

Part 1 - Appendix 3A
Kansas City Power & Light Reports

Missouri 4 CSR 240-22.030 (2) Reporting Requirements
Load Analysis and Forecasting

(2)(D) For each major class specified pursuant to subsection (2)(A), the utility shall provide, on a seasonal and annual basis for each year of the historical period --

(2)(D)(1) Its assessment of the historical enduse drivers of energy usage and peak demand, including trends in number of units and energy consumption per unit;

(3)(D)(2) Its assessment to the weather sensitivity of energy and peak demand; and

(2)(D)(3) Plots illustrating trends materially affecting electricity consumption over the historical period.

Compliance: See Plots 3A-1 through 3A-36 for base-case KCP&L forecast reports designed to comply with section (2)(D) reporting requirements.

Linked Files:**Work Files**

Folder: Datalyzers/WN Class

CombineAccrCCOSSales.NDMetrix Project

ActPeakSumWin

WNPeakSumWin

Project Files

IRP_2D_KCPL_Customer.xls

IRP_2D_KCPL_AvgUse

IRP_2D_KCPL_EndUse_AvgUse.xls

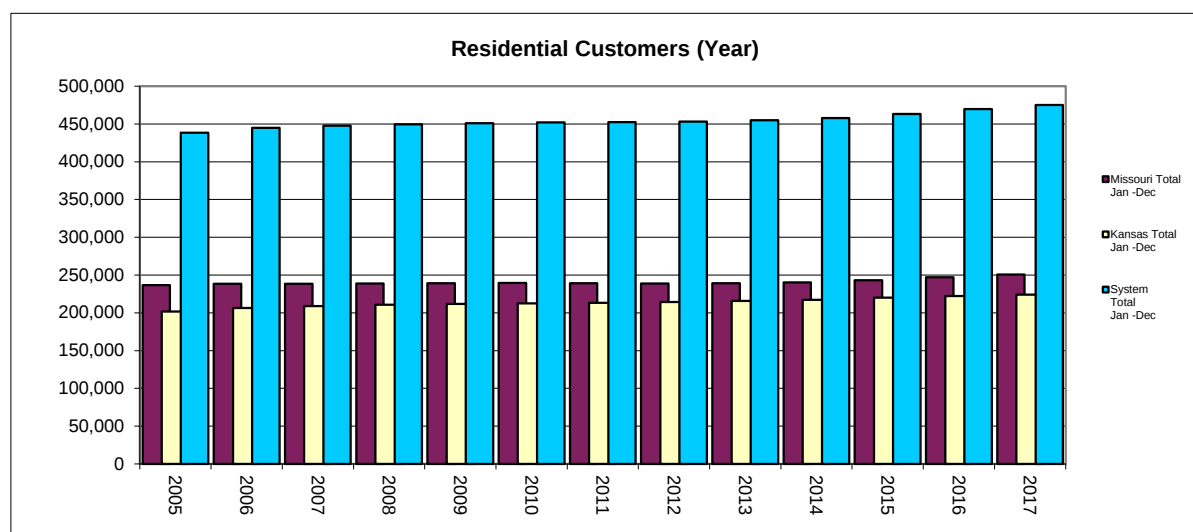
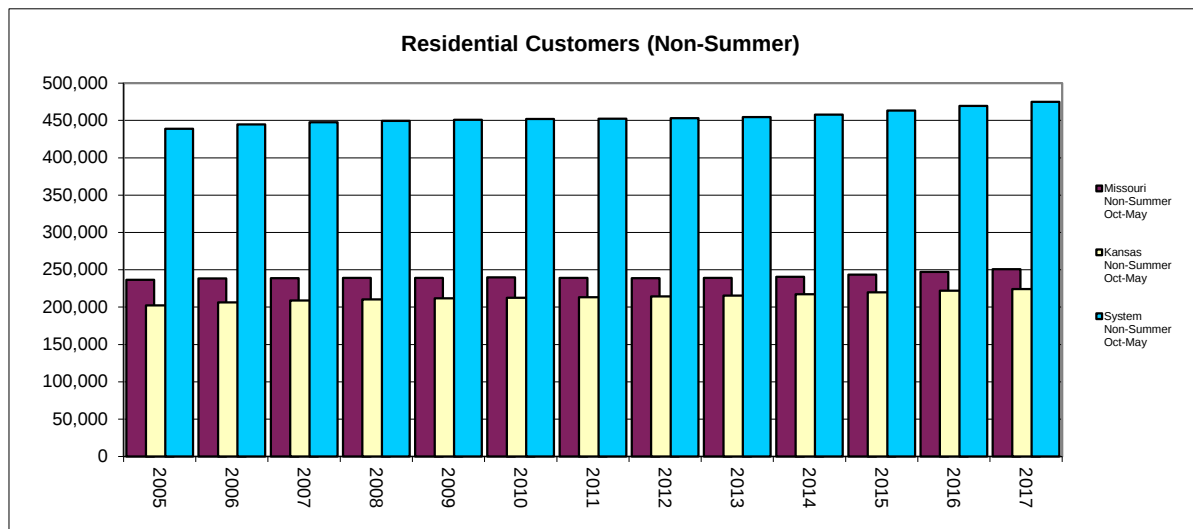
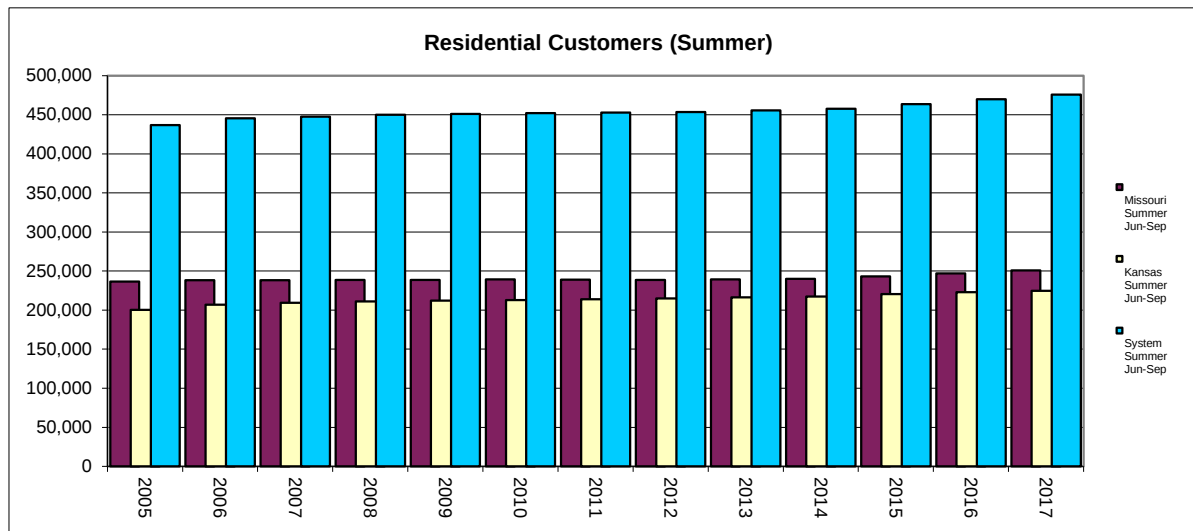
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IRP_2D_KCPL_Peak_EndUse

IRP_2D_KCPL_PeakPerCust_EndUse

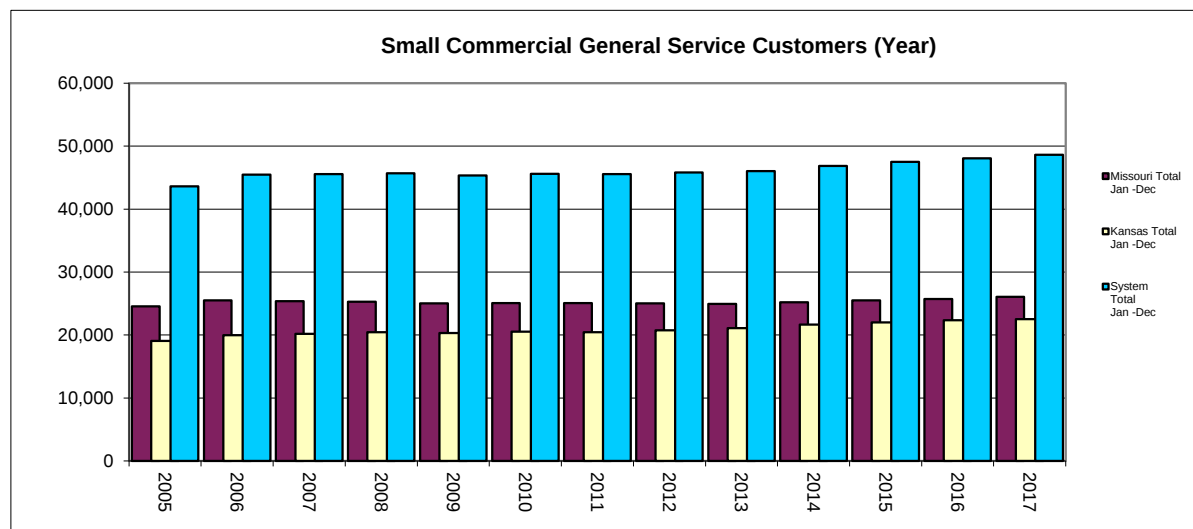
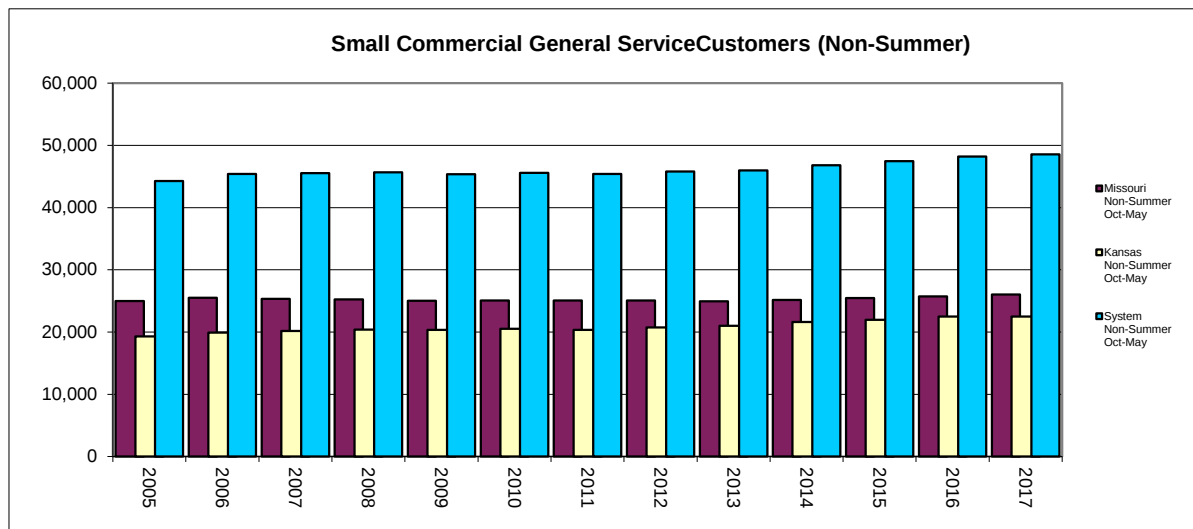
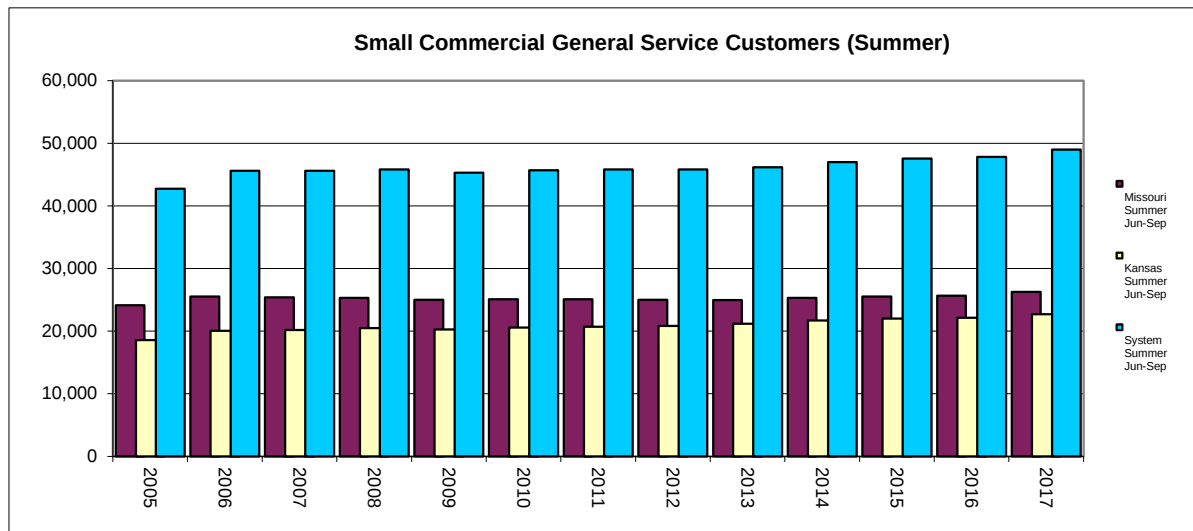
Plot 3A-1: Missouri & Kansas Residential Customers

Year	Missouri Summer Jun-Sep	Missouri Non-Summer Oct-May	Missouri Total Jan -Dec	Kansas Summer Jun-Sep	Kansas Non-Summer Oct-May	Kansas Total Jan -Dec	System Summer Jun-Sep	System Non-Summer Oct-May	System Total Jan -Dec
2005	236,455	236,691	236,612	200,464	202,291	201,682	436,919	438,982	438,294
2006	238,412	238,378	238,389	206,994	206,289	206,524	445,405	444,666	444,913
2007	238,405	238,786	238,659	209,327	208,748	208,941	447,732	447,534	447,600
2008	238,663	239,050	238,921	211,243	210,539	210,774	449,905	449,589	449,694
2009	238,695	239,258	239,070	212,253	211,737	211,909	450,948	450,996	450,980
2010	239,265	239,767	239,600	212,877	212,390	212,552	452,142	452,157	452,152
2011	238,909	239,204	239,105	213,784	213,275	213,445	452,693	452,478	452,550
2012	238,629	238,849	238,776	214,929	214,210	214,449	453,558	453,058	453,225
2013	239,146	239,089	239,108	216,428	215,477	215,794	455,573	454,566	454,902
2014	240,052	240,607	240,422	217,506	217,190	217,295	457,557	457,797	457,717
2015	243,043	243,417	243,292	220,462	219,792	220,015	463,505	463,209	463,308
2016	246,995	247,275	247,181	222,992	222,141	222,425	469,987	469,416	469,606
2017	250,930	250,851	250,864	224,781	224,113	224,224	475,711	474,964	475,089
07-'12	0.02%	0.01%	0.01%	0.53%	0.52%	0.52%	0.26%	0.25%	0.25%
17-'12	1.01%	0.99%	0.99%	0.90%	0.91%	0.90%	0.96%	0.95%	0.95%
07-'17	0.51%	0.49%	0.50%	0.71%	0.71%	0.71%	0.61%	0.60%	0.60%



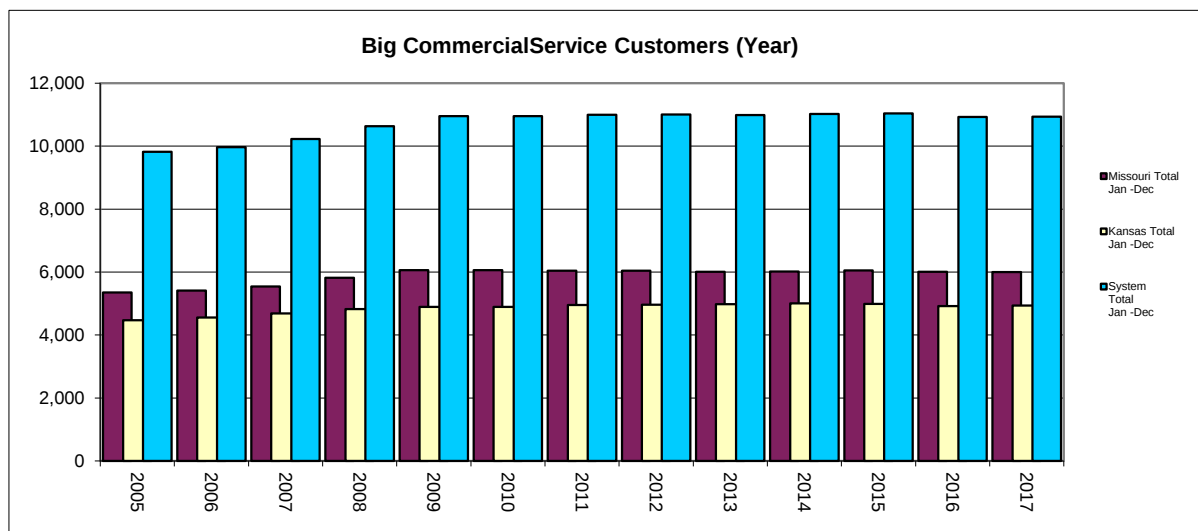
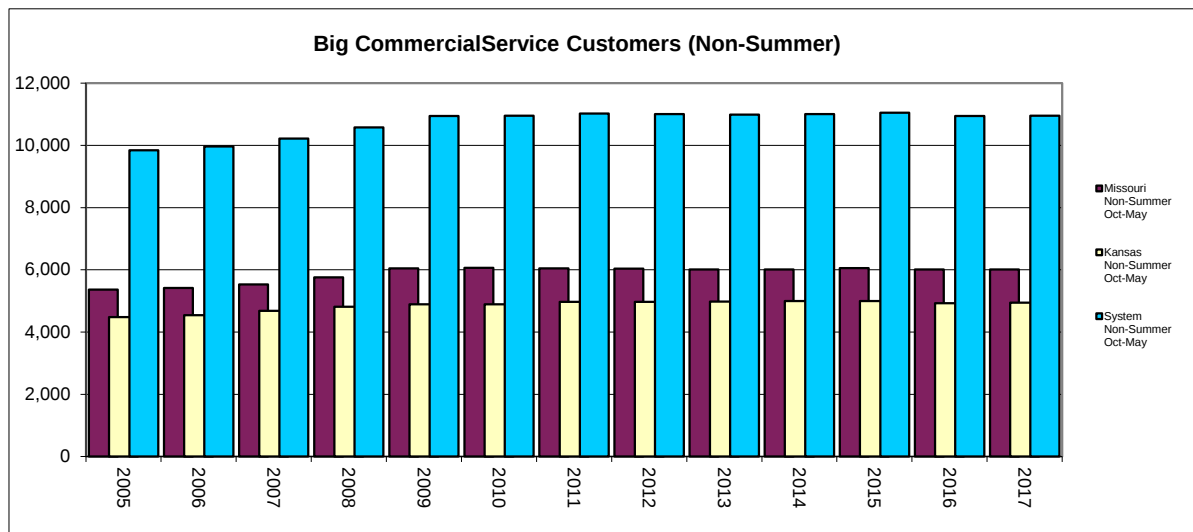
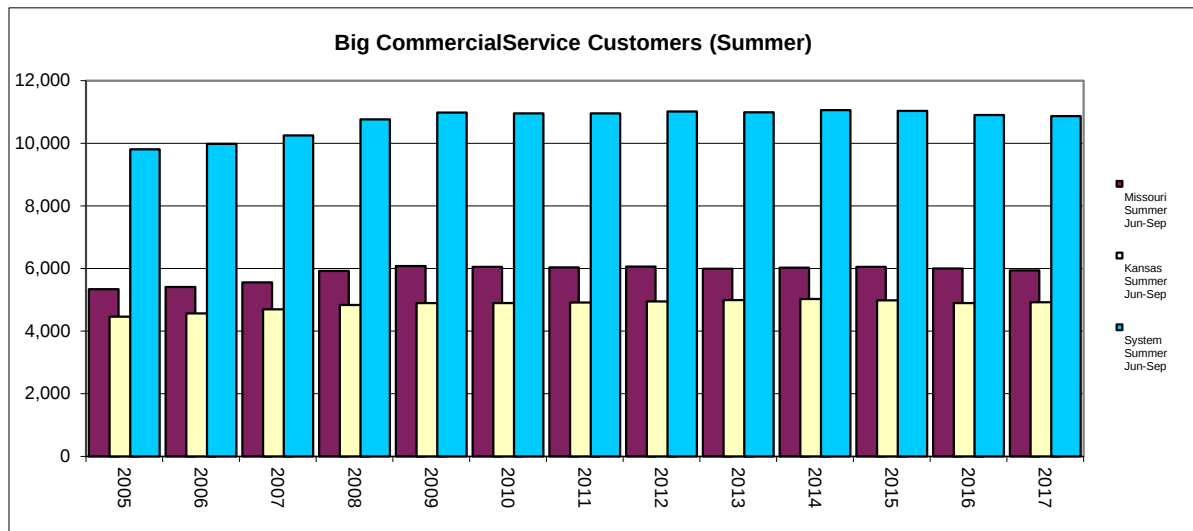
Plot 3A-2: Missouri & Kansas Small Commercial Customers

Year	Missouri Summer Jun-Sep	Missouri Non-Summer Oct-May	Missouri Total Jan -Dec	Kansas Summer Jun-Sep	Kansas Non-Summer Oct-May	Kansas Total Jan -Dec	System Summer Jun-Sep	System Non-Summer Oct-May	System Total Jan -Dec
2005	24,125	24,999	24,562	18,601	19,279	19,053	42,726	44,278	43,615
2006	25,530	25,503	25,512	20,079	19,901	19,961	45,609	45,405	45,473
2007	25,394	25,341	25,358	20,210	20,190	20,196	45,603	45,531	45,555
2008	25,314	25,255	25,275	20,501	20,408	20,439	45,815	45,663	45,714
2009	25,013	25,007	25,009	20,281	20,343	20,322	45,293	45,350	45,331
2010	25,113	25,078	25,090	20,580	20,512	20,535	45,693	45,590	45,624
2011	25,118	25,069	25,085	20,710	20,345	20,467	45,828	45,414	45,552
2012	25,007	25,055	25,039	20,839	20,731	20,767	45,846	45,786	45,806
2013	24,983	24,938	24,953	21,198	21,016	21,077	46,180	45,954	46,029
2014	25,294	25,159	25,204	21,692	21,633	21,653	46,986	46,792	46,857
2015	25,546	25,482	25,504	22,028	21,972	21,991	47,574	47,455	47,494
2016	25,683	25,738	25,720	22,124	22,488	22,366	47,807	48,226	48,086
2017	26,289	26,044	26,085	22,702	22,512	22,544	48,991	48,556	48,629
07-'12	-0.31%	-0.23%	-0.25%	0.62%	0.53%	0.56%	0.11%	0.11%	0.11%
17-'12	1.00%	0.78%	0.82%	1.73%	1.66%	1.66%	1.34%	1.18%	1.20%
07-'17	0.35%	0.27%	0.28%	1.17%	1.09%	1.11%	0.72%	0.65%	0.66%



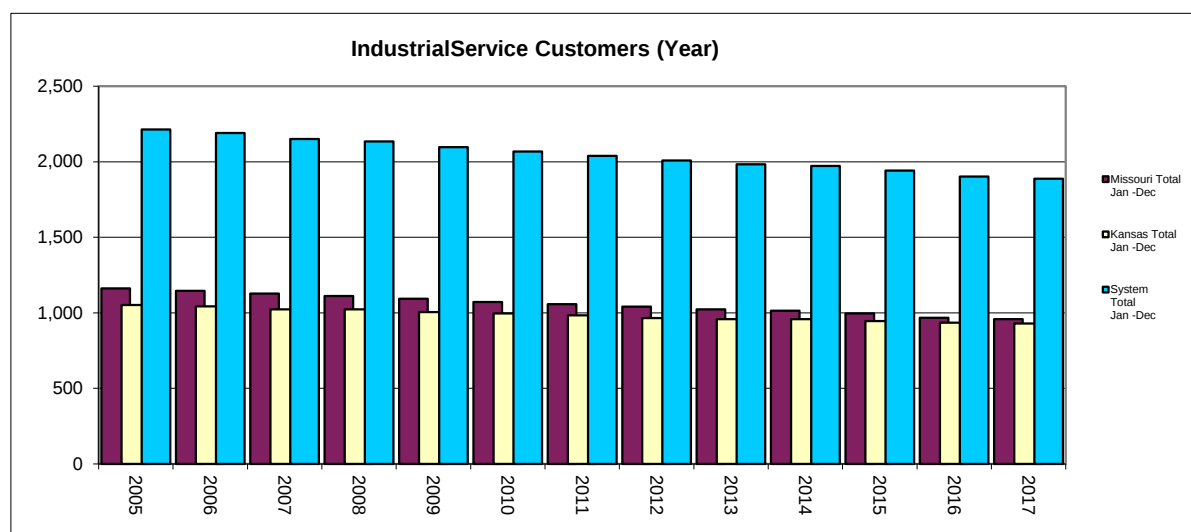
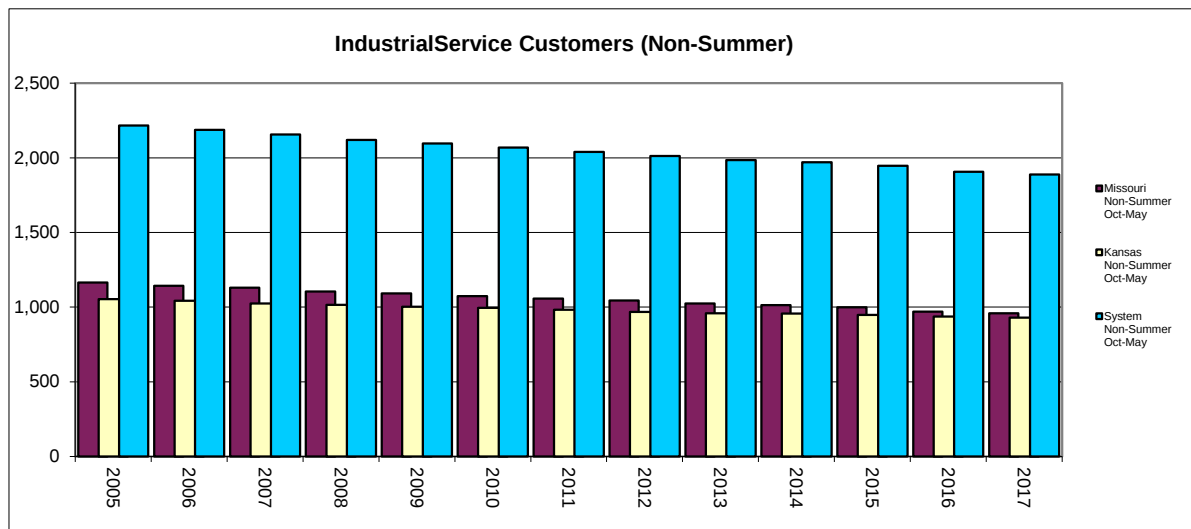
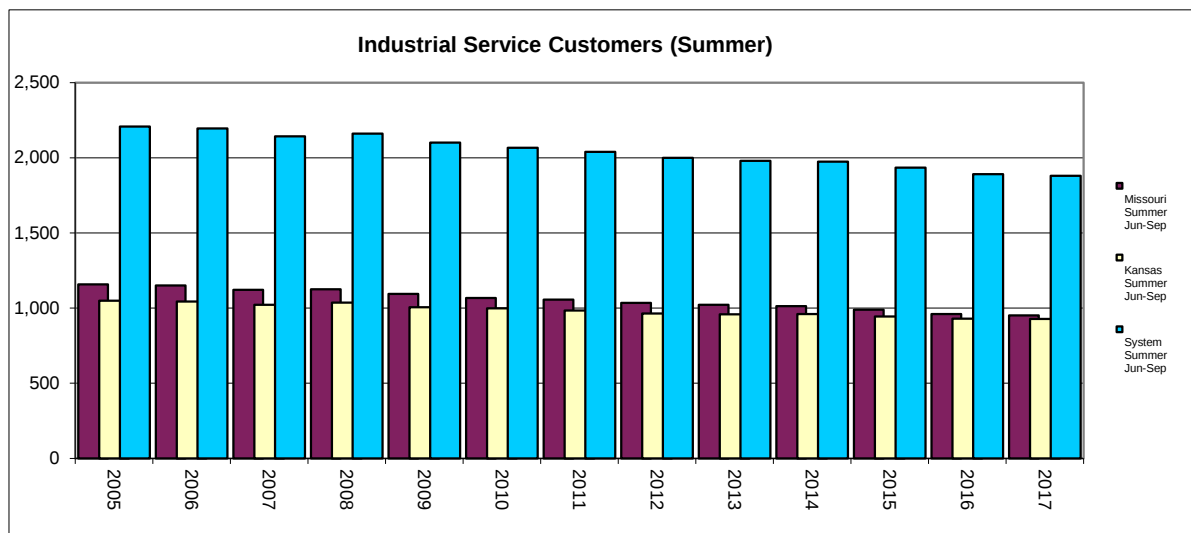
Plot 3A-3: Missouri & Kansas Big Commercial Customers

Year	Missouri Summer Jun-Sep	Missouri Non-Summer Oct-May	Missouri Total Jan -Dec	Kansas Summer Jun-Sep	Kansas Non-Summer Oct-May	Kansas Total Jan -Dec	System Summer Jun-Sep	System Non-Summer Oct-May	System Total Jan -Dec
2005	5,339	5,360	5,349	4,466	4,480	4,473	9,805	9,840	9,822
2006	5,408	5,418	5,415	4,571	4,543	4,552	9,979	9,961	9,967
2007	5,560	5,533	5,542	4,696	4,685	4,689	10,255	10,218	10,230
2008	5,924	5,761	5,815	4,838	4,814	4,822	10,762	10,575	10,637
2009	6,081	6,049	6,060	4,899	4,896	4,897	10,981	10,945	10,957
2010	6,056	6,061	6,059	4,901	4,895	4,897	10,956	10,956	10,956
2011	6,038	6,050	6,046	4,915	4,971	4,952	10,953	11,021	10,998
2012	6,062	6,035	6,044	4,953	4,968	4,963	11,015	11,004	11,007
2013	5,995	6,011	6,006	4,997	4,978	4,984	10,992	10,989	10,990
2014	6,028	6,012	6,017	5,029	4,995	5,007	11,057	11,007	11,024
2015	6,050	6,056	6,054	4,984	4,994	4,991	11,035	11,050	11,045
2016	6,000	6,013	6,009	4,900	4,930	4,920	10,900	10,943	10,929
2017	5,944	6,012	6,001	4,921	4,941	4,938	10,865	10,954	10,939
07-'12	1.74%	1.75%	1.75%	1.07%	1.18%	1.14%	1.44%	1.49%	1.47%
17-'12	-0.39%	-0.08%	-0.14%	-0.13%	-0.11%	-0.10%	-0.27%	-0.09%	-0.12%
07-'17	0.67%	0.83%	0.80%	0.47%	0.53%	0.52%	0.58%	0.70%	0.67%



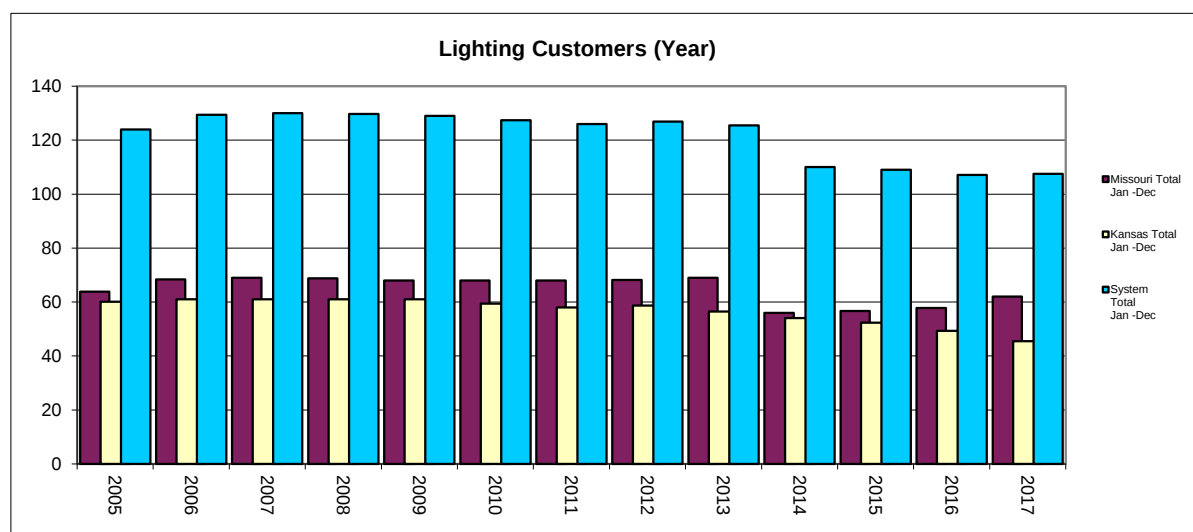
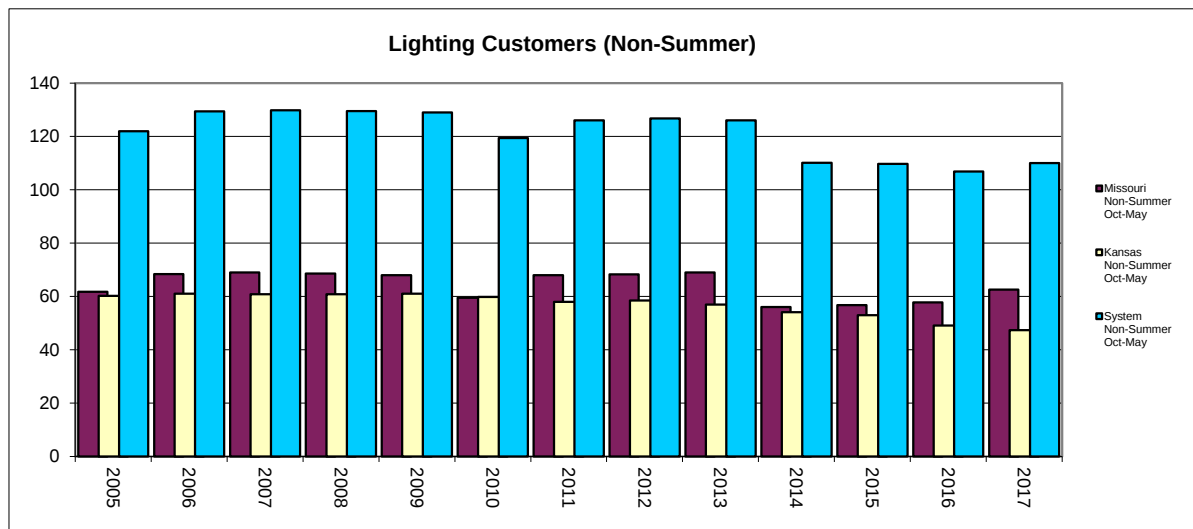
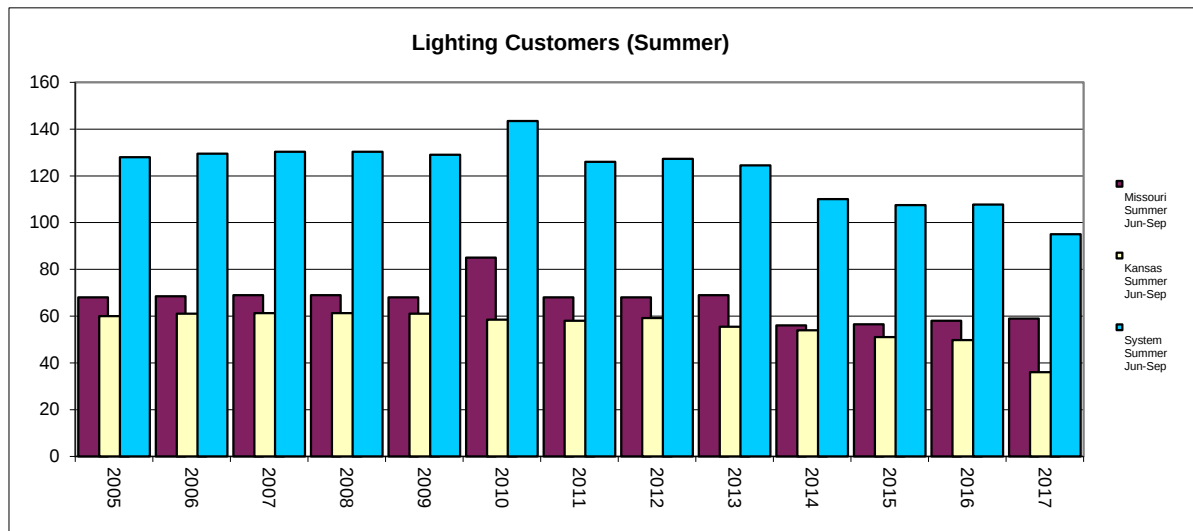
Plot 3A-4: Missouri & Kansas Industrial Customers

Year	Missouri Summer Jun-Sep	Missouri Non-Summer Oct-May	Missouri Total Jan -Dec	Kansas Summer Jun-Sep	Kansas Non-Summer Oct-May	Kansas Total Jan -Dec	System Summer Jun-Sep	System Non-Summer Oct-May	System Total Jan -Dec
2005	1,158	1,164	1,162	1,050	1,053	1,052	2,208	2,217	2,214
2006	1,151	1,144	1,146	1,045	1,043	1,043	2,196	2,186	2,190
2007	1,122	1,130	1,127	1,022	1,025	1,024	2,143	2,155	2,151
2008	1,126	1,104	1,111	1,036	1,015	1,022	2,162	2,120	2,134
2009	1,094	1,092	1,093	1,007	1,003	1,004	2,101	2,095	2,097
2010	1,067	1,074	1,072	999	995	996	2,066	2,069	2,068
2011	1,056	1,057	1,057	984	982	983	2,039	2,039	2,039
2012	1,035	1,045	1,042	964	967	966	1,999	2,013	2,008
2013	1,022	1,025	1,024	958	960	959	1,980	1,984	1,983
2014	1,014	1,014	1,014	960	957	958	1,974	1,970	1,972
2015	991	999	996	944	948	946	1,934	1,946	1,942
2016	961	970	967	930	937	934	1,891	1,907	1,901
2017	952	960	958	928	929	929	1,880	1,889	1,888
07-'12	-1.59%	-1.55%	-1.56%	-1.15%	-1.16%	-1.15%	-1.38%	-1.36%	-1.37%
17-'12	-1.66%	-1.70%	-1.66%	-0.76%	-0.80%	-0.78%	-1.22%	-1.26%	-1.23%
07-'17	-1.63%	-1.62%	-1.61%	-0.96%	-0.98%	-0.97%	-1.30%	-1.31%	-1.30%



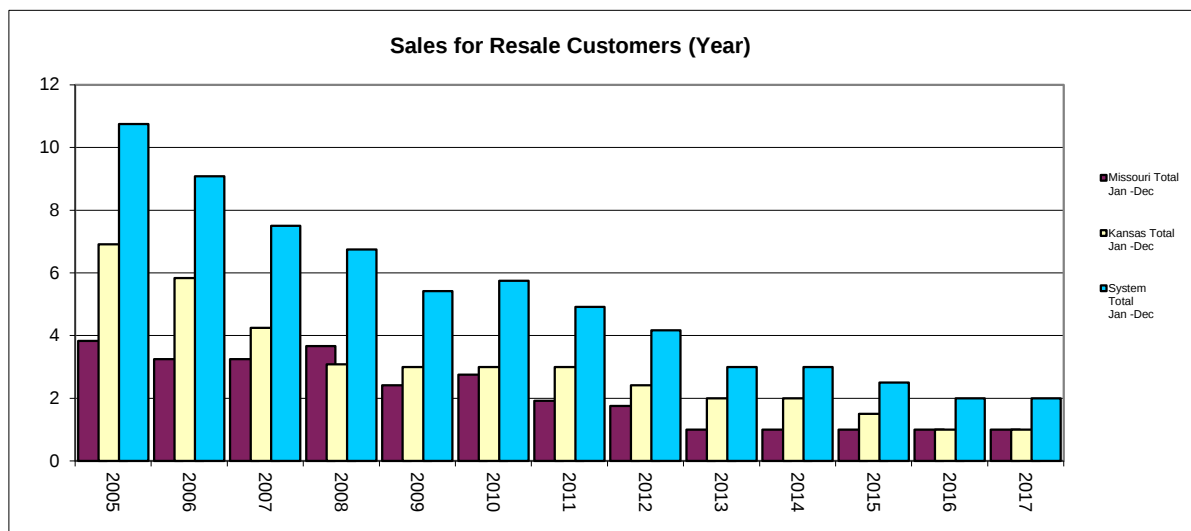
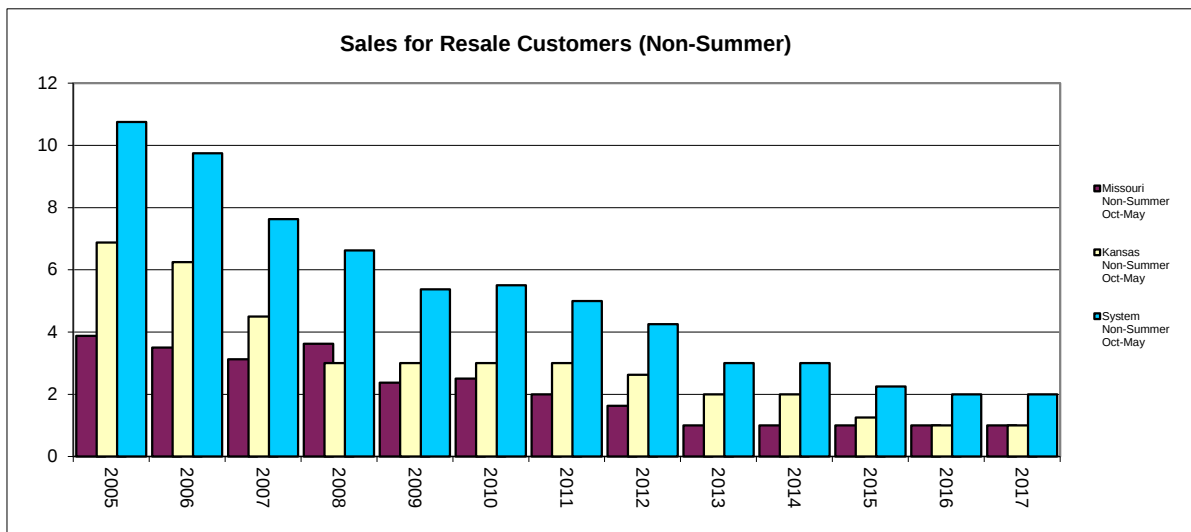
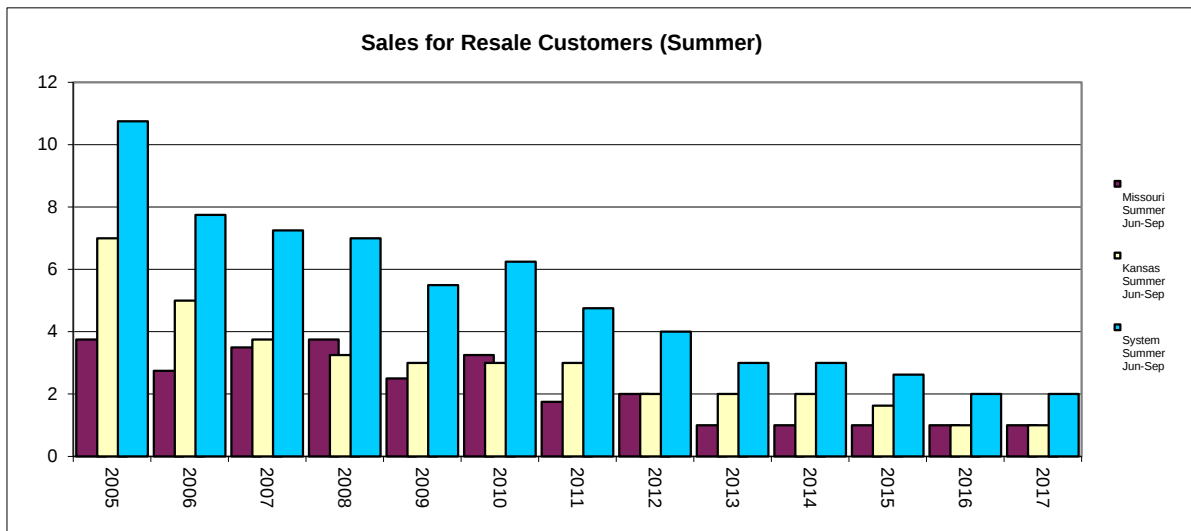
Plot 3A-5: Missouri & Kansas Lighting Customers

Year	Missouri Summer Jun-Sep	Missouri Non-Summer Oct-May	Missouri Total Jan -Dec	Kansas Summer Jun-Sep	Kansas Non-Summer Oct-May	Kansas Total Jan -Dec	System Summer Jun-Sep	System Non-Summer Oct-May	System Total Jan -Dec
2005	68	62	64	60	60	60	128	122	124
2006	69	68	68	61	61	61	130	129	129
2007	69	69	69	61	61	61	130	130	130
2008	69	69	69	61	61	61	130	130	130
2009	68	68	68	61	61	61	129	129	129
2010	85	60	68	59	60	59	144	119	127
2011	68	68	68	58	58	58	126	126	126
2012	68	68	68	59	59	59	127	127	127
2013	69	69	69	56	57	57	125	126	126
2014	56	56	56	54	54	54	110	110	110
2015	57	57	57	51	53	52	108	110	109
2016	58	58	58	50	49	49	108	107	107
2017	59	63	62	36	47	46	95	110	108
07-'12	-0.29%	-0.22%	-0.24%	-0.66%	-0.79%	-0.75%	-0.46%	-0.49%	-0.48%
17-'12	-2.80%	-1.71%	-1.88%	-9.48%	-4.12%	-4.98%	-5.68%	-2.79%	-3.27%
07-'17	-1.55%	-0.97%	-1.06%	-5.18%	-2.47%	-2.89%	-3.11%	-1.65%	-1.88%



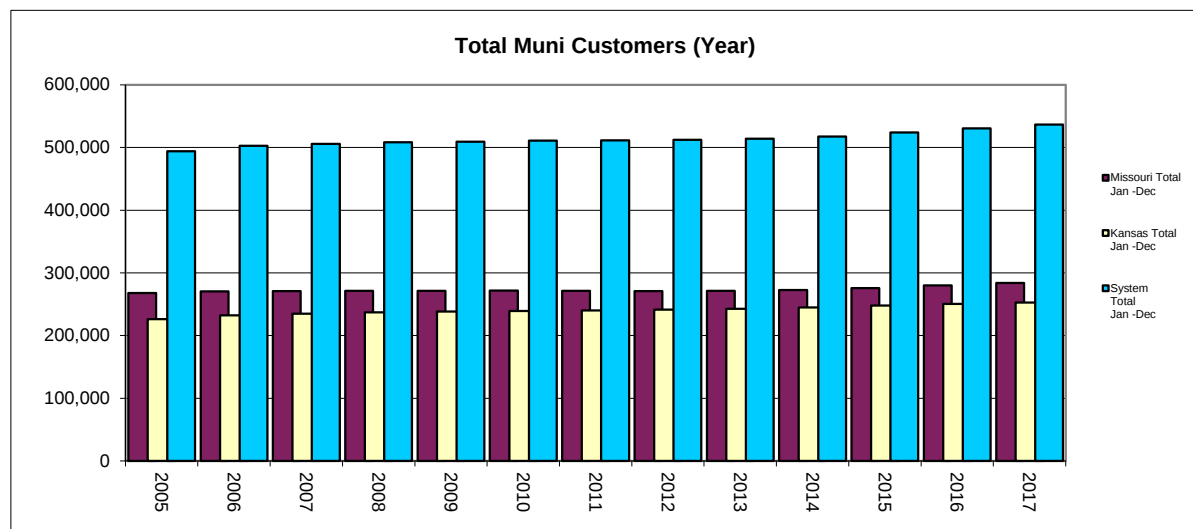
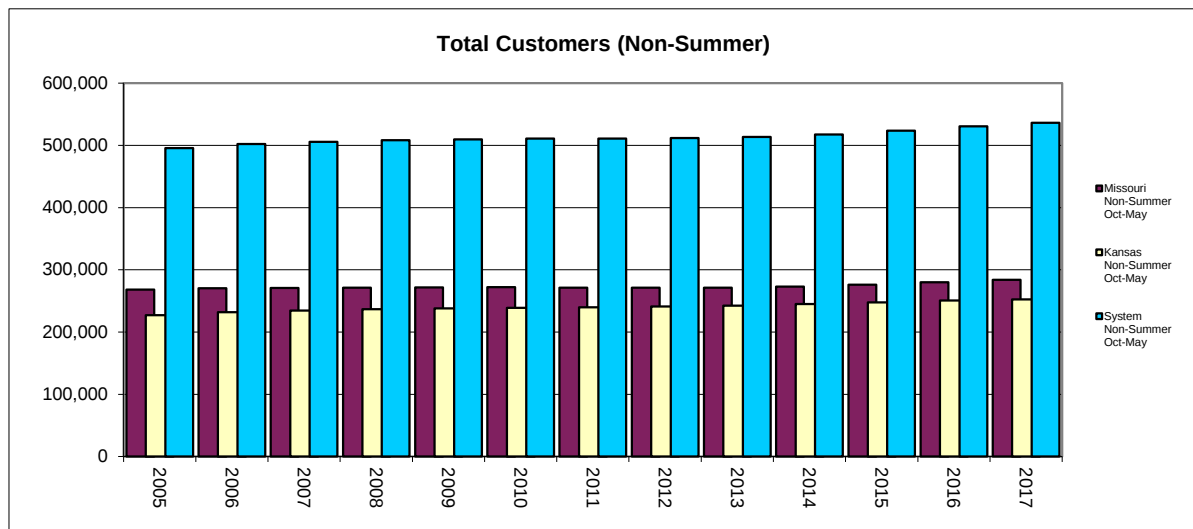
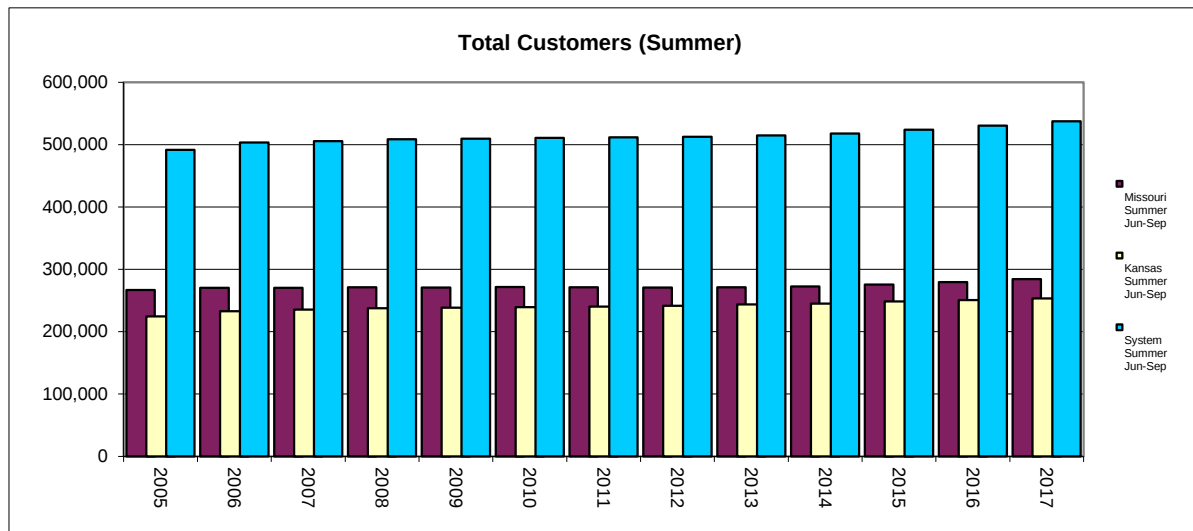
Plot 3A-6: Missouri & Kansas Sales for Resale Customers

