February 19, 2010

BY EMAIL & COURIER

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
2300 Yonge St, Suite 2701
Toronto ON M4P 1E4

Dear Ms. Walli:

Board File No. EB-2009-0265
Haldimand County Hydro Inc. – 2010 Cost of Service Application
Argument of Energy Probe

Pursuant to Procedural Order No. 4, issued by the Board on February 10, 2010, please find attached two hard copies of the Argument of Energy Probe Research Foundation (Energy Probe) in the EB-2009-0265 proceeding for the Board's consideration. An electronic version of this communication will be forwarded in PDF format.

Should you require additional information, please do not hesitate to contact me.

Yours truly,

David S. MacIntosh
Case Manager

cc: Lloyd Payne, Haldimand County Hydro Inc. (By email)
James C. Sidlofsky, Borden Ladner Gervais LLP (By email)
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Interested Parties (By email)

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EB-2009-0265

IN THE MATTER OF the *Ontario Energy Board Act, 1998*, S.O. 1998, c. 15, (Schedule B);

AND IN THE MATTER OF an application by Haldimand County Hydro Inc. for an order approving just and reasonable rates and other charges for electricity distribution to be effective May 1, 2010.

ENERGY PROBE RESEARCH FOUNDATION
("ENERGY PROBE")

ARGUMENT

February 19, 2010

HALDIMAND COUNTY HYDRO INC.
2010 RATES

EB-2009-0265

ARGUMENT OF ENERGY PROBE RESEARCH FOUNDATION

A - INTRODUCTION

This is the Argument of the Energy Probe Research Foundation ("Energy Probe") related to the setting of 2010 rates for Haldimand County Hydro Inc. ("HCHI") effective May 1, 2010.

This Argument is limited to the unsettled issues as identified in Appendix A to the Settlement Agreement dated February 12, 2010. Where possible, Energy Probe has used the Settlement Agreement appendices as references to figures as the currently stand as a result of the settled issues.

B – REQUIREMENT FOR A LEAD/LAG STUDY

HCHI has forecasted its working cash allowance using the "15% of specific OM&A accounts formula approach" included in the Board's Updated Filing Requirements dated May 27, 2009 (Exhibit 2, Tab 4, Schedule 1, page 1). HCHI has not undertaken a lead/lag study (VECC Interrogatory #4), nor does it know what the cost of such a study would be (VECC Interrogatory #28).

Energy Probe submits that it has concerns with the appropriateness of the standard 15% formulaic approach used to calculate the working capital allowance. This approach dates back to the prior regulation of municipal distributors by the former Ontario Hydro. The electricity industry has undergone significant restructuring since that time. Rates have been unbundled, distributors have been incorporated into for profit businesses and competition has been introduced in generation, to mention just a few. Customers can now pay their electricity bills on-line. In the near future further changes are expected including smart metering and time-of-use pricing. All of these changes have had or will have impacts on the cash working capital requirements for all distributors.

Energy Probe submits that the Board should direct HCHI to undertake a lead/lag study in time for its next rates rebasing cost of service application. As shown in Appendix C of the Settlement Agreement, the 2010 test year working capital allowance is $5,460,259 and represents approximately 13.6% of the total rate base. This means that a one percentage point change in the 15% factor currently used to estimate rate base is equivalent to more than $360,000 in rate base and represents more than 0.9% of total rate base.

In other words, even a relatively small change in the level of the working capital allowance has a significant impact on rate base and the resulting revenue requirement.

Energy Probe notes that the Board has expressed concerns about the potential costs to prepare a lead/lag study for distributors with a small working capital requirement and that the cost of an individual study may exceed any adjustment that might result.

Energy Probe notes that the revenue requirement impact of the current working capital allowance will factor into rates not only in the current cost of service year of 2010, but also in the subsequent 3 years under IRM. As a result, the Board should compare the potential cost of a lead/lag study to the impact on the revenue requirement, multiplied by a factor of 4.

Energy Probe further submits that the costs of a lead/lag study should not be significant. Most of the information required to prepare a lead/lag study is based on invoice dates for payments made by the distributor and when payment is received from customers relative to when their meter was read. As a result, this information can be obtained using internal resources.

Energy Probe further submits that the Board may want to hold a workshop and/or publish a generic methodology on how a distributor can complete their own lead/lag study with minimal external costs.

