BOMA INTERROGATORY #13

INTERROGATORY

Ref: Ibid, p21

Please provide copies of the model/equation used to forecast average gas use in 2018 for each of the rates 1 and 6, with explanatory note that illustrates the relative strength of each driver in the equation, eg. heating degree days, vintage (rate 1 only), employment, Ontario grid gross domestic product, vacancy rates (rate 6 only), real energy prices, and a time trend. Please describe and illustrate by, an example, the relative impact of the "time trend" EGD uses.

RESPONSE

The regression equations used by the Company to forecast average use are presented in the pre-filed evidence. Please refer to Exhibit C2, Tab 1, Schedule 3, Table 5 at pages 12 to 13 and Table 8 at pages 16 to 18, for the Rate 1 and 6 average use regression equations. Tables 4 and 7 in the same Exhibit, at pages 11 and 15 respectively present the mnemonics used in the models.

The models are in logarithmic form. The coefficients of the explanatory variables measure the change in average use resulting from a change in the explanatory variables, all else equal. The magnitude of the coefficient determines the extent of the explanatory variable's impact on the average use forecast for an equal percentage change in an explanatory variable.

Central Region - Central Weather Zone

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.62	0.80	0.43
LOG(CDD)	0.71	21.85	0.00
LOG(REALCRCRPG)	-0.02	-1.62	0.12
LOG(CEN20VINT)	0.58	8.53	0.00
LOG(CENTEMP)	0.22	2.51	0.02
DUM2008	-0.04	-3.73	0.00
R-squared	0.99		
Adjusted R-squared	0.99		
S.E. of regression	0.01		
F-statistic	645.70		0.000

Witnesses: M. Suarez
                      H. Sayyan

The table above replicates the Rate 1 Central region long run equation model presented in the pre-filed evidence. Interpretation of the explanatory variable coefficients is as follows: For example, the coefficient of REALCRCRPG- the real gas price variable (-0.02) is interpreted as follows: 1% increase in real gas price would lead to a 0.02% decline in average use for Central region Rate 1 customers assuming all other variables in the model are held constant. Similarly the coefficient of CDD-central degree days (0.71) shows that 1% increase in the Central region heating degree days would cause 0.72% increase in Central region Rate 1 average use.

This interpretation applies to all coefficients in the models except for the constant and dummy variables. The constant coefficient is just that, a constant and does not vary. The dummy variable is either 0 or 1.

Where included in a model the time trend takes on values, beginning with the value 1, to the end of the sample period. Time trend is a variable which is equal to the time index in a given year (if the sample includes years 1985-2016 then the time trend variable equals 1 for 1985, 2 for 1986 etc.). The coefficient for the time trend is interpreted in the same manner as the other coefficients (with the exception of the dummy variables and the constant). It should be noted, however, that the percentage change in the time trend decreases the longer the forecast horizon.

In both Rate 1 and Rate 6 models, it is evident that the degree day variable has the greatest impact on the average use forecast. The vintage variable for the Rate 1 models and economic variables in the Rate 6 models also have significant impacts.

Witnesses: M. Suarez
                  H. Sayyan