Year	Missouri Summer Jun-Sep	Missouri Non-Summer Oct-May	Missouri Total Jan -Dec	Kansas Summer Jun-Sep	Kansas Non-Summer Oct-May	Kansas Total Jan -Dec	System Summer Jun-Sep	System Non-Summer Oct-May	System Total Jan -Dec
2005	4	4	4	7	7	7	11	11	11
2006	3	4	3	5	6	6	8	10	9
2007	4	3	3	4	5	4	7	8	8
2008	4	4	4	3	3	3	7	7	7
2009	3	2	2	3	3	3	6	5	5
2010	3	3	3	3	3	3	6	6	6
2011	2	2	2	3	3	3	5	5	5
2012	2	2	2	2	3	2	4	4	4
2013	1	1	1	2	2	2	3	3	3
2014	1	1	1	2	2	2	3	3	3
2015	1	1	1	2	1	2	3	2	3
2016	1	1	1	1	1	1	2	2	2
2017	1	1	1	1	1	1	2	2	2
07-'12	-10.59%	-12.26%	-11.65%	-11.81%	-10.22%	-10.68%	-11.21%	-11.03%	-11.09%
17-'12	-12.94%	-9.25%	-10.59%	-12.94%	-17.55%	-16.18%	-12.94%	-13.99%	-13.65%
07-'17	-11.77%	-10.77%	-11.12%	-12.38%	-13.96%	-13.47%	-12.08%	-12.53%	-12.38%



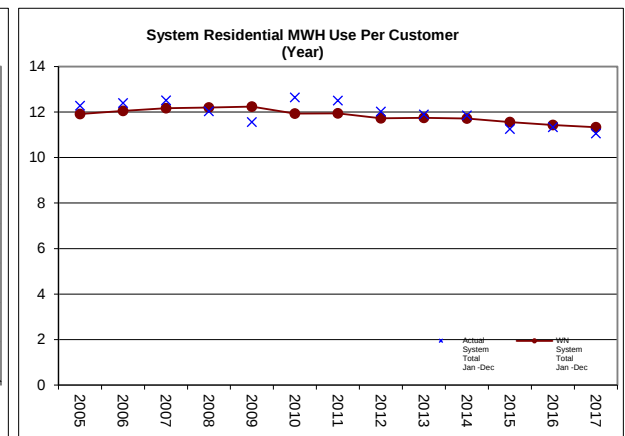
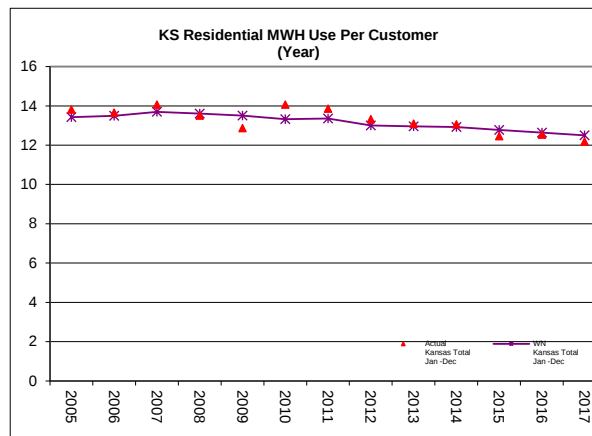
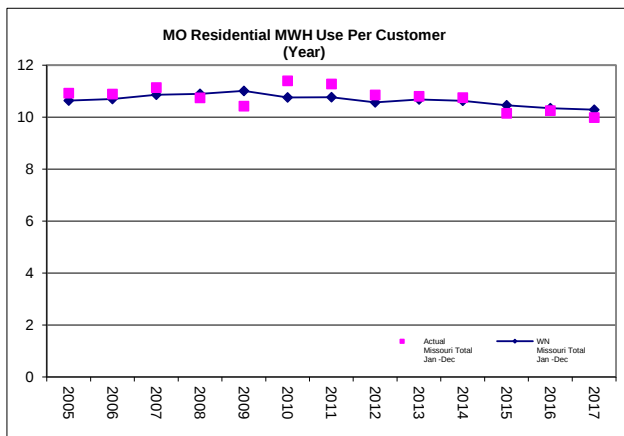
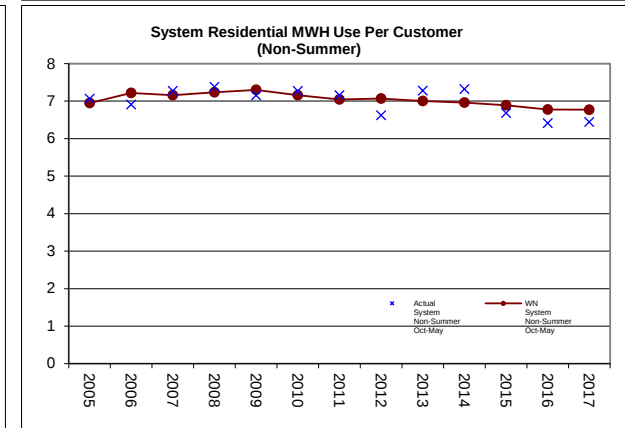
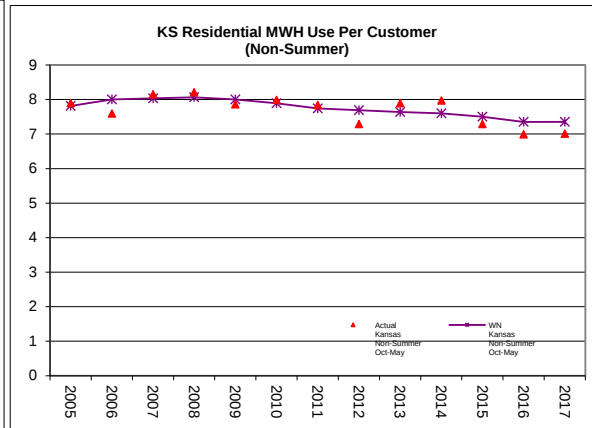
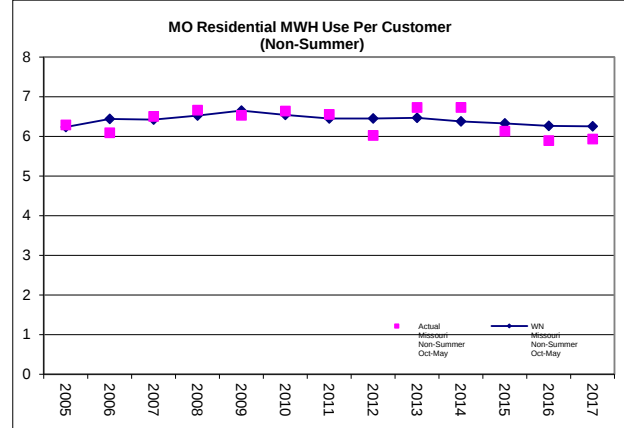
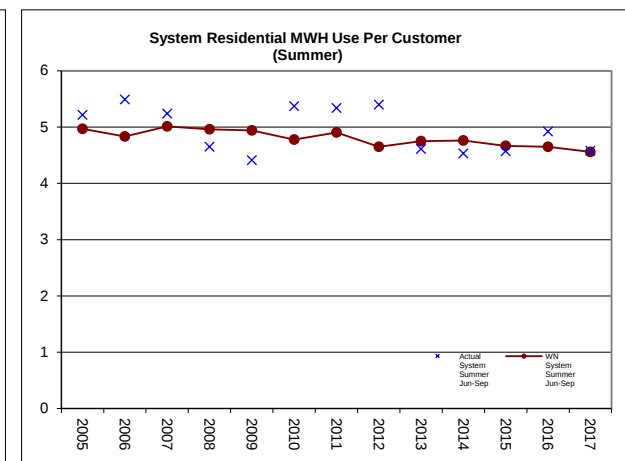
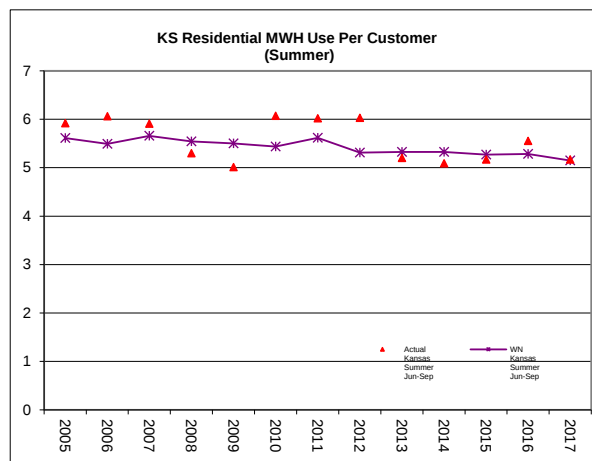
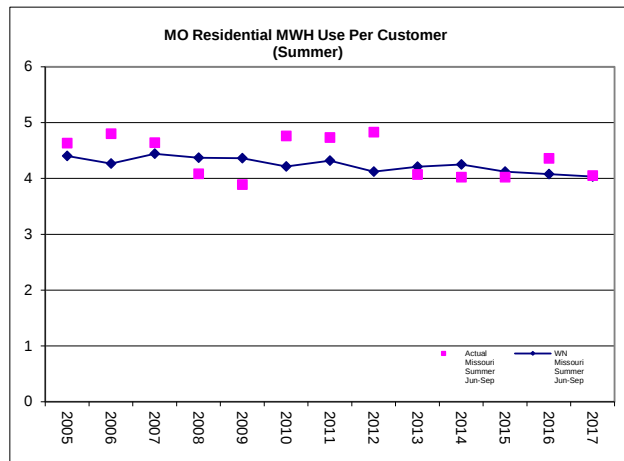
Plot 3A-7: Missouri & Kansas Total Customers

Year	Missouri Summer Jun-Sep	Missouri Non-Summer Oct-May	Missouri Total Jan -Dec	Kansas Summer Jun-Sep	Kansas Non-Summer Oct-May	Kansas Total Jan -Dec	System Summer Jun-Sep	System Non-Summer Oct-May	System Total Jan -Dec
2005	267,149	268,279	267,753	224,647	227,170	226,327	491,796	495,450	494,080
2006	270,572	270,514	270,533	232,755	231,843	232,147	503,326	502,357	502,680
2007	270,552	270,862	270,759	235,319	234,714	234,915	505,871	505,576	505,674
2008	271,099	271,242	271,194	237,683	236,841	237,122	508,782	508,083	508,316
2009	270,953	271,477	271,302	238,504	238,043	238,197	509,457	509,520	509,499
2010	271,588	272,042	271,891	239,418	238,855	239,043	511,006	510,897	510,933
2011	271,191	271,449	271,363	240,454	239,634	239,907	511,644	511,083	511,270
2012	270,804	271,055	270,971	241,745	240,937	241,206	512,549	511,992	512,177
2013	271,214	271,133	271,160	243,638	242,489	242,872	514,852	513,622	514,032
2014	272,443	272,848	272,713	245,244	244,831	244,969	517,687	517,680	517,682
2015	275,687	276,012	275,903	248,470	247,760	247,997	524,157	523,772	523,900
2016	279,698	280,054	279,936	250,997	250,546	250,696	530,695	530,600	530,632
2017	284,175	283,931	283,972	253,369	252,544	252,681	537,544	536,475	536,653
07-'12	0.02%	0.01%	0.02%	0.54%	0.52%	0.53%	0.26%	0.25%	0.26%
17-'12	0.97%	0.93%	0.94%	0.94%	0.95%	0.93%	0.96%	0.94%	0.94%
07-'17	0.49%	0.47%	0.48%	0.74%	0.73%	0.73%	0.61%	0.59%	0.60%



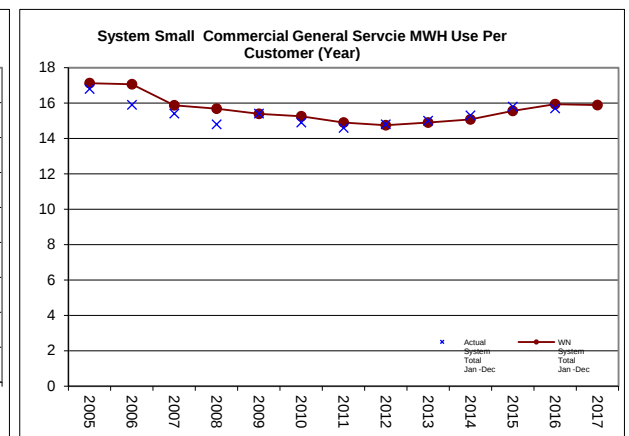
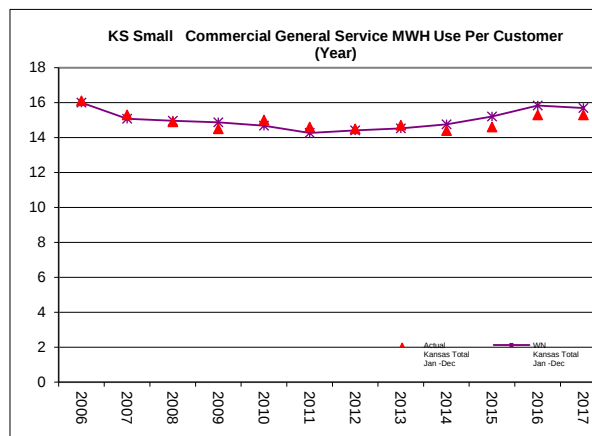
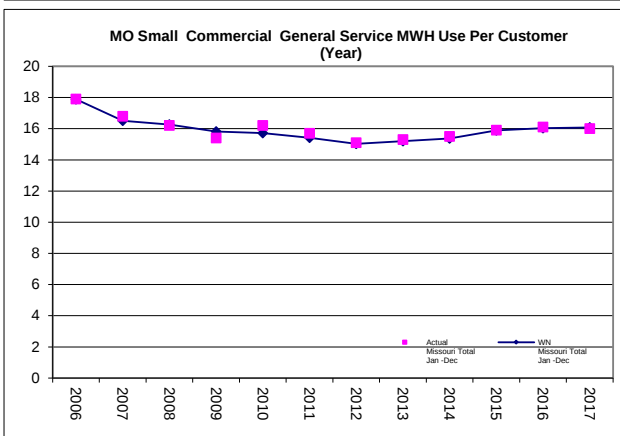
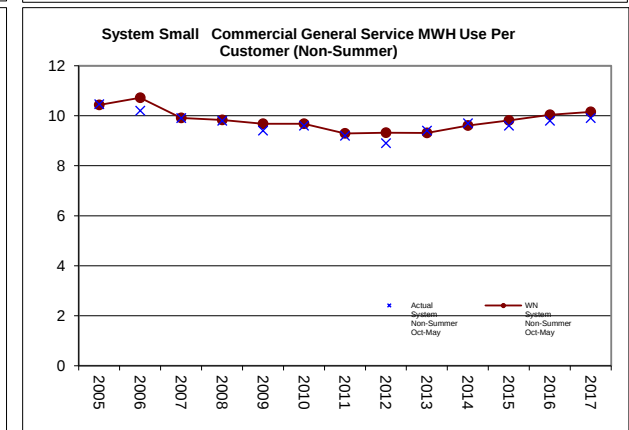
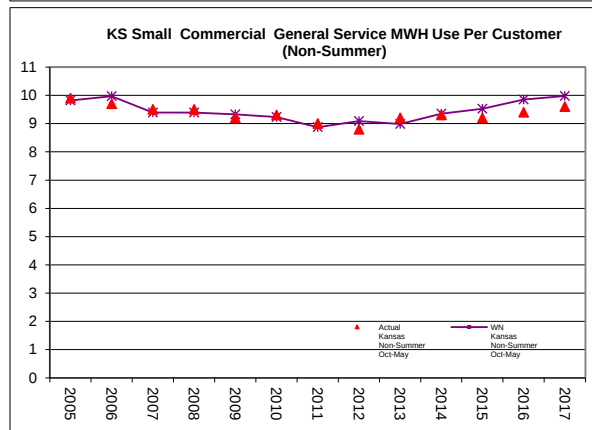
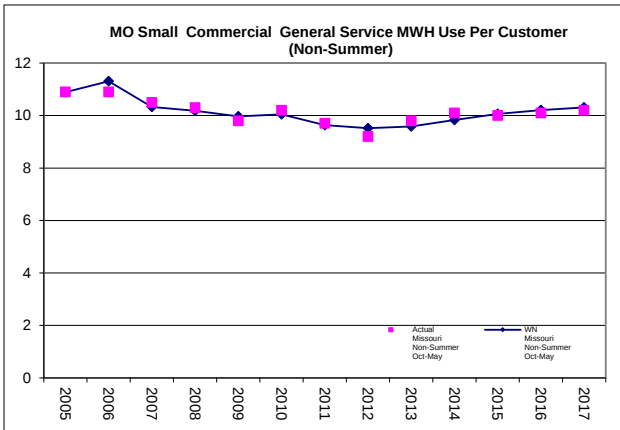
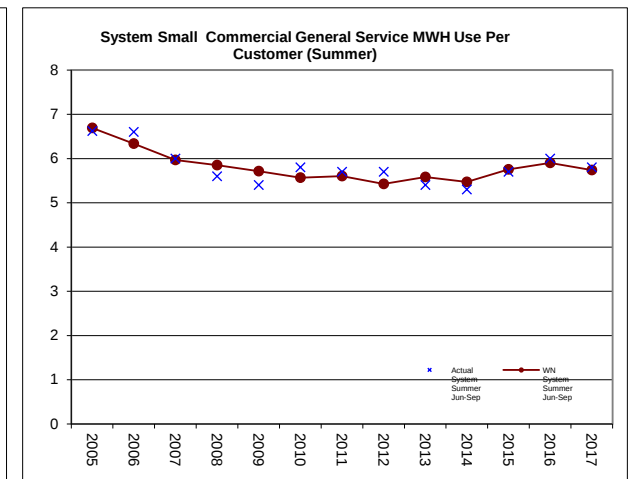
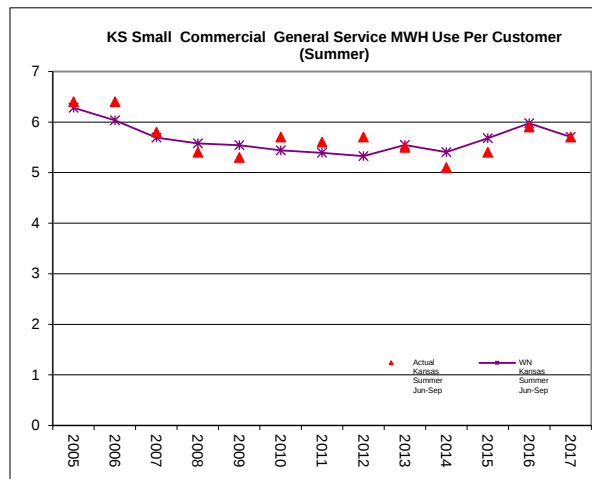
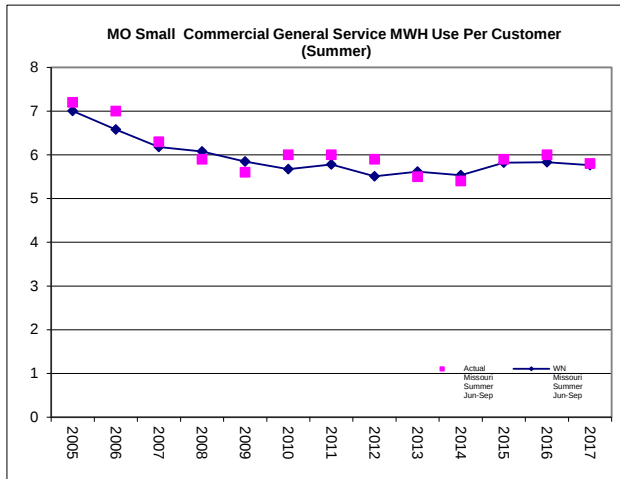
Plot 3A-8 Missouri & Kansas Residential MWH Use Per Customer
(Actual vs. Weather Normalized)

Year	Actual Missouri Summer Jun-Sep	WN Missouri Summer Jun-Sep	Actual Missouri Non-Summer Oct-May	WN Missouri Non-Summer Oct-May	Actual Missouri Total Jan -Dec	WN Missouri Total Jan -Dec	Actual Kansas Summer Jun-Sep	WN Kansas Summer Jun-Sep	Actual Kansas Non-Summer Oct-May	WN Kansas Non-Summer Oct-May	Actual Kansas Total Jan -Dec	WN Kansas Total Jan -Dec	Actual System Summer Jun-Sep	WN System Summer Jun-Sep	Actual System Non-Summer Oct-May	WN System Non-Summer Oct-May	Actual System Total Jan -Dec	WN System Total Jan -Dec
	Actual Missouri Summer Jun-Sep	WN Missouri Summer Jun-Sep	Actual Missouri Non-Summer Oct-May	WN Missouri Non-Summer Oct-May	Actual Missouri Total Jan -Dec	WN Missouri Total Jan -Dec	Actual Kansas Summer Jun-Sep	WN Kansas Summer Jun-Sep	Actual Kansas Non-Summer Oct-May	WN Kansas Non-Summer Oct-May	Actual Kansas Total Jan -Dec	WN Kansas Total Jan -Dec	Actual System Summer Jun-Sep	WN System Summer Jun-Sep	Actual System Non-Summer Oct-May	WN System Non-Summer Oct-May	Actual System Total Jan -Dec	WN System Total Jan -Dec
2005	4.63	4.40	6.29	6.24	10.92	10.64	5.92	5.61	7.89	7.81	13.81	13.43	5.22	4.97	7.06	6.95	12.28	11.92
2006	4.80	4.26	6.09	6.44	10.89	10.70	6.06	5.49	7.59	8.00	13.65	13.49	5.49	4.84	6.91	7.22	12.40	12.05
2007	4.64	4.44	6.50	6.42	11.14	10.87	5.91	5.66	8.15	8.04	14.06	13.69	5.24	5.01	7.27	7.16	12.51	12.17
2008	4.08	4.37	6.66	6.52	10.74	10.89	5.30	5.54	8.21	8.06	13.51	13.61	4.65	4.96	7.38	7.23	12.03	12.19
2009	3.89	4.36	6.53	6.65	10.42	11.01	5.01	5.50	7.86	8.00	12.87	13.51	4.41	4.94	7.15	7.30	11.56	12.24
2010	4.76	4.21	6.64	6.54	11.40	10.76	6.07	5.44	7.99	7.89	14.06	13.33	5.37	4.78	7.27	7.16	12.64	11.94
2011	4.73	4.32	6.55	6.45	11.28	10.77	6.02	5.62	7.84	7.74	13.86	13.36	5.34	4.90	7.16	7.04	12.50	11.95
2012	4.83	4.12	6.02	6.45	10.85	10.57	6.03	5.31	7.29	7.69	13.32	13.00	5.40	4.65	6.62	7.07	12.02	11.72
2013	4.07	4.21	6.73	6.47	10.80	10.68	5.20	5.33	7.89	7.63	13.09	12.96	4.61	4.75	7.28	7.00	11.89	11.75
2014	4.02	4.25	6.73	6.38	10.75	10.63	5.09	5.32	7.97	7.60	13.06	12.93	4.53	4.76	7.32	6.96	11.85	11.72
2015	4.02	4.12	6.13	6.33	10.15	10.45	5.17	5.27	7.29	7.50	12.46	12.77	4.57	4.67	6.68	6.89	11.25	11.55
2016	4.36	4.08	5.89	6.26	10.25	10.34	5.55	5.28	6.99	7.35	12.54	12.63	4.92	4.65	6.41	6.78	11.33	11.43
2017	4.05	4.03	5.93	6.25	9.98	10.29	5.17	5.15	7.01	7.35	12.18	12.50	4.58	4.56	6.44	6.77	11.05	11.33
06-'11	-0.3%	0.2%	1.5%	0.0%	0.7%	0.1%	-0.1%	0.5%	0.7%	-0.7%	0.3%	-0.2%	-0.6%	0.3%	0.7%	-0.5%	0.2%	-0.2%
11-'16	-1.6%	-1.1%	-2.1%	-0.6%	-1.9%	-0.8%	-1.6%	-1.2%	-2.3%	-1.0%	-2.0%	-1.1%	-1.6%	-1.1%	-2.2%	-0.8%	-1.9%	-0.9%
06-'16	-1.0%	-0.4%	-0.3%	-0.3%	-0.6%	-0.3%	-0.9%	-0.4%	-0.8%	-0.8%	-0.8%	-0.7%	-1.1%	-0.4%	-0.7%	-0.6%	-0.9%	-0.5%



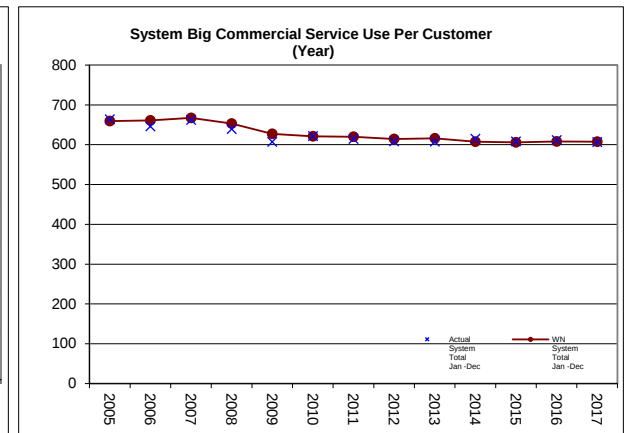
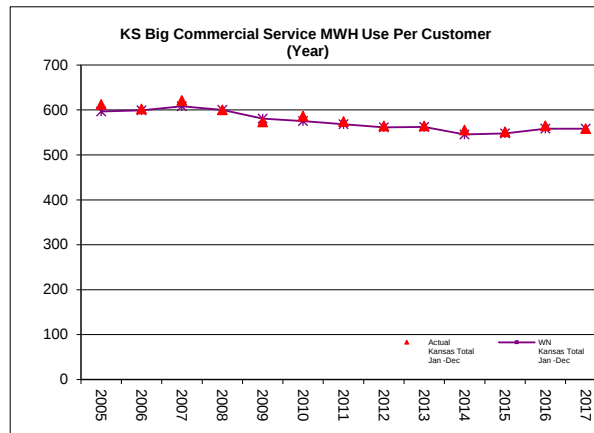
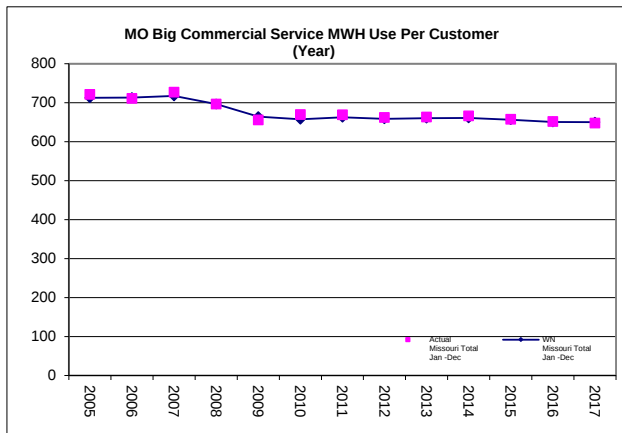
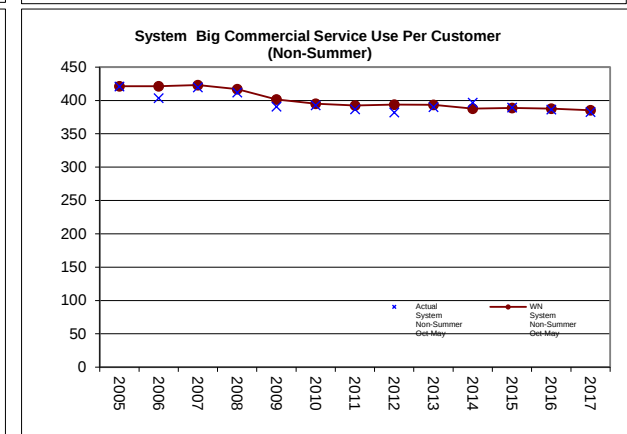
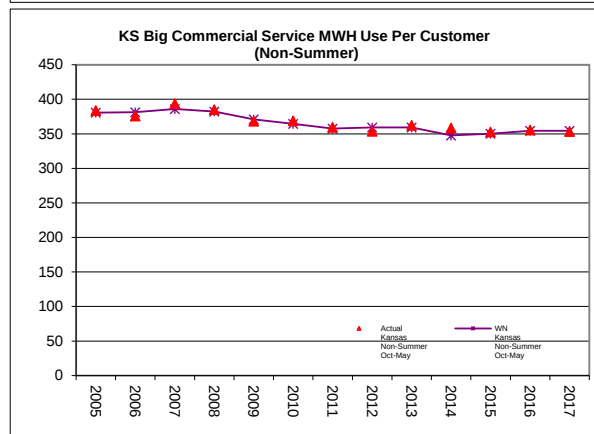
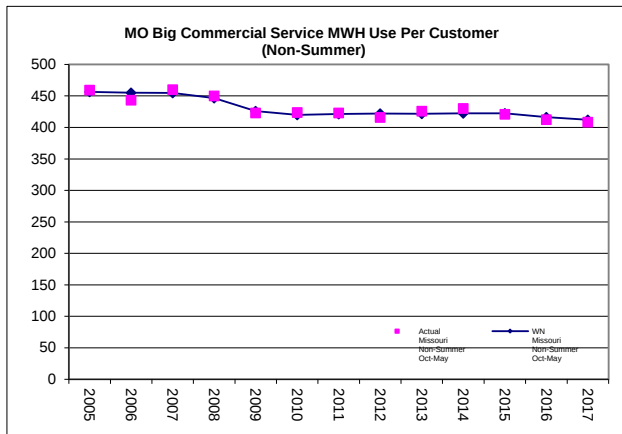
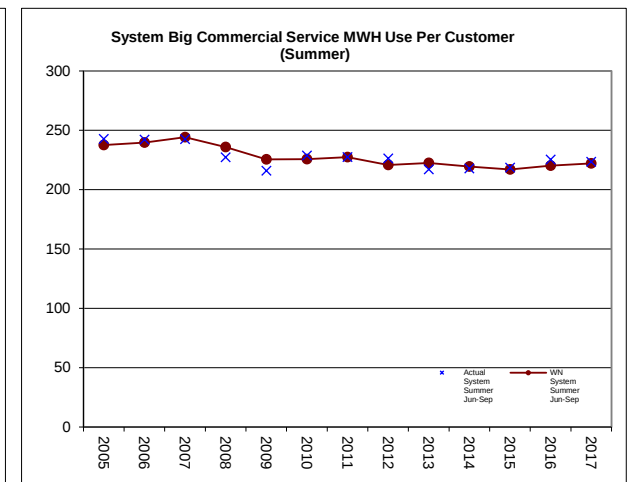
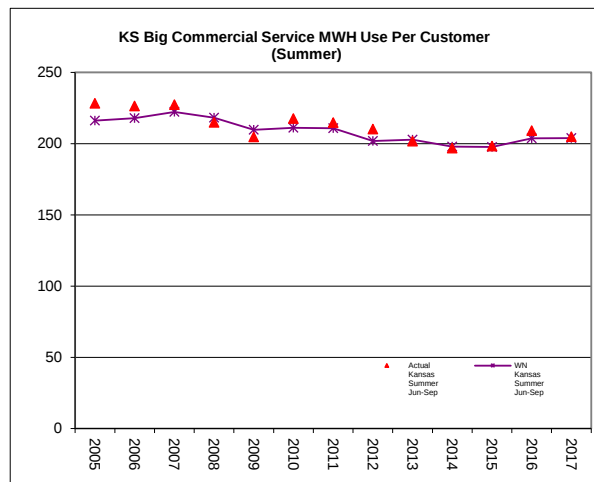
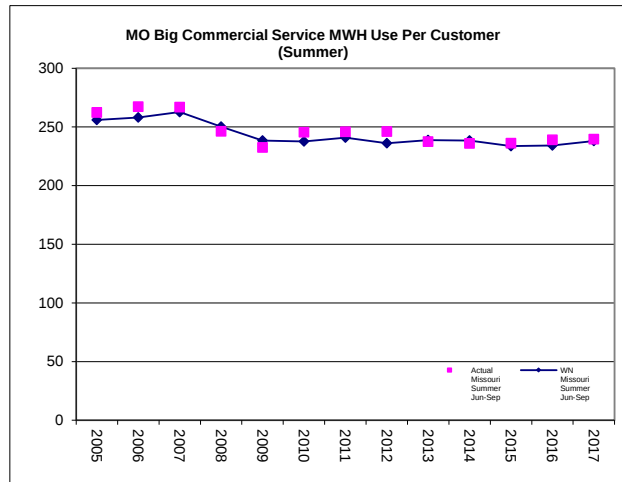
**Plot 3A-9 Missouri & Kansas Small Commercial General Service MWH Use Per Customer
(Actual vs. Weather Normalized)**

	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
	Missouri	Missouri	Missouri	Missouri	Missouri	Missouri	Kansas	Kansas	Kansas	Kansas	Kansas	Kansas	System	System	System	System	System	System
	Summer	Summer	Non-Summer	Non-Summer	Total	Total	Summer	Summer	Non-Summer	Non-Summer	Total	Total	Summer	Summer	Non-Summer	Non-Summer	Total	Total
Year	Jun-Sep	Jun-Sep	Oct-May	Oct-May	Jan -Dec	Jan -Dec	Jun-Sep	Jun-Sep	Oct-May	Oct-May	Jan -Dec	Jan -Dec	Jun-Sep	Jun-Sep	Oct-May	Oct-May	Jan -Dec	Jan -Dec
2005	7.2	7.0	10.9	10.9	18.1	17.9	6.4	6.3	9.9	9.8	16.3	16.1	6.6	6.7	10.5	10.4	17.1	17.1
2006	7.0	6.6	10.9	11.3	17.9	17.9	6.4	6.0	9.7	10.0	16.1	16.0	6.6	6.3	10.2	10.7	16.8	17.1
2007	6.3	6.2	10.5	10.3	16.8	16.5	5.8	5.7	9.5	9.4	15.3	15.1	6.0	6.0	9.9	9.9	15.9	15.9
2008	5.9	6.1	10.3	10.2	16.2	16.3	5.4	5.6	9.5	9.4	14.9	15.0	5.6	5.9	9.8	9.8	15.4	15.7
2009	5.6	5.8	9.8	10.0	15.4	15.8	5.3	5.5	9.2	9.3	14.5	14.9	5.4	5.7	9.4	9.7	14.8	15.4
2010	6.0	5.7	10.2	10.0	16.2	15.7	5.7	5.4	9.3	9.2	15.0	14.7	5.8	5.6	9.6	9.7	15.4	15.3
2011	6.0	5.8	9.7	9.6	15.7	15.4	5.6	5.4	9.0	8.9	14.6	14.3	5.7	5.6	9.2	9.3	14.9	14.9
2012	5.9	5.5	9.2	9.5	15.1	15.0	5.7	5.3	8.8	9.1	14.5	14.4	5.7	5.4	8.9	9.3	14.6	14.7
2013	5.5	5.6	9.8	9.6	15.3	15.2	5.5	5.5	9.2	9.0	14.7	14.5	5.4	5.6	9.4	9.3	14.8	14.9
2014	5.4	5.5	10.1	9.8	15.5	15.4	5.1	5.4	9.3	9.3	14.4	14.8	5.3	5.5	9.7	9.6	15.0	15.1
2015	5.9	5.8	10.0	10.1	15.9	15.9	5.4	5.7	9.2	9.5	14.6	15.2	5.7	5.8	9.6	9.8	15.3	15.6
2016	6.0	5.8	10.1	10.2	16.1	16.0	5.9	6.0	9.4	9.9	15.3	15.8	6.0	5.9	9.8	10.0	15.8	15.9
2017	5.8	5.8	10.2	10.3	16.0	16.1	5.7	5.7	9.6	10.0	15.3	15.7	5.8	5.7	9.9	10.2	15.7	15.9
06-'11	-3.0%	-2.6%	-2.3%	-3.2%	-2.6%	-2.9%	-2.6%	-2.2%	-1.5%	-2.3%	-1.9%	-2.3%	-2.9%	-2.4%	-2.0%	-2.8%	-2.4%	-2.7%
11-'16	0.0%	0.2%	0.8%	1.2%	0.5%	0.8%	1.0%	2.1%	0.9%	2.1%	0.9%	2.1%	1.0%	1.0%	1.3%	1.6%	1.2%	1.4%
06-'16	-1.5%	-1.2%	-0.8%	-1.0%	-1.1%	-1.1%	-0.8%	-0.1%	-0.3%	-0.1%	-0.5%	-0.1%	-0.9%	-0.7%	-0.4%	-0.7%	-0.6%	-0.7%



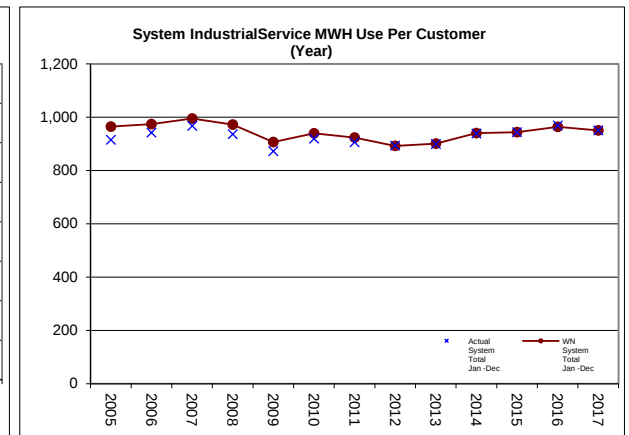
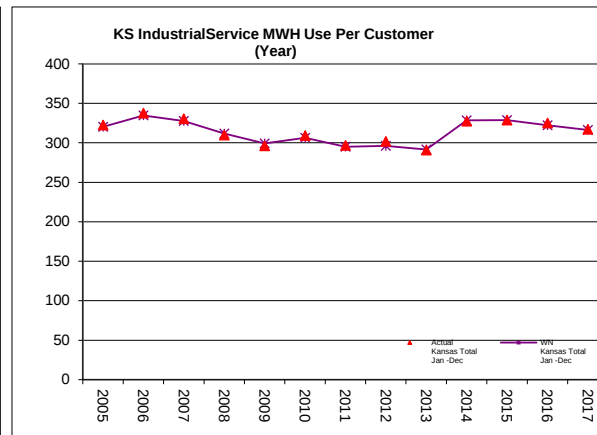
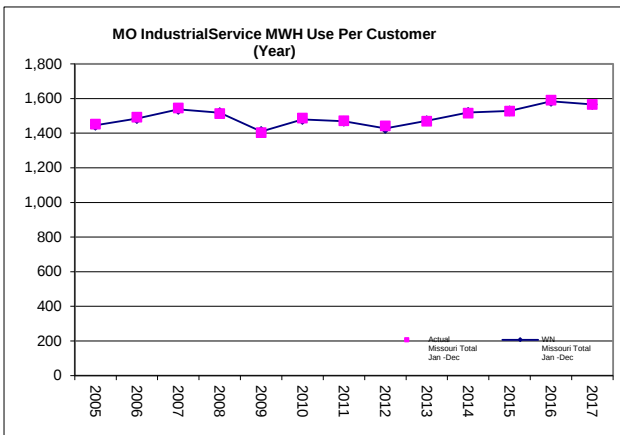
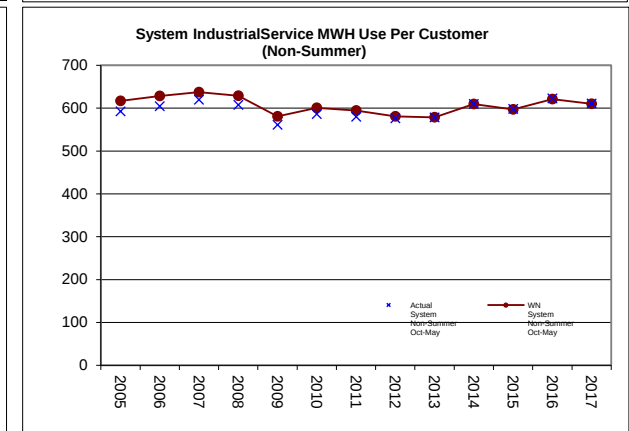
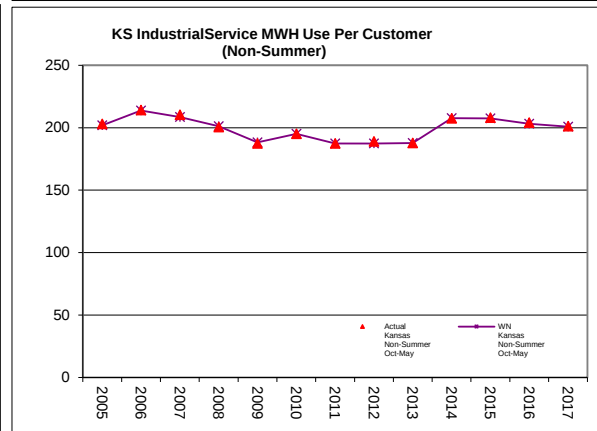
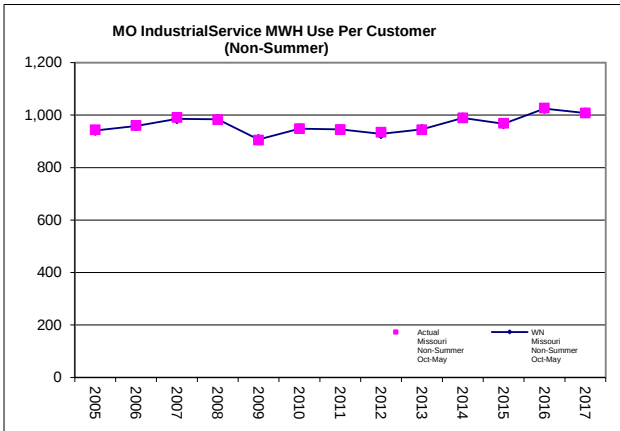
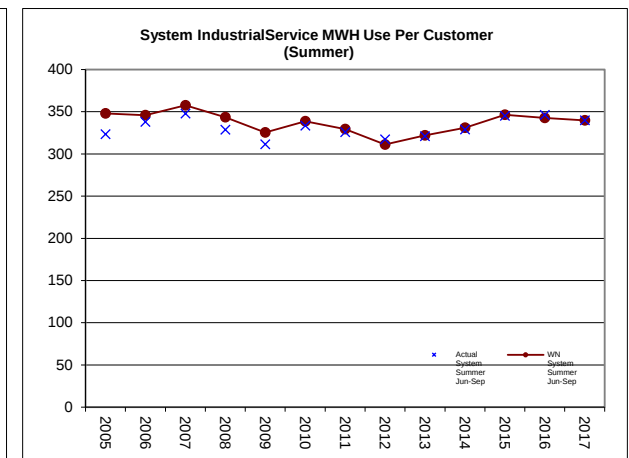
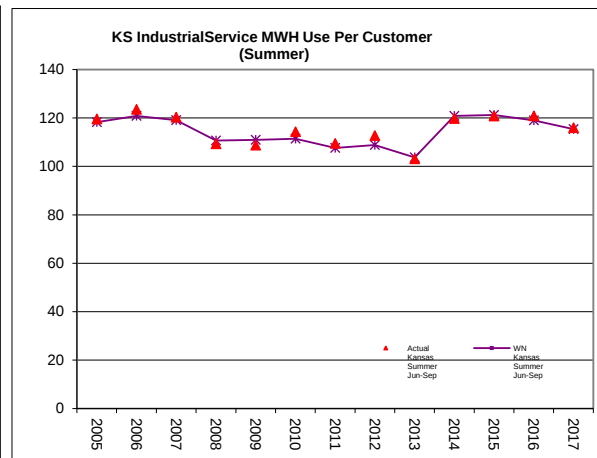
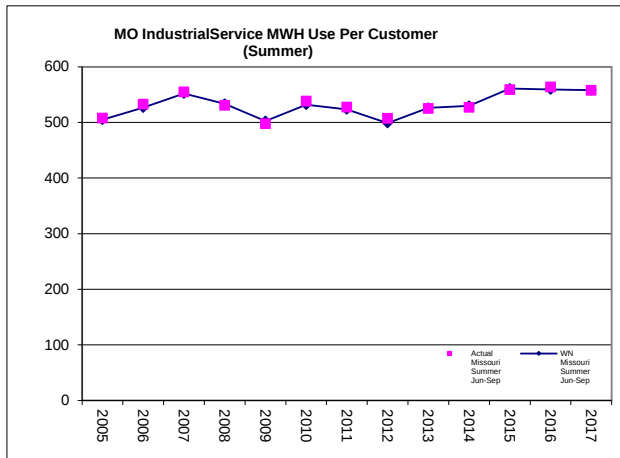
**Plot 3A-10 Missouri & Kansas Big Commercial Service MWH Use Per Customer
(Actual vs. Weather Normalized)**

Year	Actual Missouri Summer Jun-Sep	WN Missouri Summer Jun-Sep	Actual Missouri Non-Summer Oct-May	WN Missouri Non-Summer Oct-May	Actual Missouri Total Jan -Dec	WN Missouri Total Jan -Dec	Actual Kansas Summer Jun-Sep	WN Kansas Summer Jun-Sep	Actual Kansas Non-Summer Oct-May	WN Kansas Non-Summer Oct-May	Actual Kansas Total Jan -Dec	WN Kansas Total Jan -Dec	Actual System Summer Jun-Sep	WN System Summer Jun-Sep	Actual System Non-Summer Oct-May	WN System Non-Summer Oct-May	Actual System Total Jan -Dec	WN System Total Jan -Dec
	Jun-Sep	Jun-Sep	Oct-May	Oct-May	Jan -Dec	Jan -Dec	Jun-Sep	Jun-Sep	Oct-May	Oct-May	Jan -Dec	Jan -Dec	Jun-Sep	Jun-Sep	Oct-May	Oct-May	Jan -Dec	Jan -Dec
2005	262.2	255.9	459.2	456.4	721.4	712.3	228.3	216.2	383.9	380.6	612.1	596.8	242.6	237.6	421.0	421.5	663.6	659.1
2006	267.2	258.1	443.6	455.1	710.8	713.2	226.4	217.9	375.9	381.3	602.3	599.2	242.0	239.7	403.7	421.4	645.7	661.1
2007	266.9	262.7	460.2	454.6	727.1	717.4	227.3	222.2	394.0	386.0	621.3	608.2	242.5	244.2	419.8	423.2	662.3	667.4
2008	246.3	250.3	450.0	446.4	696.3	696.7	214.9	218.1	385.2	382.2	600.1	600.3	227.2	235.8	412.0	417.2	639.2	653.0
2009	232.5	238.4	422.9	426.1	655.4	664.5	204.7	209.7	368.4	370.9	573.1	580.6	215.8	225.6	390.9	401.4	606.7	627.0
2010	245.4	237.7	423.9	419.9	669.2	657.6	217.6	211.1	368.9	364.5	586.5	575.5	228.8	225.8	392.9	395.1	621.7	620.9
2011	245.8	241.0	423.2	421.4	669.0	662.3	214.8	210.8	359.6	357.7	574.4	568.4	227.4	227.4	386.7	392.6	614.1	620.0
2012	246.1	236.2	416.1	422.1	662.3	658.2	210.3	201.8	353.9	359.3	564.1	561.1	226.3	220.7	382.1	393.7	608.4	614.4
2013	237.4	238.8	426.0	421.7	663.4	660.5	201.7	202.8	362.5	359.3	564.2	562.1	217.1	222.5	390.3	393.4	607.4	615.9
2014	235.9	238.3	430.1	422.5	666.0	660.9	196.7	197.8	358.5	347.7	555.2	545.6	217.7	219.5	396.9	387.8	614.6	607.3
2015	236.2	233.7	421.0	422.3	657.1	656.0	198.2	197.7	352.9	350.2	551.2	547.8	218.6	217.0	389.5	388.9	608.0	605.9
2016	239.0	234.2	412.6	416.3	651.6	650.5	209.1	203.8	355.8	354.5	564.9	558.3	225.2	220.2	386.4	387.8	611.6	607.9
2017	239.5	237.9	408.4	412.1	647.9	650.1	204.8	203.9	353.4	354.3	558.2	558.2	223.4	222.2	382.9	385.3	606.3	607.5
06-'11	-1.7%	-1.4%	-0.9%	-1.5%	-1.2%	-1.5%	-1.0%	-0.7%	-0.9%	-1.3%	-0.9%	-1.0%	-1.2%	-1.0%	-0.9%	-1.4%	-1.0%	-1.3%
11-'16	-0.6%	-0.6%	-0.5%	-0.2%	-0.5%	-0.4%	-0.5%	-0.7%	-0.2%	-0.2%	-0.3%	-0.4%	-0.2%	-0.6%	0.0%	-0.3%	-0.1%	-0.4%
06-'16	-1.1%	-1.0%	-0.7%	-0.9%	-0.9%	-0.9%	-0.8%	-0.7%	-0.5%	-0.7%	-0.6%	-0.7%	-0.7%	-0.8%	-0.4%	-0.8%	-0.5%	-0.8%



