Electricity Customer models:

Residential heating Customers

System: SYS02_ELRESCUST_LOG
Estimation Method: Iterative Seemingly Unrelated Regression

Sample: 2001M04 2008M03
Included observations: 85
Total system (balanced) observations 168
Simultaneous weighting matrix & coefficient iteration

Dependent Variable: LOG(ELRESCUST_HT)	Coefficient	Std. Error	t-Statistic	Prob.
Constant	19.90501	0.33881	58.75038	0.00000
January	0.01677	0.00227	7.40050	0.00000
February	0.01253	0.00225	5.56309	0.00000
April	0.01280	0.00187	6.86161	0.00000
September	-0.00604	0.00204	-2.96300	0.00354
November	-0.00972	0.00190	-5.12259	0.00000
LOG(ELRESCUST_HT [-1])	-0.86565	0.03056	-28.32549	0.00000
LOG(GASRESCUST_HT)	-0.08333	0.01063	-7.83694	0.00000
September, 2006	0.02912	0.00548	5.30973	0.00000
Observations: 84				
R-squared	0.90698	Mean dependent var		10.18817
Adjusted R-squared	0.89706	S.D. dependent var		0.01891
S.E. of regression	0.00607	Sum squared resid		0.00276
Durbin-Watson stat	1.92074			
Residual Correlation:	0.61876			

Key:

• January is a dummy variable, taking on the value one in the month of January, and zero otherwise;

• February is a dummy variable, taking on the value one in the month of February, and zero otherwise;

• April is a dummy variable, taking on the value one in the month of April, and zero otherwise;

• September is a dummy variable, taking on the value one in the month of September, and zero otherwise;
• November is a dummy variable, taking on the value one in the month of November, and zero otherwise;

• ELRESCUST_HT [-1] is the dependent variable lagged one month;

• GASRESCUST_HT is the number of residential gas heating customers;

• September, 2006 is a dummy variable, taking on the value one in that month/year, and zero otherwise.

Residential non-heating Customers

System: SYS02_ELRESCUST_LOG
Estimation Method: Iterative Seemingly Unrelated Regression

Sample: 2001M04 2008M03
Included observations: 85
Total system (balanced) observations 168
Simultaneous weighting matrix & coefficient iteration

Dependent Variable: LOG(ELRESCUST_NH)	Coefficient	Std. Error	t-Statistic	Prob.
Odd_Months	6.83679	0.17494	39.08068	0.00000
Even_Months	6.81098	0.17406	39.13061	0.00000
January	0.01560	0.00178	8.78357	0.00000
February	-0.00386	0.00154	-2.50608	0.01327
LOG(HOUSEHOLDSELEC)	0.19777	0.06976	2.83521	0.00521
LOG(GASRESCUST_HT)	0.42088	0.01589	26.49004	0.00000
September, 2006	0.00814	0.00351	2.32172	0.02158
Autoregressive Error [-1]	-0.80877	0.06513	-12.41768	0.00000
Observations: 84				
R-squared	0.96674	Mean dependent var		12.29428
Adjusted R-squared	0.96367	S.D. dependent var		0.02691
S.E. of regression	0.00513	Sum squared resid		0.00200
Durbin-Watson stat	1.86205			
Residual Correlation:	0.61876			

Key:

• Odd_Months is a dummy variable, taking on the value one in the months of January/March/May/July/September/November, and zero otherwise;

• Even_Months is a dummy variable, taking on the value one in the months of February/April/June/August/October/December, and zero otherwise;

• January is a dummy variable, taking on the value one in the month of January, and zero otherwise;

• February is a dummy variable, taking on the value one in the month of February, and zero otherwise;

• HOUSEHOLDSELEC is Central Hudson's electricity sales-weighted calculation of households, using county-specific data from Economy.com.

• GASRESCUST_HT is the number of residential gas heating customers;

• September, 2006 is a dummy variable, taking on the value one in that month/year, and zero otherwise.

