

MidAmerican Energy Company  
Rate RSD Weather Normalization Calculation  
2014 South Dakota Electric Rate Case

Weather Normalization Results Support  
Test Year Ending December 31, 2012

I. Monthly Usage and Weather Data

Rate	Month	Billed Sales	Billed Sales Above 1000 kWh	Bills	Total Days Billed	Total Billed HDD 55	Total Billed CDD 65	Total Normal Billed HDD 55	Total Normal Billed CDD 65	Average Billing Days Per Bill	Calendar Days per Month
RWD	201301	727,111	311,084	488	16,728	553,580	-	562,120	-	34	31
RWD	201302	598,220	209,685	488	14,340	446,335	-	483,203	-	29	28
RWD	201303	578,948	193,597	489	14,316	426,487	-	378,746	-	29	31
RWD	201304	541,999	165,225	491	14,571	293,576	-	218,410	-	30	30
RWD	201305	498,707	123,153	491	14,479	148,853	3,614	74,048	9,225	29	31
RWD	201306	514,830	135,208	492	15,142	13,926	30,498	9,867	41,518	31	30
RWD	201307	675,327	244,437	495	14,701	-	128,573	-	110,862	30	31
RWD	201308	691,231	258,304	500	15,380	-	114,206	-	142,375	31	31
RWD	201309	714,638	266,889	505	15,109	-	132,510	198	97,269	30	30
RWD	201310	554,993	161,661	514	15,237	7,962	52,451	25,764	31,459	30	31
RWD	201311	538,707	147,713	517	15,342	154,420	5,793	125,720	2,178	30	30
RWD	201312	643,393	215,823	520	16,266	405,920	-	365,065	-	31	31

Rate	Month	Billing kWh per Customer	Billing kWh per Customer per Day	Actual Billing HDD 55/Day	Actual Billing CDD 65/Day	Normal Billing HDD 55/Day	Normal Billing CDD 65/Day	Normal Calendar HDD 55/Day	Normal Calendar CDD 65/Day
RWD	201301	1,490	43.47	33.09	0.00	33.60	0.00	34.71	0.00
RWD	201302	1,226	41.72	31.13	0.00	33.70	0.00	29.89	0.00
RWD	201303	1,185	40.44	29.79	0.00	26.46	0.00	18.74	0.00
RWD	201304	1,103	37.20	20.15	0.00	14.99	0.00	7.40	0.33
RWD	201305	1,016	34.44	10.28	0.25	5.11	0.64	1.16	1.74
RWD	201306	1,046	34.00	0.92	2.01	0.65	2.74	0.00	6.23
RWD	201307	1,365	45.94	0.00	8.75	0.00	7.54	0.00	9.55
RWD	201308	1,383	44.94	0.00	7.43	0.00	9.26	0.00	7.52
RWD	201309	1,415	47.30	0.00	8.77	0.01	6.44	0.80	2.73
RWD	201310	1,079	36.42	0.52	3.44	1.69	2.06	6.29	0.26
RWD	201311	1,042	35.11	10.07	0.38	8.19	0.14	19.40	0.00
RWD	201312	1,238	39.55	24.96	0.00	22.44	0.00	32.48	0.00

Billing kWh per customer per day and Actual billing HDD and CDD per day are used in the weather normalization regression model.

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II. Weather Normalization Model (Use per customer per day vs. CDD and HDD per day)

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.9922
R Square	0.9845
Adjusted R Square	0.9811
Standard Error	0.6424
Observations	12

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	235.9824	117.9912	285.8754	7.1802E-09
Residual	9	3.7146	0.4127		
Total	11	239.6970			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	29.9241	0.5018	59.6357	0.0000	28.7890	31.0592	28.7890	31.0592
HDD 55/Day	0.3825	0.0215	17.7581	0.0000	0.3337	0.4312	0.3337	0.4312
CDD 65/Day	1.9309	0.0808	23.9100	0.0000	1.7482	2.1136	1.7482	2.1136

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III. Billed Sales and Revenue Adjustment