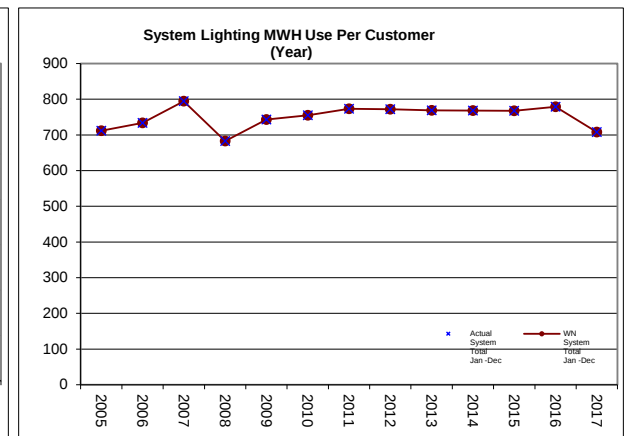
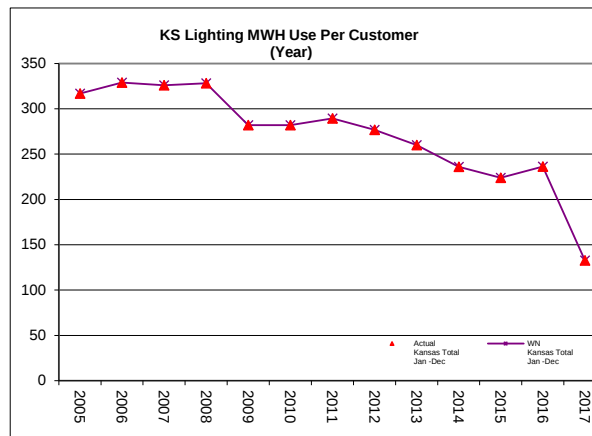
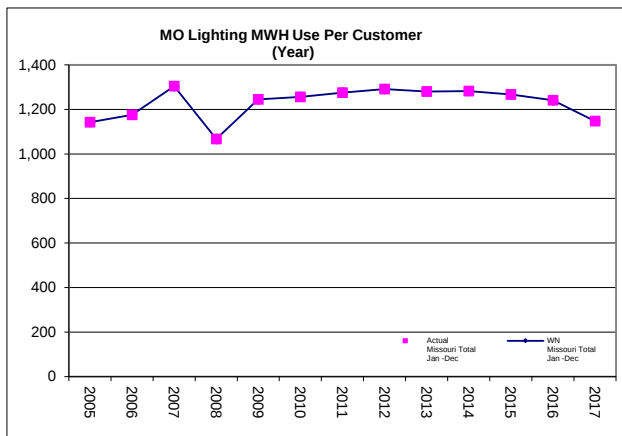
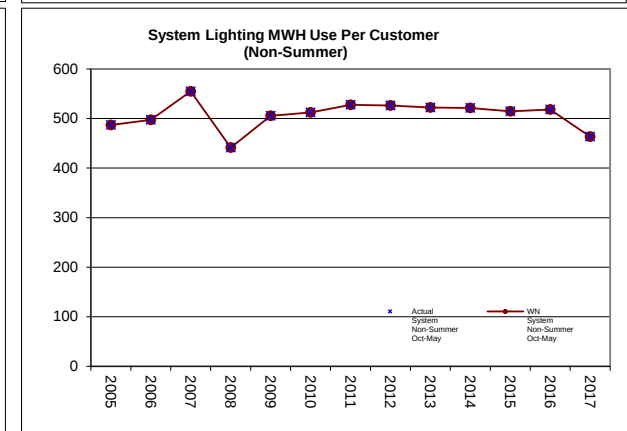
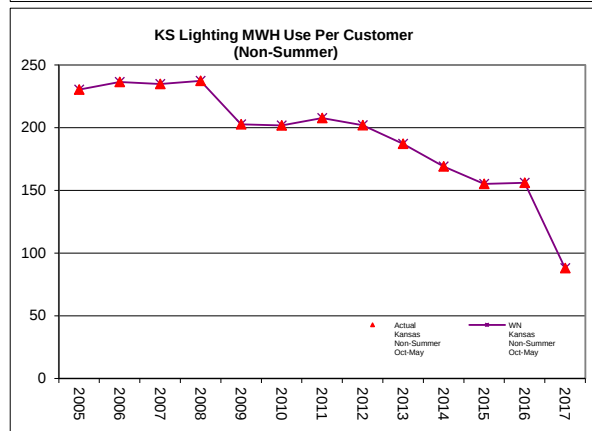
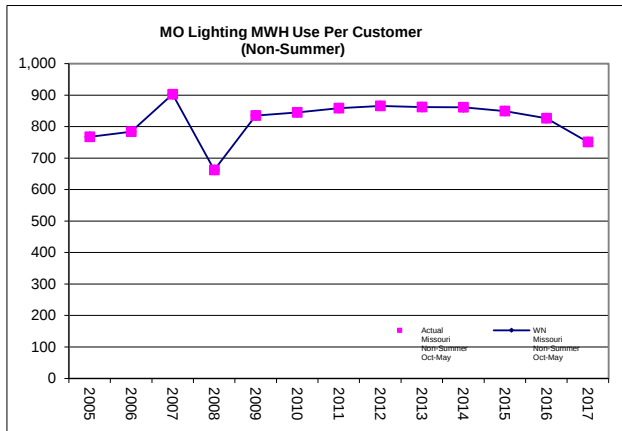
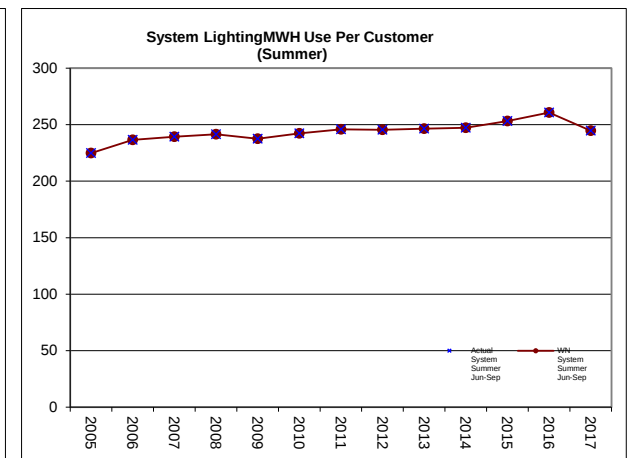
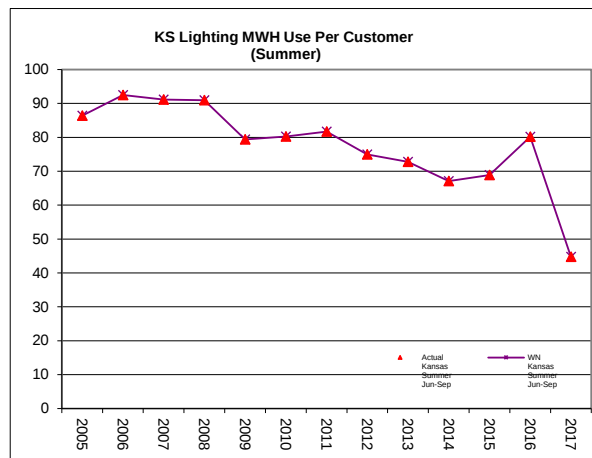
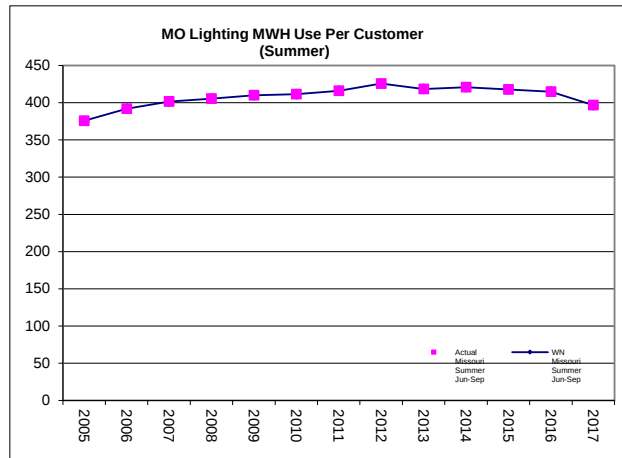
Plot 3A-11 Missouri & Kansas Industrial Service MWH Use Per Customer
(Actual vs. Weather Normalized)

Year	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
	Missouri Summer Jun-Sep	Missouri Summer Jun-Sep	Missouri Non-Summer Oct-May	Missouri Non-Summer Oct-May	Missouri Total Jan -Dec	Missouri Total Jan -Dec	Kansas Summer Jun-Sep	Kansas Summer Jun-Sep	Kansas Non-Summer Oct-May	Kansas Non-Summer Oct-May	Kansas Total Jan -Dec	Kansas Total Jan -Dec	System Summer Jun-Sep	System Summer Jun-Sep	System Non-Summer Oct-May	System Non-Summer Oct-May	System Total Jan -Dec	System Total Jan -Dec
2005	507.9	504.9	944.0	941.3	1,451.9	1,446.2	119.6	118.3	203.0	201.9	322.6	320.2	323.3	348.1	592.1	617.0	915.4	965.1
2006	532.6	526.7	959.7	958.0	1,492.3	1,484.7	123.5	120.9	214.2	213.8	337.7	334.6	337.9	345.7	604.2	628.4	942.1	974.2
2007	554.9	552.0	990.9	985.5	1,545.8	1,537.6	120.3	119.1	210.3	208.6	330.6	327.7	347.7	357.6	619.6	637.4	967.3	995.1
2008	530.7	533.6	982.1	984.1	1,512.7	1,517.7	109.3	110.7	200.5	201.1	309.8	311.8	328.7	343.3	607.7	629.0	936.4	972.3
2009	497.7	502.4	904.7	907.0	1,402.4	1,409.5	108.7	111.0	187.4	188.4	296.2	299.3	311.3	325.4	561.2	580.9	872.5	906.3
2010	538.3	531.9	948.5	947.7	1,486.9	1,479.6	114.3	111.4	195.0	195.1	309.3	306.5	333.3	338.7	586.2	600.8	919.4	939.5
2011	527.4	523.3	944.6	945.2	1,471.9	1,468.5	109.5	107.6	187.3	187.4	296.8	295.0	325.8	329.5	579.8	594.2	905.6	923.8
2012	507.5	498.8	934.1	928.2	1,441.7	1,427.0	112.7	108.9	189.1	187.4	301.8	296.2	317.2	311.2	576.0	581.0	893.2	892.1
2013	525.2	526.5	944.2	945.5	1,469.4	1,471.9	103.1	103.7	187.7	187.8	290.8	291.5	320.9	322.0	578.4	578.5	899.3	900.5
2014	527.0	529.9	988.9	988.9	1,515.9	1,518.8	119.8	120.9	207.5	207.7	327.3	328.5	328.9	330.9	609.5	609.6	938.4	940.5
2015	558.9	561.0	968.4	966.9	1,527.3	1,527.9	120.7	121.2	208.0	207.5	328.7	328.7	345.1	346.3	598.1	597.1	943.3	943.5
2016	563.9	559.3	1,027.0	1,024.6	1,590.9	1,583.9	120.9	119.0	204.2	203.2	325.1	322.2	346.1	342.8	622.8	621.0	968.8	963.8
2017	557.9	558.2	1,007.5	1,007.9	1,565.4	1,566.1	115.9	115.4	201.1	200.8	317.1	316.2	339.9	339.8	610.4	610.3	950.2	950.1
06-'11	-0.2%	-0.1%	-0.3%	-0.3%	-0.3%	-0.2%	-2.4%	-2.3%	-2.6%	-2.6%	-2.5%	-2.5%	-0.7%	-1.0%	-0.8%	-1.1%	-0.8%	-1.1%
11-'16	1.3%	1.3%	1.7%	1.6%	1.6%	1.5%	2.0%	2.0%	1.7%	1.6%	1.8%	1.8%	1.2%	0.8%	1.4%	0.9%	1.4%	0.9%
06-'16	0.6%	0.6%	0.7%	0.7%	0.6%	0.6%	-0.2%	-0.2%	-0.5%	-0.5%	-0.4%	-0.4%	0.2%	-0.1%	0.3%	-0.1%	0.3%	-0.1%



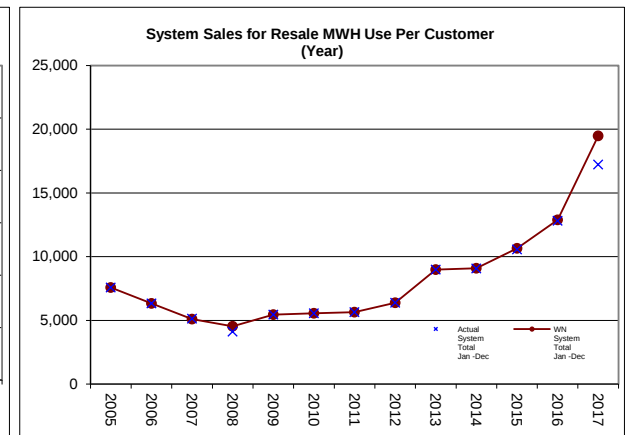
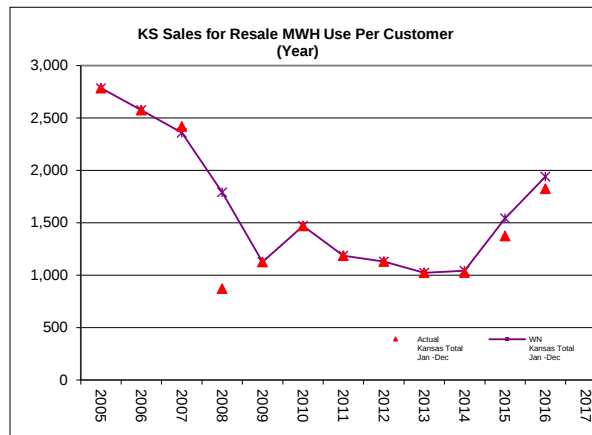
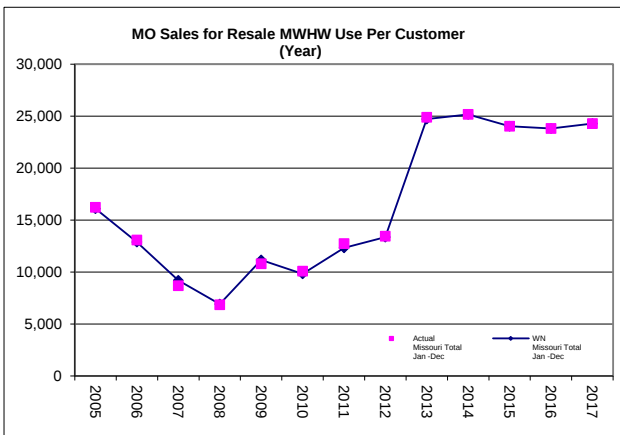
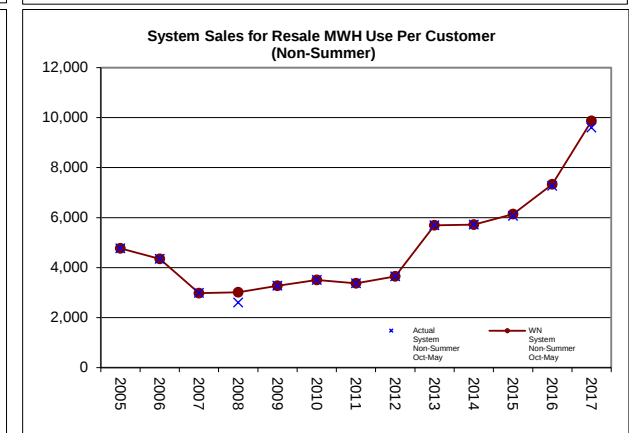
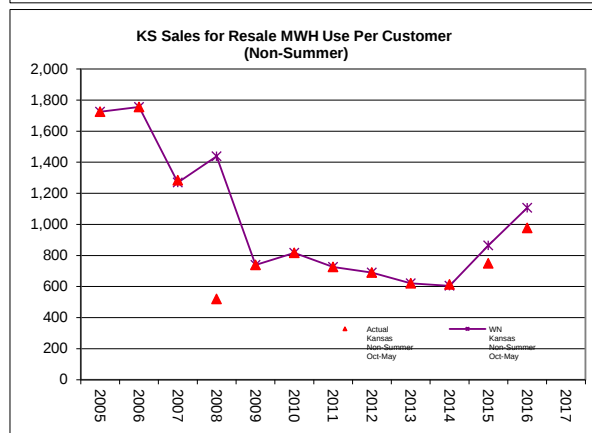
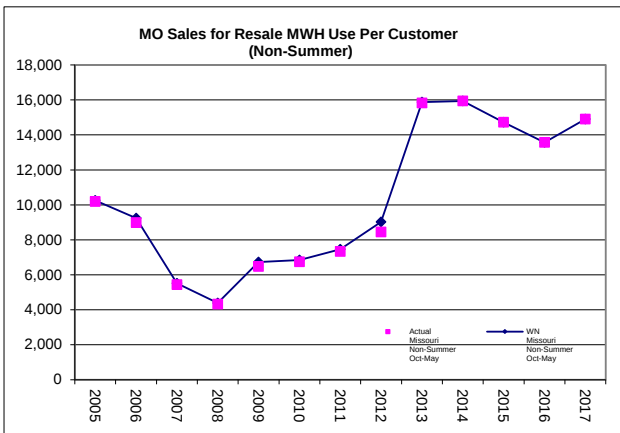
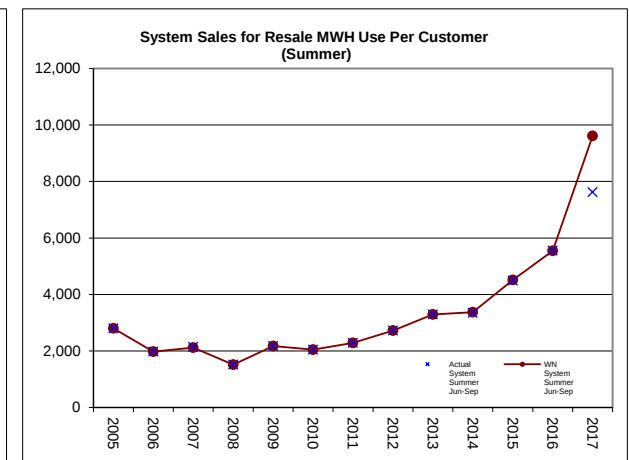
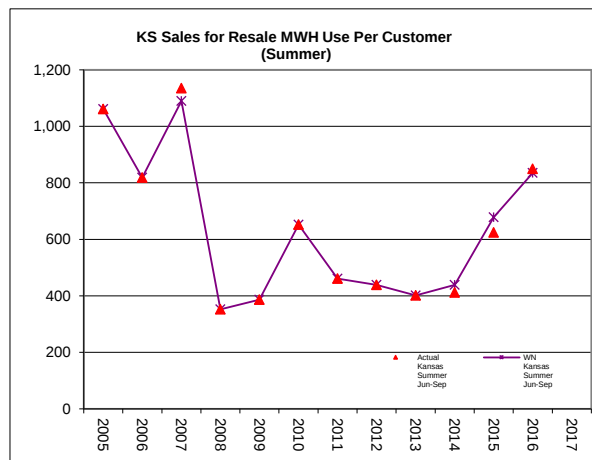
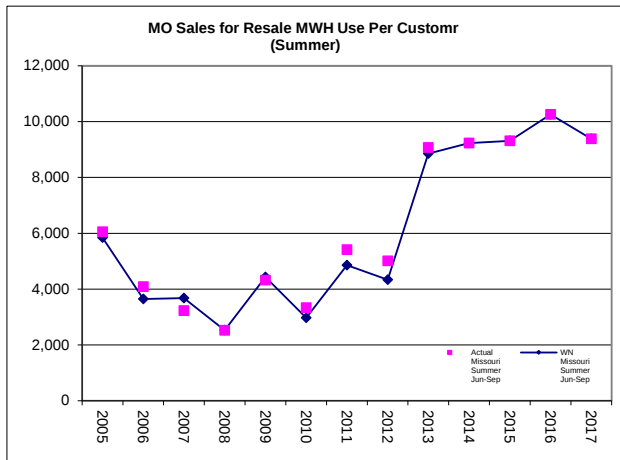
Plot 3A-12 Missouri & Kansas Lighting MWH Use Per Customer
(Actual vs. Weather Normalized)

Year	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
	Missouri Summer Jun-Sep	Missouri Summer Jun-Sep	Missouri Non-Summer Oct-May	Missouri Non-Summer Oct-May	Missouri Total Jan -Dec	Missouri Total Jan -Dec	Kansas Summer Jun-Sep	Kansas Summer Jun-Sep	Kansas Non-Summer Oct-May	Kansas Non-Summer Oct-May	Kansas Total Jan -Dec	Kansas Total Jan -Dec	System Summer Jun-Sep	System Summer Jun-Sep	System Non-Summer Oct-May	System Non-Summer Oct-May	System Total Jan -Dec	System Total Jan -Dec
2005	375.7	375.7	767.0	767.0	1,142.8	1,142.8	86.4	86.4	230.4	230.4	316.8	316.8	224.8	224.8	487.1	487.1	711.9	711.9
2006	392.0	392.0	783.5	783.5	1,175.5	1,175.5	92.5	92.5	236.5	236.5	329.0	329.0	236.5	236.5	497.4	497.4	733.9	733.9
2007	401.5	401.5	902.9	902.9	1,304.4	1,304.4	91.1	91.1	234.8	234.8	325.9	325.9	239.4	239.4	554.9	554.9	794.3	794.3
2008	405.3	405.3	662.1	662.1	1,067.5	1,067.5	90.9	90.9	237.3	237.3	328.3	328.3	241.4	241.4	441.3	441.3	682.8	682.8
2009	409.9	409.9	835.1	835.1	1,245.0	1,245.0	79.4	79.4	202.6	202.6	282.0	282.0	237.6	237.6	505.4	505.4	742.9	742.9
2010	411.6	411.6	844.9	844.9	1,256.5	1,256.5	80.3	80.3	201.7	201.7	282.0	282.0	242.3	242.3	512.6	512.6	754.9	754.9
2011	416.1	416.1	858.7	858.7	1,274.8	1,274.8	81.7	81.7	207.7	207.7	289.4	289.4	245.9	245.9	527.5	527.5	773.5	773.5
2012	425.7	425.7	865.3	865.3	1,291.1	1,291.1	74.9	74.9	202.0	202.0	276.9	276.9	245.4	245.4	526.4	526.4	771.8	771.8
2013	418.5	418.5	861.9	861.9	1,280.4	1,280.4	72.8	72.8	187.2	187.2	260.0	260.0	246.4	246.4	522.3	522.3	768.7	768.7
2014	420.9	420.9	861.6	861.6	1,282.4	1,282.4	67.1	67.1	169.0	169.0	236.1	236.1	247.2	247.2	521.2	521.2	768.4	768.4
2015	417.8	417.8	849.0	849.0	1,266.8	1,266.8	68.9	68.9	155.2	155.2	224.0	224.0	253.1	253.1	514.4	514.4	767.5	767.5
2016	414.8	414.8	826.1	826.1	1,240.9	1,240.9	80.2	80.2	156.1	156.1	236.3	236.3	260.7	260.7	518.1	518.1	778.9	778.9
2017	396.8	396.8	751.0	751.0	1,147.8	1,147.8	44.8	44.8	87.9	87.9	132.7	132.7	244.6	244.6	463.6	463.6	708.2	708.2
06-'11	1.2%	1.2%	1.9%	1.9%	1.6%	1.6%	-2.4%	-2.4%	-2.6%	-2.6%	-2.5%	-2.5%	0.8%	0.8%	1.2%	1.2%	1.1%	1.1%
11-'16	-0.1%	-0.1%	-0.8%	-0.8%	-0.5%	-0.5%	-0.4%	-0.4%	-5.6%	-5.6%	-4.0%	-4.0%	1.2%	1.2%	-0.4%	-0.4%	0.1%	0.1%
06-'16	0.6%	0.6%	0.5%	0.5%	0.5%	0.5%	-1.4%	-1.4%	-4.1%	-4.1%	-3.3%	-3.3%	1.0%	1.0%	0.4%	0.4%	0.6%	0.6%



**Plot 3A-13 Missouri & Kansas Sales for Resale MWH Use Per Customer
(Actual vs. Weather Normalized)**

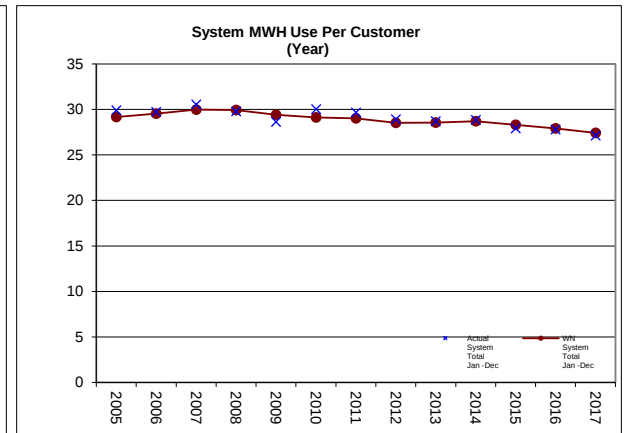
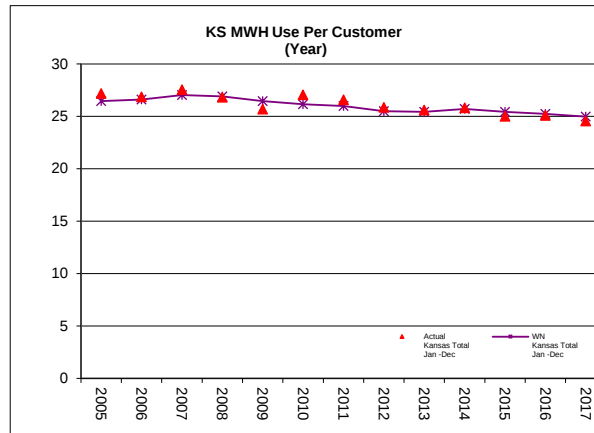
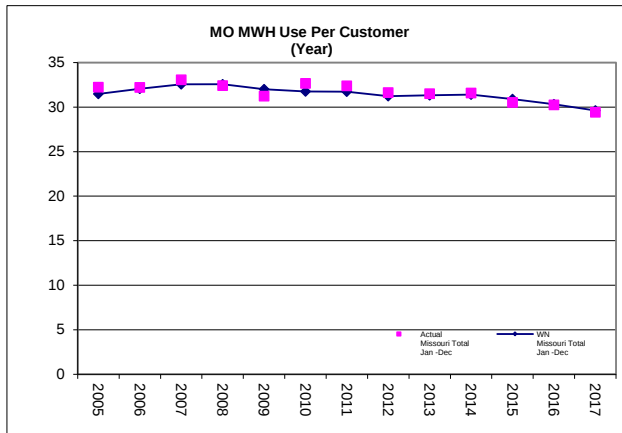
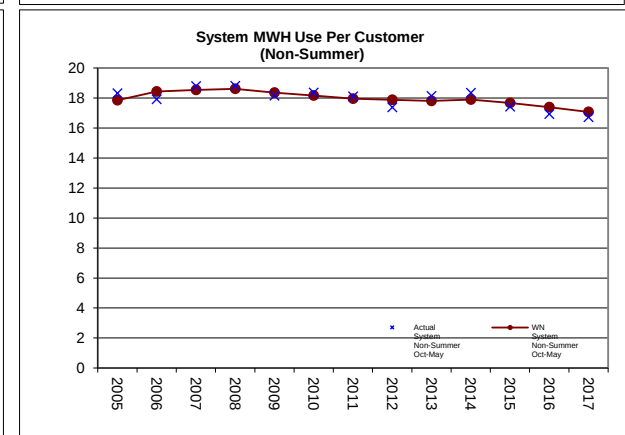
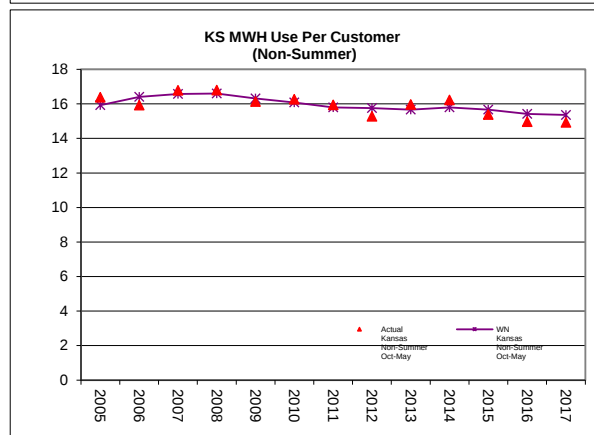
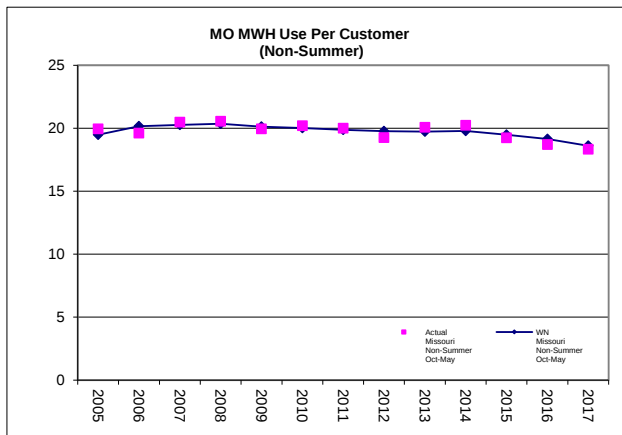
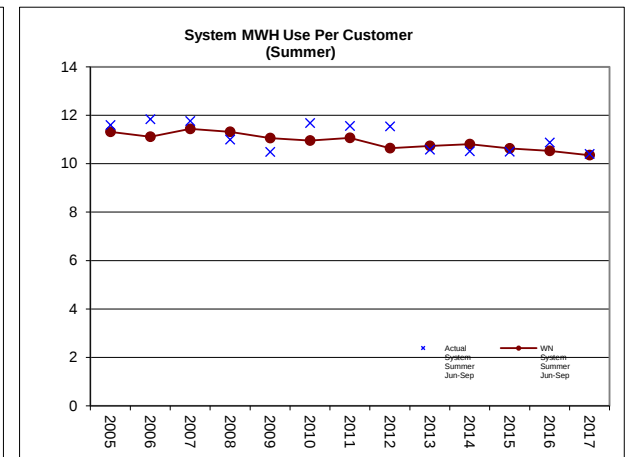
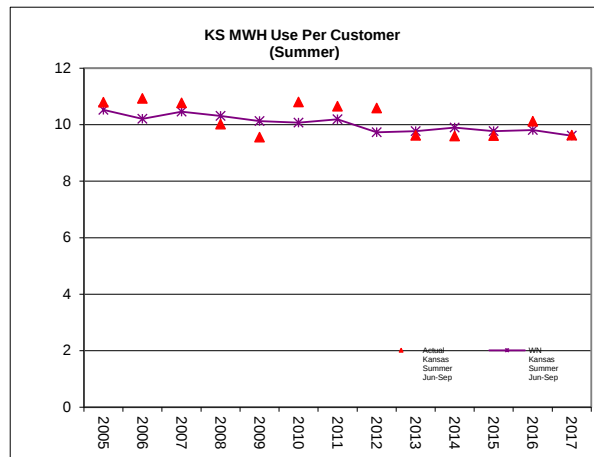
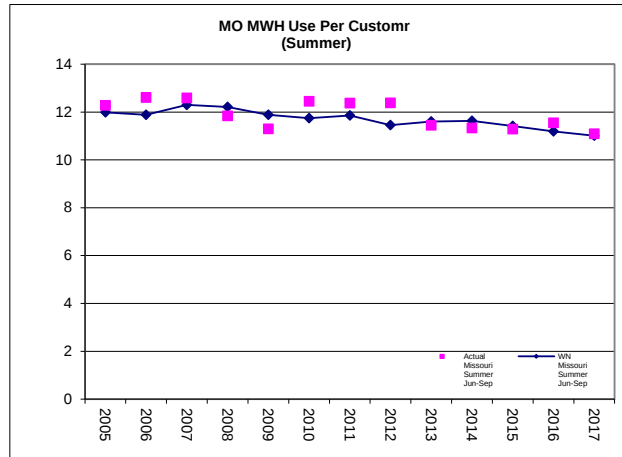
Year	Actual Missouri Summer Jun-Sep	WN Missouri Summer Jun-Sep	Actual Missouri Non-Summer Oct-May	WN Missouri Non-Summer Oct-May	Actual Missouri Total Jan -Dec	WN Missouri Total Jan -Dec	Actual Kansas Summer Jun-Sep	WN Kansas Summer Jun-Sep	Actual Kansas Non-Summer Oct-May	WN Kansas Non-Summer Oct-May	Actual Kansas Total Jan -Dec	WN Kansas Total Jan -Dec	Actual System Summer Jun-Sep	WN System Summer Jun-Sep	Actual System Non-Summer Oct-May	WN System Non-Summer Oct-May	Actual System Total Jan -Dec	WN System Total Jan -Dec
	Missouri Summer Jun-Sep	Missouri Summer Jun-Sep	Missouri Non-Summer Oct-May	Missouri Non-Summer Oct-May	Missouri Total Jan -Dec	Missouri Total Jan -Dec	Kansas Summer Jun-Sep	Kansas Summer Jun-Sep	Kansas Non-Summer Oct-May	Kansas Non-Summer Oct-May	Kansas Total Jan -Dec	Kansas Total Jan -Dec	System Summer Jun-Sep	System Summer Jun-Sep	System Non-Summer Oct-May	System Non-Summer Oct-May	System Total Jan -Dec	System Total Jan -Dec
2005	6,049.4	5,847.7	10,183.8	10,253.1	16,233.2	16,100.8	1,061.1	1,061.1	1,724.1	1,724.1	2,785.2	2,785.2	2,801.2	2,801.2	4,773.5	4,773.5	7,574.7	7,574.7
2006	4,087.2	3,646.7	8,990.9	9,239.2	13,078.0	12,885.9	818.9	818.9	1,755.7	1,755.7	2,574.6	2,574.6	1,978.6	1,978.6	4,352.9	4,352.9	6,331.5	6,331.5
2007	3,230.5	3,675.3	5,442.2	5,516.3	8,672.6	9,191.5	1,134.6	1,089.9	1,284.2	1,269.0	2,418.8	2,358.9	2,146.4	2,123.3	2,988.3	2,979.3	5,134.7	5,102.6
2008	2,524.5	2,527.0	4,323.5	4,390.0	6,848.0	6,917.0	352.3	352.3	519.6	1,437.7	871.9	1,790.0	1,516.0	1,516.0	2,601.0	3,016.7	4,117.0	4,532.7
2009	4,317.9	4,431.8	6,479.4	6,728.2	10,797.3	11,160.1	386.6	386.6	738.8	738.8	1,125.4	1,125.3	2,173.6	2,173.6	3,275.3	3,275.3	5,448.9	5,448.9
2010	3,332.7	2,971.1	6,741.1	6,850.7	10,073.7	9,821.8	651.8	651.8	817.1	817.1	1,468.9	1,468.9	2,045.9	2,045.9	3,509.8	3,509.8	5,555.7	5,555.7
2011	5,407.7	4,860.9	7,330.6	7,460.2	12,738.4	12,321.1	460.7	460.7	725.7	725.7	1,186.5	1,186.5	2,283.3	2,283.3	3,367.7	3,367.7	5,651.0	5,651.0
2012	5,006.7	4,333.9	8,441.6	9,026.5	13,448.2	13,360.4	439.0	439.0	690.4	690.4	1,129.4	1,129.4	2,722.8	2,722.8	3,654.1	3,654.1	6,376.9	6,376.9
2013	9,071.6	8,851.8	15,826.9	15,870.5	24,898.5	24,722.2	401.7	401.7	620.9	620.8	1,022.6	1,022.6	3,291.7	3,291.7	5,689.5	5,689.5	8,981.2	8,981.2
2014	9,228.9	9,228.9	15,936.2	15,936.2	25,165.1	25,165.1	412.2	438.7	613.4	604.4	1,025.7	1,043.0	3,351.1	3,368.7	5,721.0	5,715.0	9,072.1	9,083.7
2015	9,315.1	9,315.1	14,718.4	14,718.4	24,033.5	24,033.5	624.1	678.2	749.0	864.7	1,373.2	1,543.0	4,486.8	4,516.8	6,070.7	6,142.3	10,557.5	10,659.2
2016	10,257.4	10,257.4	13,564.6	13,564.6	23,822.0	23,822.0	849.3	835.4	976.0	1,105.8	1,825.3	1,941.1	5,553.3	5,546.4	7,270.3	7,335.2	12,823.6	12,881.5
2017	9,383.5	9,383.5	14,904.6	14,904.5	24,288.0	24,288.0							7,621.8	9,613.5	9,600.0	9,870.1	17,221.8	19,483.5
06-'11	5.8%	5.9%	-4.0%	-4.2%	-0.5%	-0.9%	-10.9%	-10.9%	-16.2%	-16.2%	-14.4%	-14.4%	2.9%	2.9%	-5.0%	-5.0%	-2.2%	-2.2%
11-'16	13.7%	16.1%	13.1%	12.7%	13.3%	14.1%	13.0%	12.6%	6.1%	8.8%	9.0%	10.3%	19.5%	19.4%	16.6%	16.8%	17.8%	17.9%
06-'16	9.6%	10.9%	4.2%	3.9%	6.2%	6.3%	0.4%	0.2%	-5.7%	-4.5%	-3.4%	-2.8%	10.9%	10.9%	5.3%	5.4%	7.3%	7.4%



* Use per customer increased due to loss of customers in MO & KS 2012-2014

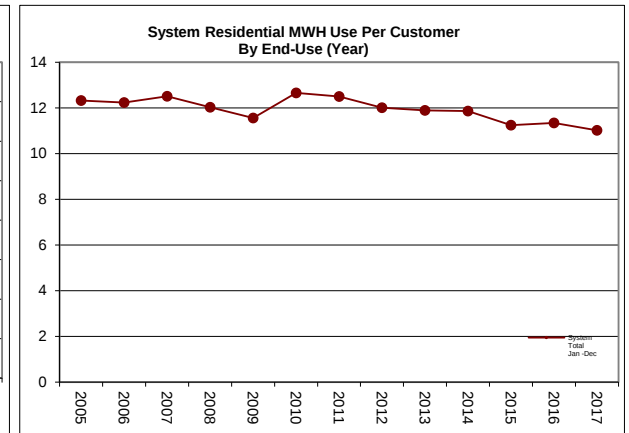
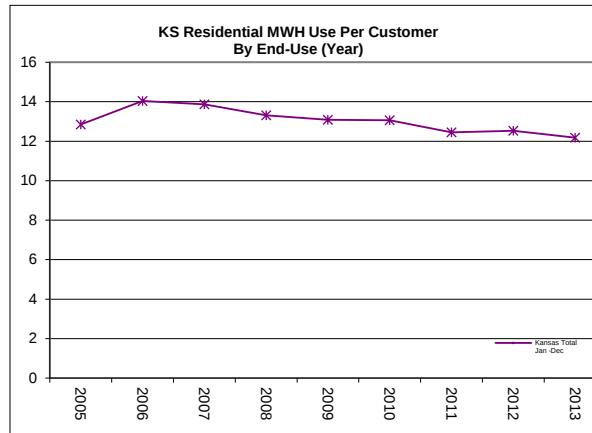
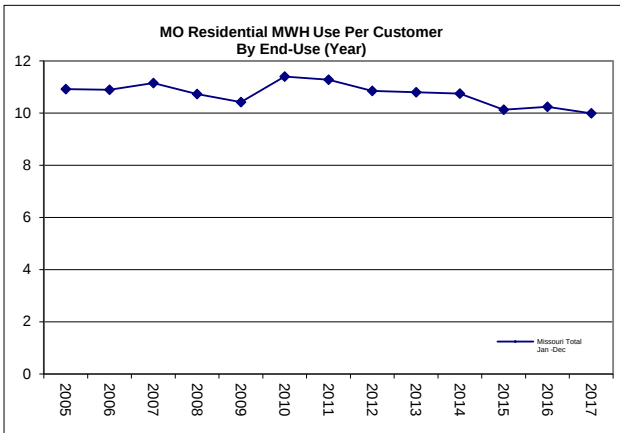
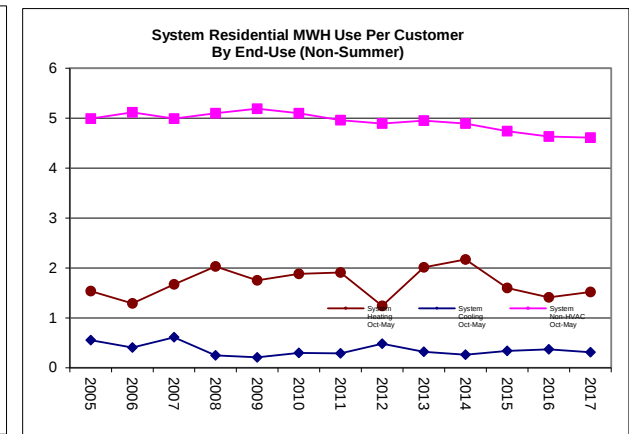
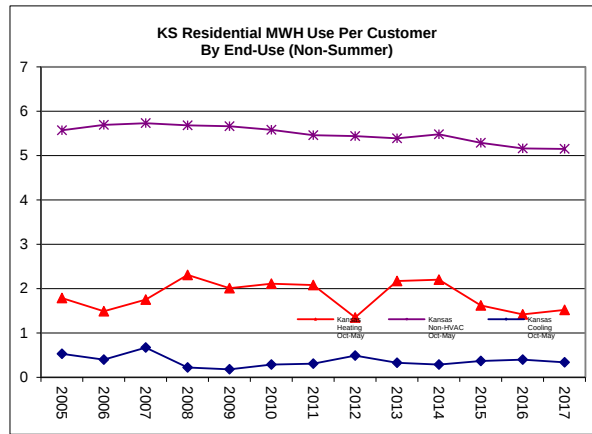
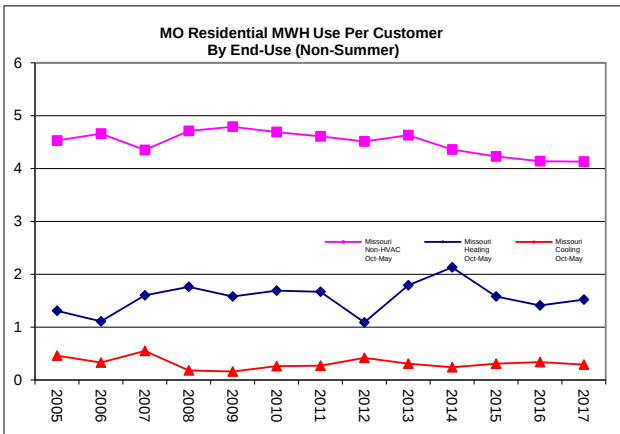
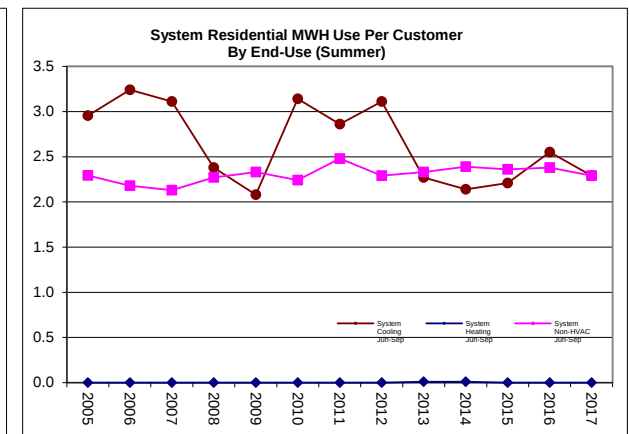
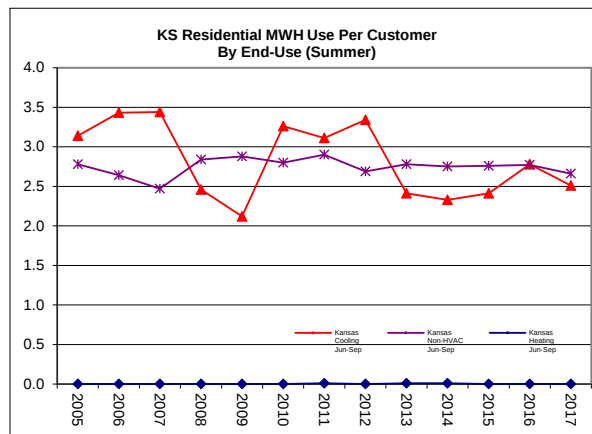
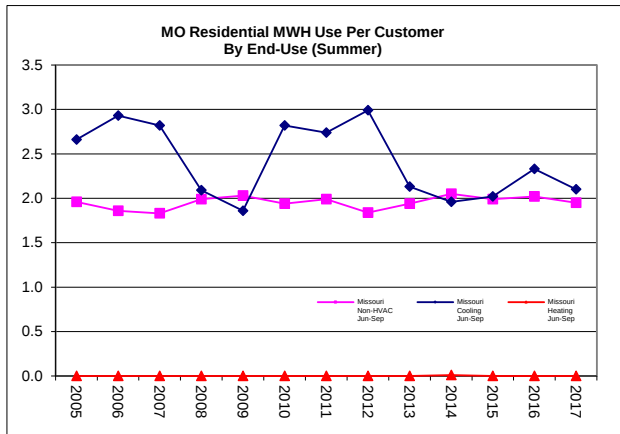
Plot 3A-14 Missouri & Kansas Total MWH Use Per Customer
(Actual vs. Weather Normalized)

Year	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
	Missouri	Missouri	Missouri	Missouri	Missouri	Missouri	Kansas	Kansas	Kansas	Kansas	Kansas	Kansas	System	System	System	System	System	System
	Summer	Summer	Non-Summer	Non-Summer	Total	Total	Summer	Summer	Non-Summer	Non-Summer	Total	Total	Summer	Summer	Non-Summer	Non-Summer	Total	Total
	Jun-Sep	Jun-Sep	Oct-May	Oct-May	Jan -Dec	Jan -Dec	Jun-Sep	Jun-Sep	Oct-May	Oct-May	Jan -Dec	Jan -Dec	Jun-Sep	Jun-Sep	Oct-May	Oct-May	Jan -Dec	Jan -Dec
2005	12.3	12.0	20.0	19.5	32.2	31.5	10.8	10.5	16.4	15.9	27.2	26.4	11.6	11.3	18.3	17.9	29.9	29.2
2006	12.6	11.9	19.6	20.2	32.2	32.1	10.9	10.2	15.9	16.4	26.9	26.6	11.8	11.1	17.9	18.4	29.7	29.5
2007	12.6	12.3	20.5	20.3	33.1	32.6	10.8	10.5	16.8	16.6	27.6	27.0	11.8	11.4	18.8	18.5	30.5	30.0
2008	11.8	12.2	20.6	20.4	32.4	32.6	10.0	10.3	16.8	16.6	26.8	26.9	11.0	11.3	18.8	18.6	29.8	29.9
2009	11.3	11.9	19.9	20.1	31.2	32.0	9.6	10.1	16.1	16.3	25.7	26.5	10.5	11.1	18.2	18.4	28.6	29.4
2010	12.5	11.7	20.2	20.0	32.7	31.8	10.8	10.1	16.3	16.1	27.1	26.2	11.7	11.0	18.4	18.2	30.0	29.1
2011	12.4	11.9	20.0	19.9	32.4	31.7	10.7	10.2	15.9	15.8	26.6	26.0	11.6	11.1	18.1	18.0	29.7	29.0
2012	12.4	11.5	19.3	19.8	31.6	31.2	10.6	9.7	15.3	15.8	25.9	25.5	11.5	10.6	17.4	17.9	28.9	28.5
2013	11.4	11.6	20.1	19.7	31.5	31.3	9.6	9.8	16.0	15.7	25.6	25.4	10.6	10.7	18.1	17.8	28.7	28.5
2014	11.3	11.6	20.2	19.8	31.6	31.4	9.6	9.9	16.2	15.8	25.8	25.7	10.5	10.8	18.3	17.9	28.9	28.7
2015	11.3	11.4	19.2	19.5	30.5	30.9	9.6	9.8	15.4	15.7	25.0	25.4	10.5	10.6	17.4	17.7	27.9	28.3
2016	11.6	11.2	18.7	19.1	30.3	30.3	10.1	9.8	15.0	15.4	25.1	25.2	10.9	10.5	16.9	17.4	27.8	27.9
2017	11.1	11.0	18.3	18.6	29.4	29.6	9.6	9.6	14.9	15.4	24.6	25.0	10.4	10.4	16.7	17.1	27.1	27.4
06-'11	-0.4%	0.0%	0.4%	-0.3%	0.1%	-0.2%	-0.5%	0.0%	0.0%	-0.7%	-0.2%	-0.5%	-0.5%	-0.1%	0.2%	-0.5%	-0.1%	-0.3%
11-'16	-1.4%	-1.2%	-1.3%	-0.7%	-1.4%	-0.9%	-1.0%	-0.8%	-1.3%	-0.5%	-1.2%	-0.6%	-1.2%	-1.0%	-1.3%	-0.7%	-1.3%	-0.8%
06-'16	-0.9%	-0.6%	-0.5%	-0.5%	-0.6%	-0.6%	-0.8%	-0.4%	-0.6%	-0.6%	-0.7%	-0.5%	-0.8%	-0.5%	-0.6%	-0.6%	-0.7%	-0.6%



