COALITION/IEC (DAYMARK LOAD) – 1

Tab and Appendix:	**Daymark Load Forecast Review**	**Page No. (and line no. if applicable):**	**Page 3**
Topic:	**Price elasticity**		
Sub Topic:			
Issue:	**Accuracy of price elasticity values**		

Preamble to IR (If Any):

It is indicated that since the anticipated price increases are greater than those experienced previously, MH may see greater elasticity impacts.

Question:

a) Does the extrapolation to price increases outside of those seen in the historical period necessarily mean higher elasticities as opposed to lower (or more generally, different)? If so, please explain why.

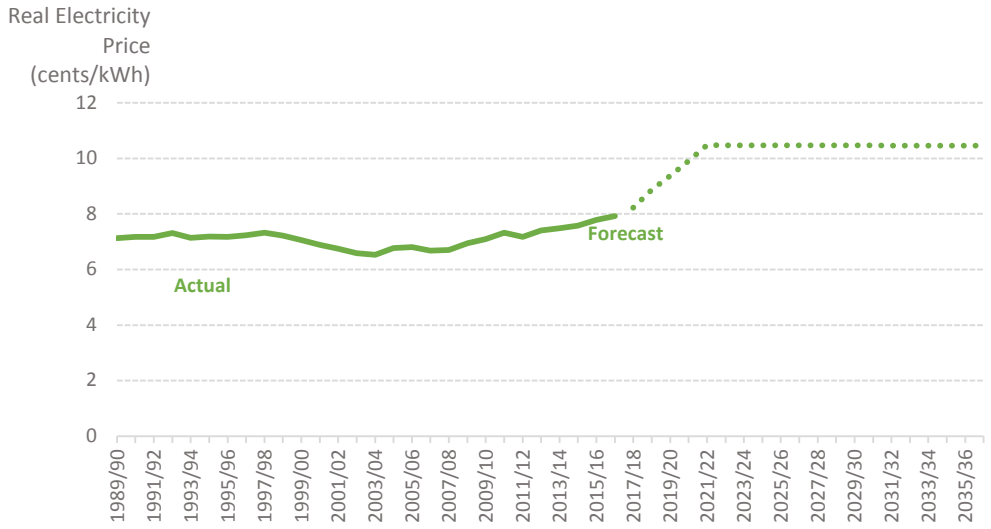
Rationale for Question:

RESPONSE:

In its Load Forecast report "on page 3, Daymark stated: However, the magnitude of the electricity price increases anticipated are not of the level that have been seen during the historical period and MH may see greater elasticity impacts than presented in its 2017 load forecast report." Daymark is expressing a concern over the potential for a different elasticity response to the price increases proposed by MH since the proposed prices, as depicted in the graph below, are greater than those experienced in MH's history since

1989/1990.

Whether the proposed increases will evoke price elasticity responses similar to those seen in the history of Manitoba Hydro's statistical analysis or will result in a different response, cannot be specifically addressed by Daymark. We simply raised the issue so that the parties to this case consider that the magnitude and duration of the increases combined with low natural gas prices may result in greater fuel substitution decisions or fuel greater investment in efficiency. It should be noted that the report developed by Dr. Yatchew has provided broad estimates of short-term electricity elasticity of -0.1 across all sectors and long-term elasticities of -0.35 for the residential and commercial sectors and -0.5 for the industrial sector. MH's price elasticity estimates are slightly lower than these.



RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

COALITION/IEC (DAYMARK LOAD) - 2

Tab and Appendix:	**Daymark Load Forecast Review**	**Page No. (and line no. if applicable):**	**Page 4**
Topic:	**Stochastic Risk Assessment**		
Sub Topic:			
Issue:	**Impact of Multicollinearity on Stochastic Risk Assessment**		

Preamble to IR (If Any):

It is suggested that a stochastic risk assessment be performed.

Question:

a) Please explain what impact, if any, the uncertainty in model coefficients that arise from the presence of multicollinearity would have on the accuracy of a probabilistic risk assessment.

Rationale for Question:

RESPONSE:

Probabilistic risk assessment can help evaluate the inherent characteristics of each fundamental independent variable. This method provides a tool for estimating potential outcomes by allowing random variations in one or more key variables. Multicollinearity can arise if a regression model uses more than one highly correlated independent variables. Although multicollinearity doesn't affect the overall fit of the model nor result in bad forecasts of the dependent variable, its presence does produce unreliable coefficient estimates. Since the coefficients estimated from regression models can be

used to infer the relationship between key input variables and the output variable in a probabilistic risk assessment, theoretically, unreliable estimates of coefficients may impact the probabilistic risk assessment.

