Vulnerable Energy Consumers Coalition ("VECC") Interrogatory # 1

Reference: Page 3

a) What evidence is there that the peak/off-peak price differentials for HOEP needs reinforcement and do not already properly reflect, or perhaps even overstate, the relative value of electricity (the commodity) in the peak and off-peak periods?

b) Please respond to part (a) also taking into consideration the recent changes in the allocation and recovery of the Global Adjustment (per page 7, footnote #7) and the resulting impact on peak/off peak price differentials.

Response

a) The Hourly Ontario Energy Price provides an index of marginal generation cost in Ontario, i.e., variable fuel cost. It does not necessarily represent either the short- or long-run marginal cost of electricity in Ontario, either on- or off-peak. The existence of the Global Adjustment provides strong evidence of this. The HOEP (or variation between peak- and off-peak) provides no indication of other electricity costs associated with on- and off-peak demand.

   The discussion of more policies intended at encouraging less on-peak consumption suggests that the current market based signals are insufficient to ensure that consumption is at socially efficient levels. Alternatively, the fact that residential consumption is currently subsidized results in inefficient levels of consumption.

b) AMPCO has insufficient information regarding the "recent changes" referred to above. We note, also, that these changes are proposed and not yet made.

Vulnerable Energy Consumers Coalition ("VECC") Interrogatory # 2

Reference: Page 3

a) Please confirm that the referenced quotes by Kahn and Lewis are both dealing with circumstances where the amount of capacity costs incurred is driven by the peak demand for the assets concerned.

Response

We cannot confirm this. The quote by Lewis, in Bonbright, makes reference to "the standing costs of the undertaking" but doesn't specify what undertaking. The Kahn quote refers to an economic principle dealing broadly with the allocation of common costs and suggests that these costs be levied on the basis of a customer's contribution to peak demand. Both quotes imply circumstances in which the determination of long run capacity needs, which drives capacity costs (as referred to in the question), is related to a forecast of peak demand over time, as is the case with Hydro One's network assets.

Vulnerable Energy Consumers Coalition ("VECC") Interrogatory # 3

Reference: Pages 3-4

a) Please confirm that the Ramsey Pricing rule regarding increasing prices in inverse proportion to demand elasticities:
   - Assumes that the total revenues to be recovered exceed those derived based on marginal cost pricing, and
   - Assumes the "increases" are relative to the prices that would exist if based on marginal costs.

Response

We do not agree. Ramsey's theory was initially constructed as an approach to optimal taxation, i.e., the most efficient way to levy taxes to recover costs, including costs for social services, national defense, etc., where marginal cost pricing has no practical application.

Examples described in Kahn and Viscusi (see excerpts attached in our responses to Board Staff IRs) describe circumstances of declining marginal costs (i.e., in the presence of economies of scale), but these circumstances do not necessarily need to be present to justify an application of Ramsey's theory.

The Ramsey result is flexible and holds for a certain fixed amount of recoverable revenue that does not have to be correlated with marginal cost pricing. For a simple derivation please see p. 410 of Microeconomic Analysis by Hal Varian, Third Edition (1992).

Vulnerable Energy Consumers Coalition ("VECC") Interrogatory # 4

Reference: Page 4

a) With respect to the OEB's statutory objectives, what does AMPCO consider to be the "consumer interests with respect to prices" that the OEB should be protecting?

b) Is "encouraging efficiency in the use of electricity" the only objective that should be considered in determining Network charges? If not, what other objectives/principles need to be taken into account?

Response

a) In AMPCO's view, protecting consumers' interests with respect to pricing relies on the promotion and achievement of efficiency in generation, transmission and distribution, and in promoting and achieving efficient demand management. If potential efficiencies are not realized, consumers' interests are unjustly and unreasonably harmed.

b) No. As we set out in our submission, we believe it is the totality of and interaction among the Board's statutory objectives and authorities that provides the legal framework for the Board's decision-making.

Vulnerable Energy Consumers Coalition ("VECC") Interrogatory # 5

Reference: Page 5 and Attachment 1, page 9

a) Please reconcile the discussion on page 5 which suggests the summer peak period starts in July with Dr. Sen's analysis which identifies (page 9) the months May through August as the summer peak period.

b) Based on 2008 data, what were the 5 highest peak days of demand in Ontario? Note: 2008 was chosen as this is identified in Attachment 1 (page 5) as the most recent year of publicly available data used in AMPCO's analysis.

c) Where these 5 days also the 5 highest peak days in each of region of Ontario (as defined by the IESO)? If not, what were the 5 highest peak days in each region in 2008?