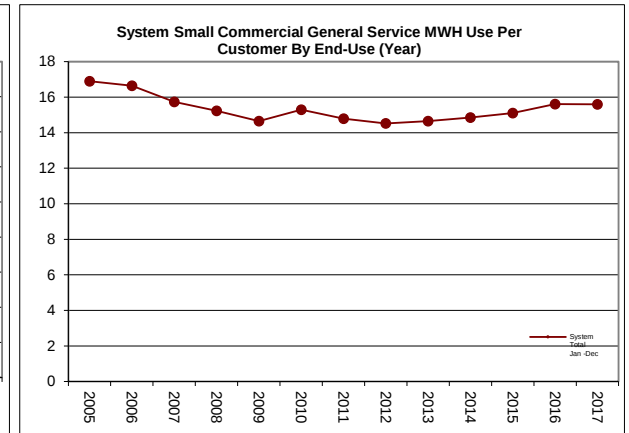
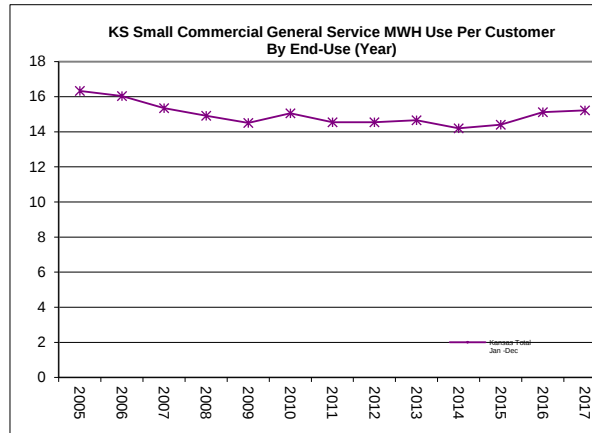
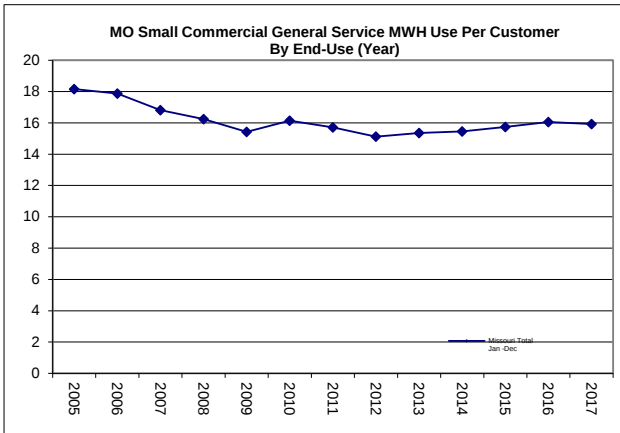
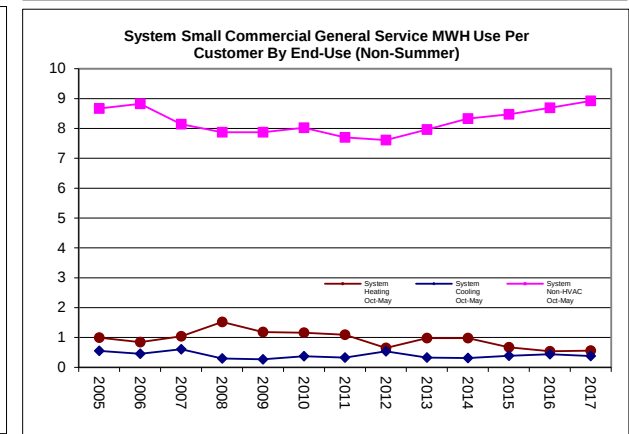
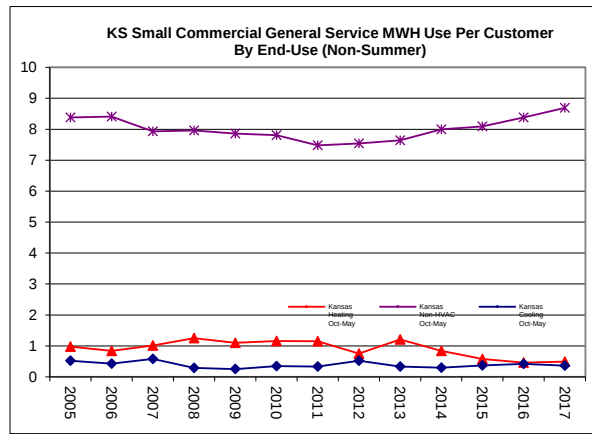
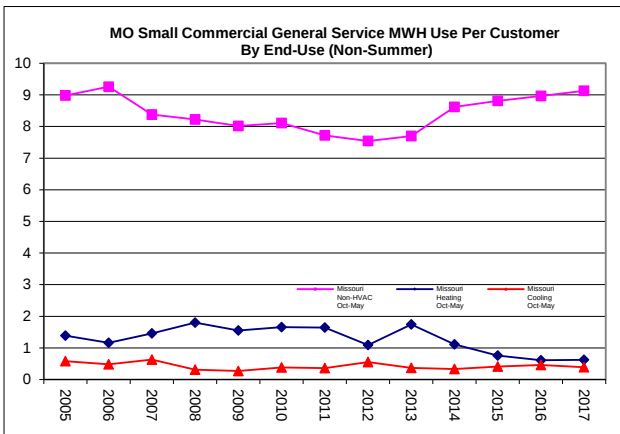
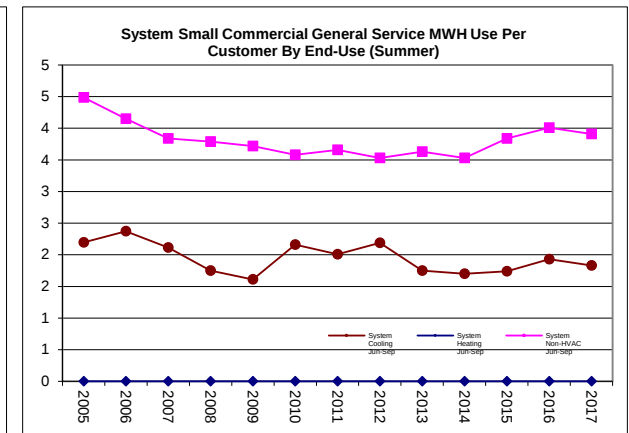
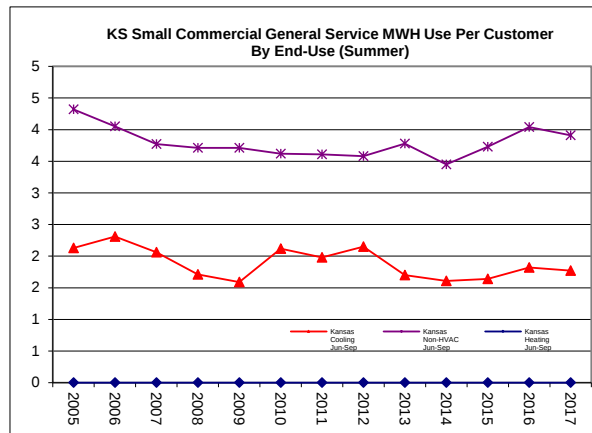
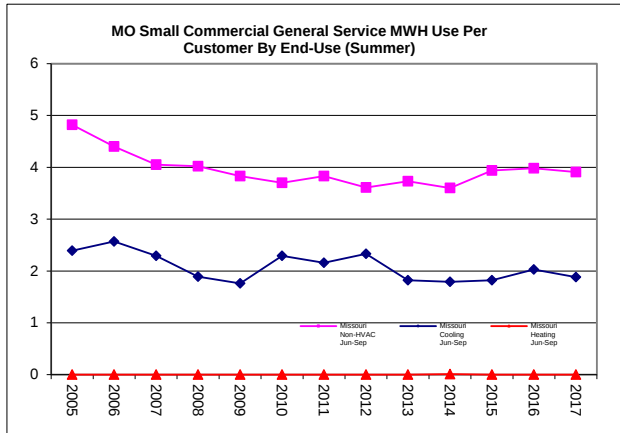
Plot 3A-15 Missouri & Kansas Residential MWH Use Per Customer By End-Use

Year	Missouri Cooling Jun-Sep	Missouri Cooling Oct-May	Missouri Heating Jun-Sep	Missouri Heating Oct-May	Missouri Non-HVAC Jun-Sep	Missouri Non-HVAC Oct-May	Missouri Total Jan -Dec	Kansas Cooling Jun-Sep	Kansas Cooling Oct-May	Kansas Heating Jun-Sep	Kansas Heating Oct-May	Kansas Non-HVAC Jun-Sep	Kansas Non-HVAC Oct-May	Kansas Total Jan -Dec	System Cooling Jun-Sep	System Cooling Oct-May	System Heating Jun-Sep	System Heating Oct-May	System Non-HVAC Jun-Sep	System Non-HVAC Oct-May	System Total Jan -Dec
2005	2.7	0.5	0.0	1.3	2.0	4.5	10.9	3.1	0.5	0.0	1.8	2.8	5.6	13.8	3.0	0.6	0.0	1.5	2.3	5.0	12.3
2006	2.9	0.3	0.0	1.1	1.9	4.7	10.9	3.4	0.4	0.0	1.5	2.6	5.7	13.7	3.2	0.4	0.0	1.3	2.2	5.1	12.2
2007	2.8	0.6	0.0	1.6	1.8	4.4	11.2	3.4	0.7	0.0	1.8	2.5	5.7	14.1	3.1	0.6	0.0	1.7	2.1	5.0	12.5
2008	2.1	0.2	0.0	1.8	2.0	4.7	10.7	2.5	0.2	0.0	2.3	2.8	5.7	13.5	2.4	0.3	0.0	2.0	2.3	5.1	12.0
2009	1.9	0.2	0.0	1.6	2.0	4.8	10.4	2.1	0.2	0.0	2.0	2.9	5.7	12.9	2.1	0.2	0.0	1.8	2.3	5.2	11.6
2010	2.8	0.3	0.0	1.7	1.9	4.7	11.4	3.3	0.3	0.0	2.1	2.8	5.6	14.0	3.1	0.3	0.0	1.9	2.2	5.1	12.7
2011	2.7	0.3	0.0	1.7	2.0	4.6	11.3	3.1	0.3	0.0	2.1	2.9	5.5	13.9	2.9	0.3	0.0	1.9	2.5	5.0	12.5
2012	3.0	0.4	0.0	1.1	1.8	4.5	10.9	3.3	0.5	0.0	1.4	2.7	5.4	13.3	3.1	0.5	0.0	1.2	2.3	4.9	12.0
2013	2.1	0.3	0.0	1.8	1.9	4.6	10.8	2.4	0.3	0.0	2.2	2.8	5.4	13.1	2.3	0.3	0.0	2.0	2.3	5.0	11.9
2014	2.0	0.2	0.0	2.1	2.1	4.4	10.8	2.3	0.3	0.0	2.2	2.8	5.5	13.1	2.1	0.3	0.0	2.2	2.4	4.9	11.9
2015	2.0	0.3	0.0	1.6	2.0	4.2	10.1	2.4	0.4	0.0	1.6	2.8	5.3	12.5	2.2	0.3	0.0	1.6	2.4	4.7	11.3
2016	2.3	0.3	0.0	1.4	2.0	4.1	10.2	2.8	0.4	0.0	1.4	2.8	5.2	12.5	2.6	0.4	0.0	1.4	2.4	4.6	11.3
2017	2.1	0.3	0.0	1.5	2.0	4.1	10.0	2.5	0.3	0.0	1.5	2.7	5.2	12.2	2.3	0.3	0.0	1.5	2.3	4.6	11.0
06-'11	-1.3%	-3.9%	#DIV/0!	8.5%	1.4%	-0.2%	0.7%	-1.9%	-5.0%	#DIV/0!	6.9%	1.9%	-0.8%	0.3%	-2.5%	-6.5%	#DIV/0!	8.2%	2.6%	-0.6%	0.4%
11-'16	-3.2%	4.7%	#DIV/0!	-3.3%	0.3%	-2.1%	-1.9%	-2.2%	5.2%	-100.0%	-7.4%	-0.9%	-1.1%	-2.0%	-2.3%	5.0%	#DIV/0!	-5.9%	-0.8%	-1.4%	-1.9%
06-'16	-2.3%	0.3%	#DIV/0!	2.4%	0.8%	-1.2%	-0.6%	-2.1%	0.0%	#DIV/0!	-0.5%	0.5%	-1.0%	-0.9%	-2.4%	-0.9%	#DIV/0!	0.9%	0.9%	-1.0%	-0.8%



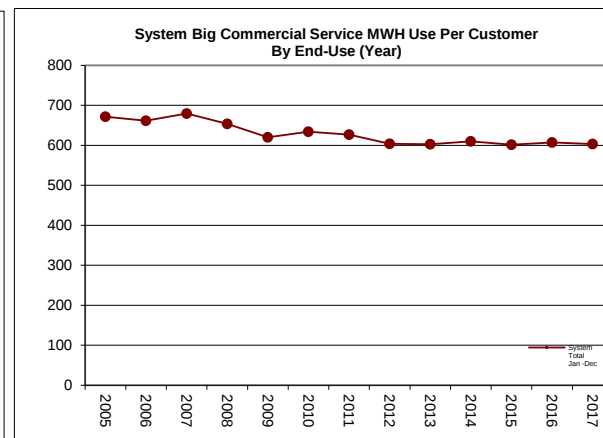
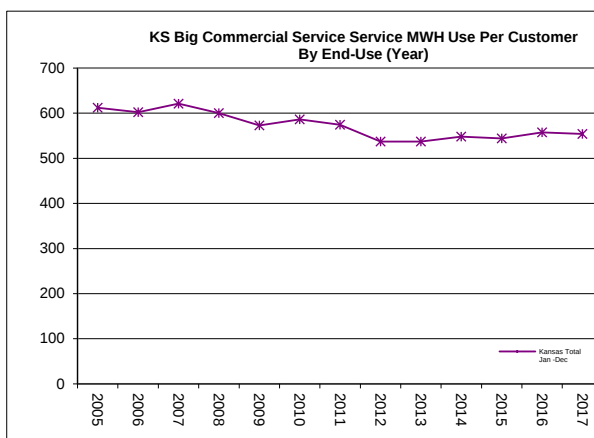
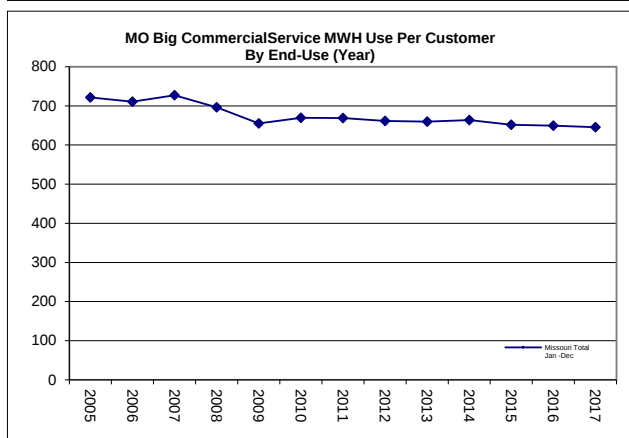
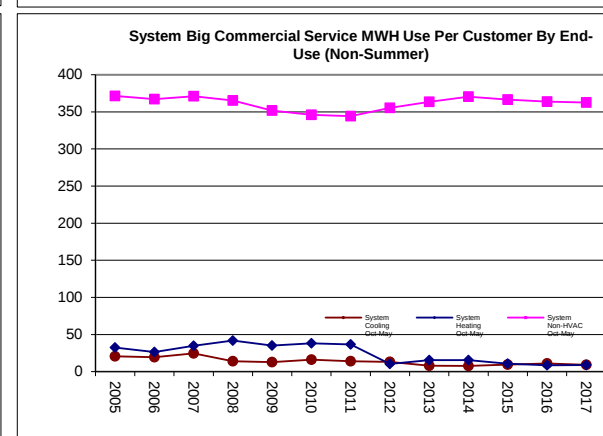
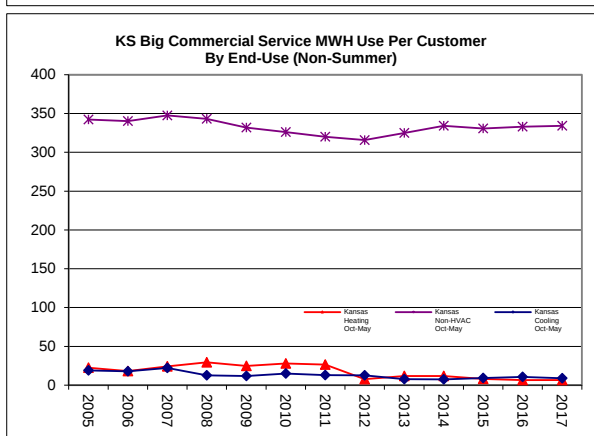
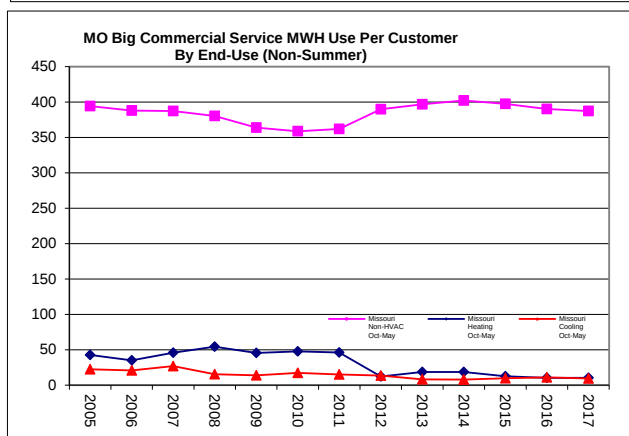
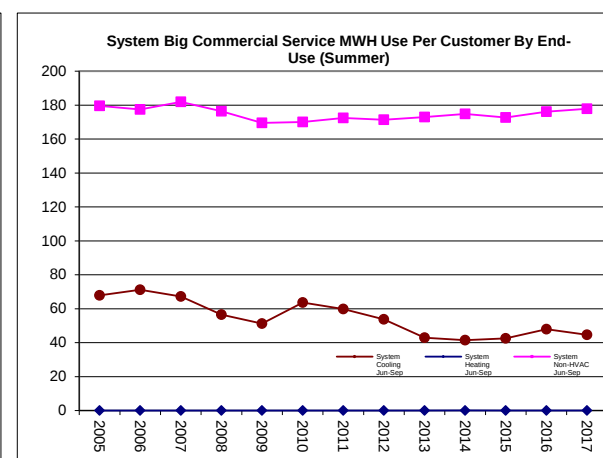
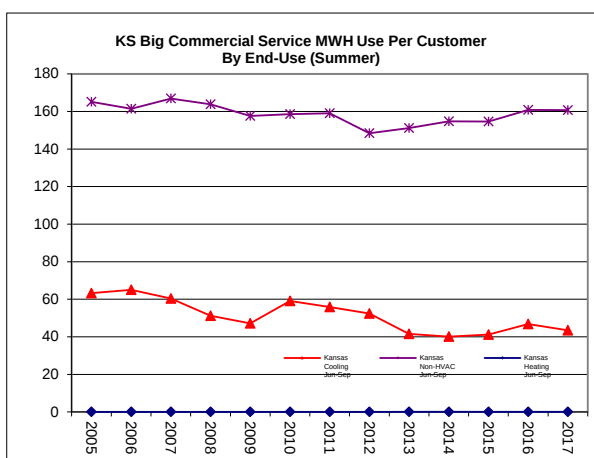
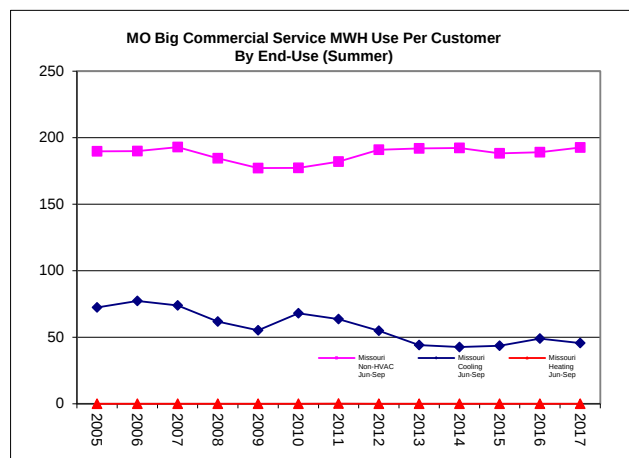
Plot 3A-16 Missouri & Kansas Small Commercial General Service MWH Use Per Customer By End-Use

	Missouri	Missouri	Missouri	Missouri	Missouri	Missouri	Missouri	Kansas	Kansas	Kansas	Kansas	Kansas	Kansas	Kansas	System	System	System	System	System	System	System
	Cooling	Cooling	Heating	Heating	Non-HVAC	Non-HVAC	Total	Cooling	Cooling	Heating	Heating	Non-HVAC	Non-HVAC	Total	Cooling	Cooling	Heating	Heating	Non-HVAC	Non-HVAC	Total
Year	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jan -Dec	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jan -Dec	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jan -Dec
2005	2.4	0.6	0.0	1.4	4.8	9.0	18.2	2.1	0.5	0.0	1.0	4.3	8.4	16.3	2.2	0.6	0.0	1.0	4.5	8.7	16.9
2006	2.6	0.5	0.0	1.2	4.4	9.3	17.9	2.3	0.4	0.0	0.8	4.1	8.4	16.0	2.4	0.5	0.0	0.8	4.1	8.8	16.6
2007	2.3	0.6	0.0	1.5	4.1	8.4	16.8	2.1	0.6	0.0	1.0	3.8	7.9	15.4	2.1	0.6	0.0	1.0	3.8	8.1	15.7
2008	1.9	0.3	0.0	1.8	4.0	8.2	16.2	1.7	0.3	0.0	1.3	3.7	8.0	14.9	1.8	0.3	0.0	1.5	3.8	7.9	15.2
2009	1.8	0.3	0.0	1.6	3.8	8.0	15.4	1.6	0.3	0.0	1.1	3.7	7.9	14.5	1.6	0.3	0.0	1.2	3.7	7.9	14.7
2010	2.3	0.4	0.0	1.7	3.7	8.1	16.1	2.1	0.4	0.0	1.2	3.6	7.8	15.1	2.2	0.4	0.0	1.2	3.6	8.0	15.3
2011	2.2	0.4	0.0	1.6	3.8	7.7	15.7	2.0	0.3	0.0	1.2	3.6	7.5	14.6	2.0	0.3	0.0	1.1	3.7	7.7	14.8
2012	2.3	0.6	0.0	1.1	3.6	7.5	15.1	2.2	0.5	0.0	0.8	3.6	7.5	14.5	2.2	0.5	0.0	0.7	3.5	7.6	14.5
2013	1.8	0.4	0.0	1.7	3.7	7.7	15.4	1.7	0.3	0.0	1.2	3.8	7.6	14.7	1.8	0.3	0.0	1.0	3.6	8.0	14.7
2014	1.8	0.3	0.0	1.1	3.6	8.6	15.5	1.6	0.3	0.0	0.8	3.5	8.0	14.2	1.7	0.3	0.0	1.0	3.5	8.3	14.9
2015	1.8	0.4	0.0	0.8	3.9	8.8	15.7	1.6	0.4	0.0	0.6	3.7	8.1	14.4	1.7	0.4	0.0	0.7	3.8	8.5	15.1
2016	2.0	0.5	0.0	0.6	4.0	9.0	16.1	1.8	0.4	0.0	0.5	4.0	8.4	15.1	1.9	0.4	0.0	0.5	4.0	8.7	15.6
2017	1.9	0.4	0.0	0.6	3.9	9.1	15.9	1.8	0.4	0.0	0.5	3.9	8.7	15.2	1.8	0.4	0.0	0.6	3.9	8.9	15.6
06-'11	-3.4%	-5.6%	#DIV/0!	7.2%	-2.7%	-3.6%	-2.5%	-3.0%	-5.2%	#DIV/0!	6.5%	-2.3%	-2.3%	-1.9%	-3.3%	-6.3%	#DIV/0!	5.3%	-2.5%	-2.7%	-2.3%
11-'16	-1.2%	5.0%	#DIV/0!	-17.9%	0.8%	3.0%	0.4%	-1.7%	4.9%	#DIV/0!	-16.7%	2.3%	2.3%	0.8%	-0.8%	5.9%	#DIV/0!	-13.1%	1.8%	2.4%	1.1%
06-'16	-2.3%	-0.4%	#DIV/0!	-6.2%	-1.0%	-0.3%	-1.1%	-2.4%	-0.2%	#DIV/0!	-5.8%	0.0%	0.0%	-0.6%	-2.0%	-0.4%	#DIV/0!	-4.3%	-0.3%	-0.1%	-0.6%



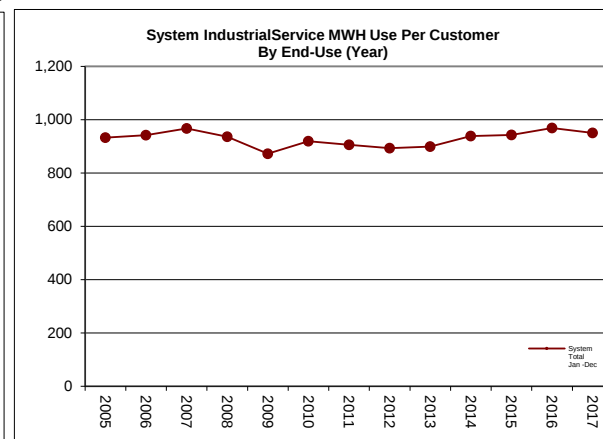
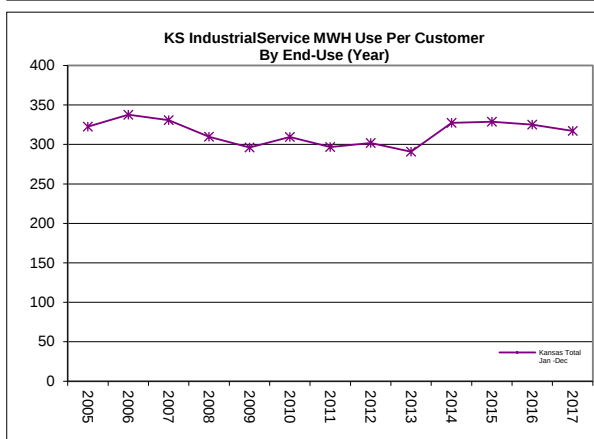
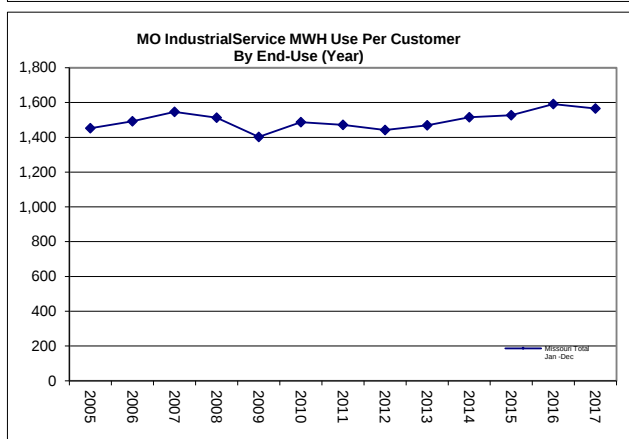
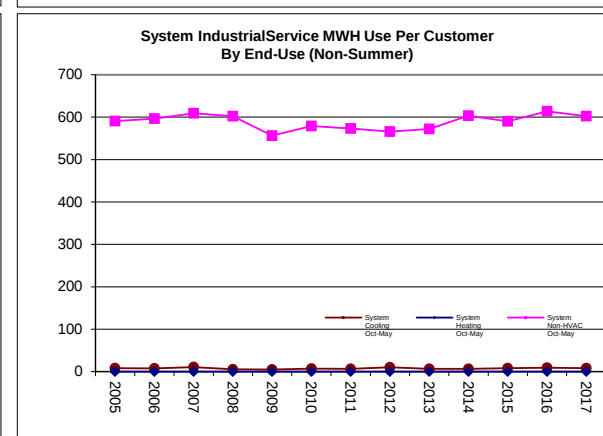
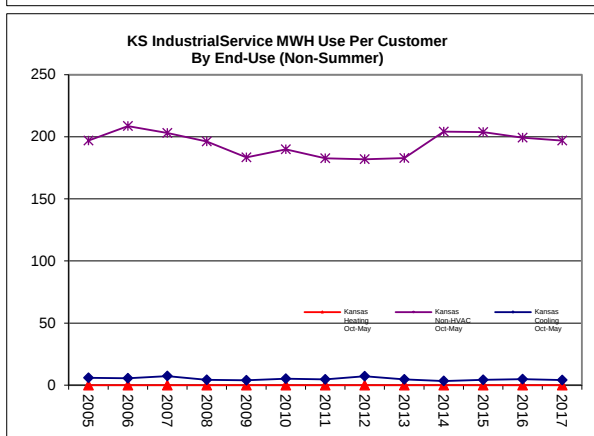
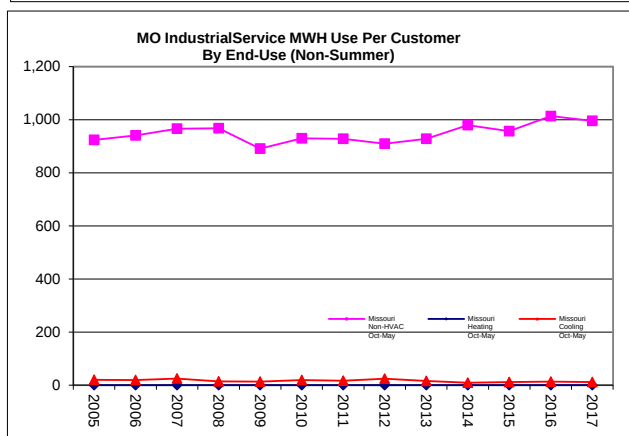
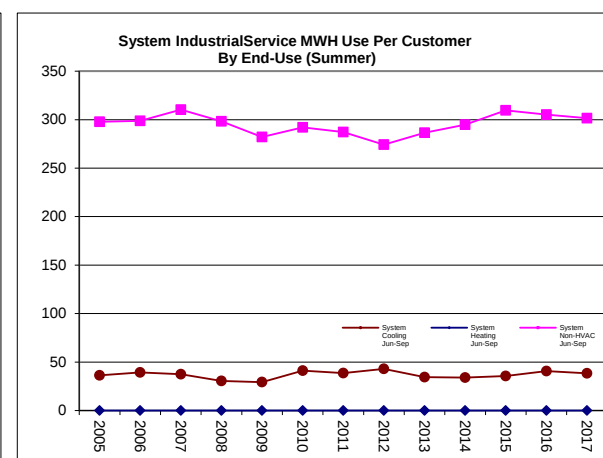
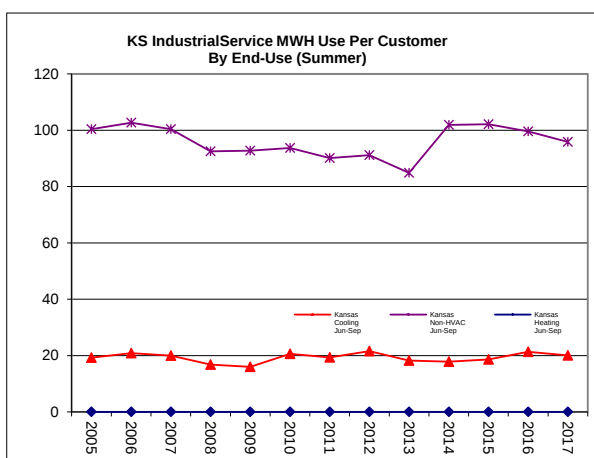
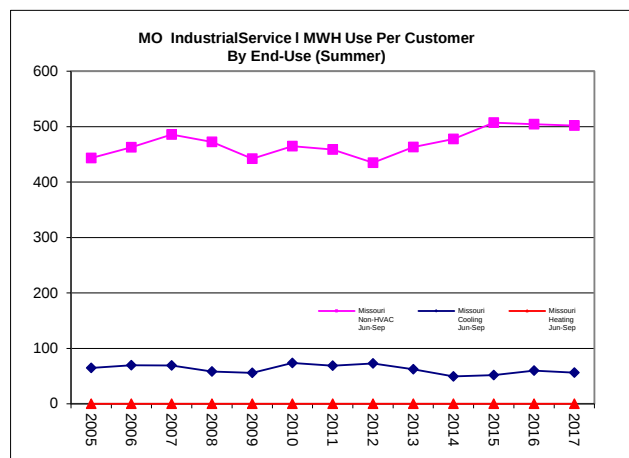
Plot 3A-17 Missouri & Kansas Big Commercial General Service MWH Use Per Customer By End-Use

Year	Missouri Cooling	Missouri Cooling	Missouri Heating	Missouri Heating	Missouri Non-HVAC	Missouri Non-HVAC	Missouri Total	Kansas Cooling	Kansas Cooling	Kansas Heating	Kansas Heating	Kansas Non-HVAC	Kansas Non-HVAC	Kansas Total	System Cooling	System Cooling	System Heating	System Heating	System Non-HVAC	System Non-HVAC	System Total
	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jan -Dec	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jan -Dec	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jan -Dec
2005	72.4	22.5	0.0	42.5	189.8	394.2	721.4	63.2	19.1	0.0	22.4	165.1	342.4	612.1	67.8	20.8	0.0	32.3	179.5	371.4	671.9
2006	77.3	20.9	0.0	34.9	189.9	387.7	710.7	65.0	17.8	0.0	18.0	161.4	340.1	602.3	71.2	19.3	0.0	26.3	177.5	367.2	661.5
2007	73.9	26.9	0.0	45.9	192.9	387.4	727.1	60.4	22.2	0.0	24.2	166.9	347.6	621.3	67.2	24.6	0.0	34.9	181.9	371.2	679.7
2008	61.7	15.4	0.0	54.3	184.5	380.2	696.2	51.2	12.6	0.0	29.4	163.8	343.1	600.1	56.5	14.0	0.0	41.9	176.3	365.4	654.0
2009	55.3	13.8	0.0	45.4	177.2	363.8	655.4	47.2	11.8	0.0	24.7	157.6	331.9	573.1	51.2	12.8	0.0	35.1	169.5	351.6	620.2
2010	68.1	17.4	0.0	47.8	177.3	358.6	669.2	59.0	15.0	0.0	27.8	158.6	326.0	586.5	63.6	16.2	0.0	38.1	170.1	345.9	634.0
2011	63.7	15.0	0.1	46.3	182.0	361.9	668.9	55.8	13.1	0.0	26.5	159.0	320.0	574.4	59.8	14.0	0.0	36.6	172.5	344.2	627.1
2012	54.9	13.5	0.0	12.4	191.0	389.7	661.6	52.3	12.7	0.0	7.8	148.4	315.8	537.1	53.7	13.2	0.0	10.3	171.3	355.5	604.0
2013	44.2	8.2	0.1	18.7	191.9	396.9	659.8	41.6	7.7	0.0	11.7	151.2	325.0	537.2	43.0	8.0	0.0	15.4	173.0	363.5	602.9
2014	42.7	7.9	0.1	18.6	192.3	402.2	663.8	40.1	7.4	0.1	11.7	154.8	334.1	548.1	41.5	7.7	0.1	15.4	174.9	370.6	610.1
2015	43.6	9.8	0.0	12.7	188.2	397.3	651.6	41.2	9.3	0.0	8.1	154.7	330.6	543.9	42.5	9.6	0.0	10.6	172.7	366.4	601.7
2016	49.0	11.1	0.0	10.3	189.2	390.2	649.7	46.8	10.5	0.0	6.5	160.8	333.1	557.7	48.0	10.8	0.0	8.5	176.1	363.8	607.2
2017	45.6	9.5	0.0	10.5	192.6	387.2	645.5	43.5	9.0	0.0	6.7	160.7	334.1	554.0	44.7	9.3	0.0	8.8	177.9	362.5	603.1
06-'11	-3.8%	-6.4%	61.5%	5.8%	-0.8%	-1.4%	-1.2%	-3.0%	-5.9%	#DIV/0!	8.1%	-0.3%	-1.2%	-0.9%	-3.4%	-6.2%	#DIV/0!	6.8%	-0.6%	-1.3%	-1.1%
11-'16	-5.1%	-5.9%	-28.9%	-26.0%	0.8%	1.5%	-0.6%	-3.5%	-4.2%	#DIV/0!	-24.5%	0.2%	0.8%	-0.6%	-4.3%	-5.1%	#DIV/0!	-25.3%	0.4%	1.1%	-0.6%
06-'16	-4.5%	-6.2%	7.2%	-11.5%	0.0%	0.1%	-0.9%	-3.2%	-5.1%	#DIV/0!	-9.7%	0.0%	-0.2%	-0.8%	-3.9%	-5.6%	#DIV/0!	-10.6%	-0.1%	-0.1%	-0.9%



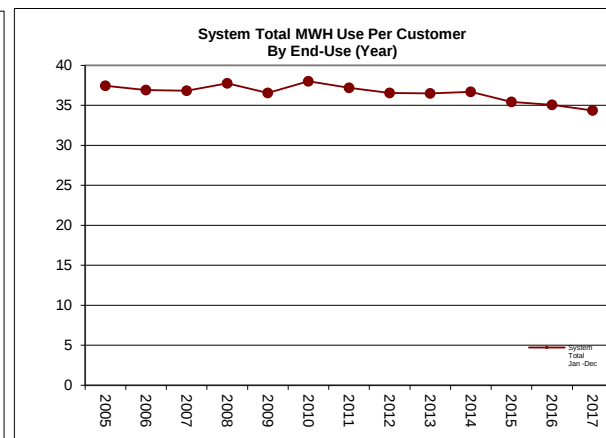
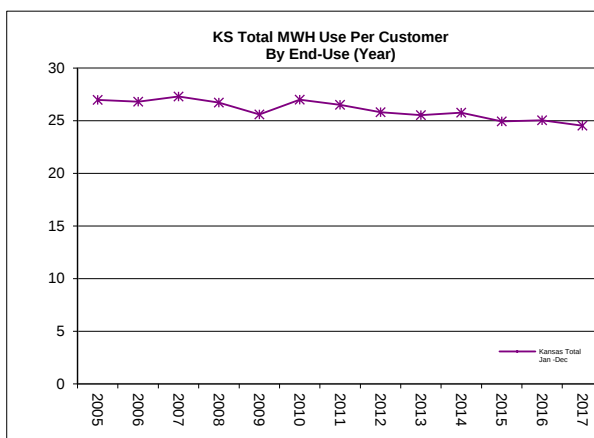
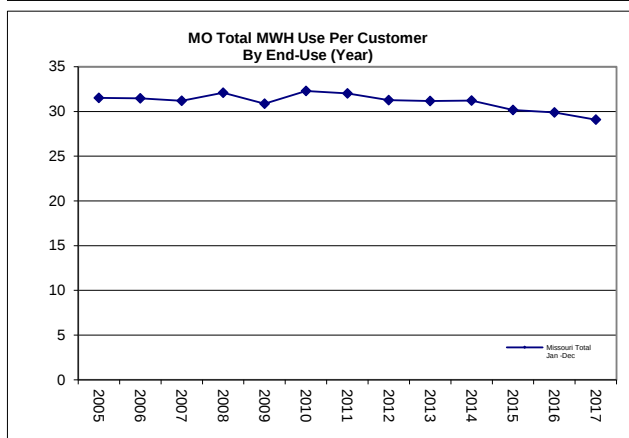
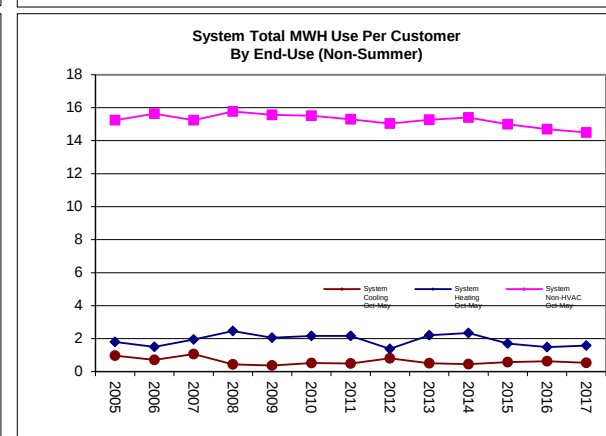
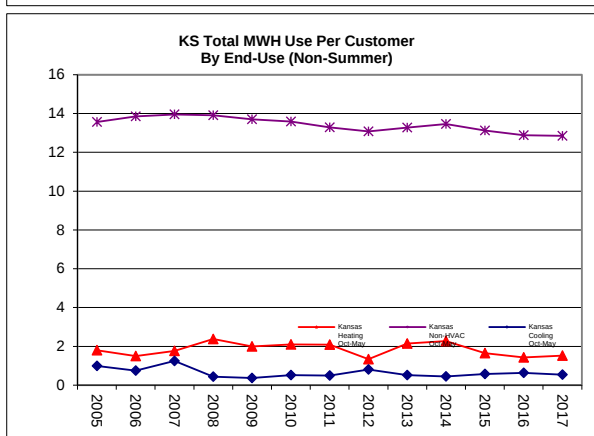
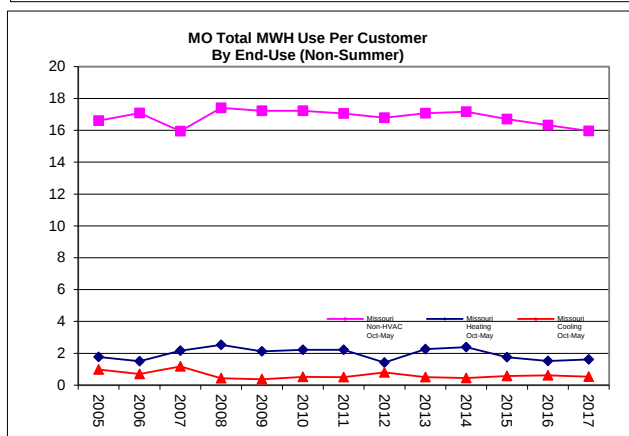
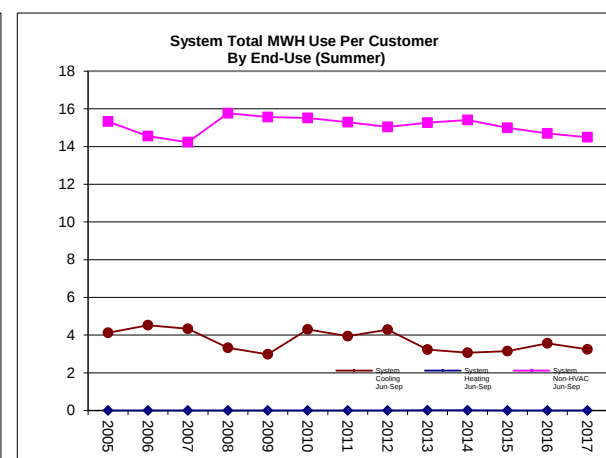
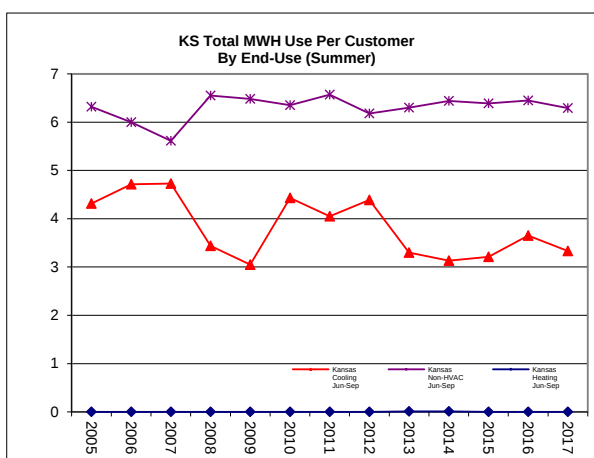
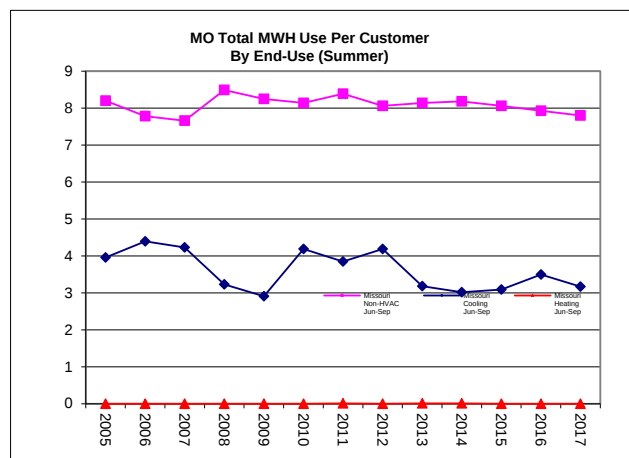
Plot 3A-18 Missouri & Kansas Industrial Service MWH Use Per Customer By End-Use

Year	Missouri							Kansas							System						
	Cooling	Cooling	Heating	Heating	Non-HVAC	Non-HVAC	Total	Cooling	Cooling	Heating	Heating	Non-HVAC	Non-HVAC	Total	Cooling	Cooling	Heating	Heating	Non-HVAC	Non-HVAC	Total
	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jan -Dec	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jan -Dec	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jan -Dec
2005	65	20	0	0	443	924	1,452	19	6	0	0	100	197	323	36	8	0	0	298	591	933
2006	70	19	0	0	463	940	1,492	21	6	0	0	103	209	338	39	8	0	0	299	597	942
2007	69	25	0	0	486	966	1,546	20	7	0	0	100	203	331	37	11	0	0	310	609	967
2008	58	14	0	0	472	968	1,513	17	4	0	0	93	196	310	31	5	0	0	298	602	936
2009	56	14	0	0	442	891	1,402	16	4	0	0	93	183	296	29	5	0	0	282	556	873
2010	74	19	0	0	465	930	1,487	21	5	0	0	94	190	309	41	7	0	0	292	579	919
2011	69	17	0	0	459	928	1,472	19	5	0	0	90	183	297	39	6	0	0	287	573	906
2012	73	24	0	0	435	910	1,442	22	7	0	0	91	182	302	43	10	0	0	274	566	893
2013	62	16	0	0	463	928	1,469	18	5	0	0	85	183	291	34	6	0	0	286	572	899
2014	49	9	0	0	478	980	1,516	18	3	0	0	102	204	327	34	6	0	0	295	603	938
2015	52	12	0	0	507	957	1,527	19	4	0	0	102	204	329	36	8	0	0	310	590	943
2016	60	13	0	0	504	1,014	1,591	21	5	0	0	100	199	325	41	9	0	0	305	614	969
2017	56	12	0	0	502	996	1,565	20	4	0	0	96	197	317	38	8	0	0	302	602	950
06-'11	-0.3%	-3.1%	#DIV/0!	#DIV/0!	-0.2%	-0.3%	-0.3%	-1.5%	-3.4%	#DIV/0!	#DIV/0!	-2.6%	-2.6%	-2.5%	-0.3%	-3.3%	#DIV/0!	#DIV/0!	-0.8%	-0.8%	-0.8%
11-'16	-2.8%	-4.3%	#DIV/0!	#DIV/0!	1.9%	1.8%	1.6%	1.9%	0.5%	#DIV/0!	#DIV/0!	2.0%	1.8%	1.8%	1.1%	7.1%	#DIV/0!	#DIV/0!	1.2%	1.4%	1.4%
06-'16	-1.5%	-3.7%	#DIV/0!	#DIV/0!	0.9%	0.8%	0.6%	0.2%	-1.5%	#DIV/0!	#DIV/0!	-0.3%	-0.5%	-0.4%	0.4%	1.8%	#DIV/0!	#DIV/0!	0.2%	0.3%	0.3%



Plot 3A-19 Missouri & Kansas Total MWH Use Per Customer By End-Use
For classes that have end-use sales

Year	Missouri Cooling	Missouri Cooling	Missouri Heating	Missouri Heating	Missouri Non-HVAC	Missouri Non-HVAC	Missouri Total	Kansas Cooling	Kansas Cooling	Kansas Heating	Kansas Heating	Kansas Non-HVAC	Kansas Non-HVAC	Kansas Total	System Cooling	System Cooling	System Heating	System Heating	System Non-HVAC	System Non-HVAC	System Total
	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jan -Dec	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jan -Dec	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jun-Sep	Oct-May	Jan -Dec
2005	4.0	1.0	0.0	1.8	8.2	16.6	31.5	4.3	1.0	0.0	1.8	6.3	13.6	27.0	4.1	1.0	0.0	1.8	15.3	15.2	37.5
2006	4.4	0.7	0.0	1.5	7.8	17.1	31.5	4.7	0.7	0.0	1.5	6.0	13.9	26.8	4.5	0.7	0.0	1.5	14.6	15.6	36.9
2007	4.2	1.2	0.0	2.2	7.7	15.9	31.2	4.7	1.2	0.0	1.8	5.6	14.0	27.3	4.3	1.1	0.0	1.9	14.2	15.2	36.8
2008	3.2	0.4	0.0	2.5	8.5	17.4	32.1	3.4	0.4	0.0	2.4	6.6	13.9	26.7	3.3	0.4	0.0	2.5	15.8	15.8	37.8
2009	2.9	0.4	0.0	2.1	8.3	17.2	30.9	3.1	0.4	0.0	2.0	6.5	13.7	25.6	3.0	0.4	0.0	2.1	15.6	15.6	36.6
2010	4.2	0.5	0.0	2.2	8.1	17.2	32.3	4.4	0.5	0.0	2.1	6.4	13.6	27.0	4.3	0.5	0.0	2.2	15.5	15.5	38.0
2011	3.9	0.5	0.0	2.2	8.4	17.1	32.0	4.1	0.5	0.0	2.1	6.6	13.3	26.5	4.0	0.5	0.0	2.2	15.3	15.3	37.2
2012	4.2	0.8	0.0	1.4	8.1	16.8	31.3	4.4	0.8	0.0	1.3	6.2	13.1	25.8	4.3	0.8	0.0	1.4	15.0	15.0	36.6
2013	3.2	0.5	0.0	2.3	8.1	17.1	31.2	3.3	0.5	0.0	2.1	6.3	13.3	25.5	3.2	0.5	0.0	2.2	15.3	15.3	36.5
2014	3.0	0.5	0.0	2.4	8.2	17.2	31.2	3.1	0.5	0.0	2.3	6.4	13.5	25.8	3.1	0.5	0.0	2.3	15.4	15.4	36.7
2015	3.1	0.6	0.0	1.8	8.1	16.7	30.2	3.2	0.6	0.0	1.7	6.4	13.1	24.9	3.2	0.6	0.0	1.7	15.0	15.0	35.4
2016	3.5	0.6	0.0	1.5	7.9	16.3	29.9	3.7	0.6	0.0	1.4	6.5	12.9	25.0	3.6	0.6	0.0	1.5	14.7	14.7	35.1
2017	3.2	0.5	0.0	1.6	7.8	16.0	29.1	3.3	0.5	0.0	1.5	6.3	12.9	24.5	3.3	0.5	0.0	1.6	14.5	14.5	34.4
06-'11	-2.6%	-6.7%	#DIV/0!	8.1%	1.5%	0.0%	0.4%	-3.0%	-7.7%	#DIV/0!	6.9%	1.8%	-0.8%	-0.2%	-2.7%	-6.8%	#DIV/0!	7.5%	1.0%	-0.4%	0.1%
11-'16	-1.9%	4.4%	-100.0%	-7.3%	-1.1%	-0.9%	-1.4%	-2.1%	4.7%	#DIV/0!	-7.3%	-0.4%	-0.6%	-1.1%	-2.0%	4.7%	#DIV/0!	-7.3%	-0.8%	-0.8%	-1.2%
06-'16	-2.3%	-1.3%	#DIV/0!	0.1%	0.2%	-0.4%	-0.5%	-2.5%	-1.7%	#DIV/0!	-0.5%	0.7%	-0.7%	-0.7%	-2.3%	-1.2%	#DIV/0!	-0.2%	0.1%	-0.6%	-0.5%