If the Board remains concerned with the potential costs associated with a full lead/lag study, then Energy Probe submits that a lead/lag study should be undertaken for the cost of power component of the working capital calculation. As shown in Appendix D to the Settlement Agreement, the power supply expenses (including commodity costs, transmission costs, rural rate assistance and wholesale market service costs) accounts for approximately 80% of the total working capital allowance. A review of these expenses, at a minimum, should be undertaken because of their significant impact on rates.

C - COST OF CAPITAL

The EB-2009-0084 Report of the Board on the Cost of Capital for Ontario's Regulated Utilities dated December 11, 2009 indicates that the result of the Report is Board policy and that the process was not a hearing process that did not, and indeed could not, set rates. The Report goes on to state that the refreshed cost of capital policies will be considered through rate hearings for the individual utilities, at which it is possible that specific evidence may be proffered and tested before the Board. Specifically, the Report states:

> *"Board panels assigned to these cases will look to the report for guidance in how the cost of capital should be determined. Board panels considering individual rate applications, however, are not bound by the Board's policy, and where justified by specific circumstances, may choose not to apply the policy (or a part of the policy)."* (Page 13)

Energy Probe submits that based on the December, 2009 Report of the Board and the evidence on the record in this proceeding there are two adjustments that Board should make to the cost of capital for the distributor. The first of these adjustments relates to the deemed capital structure and the second relates to the allowed return on equity.

a) Deemed Capital Structure

Short-term debt was not factored into electricity distribution and transmission rate-setting prior to 2008. As part of the December 20, 2006 Report of the Board on Cost of Capital and 2nd Generation Incentive Regulation for Ontario's Electricity Distributors, the Board adopted a deemed short-term debt component of 4% of the capital structure. As part of that Board Report, the Board stated:

> *"As a general principle for ratemaking purposes, the Board believes that the term of the debt should be assumed to be similar to the life of the assets that are to be acquired with that debt. This suggests that, in theory, for an industry with long-lived assets, the majority of debt should be long-term. However, in reality, some short-term debt is a suitable tool to help meet fluctuations in working capital levels."* (Page 10)

As noted in the December, 2009 Report of the Board, capital structure was not a primary focus of the consultation. The Board determined that the split of 60% debt and 40% equity is appropriate for all electricity distributors (page 50). The Board did not explicitly state that the 60% debt component of the capital structure should remain at 56% long term debt and 4% short term debt, although Table 2 provided in the Summary section of the Board Report reflects the continuation of these figures.

Energy Probe submits that the evidence in this proceeding indicates that the 4% deemed level of short-term debt is not reasonable and that the incremental costs imposed on ratepayers by this are neither just nor reasonable.

Energy Probe agrees with the Board's comments provided in the December, 2006 Report of the Board that the term of the debt should mirror the life of the assets that the debt is used to finance. By its very nature, equity is long-term financing. This leaves the mix of long-term and short-term debt to be used to provide an appropriate balance within the capital structure to reflect the actual mix of assets being financed.

As noted by the Board in the December, 2006 Report, short-term debt is a suitable tool to help meet the fluctuations in working capital levels. As explained in Exhibit 2, Tab 4, Schedule 1, the working capital allowance has been calculated using the 15% factor. This effectively represents in average lag of 54.75 days between when a distributor pays its expenses and when they collect revenue from the customers. This reflects the short-term nature of the working capital.

As illustrated in Appendix C of the Settlement Agreement, the working capital allowance component of rate base in 2010 is $5,460,259. This represents 13.6% of the total rate base of $40,157,330. Table 1 of Exhibit 2, Tab 1, Schedule 1 illustrates that the level of the working capital allowance been very stable over the last several years. Over the 2006 through 2009 period, the level of the working capital allowance has ranged from $5.14 million to $5.37 million. On a percentage of total rate base, the working capital allowance has ranged from a low of 13.8% to a high of 15.1% over this period.

At the same time, using the 4% deemed shot-term debt component to finance total rate base, the deemed amount of short-term debt is only $1,606,293 in 2010 (calculated as 4% of $40,157,330 total rate base shown in Appendix C of the Settlement Agreement). The resulting shortfall in deemed short-term debt in 2010 as compared to the working capital level is $3,853,966.

Energy Probe submits that this mismatch between the level of deemed short-term debt and the working capital level included in rate base is not appropriate. The distributor is effectively financing short term assets through long-term debt. This means that ratepayers are being asked to pay long-term interest rates on short-term assets.