Response

a) Dr. Sen chose data from May through August to estimate elasticities. AMPCO proposes a 12 month billing period starting in July of each year.

b)

Date	Ontario	Northwest	Northeast	Ottawa	East	Toronto	Essa	Bruce	Southwest	Niagara	West
Jun 09	**24,001**	626	1,345	1,623	1,559	9,177	1,285	65	4,705	929	2,687
Jul 07	**23,136**	622	1,318	1,693	1,494	8,515	1,323	68	4,645	877	2,581
Jul 08	**23,224**	682	1,371	1,720	1,483	8,812	1,213	53	4,504	870	2,516
Jul 16	**23,194**	687	1,208	1,552	1,328	8,620	1,316	79	4,734	894	2,776
Jul 17	**23,622**	687	1,205	1,582	1,415	8,782	1,390	72	4,726	926	2,837
Total	**117,177**	3,304	6,447	8,170	7,279	43,906	6,527	337	23,314	4,496	13,397

c)

Ontario	Northwest	Northeast	Ottawa	East	Toronto	Essa	Bruce	Southwest	Niagara	West
Jun 09	Jan 31	Jan 03	Jan 03	Jan 03	Jun 09	Jan 02	Mar 25	Jun 09	May 10	Jun 25
Jul 07	Feb 10	Jan 30	Jan 21	Jun 09	Jul 08	Jan 03	Mar 26	Jul 07	Jun 09	Jul 16
Jul 08	Feb 11	Feb 11	Feb 11	Jun 10	Jul 09	Feb 11	Mar 27	Jul 08	Jul 17	Jul 17
Jul 16	Dec 16	Feb 15	Feb 12	Sep 02	Jul 16	Feb 12	Nov 21	Jul 16	Jul 18	Aug 05
Jul 17	Dec 19	Dec 21	Dec 19	Sep 03	Jul 17	Dec 22	Dec 10	Jul 17	Aug 05	Sep 03

Ontario	Northwest	Northeast	Ottawa	East	Toronto	Essa	Bruce	Southwest	Niagara	West
24,001	837	1,771	2,008	1,514	9,228	1,548	199	4,740	925	2,737
23,136	849	1,753	1,982	1,607	8,812	1,543	209	4,645	943	2,793
23,224	847	1,764	1,996	1,550	8,812	1,554	158	4,608	929	2,837
23,194	839	1,782	2,054	1,546	8,636	1,538	182	4,734	916	2,816
23,622	847	1,781	1,997	1,536	8,804	1,522	154	4,726	906	2,763
117,177	4,219	8,851	10,037	7,753	44,292	7,705	902	23,453	4,619	13,946

Vulnerable Energy Consumers Coalition ("VECC") Interrogatory # 6

Reference: Page 6

a) What is the marginal (avoided) cost of Network transmission service?

b) What is the per kW charge that a customer will avoid for each kW shifted from the "peak hour" for all 5 of the highest peak load days?

c) Is congestion associated with the time of system peak demand or with timing of peak demand in specific areas/regions of Ontario?

Response

a) It is the cost of capacity needed to supply the marginal increment of demand.

b) It depends on the revenue requirement approved by the Board and the charge determinant developed by Hydro One subject to approval by the Board.

In 2007, when the network charge determinant was $2.31 per kW-month, the equivalent critical peak charge determinant would be $27.72 per kW-year.

c) AMPCO asked Hydro One to provide information and analysis which might answer this question (in Exhibit I, Tab 9, Schedule 68, part B). Hydro One responded (via Power Advisory): "We don't have specific examples." And "Power Advisory has not performed such an analysis."

Vulnerable Energy Consumers Coalition ("VECC") Interrogatory # 7

Reference: Page 8, lines 18-21

a) Please explain why the anticipated evidence from leading industrial customers was not pre-filed with the OEB by the required deadline so that other parties could have an opportunity to consider it prior to their appearance.

b) Please file this "evidence" in conjunction with the interrogatory responses.

Response

Submissions to support direct testimony of AMPCO members will be filed as necessary at the appropriate time.

Vulnerable Energy Consumers Coalition ("VECC") Interrogatory # 8

Reference: Page 11

a) The discussion in the first paragraph suggests that generators with Clean Energy Supply contracts are expected to operate in low market (HOEP) price hours even when price may not cover the cost of gas. Please reconcile and provide more details on precisely how the monthly revenue requirement and the imputed market revenues are determined.

b) Isn't the purpose of the gas-fired generation to meet demand during high load periods? Please reconcile the discussion in the second paragraph with the role of gas-fired generators.

