

Chapter 3 – Appendix B

Weather Normalized Energy Models¹

Residential Weather Normalization Energy Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	70,140,518	611,943	114.62	0.00%
DOWBinary.Monday	-1,538,864	253,418	-6.07	0.00%
DOWBinary.Tuesday	-1,750,769	250,366	-6.99	0.00%
DOWBinary.Wednesday	-1,869,585	251,965	-7.42	0.00%
DOWBinary.Thursday	-2,333,102	251,417	-9.28	0.00%
DOWBinary.Friday	-2,129,227	250,143	-8.51	0.00%
DOWBinary.Saturday	-1,010,450	249,958	-4.04	0.01%
MonthBinary.Jan	4,165,836	303,725	13.72	0.00%
MonthBinary.Feb	2,597,778	312,991	8.30	0.00%
MonthBinary.Apr	-2,905,896	359,547	-8.08	0.00%
MonthBinary.May	-3,018,482	373,418	-8.08	0.00%
MonthBinary.Jun	-1,241,090	324,732	-3.82	0.02%
MonthBinary.Aug	-1,065,698	356,175	-2.99	0.29%
MonthBinary.Sep	-2,779,102	350,242	-7.94	0.00%
MonthBinary.Oct	-3,187,017	332,145	-9.60	0.00%
MonthBinary.Dec	3,556,685	356,159	9.99	0.00%
ResSplines.AvgT	-812,822	14,113	-57.60	0.00%
ResSplines.CoolAvgT	316,463	35,903	8.81	0.00%
ResSplines.MILDAvgT	486,779	81,189	6.00	0.00%
ResSplines.WarmAvgT	935,774	101,130	9.25	0.00%
ResSplines.HotAvgT	604,412	77,546	7.79	0.00%
ResSplines.SummerWarm	88,626	38,121	2.33	2.03%
ResSplines.WinterCool	-206,193	44,614	-4.62	0.00%
ResSplines.ShoulderWarm	-519,555	96,959	-5.36	0.00%
ResSplines.XHotAvgT	-430,462	211,484	-2.04	4.21%
MonthBinary.April2018	982,008	470,170	2.09	3.70%

¹ 20 CSR 4240-22.030(2)(C)3

Residential Weather Normalization Energy Models Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	879
Deg. of Freedom for Error	853
R-Squared	0.96
Adjusted R-Squared	0.96
F-Statistic	881.36
Prob (F-Statistic)	0
Mean Abs. % Err. (MAPE)	4.35%
Durbin-Watson Statistic	1.25

Commercial SGS Weather Normalization Energy Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	12,972,252	118,247	109.71	0.00%
DOWBinary.MonFri	1,129,408	98,146	11.51	0.00%
DOWBinary.TWT	1,300,418	97,130	13.39	0.00%
DOWBinary.Sunday	-137,048	49,737	-2.76	0.60%
MonthBinary.Feb	114,158	56,451	2.02	4.35%
MonthBinary.Mar	-271,729	57,325	-4.74	0.00%
MonthBinary.May	-529,448	91,651	-5.78	0.00%
MonthBinary.Jun	-755,472	132,528	-5.70	0.00%
MonthBinary.Jul	-492,578	142,072	-3.47	0.06%
MonthBinary.Aug	-508,052	135,233	-3.76	0.02%
MonthBinary.Sep	-357,771	121,894	-2.94	0.34%
MonthBinary.Oct	-712,164	79,450	-8.96	0.00%
MonthBinary.Nov	254,256	68,502	3.71	0.02%
COMSGSSplines.AvgT	-118,672	2,650	-44.79	0.00%
COMSGSSplines.CoolAvgT	37,495	8,288	4.52	0.00%
COMSGSSplines.MildAvgT	93,576	13,676	6.84	0.00%
COMSGSSplines.WarmAvgT	131,101	17,882	7.33	0.00%
COMSGSSplines.HotAvgT	51,713	17,197	3.01	0.27%
COMSGSSplines.WkndAvgT	-6,178	1,538	-4.02	0.01%
COMSGSSplines.WinterMildAvgT	-115,312	26,647	-4.33	0.00%
COMSGSSplines.ShoulderAvgT	-14,975	1,308	-11.45	0.00%
COMSGSSplines.SummerWarmAvgT	30,094	10,000	3.01	0.27%
MonthBinary.Yr2017	71,167	28,654	2.48	1.32%

ComSGS Weather Normalization Energy Models Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	883
Deg. of Freedom for Error	860
R-Squared	0.95
Adjusted R-Squared	0.94
F-Statistic	675.67
Prob (F-Statistic)	0
Mean Abs. % Err. (MAPE)	3.57%
Durbin-Watson Statistic	1.42

ComLGS Weather Normalization Energy Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	23,702,401	204,065	116.15	0.00%
DOWBinary.Monday	2,551,163	221,324	11.53	0.00%
DOWBinary.TWT	2,846,581	214,808	13.25	0.00%
DOWBinary.Friday	2,384,573	219,291	10.87	0.00%
DOWBinary.Saturday	748,593	82,729	9.05	0.00%
MonthBinary.Apr	619,854	135,612	4.57	0.00%
MonthBinary.May	1,539,539	126,156	12.20	0.00%
MonthBinary.Jun	-3,455,001	1,082,028	-3.19	0.15%
MonthBinary.Jul	-3,007,629	1,097,044	-2.74	0.62%
MonthBinary.Aug	-2,964,511	1,082,783	-2.74	0.63%
MonthBinary.Sep	-2,552,562	1,062,754	-2.40	1.65%
MonthBinary.Oct	1,039,788	110,590	9.40	0.00%
MonthBinary.Dec	-230,581	110,116	-2.09	3.65%
COMLGSSplines.AvgT	-177,052	3,527	-50.20	0.00%
COMLGSSplines.WarmAvgT	292,074	11,842	24.66	0.00%
COMLGSSplines.HotAvgT	109,218	21,603	5.06	0.00%
COMLGSSplines.WkndAvgT	-17,090	4,165	-4.10	0.01%
COMLGSSplines.WkndHotAvg	-33,930	13,693	-2.48	1.34%
COMLGSSplines.ShoulderAvgT	3,778	2,222	1.70	8.95%
COMLGSSplines.SummerAvgT	69,769	14,676	4.75	0.00%
MonthBinary.Yr2017	576,395	48,032	12.00	0.00%