Commercial demand Customers

Dependent Variable: SD{LOG(ELCOMCUST_D)}
Method: Least Squares

Sample (adjusted): 2002M01 2008M03
Included observations: 75 after adjustments

SMA Backcast: 2001M01 2001M12

	Coefficient	Std. Error	t-Statistic	Prob.
Constant	3.0172	0.3017	9.9994	0.0000
January	0.0157	0.0019	8.1235	0.0000
November	0.0089	0.0023	3.9107	0.0002
December	-0.0055	0.0027	-2.0278	0.0464
SD{LOG(EMPTOTELEC [-3])}	0.0069	0.0027	2.5209	0.0140
Seasonal Moving Average Error [-12]	-0.9414	0.0324	-29.0168	0.0000
R-squared	0.6872	Mean dependent var		0.0345
Adjusted R-squared	0.6645	S.D. dependent var		0.0219
S.E. of regression	0.0127	Akaike info criterion		-5.8186
Sum squared resid	0.0111	Schwarz criterion		-5.6332
Log likelihood	224.1964	F-statistic		30.3125
Durbin-Watson stat	2.2727	Prob(F-statistic)		0.0000

Key:

• SD{} signifies a seasonal (span 12) difference;

• January is a dummy variable, taking on the value one in the month of January, and zero otherwise;

• November is a dummy variable, taking on the value one in the month of November, and zero otherwise;

• December is a dummy variable, taking on the value one in the month of December, and zero otherwise;

• EMPTOTELEC [-3] is Central Hudson's electricity sales-weighted calculation of total employment , using county-specific data from Economy.com, lagged three months.

Commercial non-demand Customers

Dependent Variable: D{LOG(ELCOMCUST_ND)}
Method: Least Squares

Sample (adjusted): 2001M04 2008M03
Included observations: 84 after adjustments

MA Backcast: 2001M03

	Coefficient	Std. Error	t-Statistic	Prob.
D{EVEN_MONTHS}	0.07283	0.00208	34.94861	0.00000
D{January}	0.02540	0.00341	7.43946	0.00000
D{May}	-0.01019	0.00339	-3.00629	0.00357
D{November}	-0.01247	0.00341	-3.65524	0.00047
D{December}	0.00794	0.00325	2.44215	0.01689
D{LOG(HOUSEHOLDSELEC [-3])}	0.94355	0.41269	2.28634	0.02498
Moving Average Error [-1]	-0.75383	0.07697	-9.79441	0.00000

R-squared	0.98804	Mean dependent var	0.00068
Adjusted R-squared	0.98711	S.D. dependent var	0.07584
S.E. of regression	0.00861	Akaike info criterion	-6.59161
Sum squared resid	0.00571	Schwarz criterion	-6.38904
Log likelihood	283.84764	Durbin-Watson stat	2.20176

Key:

• D{} signifies a first difference;

• Even_Months is a dummy variable, taking on the value one in the months of February/April/June/August/October/December, and zero otherwise;

• January is a dummy variable, taking on the value one in the month of January, and zero otherwise;

• May is a dummy variable, taking on the value one in the month of May, and zero otherwise;

• November is a dummy variable, taking on the value one in the month of November, and zero otherwise;

• December is a dummy variable, taking on the value one in the month of December, and zero otherwise;

• HOUSEHOLDSELEC [-3] is Central Hudson's electricity sales-weighted calculation of households, using county-specific data from Economy.com, lagged three months.

OPA demand Customers

Dependent Variable: D{LOG(ELOPACUST_D)}
Method: Least Squares

Sample (adjusted): 2001M04 2008M03
Included observations: 84 after adjustments

MA Backcast: 2001M03

	Coefficient	Std. Error	t-Statistic	Prob.
D{January}	0.01777	0.00619	2.87031	0.00526
D{March}	0.02660	0.00611	4.35065	0.00004
D{December}	0.01694	0.00618	2.73957	0.00760
D{LOG(EMPTOTELEC)}	3.08589	0.44522	6.93123	0.00000
Moving Average Error [-1]	-0.87751	0.05767	-15.21618	0.00000
R-squared	0.59184	Mean dependent var		0.00133
Adjusted R-squared	0.57117	S.D. dependent var		0.02499
S.E. of regression	0.01637	Akaike info criterion		-5.32930
Sum squared resid	0.02116	Schwarz criterion		-5.18461
Log likelihood	228.83071	Durbin-Watson stat		1.99354

Key:

• D{} signifies a first difference;

• January is a dummy variable, taking on the value one in the month of January, and zero otherwise;

• March is a dummy variable, taking on the value one in the month of March, and zero otherwise.

• December is a dummy variable, taking on the value one in the month of December, and zero otherwise;

• EMPTOTELEC is Central Hudson's electricity sales-weighted calculation of total employment , using county-specific data from Economy.com.