Winter Usage	1st Step Percentage	Actual Use/Bill	Actual % in 2nd Step	Weather Normalized Use/Bill	Weather Normalized % in 2nd Step	Step 1 Adjustment	Step 2 Adj. Adjustment	HDD Weather Normalization Adjustment	CDD Weather Normalization Adjustment	Total Weather Normalization Adjustment
1,490	42.8%	1490	42.8%	1496	43.0%	124	3,143	3,266	-	3,266
1,226	35.1%	1226	35.1%	1255	36.1%	2,840	11,261	14,101	-	14,101
1,185	33.4%	1185	33.4%	1147	32.1%	(4,675)	(13,585)	(18,260)	-	(18,260)
1,103	30.5%	1103	30.5%	1045	28.4%	(9,260)	(19,489)	(28,749)	-	(28,749)
1,016	24.7%	1016	24.7%	980	23.4%	(7,167)	(10,608)	(28,611)	10,835	(17,775)
1,079	29.1%	1046	26.3%	1086	27.5%	7,864	11,862	(1,553)	21,278	19,726
1,042	27.4%	1365	36.2%	1296	34.0%	(8,003)	(26,195)	-	(34,198)	(34,198)
1,238	33.5%	1383	37.4%	1492	40.8%	8,761	45,631	-	54,392	54,392
		1415	37.3%	1281	33.1%	(15,444)	(52,529)	76	(68,048)	(67,972)
Summer Usage	1st Step Percentage	1079	29.1%	1014	26.8%	(11,696)	(22,031)	6,809	(40,536)	(33,727)
1,046	26.3%	1042	27.4%	1008	26.2%	(6,573)	(11,385)	(10,977)	(6,980)	(17,958)
1,365	36.2%	1238	33.5%	1208	32.5%	(3,643)	(11,983)	(15,626)	-	(15,626)
1,383	37.4%									
1,415	37.3%									
		W Slope:	0.0003571	Winter kWh Adjustment:		(40,049)	(74,677)			
		S Slope:	0.0003118	Summer kWh Adjustment:		(6,822)	(21,231)			
				Winter Revenue Rate:		\$ 0.0497	\$ 0.0490			
				Summer Revenue Rate:		\$ 0.0634	\$ 0.0610			
				Winter Revenue Adjustment:		\$ (1,990)	\$ (3,659)			
				Summer Revenue Adjustment:		\$ (432)	\$ (1,295)			

The differences normal and actual billed HDD and CDD per day are multiplied by the respective model coefficients to get a normalization amount per day, which is then multiplied by the average billing days in the month (per bill) and the total number of bills in the month to determine the total weather adjustment or the billing month.

Normalization amounts by step are calculated for each month by estimating the difference in the split between the first and second step of the rate between actual use per month and weather normalized use per month. The difference between these splits is used to allocate the monthly adjustment between setp.

The adjustments in each step are multiplied by the respective rates to calculate a revenue adjustment amount.

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IV. Unbilled Sales and Revenue Adjustment

HDD Weather Adjustment Actual Billed to Normal Calendar	CDD Weather Adjustment Actual Billed to Normal Calendar	Weather Normalized Calendar Use per Cust. per Day	Weather Normalized Monthly Calendar Sales			
0.62	-	44.09	667,054	unbilled sales adj. step 1	62.3%	(117,772)
(0.47)	-	41.25	563,540	unbilled sales adj. step 2	37.7%	(71,410)
(4.23)	-	36.21	548,718	unbilled revenue adj. step 1	\$ 0.0497	\$ (5,853)
(4.88)	0.64	32.97	485,807	unbilled revenue adj. step 2	\$ 0.0490	\$ (3,499)
(3.49)	2.88	33.84	514,898			
(0.35)	8.15	41.80	617,064			
-	1.55	47.49	728,444	Actual Billed Sales:		7,278,104
-	0.17	45.12	699,009	W.N. Billed Sales:		7,135,325
0.31	(11.66)	35.95	544,575	Actual Unbilled Sales:		212,670
2.21	(6.15)	32.48	517,793	W.N. Unbilled Sales:		23,488
3.57	(0.73)	37.95	588,444	Actual Calendar Sales:		7,490,774
2.88	-	42.43	683,468	W.N. Calendar Sales:		7,158,813
			7,158,813			

The differences normal calendar HDD and CDD per day and actual billed HDD and CDD per day are multiplied by the respective model coefficients to get a normalization amount per calendar day, which is then multiplied by the calendar days in the month and the total number of bills in the month to determine total calendar month weather normalized sales.

The difference between annual weather normalized billed sales and annual weather normalized calendar sales is assumed to be weather normalized unbilled sales. The difference between weather normalized and actual unbilled sales is the unbilled sales adjustment, which is allocated to step based on the weather normalized split for January and December. The adjustment amount for each step is multiplied by the respective rate to calculate an unbilled revenue adjustment amount.