Note: One of the explanatory variables were retained in the model despite being only marginally statistically significant ($p\text{-value} > .05$). The direction and magnitude of the coefficient are reasonable, the standard error is consistent with other variables, and the interpretation of all of the weather variables is cleaner with the inclusion of this variable.

ComLGS Weather Normalization Energy Models Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	857
Deg. of Freedom for Error	836
R-Squared	0.95
Adjusted R-Squared	0.94
F-Statistic	722.82
Prob (F-Statistic)	0
Mean Abs. % Err. (MAPE)	2.50%
Durbin-Watson Statistic	1.12

ComSPS Weather Normalization Energy Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	8,167,256	108,139	75.53	0.00%
DOWBinary.Thursday	59,523	34,159	1.74	8.18%
DOWBinary.Saturday	-482,018	33,725	-14.29	0.00%
DOWBinary.Sunday	-565,577	33,714	-16.78	0.00%
MonthBinary.Jan	-128,334	56,099	-2.29	2.24%
MonthBinary.Feb	-110,014	53,702	-2.05	4.08%
MonthBinary.Mar	-314,442	51,253	-6.14	0.00%
MonthBinary.Apr	-269,988	54,034	-5.00	0.00%
MonthBinary.May	-312,952	51,228	-6.11	0.00%
MonthBinary.Jun	-258,275	52,534	-4.92	0.00%
MonthBinary.Jul	129,404	57,395	2.26	2.44%
MonthBinary.Oct	-244,069	51,961	-4.70	0.00%
MonthBinary.Nov	-159,532	58,889	-2.71	0.69%
COMSPSSplines.AvgT	-35,480	2,762	-12.85	0.00%
COMSPSSplines.CoolAvgT	47,381	4,186	11.32	0.00%
COMSPSSplines.MildAvgT	44,601	6,043	7.38	0.00%
COMSPSSplines.WarmAvgT	22,639	12,193	1.86	6.37%
COMSPSSplines.HotAvgT	-67,667	28,507	-2.37	1.78%
COMSPSSplines.ShoulderMildAvgT	-53,950	13,858	-3.89	0.01%
MonthBinary.Yr2017	-124,611	25,026	-4.98	0.00%

Note: One of the explanatory variables were retained in the model despite being only marginally statistically significant ($p\text{-value} > .05$). The direction and magnitude of the coefficient are reasonable, the standard error is consistent with other variables, and the interpretation of all of the weather variables is cleaner with the inclusion of this variable.

Com SPS Weather Normalization Energy Models Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	794
Deg. of Freedom for Error	774
R-Squared	0.79
Adjusted R-Squared	0.79
F-Statistic	154.38
Prob (F-Statistic)	0
Mean Abs. % Err. (MAPE)	3.57%
Durbin-Watson Statistic	0.68

Com LPS Weather Normalization Energy Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	5,051,263	281,875	17.92	0.00%
DOWBinary.Saturday	-289,129	40,714	-7.10	0.00%
DOWBinary.Sunday	-328,224	40,755	-8.05	0.00%
MonthBinary.Jan	-358,555	62,073	-5.78	0.00%
MonthBinary.Mar	236,549	54,157	4.37	0.00%
MonthBinary.Apr	279,353	68,437	4.08	0.01%
MonthBinary.May	-91,827	56,558	-1.62	10.49%
MonthBinary.Jun	-443,810	59,018	-7.52	0.00%
MonthBinary.Jul	-424,672	64,087	-6.63	0.00%
COMLPSSplines.WarmAvgT	40,981	6,093	6.73	0.00%
COMLPSSplines.ShoulderWarmAvgT	-34,991	7,642	-4.58	0.00%
COMLPSSplines.AvgT	-24,461	11,756	-2.08	3.78%
COMLPSSplines.HotAvgT	15,912	7,412	2.15	3.22%
COMLPSSplines.CoolAvgT	22,216	12,927	1.72	8.62%

Note: Some of the explanatory variables were retained in the model despite being only marginally statistically significant (p-value>.05). The direction and magnitude of the coefficient are reasonable, the standard error is consistent with other variables, and the interpretation of all of the weather variables is cleaner with the inclusion of this variable.

Com LPS Weather Normalization Energy Models Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	692
Deg. of Freedom for Error	678
R-Squared	0.63
Adjusted R-Squared	0.62
F-Statistic	87.87
Prob (F-Statistic)	0
Mean Abs. % Err. (MAPE)	6.56%
Durbin-Watson Statistic	0.14

Ind SGS Weather Normalization Energy Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	474,434	12,522	37.89	0.00%
DOWBinary.Monday	34,734	7,926	4.38	0.00%
DOWBinary.Tuesday	47,398	8,283	5.72	0.00%
DOWBinary.Wednesday	43,744	8,395	5.21	0.00%
DOWBinary.Thursday	39,012	8,388	4.65	0.00%
DOWBinary.Friday	30,535	8,236	3.71	0.02%
DOWBinary.Saturday	9,493	3,178	2.99	0.29%
MonthBinary.Sep	25,645	9,573	2.68	0.75%
MonthBinary.Oct	69,371	9,275	7.48	0.00%
MonthBinary.Nov	81,547	9,706	8.40	0.00%
INDSGSSplines.AvgT	-5,718	265	-21.62	0.00%
INDSGSSplines.MILDAvgT	5,078	512	9.92	0.00%
INDSGSSplines.WarmAvgT	8,677	709	12.24	0.00%
INDSGSSplines.WkndAvgT	-931	126	-7.39	0.00%
MonthBinary.Yr2017	24,002	5,221	4.60	0.00%
AR(1)	1	0	21.32	0.00%