OPA non-demand customers

Dependent Variable: LOG(ELOPACUST_ND)
Method: Least Squares

Sample (adjusted): 2001M04 2008M03
Included observations: 84 after adjustments

	Coefficient	Std. Error	t-Statistic	Prob.
Odd_Months	4.45089	0.74372	5.98461	0.00000
Even_Months	4.56218	0.76160	5.99026	0.00000
January	0.02417	0.00633	3.81946	0.00026
December	0.01464	0.00616	2.37576	0.01994
LOG(ELOPACUST_ND [-2])	0.40453	0.09936	4.07124	0.00011

R-squared	0.97608	Mean dependent var	7.57352
Adjusted R-squared	0.97487	S.D. dependent var	0.09386
S.E. of regression	0.01488	Akaike info criterion	-5.51986
Sum squared resid	0.01749	Schwarz criterion	-5.37517
Log likelihood	236.83421	Durbin-Watson stat	2.12047

Key:

• Odd_Months is a dummy variable, taking on the value one in the months of January/March/May/July/September/November, and zero otherwise;

• Even_Months is a dummy variable, taking on the value one in the months of February/April/June/August/October/December, and zero otherwise;

• January is a dummy variable, taking on the value one in the month of January, and zero otherwise;

• December is a dummy variable, taking on the value one in the month of December, and zero otherwise;

• ELOPACUST_ND [-2] is the dependent variable, lagged two months.

Industrial demand Customers

Sample: 1997M01 2008M03			
Included observations: 135			
Method: Holt-Winters Multiplicative Seasonal			
Original Series: ELINDCUST_D			
Parameters:	Alpha		0.25
	Beta		0.04
	Gamma		0.00
Sum of Squared Residuals			20617.99
Root Mean Squared Error			12.36
End of Period Levels:	Mean		553.53550
	Trend		-0.30953
	Seasonals:	2007M04	0.99878
		2007M05	0.99618
		2007M06	1.00359
		2007M07	1.00162
		2007M08	0.98627
		2007M09	0.99301
		2007M10	1.00458
		2007M11	0.99145
		2007M12	1.00985
		2008M01	1.00533
		2008M02	0.98425
		2008M03	1.02510

Electricity Sales models:

Residential heating Sales per Customer

Dependent Variable: ELRESUPC_HT
Method: Least Squares

Sample: 2001M04 2008M03
Included observations: 84

	Coefficient	Std. Error	t-Statistic	Prob.
February / March	49.51208	12.77721	3.87503	0.00020
June	100.81110	17.06184	5.90857	0.00000
July / September	201.60020	32.49425	6.20418	0.00000
August	257.54980	42.06744	6.12231	0.00000
October	149.21760	18.70382	7.97792	0.00000
"X" – HEAT	0.00023	0.00001	43.61594	0.00000
"X" – COOL	0.00109	0.00017	6.24475	0.00000
"X" - OTHER	0.46528	0.03716	12.52182	0.00000
Autoregressive Error [-1]	0.52691	0.10199	5.16649	0.00000
R-squared	0.99358	Mean dependent var		1067.17100
Adjusted R-squared	0.99290	S.D. dependent var		391.53590
S.E. of regression	32.99639	Akaike info criterion		9.93163
Sum squared resid	81657.15000	Schwarz criterion		10.19208
Log likelihood	-408.12850	Durbin-Watson stat		1.85764

Key:

• February is a dummy variable, taking on the value one in the month of February, and zero otherwise;

• March is a dummy variable, taking on the value one in the month of March, and zero otherwise;

• June is a dummy variable, taking on the value one in the month of June, and zero otherwise;

• July is a dummy variable, taking on the value one in the month of July, and zero otherwise;

• August is a dummy variable, taking on the value one in the month of August, and zero otherwise;

• September is a dummy variable, taking on the value one in the month of September, and zero otherwise;

• October is a dummy variable, taking on the value one in the month of October, and zero otherwise.

Residential non-heating Sales per Customer

Dependent Variable: ELRESUPC_NH
Method: State Space - Maximum likelihood (Marquardt)

Sample: 2001M04 2008M03
Included observations: 84

	Coefficient	Std. Error	t-Statistic	Prob.
February	9.30352	3.72829	2.49538	0.01260
September	-11.04609	4.42118	-2.49845	0.01250
"X" – HEATING	0.72085	0.06715	10.73436	0.00000
"X" – COOLING	0.80610	0.05144	15.67218	0.00000
"X" – OTHER	0.62651	0.04969	12.60963	0.00000
Income Elasticity on Income Index	0.37640	0.08209	4.58554	0.00000
ELRESUPC_NH [-12]	0.25810	0.05096	5.06444	0.00000
Moving Average Error [-1]	0.67424	0.09990	6.74925	0.00000
Log likelihood	-327.46400	Akaike info criterion		8.01105
Parameters	9.00000	Schwarz criterion		8.27149
Diffuse priors	0.00000	Hannan-Quinn criter.		8.11575

Key:

• February is a dummy variable, taking on the value one in the month of February, and zero otherwise;

• September is a dummy variable, taking on the value one in the month of September, and zero otherwise;

• ELRESUPC_NH [-12] is the dependent variable lagged 12 months.