Response

a) No. This is not the case. The CES contracts are structured to as to compensate generators for monthly revenue requirements net of imputed market revenues taking into account the price of electricity (HOEP), the price of natural gas (Dawn Daily Index) and the deemed facility heat rate. CES generators explicitly are not expected to run when the spark spread indicates it would be uneconomic to do so.

b) The structure of the CES contracts is designed to provide incentives for generators to operate when it should be economic to do so and to not operate when it should not be economic. The design is based on factors we describe in answer (a) above. System demand is irrelevant to this calculation except to the extent that high demand is strongly correlated with high price. We note, however, that high prices can occur during periods when demand is not high as a result of supply contingencies. In these instances, if the spark spread indicates that generation would be economic as a result of high prices, the CES contract generators would be deemed to operate.

Vulnerable Energy Consumers Coalition ("VECC") Interrogatory # 9

Reference: Page 12

a) Is Figure 1 a conceptual presentation of the relationship or is it based on actual data? If based on actual data, please indicate the year(s) and source.

b) Please provide a graph that plots HOEP versus demand for the most recent year available.

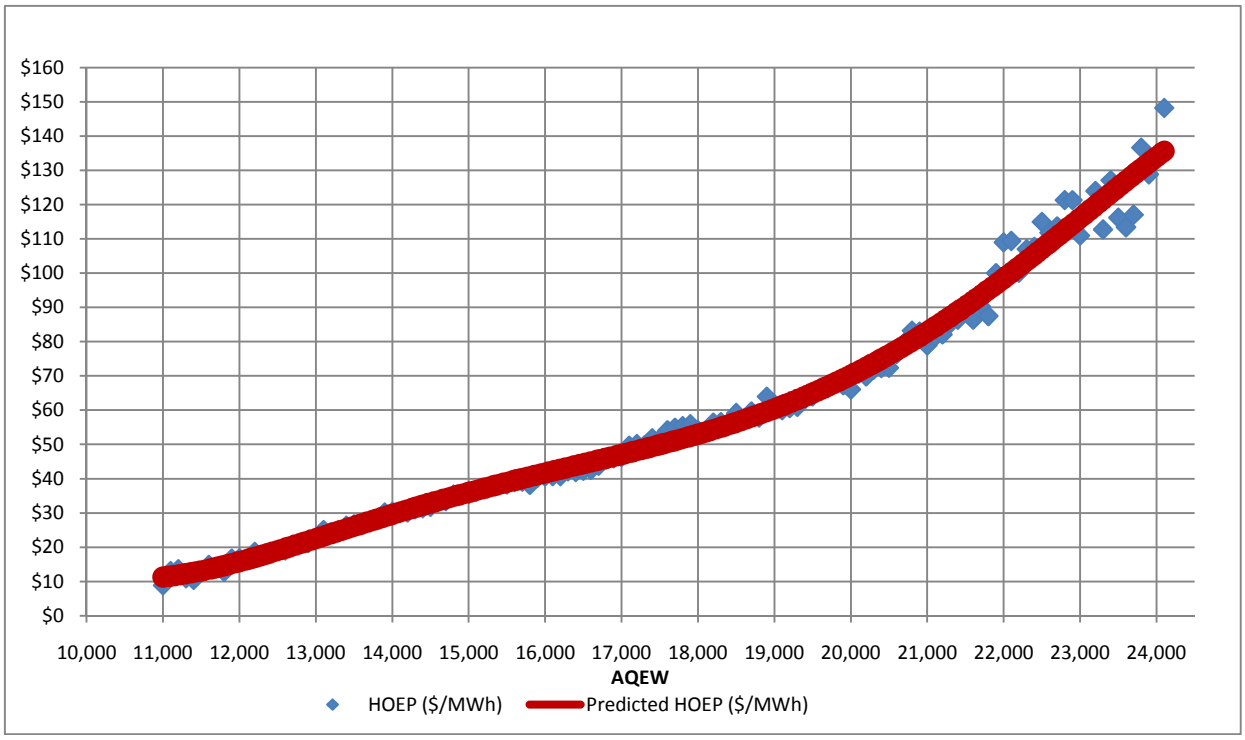
c) Please provide a graph that plots the Global Adjustments versus demand for the most recent year available and indicate the basis/source for the hourly GA values.

