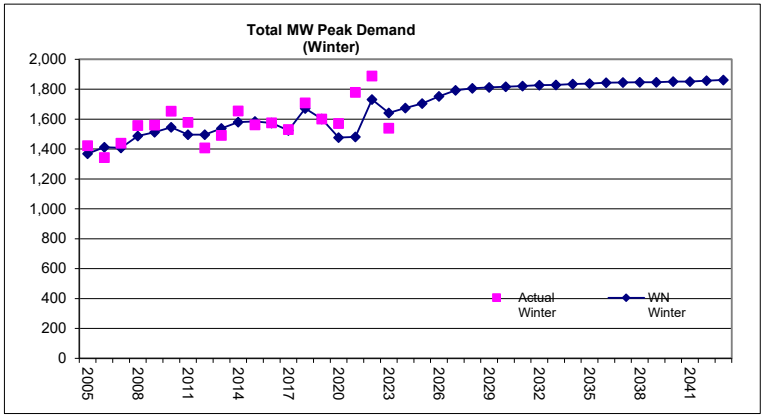


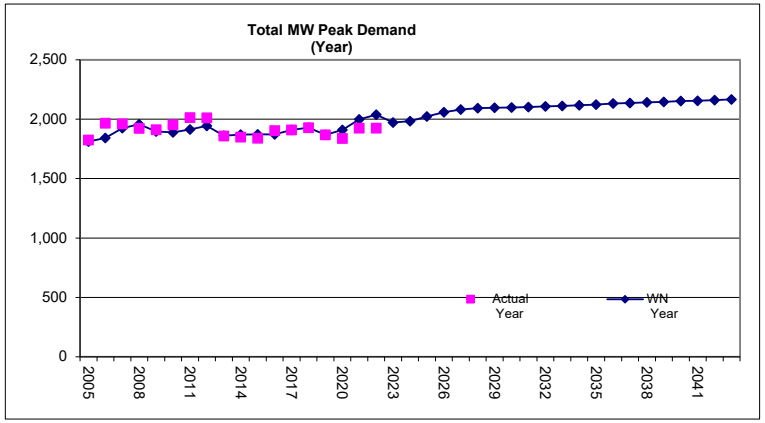


Plot 3B-7 Evergy Missouri West Total System MW Peak Demand
(Actual vs. Weather Normalized)

Year	Actual Summer	WN Summer	Actual Winter	WN Winter	Actual Year	WN Year
2005	1,826.0	1,812.0	1,422.0	1,369.0	1,826.0	1,812.0
2006	1,967.0	1,842.0	1,343.0	1,412.0	1,967.0	1,842.0
2007	1,961.0	1,926.0	1,439.0	1,408.0	1,961.0	1,926.0
2008	1,924.0	1,958.0	1,558.0	1,487.0	1,924.0	1,958.0
2009	1,911.0	1,896.0	1,560.0	1,512.0	1,911.0	1,896.0
2010	1,953.0	1,890.0	1,653.0	1,545.0	1,953.0	1,890.0
2011	2,013.0	1,914.0	1,578.0	1,496.0	2,013.0	1,914.0
2012	2,011.0	1,944.6	1,407.0	1,496.5	2,011.0	1,944.6
2013	1,860.0	1,861.2	1,491.0	1,537.4	1,860.0	1,861.2
2014	1,849.0	1,869.6	1,655.0	1,580.6	1,849.0	1,869.6
2015	1,841.0	1,873.1	1,562.0	1,584.7	1,841.0	1,873.1
2016	1,904.0	1,872.5	1,575.0	1,574.6	1,904.0	1,872.5
2017	1,910.0	1,910.0	1,531.0	1,525.0	1,910.0	1,910.0
2018	1,928.9	1,929.0	1,708.5	1,671.0	1,928.9	1,929.0
2019	1,867.9	1,867.9	1,601.0	1,601.0	1,867.9	1,867.9
2020	1,838.0	1,910.2	1,571.0	1,476.0	1,838.0	1,910.2
2021	1,925.0	1,997.8	1,779.0	1,480.8	1,925.0	1,997.8
2022	1,925.0	2,038.0	1,889.0	1,731.8	1,925.0	2,038.0
2023		1,971.5	1,540.0	1,641.6		1,971.5
2024		1,984.0		1,675.0		1,984.0
2025		2,023.0		1,705.0		2,023.0
2026		2,059.0		1,753.0		2,059.0
2027		2,081.0		1,792.0		2,081.0
2028		2,092.0		1,806.0		2,092.0
2029		2,096.0		1,812.0		2,096.0
2030		2,099.0		1,816.0		2,099.0
2031		2,102.0		1,821.0		2,102.0
2032		2,108.0		1,827.0		2,108.0
2033		2,112.0		1,829.0		2,112.0
2034		2,118.0		1,834.0		2,118.0
2035		2,124.0		1,838.0		2,124.0
2036		2,133.0		1,844.0		2,133.0
2037		2,136.0		1,845.0		2,136.0
2038		2,142.0		1,847.0		2,142.0
2039		2,145.0		1,847.0		2,145.0
2040		2,153.0		1,851.0		2,153.0
2041		2,155.0		1,851.0		2,155.0
2042		2,160.0		1,857.0		2,160.0
2043		2,167.0		1,862.0		2,167.0
'18-'23	-100.0%	0.4%	-2.1%	-0.4%	-100.0%	0.4%
'23-'28		1.2%		1.9%		1.2%
'28-'33		0.2%		0.3%		0.2%
'33-'38		0.3%		0.2%		0.3%
'38-'43		0.2%		0.2%		0.2%