Ind SGS Weather Normalization Energy Models Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	881
Deg. of Freedom for Error	865
R-Squared	0.83
Adjusted R-Squared	0.83
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err. (MAPE)	9.52%
Durbin-Watson Statistic	2.14

Ind LGS Weather Normalization Energy Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	1,776,983	74,257	23.93	0.00%
DOWBinary.TWT	808,479	78,704	10.27	0.00%
DOWBinary.MonFri	629,787	79,615	7.91	0.00%
DOWBinary.Saturday	205,904	41,709	4.94	0.00%
MonthBinary.Jan	163,765	43,302	3.78	0.02%
MonthBinary.May	162,592	42,666	3.81	0.02%
MonthBinary.Jun	299,472	43,867	6.83	0.00%
MonthBinary.Jul	408,581	43,585	9.37	0.00%
MonthBinary.Aug	322,101	43,048	7.48	0.00%
MonthBinary.Sep	217,314	43,481	5.00	0.00%
MonthBinary.Nov	187,557	45,064	4.16	0.00%
INDLGSSplines.WkndAvgT	-3,091	1,208	-2.56	1.07%

Ind LGS Weather Normalization Energy Models Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	707
Deg. of Freedom for Error	695
R-Squared	0.65
Adjusted R-Squared	0.65
F-Statistic	118.81
Prob (F-Statistic)	0
Mean Abs. % Err. (MAPE)	10.42%
Durbin-Watson Statistic	0.62

Ind SPS Weather Normalization Energy Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	2,683,886	31,043	86.46	0.00%
DOWBinary.MonFri	972,978	16,250	59.88	0.00%
DOWBinary.TWT	1,125,624	15,271	73.71	0.00%
DOWBinary.Saturday	281,425	18,727	15.03	0.00%
MonthBinary.Feb	106,144	19,464	5.45	0.00%
MonthBinary.Aug	154,494	20,311	7.61	0.00%
INDSPSSplines.AvgT	-2,923	634	-4.61	0.00%
INDSPSSplines.WarmAvgT	17,424	1,287	13.54	0.00%
MonthBinary.Apr	-37,720	19959.73	-1.89	5.92%
MonthBinary.Jul	105,560	22,082	4.78	0.00%
MonthBinary.Sep	77,148	20,036	3.85	0.01%
MonthBinary.Oct	-52,254	18843.21	-2.77	0.57%

Ind SPS Weather Normalization Energy Models Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	683
Deg. of Freedom for Error	671
R-Squared	0.93
Adjusted R-Squared	0.93
F-Statistic	767.04
Prob (F-Statistic)	0
Mean Abs. % Err. (MAPE)	2.80%
Durbin-Watson Statistic	1.04

Ind LPS Weather Normalization Energy Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	5,002,685	58,118	86.08	0.00%
DOWBinary.Monday	408,961	13,803	29.63	0.00%
DOWBinary.Tuesday	536,892	17,460	30.75	0.00%
DOWBinary.Wednesday	596,706	19,010	31.39	0.00%
DOWBinary.Thursday	622,278	18,988	32.77	0.00%
DOWBinary.Friday	574,415	17,305	33.19	0.00%
DOWBinary.Saturday	206,832	13,391	15.45	0.00%
MonthBinary.Feb	-327,288	67,388	-4.86	0.00%
MonthBinary.May	-372,089	70,229	-5.30	0.00%
MonthBinary.Jun	-198,045	70,423	-2.81	0.51%
MonthBinary.Aug	108,713	64,016	1.70	8.99%
MonthBinary.Dec	-133,931	91,317	-1.47	14.29%
INDLPSSplines.MildAvgT	15,247	1,572	9.70	0.00%
MonthBinary.Oct2017	-315,432	100,591	-3.14	0.18%
MonthBinary.Nov2017	-262,303	109,848	-2.39	1.72%
MonthBinary.March2018	-328,043	94,221	-3.48	0.05%
MonthBinary.Yr2017	-527,979	74,629	-7.08	0.00%
AR(1)	1	0	49.01	0.00%

Note: Some of the explanatory variables were retained in the model despite being only marginally statistically significant ($p\text{-value} > .05$). The direction and magnitude of the coefficient are reasonable, the standard error is consistent with other variables, and the interpretation of all of the weather variables is cleaner with the inclusion of this variable.

Ind LPS Weather Normalization Energy Models Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	692
Deg. of Freedom for Error	674
R-Squared	0.93
Adjusted R-Squared	0.93
F-Statistic	558.40
Prob (F-Statistic)	0
Mean Abs. % Err. (MAPE)	2.03%
Durbin-Watson Statistic	2.16