The impact on the revenue requirement of this unjustified mismatch can be calculated based on the difference between the long-term and short-term interest rates as shown in Appendix G of the Settlement Agreement and Exhibit 5, Tab 1, Schedule 2, page 4. In particular, the following table utilizes the agreed upon long-term debt rate of 5.13% and the short-term debt rate of 1.33%.

	2010
Long-term Debt Rate	5.13%
Short-term Debt Rate	1.33%
Difference	3.80%
Deemed Shortfall	$3,853,966
Interest Cost Impact	$146,450

Energy Probe is aware that the differential between the long-term and short-term interest rates is likely to be substantially less than that shown in the above table, based on the methodology to be used as described in the Board's December, 2009 Report to determine the deemed short-term debt rate. Even if the difference in the rates is only 2.5% the interest cost impact is more than $96,000. This amount represents a significant proportion of the total revenue requirement of just over $12.2 million (Appendix B of the Settlement Agreement). This additional cost needs to be considered not only in the current test year, but also in the three subsequent IRM rate years. Over the four year period, ratepayers will be required to pay more than $384,000 more than they should.

As noted above, the distributor is effectively financing a significant portion of short-term assets with long-term financing at a higher rate. It has a significantly different level of short term working capital levels in relation to rate base than a deemed short-term debt component of 4% would imply.

Energy Probe submits that it is neither just nor reasonable for the Board to expect ratepayers to pay long-term interest costs to finance short-term assets. This is no more appropriate that if the distributor applied a high depreciation rate associated with computer software to a long lived asset such as poles that should have a low depreciation rate. In both cases the resulting revenue requirement is artificially inflated.

As noted earlier, the Board, in its December, 2009 Report indicated that panels assigned to individual utility rate cases are not bound by the Board's policy where justified by specific circumstances. Energy Probe submits that the evidence is clear. A 4% deemed short-term debt component is not appropriate when the distributor has a short-term asset component of rate base of more than 14%.

It should be noted that the distributor has actual and forecasted long-term debt of $16,591,305 (Appendix G of Settlement Agreement), while the deemed long term debt is more than $22,488,105 million (calculated as 56% of $40,157,330 total rate base shown in Appendix C of the Settlement Agreement). The difference between the deemed long-term debt and the level of actual long-term debt is $5,896,800. If a portion of this amount of deemed long-term debt equal to the shortfall between the deemed amount of short term debt and the working capital allowance component of rate base was simply classified as short-term debt, the short-term debt component of rate base would increase to 13.6%, much more in line with the level of short term assets in rate base. Based on a 2.5% differential in rates, this would reduce the revenue requirement by more than $96,000 and reduce rates by this amount in the following three years.

Equally important, it should also be noted that moving the difference between the deemed long-term debt and the actual level of long-term debt to short-term debt has no negative impact on the distributor since it does not have an actual cost associated with the unfunded long-term debt to recover.

Finally, Energy Probe notes the Board's comments at page 52 of its December, 2009 Report:

> *"The Board wishes to emphasize that the long-term debt guidelines relating to electricity distribution utilities are expected to evolve over time and are expected to converge with the process used by the Board to determine the amount and cost of long-term debt for natural gas distributors."*

Energy Probe submits it is time for the evolution to begin.

b) Allowed Return on Equity

The Board has determined a methodology to determine the return on equity as part of the December, 2009 Board Report. Based on this methodology and based on the September, 2009 information the return on equity would be 9.75%. This figure will be updated by the Board based on January, 2010 information.

The Board determined the 9.75% figure based on a long term Government of Canada bond yield of 4.25% and an initial equity risk premium of 550 basis points. This equity risk premium includes an implicit 50 basis point for transactional costs (page 37 of the December, 2009 Report). This is the same amount included in the equity risk premium as determined in the Board's December, 2006 Report. In that Report the Board noted that it would continue to include an implicit premium of 50 basis points for floatation and transaction costs. The Board further noted that this inclusion had been the case ever since the Board first introduced the premium in the early 1990s.

Flotation costs of capital are applicable in cases where a particular distributor releases some new stocks in the market or if it issues debt. These costs generally consist of charges for underwriters, commissions to be paid to brokers, legal fees and cost of administration.

Based on a rate base of $40,157,330 shown in Appendix C to the Settlement Agreement and the deemed equity component of 40%, the common equity forecast for 2010 is $16,062,932. Based on this figure, the 50 basis point allowance for the floatation and transactional costs represent a significant amount of the revenue requirement. This cost amounts to $80,315 and when grossed up for taxes using the marginal rate of 29.48% shown in Table 2 of Appendix F to the Settlement Agreement is nearly $114,000.