Response

a) The figure is based on the actual supply mix during the period from January 2004 to July 2010 together with assumptions about contract structure and unit cost. The purpose is to generalize the total unit cost of energy in current market. All data is publicly available from the IESO.

Prescribed Hydro	Prescribed Nuclear	BRUCE Power	NUG	CES	Renewable Wind	Renewable Hydro	Other Contracted Hydro
36.66	54.98	75.25	72.33	187.48	85.85	85.85	80.00

b)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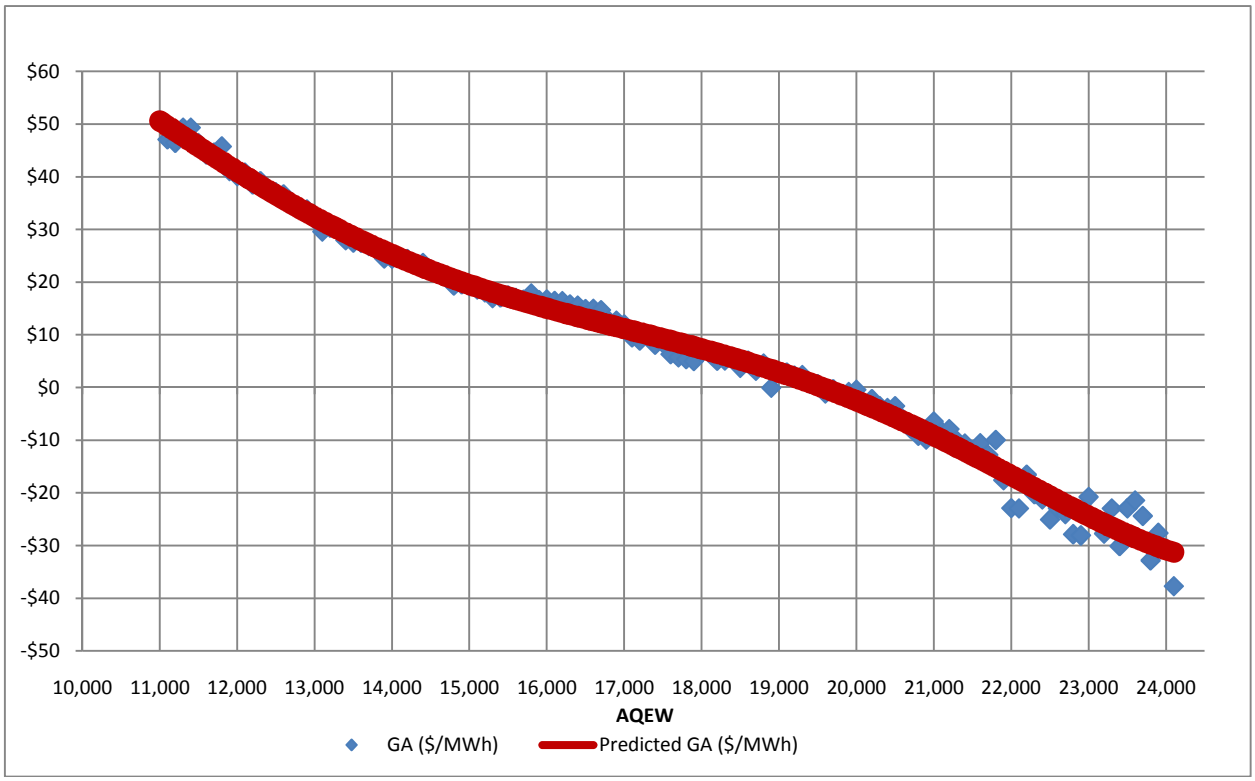
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AQEW
GA ($/MWh)
Predicted GA ($/MWh)

Vulnerable Energy Consumers Coalition ("VECC") Interrogatory # 10

Reference: Page 14

a) The first paragraph state that "the design would reward only those customers who participate and only to the extent they succeed in reducing their demand during critical peaks". Is it not the case that some industrial customers benefit from the change in the design of the network charge determinant even if they do not change their demand? If not, please explain why.

Response

The removal of the cross-subsidy inherent in the existing rate design would reduce charges for customers with relatively lower demand during on-peak hours.

Vulnerable Energy Consumers Coalition ("VECC") Interrogatory # 11

Reference: Page 14

a) The second paragraph appears to suggest that all customers will be better off as a result of the change in the network charge determinant design. Please confirm whether or not this is the intended conclusion. If yes, please demonstrate how this is the case for a customer who will a) experience an increase in cost of network service as a result of the change in charge determinant and b) has a limited scope to reduce demand at the time of system peak.