Weather Normalized Peak Demand Models²

Residential Weather Normalization Peak Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	3,401,406	43,621	77.98	0.00%
DOWBinary.Friday	-74,364	19,692	-3.78	0.02%
DOWBinary.Saturday	-61,286	19,611	-3.13	0.19%
MonthBinary.Feb	-83,865	29,010	-2.89	0.40%
MonthBinary.Mar	-186,421	28,780	-6.48	0.00%
MonthBinary.Apr	-224,774	31,877	-7.05	0.00%
MonthBinary.May	-199,444	27,631	-7.22	0.00%
MonthBinary.Sep	-138,986	27,799	-5.00	0.00%
MonthBinary.Oct	-300,944	27,575	-10.91	0.00%
MonthBinary.Nov	-182,564	29,419	-6.21	0.00%
ResSplines.AvgT	-33,547	1,069	-31.39	0.00%
ResSplines.MildAvgT	30,232	4,846	6.24	0.00%
ResSplines.WarmAvgT	67,241	8,616	7.80	0.00%
ResSplines.HotAvgT	26,955	6,986	3.86	0.01%
ResSplines.XHotAvgT	-29,259	11,498	-2.55	1.11%
ResSplines.ShoulderWarmAvgT	-36,690	8,191	-4.48	0.00%

Residential Weather Normalization Peak Models Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	700
Deg. of Freedom for Error	684
R-Squared	0.92
Adjusted R-Squared	0.91
F-Statistic	491.28
Prob (F-Statistic)	0
Mean Abs. % Err. (MAPE)	6.73%
Durbin-Watson Statistic	1.54

² 20 CSR 4240-22.030(2)(C)3

Com SGS Weather Normalization Peak Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	579,458	7,773	74.55	0.00%
DOWBinary.TWT	127,464	3,733	34.15	0.00%
DOWBinary.MonFri	118,937	3,964	30.01	0.00%
MonthBinary.Apr	-18,515	5,001	-3.70	0.02%
MonthBinary.Jun	-29,853	6,052	-4.93	0.00%
MonthBinary.Jul	-25,905	6,406	-4.04	0.01%
MonthBinary.Aug	-22,885	5,912	-3.87	0.01%
MonthBinary.Oct	-12,313	4,767	-2.58	1.00%
MonthBinary.Nov	-10,825	4,674	-2.32	2.08%
COMSGSSplines.AvgT	-5,198	181	-28.79	0.00%
COMSGSSplines.MildAvgT	6,609	1,237	5.34	0.00%
COMSGSSplines.WarmAvgT	7,121	1,706	4.17	0.00%
COMSGSSplines.HotAvgT	4,799	890	5.39	0.00%
COMSGSSplines.WinterMildAvgT	-4,582	1,373	-3.34	0.09%
COMSGSSplines.SummerAvgT	483	75	6.43	0.00%
COMSGSSplines.WkndMildAvgT	-2,463	221	-11.15	0.00%

Com SGS Weather Normalization Peak Models Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	706
Deg. of Freedom for Error	690
R-Squared	0.93
Adjusted R-Squared	0.93
F-Statistic	641.17
Prob (F-Statistic)	0
Mean Abs. % Err. (MAPE)	4.99%
Durbin-Watson Statistic	1.96

Com LGS Weather Normalization Peak Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	1,054,093	11,953	88.19	0.00%
DOWBinary.TWT	249,727	5,804	43.03	0.00%
DOWBinary.MonFri	226,798	6,136	36.96	0.00%
DOWBinary.Saturday	36,247	6,518	5.56	0.00%
MonthBinary.Apr	43,376	7,404	5.86	0.00%
MonthBinary.May	56,521	10,042	5.63	0.00%
MonthBinary.Jun	72,959	11,321	6.45	0.00%
MonthBinary.Jul	63,521	11,876	5.35	0.00%
MonthBinary.Aug	84,433	11,081	7.62	0.00%
MonthBinary.Sep	106,438	10,366	10.27	0.00%
MonthBinary.Oct	41,895	7,752	5.40	0.00%
COMLGSSplines.AvgT	-8,016	262	-30.57	0.00%
COMLGSSplines.MildAvgT	19,166	716	26.79	0.00%
COMLGSSplines.HotAvgT	5,942	1,009	5.89	0.00%
COMLGSSplines.WkndHotAvgT	-6,401	864	-7.41	0.00%

Com LGS Weather Normalization Peak Models Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	683
Deg. of Freedom for Error	668
R-Squared	0.94
Adjusted R-Squared	0.94
F-Statistic	707.22
Prob (F-Statistic)	0
Mean Abs. % Err. (MAPE)	3.56%
Durbin-Watson Statistic	1.59

Com SPS Weather Normalization Peak Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	334,808	6,916	48.41	0.00%
DOWBinary.Monday	35,506	1,887	18.81	0.00%
DOWBinary.TWT	35,262	1,360	25.93	0.00%
DOWBinary.Friday	32,601	1,832	17.80	0.00%
MonthBinary.Jan	-8,351	2,853	-2.93	0.35%
MonthBinary.Feb	-6,195	2,696	-2.30	2.19%
MonthBinary.Mar	-17,759	2,596	-6.84	0.00%
MonthBinary.Apr	-17,675	2,503	-7.06	0.00%
MonthBinary.May	-18,139	2,314	-7.84	0.00%
MonthBinary.Jun	-14,362	2,266	-6.34	0.00%
MonthBinary.Oct	-14,425	2,395	-6.02	0.00%
MonthBinary.Nov	-11,879	2,706	-4.39	0.00%
COMSPSSplines.CoolAvgT	1,403	295	4.76	0.00%
COMSPSSplines.WarmAvgT	1,723	304	5.67	0.00%
COMSPSSplines.MildAvgT	1,951	253	7.72	0.00%
COMSPSSplines.AvgT	-1,525	196	-7.78	0.00%
MonthBinary.July2018	10,410	3,021	3.45	0.06%

Com SPS Weather Normalization Peak Models Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	679
Deg. of Freedom for Error	662
R-Squared	0.84
Adjusted R-Squared	0.83
F-Statistic	214.57
Prob (F-Statistic)	0
Mean Abs. % Err. (MAPE)	3.65%
Durbin-Watson Statistic	0.96