Energy Probe submits that inclusion of the implicit 50 basis points for transactional costs is not appropriate for this distributor. There is no evidence to support that the distributor expects to incur any floatation or transaction costs in the test year. There simply is no evidence to suggest that this distributor will incur any of these costs.

As noted above, the inclusion of some provision for floatation or transactional costs in the equity risk premium component of the return on equity has been long standing at the Board, and indeed, at other regulators across North America. Energy Probe submits that distributors that have such costs should be able to recover them. Energy Probe makes no comments as to whether an allowance of 50 basis points is appropriate, is too high, or is too low. In any case, that is irrelevant in the current situation.

The evidence in this proceeding is that the cost for this distributor is $0.

As noted earlier in the submissions on the capital structure, the Board panel assigned to individual utility rate cases are not bound by the Board's policy where justified by specific circumstances.

Energy Probe submits that the evidence is clear. The specific circumstance in this case is that there are no floatation or transaction costs associated with equity that needs to be recovered from ratepayers.

The Board should not, indeed cannot, allow a distributor to recover costs that the Board knows do not exist. To do so would not result in just and reasonable rates.

The Board would not allow a distributor to include a capital expenditure that it knew would not take place in the test year to be added to rate base. The Board would not allow a depreciation expense to be included in the revenue requirement if that depreciation expense was calculated on an asset that did not exist. The Board would not allow an OM&A expense to be included in the revenue requirement if the evidence indicated that the money would not be spent or the addition to staff was not going to take place. The Board would not allow a cost of debt of 6% if the evidence indicates that the forecasted cost of debt for the test year is 5.75%. Why would the Board allow recovery of any cost that the evidence clearly indicates does not exist?

Energy Probe submits that it would be grossly unfair to ratepayers to expect them to pay for equity-related costs that do not clearly do no exist.

Energy Probe also submits that this would be unfair to other distributors that do have floatation and transaction costs. In the case of such a distributor, it would earn 9.75% on its deemed equity and some portion of that would be related to costs that were actually incurred. If the 50 basis points is appropriate and accurate allowance, then the shareholder effectively earns an after cost return on equity of 9.25%. The shareholder of the distributor that has no such costs, however, is allowed to earn an after cost return on equity of 9.75%.

Energy Probe submits that the Board should not discriminate on this basis. Shareholders of all distributors should be allowed the opportunity to earn the same after cost return on equity.

D- THE HARMONIZED SALES TAX

a) The Impact

The provincial sales tax ("PST") and the goods and services tax ("GST") have been combined into a harmonized sales tax ("HST") effective July 1, 2010. The PST is included as part of the expense included in an OM&A expense and as part of the cost of capital expenditures. This is different from the GST. The GST is not included as part of the cost of an OM&A expense or as part of the cost of a capital expenditure. The GST paid by a utility is a credit that is used an offset to the amount of GST collected. The difference between the amount collected and amount paid is remitted to the government.

The HST will operate in a similar manner to the GST. The effect of this change for businesses will be a reduction in OM&A expenses and capital expenditure costs related to the PST.

Energy Probe submits that it is important that ratepayers receive the benefit of the lower costs for businesses associated with the elimination of the PST, in line with the policy of the Government of Ontario.

b) The Quantification Issue

In response to Energy Probe Interrogatory #1, HCHI has indicated that it has not made any adjustments to the OM&A or capital expenditure forecasts for 2010 to reflect the removal of the PST as of July 1, 2010. HCHI was not able to provide an estimate of the amount of PST paid on OM&A or capital expenditure costs in 2006 or 2009. Nor was HCHI able to provide an estimate of the PST related costs included in the 2010 forecasts.

Energy Probe submits that both the OM&A expense forecast and the capital expenditure forecast for 2010 should be reduced to reflect the July 1, 2010 implementation date for the HST and the elimination of the PST. However, as noted above, there is no evidence on the record as to the amount that either the OM&A or capital expenditure forecasts should be reduced by.