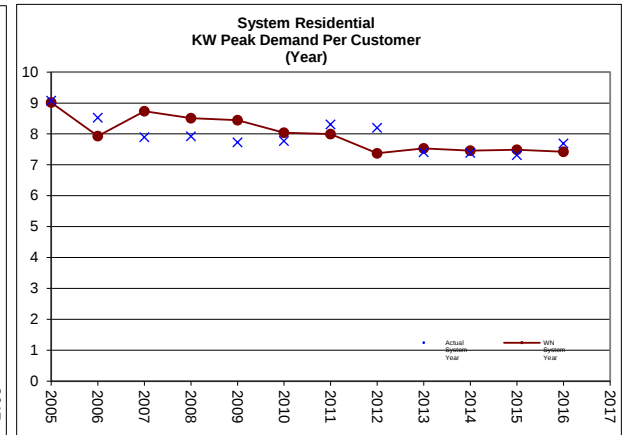
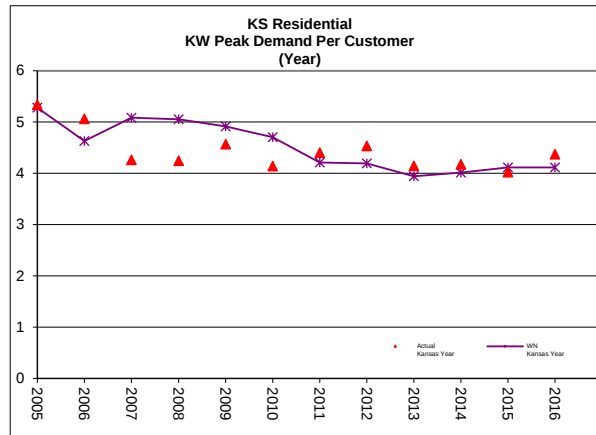
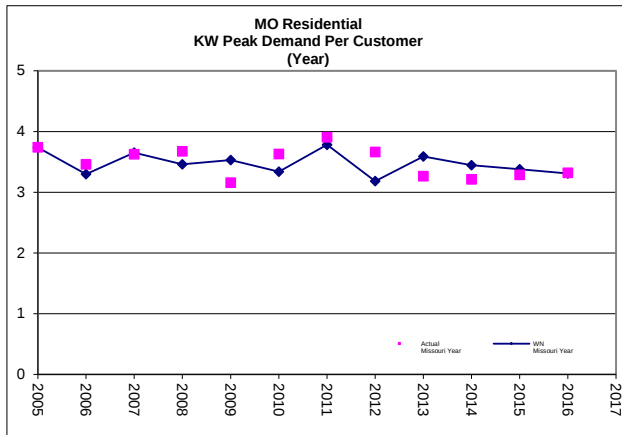
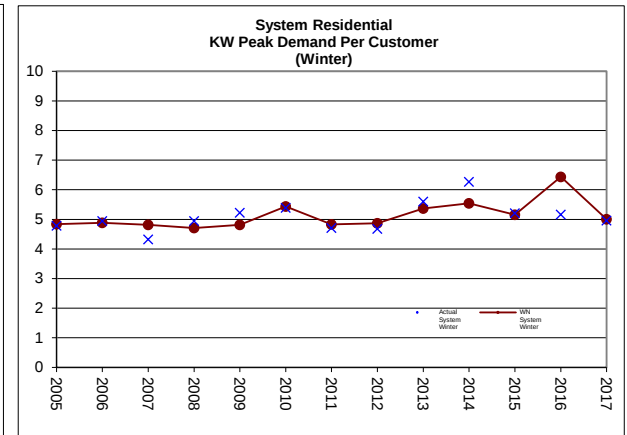
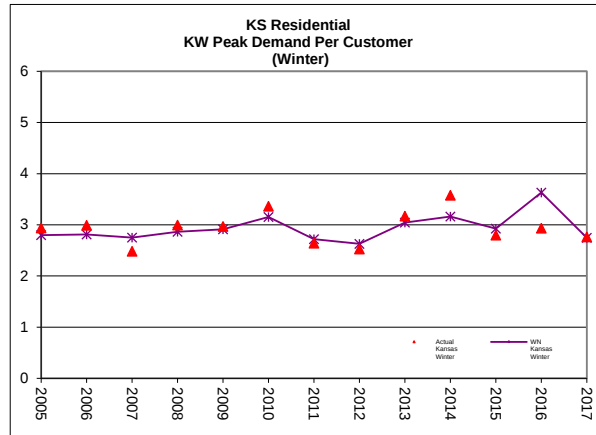
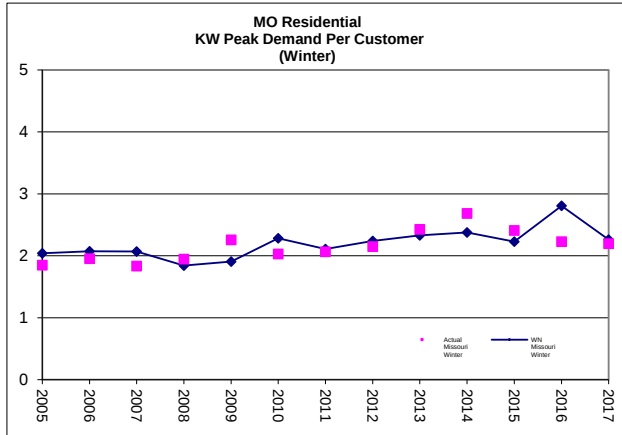
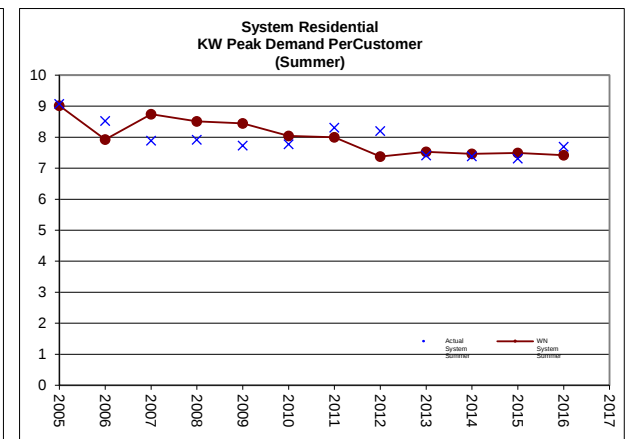
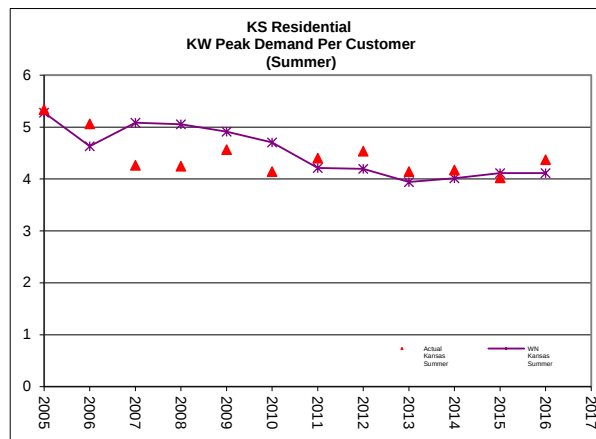
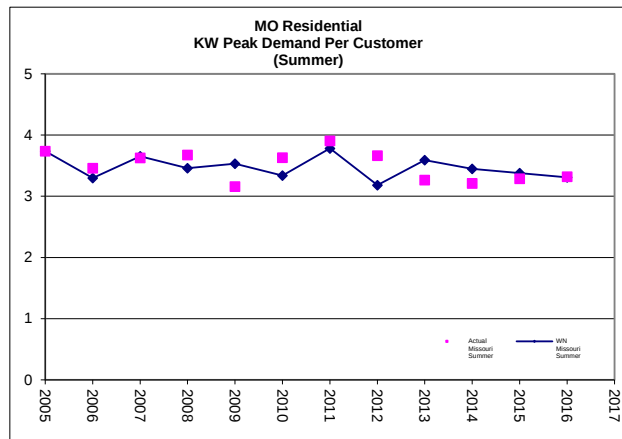


**Plot 3A-20 Missouri & Kansas Residential KW Peak Demand Per Customer
(Actual vs. Weather Normalized)**

Year	Actual Missouri Summer	WN Missouri Summer	Actual Missouri Winter	WN Missouri Winter	Actual Missouri Year	WN Missouri Year	Actual Kansas Summer	WN Kansas Summer	Actual Kansas Winter	WN Kansas Winter	Actual Kansas Year	WN Kansas Year	Actual System Summer	WN System Summer	Actual System Winter	WN System Winter	Actual System Year	WN System Year
2005	3.7	3.7	1.8	2.0	3.7	3.7	5.3	5.3	2.9	2.8	5.3	5.3	9.1	9.0	4.8	4.8	9.1	9.0
2006	3.5	3.3	2.0	2.1	3.5	3.3	5.1	4.6	3.0	2.8	5.1	4.6	8.5	7.9	4.9	4.9	8.5	7.9
2007	3.6	3.7	1.8	2.1	3.6	3.7	4.3	5.1	2.5	2.7	4.3	5.1	7.9	8.7	4.3	4.8	7.9	8.7
2008	3.7	3.5	1.9	1.8	3.7	3.5	4.2	5.1	3.0	2.9	4.2	5.1	7.9	8.5	4.9	4.7	7.9	8.5
2009	3.2	3.5	2.3	1.9	3.2	3.5	4.6	4.9	3.0	2.9	4.6	4.9	7.7	8.4	5.2	4.8	7.7	8.4
2010	3.6	3.3	2.0	2.3	3.6	3.3	4.1	4.7	3.4	3.2	4.1	4.7	7.8	8.0	5.4	5.4	7.8	8.0
2011	3.9	3.8	2.1	2.1	3.9	3.8	4.4	4.2	2.6	2.7	4.4	4.2	8.3	8.0	4.7	4.8	8.3	8.0
2012	3.7	3.2	2.1	2.2	3.7	3.2	4.5	4.2	2.5	2.6	4.5	4.2	8.2	7.4	4.7	4.9	8.2	7.4
2013	3.3	3.6	2.4	2.3	3.3	3.6	4.1	3.9	3.2	3.0	4.1	3.9	7.4	7.5	5.6	5.4	7.4	7.5
2014	3.2	3.4	2.7	2.4	3.2	3.4	4.2	4.0	3.6	3.2	4.2	4.0	7.4	7.5	6.3	5.5	7.4	7.5
2015	3.3	3.4	2.4	2.2	3.3	3.4	4.0	4.1	2.8	2.9	4.0	4.1	7.3	7.5	5.2	5.2	7.3	7.5
2016	3.3	3.3	2.2	2.8	3.3	3.3	4.4	4.1	2.9	3.6	4.4	4.1	7.7	7.4	5.2	6.4	7.7	7.4
2017			2.2	2.3					2.8	2.7					5.0	5.0		
06-'11	2.5%	2.8%	1.1%	0.3%	2.5%	2.8%	-2.8%	-1.9%	-2.5%	-0.7%	-2.8%	-1.9%	-0.5%	0.2%	-1.0%	-0.2%	-0.5%	0.2%
11-'16	-3.2%	-2.6%	1.5%	5.9%	-3.2%	-2.6%	-0.1%	-0.5%	2.1%	5.9%	-0.1%	-0.5%	-1.5%	-1.5%	1.9%	5.9%	-1.5%	-1.5%
06-'16	-0.4%	0.0%	1.3%	3.1%	-0.4%	0.0%	-1.5%	-1.2%	-0.2%	2.6%	-1.5%	-1.2%	-1.0%	-0.7%	0.4%	2.8%	-1.0%	-0.7%

* 2017 Summer peaks are not include since they are projections. The peak month occurred after the June 2017 cut off.

Winter values are include since the peak occurred in January 2017.

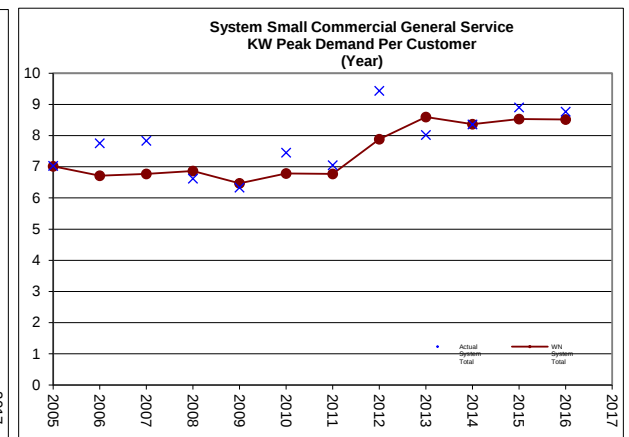
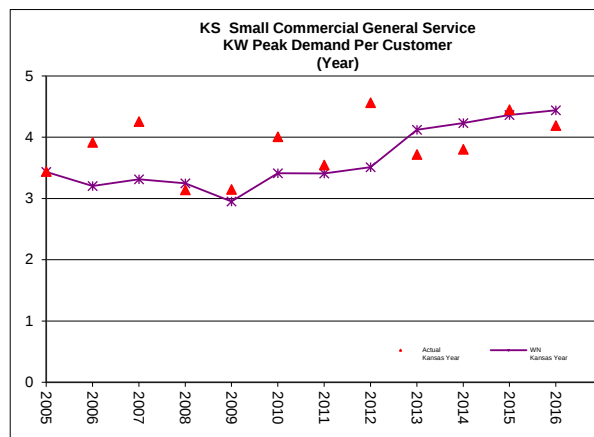
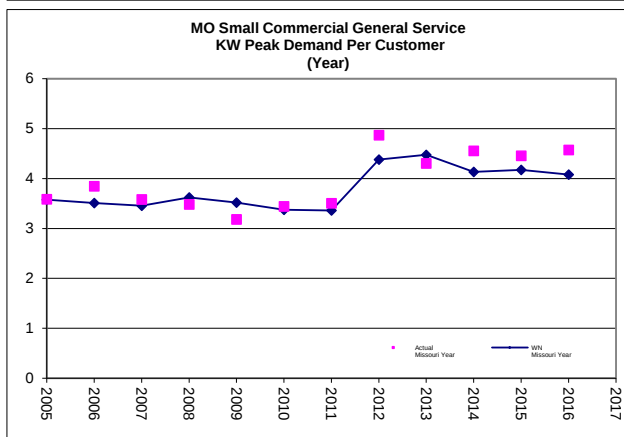
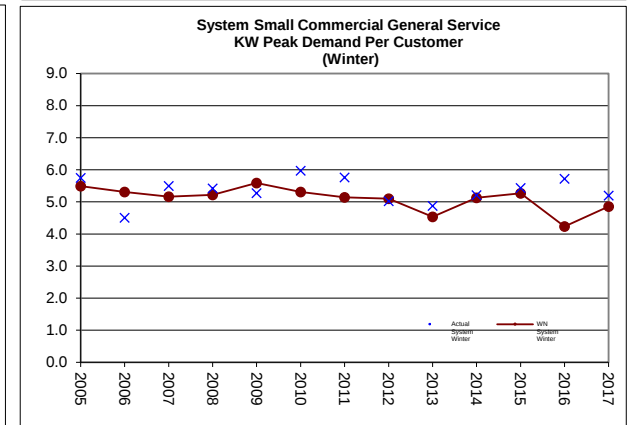
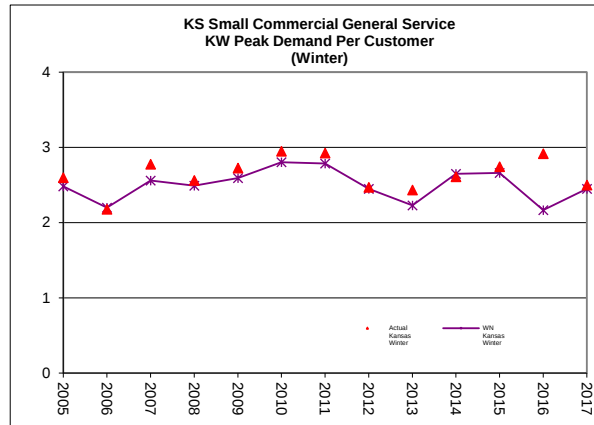
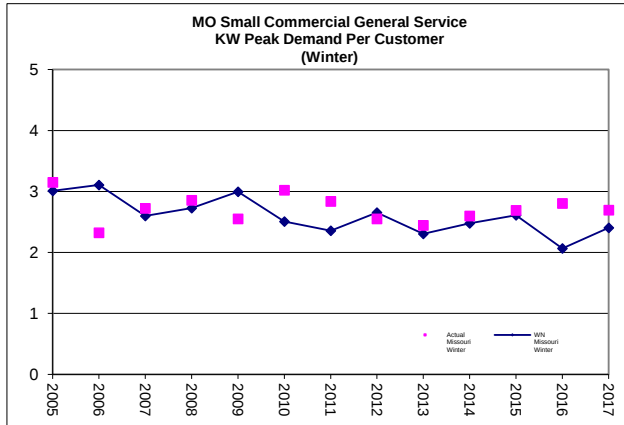
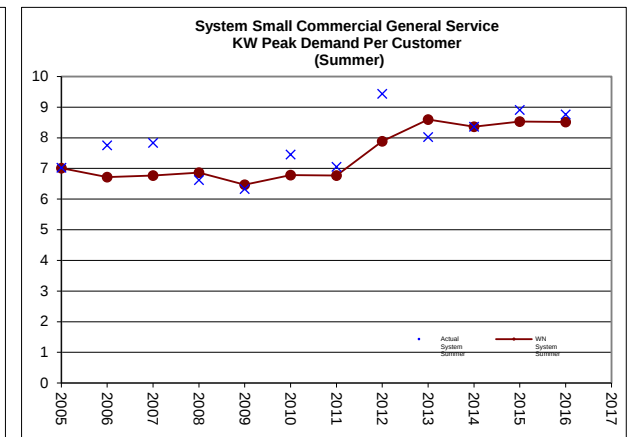
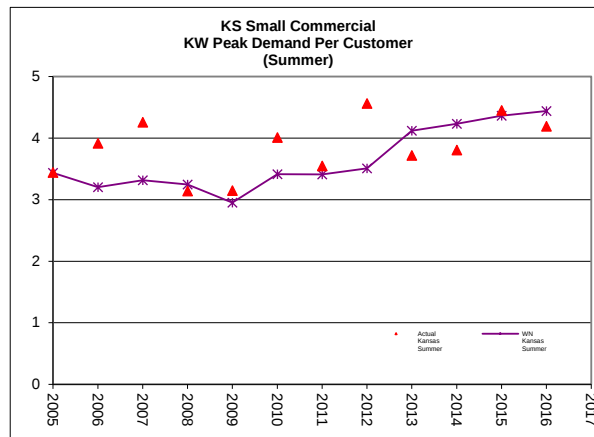
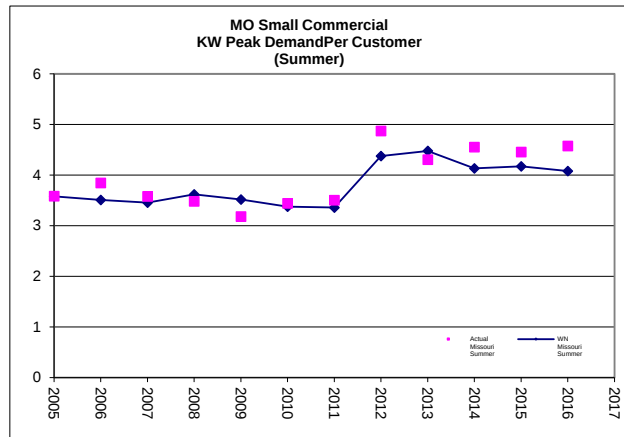


Plot 3A-21 Missouri & Kansas Small Commercial KW Peak Demand Per Customer
(Actual vs. Weather Normalized)

Year	Actual Missouri Summer	WN Missouri Summer	Actual Missouri Winter	WN Missouri Winter	Actual Missouri Year	WN Missouri Year	Actual Kansas Summer	WN Kansas Summer	Actual Kansas Winter	WN Kansas Winter	Actual Kansas Year	WN Kansas Year	Actual System Summer	WN System Summer	Actual System Winter	WN System Winter	Actual System Total	WN System Total
2005	3.6	3.6	3.2	3.0	3.6	3.6	3.4	3.4	2.6	2.5	3.4	3.4	7.0	7.0	5.7	5.5	7.0	7.0
2006	3.8	3.5	2.3	3.1	3.8	3.5	3.9	3.2	2.2	2.2	3.9	3.2	7.8	6.7	4.5	5.3	7.8	6.7
2007	3.6	3.5	2.7	2.6	3.6	3.5	4.3	3.3	2.8	2.6	4.3	3.3	7.8	6.8	5.5	5.2	7.8	6.8
2008	3.5	3.6	2.9	2.7	3.5	3.6	3.1	3.2	2.6	2.5	3.1	3.2	6.6	6.9	5.4	5.2	6.6	6.9
2009	3.2	3.5	2.6	3.0	3.2	3.5	3.1	3.0	2.7	2.6	3.1	3.0	6.3	6.5	5.3	5.6	6.3	6.5
2010	3.4	3.4	3.0	2.5	3.4	3.4	4.0	3.4	2.9	2.8	4.0	3.4	7.5	6.8	6.0	5.3	7.5	6.8
2011	3.5	3.4	2.8	2.4	3.5	3.4	3.5	3.4	2.9	2.8	3.5	3.4	7.1	6.8	5.8	5.1	7.1	6.8
2012	4.9	4.4	2.6	2.7	4.9	4.4	4.6	3.5	2.5	2.4	4.6	3.5	9.4	7.9	5.0	5.1	9.4	7.9
2013	4.3	4.5	2.4	2.3	4.3	4.5	3.7	4.1	2.4	2.2	3.7	4.1	8.0	8.6	4.9	4.5	8.0	8.6
2014	4.6	4.1	2.6	2.5	4.6	4.1	3.8	4.2	2.6	2.6	3.8	4.2	8.4	8.4	5.2	5.1	8.4	8.4
2015	4.5	4.2	2.7	2.6	4.5	4.2	4.5	4.4	2.7	2.7	4.5	4.4	8.9	8.5	5.4	5.3	8.9	8.5
2016	4.6	4.1	2.8	2.1	4.6	4.1	4.2	4.4	2.9	2.2	4.2	4.4	8.8	8.5	5.7	4.2	8.8	8.5
2017			2.7	2.4					2.5	2.4					5.2	4.9		
06-'11	-1.8%	-0.9%	4.1%	-5.4%	-1.8%	-0.9%	-1.9%	1.2%	6.1%	4.8%	-1.9%	1.2%	-1.9%	0.2%	5.1%	-0.6%	-1.9%	0.2%
11-'16	5.5%	4.0%	-0.2%	-2.6%	5.5%	4.0%	3.4%	5.4%	-0.1%	-4.9%	3.4%	5.4%	4.4%	4.7%	-0.1%	-3.8%	4.4%	4.7%
06-'16	1.8%	1.5%	1.9%	-4.0%	1.8%	1.5%	0.7%	3.3%	3.0%	-0.1%	0.7%	3.3%	1.2%	2.4%	2.4%	-2.2%	1.2%	2.4%

* 2017 Summer peaks are not include since they are projections. The peak month occurred after the June 2017 cut off.

Winter values are include since the peak occurred in January 2017.

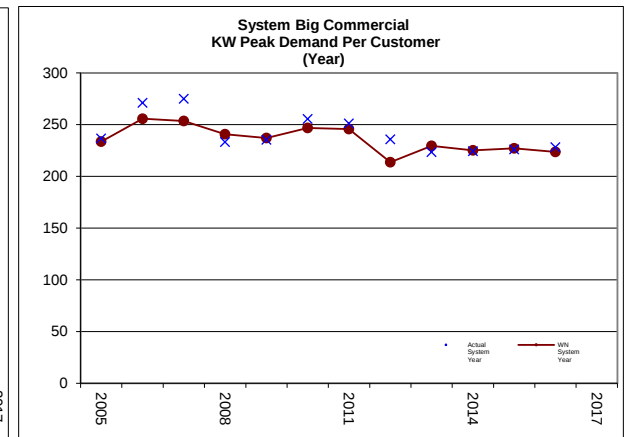
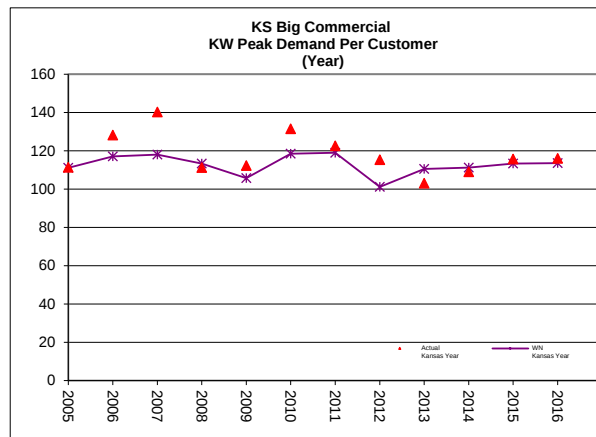
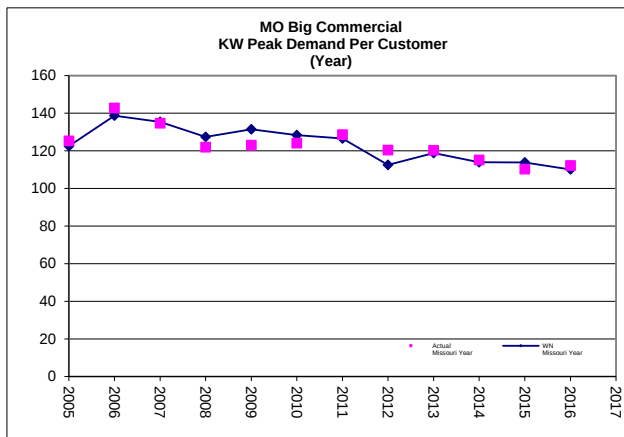
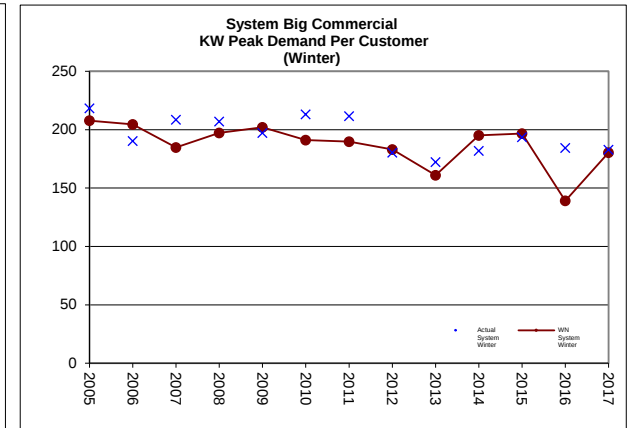
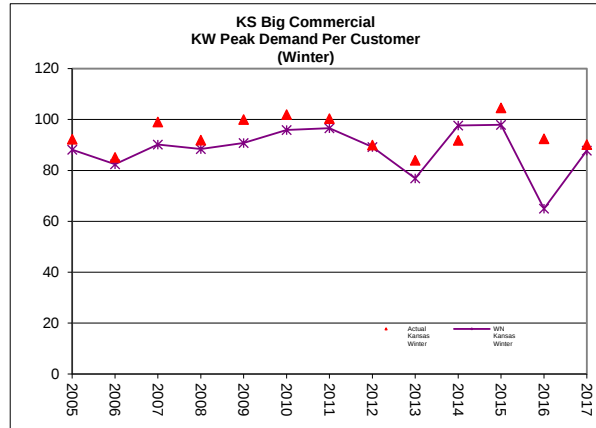
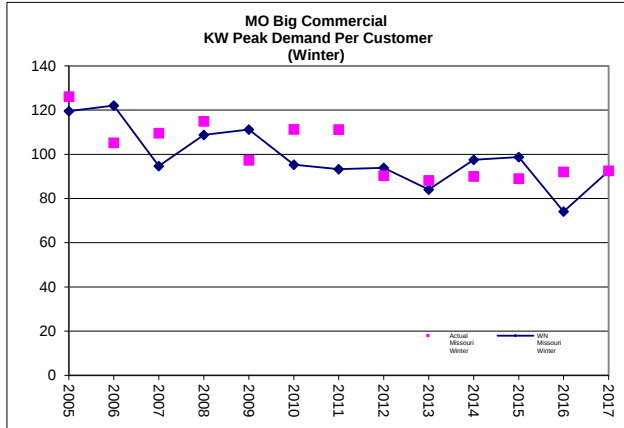
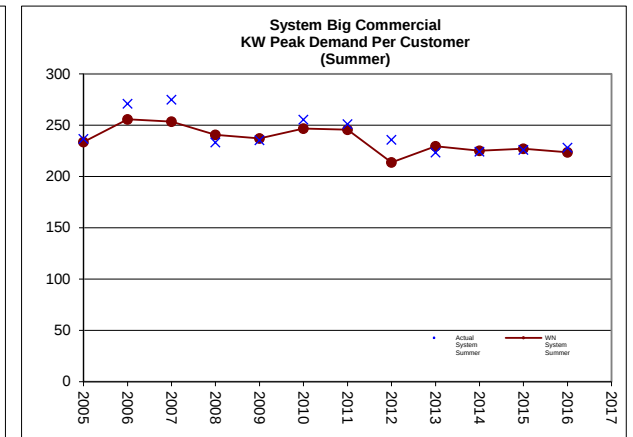
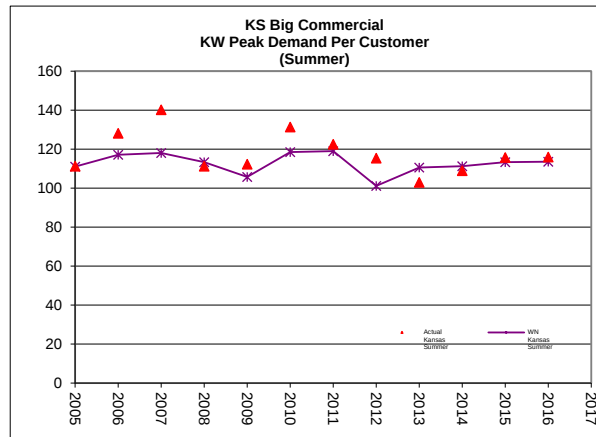
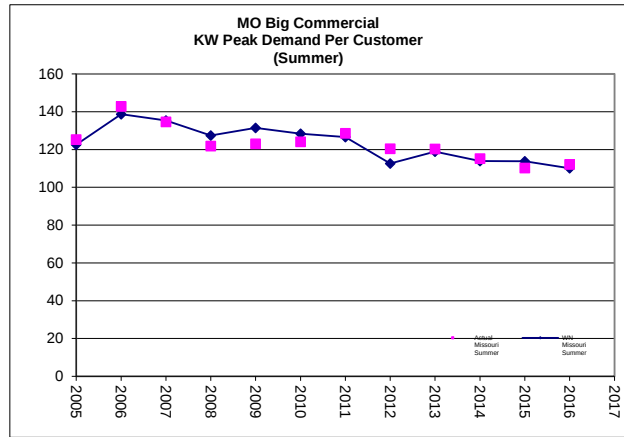


**Plot 3A-22 Missouri & Kansas Big Commercial KW Peak Demand Per Customer
(Actual vs. Weather Normalized)**

Year	Actual Missouri Summer	WN Missouri Summer	Actual Missouri Winter	WN Missouri Winter	Actual Missouri Year	WN Missouri Year	Actual Kansas Summer	WN Kansas Summer	Actual Kansas Winter	WN Kansas Winter	Actual Kansas Year	WN Kansas Year	Actual System Summer	WN System Summer	Actual System Winter	WN System Winter	Actual System Year	WN System Year
2005	125.3	122.5	126.1	119.5	125.3	122.5	111.3	111.1	92.3	88.2	111.3	111.1	236.6	233.6	218.4	207.7	236.6	233.6
2006	142.8	138.7	105.3	122.1	142.8	138.7	128.2	117.1	85.1	82.4	128.2	117.1	271.0	255.8	190.4	204.5	271.0	255.8
2007	134.6	135.4	109.6	94.7	134.6	135.4	140.3	118.1	99.0	90.1	140.3	118.1	274.9	253.4	208.6	184.8	274.9	253.4
2008	121.9	127.4	115.0	108.8	121.9	127.4	111.2	113.3	92.0	88.4	111.2	113.3	233.1	240.7	207.0	197.2	233.1	240.7
2009	123.0	131.4	97.3	111.2	123.0	131.4	112.3	105.7	100.0	90.8	112.3	105.7	235.3	237.1	197.3	202.0	235.3	237.1
2010	124.1	128.3	111.3	95.3	124.1	128.3	131.4	118.5	102.0	95.9	131.4	118.5	255.5	246.8	213.3	191.2	255.5	246.8
2011	128.6	126.6	111.3	93.2	128.6	126.6	122.6	119.0	100.3	96.6	122.6	119.0	251.2	245.6	211.6	189.8	251.2	245.6
2012	120.4	112.5	90.3	93.9	120.4	112.5	115.4	101.1	90.0	89.2	115.4	101.1	235.7	213.7	180.3	183.1	235.7	213.7
2013	120.3	118.8	88.2	84.1	120.3	118.8	103.0	110.6	84.0	76.9	103.0	110.6	223.3	229.4	172.2	161.0	223.3	229.4
2014	115.2	113.9	90.1	97.6	115.2	113.9	109.0	111.3	91.8	97.7	109.0	111.3	224.2	225.2	181.9	195.2	224.2	225.2
2015	110.2	113.8	89.0	98.7	110.2	113.8	115.7	113.4	104.6	97.9	115.7	113.4	225.9	227.2	193.6	196.7	225.9	227.2
2016	112.1	110.1	92.0	74.1	112.1	110.1	116.0	113.6	92.5	65.0	116.0	113.6	228.1	223.7	184.5	139.0	228.1	223.7
2017			92.6	92.5					90.2	87.8					182.8	180.3		
06-'11	-2.1%	-1.8%	1.1%	-5.2%	-2.1%	-1.8%	-0.9%	0.3%	3.3%	3.2%	-0.9%	0.3%	-1.5%	-0.8%	2.1%	-1.5%	-1.5%	-0.8%
11-'16	-2.7%	-2.8%	-3.7%	-4.5%	-2.7%	-2.8%	-1.1%	-0.9%	-1.6%	-7.6%	-1.1%	-0.9%	-1.9%	-1.9%	-2.7%	-6.0%	-1.9%	-1.9%
06-'16	-2.4%	-2.3%	-1.3%	-4.9%	-2.4%	-2.3%	-1.0%	-0.3%	0.8%	-2.4%	-1.0%	-0.3%	-1.7%	-1.3%	-0.3%	-3.8%	-1.7%	-1.3%

* 2017 Summer peaks are not include since they are projections. The peak month occurred after the June 2017 cut off.

Winter values are include since the peak occurred in January 2017.

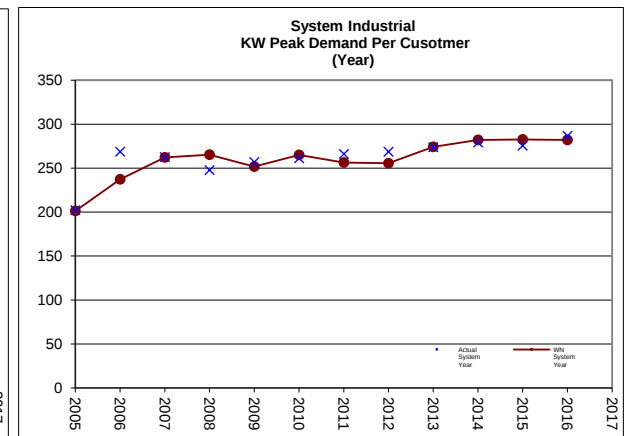
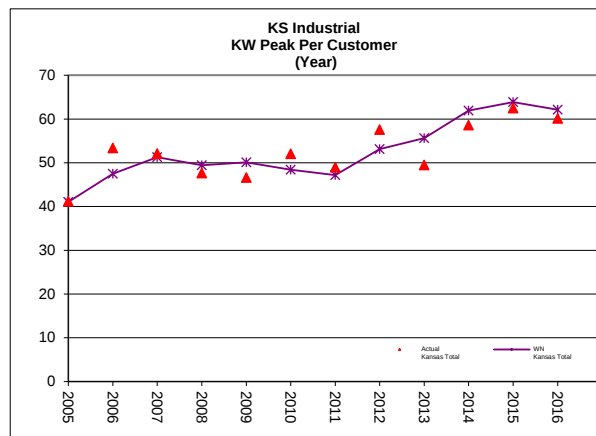
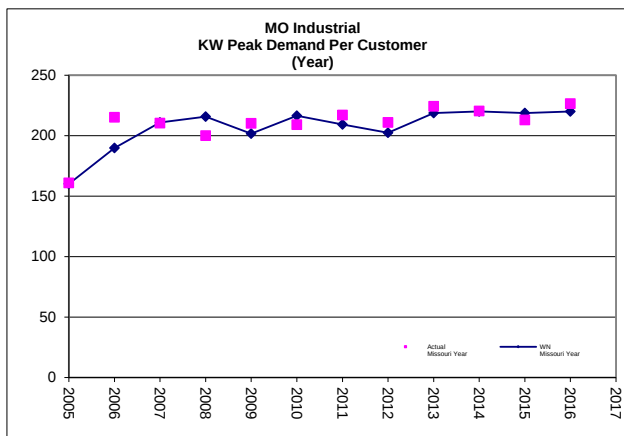
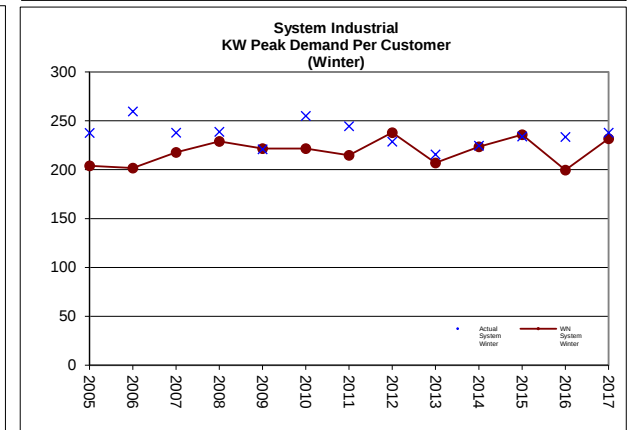
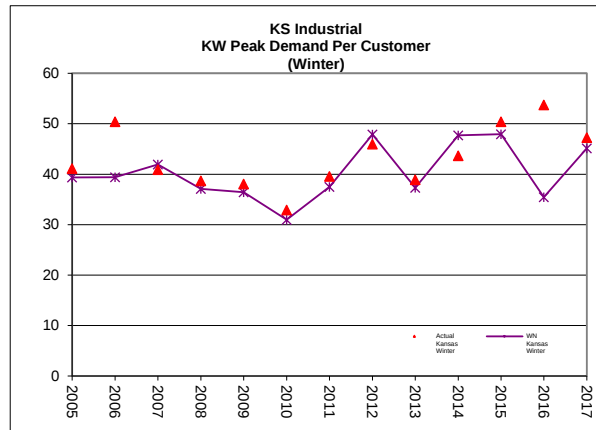
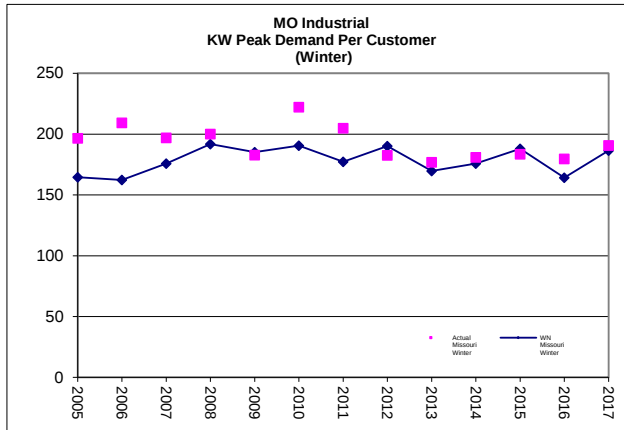
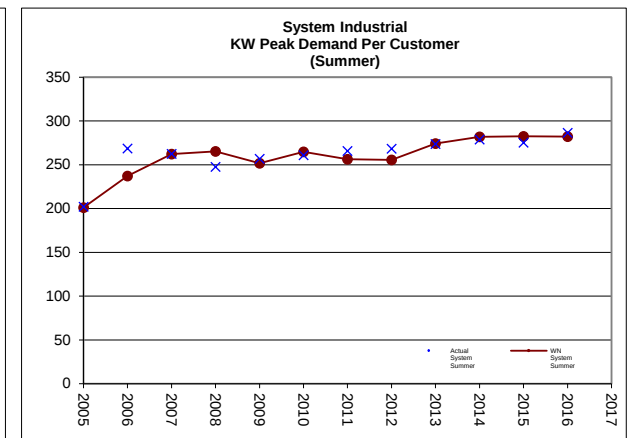
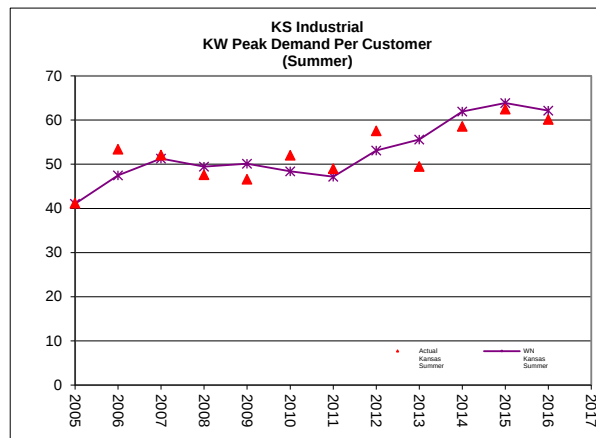
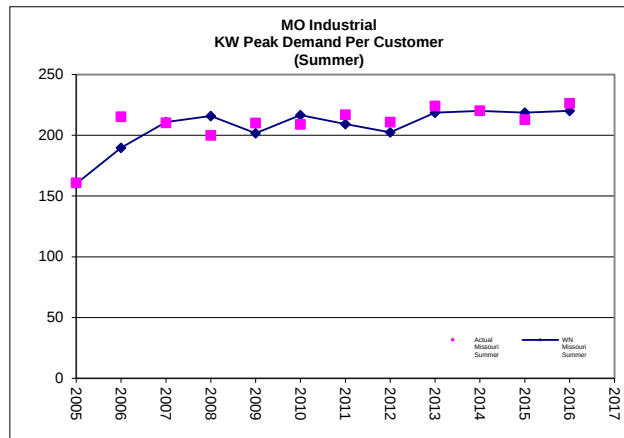


**Plot 3A-23 Missouri & Kansas Industrial KW Peak Demand Per Customer
(Actual vs. Weather Normalized)**

Year	Actual Missouri Summer	WN Missouri Summer	Actual Missouri Winter	WN Missouri Winter	Actual Missouri Year	WN Missouri Year	Actual Kansas Summer	WN Kansas Summer	Actual Kansas Winter	WN Kansas Winter	Actual Kansas Total	WN Kansas Total	Actual System Summer	WN System Summer	Actual System Winter	WN System Winter	Actual System Year	WN System Year
2005	160.9	160.2	196.5	164.6	160.9	160.2	41.2	41.1	41.1	39.3	41.2	41.1	202.1	201.2	237.7	203.9	202.1	201.2
2006	215.3	189.7	209.3	162.3	215.3	189.7	53.4	47.5	50.4	39.4	53.4	47.5	268.7	237.2	259.7	201.7	268.7	237.2
2007	210.4	211.0	197.0	175.7	210.4	211.0	52.1	51.3	40.9	41.9	52.1	51.3	262.5	262.2	238.0	217.7	262.5	262.2
2008	200.0	215.9	200.2	191.8	200.0	215.9	47.6	49.4	38.7	37.1	47.6	49.4	247.6	265.3	238.9	228.9	247.6	265.3
2009	210.2	201.7	182.8	185.2	210.2	201.7	46.6	50.1	38.1	36.4	46.6	50.1	256.9	251.9	220.9	221.6	256.9	251.9
2010	209.1	216.5	222.2	190.6	209.1	216.5	52.0	48.4	32.9	31.0	52.0	48.4	261.1	264.9	255.1	221.6	261.1	264.9
2011	217.0	209.3	204.8	177.3	217.0	209.3	49.0	47.2	39.6	37.5	49.0	47.2	266.0	256.5	244.4	214.8	266.0	256.5
2012	210.9	202.5	182.6	190.1	210.9	202.5	57.6	53.1	46.0	47.9	57.6	53.1	268.5	255.6	228.6	238.0	268.5	255.6
2013	224.3	218.6	176.8	169.6	224.3	218.6	49.5	55.6	38.9	37.3	49.5	55.6	273.8	274.3	215.7	207.0	273.8	274.3
2014	220.4	220.1	180.9	175.7	220.4	220.1	58.6	61.9	43.7	47.7	58.6	61.9	279.0	282.0	224.6	223.5	279.0	282.0
2015	213.0	218.7	183.6	187.9	213.0	218.7	62.5	63.9	50.4	47.9	62.5	63.9	275.4	282.6	234.0	235.9	275.4	282.6
2016	226.5	220.1	179.7	164.2	226.5	220.1	60.1	62.1	53.7	35.5	60.1	62.1	286.6	282.2	233.5	199.6	286.6	282.2
2017			190.6	186.5					47.3	45.1					237.9	231.6		
06-'11	0.2%	2.0%	-0.4%	1.8%	0.2%	2.0%	-1.7%	-0.1%	-4.7%	-1.0%	-1.7%	-0.1%	-0.2%	1.6%	-1.2%	1.3%	-0.2%	1.6%
11-'16	0.9%	1.0%	-2.6%	-1.5%	0.9%	1.0%	4.2%	5.7%	6.3%	-1.1%	4.2%	5.7%	1.5%	1.9%	-0.9%	-1.5%	1.5%	1.9%
06-'16	0.5%	1.5%	-1.5%	0.1%	0.5%	1.5%	1.2%	2.7%	0.6%	-1.0%	1.2%	2.7%	0.6%	1.8%	-1.1%	-0.1%	0.6%	1.8%

* 2017 Summer peaks are not include since they are projections. The peak month occurred after the June 2017 cut off.

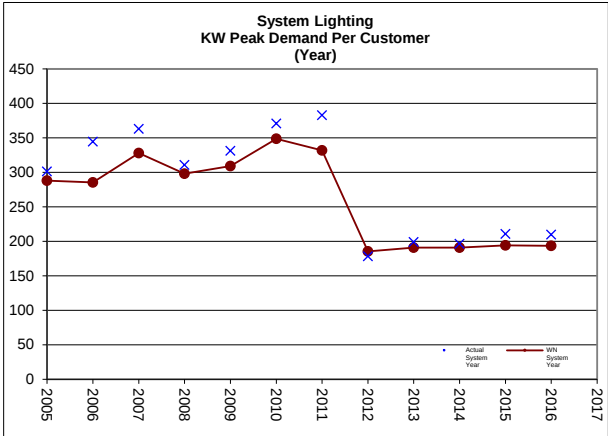
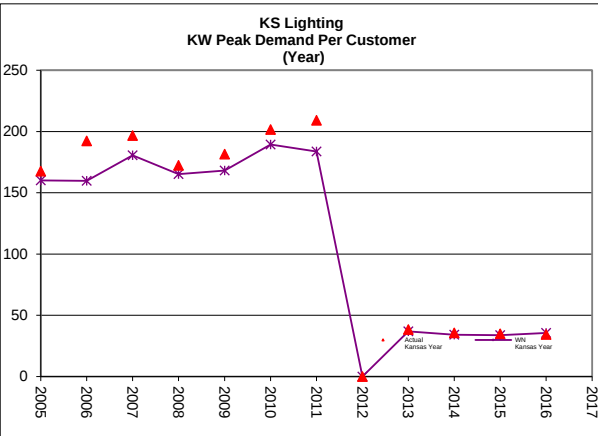
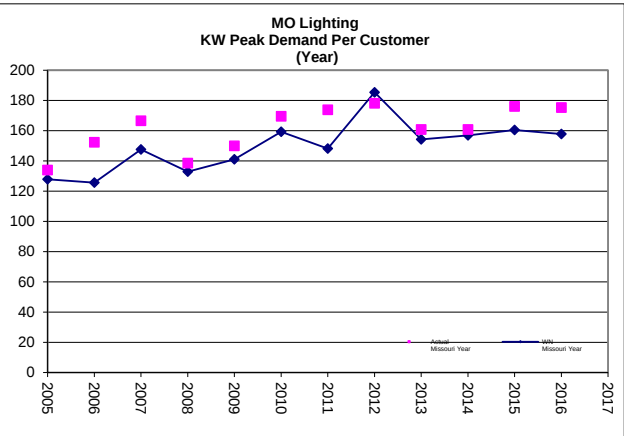
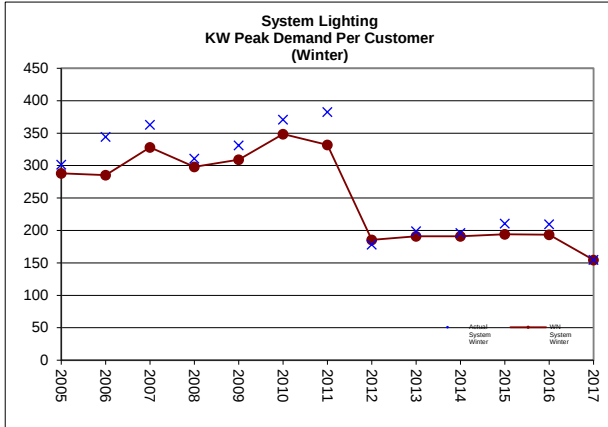
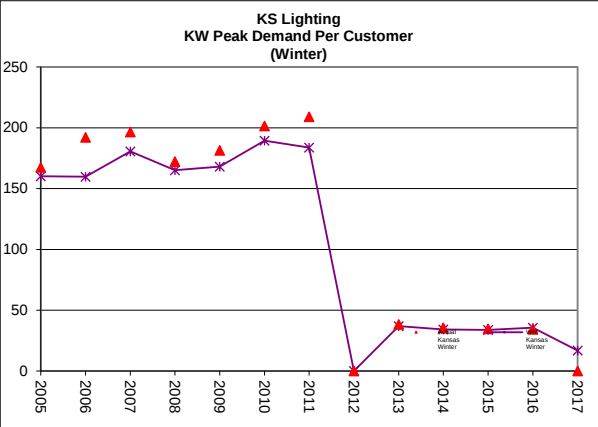
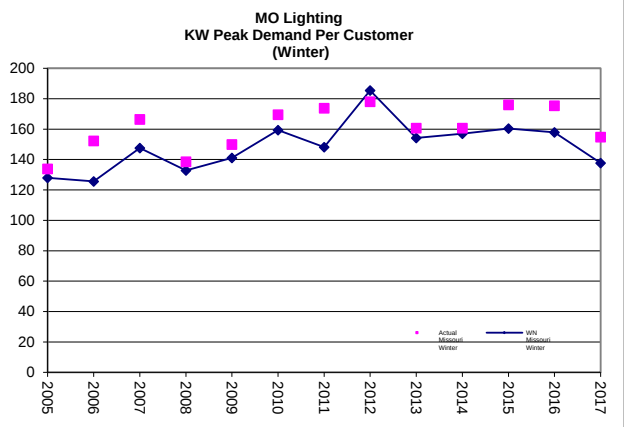
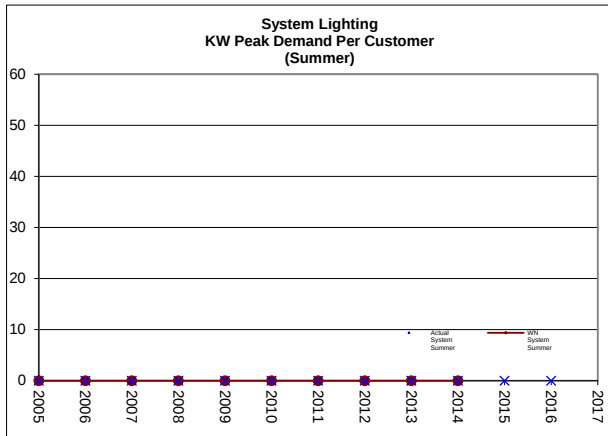
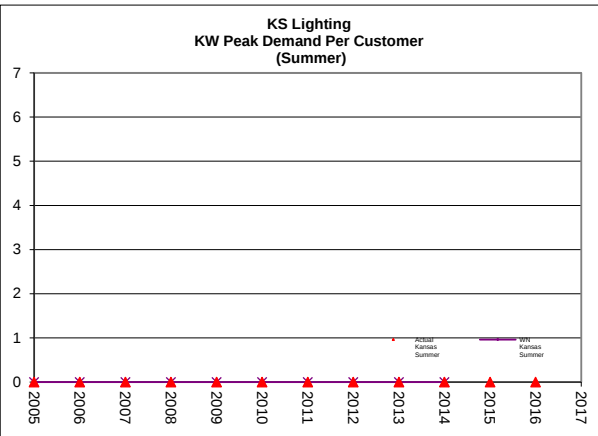
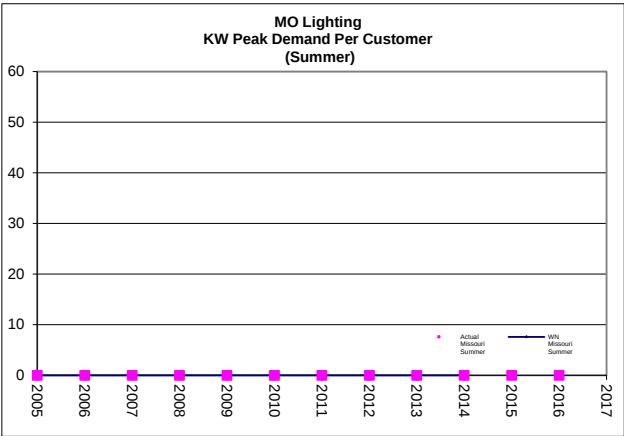
Winter values are include since the peak occurred in January 2017.