Com LPS Weather Normalization Peak Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	171,435	1,975	86.79	0.00%
DOWBinary.Tuesday	22,506	2,068	10.88	0.00%
DOWBinary.Wednesday	19,959	2,063	9.68	0.00%
DOWBinary.Thursday	22,115	2,056	10.76	0.00%
DOWBinary.MonFri	21,444	1,682	12.75	0.00%
MonthBinary.Jan	-8,870	2,778	-3.19	0.15%
MonthBinary.Mar	13,988	2,604	5.37	0.00%
MonthBinary.Apr	18,186	3,894	4.67	0.00%
MonthBinary.May	10,074	3,008	3.35	0.09%
MonthBinary.Jun	-4,414	2,929	-1.51	13.23%
MonthBinary.Oct	10,193	2,681	3.80	0.02%
MonthBinary.Aug	13,186	2,913	4.53	0.00%
MonthBinary.Sep	14,682	3,003	4.89	0.00%
MonthBinary.Nov	5,480	2,960	1.85	6.45%
COMLPSSplines.WarmAvgT	2,312	284	8.14	0.00%
COMLPSSplines.HotAvgT	-5,271	1,028	-5.13	0.00%
COMLPSSplines.MildAvgT	520	120	4.32	0.00%
COMLPSSplines.ShoulderMildAvgT	-524	227	-2.31	2.12%

Note: Some of the explanatory variables were retained in the model despite being only marginally statistically significant ($p\text{-value} > .05$). The direction and magnitude of the coefficient are reasonable, the standard error is consistent with other variables, and the interpretation of all of the weather variables is cleaner with the inclusion of this variable.

Com LPS Weather Normalization Peak Models Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	692
Deg. of Freedom for Error	674
R-Squared	0.67
Adjusted R-Squared	0.66
F-Statistic	79.74
Prob (F-Statistic)	0
Mean Abs. % Err. (MAPE)	6.44%
Durbin-Watson Statistic	0.28

Ind SGS Weather Normalization Peak Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	22,966	759	30.28	0.00%
MonthBinary.Sep	1,772	545	3.25	0.12%
MonthBinary.Oct	7,239	529	13.69	0.00%
MonthBinary.Nov	4,991	555	8.99	0.00%
INDSGSSplines.AvgT	-114	16	-7.05	0.00%
INDSGSSplines.MildAvgT	434	36	12.05	0.00%
INDSGSSplines.WkndAvgT	-170	10	-17.37	0.00%
INDSGSSplines.WkndMildAvgT	176	48	3.68	0.03%
DOWBinary.TWT	1,124	348	3.225	0.13%

Ind SGS Weather Normalization Peak Models Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	706
Deg. of Freedom for Error	697
R-Squared	0.66
Adjusted R-Squared	0.65
F-Statistic	166.26
Prob (F-Statistic)	0
Mean Abs. % Err. (MAPE)	16.03%
Durbin-Watson Statistic	1.56

Ind LGS Weather Normalization Peak Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	79,397	1,553	51.12	0.00%
DOWBinary.Monday	39,179	1,948	20.11	0.00%
DOWBinary.TWT	43,669	1,632	26.759	0.00%
DOWBinary.Friday	33,732	1,944	17.352	0.00%
DOWBinary.Saturday	5,735	1,939	2.958	0.32%
MonthBinary.Jan	9,364	2,039	4.591	0.00%
MonthBinary.Feb	4,206	2,068	2.034	4.24%
MonthBinary.May	7,988	1,988	4.019	0.01%
MonthBinary.Jun	13,357	2,049	6.519	0.00%
MonthBinary.Jul	18,681	2,175	8.591	0.00%
MonthBinary.Aug	15,190	1,997	7.608	0.00%
MonthBinary.Sep	11,015	2,031	5.424	0.00%
MonthBinary.Nov	9,498	2,133	4.454	0.00%
INDLGSsplines.TWTHotAvgT	745	374	1.994	4.66%

Ind LGS Weather Normalization Peak Models Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	707
Deg. of Freedom for Error	693
R-Squared	0.66
Adjusted R-Squared	0.66
F-Statistic	104.04
Prob (F-Statistic)	0
Mean Abs. % Err. (MAPE)	9.58%
Durbin-Watson Statistic	0.81

Ind SPS Weather Normalization Peak Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	127,540	2,299	55.48	0.00%
DOWBinary.Monday	36,844	2,593	14.21	0.00%
DOWBinary.TWT	41,938	2,491	16.83	0.00%
DOWBinary.Saturday	10,144	1,251	8.11	0.00%
DOWBinary.Friday	34,926	2,595	13.46	0.00%
MonthBinary.Feb	5,427	1,273	4.26	0.00%
MonthBinary.Jun	4,781	1,576	3.03	0.25%
MonthBinary.Jul	8,232	1,676	4.91	0.00%
MonthBinary.Aug	7,421	1,512	4.91	0.00%
MonthBinary.Sep	5,737	1,439	3.99	0.01%
INDSPSSplines.WarmAvgT	548	52	10.62	0.00%
INDSPSSplines.WkndAvgT	-222	38	-5.82	0.00%

Ind SPS Weather Normalization Peak Models Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	683
Deg. of Freedom for Error	671
R-Squared	0.88
Adjusted R-Squared	0.88
F-Statistic	443.49
Prob (F-Statistic)	0
Mean Abs. % Err. (MAPE)	3.60%
Durbin-Watson Statistic	1.61