In the absence of this information, Energy Probe submits that there are two options open to the Board.

c) Deferral Account Option

First, the Board could accept no change to the OM&A expenses and capital expenditure forecast but require HCHI to track the savings beginning July 1 until its next rebasing application in a deferral account. Energy Probe submits that the wording for such a deferral account and directive from the Board could parallel that the EB-2009-0139 Settlement Agreement (pages 4-5) dated January 22, 2010 for Toronto Hydro-Electric System Limited which is replicated here:

> *"Beginning July 1, 2010 and until THESL's next cost-of-service rebasing application, track in a deferral account the incremental Input Tax Credit it receives on non-passthrough items that were previously subject to Provincial Sales Tax and become subject to Harmonized Sales Tax. The intention of this account is to track the incremental change due to the shift from Provincial Sales Tax to the Harmonized Sales Tax and the amounts THESL receives through the incremental Input Tax Credit. Tracking of these amounts will continue in the deferral account until THESL's next cost of service application is determined by the Board or until the Board provides guidance on this matter, whichever occurs first. For example,*

Cost of Power and all other upstream charges applied to THESL by the IESO and/or Hydro One are excluded from this calculation, and to qualify for this treatment the cost of the subject items must be determinative of distribution revenue requirement (including capital and distribution expenses). THESL will apply to clear the balance in the variance account as a credit to customers at the next opportunity for a rate change after the account balance information becomes available."

However, as indicated in the responses to Energy Probe Interrogatory #1(f) and Board Staff Supplemental Interrogatory #11, HCHI is concerned with the administrative costs associated with trying to track the PST costs no longer paid after July 1, 2010. In addition, HCHI expresses concern about its ability to accurately track these reduced expenses.

d) Burlington Hydro Option

In light of the above and in lieu of a deferral account, Energy Probe submits that the Board has the option of estimating the reduction in the PST related to the OM&A expenses and the capital expenditures based on the information provided by Burlington Hydro in EB-2009-0259.

In its rates proceeding Burlington Hydro did an extensive review of its expenses related to the provincial sales tax. Burlington Hydro estimated that its 2010 capital expenditures for 2010 of $8,836,100 (Exhibit 2, Tab 3, Schedule 1, page 5) included $344,929 in provincial sales tax (Energy Probe Interrogatory #1). This figure represents 3.9% of the capital expenditures, which was in line with historical figures from 2006 through 2009.

Similarly, Burlington Hydro estimated that its 2010 OM&A expenses for 2010 of $14,800,994 (Exhibit 4, Tab 1, page 1) included $72,728 in provincial sales tax (Energy Probe Interrogatory #1). This figure represents 0.49% of the OM&A expenditures, which again was in line with historical figures for 2006 through 2009.

Application of the percentages for Burlington Hydro as a proxy for HCHI would result in the following reductions.

The capital expenditures forecast by HCHI of $3,312,301 to be added to rate base in 2010 (Exhibit 2, Tab 2, Schedule 1, page 5) would be reduced by one-half of 3.9% of this amount, or $64,590. The OM&A expense forecast by HCHI for 2010 of $7,391,913 ($7,651,970 from Table 1 of Exhibit 4, Tab 1, Schedule 1 less the OM&A reductions shown in Appendix B to the Settlement Agreement) would be reduced by one-half of 0.49% of this amount, or $17,000. In both cases the adjustment by one-half of the percentages is to reflect the elimination of the PST on July 1, 2010.

Energy Probe submits that this approach provides reasonable estimates of the reduction to both OM&A expenses and capital expenditures in 2010. It does not require the administrative burden and uncertainty associated with a deferral or variance account.

E – LOAD FORECAST

a) The Methodology

HCHI uses a forecast methodology that consists of a number of distinct steps. The methodology is described in detail in Exhibit 3, Tab 2, Schedule 2 beginning at page 7.

The first step in the process is the use of a multifactor regression analysis to model total monthly system purchased energy over the historical period for January, 2001 through December, 2008. The second step involves the "normalization" of the actual 2008 purchased energy amount based on the results of the equation and the use of normal degree days. HCHI defines normal degree days as average over the 2001 through 2008 period. The third step involves adjusting the normalized 2008 purchase figure by the IESO 18-Month Outlook to arrive at 2009 and 2010 purchased energy forecasts.

The fourth step in the methodology adjusts the purchased energy forecast to a billed energy forecast by dividing the purchase forecast by the average loss factor for the 2004 through 2008 total loss factor of 1.068. The fifth step involves an analysis of the annual kWh usage per customer for each rate class, along with the forecasted number of customers/connection in each class and the weather sensitivity by rate class. This creates a non-normalized forecast of kWhs for each rate class which is then aligned to the normalized billed energy forecast. The sixth and final step involves the conversion of the kWh forecast to kWs for those classes where the distribution volumetric charge billing determinant is kWs.