**Plot 3A-24 Missouri & Kansas Lighting KW Peak Demand Per Customer
(Actual vs. Weather Normalized)**

Year	Actual Missouri Summer	WN Missouri Summer	Actual Missouri Winter	WN Missouri Winter	Actual Missouri Year	WN Missouri Year	Actual Kansas Summer	WN Kansas Summer	Actual Kansas Winter	WN Kansas Winter	Actual Kansas Year	WN Kansas Year	Actual System Summer	WN System Summer	Actual System Winter	WN System Winter	Actual System Year	WN System Year
2005	0.0	0.0	133.9	127.9	133.9	127.9	0.0	0.0	167.5	160.0	167.5	160.0	0.0	0.0	301.4	288.0	301.4	288.0
2006	0.0	0.0	152.3	125.6	152.3	125.6	0.0	0.0	192.2	159.8	192.2	159.8	0.0	0.0	344.5	285.4	344.5	285.4
2007	0.0	0.0	166.5	147.5	166.5	147.5	0.0	0.0	196.6	180.5	196.6	180.5	0.0	0.0	363.1	328.0	363.1	328.0
2008	0.0	0.0	138.6	132.8	138.6	132.8	0.0	0.0	172.3	165.2	172.3	165.2	0.0	0.0	310.8	298.0	310.8	298.0
2009	0.0	0.0	149.9	141.0	149.9	141.0	0.0	0.0	181.5	168.1	181.5	168.1	0.0	0.0	331.4	309.1	331.4	309.1
2010	0.0	0.0	169.5	159.3	169.5	159.3	0.0	0.0	201.5	189.4	201.5	189.4	0.0	0.0	371.0	348.6	371.0	348.6
2011	0.0	0.0	173.8	148.2	173.8	148.2	0.0	0.0	209.0	183.7	209.0	183.7	0.0	0.0	382.8	331.9	382.8	331.9
2012	0.0	0.0	178.1	185.4	178.1	185.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	178.1	185.4	178.1	185.4
2013	0.0	0.0	160.7	154.2	160.7	154.2	0.0	0.0	38.4	36.8	38.4	36.8	0.0	0.0	199.1	191.0	199.1	191.0
2014	0.0	0.0	160.7	157.0	160.7	157.0	0.0	0.0	35.6	34.1	35.6	34.1	0.0	0.0	196.4	191.1	196.4	191.1
2015	0.0	0.0	176.0	160.4	176.0	160.4	0.0	0.0	34.8	33.7	34.8	33.7	0.0	0.0	210.8	194.2	210.8	194.2
2016	0.0	0.0	175.4	157.8	175.4	157.8	0.0	0.0	34.3	35.6	34.3	35.6	0.0	0.0	209.7	193.5	209.7	193.5
2017			154.8	137.6					0.0	16.9					154.8	154.6		
06-'11	#DIV/0!	#DIV/0!	2.7%	3.4%	2.7%	3.4%	#DIV/0!	#DIV/0!	1.7%	2.8%	1.7%	2.8%	#DIV/0!	#DIV/0!	2.1%	3.1%	2.1%	3.1%
11-'16	#DIV/0!	#DIV/0!	0.2%	1.3%	0.2%	1.3%	#DIV/0!	#DIV/0!	-30.3%	-28.0%	-30.3%	-28.0%	#DIV/0!	#DIV/0!	-11.3%	-10.2%	-11.3%	-10.2%
06-'16	#DIV/0!	#DIV/0!	1.4%	2.3%	1.4%	2.3%	#DIV/0!	#DIV/0!	-15.8%	-13.9%	-15.8%	-13.9%	#DIV/0!	#DIV/0!	-4.8%	-3.8%	-4.8%	-3.8%

* 2017 Summer peaks are not include since they are projections. The peak month occurred after the June 2017 cut off.
Winter values are include since the peak occurred in January 2017.



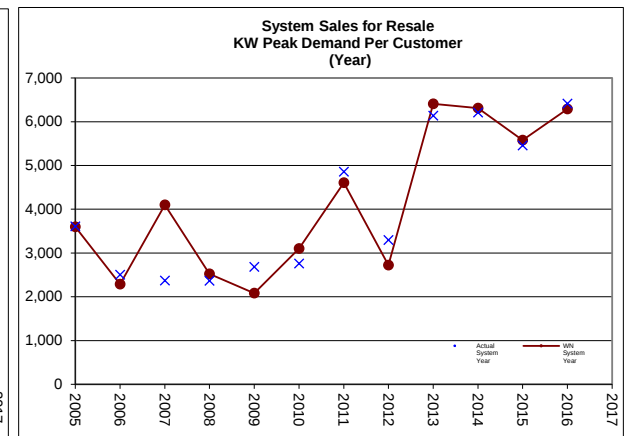
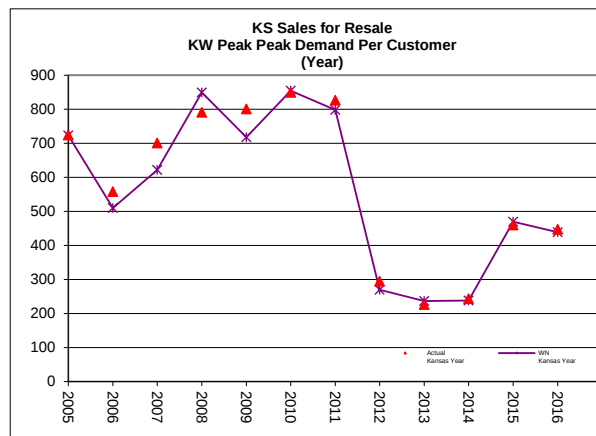
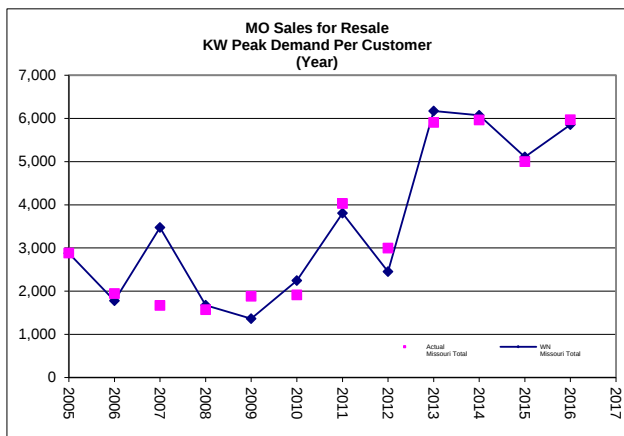
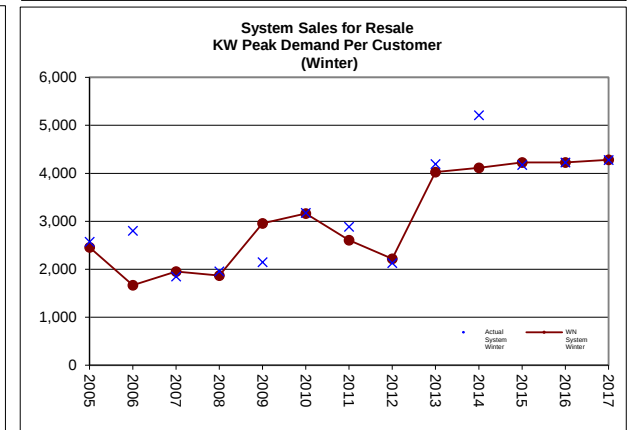
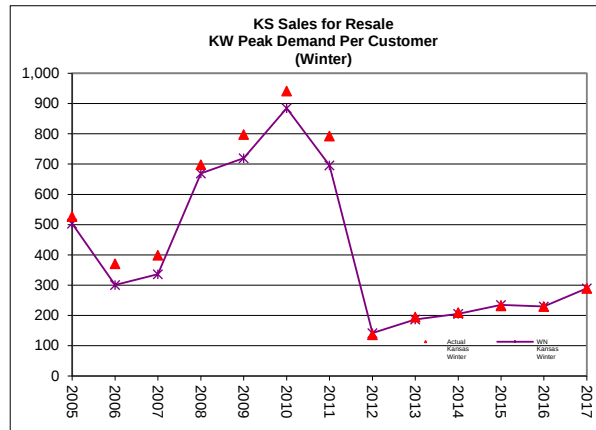
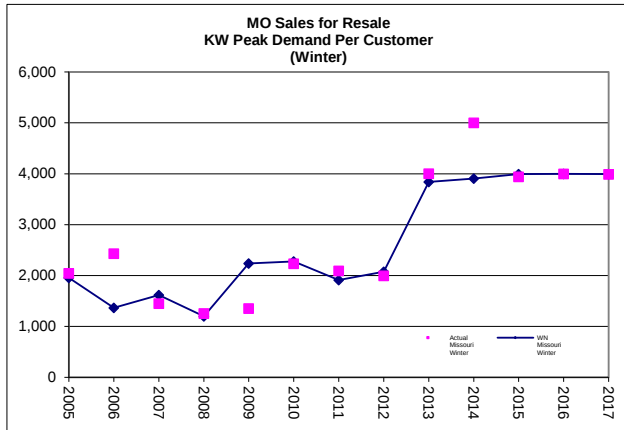
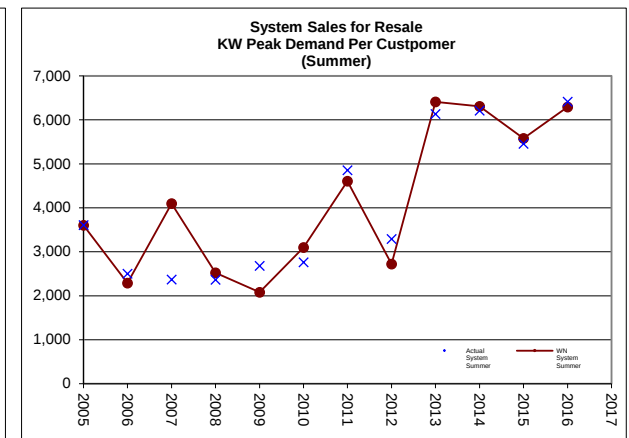
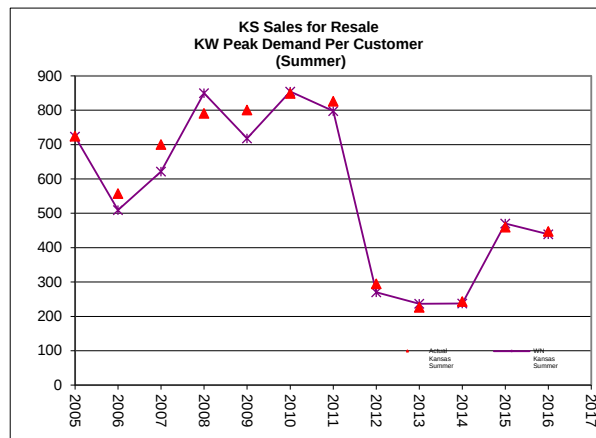
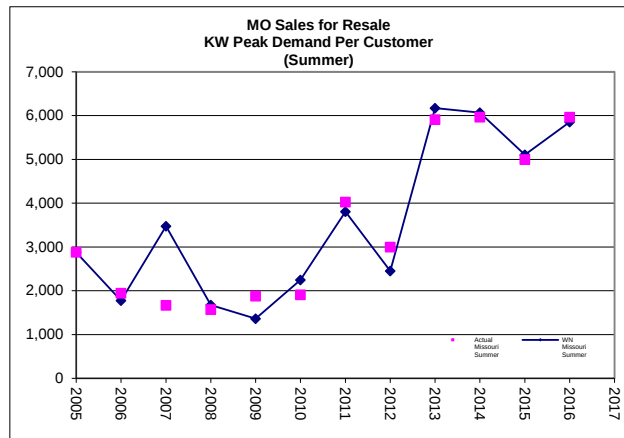
**Plot 3A-25 Missouri & Kansas Sales for Resale KW Peak Demand Per Customer
(Actual vs. Weather Normalized)**

Year	Actual Missouri Summer	WN Missouri Summer	Actual Missouri Winter	WN Missouri Winter	Actual Missouri Total	WN Missouri Total	Actual Kansas Summer	WN Kansas Summer	Actual Kansas Winter	WN Kansas Winter	Actual Kansas Year	WN Kansas Year	Actual System Summer	WN System Summer	Actual System Winter	WN System Winter	Actual System Year	WN System Year
2005	2,883.5	2,877.5	2,045.8	1,954.5	2,883.5	2,877.5	724.5	723.0	527.3	503.7	724.5	723.0	3,608.1	3,600.5	2,573.1	2,458.3	3,608.1	3,600.5
2006	1,945.6	1,776.8	2,431.4	1,366.7	1,945.6	1,776.8	557.9	509.5	370.9	300.5	557.9	509.5	2,503.6	2,286.3	2,802.3	1,667.2	2,503.6	2,286.3
2007	1,669.9	3,476.2	1,449.8	1,615.6	1,669.9	3,476.2	700.6	621.8	399.2	336.4	700.6	621.8	2,370.5	4,098.0	1,848.9	1,952.0	2,370.5	4,098.0
2008	1,572.1	1,671.3	1,258.2	1,199.4	1,572.1	1,671.3	791.0	849.7	697.8	669.0	791.0	849.7	2,363.1	2,521.0	1,956.0	1,868.4	2,363.1	2,521.0
2009	1,880.0	1,362.8	1,351.8	2,235.6	1,880.0	1,362.8	800.8	718.0	798.3	719.4	800.8	718.0	2,680.8	2,080.8	2,150.0	2,955.0	2,680.8	2,080.8
2010	1,910.4	2,244.7	2,235.2	2,276.1	1,910.4	2,244.7	849.5	854.5	941.4	884.7	849.5	854.5	2,759.9	3,099.2	3,176.6	3,160.8	2,759.9	3,099.2
2011	4,028.4	3,807.0	2,093.8	1,911.6	4,028.4	3,807.0	826.3	797.8	792.6	696.1	826.3	797.8	4,854.8	4,604.8	2,886.4	2,607.6	4,854.8	4,604.8
2012	2,998.7	2,453.2	1,994.9	2,076.8	2,998.7	2,453.2	294.9	269.9	136.3	141.9	294.9	269.9	3,293.5	2,723.1	2,131.3	2,218.7	3,293.5	2,723.1
2013	5,907.9	6,172.6	4,000.5	3,837.5	5,907.9	6,172.6	226.5	236.6	195.0	187.1	226.5	236.6	6,134.4	6,409.2	4,195.5	4,024.5	6,134.4	6,409.2
2014	5,965.1	6,070.7	5,000.5	3,907.0	5,965.1	6,070.7	243.6	237.8	210.0	205.1	243.6	237.8	6,208.7	6,308.5	5,210.5	4,112.1	6,208.7	6,308.5
2015	4,997.5	5,108.8	3,942.8	3,993.2	4,997.5	5,108.8	459.8	470.0	231.6	234.6	459.8	470.0	5,457.3	5,578.8	4,174.4	4,227.8	5,457.3	5,578.8
2016	5,967.7	5,852.5	3,998.1	3,998.1	5,967.7	5,852.5	447.6	438.9	229.9	229.9	447.6	438.9	6,415.2	6,291.5	4,227.9	4,228.0	6,415.2	6,291.5
2017			3,990.6	3,991.8					289.3	289.4					4,279.9	4,281.2		
06-'11	15.7%	16.5%	-2.9%	6.9%	15.7%	16.5%	8.2%	9.4%	16.4%	18.3%	8.2%	9.4%	14.2%	15.0%	0.6%	9.4%	14.2%	15.0%
11-'16	8.2%	9.0%	13.8%	15.9%	8.2%	9.0%	-11.5%	-11.3%	-21.9%	-19.9%	-11.5%	-11.3%	5.7%	6.4%	7.9%	10.1%	5.7%	6.4%
06-'16	11.9%	12.7%	5.1%	11.3%	11.9%	12.7%	-2.2%	-1.5%	-4.7%	-2.6%	-2.2%	-1.5%	9.9%	10.7%	4.2%	9.8%	9.9%	10.7%

* 2017 Summer peaks are not include since they are projections. The peak month occurred after the June 2017 cut off.

Winter values are include since the peak occurred in January 2017.

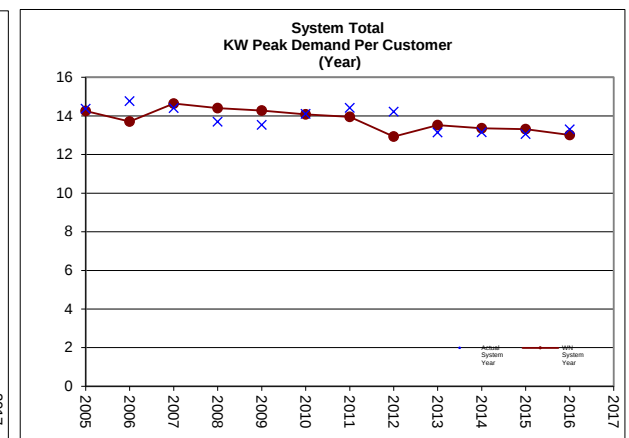
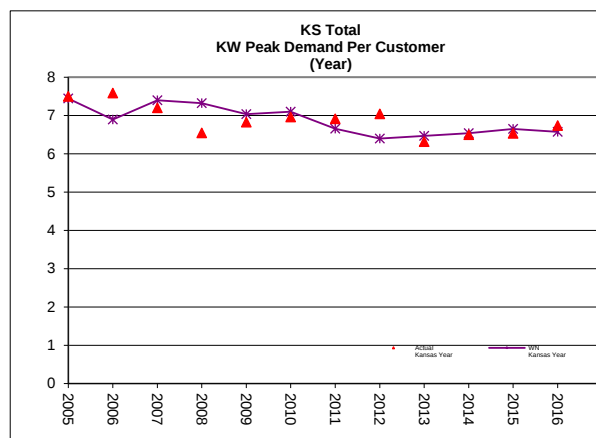
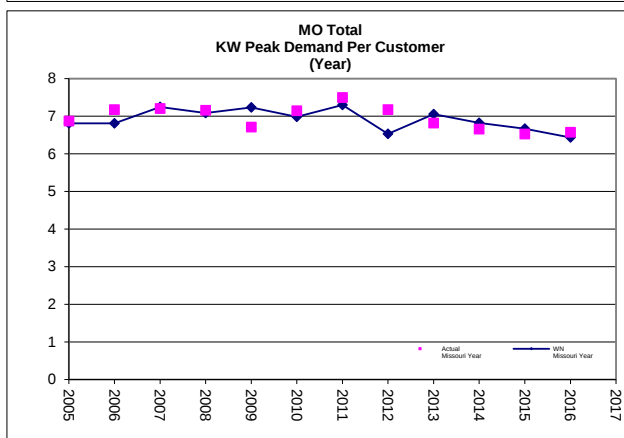
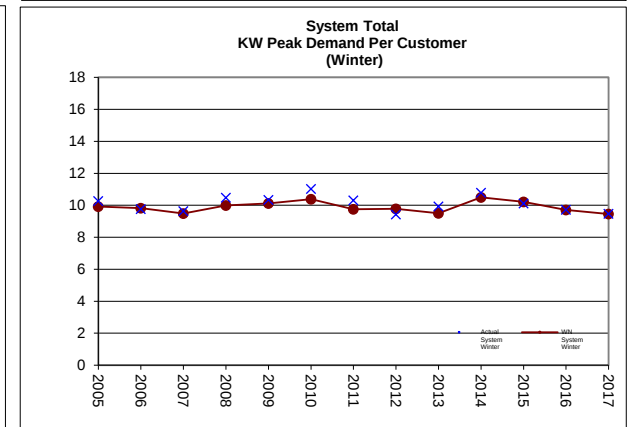
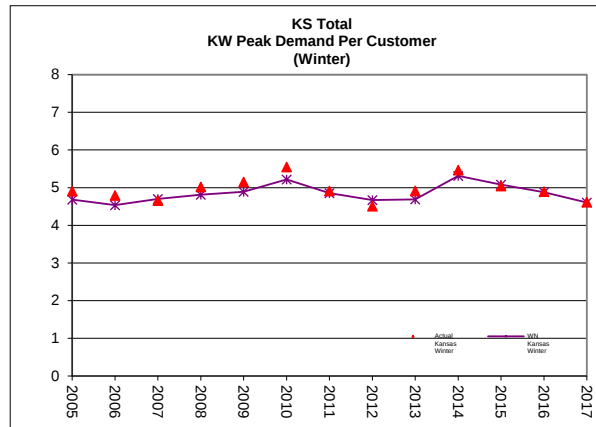
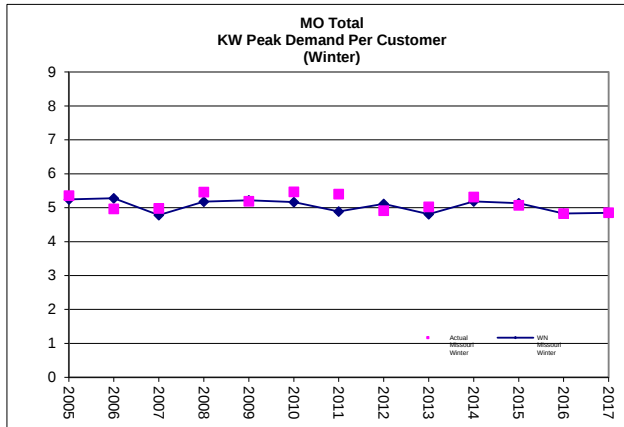
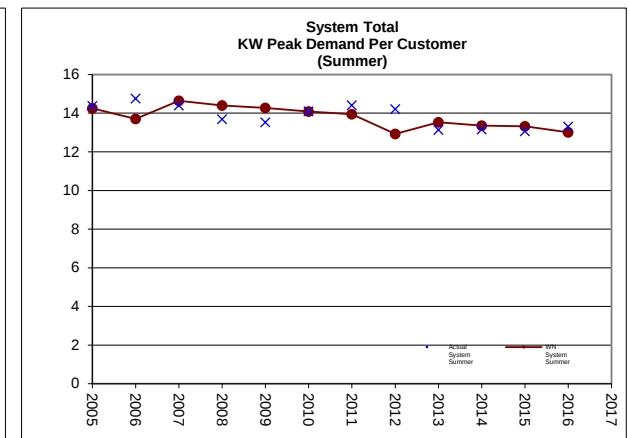
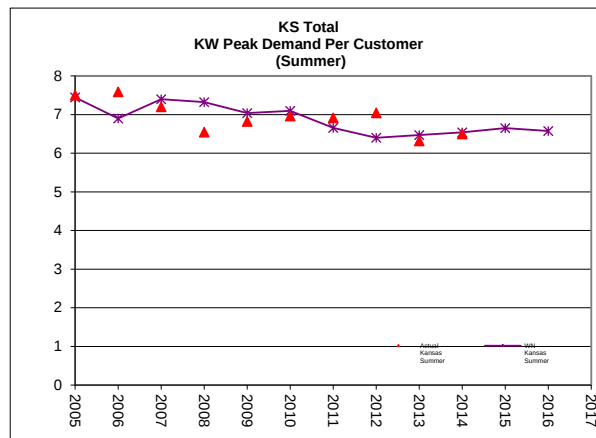
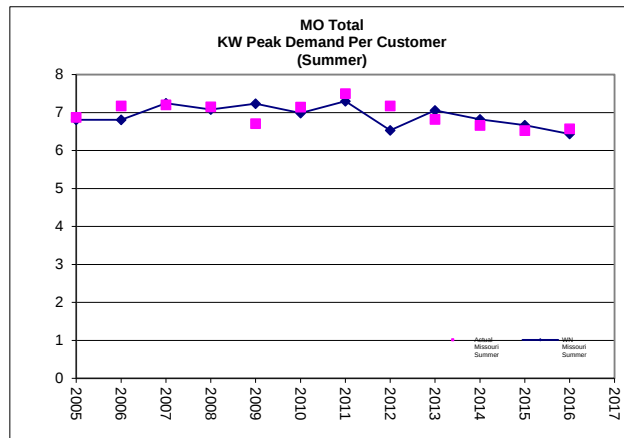
*SFR 2006 winter actual peak occurred in a different month than the weather normalized peak.



Plot 3A-26 Missouri & Kansas Total KW Peak Demand Per Customer
(Actual vs. Weather Normalized)

Year	Actual Missouri Summer	WN Missouri Summer	Actual Missouri Winter	WN Missouri Winter	Actual Missouri Year	WN Missouri Year	Actual Kansas Summer	WN Kansas Summer	Actual Kansas Winter	WN Kansas Winter	Actual Kansas Year	WN Kansas Year	Actual System Summer	WN System Summer	Actual System Winter	WN System Winter	Actual System Year	WN System Year
2005	6.9	6.8	5.4	5.2	6.9	6.8	7.5	7.4	4.9	4.7	7.5	7.4	14.4	14.3	10.3	9.9	14.4	14.3
2006	7.2	6.8	5.0	5.3	7.2	6.8	7.6	6.9	4.8	4.5	7.6	6.9	14.8	13.7	9.8	9.8	14.8	13.7
2007	7.2	7.2	5.0	4.8	7.2	7.2	7.2	7.4	4.7	4.7	7.2	7.4	14.4	14.6	9.6	9.5	14.4	14.6
2008	7.2	7.1	5.5	5.2	7.2	7.1	6.5	7.3	5.0	4.8	6.5	7.3	13.7	14.4	10.5	10.0	13.7	14.4
2009	6.7	7.2	5.2	5.2	6.7	7.2	6.8	7.0	5.2	4.9	6.8	7.0	13.5	14.3	10.3	10.1	13.5	14.3
2010	7.1	7.0	5.5	5.2	7.1	7.0	7.0	7.1	5.6	5.2	7.0	7.1	14.1	14.1	11.0	10.4	14.1	14.1
2011	7.5	7.3	5.4	4.9	7.5	7.3	6.9	6.7	4.9	4.9	6.9	6.7	14.4	14.0	10.3	9.7	14.4	14.0
2012	7.2	6.5	4.9	5.1	7.2	6.5	7.0	6.4	4.5	4.7	7.0	6.4	14.2	12.9	9.4	9.8	14.2	12.9
2013	6.8	7.1	5.0	4.8	6.8	7.1	6.3	6.5	4.9	4.7	6.3	6.5	13.1	13.5	9.9	9.5	13.1	13.5
2014	6.7	6.8	5.3	5.2	6.7	6.8	6.5	6.5	5.5	5.3	6.5	6.5	13.2	13.4	10.8	10.5	13.2	13.4
2015	6.5	6.7	5.1	5.1	6.5	6.7	6.5	6.6	5.0	5.1	6.5	6.6	13.1	13.3	10.1	10.2	13.1	13.3
2016	6.6	6.4	4.8	4.8	6.6	6.4	6.7	6.6	4.9	4.9	6.7	6.6	13.3	13.0	9.7	9.7	13.3	13.0
2017			4.9	4.8					4.6	4.6					9.5	9.5		
06-'11	0.9%	1.4%	1.7%	-1.5%	0.9%	1.4%	-1.8%	-0.7%	0.5%	1.4%	-1.8%	-0.7%	-0.5%	0.4%	1.1%	-0.1%	-0.5%	0.4%
11-'16	-2.6%	-2.5%	-2.2%	-0.3%	-2.6%	-2.5%	-0.5%	-0.2%	-0.1%	0.1%	-0.5%	-0.2%	-1.6%	-1.4%	-1.2%	-0.1%	-1.6%	-1.4%
06-'16	-0.9%	-0.6%	-0.3%	-0.9%	-0.9%	-0.6%	-1.2%	-0.5%	0.2%	0.7%	-1.2%	-0.5%	-1.0%	-0.5%	0.0%	-0.1%	-1.0%	-0.5%

* 2017 Summer peaks are not include since they are projections. The peak month occurred after the June 2017 cut off.
 Winter values are include since the peak occurred in January 2017.

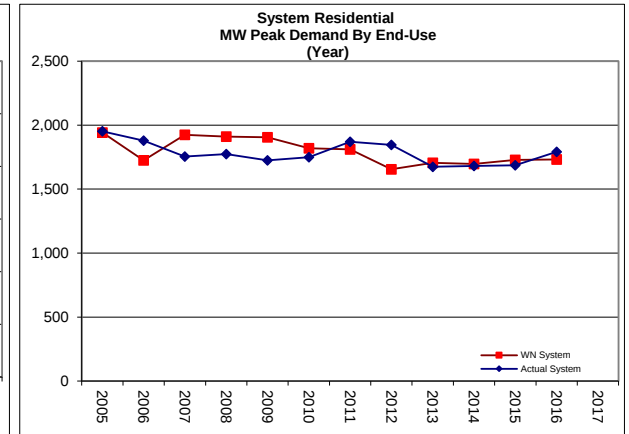
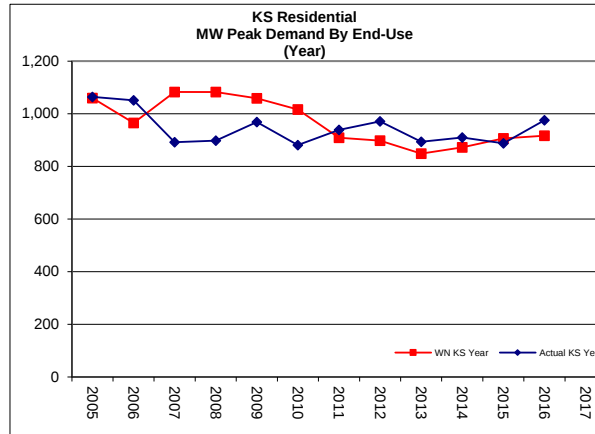
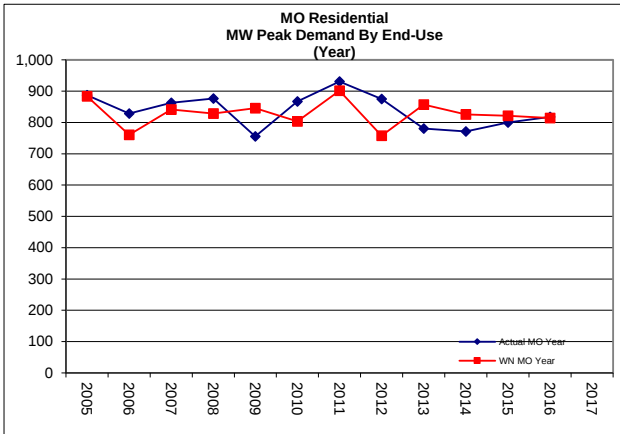
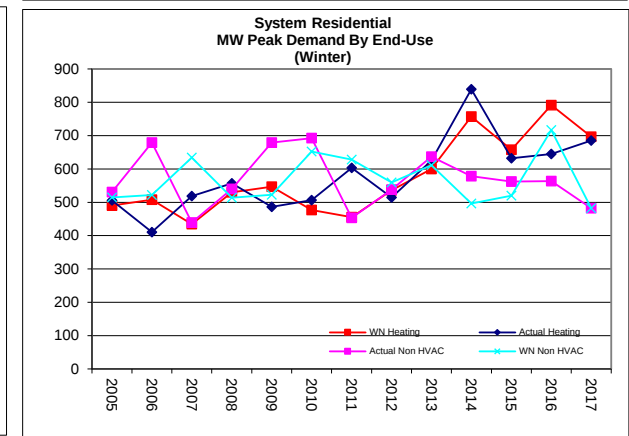
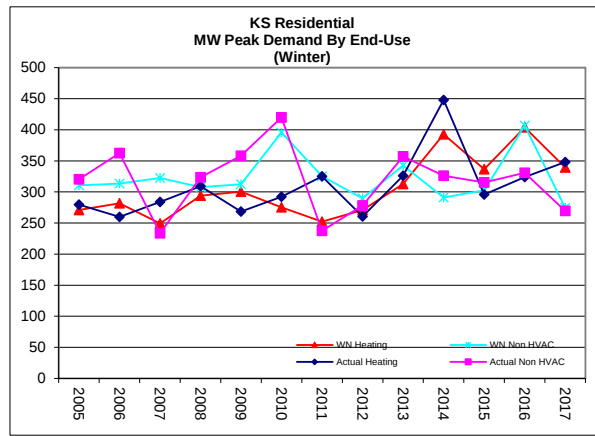
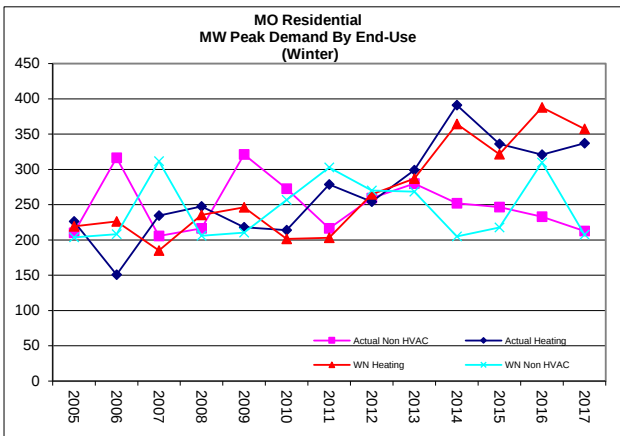
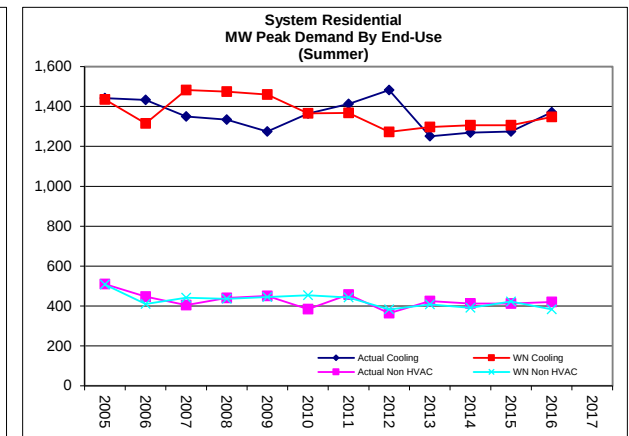
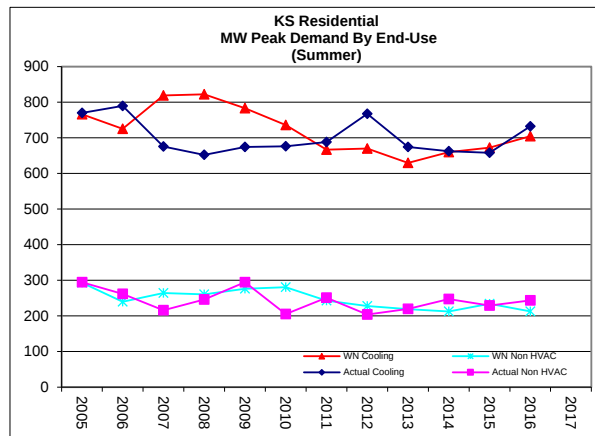
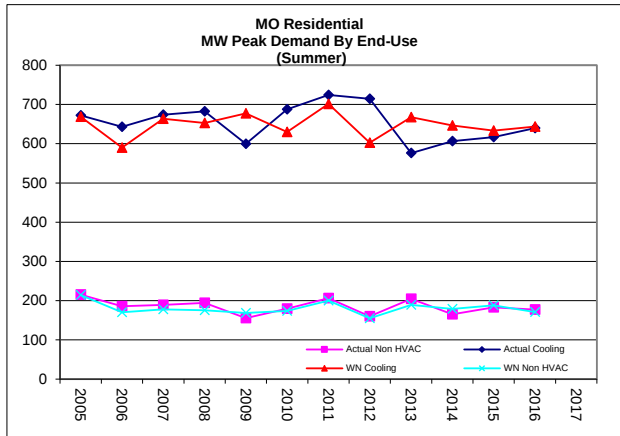


Plot 3A-27 Missouri & Kansas Residential MW Peak Demand By End-Use

Year	Missouri										Kansas									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year		Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	672.1	669.0	226.3	219.4	215.3	214.3	210.0	203.7	887.4	883.3	769.8	766.3	279.6	271.1	294.5	293.2	320.3	310.5	1,064.4	1,059.5
2006	642.8	590.2	150.7	226.4	185.6	170.4	316.6	208.2	828.4	760.5	789.7	725.0	259.9	281.6	261.5	240.1	362.4	313.5	1,051.2	965.1
2007	673.7	663.9	234.6	185.1	188.9	177.7	205.6	311.5	862.7	841.6	675.9	818.8	283.9	249.3	216.1	264.2	233.6	322.3	891.9	1,083.0
2008	682.3	652.7	247.6	235.6	194.2	175.4	216.4	205.9	876.5	828.2	652.1	822.2	309.0	294.0	245.9	260.7	323.4	307.7	898.0	1,082.8
2009	599.9	677.2	218.0	246.2	155.5	168.8	321.2	210.3	755.4	846.0	674.3	782.9	268.5	300.6	294.7	276.2	358.1	312.4	968.9	1,059.1
2010	687.9	629.8	213.8	201.4	179.4	173.7	272.5	256.7	867.3	803.5	676.0	735.9	292.3	275.4	205.3	280.7	419.8	395.5	881.3	1,016.5
2011	724.4	701.6	278.6	203.0	206.3	199.8	216.3	302.8	930.6	901.4	688.2	666.6	324.8	252.1	250.8	243.0	237.3	325.5	939.1	909.6
2012	714.7	602.5	254.4	264.8	159.9	155.0	259.3	270.0	874.6	757.6	767.7	670.2	260.3	271.0	203.9	227.7	278.3	289.7	971.6	897.9
2013	576.0	667.7	299.0	286.8	204.8	189.3	280.0	268.6	780.8	857.0	674.5	629.6	326.0	312.8	219.6	219.1	357.0	342.5	894.1	848.7
2014	606.5	646.5	391.0	364.3	165.0	179.1	252.0	205.1	771.5	825.6	662.1	659.7	448.0	392.7	247.6	212.5	326.0	291.1	909.7	872.2
2015	616.7	633.5	336.1	321.4	182.9	188.0	246.4	217.6	799.6	821.5	657.7	672.3	295.7	336.4	228.9	234.0	315.4	302.5	887.6	906.3
2016	639.5	643.8	320.8	387.8	177.0	170.7	232.9	309.9	817.6	814.5	732.0	704.3	323.8	403.8	243.7	212.6	330.8	406.8	975.7	916.9
2017			337.2	357.3			212.5	207.6					348.2	339.3			269.4	274.4		
06-'11	2.4%	3.5%	13.1%	-2.2%	2.1%	3.2%	-7.3%	7.8%	2.4%	3.5%	-2.7%	-1.7%	4.6%	-2.2%	-0.8%	0.2%	-8.1%	0.8%	-2.2%	-1.2%
11-'16	-2.5%	-1.7%	2.9%	13.8%	-3.0%	-3.1%	1.5%	0.5%	-2.6%	-2.0%	1.2%	1.1%	-0.1%	9.9%	-0.6%	-2.6%	6.9%	4.6%	0.8%	0.2%
06-'16	-0.1%	0.9%	7.8%	5.5%	-0.5%	0.0%	-3.0%	4.1%	-0.1%	0.7%	-0.8%	-0.3%	2.2%	3.7%	-0.7%	-1.2%	-0.9%	2.6%	-0.7%	-0.5%

* 2017 Summer peaks are not include since they are projections. The peak month occurred after the June 2017 cut off.
Winter values are include since the peak occurred in January 2017.

Year	System									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	1,441.9	1,435.4	505.8	490.4	509.8	507.5	530.3	514.2	1,951.7	1,942.8
2006	1,432.5	1,315.1	410.6	508.0	447.1	410.5	679.0	521.6	1,879.6	1,725.6
2007	1,349.6	1,482.7	518.5	434.4	405.0	441.9	439.2	633.8	1,754.6	1,924.6
2008	1,334.3	1,474.9	556.7	529.6	440.1	436.1	539.8	513.5	1,774.5	1,911.0
2009	1,274.1	1,460.1	486.5	546.8	450.2	445.0	679.3	522.7	1,724.3	1,905.0
2010	1,363.9	1,365.7	506.1	476.8	384.7	454.4	692.3	652.2	1,748.6	1,820.0
2011	1,412.6	1,368.2	603.4	455.1	457.1	442.7	453.6	628.2	1,869.7	1,810.9
2012	1,482.3	1,272.7	514.7	535.8	363.8	382.7	537.6	559.7	1,846.2	1,655.4
2013	1,250.5	1,297.3	625.1	599.6	424.4	408.4	637.1	611.1	1,674.9	1,705.7
2014	1,268.6	1,306.2	839.1	757.0	412.6	391.6	578.1	496.2	1,681.2	1,697.8
2015	1,274.4	1,305.8	631.8	657.9	411.8	422.0	561.8	520.1	1,686.2	1,727.8
2016	1,371.6	1,348.0	644.7	791.6	420.7	383.3	563.7	716.7	1,792.3	1,731.4
2017			685.4	696.6			481.9	482.0		
06-'11	-0.3%	0.8%	8.0%	-2.2%	0.4%	1.5%	-7.7%	3.8%	-0.1%	1.0%
11-'16	-0.6%	-0.3%	1.3%	11.7%	-1.6%	-2.8%	4.4%	2.7%	-0.8%	-0.9%
06-'16	-0.4%	0.2%	4.6%	4.5%	-0.6%	-0.7%	-1.8%	3.2%	-0.5%	0.0%



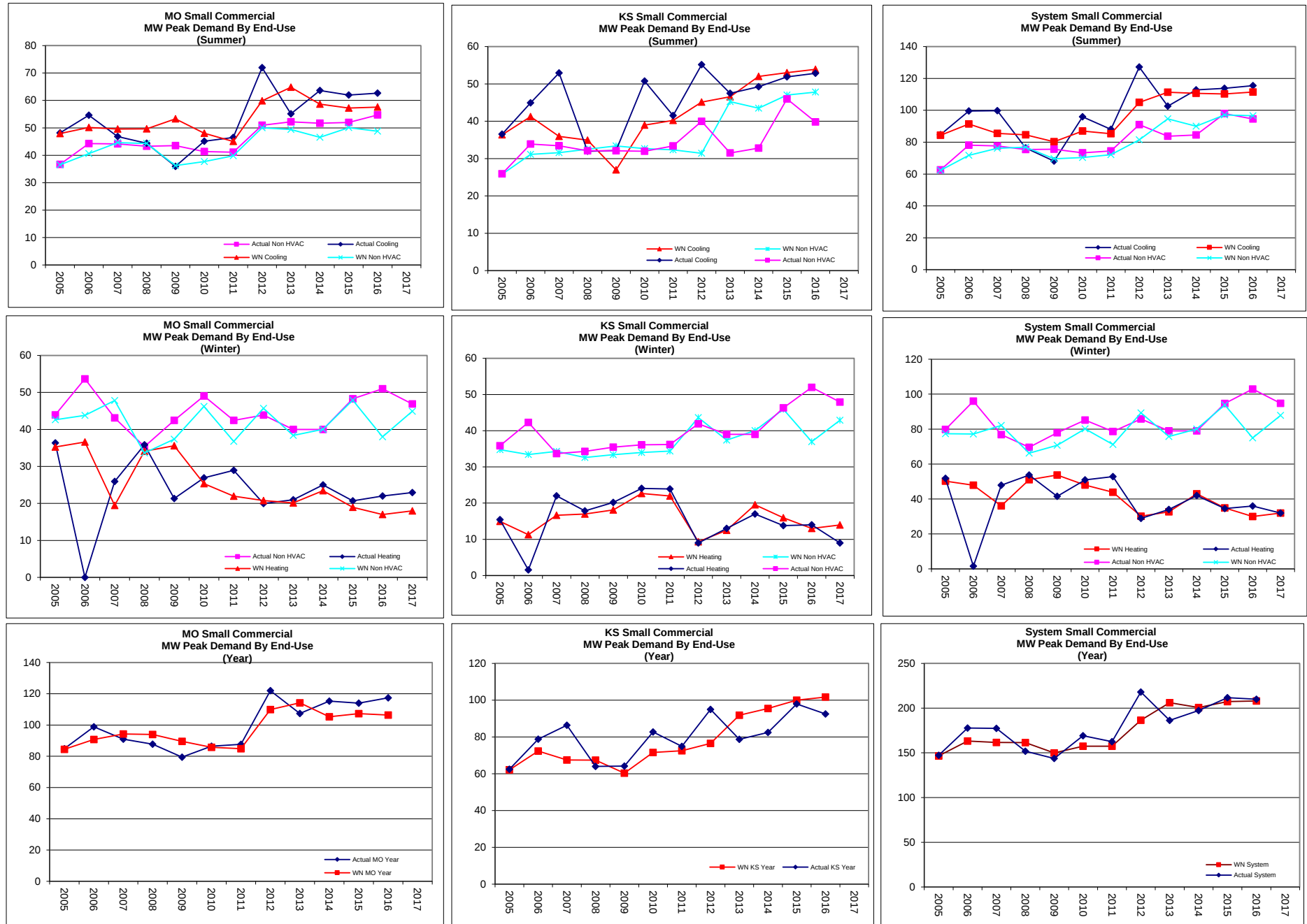
Plot 3A-28 Missouri & Kansas Small Commercial MW Peak Demand By End-Use

Year	Missouri										Kansas									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year		Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	48.2	47.9	36.4	35.3	36.7	36.5	43.9	42.6	84.8	84.5	36.5	36.4	15.4	15.0	25.9	25.8	35.9	34.8	62.5	62.2
2006	54.6	50.2	0.0	36.6	44.3	40.6	53.7	43.8	98.9	90.8	44.9	41.2	1.5	11.3	33.9	31.1	42.3	33.4	78.8	72.4
2007	46.8	49.6	25.9	19.4	44.2	44.6	43.1	47.8	91.0	94.2	52.9	35.9	22.0	16.6	33.4	31.6	33.7	34.3	86.4	67.5
2008	44.4	49.6	35.8	34.1	43.3	44.3	35.3	33.6	87.7	93.9	31.9	34.9	17.8	17.0	32.1	32.5	34.3	32.6	64.0	67.4
2009	35.9	53.3	21.3	35.6	43.5	36.2	42.4	37.4	79.5	89.5	32.1	27.0	20.2	18.1	32.1	33.4	35.4	33.4	64.2	60.3
2010	45.1	48.0	26.9	25.3	41.3	37.7	49.0	46.2	86.5	85.7	50.8	39.0	24.1	22.7	32.0	32.7	36.1	34.0	82.7	71.6
2011	46.5	45.0	28.9	21.9	41.1	39.8	42.5	36.8	87.6	84.9	41.5	40.2	23.9	22.0	33.4	32.3	36.2	34.4	74.9	72.6
2012	72.0	59.9	19.9	20.8	51.0	50.0	43.9	45.7	121.9	109.9	55.1	45.1	9.0	9.3	40.0	31.4	41.9	43.6	95.0	76.5
2013	55.1	64.8	21.0	20.1	52.2	49.4	40.0	38.4	107.3	114.2	47.5	46.6	13.0	12.5	31.5	45.3	39.0	37.4	78.8	91.8
2014	63.6	58.7	25.0	23.4	51.7	46.5	40.0	40.0	115.3	105.2	49.2	52.0	17.0	19.5	32.8	43.5	39.0	40.0	82.5	95.5
2015	62.0	57.2	20.7	19.0	52.0	50.1	48.3	47.9	113.9	107.3	51.9	53.0	13.8	16.0	46.0	47.0	46.3	45.9	98.0	100.0
2016	62.7	57.6	22.0	17.0	54.7	48.8	51.0	38.0	117.4	106.3	52.8	53.9	14.0	13.0	39.8	47.8	52.0	37.0	92.5	101.7
2017			22.9	18.0			46.9	44.9					9.0	14.0			47.9	42.9		
06-'11	-3.2%	-2.1%	#DIV/0!	-9.7%	-1.5%	-0.4%	-4.6%	-3.4%	-2.4%	-1.3%	-1.6%	-0.5%	72.9%	14.3%	-0.3%	0.8%	-3.1%	0.6%	-1.0%	0.1%
11-'16	6.1%	5.0%	-5.3%	-5.0%	5.9%	4.1%	3.7%	0.6%	6.0%	4.6%	4.9%	6.0%	-10.2%	-10.0%	3.6%	8.1%	7.5%	1.5%	4.3%	7.0%
06-'16	1.4%	1.4%	#DIV/0!	-7.4%	2.1%	1.8%	-0.5%	-1.4%	1.7%	1.6%	1.6%	2.7%	24.6%	1.4%	1.6%	4.4%	2.1%	1.0%	1.6%	3.5%

* 2017 Summer peaks are not include since they are projections. The peak month occurred after the June 2017 cut off.
Winter values are include since the peak occurred in January 2017.

