Hydro One Networks Inc. Interrogatory # 1

Please provide case citations in which Ramsey pricing has been adopted either by a Canadian regulatory agency, or (2) by any regulatory agency with respect to pricing of transmission services.

Response

The genesis of Ramsay Pricing is the minimization of dead weight loss. In other words, Ramsay pricing is considered to be efficient because it minimizes dead weight loss. There are many instances of Canadian economic policy that are directed towards the minimization of dead weight loss. The recent harmonization of the federal and provincial sales taxes in Ontario is a good example. As a result, most commodities are now similarly taxed, which prevents artificial substitution (and deadweight loss) because one commodity is taxed, while others are not. Another example stems from Canadian competition policy towards mergers, which simply treats losses to consumers and gains to producers (through higher prices) as a transfer, therefore giving equal weight to all economic agents: consumers and producers. Whether a merger is considered to be beneficial to society is evaluated through a comparison of the magnitude of dead weight loss and corresponding efficiencies.

The theoretical approach developed by Ramsey (as described in his seminal paper of 1927) has evolved and found application across a broad range of regulation and rate design. While perhaps not referred to as Ramsey Pricing per se, his theory of optimal taxation, i.e., that fixed or sunk costs are best recovered in inverse proportion to demand elasticity, and as represented by demand-based rates, is implicit in much of the work of regulators in Canada and abroad. There are numerous examples in Ontario, where the theory originating with Ramsey underlies the justification for rate design, including in rates approved for Hydro One Networks Inc.

Hydro One Networks Inc. Interrogatory # 2

Please explain how the numerator in Equation 1, appearing on page 5 of 14 of the AMPCO Evidence, is calculated.

Response

With the typographical correction noted in our response to Board Staff IR #4, the equation is self-evident.

For clarity, and as described in our response to CME IRR #1 (a), the peak demand factor for a customer is calculated as follows:

"The peak demand factor for each Class A consumer will be calculated according to that consumer's percentage contribution to overall system demand during the five peak hours identified by the IESO. This factor will be determined in order to identify a proportionate share of the total global adjustment cost to be allocated to each Class A consumer. For example, if a Class A consumer is assessed to be responsible for 1% of peak demand during the reporting period, that consumer will be allocated 1% of the total system-wide global adjustment cost throughout the subsequent billing period."

Hydro One Networks Inc. Interrogatory # 3

Please provide the results of the econometric estimation of Equation 2 on page 12 of 14 of the AMPCO Evidence, including estimated coefficients and goodness of fit and other summary statistics.

Response

The summary statistics are provided below:

Regression Statistics	
Multiple R	0.960
R Square	0.922
Adjusted R Square	0.921
Standard Error	5.703
Observations	156

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	58828.050	29414.025	904.475	0.000
Residual	153	4975.645	32.521		
Total	155	63803.695			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	160.558743	7.879859	20.375839	0.000000	144.991370	176.126117
AQEW	-0.014736	0.000905	-16.275129	0.000000	-0.016525	-0.012948
$(AQEW)^2$	0.000001	0.000000	20.560481	0.000000	0.000000	0.000001

Hydro One Networks Inc. Interrogatory # 4

With reference to Figure 2 on page 13 of 14 of the AMPCO Evidence.

a) Does this chart plot the results of an econometric estimation of an equation? If so, please provide the equation that was estimated.

b) If this is the result of an estimation, please specify what data set was used and for what time frame.

c) Please provide the results of the estimation including estimated coefficients and goodness of fit and other summary statistics.

Response

a) Yes, the equation is $Loss = \beta_0 + \beta_1 * AQEW + \beta_2 * (AQEW)^2 + u$

b) Hourly Ontario demand and AQEW from January 2004 through July 2010

c) The summary statistics are provided below:

Regression Statistics	
Multiple R	0.988
R Square	0.976
Adjusted R Square	0.975
Standard Error	25.861
Observations	156

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	4102968.772	2051484.386	3067.519	0.000
Residual	153	102322.792	668.776		
Total	155	4205291.564			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	357.709752	35.733863	10.010386	0.000000	287.114279	428.305224
AQEW	-0.027956	0.004106	-6.808383	0.000000	-0.036068	-0.019844
$(AQEW)^2$	0.000002	0.000000	15.477582	0.000000	0.000002	0.000002