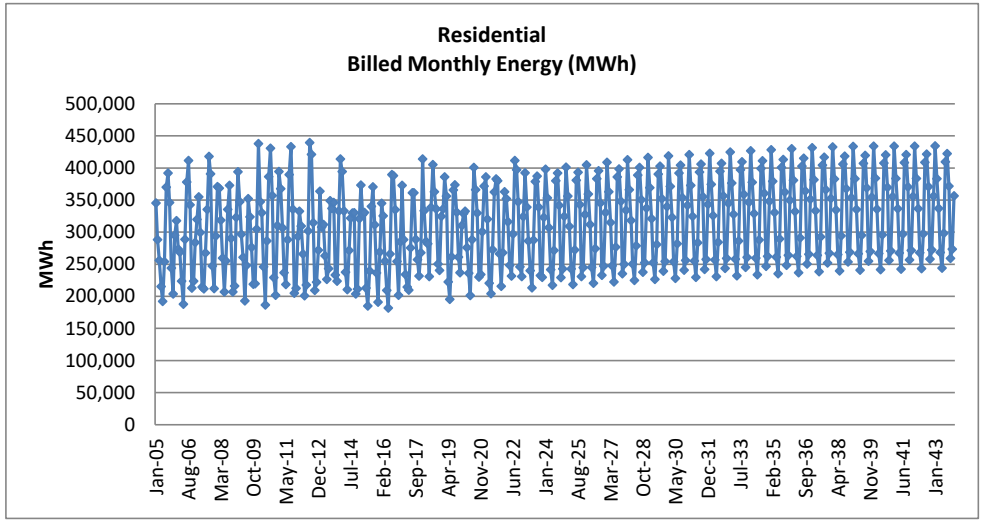


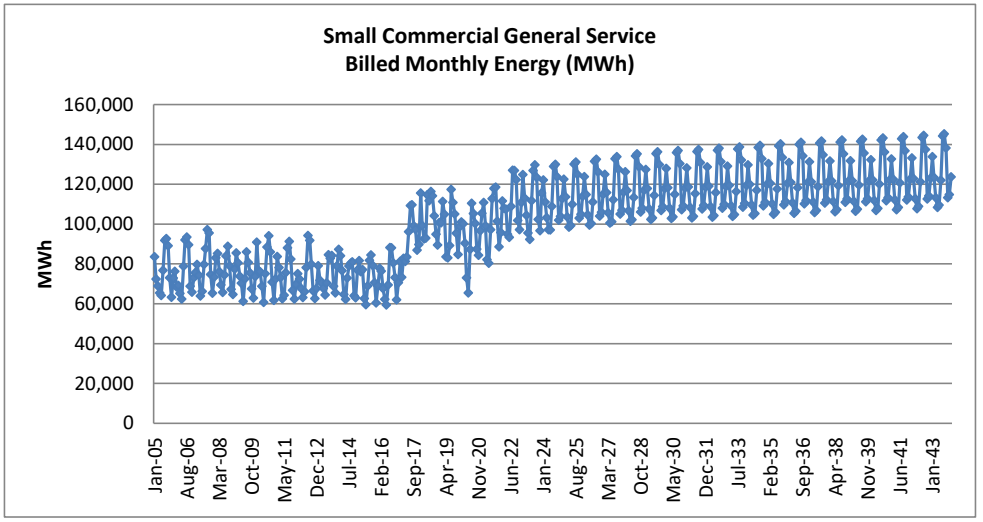
* 2023 Summer peaks are not include since they are projections.
The peak month occurred after the June 2023 cut off.
Winter values are include since the peak occurred in January 2023.