* Small Commercial did not have a coincident peak at the time of the system in 2006 due to the system peak occurring in November.
The peak usually occurs in January or December

Year	System									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	84.7	84.3	51.8	50.2	62.6	62.3	79.8	77.4	147.3	146.6
2006	99.6	91.4	1.5	47.9	78.2	71.8	96.0	77.2	177.7	163.2
2007	99.8	85.5	47.9	36.1	77.6	76.2	76.8	82.1	177.4	161.7
2008	76.4	84.6	53.7	51.1	75.4	76.8	69.6	66.2	151.8	161.4
2009	68.1	80.3	41.5	53.7	75.6	69.6	77.9	70.7	143.7	149.9
2010	95.9	87.0	51.0	48.0	73.3	70.4	85.1	80.2	169.2	157.4
2011	88.0	85.2	52.8	43.9	74.5	72.2	78.6	71.2	162.5	157.4
2012	127.1	105.0	28.9	30.1	91.0	81.4	85.8	89.3	218.1	186.4
2013	102.6	111.4	34.0	32.6	83.7	94.6	79.0	75.8	186.3	206.0
2014	112.9	110.7	42.0	43.0	84.5	90.0	79.0	80.1	197.4	200.7
2015	113.8	110.2	34.5	34.9	98.0	97.1	94.6	93.8	211.8	207.3
2016	115.5	111.5	36.0	30.0	94.5	96.6	102.9	75.0	210.0	208.0
2017			31.9	31.9			94.8	87.8		
06-'11	-2.4%	-1.4%	102.7%	-1.7%	-1.0%	0.1%	-3.9%	-1.6%	-1.8%	-0.7%
11-'16	5.6%	5.5%	-7.4%	-7.3%	4.9%	6.0%	5.5%	1.0%	5.3%	5.7%
06-'16	1.5%	2.0%	37.0%	-4.6%	1.9%	3.0%	0.7%	-0.3%	1.7%	2.5%



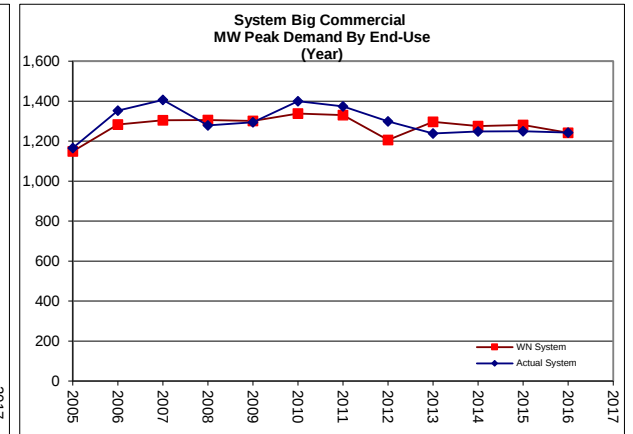
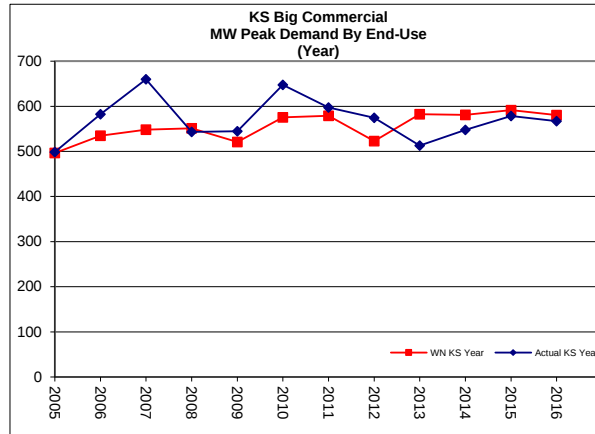
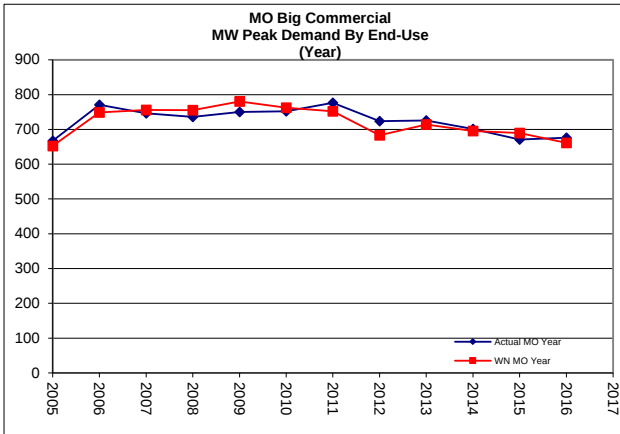
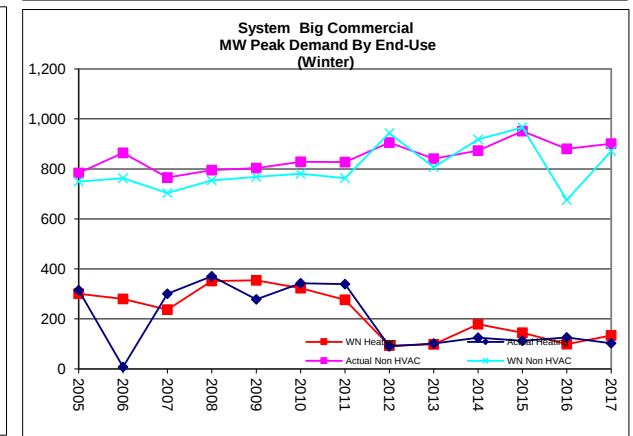
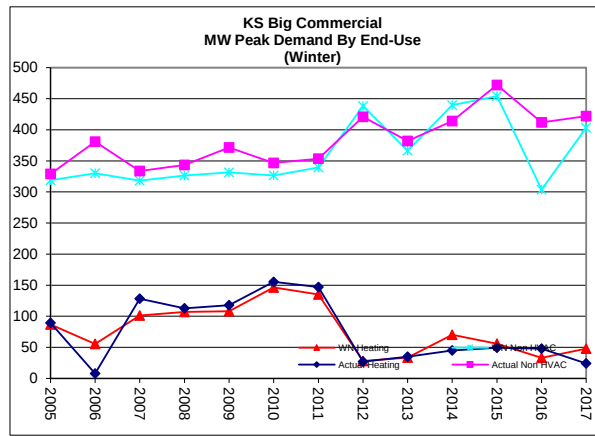
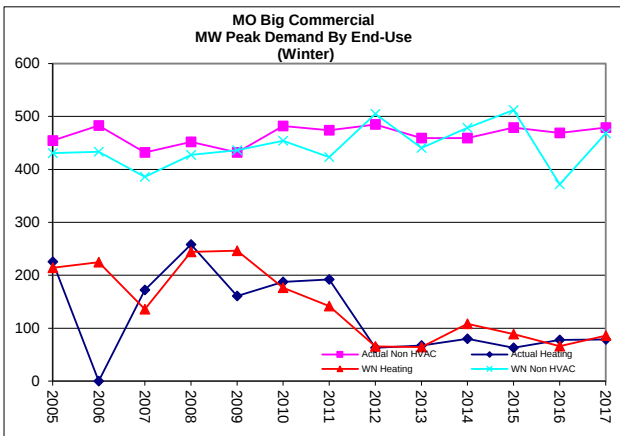
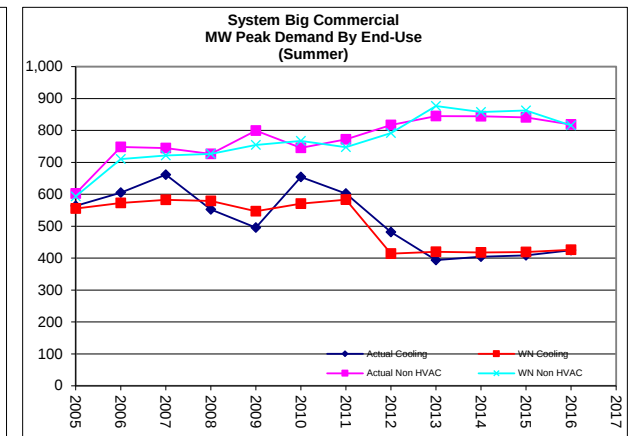
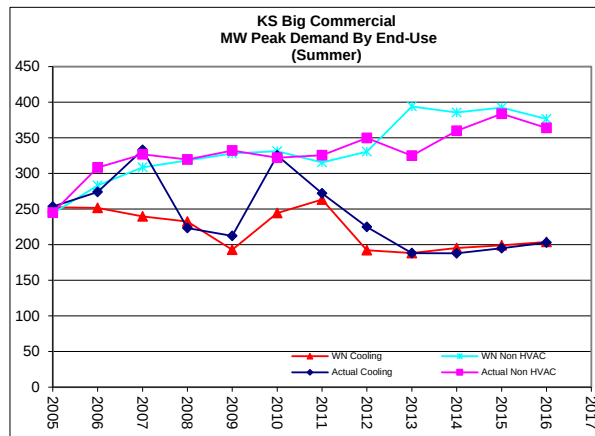
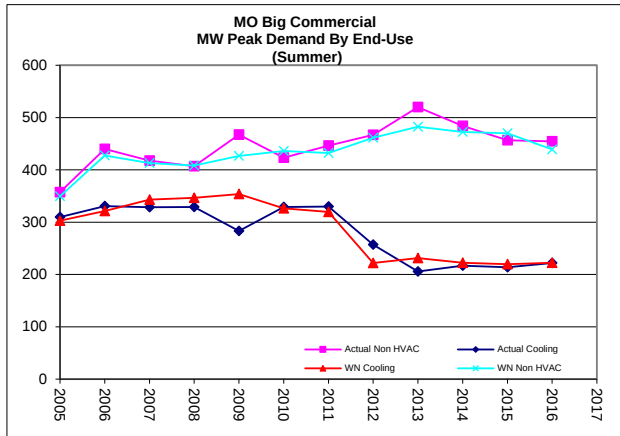
Plot 3A-29 Missouri & Kansas Big Commercial MW Peak Demand By End-Use

Year	Missouri										Kansas									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year		Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	309.9	303.1	225.6	213.9	357.3	349.5	454.3	430.8	667.2	652.5	253.7	252.5	89.5	86.8	245.0	243.9	328.9	318.9	498.7	496.4
2006	330.7	321.2	0.0	224.6	440.0	427.4	482.9	433.3	770.7	748.7	274.1	251.6	7.8	55.5	308.4	283.1	380.9	330.0	582.4	534.7
2007	328.6	343.0	172.3	135.6	417.8	413.1	432.0	385.9	746.4	756.1	332.9	239.6	128.2	101.2	326.9	308.5	333.7	318.0	659.8	548.1
2008	329.0	346.8	258.2	244.2	406.8	408.4	452.1	427.6	735.8	755.2	223.5	232.6	112.6	107.1	319.5	318.4	343.2	326.5	543.0	551.0
2009	283.1	353.7	160.8	246.4	467.2	426.6	432.0	436.3	750.3	780.3	212.5	192.8	117.8	108.1	332.2	327.9	371.6	331.7	544.7	520.7
2010	329.0	326.5	187.3	176.4	423.0	435.9	482.2	454.2	752.0	762.4	325.3	244.4	155.4	146.4	322.2	331.3	346.6	326.5	647.5	575.7
2011	330.1	319.7	192.0	141.7	446.4	432.3	474.0	423.3	776.4	752.0	271.9	263.4	147.0	135.0	325.6	315.4	353.5	339.3	597.5	578.8
2012	256.9	221.8	62.8	65.4	466.8	461.2	484.8	504.7	723.7	683.0	224.9	192.3	26.9	28.0	349.8	330.7	420.9	438.2	574.7	523.0
2013	205.8	231.5	67.0	64.3	519.9	482.5	459.1	440.3	725.9	714.0	188.1	188.3	35.0	33.6	324.9	394.0	382.0	366.5	513.0	582.3
2014	216.7	222.6	80.0	108.4	484.2	472.5	459.0	478.6	701.4	695.1	187.9	195.3	45.0	70.3	359.9	385.5	414.0	439.5	547.8	580.8
2015	213.9	219.7	63.1	88.8	456.8	470.0	479.1	512.1	670.9	689.7	194.9	199.2	49.3	55.9	383.8	392.4	472.2	454.2	578.7	591.6
2016	221.8	222.4	78.0	66.0	454.5	438.9	468.8	371.8	676.0	661.3	202.9	203.9	48.0	33.0	364.0	376.5	411.8	303.9	566.9	580.4
2017			78.8	85.8			478.9	468.0					23.9	47.9			422.0	403.2		
06-'11	0.0%	-0.1%	#DIV/0!	-8.8%	0.3%	0.2%	-0.4%	-0.5%	0.1%	0.1%	-0.2%	0.9%	79.8%	19.5%	1.1%	2.2%	-1.5%	0.6%	0.5%	1.6%
11-'16	-7.6%	-7.0%	-16.5%	-14.2%	0.4%	0.3%	-0.2%	-2.6%	-2.7%	-2.5%	-5.7%	-5.0%	-20.1%	-24.6%	2.3%	3.6%	3.1%	-2.2%	-1.0%	0.1%
06-'16	-3.9%	-3.6%	#DIV/0!	-11.5%	0.3%	0.3%	-0.3%	-1.5%	-1.3%	-1.2%	-3.0%	-2.1%	19.9%	-5.1%	1.7%	2.9%	0.8%	-0.8%	-0.3%	0.8%

* 2017 Summer peaks are not include since they are projections. The peak month occurred after the June 2017 cut off.
 Winter values are include since the peak occurred in January 2017.

* Big Commercial did not have a coincident peak at the time of the system in 2006 due to the system peak occuring in November.
 The peak usually occurs in January or December

Year	Sysetm									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	563.5	555.6	315.1	300.7	602.4	593.4	783.3	749.8	1,165.9	1,148.9
2006	604.8	572.8	7.8	280.0	748.4	710.5	863.8	763.3	1,353.1	1,283.4
2007	661.5	582.6	300.5	236.8	744.6	721.6	765.7	703.9	1,406.2	1,304.2
2008	552.5	579.3	370.8	351.3	726.3	726.8	795.3	754.1	1,278.8	1,306.1
2009	495.5	546.5	278.6	354.4	799.4	754.5	803.5	768.0	1,295.0	1,301.0
2010	654.3	570.9	342.7	322.9	745.2	767.2	828.8	780.8	1,399.5	1,338.1
2011	602.0	583.1	339.1	276.8	772.0	747.7	827.5	762.7	1,374.0	1,330.8
2012	481.8	414.1	89.8	93.5	816.6	791.9	905.7	942.8	1,298.4	1,206.0
2013	393.9	419.7	102.0	97.9	844.8	876.5	841.1	806.8	1,238.7	1,296.2
2014	404.6	417.9	125.0	178.7	844.1	858.0	873.1	918.1	1,248.7	1,275.9
2015	408.8	418.9	112.4	144.8	840.6	862.4	951.2	966.3	1,249.4	1,281.3
2016	424.7	426.3	125.9	99.0	818.6	815.5	880.6	675.7	1,243.3	1,241.7
2017			102.8	133.7			900.9	871.2		
06-'11	-0.1%	0.4%	112.5%	-0.2%	0.6%	1.0%	-0.9%	0.0%	0.3%	0.7%
11-'16	-6.7%	-6.1%	-18.0%	-18.6%	1.2%	1.7%	1.3%	-2.4%	-2.0%	-1.4%
06-'16	-3.5%	-2.9%	32.0%	-9.9%	0.9%	1.4%	0.2%	-1.2%	-0.8%	-0.3%

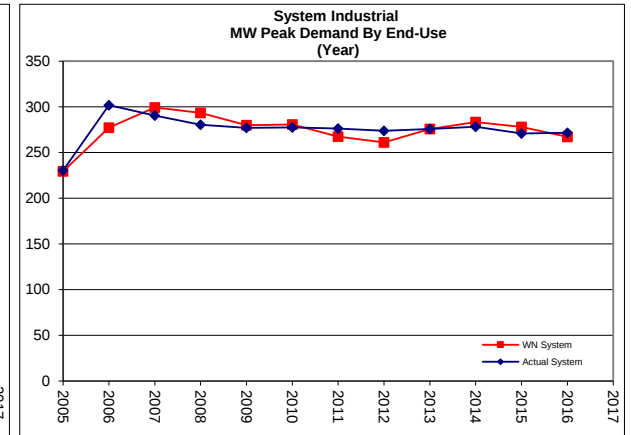
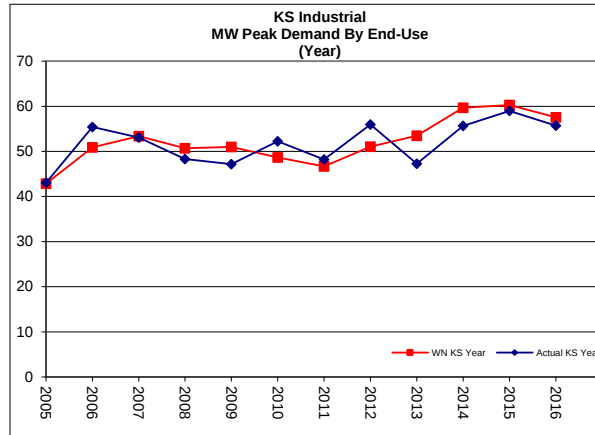
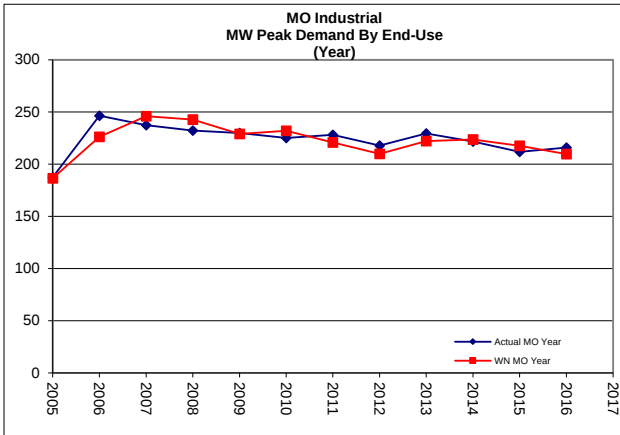
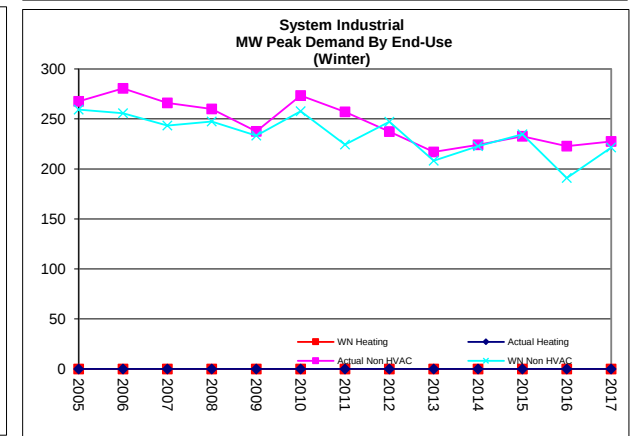
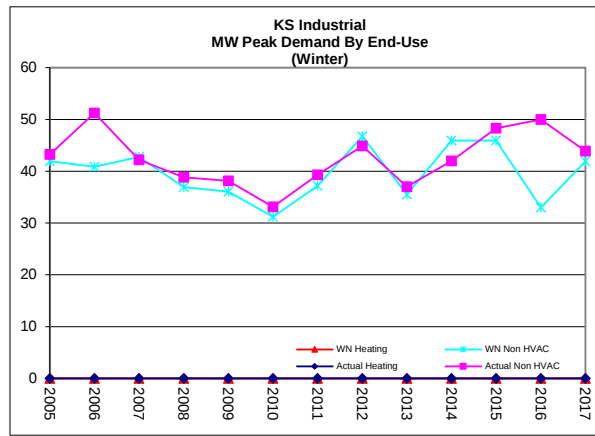
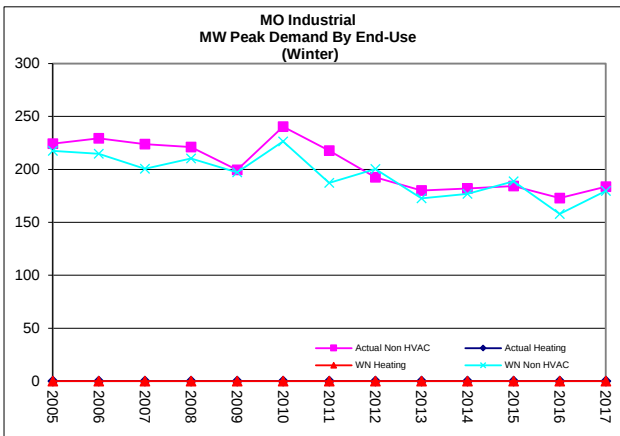
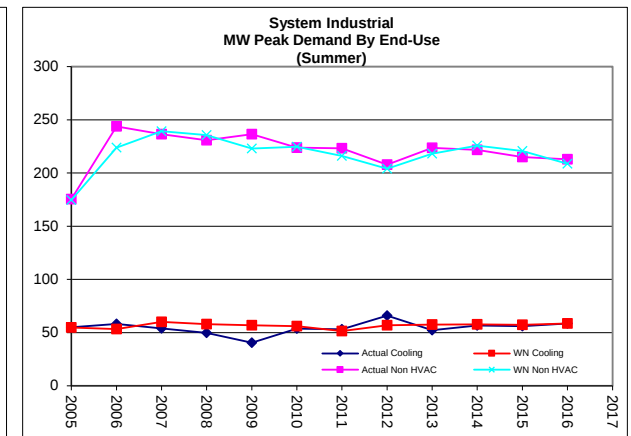
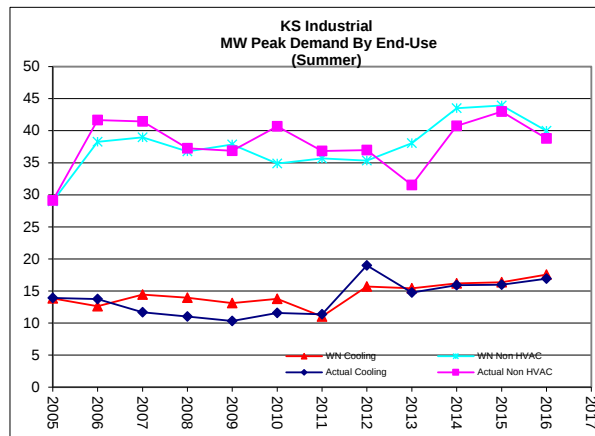
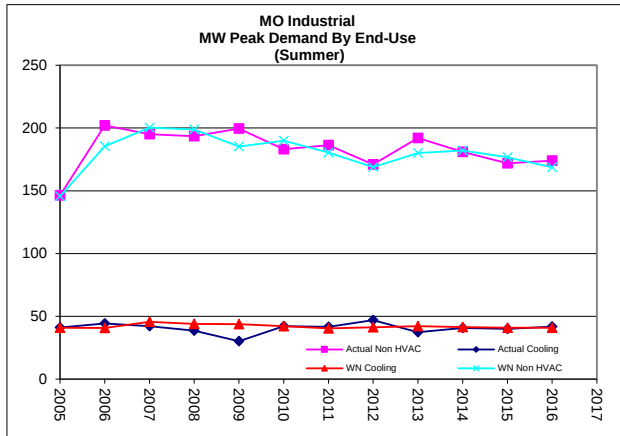


Plot 3A-30 Missouri & Kansas Industrial MW Peak Demand By End-Use

Year	Missouri										Kansas									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year		Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	41.1	40.9	0.0	0.0	146.3	145.7	224.2	217.4	187.4	186.6	13.9	13.9	0.0	0.0	29.1	29.0	43.2	41.9	43.0	42.8
2006	44.4	40.7	0.0	0.0	202.1	185.5	229.3	214.8	246.5	226.3	13.8	12.6	0.0	0.0	41.7	38.3	51.2	40.9	55.4	50.9
2007	42.3	45.7	0.0	0.0	195.1	200.3	223.8	200.5	237.3	246.0	11.7	14.4	0.0	0.0	41.4	38.9	42.2	42.8	53.1	53.4
2008	38.7	44.0	0.0	0.0	193.5	198.9	221.2	210.4	232.2	242.8	11.0	13.9	0.0	0.0	37.3	36.8	38.8	36.9	48.3	50.7
2009	30.2	43.8	0.0	0.0	199.6	185.2	199.5	197.2	229.8	229.0	10.3	13.1	0.0	0.0	36.9	37.9	38.1	36.1	47.2	51.0
2010	42.1	42.2	0.0	0.0	183.1	189.8	240.4	226.5	225.2	232.0	11.6	13.8	0.0	0.0	40.7	34.9	33.1	31.2	52.2	48.7
2011	41.7	40.4	0.0	0.0	186.3	180.5	217.6	187.3	228.1	220.9	11.4	11.0	0.0	0.0	36.8	35.7	39.3	37.2	48.2	46.7
2012	47.0	41.2	0.0	0.0	170.9	168.8	192.5	200.4	217.9	210.0	19.0	15.7	0.0	0.0	37.0	35.3	44.9	46.7	56.0	51.0
2013	37.4	42.2	0.0	0.0	192.0	180.0	180.0	172.7	229.4	222.2	14.8	15.4	0.0	0.0	31.5	38.1	37.0	35.5	47.3	53.5
2014	40.8	41.5	0.0	0.0	180.9	182.1	182.0	176.8	221.7	223.6	15.9	16.2	0.0	0.0	40.8	43.5	42.0	45.9	55.7	59.7
2015	40.0	40.9	0.0	0.0	171.9	176.8	184.3	188.7	211.9	217.6	16.0	16.3	0.0	0.0	43.0	43.9	48.3	45.9	59.0	60.3
2016	41.8	41.0	0.0	0.0	174.1	168.7	172.9	157.9	215.8	209.7	16.9	17.6	0.0	0.0	38.8	40.0	50.0	33.0	55.7	57.6
2017			0.0	0.0			183.6	179.6					0.0	0.0			43.9	41.9		
06-'11	-1.2%	-0.2%	#DIV/0!	#DIV/0!	-1.6%	-0.6%	-1.0%	-2.7%	-1.5%	-0.5%	-3.7%	-2.7%	#DIV/0!	#DIV/0!	-2.4%	-1.4%	-5.2%	-1.9%	-2.8%	-1.7%
11-'16	0.0%	0.3%	#DIV/0!	#DIV/0!	-1.4%	-1.3%	-4.5%	-3.3%	-1.1%	-1.0%	8.2%	9.8%	#DIV/0!	#DIV/0!	1.0%	2.3%	4.9%	-2.4%	2.9%	4.3%
06-'16	-0.6%	0.1%	#DIV/0!	#DIV/0!	-1.5%	-0.9%	-2.8%	-3.0%	-1.3%	-0.8%	2.1%	3.4%	#DIV/0!	#DIV/0!	-0.7%	0.4%	-0.2%	-2.1%	0.0%	1.2%

* 2017 Summer peaks are not include since they are projections. The peak month occurred after the June 2017 cut off.
Winter values are include since the peak occurred in January 2017.

Year	Sysetm									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	55.0	54.8	-	-	175.5	174.7	267.5	259.3	230.5	229.4
2006	58.1	53.4	-	-	243.8	223.8	280.6	255.7	301.9	277.2
2007	53.9	60.1	-	-	236.5	239.3	266.0	243.3	290.4	299.4
2008	49.7	57.9	-	-	230.8	235.6	260.0	247.3	280.5	293.6
2009	40.5	56.9	-	-	236.5	223.1	237.6	233.3	277.0	280.0
2010	53.7	56.0	-	-	223.7	224.7	273.5	257.7	277.4	280.7
2011	53.1	51.4	-	-	223.1	216.1	256.9	224.4	276.3	267.6
2012	66.0	56.9	-	-	207.9	204.1	237.4	247.1	273.9	261.0
2013	52.2	57.6	-	-	223.5	218.1	217.0	208.2	275.7	275.7
2014	56.7	57.7	-	-	221.7	225.6	224.0	222.7	278.4	283.3
2015	56.0	57.2	-	-	214.9	220.7	232.6	234.6	270.9	277.9
2016	58.7	58.5	-	-	212.8	208.7	222.9	190.9	271.5	267.3
2017			-	-			227.5	221.5		
06-'11	-1.8%	-0.7%	#DIV/0!	#DIV/0!	-1.8%	-0.7%	-1.7%	-2.6%	-1.8%	-0.7%
11-'16	2.0%	2.6%	#DIV/0!	#DIV/0!	-0.9%	-0.7%	-2.8%	-3.2%	-0.3%	0.0%
06-'16	0.1%	0.9%	#DIV/0!	#DIV/0!	-1.3%	-0.7%	-2.3%	-2.9%	-1.1%	-0.4%

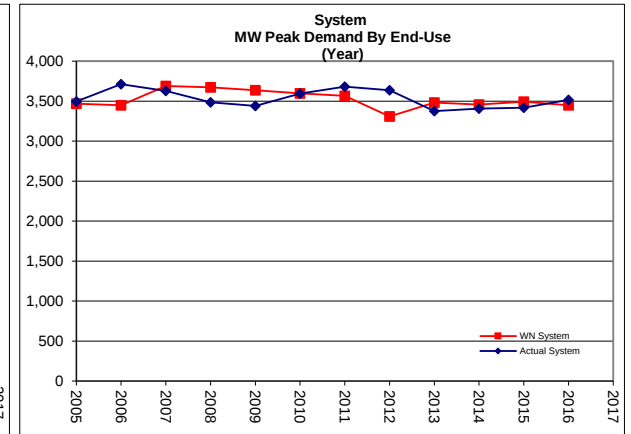
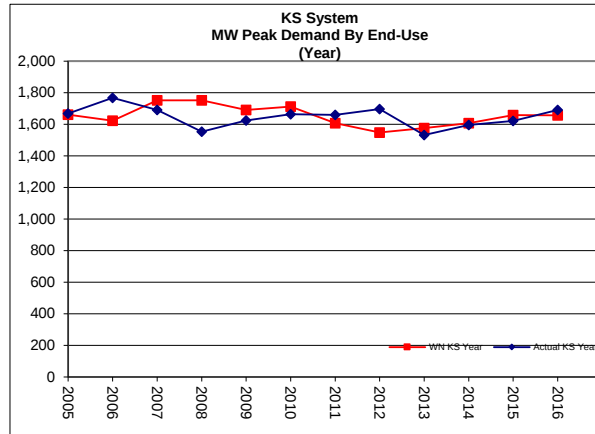
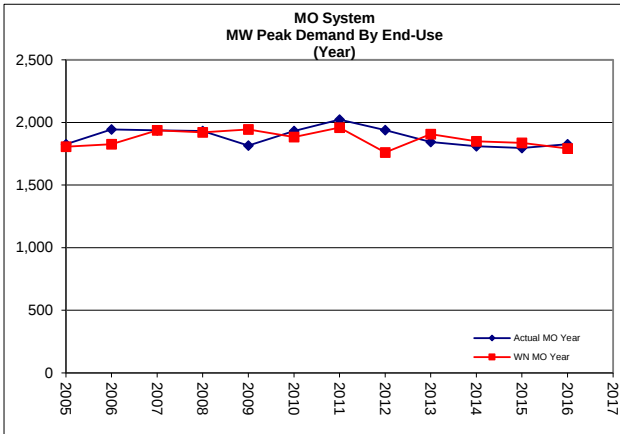
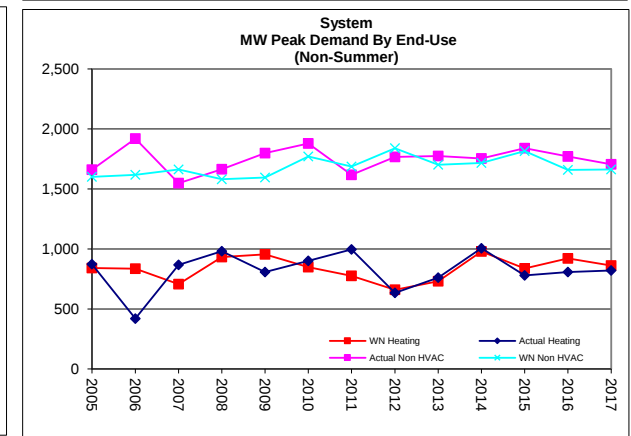
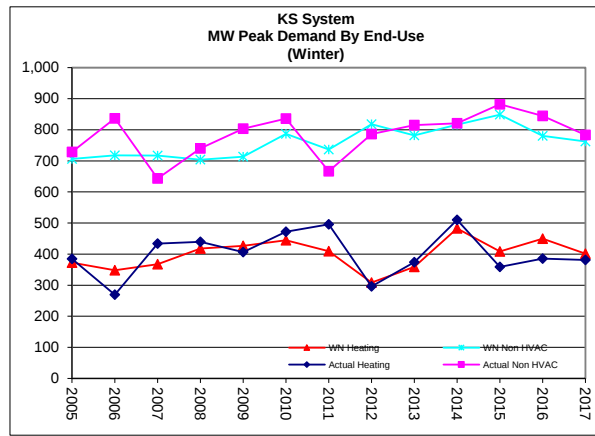
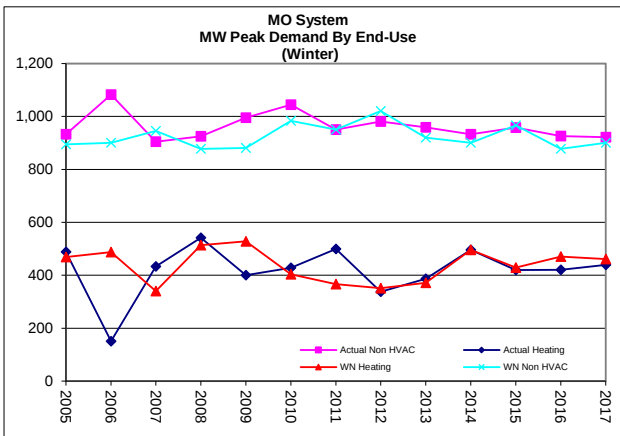
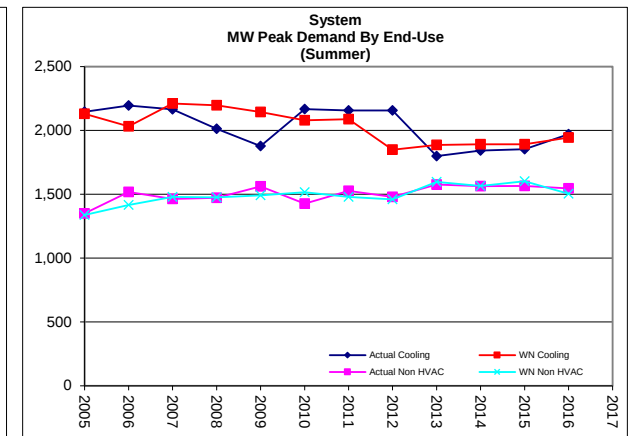
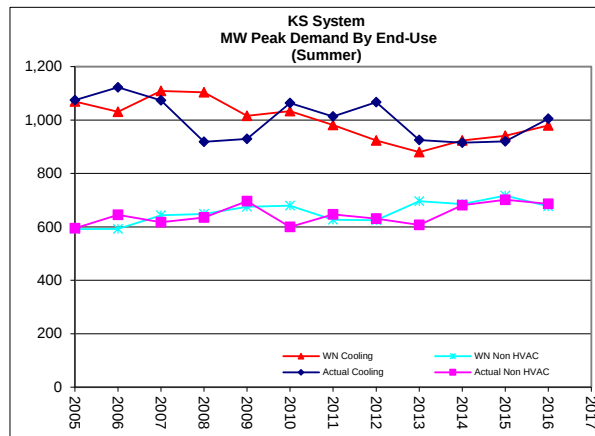
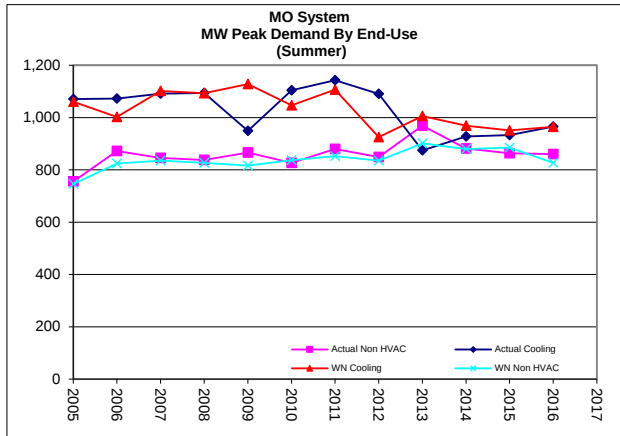


Plot 3A-31 Missouri & Kansas Total MW Peak Demand By End-Use
For classes that have end-use sales

Year	Missouri										Kansas									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year		Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	1,071.2	1,060.9	488.2	468.5	755.6	745.9	932.5	894.5	1,826.8	1,806.9	1,074.0	1,069.1	384.5	372.8	594.6	591.9	728.3	706.1	1,668.6	1,661.0
2006	1,072.5	1,002.3	150.7	487.5	871.9	824.0	1,082.5	900.1	1,944.5	1,826.2	1,122.4	1,030.4	269.2	348.4	645.5	592.6	836.8	717.8	1,767.9	1,623.0
2007	1,091.4	1,102.1	432.9	340.1	846.0	835.8	904.5	945.7	1,937.3	1,937.8	1,073.4	1,108.8	434.0	367.2	617.8	643.2	643.2	717.4	1,691.2	1,752.0
2008	1,094.4	1,093.1	541.7	513.9	837.9	827.0	925.0	877.5	1,932.2	1,920.1	918.5	1,103.6	439.5	418.1	634.8	648.3	739.7	703.7	1,553.3	1,751.9
2009	949.1	1,128.0	400.2	528.2	865.8	816.8	995.1	881.2	1,814.9	1,944.8	929.2	1,015.7	406.4	426.7	695.9	675.4	803.3	713.5	1,625.1	1,691.1
2010	1,104.1	1,046.5	428.1	403.2	826.9	837.2	1,044.1	983.6	1,931.0	1,883.7	1,063.7	1,033.0	471.8	444.4	600.1	679.5	835.7	787.2	1,663.7	1,712.5
2011	1,142.7	1,106.7	499.6	366.7	880.1	852.4	950.4	950.1	2,022.7	1,959.1	1,013.1	981.2	495.8	409.1	646.7	626.3	666.3	736.4	1,659.7	1,607.6
2012	1,090.5	925.3	337.1	351.0	848.6	835.1	980.5	1,020.7	1,939.1	1,760.4	1,066.7	923.4	296.2	308.4	630.7	625.1	786.0	818.2	1,697.4	1,548.4
2013	874.4	1,006.1	387.0	371.3	968.9	901.2	959.1	920.0	1,843.3	1,907.3	924.8	879.9	374.0	358.8	607.5	696.5	815.1	781.9	1,532.3	1,576.3
2014	927.6	969.3	496.0	496.2	881.8	880.3	933.1	900.6	1,809.4	1,849.5	915.2	923.1	510.0	482.5	681.0	685.0	821.1	816.6	1,596.2	1,608.1
2015	932.5	951.3	419.9	429.3	863.6	884.8	958.1	966.3	1,796.1	1,836.1	920.4	940.9	358.8	408.3	701.6	717.3	882.2	848.5	1,622.1	1,658.2
2016	965.8	964.7	420.8	470.8	860.3	827.2	925.6	877.6	1,826.1	1,791.9	1,004.7	979.6	385.8	449.8	686.3	676.9	844.6	780.6	1,691.0	1,656.5
2017			439.0	461.1			921.8	900.1					381.1	401.2			783.2	762.4		
06-'11	1.3%	2.0%	27.1%	-5.5%	0.2%	0.7%	-2.6%	1.1%	0.8%	1.4%	-2.0%	-1.0%	13.0%	3.3%	0.0%	1.1%	-4.5%	0.5%	-1.3%	-0.2%
11-'16	-3.3%	-2.7%	-3.4%	5.1%	-0.5%	-0.6%	-0.5%	-1.6%	-2.0%	-1.8%	-0.2%	0.0%	-4.9%	1.9%	1.2%	1.6%	4.9%	1.2%	0.4%	0.6%
06-'16	-1.0%	-0.4%	10.8%	-0.3%	-0.1%	0.0%	-1.6%	-0.3%	-0.6%	-0.2%	-1.1%	-0.5%	3.7%	2.6%	0.6%	1.3%	0.1%	0.8%	-0.4%	0.2%

* 2017 Summer peaks are not include since they are projections. The peak month occurred after the June 2017 cut off.
 Winter values are include since the peak occurred in January 2017.

Year	System									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	2,145.2	2,130.0	872.7	841.3	1,350.2	1,337.8	1,660.8	1,600.6	3,495.4	3,467.8
2006	2,195.0	2,032.7	420.0	835.9	1,517.4	1,416.5	1,919.3	1,617.9	3,712.4	3,449.2
2007	2,164.8	2,210.8	867.0	707.3	1,463.7	1,479.0	1,547.7	1,663.1	3,628.5	3,689.8
2008	2,012.9	2,196.7	981.2	932.0	1,472.7	1,475.3	1,664.7	1,581.2	3,485.5	3,672.1
2009	1,878.3	2,143.7	806.6	955.0	1,561.7	1,492.2	1,798.3	1,594.7	3,439.9	3,635.9
2010	2,167.8	2,079.5	899.9	847.7	1,426.9	1,516.7	1,879.8	1,770.8	3,594.7	3,596.2
2011	2,155.7	2,087.9	995.3	775.8	1,526.8	1,478.8	1,616.7	1,686.5	3,682.5	3,566.7
2012	2,157.2	1,848.7	633.4	659.4	1,479.3	1,460.1	1,766.5	1,839.0	3,636.6	3,308.9
2013	1,799.2	1,886.0	761.1	730.1	1,576.4	1,597.7	1,774.2	1,701.9	3,375.6	3,483.6
2014	1,842.7	1,892.4	1,006.1	978.7	1,562.9	1,565.2	1,754.2	1,717.1	3,405.6	3,457.6
2015	1,853.0	1,892.2	778.7	837.6	1,565.2	1,602.1	1,840.3	1,814.9	3,418.2	3,494.3
2016	1,970.4	1,944.3	806.6	920.6	1,546.6	1,504.1	1,770.1	1,658.2	3,517.1	3,448.4
2017			820.1	862.2			1,705.0	1,662.6		
06-'11	-0.4%	0.5%	18.8%	-1.5%	0.1%	0.9%	-3.4%	0.8%	-0.2%	0.7%
11-'16	-1.8%	-1.4%	-4.1%	3.5%	0.3%	0.3%	1.8%	-0.3%	-0.9%	-0.7%
06-'16	-1.1%	-0.4%	6.7%	1.0%	0.2%	0.6%	-0.8%	0.2%	-0.5%	0.0%



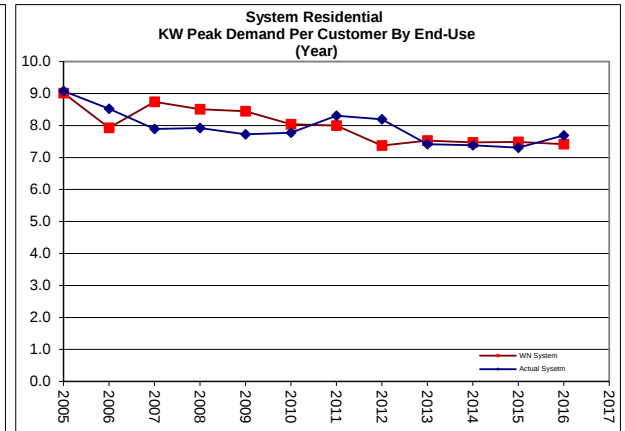
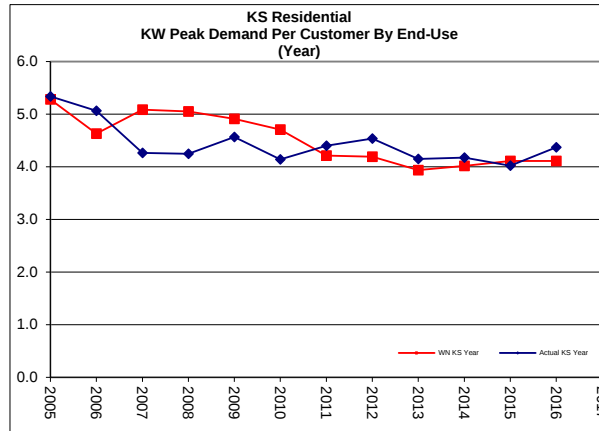
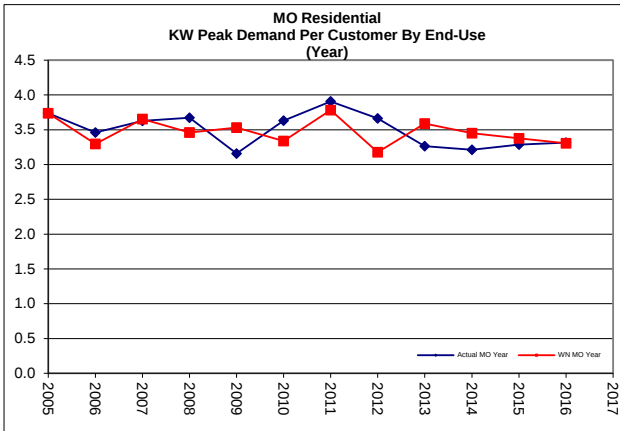
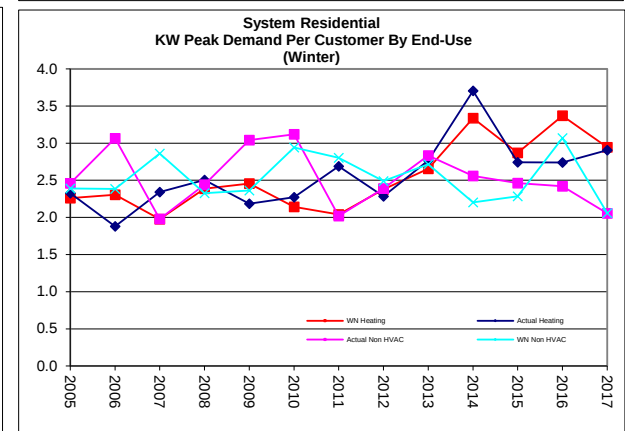
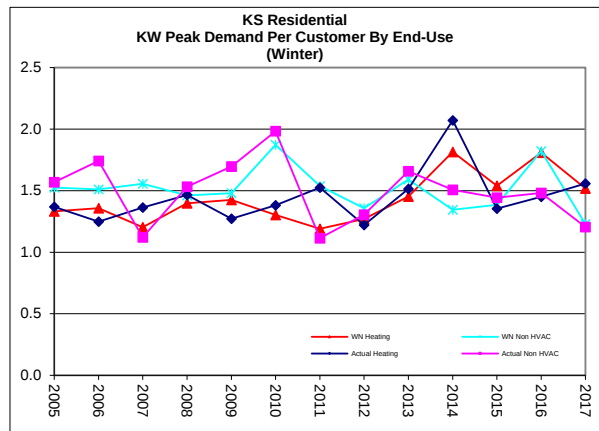
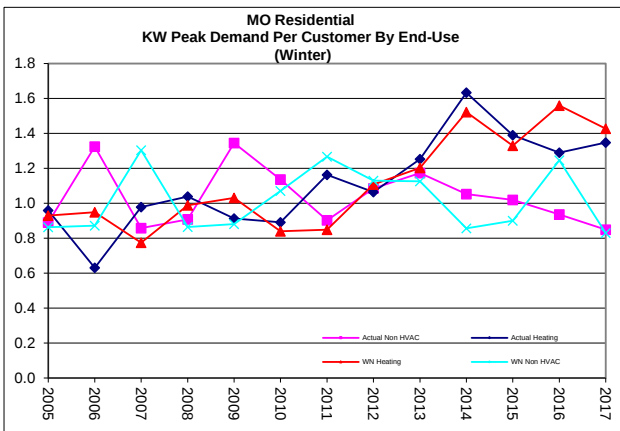
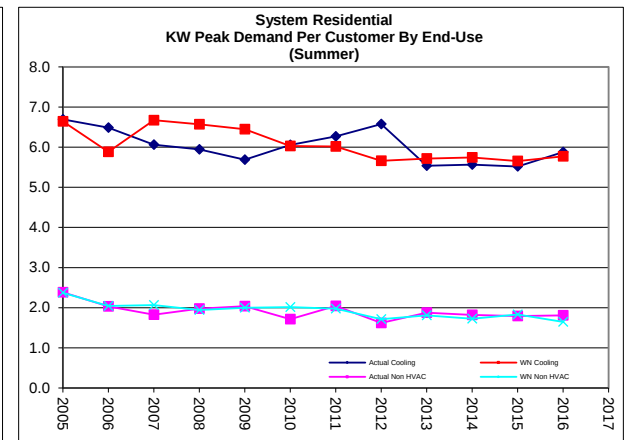
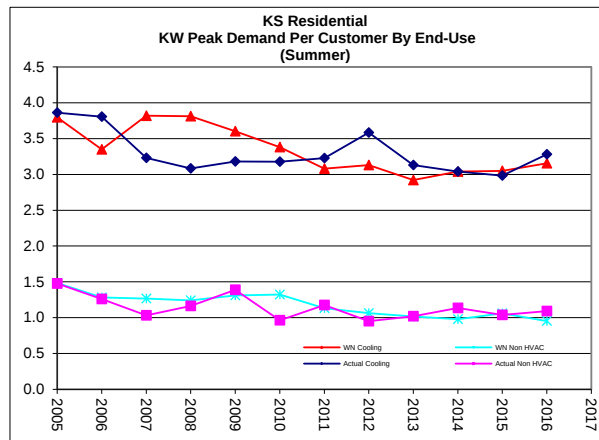
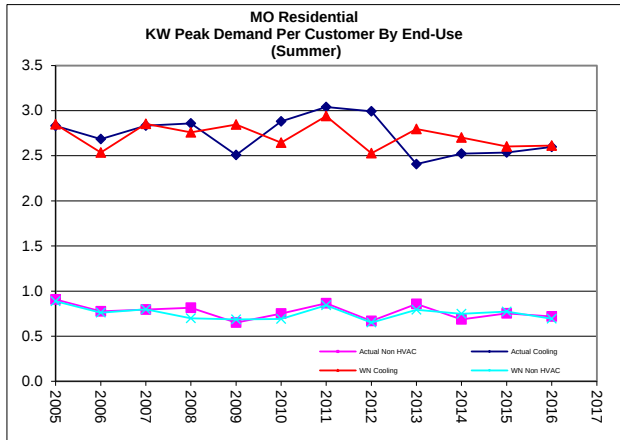
Plot 3A-32 Missouri & Kansas Residential KW Peak Demand Per Customer By End-Use

Year	Missouri										Kansas									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year		Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	2.8	2.8	1.0	0.9	0.9	0.9	0.9	0.9	3.7	3.7	3.9	3.8	1.4	1.3	1.5	1.5	1.6	1.5	5.3	5.3
2006	2.7	2.5	0.6	0.9	0.8	0.8	1.3	0.9	3.5	3.3	3.8	3.3	1.2	1.4	1.3	1.3	1.7	1.5	5.1	4.6
2007	2.8	2.9	1.0	0.8	0.8	0.8	0.9	1.3	3.6	3.7	3.2	3.8	1.4	1.2	1.0	1.3	1.1	1.6	4.3	5.1
2008	2.9	2.8	1.0	1.0	0.8	0.7	0.9	0.9	3.7	3.5	3.1	3.8	1.5	1.4	1.2	1.2	1.5	1.5	4.2	5.1
2009	2.5	2.8	0.9	1.0	0.7	0.7	1.3	0.9	3.2	3.5	3.2	3.6	1.3	1.4	1.4	1.3	1.7	1.5	4.6	4.9
2010	2.9	2.6	0.9	0.8	0.8	0.7	1.1	1.1	3.6	3.3	3.2	3.4	1.4	1.3	1.0	1.3	2.0	1.9	4.1	4.7
2011	3.0	2.9	1.2	0.8	0.9	0.8	0.9	1.3	3.9	3.8	3.2	3.1	1.5	1.2	1.2	1.1	1.1	1.5	4.4	4.2
2012	3.0	2.5	1.1	1.1	0.7	0.7	1.1	1.1	3.7	3.2	3.6	3.1	1.2	1.3	1.0	1.1	1.3	1.4	4.5	4.2
2013	2.4	2.8	1.3	1.2	0.9	0.8	1.2	1.1	3.3	3.6	3.1	2.9	1.5	1.5	1.0	1.0	1.7	1.6	4.1	3.9
2014	2.5	2.7	1.6	1.5	0.7	0.7	1.1	0.9	3.2	3.5	3.0	3.0	2.1	1.8	1.1	1.0	1.5	1.3	4.2	4.0
2015	2.5	2.6	1.4	1.3	0.8	0.8	1.0	0.9	3.3	3.4	3.0	3.0	1.4	1.5	1.0	1.1	1.4	1.4	4.0	4.1
2016	2.6	2.6	1.3	1.6	0.7	0.7	0.9	1.2	3.3	3.3	3.3	3.2	1.5	1.8	1.1	1.0	1.5	1.8	4.4	4.1
2017			1.3	1.4			0.8	0.8					1.6	1.5			1.2	1.2		
06-'11	2.5%	3.0%	13.0%	-2.2%	2.2%	2.1%	-7.4%	7.7%	2.5%	2.8%	-3.2%	-1.7%	4.1%	-2.6%	-1.4%	-2.5%	-8.5%	0.3%	-2.8%	-1.9%
11-'16	-3.1%	-2.3%	2.1%	12.9%	-3.7%	-3.8%	0.7%	-0.3%	-3.2%	-2.6%	0.3%	0.5%	-1.0%	8.7%	-1.5%	-3.4%	5.9%	3.5%	-0.1%	-0.5%
06-'16	-0.3%	0.3%	7.4%	5.1%	-0.7%	-0.9%	-3.4%	3.6%	-0.4%	0.0%	-1.5%	-0.6%	1.5%	2.9%	-1.4%	-2.9%	-1.6%	1.9%	-1.5%	-1.2%

* 2017 Summer peaks are not include since they are projections. The peak month occurred after the June 2017 cut off.