Energy Probe supports the use of the methodology used by HCHI. Although Energy Probe believes that the regression analysis should be conducted on individual rate classes and their associated monthly billed kWhs, it is aware that sufficient reliable data on a rate class basis is not yet available for this approach to produce reliable results.

Energy Probe does not take issue with the second, fourth, fifth or sixth steps noted above. However, Energy Probe submits that there are significant issues in the first and third steps in the process. Each of these two steps is discussed below.

b) The Multifactor Regression Analysis

The equation used by HCHI is shown at page 12 of Exhibit 3, Tab 2, Schedule 2. Energy Probe submits that this equation is flawed and should not be used to model purchased energy.

There are several important deficiencies in the HCHI equation. The first of these is that the estimated coefficient on the population variable has the wrong sign. An increase in the population, all else equal, should result in increased kWh's purchased and consumed, not a reduction. Similarly, positive growth in Ontario real gross domestic product should lead to higher levels of consumption, not lower, yet this is precisely what happens when Ontario real GDP coefficient is negative as it is in the HCHI equation.

In the response provided to Board Staff Interrogatory #8 (c) HCHI has tried to rationalize the negative coefficient associated with population and economic activity. HCHI indicated that it believed the negative coefficients on the population and economic activity variables were "somewhat associated with a decline from 2006 onwards relating to CDM results".

A change in the population and/or economic activity may have an impact on the level of CDM as reflected in average use. For example, incremental customers that result from population growth and/or economic growth can increase the CDM "savings" if they replace a 60 watt incandescent light bulb with a 13 watt CFL. This is because without the additional customer, the incremental savings would not occur. However, this does not mean that the total billed energy purchased and delivered to all customers goes down. In fact, the opposite is true. In the example provided, the new customer will consume power when he turns on the CFL light. This may ultimately reduce average consumption per customer, but it will increase total consumption. This provides the a priori requirement for a positive sign on the population and economic activity variables in an equation that is based on consumption and not on average consumption per customer.

A further deficiency in the equation is that HCHI has included two variables (number of peak hours and the blackout flag) despite the fact that these variables are not statistically different from zero at any reasonable level of confidence.

In a number of interrogatory responses, HCHI has indicated that its objective was to develop a multi-regression model that achieved an R^2 value higher than or equal to 95% (Energy Probe Interrogatory #11 (a), Board Staff Interrogatory #8 (b)). In fact, in the response to the Board Staff interrogatory at part (c), HCHI indicated that:

> *"Haldimand County Hydro decided it would be more reasonable to use a model that was not fully explainable but more accurate than to use a model that was less accurate and could be fully explained."*

Energy Probe submits that this is not appropriate.

Energy Probe submits that HCHI has put too much significance on the R^2 statistic that relates to the goodness of fit. A good fit is important. However, a good fit is irrelevant if some of the estimated coefficients have incorrect signs or are statistically no different from zero with a reasonable level of confidence.

The emphasis on the goodness of fit is also overblown in the rationale used by HCHI. The R^2 statistic is the coefficient of determination for a regression equation and represents the proportion of the total variance in a dependent variable that is explained by the regression. In other words, the R^2 statistic is a measure of the explanatory power of the regression. However, it is widely acknowledged that the use of the R^2 figure must be used carefully in comparing regressions[1].

For example, the value of R^2 will remain the same or increase as more explanatory variables are added to the equation – it cannot decrease. This means that the addition of an explanatory variable such as a random variable totally unrelated to the dependent variable can increase the R^2 value. This means that an increase in the R^2 value by itself does not mean the equation will provide a better forecast.

It is also inappropriate to compare the R^2 of two regression equations with different numbers of explanatory variables. It is an appropriate use of the R^2 to compare regressions if the number of explanatory variables is the same.

Comparison of the R^2 value from the equation without the population variable as an explanatory variable to the equation with it included as done by HCHI in the response to VECC Interrogatory #8 (e) is not valid since the two equations do not have the same number of explanatory variables.

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[1] See, for example, Econometric Models, Techniques, & Applications by Michael D. Intriligator, 1978, Prentice-Hall, Inc.

A more accurate comparison of the goodness of fit across equations that have a different number of explanatory variables is the adjusted coefficient of determination, or the adjusted R^2. The adjusted R^2 takes into account the number of explanatory variables. It can decline as the number of explanatory variables is increased, effectively indicating that the added variables are masking some of the explanatory power of other variables.