Ind LPS Weather Normalization Peak Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	184,590	2,039	90.54	0.00%
DOWBinary.Monday	19,475	2,334	8.34	0.00%
DOWBinary.Tuesday	22,138	2,292	9.66	0.00%
DOWBinary.Wednesday	24,000	2,292	10.47	0.00%
DOWBinary.Thursday	26,265	2,297	11.43	0.00%
DOWBinary.Friday	25,597	2,297	11.14	0.00%
DOWBinary.Saturday	7,908	2,290	3.45	0.06%
MonthBinary.Jan	17,405	2,554	6.82	0.00%
MonthBinary.Mar	14,279	2,445	5.84	0.00%
MonthBinary.Apr	22,711	2,390	9.50	0.00%
MonthBinary.May	-1,615	2,469	-0.65	51.32%
MonthBinary.Jul	6,739	2,736	2.46	1.40%
MonthBinary.Aug	11,377	2,571	4.43	0.00%
MonthBinary.Oct	9,132	2,349	3.89	0.01%
INDLPSSplines.MildAvgT	865	65	13.40	0.00%
MonthBinary.Nov2018	25,426	3,430	7.41	0.00%
MonthBinary.Sept2018	24,939	3,331	7.49	0.00%

Note: One of the explanatory variables were retained in the model despite being only marginally statistically significant ($p\text{-value} > .05$). The direction and magnitude of the coefficient are reasonable, the standard error is consistent with other variables, and the interpretation of all of the weather variables is cleaner with the inclusion of this variable.

Ind LPS Weather Normalization Peak Models Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	693
Deg. of Freedom for Error	676
R-Squared	0.51
Adjusted R-Squared	0.50
F-Statistic	44.34
Prob (F-Statistic)	0
Mean Abs. % Err. (MAPE)	5.85%
Durbin-Watson Statistic	0.20

Energy Sales and Customer Forecast Models³

Note: The F-Statistic and associated probability cannot be computed in a regression model, such as the usual SAE specification, that does not include an intercept. Therefore, F-Statistic and associated probability were not reported whenever an SAE model was developed for forecasting purpose or an intercept was not included in the model.

Residential Energy Sales Forecast Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
ResidentialVars_Billed.XHeat	1.16	0.02	49.68	0.00%
ResidentialVars_Billed.XCool	1.71	0.03	52.09	0.00%
ResidentialVars_Billed.XOther	0.89	0.02	48.18	0.00%
ResidentialVars_Billed.Xcool_shoulder	-0.19	0.07	-2.61	1.15%

Residential Energy Sales Forecast Model Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	64
Deg. of Freedom for Error	60
R-Squared	0.99
Adjusted R-Squared	0.99
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err. (MAPE)	2.03%
Durbin-Watson Statistic	1.41

³ 20 CSR 4240-22.030(3)(B)

Residential Customer Count Forecast Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
BinaryVars.Jan	408,989	20,956	19.52	0.00%
BinaryVars.Feb	409,462	20,968	19.53	0.00%
BinaryVars.Apr	408,540	20,991	19.46	0.00%
BinaryVars.May	405,899	21,003	19.33	0.00%
BinaryVars.Jun	405,503	21,016	19.30	0.00%
BinaryVars.Jul	406,165	20,992	19.35	0.00%
BinaryVars.Aug	406,580	20,959	19.40	0.00%
BinaryVars.Sep	405,936	20,943	19.38	0.00%
BinaryVars.Dec	407,360	20,949	19.45	0.00%
BinaryVars.Mar	410,018	20,979	19.54	0.00%
BinaryVars.Oct	404,493	20,938	19.32	0.00%
BinaryVars.Nov	405,212	20,945	19.35	0.00%
UtilityData.Households	619	20.29	30.53	0.00%
AR(1)	0.52	0.09	5.55	0.00%

Residential Customer Count Forecast Model Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	95
Deg. of Freedom for Error	81
R-Squared	0.98
Adjusted R-Squared	0.98
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err. (MAPE)	0.10%
Durbin-Watson Statistic	2.23

Commercial SGS Energy Sales Forecast Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CommercialVars_Billing.SGS_XHeat	785.73	34.1	23.06	0.00%
CommercialVars_Billing.SGS_XCool	897.72	36.8	24.43	0.00%
CommercialVars_Billing.SGS_XOther	61.79	0.8	76.54	0.00%

Commercial SGS Energy Sales Forecast Model Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	54
Deg. of Freedom for Error	51
R-Squared	0.94
Adjusted R-Squared	0.93
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err. (MAPE)	2.38%
Durbin-Watson Statistic	1.40

Commercial SGS Customer Count Forecast Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
BinaryVars.Jan	64,340	24,401	2.64	1.14%
BinaryVars.Feb	64,369	24,406	2.64	1.14%
BinaryVars.Mar	64,478	24,411	2.64	1.12%
BinaryVars.Apr	64,481	24,417	2.64	1.13%
BinaryVars.May	64,532	24,425	2.64	1.12%
BinaryVars.Jun	64,507	24,436	2.64	1.13%
BinaryVars.Jul	65,105	24,400	2.67	1.05%
BinaryVars.Aug	64,773	24,464	2.65	1.11%
BinaryVars.Sep	64,725	24,481	2.64	1.12%
BinaryVars.Oct	64,695	24,497	2.64	1.13%
BinaryVars.Nov	64,780	24,513	2.64	1.12%
BinaryVars.Dec	64,836	24,529	2.64	1.12%
Econ_Trans.SGS_Output	1.76	0.54	3.29	0.20%

Commercial SGS Customer Count Forecast Model Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	59
Deg. of Freedom for Error	46
R-Squared	0.22
Adjusted R-Squared	0.02
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err. (MAPE)	0.86%
Durbin-Watson Statistic	0.04

Commercial LGS Energy Sales Forecast Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CommercialVars_Billing.LGS_XHeat	1,785	122.37	14.59	0.00%
CommercialVars_Billing.LGS_XCool	1,626	47.38	34.33	0.00%
CommercialVars_Billing.LGS_XOther	85.35	0.75	114.41	0.00%