Winter values are include since the peak occurred in January 2017.

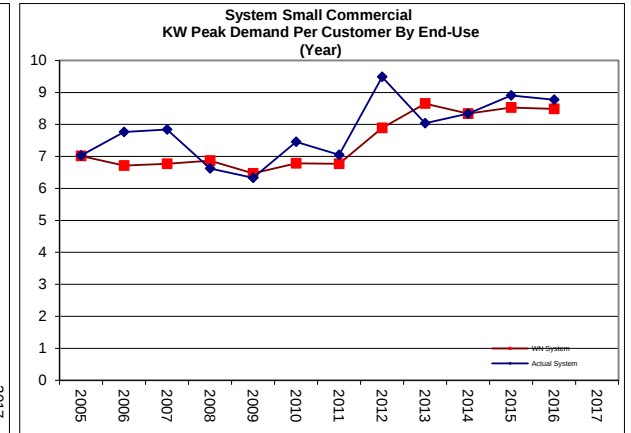
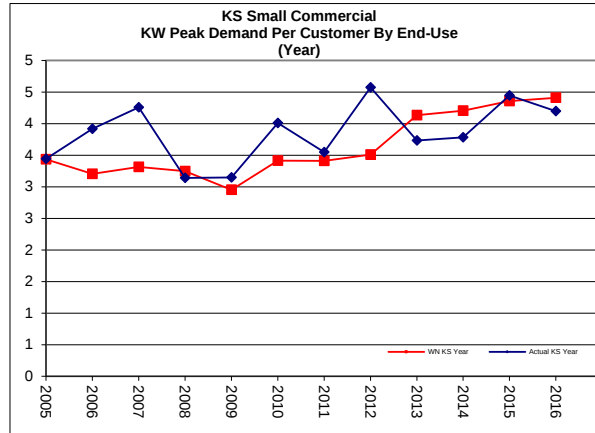
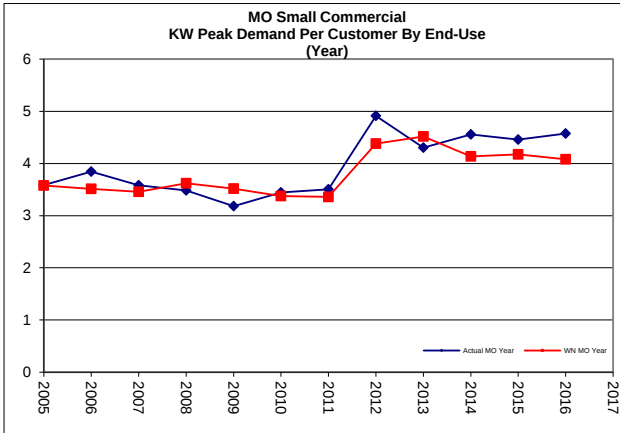
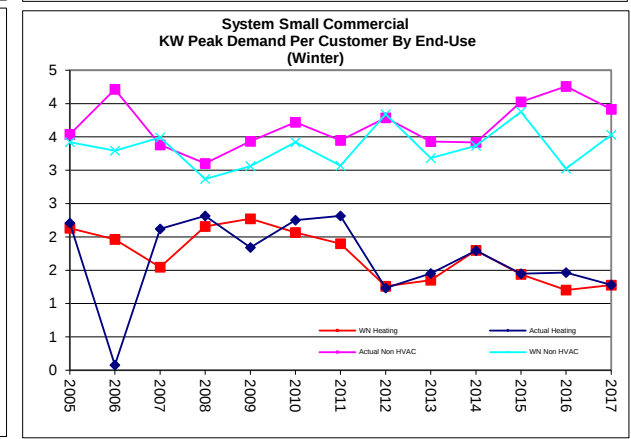
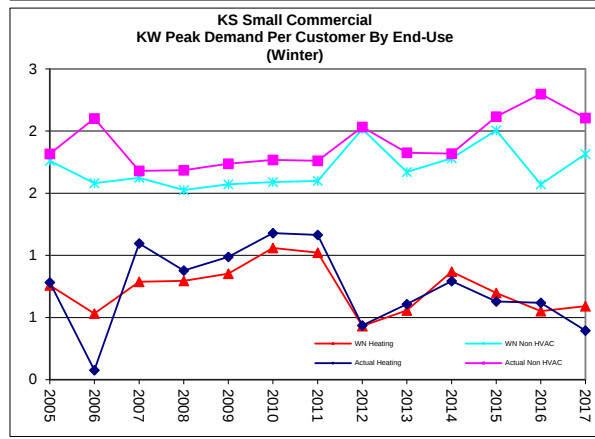
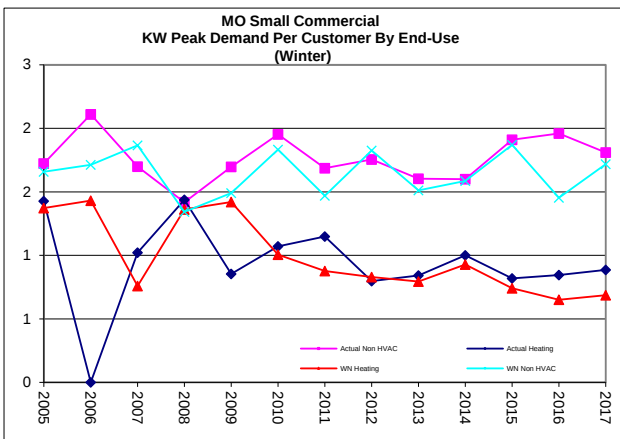
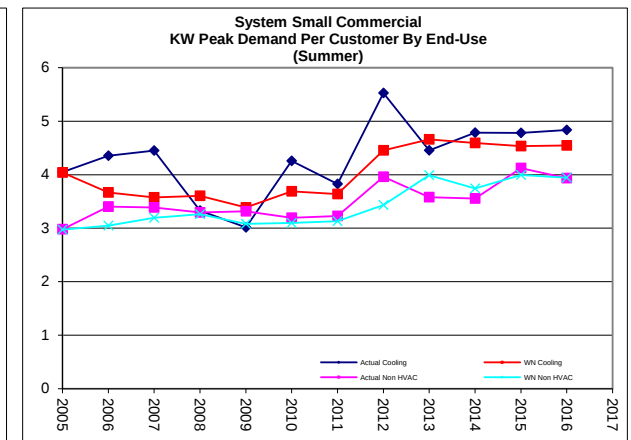
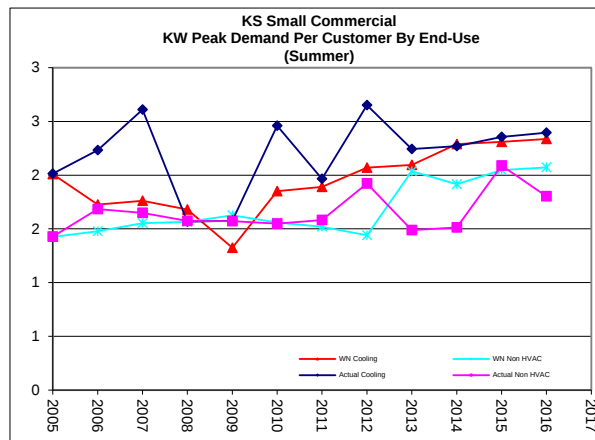
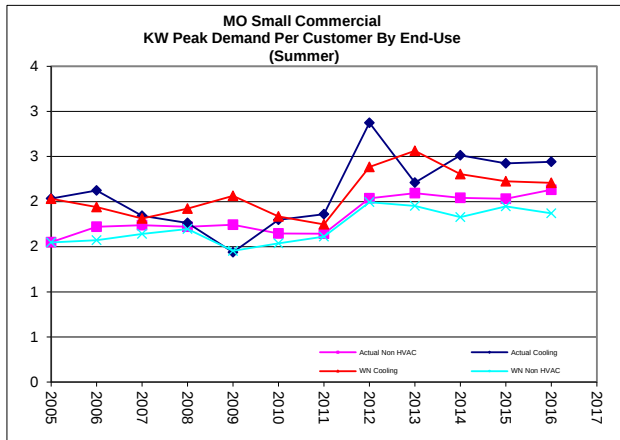
Year	System									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	6.7	6.6	2.3	2.3	2.4	2.4	2.5	2.4	9.1	9.0
2006	6.5	5.9	1.9	2.3	2.0	2.0	3.1	2.4	8.5	7.9
2007	6.1	6.7	2.3	2.0	1.8	2.1	2.0	2.9	7.9	8.7
2008	5.9	6.6	2.5	2.4	2.0	1.9	2.4	2.3	7.9	8.5
2009	5.7	6.4	2.2	2.5	2.0	2.0	3.0	2.4	7.7	8.4
2010	6.1	6.0	2.3	2.1	1.7	2.0	3.1	2.9	7.8	8.0
2011	6.3	6.0	2.7	2.0	2.0	2.0	2.0	2.8	8.3	8.0
2012	6.6	5.7	2.3	2.4	1.6	1.7	2.4	2.5	8.2	7.4
2013	5.5	5.7	2.8	2.7	1.9	1.8	2.8	2.7	7.4	7.5
2014	5.6	5.7	3.7	3.3	1.8	1.7	2.6	2.2	7.4	7.5
2015	5.5	5.7	2.7	2.9	1.8	1.8	2.5	2.3	7.3	7.5
2016	5.9	5.8	2.7	3.4	1.8	1.6	2.4	3.1	7.7	7.4
2017			2.9	2.9			2.1	2.1		
06-'11	-0.7%	0.5%	7.4%	-2.4%	0.1%	-0.7%	-8.0%	3.3%	-0.5%	0.2%
11-'16	-1.3%	-0.8%	0.4%	10.6%	-2.4%	-3.6%	3.7%	1.8%	-1.5%	-1.5%
06-'16	-1.0%	-0.2%	3.8%	3.9%	-1.2%	-2.1%	-2.3%	2.6%	-1.0%	-0.7%



Plot 3A-33 Missouri & Kansas Small Commercial KW Peak Demand Per Customer By End-Use

Year	Missouri										Kansas									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year		Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	2.0	2.0	1.4	1.4	1.6	1.5	1.7	1.7	3.6	3.6	2.0	2.0	0.8	0.8	1.4	1.4	1.8	1.8	3.4	3.4
2006	2.1	1.9	0.0	1.4	1.7	1.6	2.1	1.7	3.8	3.5	2.2	1.7	0.1	0.5	1.7	1.5	2.1	1.6	3.9	3.2
2007	1.8	1.8	1.0	0.8	1.7	1.6	1.7	1.9	3.6	3.5	2.6	1.8	1.1	0.8	1.6	1.6	1.7	1.6	4.3	3.3
2008	1.8	1.9	1.4	1.4	1.7	1.7	1.4	1.3	3.5	3.6	1.6	1.7	0.9	0.8	1.6	1.6	1.7	1.5	3.1	3.2
2009	1.4	2.1	0.9	1.4	1.7	1.5	1.7	1.5	3.2	3.5	1.6	1.3	1.0	0.9	1.6	1.6	1.7	1.6	3.1	3.0
2010	1.8	1.8	1.1	1.0	1.6	1.5	2.0	1.8	3.4	3.4	2.5	1.9	1.2	1.1	1.5	1.6	1.8	1.6	4.0	3.4
2011	1.9	1.7	1.1	0.9	1.6	1.6	1.7	1.5	3.5	3.4	2.0	1.9	1.2	1.0	1.6	1.5	1.8	1.6	3.5	3.4
2012	2.9	2.4	0.8	0.8	2.0	2.0	1.8	1.8	4.9	4.4	2.7	2.1	0.4	0.4	1.9	1.4	2.0	2.0	4.6	3.5
2013	2.2	2.6	0.8	0.8	2.1	2.0	1.6	1.5	4.3	4.5	2.2	2.1	0.6	0.6	1.5	2.0	1.8	1.7	3.7	4.1
2014	2.5	2.3	1.0	0.9	2.0	1.8	1.6	1.6	4.6	4.1	2.3	2.3	0.8	0.9	1.5	1.9	1.8	1.8	3.8	4.2
2015	2.4	2.2	0.8	0.7	2.0	1.9	1.9	1.9	4.5	4.2	2.4	2.3	0.6	0.7	2.1	2.0	2.1	2.0	4.4	4.4
2016	2.4	2.2	0.8	0.7	2.1	1.9	2.0	1.5	4.6	4.1	2.4	2.3	0.6	0.6	1.8	2.1	2.3	1.6	4.2	4.4
2017			0.9	0.7			1.8	1.7					0.4	0.6			2.1	1.8		
06-'11	-2.6%	-2.1%	#DIV/0!	-9.3%	-0.9%	0.5%	-4.4%	-3.0%	-1.8%	-0.9%	-2.5%	1.8%	72.2%	13.9%	-1.2%	0.6%	-3.5%	0.2%	-2.0%	1.2%
11-'16	5.6%	4.8%	-6.0%	-5.8%	5.3%	3.0%	3.1%	-0.2%	5.5%	4.0%	4.0%	4.3%	-11.9%	-11.6%	2.7%	6.4%	5.5%	-0.3%	3.4%	5.3%
06-'16	1.4%	1.3%	#DIV/0!	-7.6%	2.2%	1.8%	-0.7%	-1.6%	1.8%	1.5%	0.7%	3.1%	23.2%	0.4%	0.7%	3.4%	0.9%	-0.1%	0.7%	3.2%

Year	System									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	4.0	4.0	2.2	2.1	3.0	3.0	3.5	3.4	7.0	7.0
2006	4.4	3.7	0.1	2.0	3.4	3.0	4.2	3.3	7.8	6.7
2007	4.5	3.6	2.1	1.5	3.4	3.2	3.4	3.5	7.8	6.8
2008	3.3	3.6	2.3	2.2	3.3	3.3	3.1	2.9	6.6	6.9
2009	3.0	3.4	1.8	2.3	3.3	3.1	3.4	3.1	6.3	6.5
2010	4.3	3.7	2.3	2.1	3.2	3.1	3.7	3.4	7.5	6.8
2011	3.8	3.6	2.3	1.9	3.2	3.1	3.4	3.1	7.1	6.8
2012	5.5	4.5	1.2	1.3	4.0	3.4	3.8	3.8	9.5	7.9
2013	4.5	4.7	1.5	1.4	3.6	4.0	3.4	3.2	8.0	8.7
2014	4.8	4.6	1.8	1.8	3.6	3.7	3.4	3.4	8.3	8.3
2015	4.8	4.5	1.4	1.4	4.1	4.0	4.0	3.9	8.9	8.5
2016	4.8	4.5	1.5	1.2	3.9	3.9	4.3	3.0	8.8	8.5
2017			1.3	1.3			3.9	3.5		
06-'11	-2.6%	-0.2%	97.6%	-0.7%	-1.1%	0.5%	-3.9%	-1.4%	-1.9%	0.2%
11-'16	4.8%	4.6%	-8.7%	-8.7%	4.1%	4.7%	4.3%	-0.3%	4.5%	4.6%
06-'16	1.1%	2.2%	34.3%	-4.8%	1.5%	2.6%	0.1%	-0.8%	1.2%	2.4%

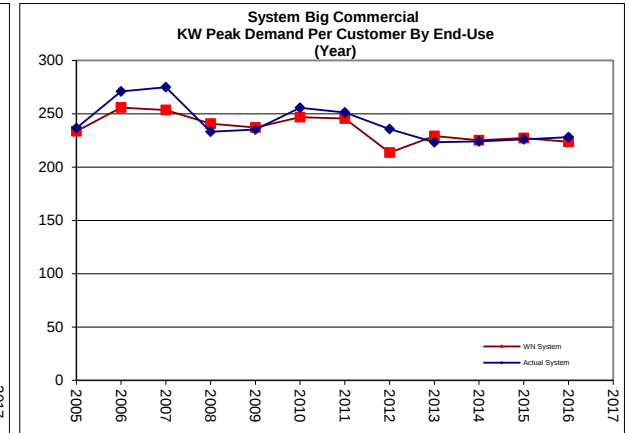
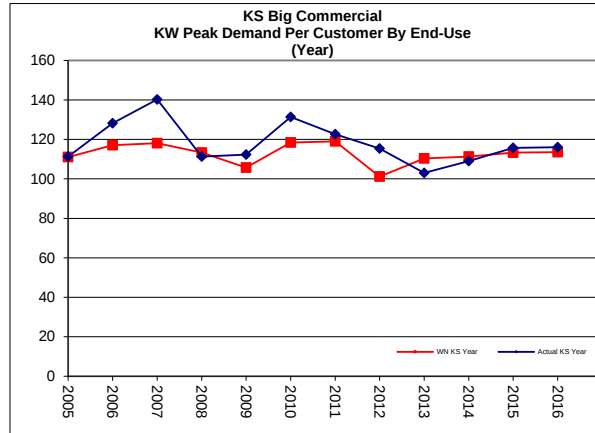
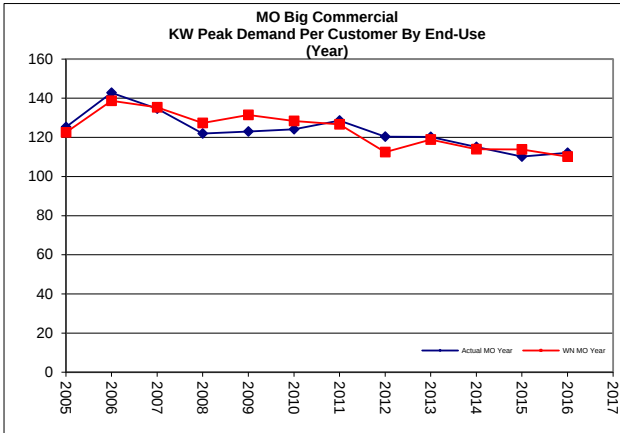
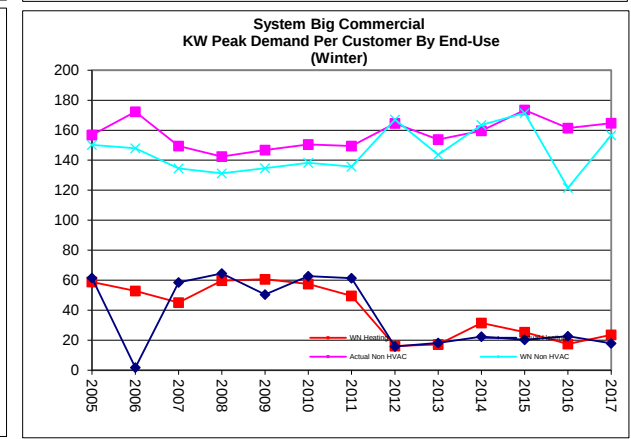
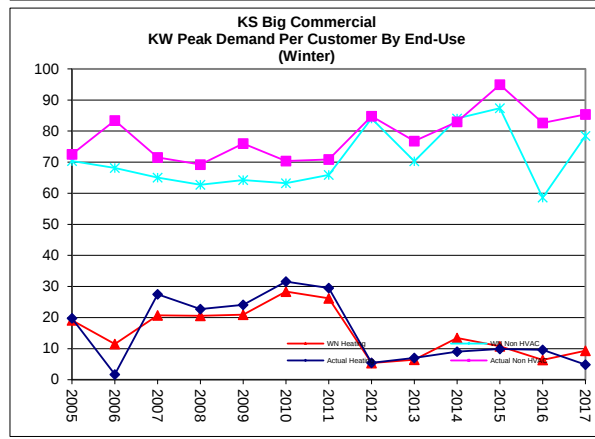
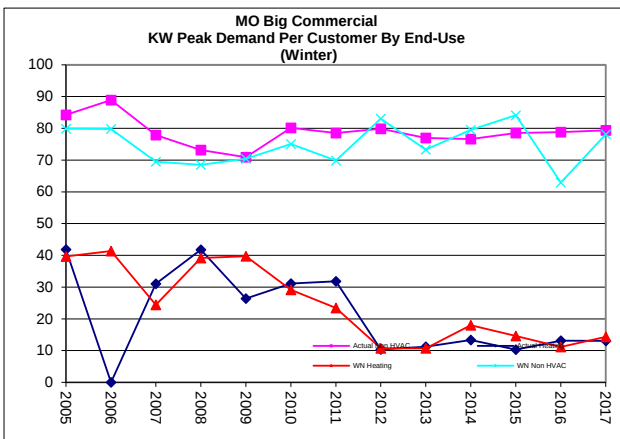
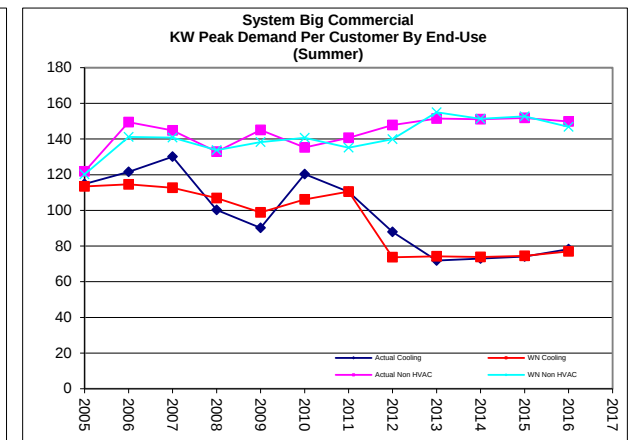
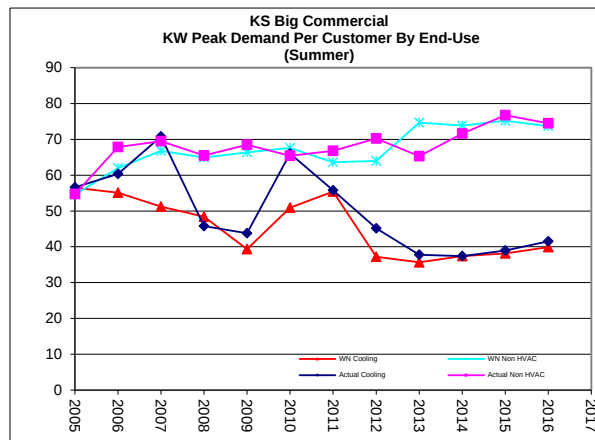
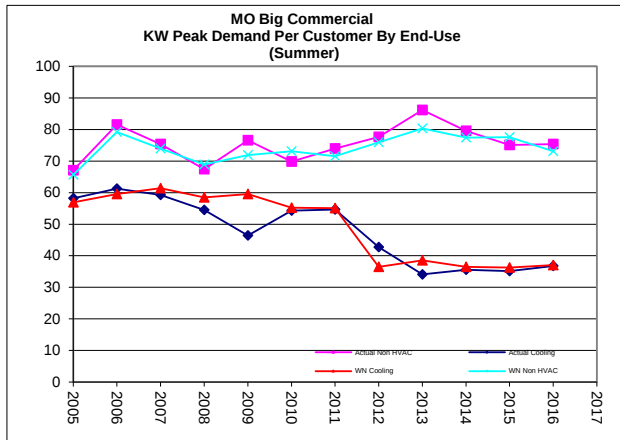


Plot 3A-34 Missouri & Kansas Big Commercial KW Peak Demand Per Customer By End-Use

Year	Missouri										Kansas									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year		Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	58.2	56.9	41.8	39.7	67.1	65.6	84.2	79.9	125.3	122.5	56.6	56.5	19.7	19.1	54.7	54.6	72.6	70.3	111.3	111.1
2006	61.3	59.5	0.0	41.4	81.5	79.2	88.9	79.8	142.8	138.7	60.3	55.1	1.7	11.4	67.9	62.0	83.4	68.1	128.2	117.1
2007	59.3	61.4	31.1	24.4	75.4	74.0	77.9	69.5	134.6	135.4	70.8	51.2	27.5	20.7	69.5	66.8	71.5	65.1	140.3	118.1
2008	54.5	58.5	41.8	39.1	67.4	68.9	73.2	68.5	121.9	127.4	45.8	48.4	22.7	20.6	65.5	64.9	69.2	62.7	111.2	113.3
2009	46.4	59.5	26.4	39.8	76.6	71.9	70.9	70.4	123.0	131.4	43.8	39.3	24.1	20.9	68.5	66.4	76.0	64.2	112.3	105.7
2010	54.3	55.2	31.1	29.2	69.8	73.1	80.2	75.1	124.1	128.3	66.0	50.9	31.6	28.4	65.4	67.6	70.4	63.3	131.4	118.5
2011	54.7	55.1	31.8	23.4	73.9	71.6	78.6	69.9	128.6	126.6	55.8	55.4	29.5	26.2	66.8	63.6	70.9	65.9	122.6	119.0
2012	42.7	36.5	10.4	10.8	77.6	75.9	79.9	83.0	120.4	112.4	45.1	37.2	5.4	5.4	70.2	64.0	84.7	84.0	115.4	101.1
2013	34.1	38.5	11.2	10.7	86.2	80.3	76.9	73.3	120.3	118.8	37.8	35.7	7.0	6.4	65.3	74.7	76.8	70.3	103.0	110.4
2014	35.6	36.5	13.4	18.0	79.5	77.4	76.6	79.5	115.1	113.9	37.4	37.4	9.0	13.4	71.6	73.9	83.0	84.0	109.0	111.3
2015	35.1	36.3	10.3	14.6	75.1	77.6	78.5	84.1	110.2	113.8	39.0	38.2	9.9	10.8	76.7	75.2	94.9	87.4	115.7	113.4
2016	36.8	37.0	13.1	11.2	75.4	73.1	78.8	62.9	112.2	110.2	41.5	39.9	9.6	6.4	74.5	73.7	82.6	58.6	116.0	113.6
2017			13.1	14.3			79.4	78.1					4.8	9.3			85.4	78.5		
06-'11	-2.3%	-1.5%	#DIV/0!	-10.8%	-1.9%	-2.0%	-2.4%	-2.6%	-2.1%	-1.8%	-1.6%	0.1%	76.7%	18.0%	-0.3%	0.5%	-3.2%	-0.7%	-0.9%	0.3%
11-'16	-7.6%	-7.6%	-16.3%	-13.8%	0.4%	0.4%	0.1%	-2.1%	-2.7%	-2.7%	-5.7%	-6.4%	-20.1%	-24.7%	2.2%	3.0%	3.1%	-2.3%	-1.1%	-0.9%
06-'16	-5.0%	-4.6%	#DIV/0!	-12.3%	-0.8%	-0.8%	-1.2%	-2.3%	-2.4%	-2.3%	-3.7%	-3.2%	18.8%	-5.7%	0.9%	1.7%	-0.1%	-1.5%	-1.0%	-0.3%

*System 2006 winter peak occurred in November, Big Commercial class typically does not have heating in November.
The weather normalized peak occurred in December.

Year	System									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	114.8	113.4	61.6	58.8	121.8	120.2	156.8	150.2	236.6	233.6
2006	121.6	114.6	1.7	52.8	149.4	141.2	172.3	147.9	271.0	255.8
2007	130.1	112.6	58.6	45.1	144.9	140.8	149.4	134.6	274.9	253.4
2008	100.3	106.9	64.5	59.7	132.8	133.8	142.4	131.2	233.1	240.7
2009	90.2	98.9	50.5	60.7	145.1	138.3	146.9	134.6	235.3	237.1
2010	120.3	106.1	62.7	57.5	135.2	140.7	150.6	138.3	255.5	246.8
2011	110.4	110.5	61.3	49.6	140.7	135.2	149.4	135.8	251.2	245.6
2012	87.9	73.7	15.8	16.1	147.9	139.9	164.6	167.0	235.7	213.6
2013	71.9	74.2	18.3	17.1	151.4	155.0	153.7	143.6	223.3	229.2
2014	73.0	73.9	22.4	31.5	151.1	151.3	159.6	163.6	224.1	225.2
2015	74.1	74.4	20.3	25.3	151.8	152.8	173.5	171.5	225.9	227.2
2016	78.3	76.9	22.7	17.5	149.9	146.8	161.5	121.5	228.2	223.7
2017			17.9	23.6			164.8	156.6		
06-'11	-1.9%	-0.7%	104.5%	-1.2%	-1.2%	-0.9%	-2.8%	-1.7%	-1.5%	-0.8%
11-'16	-6.6%	-7.0%	-18.0%	-18.8%	1.3%	1.7%	1.6%	-2.2%	-1.9%	-1.8%
06-'16	-4.3%	-3.9%	29.5%	-10.4%	0.0%	0.4%	-0.7%	-1.9%	-1.7%	-1.3%

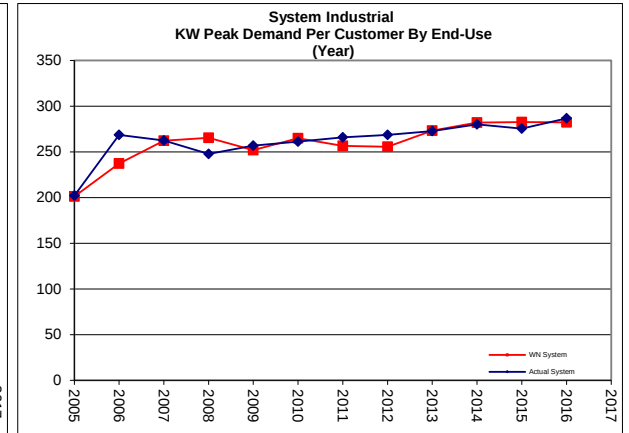
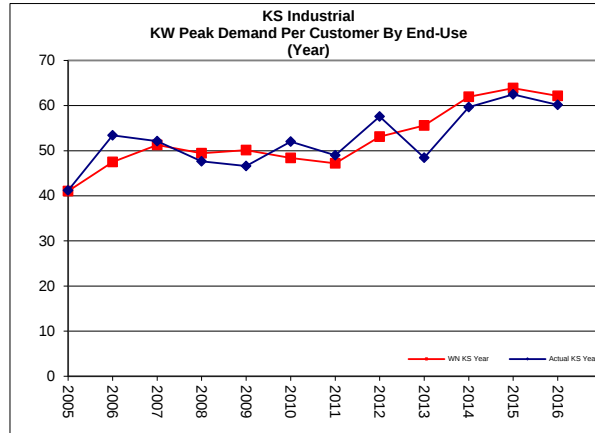
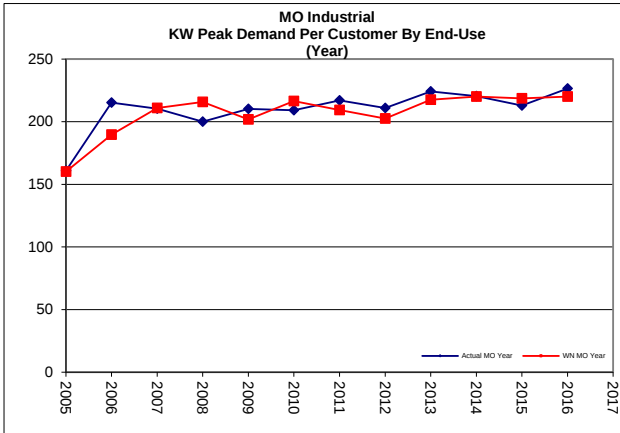
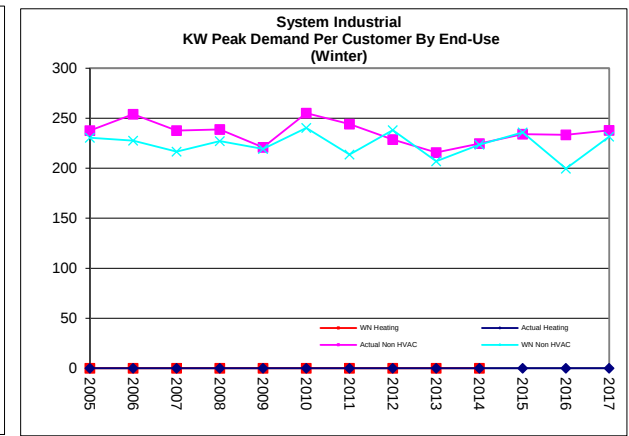
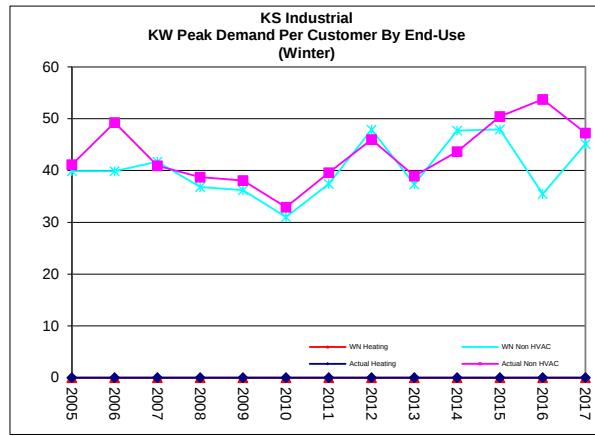
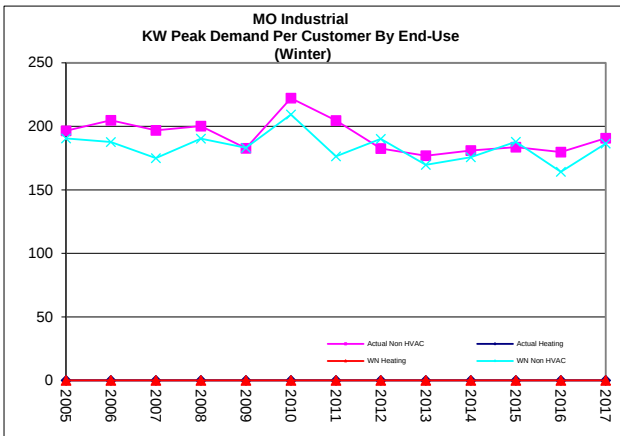
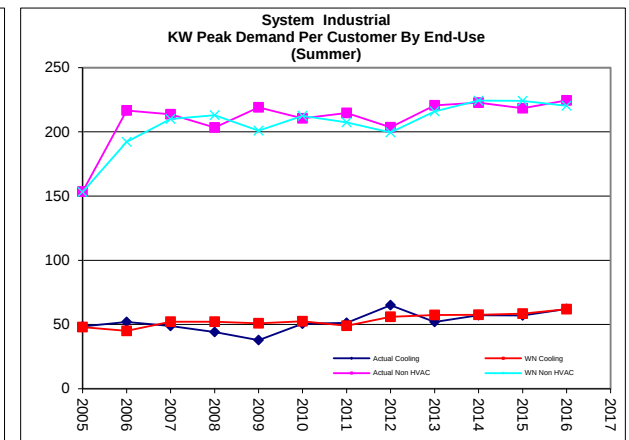
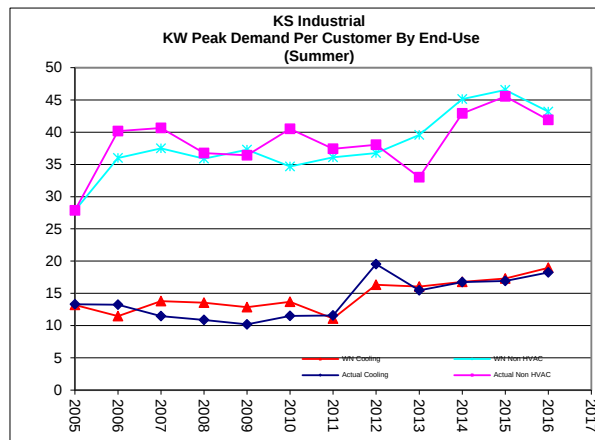
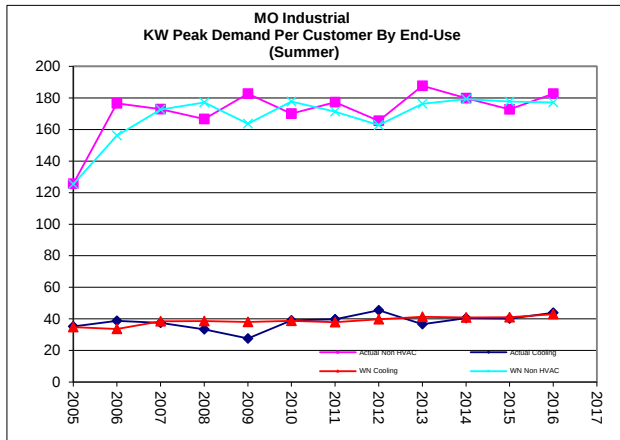


Plot 3A-35 Missouri & Kansas Industrial KW Peak Demand Per Customer By End-Use

Year	Missouri										Kansas									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year		Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	35.3	34.8	0.0	0.0	125.6	125.4	196.5	190.5	160.9	160.2	13.3	13.2	0.0	0.0	27.9	27.8	41.1	39.9	41.2	41.0
2006	38.8	33.6	0.0	0.0	176.5	156.1	204.8	187.6	215.3	189.7	13.2	11.5	0.0	0.0	40.1	36.0	49.3	39.9	53.4	47.5
2007	37.5	38.4	0.0	0.0	172.9	172.5	196.8	175.0	210.4	211.0	11.5	13.8	0.0	0.0	40.7	37.5	40.9	41.7	52.1	51.3
2008	33.3	38.7	0.0	0.0	166.7	177.2	200.2	190.4	200.0	215.9	10.9	13.6	0.0	0.0	36.7	35.9	38.7	36.8	47.6	49.4
2009	27.6	38.1	0.0	0.0	182.6	163.7	182.8	183.1	210.2	201.7	10.2	12.9	0.0	0.0	36.4	37.3	38.1	36.2	46.6	50.1
2010	39.1	38.8	0.0	0.0	170.0	177.7	222.2	209.3	209.1	216.5	11.5	13.7	0.0	0.0	40.5	34.7	32.9	31.0	52.0	48.4
2011	39.7	37.9	0.0	0.0	177.3	171.3	204.5	176.3	217.0	209.3	11.6	11.1	0.0	0.0	37.4	36.1	39.6	37.4	49.0	47.2
2012	45.5	39.7	0.0	0.0	165.5	162.8	182.6	190.1	210.9	202.5	19.5	16.3	0.0	0.0	38.0	36.8	46.0	47.9	57.6	53.1
2013	36.6	41.3	0.0	0.0	187.7	176.3	176.8	169.6	224.3	217.6	15.5	16.0	0.0	0.0	33.0	39.6	38.9	37.3	48.5	55.6
2014	40.5	40.8	0.0	0.0	179.9	179.3	180.9	175.7	220.4	220.1	16.7	16.8	0.0	0.0	42.9	45.1	43.7	47.7	59.7	61.9
2015	40.2	41.1	0.0	0.0	172.8	177.7	183.6	187.9	213.0	218.7	16.9	17.3	0.0	0.0	45.5	46.5	50.4	47.9	62.5	63.9
2016	43.8	43.0	0.0	0.0	182.6	177.1	179.7	164.2	226.5	220.1	18.3	19.0	0.0	0.0	41.9	43.2	53.7	35.5	60.1	62.1
2017			0.0	0.0			190.6	186.5					0.0	0.0			47.3	45.1		
06-'11	0.5%	2.5%	#DIV/0!	#DIV/0!	0.1%	1.9%	0.0%	-1.2%	0.2%	2.0%	-2.7%	-0.7%	#DIV/0!	#DIV/0!	-1.4%	0.0%	-4.3%	-1.3%	-1.7%	-0.1%
11-'16	2.0%	2.5%	#DIV/0!	#DIV/0!	0.6%	0.7%	-2.6%	-1.4%	0.9%	1.0%	9.6%	11.3%	#DIV/0!	#DIV/0!	2.3%	3.7%	6.3%	-1.1%	4.2%	5.7%
06-'16	1.2%	2.5%	#DIV/0!	#DIV/0!	0.3%	1.3%	-1.3%	-1.3%	0.5%	1.5%	3.3%	5.2%	#DIV/0!	#DIV/0!	0.4%	1.8%	0.9%	-1.2%	1.2%	2.7%

*2006 winter peak occurred in Novemeber vs. a typical December or January.

Year	Sysetm									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	48.6	48.0	-	-	153.5	153.2	237.7	230.4	202.1	201.2
2006	52.0	45.1	-	-	216.6	192.1	254.0	227.5	268.7	237.2
2007	48.9	52.2	-	-	213.6	210.0	237.7	216.7	262.5	262.2
2008	44.2	52.2	-	-	203.4	213.1	238.9	227.2	247.6	265.3
2009	37.8	50.9	-	-	219.0	200.9	220.9	219.4	256.9	251.9
2010	50.6	52.5	-	-	210.5	212.4	255.1	240.3	261.1	264.9
2011	51.3	49.0	-	-	214.7	207.4	244.1	213.7	266.0	256.5
2012	65.0	56.1	-	-	203.5	199.5	228.6	238.0	268.5	255.6
2013	52.0	57.4	-	-	220.7	215.9	215.7	207.0	272.7	273.3
2014	57.3	57.6	-	-	222.8	224.4	224.6	223.5	280.0	282.0
2015	57.1	58.4	-	-	218.3	224.2	234.0	235.9	275.4	282.6
2016	62.1	61.9	-	-	224.5	220.3	233.5	199.6	286.6	282.2
2017			-	-			237.9	231.6		
06-'11	-0.3%	1.7%	#DIV/0!	#DIV/0!	-0.2%	1.5%	-0.8%	-1.2%	-0.2%	1.6%
11-'16	3.9%	4.8%	#DIV/0!	#DIV/0!	0.9%	1.2%	-0.9%	-1.4%	1.5%	1.9%
06-'16	1.8%	3.2%	#DIV/0!	#DIV/0!	0.4%	1.4%	-0.8%	-1.3%	0.6%	1.8%



Plot 3A-36 Missouri & Kansas Total KW Peak Demand Per Customer By End-Use
For classes that have end-use sales

Year	Missouri										Kansas									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year		Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	98.3	96.6	44.2	42.0	195.2	193.4	283.4	273.0	293.5	290.0	75.8	75.5	21.9	21.2	85.5	85.3	117.1	113.5	161.3	160.8
2006	104.8	97.6	0.6	43.7	260.5	237.7	297.1	270.0	365.3	335.2	79.6	71.6	3.0	13.3	111.0	100.7	136.5	111.1	190.6	172.4
2007	101.4	104.5	33.1	26.0	250.8	248.9	277.3	247.7	352.3	353.5	88.1	70.6	29.9	22.7	112.8	107.1	115.3	110.0	200.9	177.7
2008	92.4	101.8	44.3	41.5	236.6	248.5	275.7	261.2	329.1	350.3	61.3	67.4	25.1	22.8	104.9	103.6	111.2	102.5	166.2	171.0
2009	78.0	102.5	28.2	42.2	261.6	237.7	256.8	255.9	339.6	340.2	58.8	57.1	26.3	23.2	107.9	106.6	117.5	103.5	166.7	163.7
2010	98.1	98.5	33.1	31.0	242.2	253.1	305.4	287.3	340.3	351.6	83.2	69.8	34.1	30.7	108.4	105.2	107.1	97.7	191.6	175.0
2011	99.3	97.7	34.1	25.1	253.7	245.3	285.7	248.9	353.0	343.0	72.5	71.5	32.2	28.4	107.0	102.3	113.3	106.4	179.5	173.8
2012	94.1	81.2	12.2	12.7	245.8	241.3	265.4	276.1	339.9	322.5	70.9	58.7	7.1	7.1	111.1	103.2	134.1	135.3	182.1	161.9
2013	75.3	85.2	13.3	12.7	276.8	259.4	256.6	245.6	352.1	344.6	58.6	56.7	9.2	8.4	100.8	117.3	119.2	110.9	159.4	174.0
2014	81.2	82.3	16.0	20.5	262.1	259.3	260.2	257.7	343.3	341.6	59.4	59.5	11.9	16.1	117.2	121.9	130.0	134.9	176.6	181.4
2015	80.3	82.2	12.6	16.7	250.6	258.0	265.1	274.8	330.9	340.1	61.2	60.9	11.9	13.0	125.4	124.8	148.9	138.7	186.6	185.7
2016	85.7	84.9	15.2	13.4	260.9	252.7	261.5	229.8	346.5	337.6	65.5	64.4	11.7	8.7	119.3	119.9	140.1	97.5	184.7	184.3
2017			15.3	16.4			272.7	267.2					6.8	11.4			135.9	126.6		
06-'11	-1.1%	0.0%	122.2%	-10.5%	-0.5%	0.6%	-0.8%	-1.6%	-0.7%	0.5%	-1.8%	0.0%	60.3%	16.3%	-0.7%	0.3%	-3.7%	-0.9%	-1.2%	0.2%
11-'16	-2.9%	-2.8%	-14.9%	-11.8%	0.6%	0.6%	-1.8%	-1.6%	-0.4%	-0.3%	-2.0%	-2.1%	-18.3%	-21.0%	2.2%	3.2%	4.3%	-1.7%	0.6%	1.2%
06-'16	-2.0%	-1.4%	37.5%	-11.2%	0.0%	0.6%	-1.3%	-1.6%	-0.5%	0.1%	-1.9%	-1.1%	14.4%	-4.2%	0.7%	1.8%	0.3%	-1.3%	-0.3%	0.7%

Year	System									
	Cooling		Heating		Non-HVAC Summer		Non-HVAC Winter		Year	
	Actual	WN	Actual	WN	Actual	WN	Actual	WN	Actual	WN
2005	174.1	172.1	66.1	63.2	280.6	278.8	400.5	386.5	454.8	450.8
2006	184.4	169.2	3.7	57.1	371.5	338.4	433.6	381.1	555.9	507.6
2007	189.5	175.1	63.0	48.7	363.7	356.1	392.5	357.6	553.1	531.2
2008	153.7	169.3	69.3	64.3	341.5	352.0	386.8	363.7	495.3	521.3
2009	136.7	159.6	54.5	65.4	369.5	344.3	374.2	359.4	506.2	503.9
2010	181.3	168.4	67.2	61.7	350.6	358.2	412.5	385.0	531.9	526.6
2011	171.8	169.2	66.3	53.5	360.7	347.7	399.0	355.3	532.5	516.8
2012	165.0	139.9	19.3	19.8	357.0	344.5	399.4	411.4	521.9	484.4
2013	133.9	141.9	22.5	21.1	377.6	376.7	375.7	356.5	511.5	518.6
2014	140.6	141.8	27.9	36.6	379.3	381.1	390.2	392.6	519.9	523.0
2015	141.5	143.0	24.4	29.7	376.0	382.8	413.9	413.5	517.5	525.8
2016	151.1	149.2	26.9	22.1	380.1	372.6	401.6	327.2	531.3	521.9
2017			22.1	27.9			408.6	393.8		
06-'11	-1.4%	0.0%	78.4%	-1.3%	-0.6%	0.5%	-1.6%	-1.4%	-0.9%	0.4%
11-'16	-2.5%	-2.5%	-16.5%	-16.2%	1.1%	1.4%	0.1%	-1.6%	0.0%	0.2%
06-'16	-2.0%	-1.3%	22.1%	-9.1%	0.2%	1.0%	-0.8%	-1.5%	-0.5%	0.3%