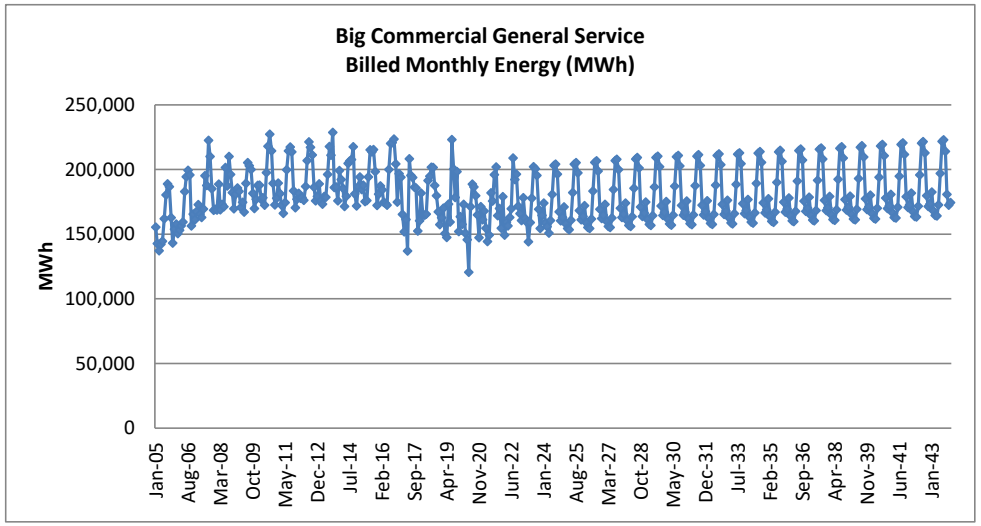
* 2022 July peak was 1,913 on 7/11/2022, which saw 16 CDD65 compared to "peak normal" CDD65 of 22.3, resulting in a large upward adjustment to get to a WN Peak. Several other days in July 2022 were much warmer than the 11th. These factors contribute to the 2022 weather normal peak being larger than the MO West historical record peak of 2,013 in 2011 AND more than 100 MW higher than any peak observed since 2012.

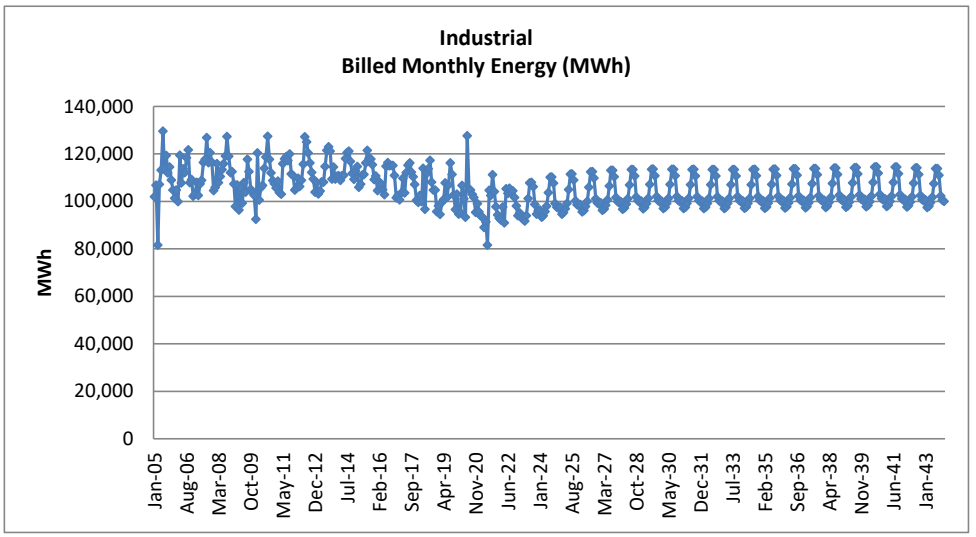
* 2021 July peak was 1,991 after adding back estimated curtailments, which saw 22 CDD65 compared to "peak normal" CDD65 of 22.3, resulting in a slight upward adjustment to get to WN Peak. MO West had not seen a peak this high in 10 years despite having several days with significantly warmer weather.