Commercial LGS Energy Sales Forecast Model Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	40
Deg. of Freedom for Error	37
R-Squared	0.96
Adjusted R-Squared	0.96
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err. (MAPE)	1.46%
Durbin-Watson Statistic	1.83

Commercial LGS Customer Count Forecast Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
BinaryVars.Jan	2,501	778	3.22	0.19%
BinaryVars.Feb	2,489	778	3.20	0.20%
BinaryVars.Mar	2,469	777	3.18	0.22%
BinaryVars.Apr	2,468	777	3.18	0.22%
BinaryVars.May	2,472	777	3.18	0.21%
BinaryVars.Jun	2,479	778	3.19	0.21%
BinaryVars.Jul	2,494	778	3.21	0.20%
BinaryVars.Aug	2,505	777	3.22	0.19%
BinaryVars.Sep	2,509	777	3.23	0.18%
BinaryVars.Oct	2,503	777	3.22	0.19%
BinaryVars.Nov	2,494	777	3.21	0.20%
BinaryVars.Dec	2,499	778	3.21	0.19%
Econ_Trans.Non_Mfg_Emp	4.84	0.54	8.98	0.00%
AR(1)	0.84	0.06	13.30	0.00%

Commercial LGS Customer Count Forecast Model Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	90
Deg. of Freedom for Error	76
R-Squared	0.98
Adjusted R-Squared	0.98
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err. (MAPE)	0.24%
Durbin-Watson Statistic	2.52

Commercial SPS Energy Sales Forecast Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CommercialVars_Billing.SPS_XHeat	463	71.71	6.46	0.00%
CommercialVars_Billing.SPS_XCool	180	13.31	13.54	0.00%
CommercialVars_Billing.SPS_XOther	29.51	0.51	58.30	0.00%

Commercial SPS Energy Sales Forecast Model Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	53
Deg. of Freedom for Error	50
R-Squared	0.81
Adjusted R-Squared	0.81
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err. (MAPE)	2.89%
Durbin-Watson Statistic	2.32

Commercial SPS Customer Count Forecast Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
Econ_Trans.Non_Mfg_Emp	0.12	0.02	6.04	0.00%
BinaryVars.Jan	303	29.21	10.36	0.00%
BinaryVars.Feb	302	28.96	10.44	0.00%
BinaryVars.Mar	298	29.07	10.24	0.00%
BinaryVars.Apr	296	29.06	10.17	0.00%
BinaryVars.May	295	29.10	10.13	0.00%
BinaryVars.Jun	296	29.12	10.16	0.00%
BinaryVars.Jul	295	28.99	10.17	0.00%
BinaryVars.Aug	295	29.09	10.15	0.00%
BinaryVars.Sep	297	29.09	10.19	0.00%
BinaryVars.Oct	295	29.13	10.13	0.00%
BinaryVars.Nov	300	29.15	10.29	0.00%
BinaryVars.Dec	302	29.18	10.34	0.00%
AR(1)	-0.36	0.11	-3.38	0.12%

Commercial SPS Customer Count Forecast Model Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	89
Deg. of Freedom for Error	75
R-Squared	0.34
Adjusted R-Squared	0.23
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err. (MAPE)	1.56%
Durbin-Watson Statistic	2.06

Commercial LPS Energy Sales Forecast Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CommercialVars_Billing.LPS_XCool	317	24.60	12.88	0.00%
CommercialVars_Billing.LPS_XOther	20.39	0.31	65.92	0.00%
AR(1)	0.30	0.16	1.86	7.09%

Commercial LPS Energy Sales Forecast Model Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	41
Deg. of Freedom for Error	38
R-Squared	0.89
Adjusted R-Squared	0.88
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err. (MAPE)	3.01%
Durbin-Watson Statistic	1.93

Commercial LPS Customer Count Forecast Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
Simple Smoothing	0.34	0.07	4.78	0

Commercial LPS Customer Count Forecast Model Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	113
Deg. of Freedom for Error	112
R-Squared	0.83
Adjusted R-Squared	0.83
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err. (MAPE)	2.04%
Durbin-Watson Statistic	2.23

Industrial SGS Energy Sales Forecast Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	11,689	1,842	6.35	0.00%
Econ_Trans.SGS_Index	-196	66.06	-2.97	0.43%
Weather_Trans.Billed_CDD	7.19	0.52	13.96	0.00%
Weather_Trans.Billed_HDD	3.88	0.29	13.36	0.00%
MEEIA_2Act_3FCST_MWh.SGS_Cycle23	-2.13	0.56	-3.83	0.03%
Binary_Vars_bil.JanHDD	0.90	0.32	2.82	0.64%
Binary_Vars_bil.DecHDD	1.99	0.33	6.06	0.00%
Binary_Vars_bil.NovHDD	5.48	0.59	9.28	0.00%
Binary_Vars_bil.OctHDD	18.56	3.69	5.04	0.00%

Industrial SGS Energy Sales Forecast Model Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	72
Deg. of Freedom for Error	63
R-Squared	0.87
Adjusted R-Squared	0.86
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err. (MAPE)	3.13%
Durbin-Watson Statistic	1.82

Industrial SGS Customer Count Forecast Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
Binary_Vars.January	5,166	55.39	93.27	0.00%
Binary_Vars.February	5,166	55.46	93.14	0.00%
Binary_Vars.March	5,171	55.72	92.81	0.00%
Binary_Vars.April	5,172	56.12	92.16	0.00%
Binary_Vars.May	5,176	56.39	91.78	0.00%
Binary_Vars.June	5,173	56.57	91.45	0.00%
Binary_Vars.July	5,172	56.63	91.34	0.00%
Binary_Vars.August	5,173	55.70	92.87	0.00%
Binary_Vars.September	5,154	55.67	92.59	0.00%
Binary_Vars.October	5,160	55.88	92.35	0.00%
Binary_Vars.November	5,159	55.96	92.20	0.00%
Binary_Vars.December	5,155	56.04	91.99	0.00%
Econ_Trans.Emp_GDP_Index_sgs	-42.56	1.06	-40.36	0.00%