Commercial demand Sales per Customer

Dependent Variable: ELCOMUPC_D
Method: Least Squares

Sample (adjusted): 2002M02 2008M03
Included observations: 74 after adjustments

	Coefficient	Std. Error	t-Statistic	Prob.
Constant	2.52691	1.15706	2.18391	0.03240
"X" – COOLING (per customer)	0.00176	0.00033	5.41526	0.00000
"X" – OTHER (per customer)	2.35074	0.88397	2.65929	0.00970
ELCOMUPC_D [-12]	0.50353	0.08061	6.24632	0.00000
Autoregressive Error [-1]	0.39813	0.11141	3.57359	0.00060

R-squared	0.89463	Mean dependent var	12.15570
Adjusted R-squared	0.88853	S.D. dependent var	1.18063
S.E. of regression	0.39419	Akaike info criterion	1.04119
Sum squared resid	10.72141	Schwarz criterion	1.19687
Log likelihood	-33.52403	F-statistic	146.46460
Durbin-Watson stat	1.99979	Prob(F-statistic)	0.00000

Key:

• ELCOMUPC_D [-12] is the dependent variable lagged 12 months.

Commercial non-demand Sales per Customer

Dependent Variable: ELCOMUPC_ND
Method: Least Squares

Sample (adjusted): 2000M02 2008M03
Included observations: 98 after adjustments

MA Backcast: 2000M01

	Coefficient	Std. Error	t-Statistic	Prob.
January	-34.76257	10.37860	-3.34945	0.00120
July	-22.94322	10.41740	-2.20239	0.03020
October	35.11493	10.51141	3.34065	0.00120
"X" – HEATING	0.00186	0.00020	9.52576	0.00000
"X" – COOLING	0.00445	0.00047	9.47494	0.00000
"X" – OTHER	4.00370	0.50550	7.92026	0.00000
ELCOMUPC_ND [-12]	0.30754	0.06209	4.95362	0.00000
Autoregressive Error [-1]	0.94763	0.02701	35.08053	0.00000
Moving Average Error [-1]	-0.73653	0.08346	-8.82472	0.00000

R-squared	0.86775	Mean dependent var	592.77610
Adjusted R-squared	0.85586	S.D. dependent var	72.66547
S.E. of regression	27.58832	Akaike info criterion	9.56000
Sum squared resid	67739.27000	Schwarz criterion	9.79740
Log likelihood	-459.44020	Durbin-Watson stat	1.69479

Key:

• January is a dummy variable, taking on the value one in the month of January, and zero otherwise;

• July is a dummy variable, taking on the value one in the month of July, and zero otherwise;

• October is a dummy variable, taking on the value one in the month of October, and zero otherwise.

• ELCOMUPC_ND [-12] is the dependent variable lagged 12 months.

OPA demand Sales per Customer

Dependent Variable: LOG(ELOPAUPC_D)
Method: Least Squares

Sample (adjusted): 2001M01 2008M03
Included observations: 87 after adjustments

	Coefficient	Std. Error	t-Statistic	Prob.
Constant	3.02741	0.01475	205.27490	0.00000
HDD (Billing-cycle adjusted)	0.00019	0.00002	10.48123	0.00000
CDD (Billing-cycle adjusted)	0.00043	0.00009	5.00935	0.00000
Price Elasticity on Price Index [-1]		**		
May/June 2003 timing	0.15282	0.02481	6.15968	0.00000
February/March 2007 timing	0.13347	0.02455	5.43611	0.00000
Seasonal Autoregressive Error [-12]	0.24469	0.11603	2.10889	0.03804

R-squared	0.78106	Mean dependent var	3.15603
Adjusted R-squared	0.76754	S.D. dependent var	0.07400
S.E. of regression	0.03568	Akaike info criterion	-3.76207
Sum squared resid	0.10311	Schwarz criterion	-3.59201
Log likelihood	169.65010	Durbin-Watson stat	1.74943

** The
Company's pre-assigned value was imposed during estimation.

Key:

• HDD is heating degree-days; CDD is cooling degree-days;

• May/June 2003 timing is a dummy variable, taking the value +1 in May 2003, -1 in June 2003, and zero otherwise;

• February/March 2007 timing is a dummy variable, taking the value +1 in February 2007, -1 in March 2007, and zero otherwise.