Plot 3B-8 Evergy Missouri West Energy Plots





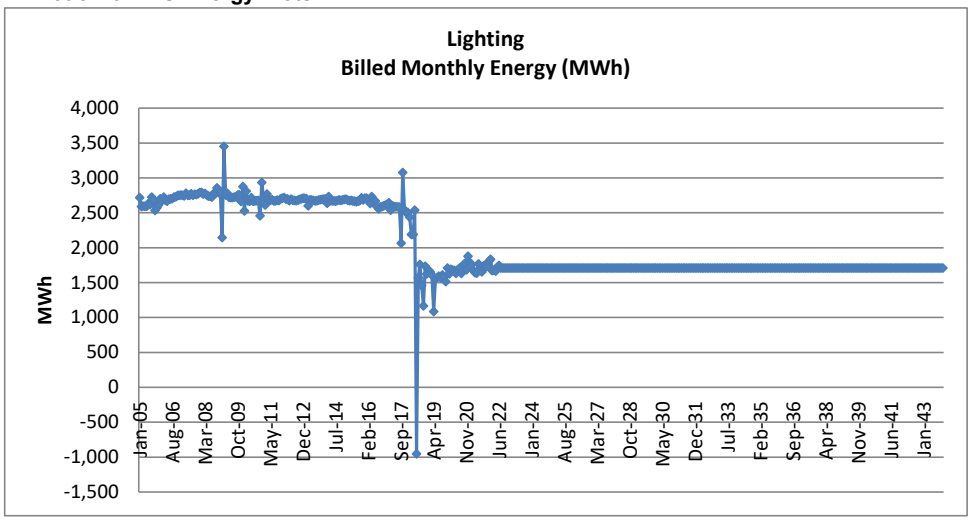


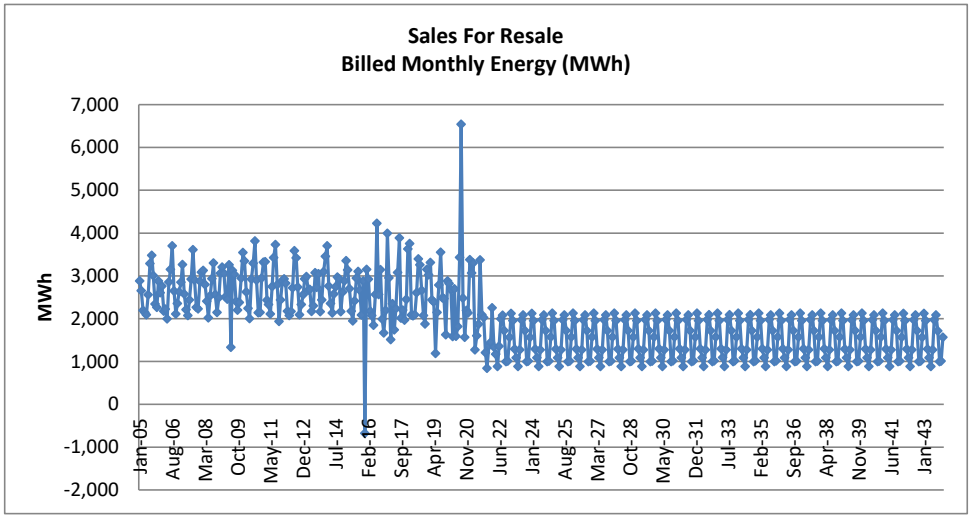


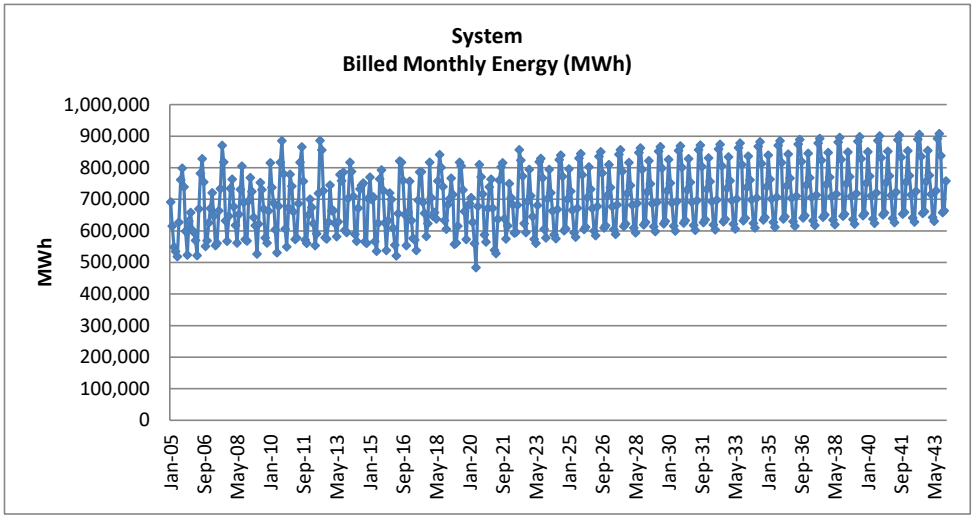
***Jump in Small commercial and decline in Big Commercial is due to consolidation and rate switchers that occuredin 2017.*

**Errors are due to rate switchers and billing errors. These outlier data points are adjusted for in the models.*

Plot 3B-9 MPS Energy Plots







**Errors are due to rate switchers and billing errors. These outlier data points are adjusted for in the models.*