Industrial SGS Customer Count Forecast Model Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	79
Deg. of Freedom for Error	66
R-Squared	0.96
Adjusted R-Squared	0.96
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err. (MAPE)	0.76%
Durbin-Watson Statistic	0.17

Industrial LGS Energy Sales Forecast Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	92,103,866	8,259,056	11.15	0.00%
Weather_Trans.Billed_CDD	30,877	2,207	13.99	0.00%
Weather_Trans.Billed_HDD	8,581	1,473	5.83	0.00%
Econ_Trans.LGS_Index	-839,520	287,809	-2.92	0.49%
Binary_Vars_bil.FebHDD	-2,921	1,192	-2.45	1.70%
Binary_Vars_bil.MarHDD	-3,663	1,255	-2.92	0.49%
Binary_Vars_bil.SepCDD	3,914	1,549	2.53	1.41%
AR(1)	0.60	0.12	5.03	0.00%

Industrial LGS Energy Sales Forecast Model Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	71
Deg. of Freedom for Error	63
R-Squared	0.89
Adjusted R-Squared	0.88
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err. (MAPE)	1.67%
Durbin-Watson Statistic	2.28

Industrial LGS Customer Count Forecast Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
Binary_Vars.January	1,191	34.39	34.62	0.00%
Binary_Vars.February	1,190	34.31	34.67	0.00%
Binary_Vars.March	1,189	34.38	34.58	0.00%
Binary_Vars.April	1,192	34.57	34.48	0.00%
Binary_Vars.May	1,187	34.70	34.20	0.00%
Binary_Vars.June	1,191	34.78	34.23	0.00%
Binary_Vars.July	1,189	34.80	34.18	0.00%
Binary_Vars.August	1,191	34.57	34.46	0.00%
Binary_Vars.September	1,194	34.39	34.72	0.00%
Binary_Vars.October	1,190	34.40	34.61	0.00%
Binary_Vars.November	1,194	34.37	34.75	0.00%
Binary_Vars.December	1,190	34.37	34.64	0.00%
Econ_Trans.Emp_GDP_Index_lgs	-2.65	0.42	-6.35	0.00%
AR(1)	0.65	0.09	7.59	0.00%

Industrial LGS Customer Count Forecast Model Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	90
Deg. of Freedom for Error	76
R-Squared	0.85
Adjusted R-Squared	0.82
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err. (MAPE)	0.56%
Durbin-Watson Statistic	2.23

Industrial SPS Energy Sales Forecast Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	75,502	10,578	7.14	0.00%
Econ_Trans.SPS_Index	836	358	2.33	2.22%
Weather_Trans.Billed_CDD	25.12	2.25	11.17	0.00%

Industrial SPS Energy Sales Forecast Model Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	79
Deg. of Freedom for Error	76
R-Squared	0.62
Adjusted R-Squared	0.61
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err. (MAPE)	2.78%
Durbin-Watson Statistic	2.28

Industrial SPS Customer Count Forecast Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
Binary_Vars.January	178	5.70	31.14	0.00%
Binary_Vars.February	178	5.63	31.53	0.00%
Binary_Vars.March	175	5.66	30.98	0.00%
Binary_Vars.April	175	5.67	30.88	0.00%
Binary_Vars.May	177	5.69	31.05	0.00%
Binary_Vars.June	175	5.70	30.67	0.00%
Binary_Vars.July	176	5.71	30.82	0.00%
Binary_Vars.August	175	5.64	31.08	0.00%
Binary_Vars.September	176	5.67	30.99	0.00%
Binary_Vars.October	175	5.68	30.90	0.00%
Binary_Vars.November	176	5.69	30.95	0.00%
Binary_Vars.December	178	5.70	31.29	0.00%
Econ_Trans.Emp_GDP_Index	9.44	5.95	1.59	11.65%
AR(1)	-0.27	0.12	-2.34	2.20%

Industrial SPS Customer Count Forecast Model Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	90
Deg. of Freedom for Error	76
R-Squared	0.18
Adjusted R-Squared	0.04
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err. (MAPE)	1.17%
Durbin-Watson Statistic	1.83

Industrial LPS Energy Sales Forecast Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	138,767	18,511	7.50	0.00%
Econ_Trans.LPS_Index	1,273	614	2.07	4.12%
Weather_Trans.Billed_CDD	42.08	3.67	11.46	0.00%
Binary_Vars_bil.MarHDD	-23.44	3.73	-6.28	0.00%
Binary_Vars_bil.TrendVar_month	775.39	201	3.86	0.02%

Industrial LPS Energy Sales Forecast Model Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	89
Deg. of Freedom for Error	84
R-Squared	0.79
Adjusted R-Squared	0.78
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err. (MAPE)	2.60%
Durbin-Watson Statistic	2.05

Industrial LPS Customer Count Forecast Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value
MA(1)	-0.75	0.07	-10.58	0.00%

Industrial LPS Customer Count Forecast Model Statistics

Model Statistic	Value of the Statistic
Adjusted Observations	91
Deg. of Freedom for Error	90
R-Squared	0.65
Adjusted R-Squared	0.65
F-Statistic	#NA
Prob (F-Statistic)	#NA
Mean Abs. % Err (MAPE)	2.73%
Durbin-Watson Statistic	2.39

Abbreviations

- Res: Residential
- Com : Commercial
- Ind: Industrial
- SGS: Small General Service
- LGS: Large General Service
- SPS: Small Primary Service
- LPS: Large Primary Service
- WN: Weather Normalized
- LTS: Large Transmission Service

3.1 Compliance References

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