Energy Probe submits that econometric modeling is an inexact science. However, as with any science there are basic tenants that need to be followed and observed. Energy Probe submits that econometric modeling is not merely a matter of regressing demand against a list of potential explanatory variables and accepting the outcome based on the best R^2 statistic. The estimated model needs to pass basic reasonableness tests, the first of which is – Are the coefficients plausible in sign? – and the second of which is – Are the estimates significant at a reasonable level of confidence? If not, it does not matter what the R^2 is. The R^2, or more accurately, the adjusted R^2 is relevant in comparing equations that first pass these reasonableness tests.

In the response to Board Staff Supplemental Interrogatory #3, HCHI provided a revised equation that eliminates the population and Ontario real GDP variables and adds a "CDM variable". Energy Probe submits that this equation should also be rejected by the Board. In addition to the continue deficiency related to coefficients on the number of peak hours and the blackout flag being not statistically different from level at any reasonable level of confidence, the CDM variable itself is suspect.

The CDM variable is an increasing number from 1 to 36 staring in January of 2006. There is no evidence based justification for why the variable only begins in January of 2006. This assumption means that there was no conservation taking place prior to 2006. This is not true. As electrical appliances are replaced with more energy efficient models there is natural conservation taking place. Similarly, houses built in the recent past tend to be more energy efficient than those of an earlier vintage. Again this would have been reflected in consumption levels prior to 2006.

There is also no evidence based justification for the cubing of the values in the CDM variable that effectively makes the growth in the CDM variable exponential. For example, the December, 2008 value of the CDM variable is 36^3 or 46,656. There is no evidence to suggest that the level of CDM is more than 46,000 times higher than it was in January of 2006.

Energy Probe submits that the Board should direct HCHI to utilize the equation provided in the response to Energy Probe Interrogatory #12 to forecast the purchased energy volumes. This equation is superior to that used by HCHI (in the original evidence in the response to Board Staff Supplemental Interrogatory #3 (a)) in that all of the estimated coefficients have signs that are as expected and they are all statistically significant at high confidence level. This equation passes the reasonableness tests noted above. Neither of the HCHI equations passes these tests.

As noted above, Energy Probe does not have any issues with the "normalization" of the actual 2008 purchased energy amount based on the results of the equation and the use of normal degree days. As shown in the response to Energy Probe Interrogatory #12 (b), the normalized figure for 2008 based on the theoretically correct equation shown in the response to part (a) of the interrogatory is 390,147,087 kWh. This is an increase of 1.9% compared to the figure of 382,853,565 kWh (Energy Probe Interrogatory # 11 (c)) based on the HCHI equation.

Energy Probe submits that the proper normalized kWh estimate for 2008 that is used as the base for the 2009 and 2010 forecasts is therefore 390,147,087. This figure is the result of a theoretically sound equation that does not suffer from the deficiencies associated with the original HCHI equation or with the modified CDM version.

c) The IESO Adjustment

As noted above, the third step of the HCHI forecast methodology involves adjusting the normalized 2008 purchase figure by the IESO 18-Month Outlook to arrive at 2009 and 2010 purchased energy forecasts. The IESO Outlook used by HCHI is shown in Table 3.1 of Exhibit 3 Tab 2, Schedule 2 and consists of a forecasted reduction of 4.0% in normal weather energy in 2009, followed by a further 0.3% reduction in 2010.

HCHI has applied these reductions to the 2008 normalized figure to arrive at the 2010 forecast of energy purchases. The calculation of the 2009 figure of 367,539,422 kWhs is illustrated in the response to Energy Probe Interrogatory #11 (d).

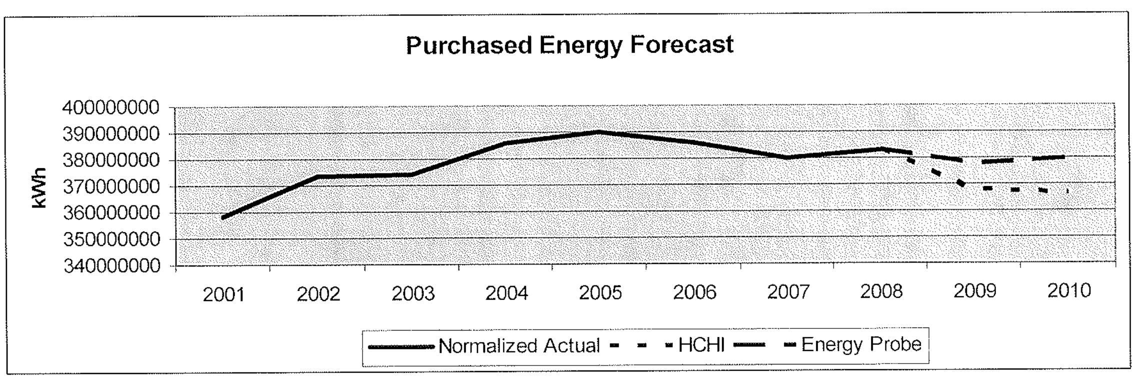
As noted above, Energy Probe submits that the 2008 starting point should be changed to 390,147,087 kWhs. In addition Energy Probe submits that the application of the changes from the IESO Ontario wide outlook without any adjustment is not appropriate for HCHI.