Response

AMPCO believes it is likely that all customers will benefit from more efficient rate design and the removal of cross-subsidies inherent in the existing rate design. We do not accept the proposition that there are customers or classes of customers who have no scope to modify their consumption behavior so as to reduce energy costs. To the extent that improving the rate design sends efficient price signals to customers, thus appropriately informing customers of the cost consequences of their consumption decision, customers will make better decisions and all customers will be better off for it.

Vulnerable Energy Consumers Coalition ("VECC") Interrogatory # 12

Reference: Attachment, page 2

Preamble: The second paragraph states that the current system for network charges provides little incentive for efficient Time of Use demand management for shifting consumption from peak to off peak hours.

a) Please explain what is meant by "efficient".

b) Please explain the definition of "peak" and "off peak" as used in this statement.

Response

a) Efficient means reflecting true marginal value and social cost.

b) Peak and off-peak refer broadly to consumption during day-time peak periods and evening and weekend off-peak periods.

Vulnerable Energy Consumers Coalition ("VECC") Interrogatory # 13

Reference: Attachment, pages 2-3

Preamble: The last paragraph on page 2 concludes that AMPCO's proposal will lead to "more efficient demand shifting through reduced demand during peak hours".

a) Please clarify how peak hours are defined within the context of this statement.

b) Does the same definition of peak hours apply to the term as used in the first full paragraph on page 3?

c) Please confirm that AMPCO's proposal incents customers to reduce demand during the anticipated times of system peak (i.e., the peak hour of the five highest demand days).

d) Please confirm that AMPCO's proposal does not necessarily induce customers to shift to the off-peak period as defined on page 13 (i.e., a customer could avoid the times of system peak (as defined by the AMPCO proposal) by shifting demand to other hours within the peak period as defined for Dr. Sen's analysis). If this is not the case, please explain why.

Response

a) Peak and off-peak refer broadly to consumption during day-time peak periods and evening and weekend off-peak periods.

b) Yes.

c) Yes.

d) Yes.

Vulnerable Energy Consumers Coalition ("VECC") Interrogatory # 14

Reference: Attachment, page 4

a) Please confirm that the definition of "peak" hours as used in Dr. Sen's analysis is 7:00 am to 6:59 pm. If not, what was the definition used?

b) Please explain why the analysis by Dr. Sen did not use a definition of the "peak period" consistent with AMPCO's proposal regarding the design for the network charge determinant.

Response

a) Yes.

b) The purpose of the study was to replicate the analysis submitted by AMPCO in EB-2008-0272, to reaffirm the validity both the findings in the earlier study and the appropriateness of the methodology employed. The study finds empirical evidence to confirm the hypothesis that industrial customers will reduce demand during peak periods in response to high prices during peak periods, and further that industrial customers will increase demand in off-peak periods in response to high prices in the previous peak period.

Vulnerable Energy Consumers Coalition ("VECC") Interrogatory # 15

Reference: Attachment, page 13

a) Based on the commentary in the second paragraph is it reasonable to assume that industrial customers will shift their demand between period hours in response to anticipated differences in price? If not, why not?

b) Are there conceptual or estimation issues with assuming consumption is a function of average prices during the peak and off peak periods, if the prices within the specific peak and off peak periods vary significantly on an hourly basis? If not, please explain why?

Response

a) Based on current econometric evidence, there is shifting. Any policy that yields a positive marginal benefit to the economic agent or consumer will induce shifting.

b) There are no conceptual issues. Smoothing the prices through averages merely reduces the volatility and offers a more conservative estimate of the relationship between demand and price.

Vulnerable Energy Consumers Coalition ("VECC") Interrogatory # 16

Reference: Attachment, page 19

a) Please provide an electronic file that sets out the hourly HOEP and the corresponding electricity prices from New York for the same hour for 2008 (or the most recent for which data was obtained for purposes of the analysis).

Response

Please see attached spreadsheets:

N1-4-16_attach 1_Day_Ahead_NYISO_Reference_LBMP_2008
N1-4-16_attach 2_Real_Time_NYISO_Reference_LBMP_2008

Vulnerable Energy Consumers Coalition ("VECC") Interrogatory # 17

Reference: Attachment, page 22 and Tables 7 & 8

a) Are the coefficients determined for Ontario Demand for the peak and the off-peak periods significantly different (in "statistical" terms) from each other?

Response

Visual observation does suggest a difference. Unfortunately, it is not possible to conduct a statistical t or F test as these coefficient estimates are from separate regressions.