OPA non-demand Sales per Customer

Dependent Variable: ELOPAUPC_ND
Method: Least Squares

Sample (adjusted): 2002M03 2008M03
Included observations: 73 after adjustments

	Coefficient	Std. Error	t-Statistic	Prob.
January	0.12528	0.01777	7.04856	0.00000
June / October	0.10381	0.01654	6.27434	0.00000
July / September	0.19711	0.02983	6.60803	0.00000
August	0.27080	0.04131	6.55482	0.00000
November	0.06709	0.01536	4.36745	0.00005
HDD (Billing-cycle adjusted)	0.00037	0.00002	19.38100	0.00000
CDD (Billing-cycle adjusted)	0.00033	0.00016	2.09157	0.04039
ELOPAUPC_ND [-2]	0.56577	0.02083	27.15910	0.00000
R-squared	0.91020	Mean dependent var		0.67904
Adjusted R-squared	0.90052	S.D. dependent var		0.11157
S.E. of regression	0.03519	Akaike info criterion		-3.75314
Sum squared resid	0.08048	Schwarz criterion		-3.50213
Log likelihood	144.98971	Durbin-Watson stat		2.03960

Key:

• January is a dummy variable, taking on the value one in the month of January, and zero otherwise;

• June is a dummy variable, taking on the value one in the month of June, and zero otherwise;

• July is a dummy variable, taking on the value one in the month of July, and zero otherwise;

• August is a dummy variable, taking on the value one in the month of August, and zero otherwise;

• September is a dummy variable, taking on the value one in the month of September, and zero otherwise;

• October is a dummy variable, taking on the value one in the month of October, and zero otherwise.

• November is a dummy variable, taking on the value one in the month of November, and zero otherwise;

• HDD is heating degree-days; CDD is cooling degree-days;

• ELOPAUPC_ND [-2] is the dependent variable lagged two months.

Industrial demand Sales per Customer

Dependent Variable: LOG(ELINDUPC_D)
Method: Least Squares

Sample (adjusted): 1999M03 2008M03
Included observations: 109 after adjustments

	Coefficient	Std. Error	t-Statistic	Prob.
Constant	1.97696	0.33283	5.93988	0.00000
CDD (Billing-cycle adjusted)	0.00032	0.00008	4.01679	0.00011
LOG(ELINDUPC_D [-12])	0.45091	0.09029	4.99397	0.00000
Output Elasticity on GDP Index		**		
Price Elasticity on Price Index [-1]		**		
Autoregressive Error [-1]	0.45557	0.09165	4.97096	0.00000
Autoregressive Error [-2]	0.41129	0.08938	4.60158	0.00001

R-squared	0.85925	Mean dependent var	3.71832
Adjusted R-squared	0.85384	S.D. dependent var	0.12016
S.E. of regression	0.04594	Akaike info criterion	-3.27826
Sum squared resid	0.21947	Schwarz criterion	-3.15480
Log likelihood	183.66499	Durbin-Watson stat	2.17949

** Company estimate, imposed during estimation

Key:

• CDD is cooling degree-days;

• ELINDUPC_D [-12] is the dependent variable lagged one month.

Industrial non-demand Sales per Customer

Dependent Variable: ELINDUPC_ND
Method: State Space - Maximum likelihood (Marquardt)

Sample: 1999M01 2008M03
Included observations: 111

	Coefficient		Std. Error	t-Statistic	Prob.
Constant (Random Walk / Final State)	-0.85962		0.05985	-14.36246	0.00000
HDD (Billing-cycle adjusted)	0.00037		0.00005	7.11336	0.00000
CDD (Billing-cycle adjusted)	0.00097		0.00022	4.47700	0.00001
Output Elasticity on GDP Index		**			
Price Elasticity on Price Index [-1]		**			
January/February 2001 timing	0.43340		0.07913	5.47681	0.00000
December, 2004	-1.09935		0.55154	-1.99322	0.04624

** Company estimate, imposed during estimation

Key:

• HDD is heating degree-days; CDD is cooling degree-days;

• January/February 2001 timing is a dummy variable, taking the value +1 in January 2001, -1 in February 2001, and zero otherwise;

• December, 2004 is a dummy variable, taking on the value one in that month/year, and zero otherwise.