As indicated in the response to Board Staff Interrogatory #9, HCHI does not have any economic trend data available for its service area. As result, it is not able to compare economic trends for the province as a whole.

However, as shown in the response to VECC Interrogatory #8 (j), there is evidence on the record in this proceeding that provides a direct comparison of the change in the normalized energy purchases by HCHI to the Ontario wide figures provided by the IESO from 2003 through 2008. A review of the table provided shows that the change in the HCHI normalized figures was greater than the Ontario wide numbers in 2004, 2005, 2006 and 2008. In only one year, 2007, was the growth at HCHI less than that of Ontario. In particular, the average growth rate over the 2004 through 2008 period for normalized energy purchases at HCHI was 0.47%. The corresponding figure for Ontario was (0.30%). The difference between these growth rates, 0.77%, is a significant difference over this 5 year period.

Energy Probe submits that the adjustment applied to the 2008 normalized energy purchases should reflect this historical difference between HCHI and Ontario. In particular, the 4.0% reduction forecast for 2009 should be reduced by 0.77% to 3.23% and the 0.3% reduction forecast for 2010 should be changed to an increase of 0.47%. Energy Probe notes that growth at HCHI in 2010 when the province is forecasted to decline is not unreasonable. Indeed, that is exactly what happened in 2008. Ontario volumes dropped 1.77%, while HCHI experienced growth of 0.68%, for a difference of nearly 2.5%.

Based on the proposed starting point for 2008 normalized energy purchases of 390,147,087 and a decline of 3.23% for 2009, the 2009 forecast would be 377,545,336 kWhs. Growth of 0.47% in 2010 results in a forecast of 379,319,799 kWhs for the test year. This compares to the forecast in the original evidence at Table 13 of Exhibit 3, Tab 2, Schedule 2 of 366,436,804 kWhs. The difference between the forecast of HCHI and that proposed by Energy Probe is shown graphically below.



Using the total loss factor of 1.068, the billed energy forecast would be 355,168,351 kWh. This is an increase of approximately 3.5% from the level forecast by HCHI of 343,105,622 kWh shown in Table 10 of Exhibit 3, Tab 2, Schedule 2. Energy Probe submits that this is a reasonable forecast based on an appropriate application of a sound methodology.

F – RSVA ACCOUNT 1588-GLOBAL ADJUSTMENT DISPOSITION

Energy Probe submits that the Board should adopt a separate rate rider for recovery of the Global Adjustment sub-account whenever the distributor is able to apply different rate riders to different customers within a rate class, as this follows the cost causality principle.

As indicated in the Settlement Agreement at pages 19-20, HCHI has noted that this time its billing system is not capable of creating distinctions among customers of the same rate class with respect to rate riders.

Energy Probe is concerned with the potential costs that may be incurred to have a separate rate rider for non-RPP customers and that these costs may outweigh the benefits in the test year.

At the same time, however, Board is aware that the Global Adjustment is an adjustment sub-account that is likely to have significant balances that need to be cleared on an annual basis going forward. Over the long term, therefore, the expenditure may be justified.

Energy Probe submits that the Board should direct HCHI to investigate the cost of being able to have different rate riders for different customers within a rate class.

Energy Probe submits that the Board should initiate a consultative to review who can and who cannot dispose of the Global Adjustment to non-RPP customers only, and what are the likely costs and benefits for those distributors and their ratepayers that currently cannot follow the principled approach.

G - COSTS

Energy Probe requests that it be awarded 100% of its reasonably incurred costs. Recognizing the size of HCHI, Energy Probe has attempted to minimize its time on this application, while at the same time ensuring a thorough review.

ALL OF WHICH IS RESPECTFULLY SUBMITTED

February 19, 2010

Randy Aiken

Consultant to Energy Probe