

**CENTRAL MAINE POWER COMPANY
 RESPONSE TO COMPETITIVE ENERGY SERVICES' DATA REQUEST NO. 1
 DOCKET No. 2008-255**

CONFIDENTIAL

October 3, 2008

CES-01-14

- Q.** Referring to Exhibit B-2, Subsection A, for the residential kWh forecast, please provide copies in excel or other electronic format of the econometric forecast, the detailed sales projections for each of the 24 residential appliances or usage categories and the reductions in energy usage based on estimated savings from conservation programs. Please include the data sets used to perform the calculations and the specific calculations performed.
- A.** The residential sales forecast process involves two approaches. The first approach utilizes econometric equations that project the growth in residential customers and electric usage per customer. The second approach relies on projection of sales by end use (appliance), taking into consideration saturation levels and appliance efficiency trends. The two approaches are then reconciled to one another, relying upon the econometric forecast as the control. The cumulative effects of Efficiency Maine programs are then incorporated to yield the sales forecast.

There are two regression equations involved in forecasting residential kWh sales: AUSEq – forecasts average quarterly kWh use per residential customer and GAINS – forecasts the growth in the number of residential customers.

The average use equation that was estimated is as follows:

Forecast Model for AUSEq with log transform
 Regression(7 regressors, 1 lagged errors)

Term	Coefficient	Std. Error	t-Statistic	Significance
Log (RPOE[-4])	-0.189616	0.072234	-2.625032	0.989103
Log (RYP_YRCUST)	0.267911	0.141576	1.892346	0.936884
HDD	0.000077	0.000011	7.205019	1.000000
THICDD	0.000163	0.000079	2.058783	0.956277
ICESTORM	-0.045203	0.016008	-2.823811	0.993627
Log (DEBT_DPY)	0.295391	0.135272	2.183686	0.967222
_CONST	5.524218	0.647007	8.538117	1.000000
_AUTO[-4]	0.936033	0.033741	27.741722	1.000000

Marked regressors are insignificant.

Within-Sample Statistics

Sample size 70	Number of parameters 8
Mean 7.37	Standard deviation 0.1191

R-square 0.9714
 Durbin-Watson 1.93
 Forecast error 0.02126
 MAPE 0.01628
 MAD 26.5

Adjusted R-square 0.9681
 Ljung-Box(18)=33.6 P=0.9859
 BIC 40.52
 RMSE 32.99

Where,

AUSEq = Log of residential sales per customer (kWh) per quarter

RPOE[-4] = Log of the real residential class price of electricity (2000 \$/kWh), lagged four quarters

RYP_YRCUST = Log of real personal income dollars per year-round customer (thous. 2000 \$)

HDD = Number of heating degree days, Portland, ME, where $HDD = 65^\circ - \text{Average Daily Temperature}$

THICDD = Number of cooling degree days adjusted for humidity, Portland, ME, where $THICDD = \{(.4 * \text{Average Dry Bulb Temperature}) + (.4 * \text{Average Dew Point Temperature}) + 15\} - 65^\circ$

ICESTORM = Dummy variable used to account for the effect of the ice storm that CMP experienced in 1998:1 (1998:1=1, otherwise=0)

DEBT_DPY = Log of the ratio of consumer debt to disposable personal income per quarter for the U.S.

_CONST = Constant term

_AUTO[-4] = Autocorrection factor, lagged four quarters.

The equation was estimated over the historic period running from the 1st Quarter of 1988 through the 2nd Quarter of 2006. The data used to develop the equation and average use forecast are provided as Attachment 1 to this response. **This information is provided under the terms and conditions of Protective Order No. 5, Confidential Global Insight Forecast Information.**

The customer gains model is as follows:

Forecast Model for GAINS
 Regression(3 regressors, 1 lagged errors)

Term	Coefficient	Std. Error	t-Statistic	Significance
GAINS[-1]	0.841567	0.064300	13.088142	1.000000
STARTS	0.108010	0.040975	2.635974	0.989376
_CONST	0.349891	0.321363	1.088772	0.719463
_AUTO[-1]	0.397405	0.124492	3.192201	0.997767

Marked regressors are insignificant.

Within-Sample Statistics

Sample size 65	Number of parameters 4
Mean 5.974	Standard deviation 1.129
R-square 0.9463	Adjusted R-square 0.9436
Durbin-Watson 1.782	Ljung-Box(18)=31.12 P=0.9721
Forecast error 0.268	BIC 0.2953
MAPE 0.03366	RMSE 0.2597
MAD 0.1975	

Where,

GAINS = Annual change in the number of CMP residential customers (thousands)

GAINS[-1] = Annual change in the number of CMP residential customers (thousands), lagged one quarter

STARTS = Annualized number of housing starts (thousands) in Maine

_CONST = Constant term

_AUTO[-1] = Autocorrection factor, lagged four quarters.

The equation was estimated over the historic period running from the 1st Quarter of 1990 through the 2nd Quarter of 2006. The data used to develop the equation and to prepare the customer forecast are provided as Attachment 1 to this response. **This information is provided under the terms and conditions of Protective Order No. 5, Confidential Global Insight Forecast Information.**

CMP's residential end use model used to develop the Fall 2006 sales forecast is provided as Attachment 2 to this response. **This information is provided under the terms and conditions of First Revised Protective Order No. 1, Confidential Retail Customer and Market Participant Information dated August 27, 2008 and Protective Order No. 5, Confidential Global Insight Forecast Information, dated September 11, 2008.**

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Attachment(s):

1. Data file used to estimate average use and customer equations, Fall 2006
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2. CMP's residential end use model, Fall 2006 **(CONFIDENTIAL)**