Daymark's scope of work did not include performing an independent analysis to evaluate the impact of potentially unreliable model estimates arising from multicollinearity on the accuracy of a probabilistic risk assessment since MH did not perform probability risk assessment.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

COALITION/IEC (DAYMARK LOAD) – 3

Tab and Appendix:	**Daymark Load Forecast Review**	**Page No. (and line no. if applicable):**	**Page 4**
Topic:	**Statistical concerns in models**		
Sub Topic:			
Issue:	**MH's testing for statistical concerns**		

Preamble to IR (If Any):

It is stated that MH should consider testing its econometric models for a variety of statistical concerns.

Question:

a) Besides multicollinearity, are there other statistical concerns, such as heteroskedasticity or serial correlation, for which MH is not currently testing?

Rationale for Question:

RESPONSE:

Based on the load forecast regression diagnostic documents provided by Manitoba Hydro, the Company tested for serial correlation (or auto-correlation) by using the Durbin-Watson Test. Those documents do not show that Manitoba Hydro directly tested for heteroskedasticity. Manitoba Hydro calculated various measurements to observe how well their models fit the data (Goodness of Fit). These measurements included the sum of squared errors, mean square error, root mean square error, and R-square. The Company also measured forecasting error (Mean Absolute Error) and the prediction

accuracy (Mean Absolute Percentage Error) of their models. Manitoba Hydro also utilized various model selection methods and criteria such as Akaike's information criterion, corrected Akaike's information criterion, Schwarz's Bayesian information criterion, and Hannan-Quinn information criterion. MH is investigating appropriate statistical tests.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

COALITION/IEC (DAYMARK LOAD) - 4

Tab and Appendix:	**Daymark Load Forecast Review**	**Page No. (and line no. if applicable):**	**Page 35, Table 3**
Topic:	**Multicollinearity**		
Sub Topic:			
Issue:	**Impact of Variance Inflation Factors on model coefficients**		

Preamble to IR (If Any):

Table 3 indicates multicollinearity with the income, saturation, and trend variables but not with the price variable

Question:

a) What implications does the fact that the price variable does not show multicollinearity with the other variables have on the degree that the price elasticity may be understated?

Rationale for Question:

RESPONSE:

As mentioned in Page 33 of Load Forecast Review Report, “As a result of the multicollinearity in MH’s residential average usage model, the coefficients associated with electricity price and income, which are interpreted as price elasticity and income elasticity, may be incorrectly estimated.” The electricity price variable used in MH’s regression model does not show a multicollinearity issue with the other independent variables. The coefficient associated with the price variable may be poorly estimated

because of the presence of other independent variables in the regression model that give rise to the multicollinearity issue. A regression model with multicollinearity suggests that the coefficients are poorly estimated. In MH's average usage regression model for the Residential sector, the variance inflation factor (VIF) presented in Table 3, Page 35 of Daymark's Load Forecast Review Report shows that three independent variables - income, saturation, and the trend variable - show a multicollinearity issue. Moreover, as shown in the step-wise regression results presented in Table 2, Page 35 of the same document, the coefficient of the price variable changes as independent variables with multicollinearity issue are introduced in the model.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

COALITION/IEC (DAYMARK LOAD) - 5

Tab and Appendix:	**Daymark Load Forecast Review**	**Page No. (and line no. if applicable):**	**Page 1** **Page 39**
Topic:	**50/50 Forecast**		
Sub Topic:			
Issue:	**Definition of 50/50 forecast**		

Preamble to IR (If Any):

It appears that Daymark two different characterizations of the 50/50 forecast.

On page 1 of Daymark's Load Forecast Review, it is stated:

> A key shortcoming of the approach taken by MH is the reliance on a forecast that has a probability of being accurate 50% of the time – for a business with high capital costs and long project lead times, a forecast that is expected to address 90% of the potential futures is typically preferred. [emphasis added]

On page 39 of Daymark's Load Forecast Review, it is stated:

> MH created a P50 load forecast, meaning there is an expectation of a 50% chance that the actual growth will be higher than the forecast, and a 50% chance that the actual growth will be lower than the forecasted growth.

Question:

a) Please clarify the correct characterization of the 50/50 forecast.

Rationale for Question:

RESPONSE:

The description mentioned on page 39 of Daymark's Load Forecast Review is the correct characterization of the 50/50 forecast.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

COALITION/IEC (DAYMARK LOAD) - 6

Tab and Appendix:	**Daymark Load Forecast Review**	**Page No. (and line no. if applicable):**	**Page 2**
Topic:	**Forecasting top consumers**		
Sub Topic:			
Issue:	**Implication of approach to forecasting top consumers**		

Preamble to IR (If Any):

On page 2 of Daymark's Load Forecast Review, it is stated:

> The top consumers forecast relies on a conservative approach to forecasting – MH uses short-term knowledge of the MH account executives for particular accounts, which is useful for the near term, but the long-term sector projections should rely on all historical trends and not single out only those accounts with a consistent history of business and consumption in the province for the duration of the historical data period. In addition, the changes in methodology between the 2014 and 2017 forecasts for this sector result in significant forecast differences over the twenty-year period. The 2017 Potential Large Industrial Load (PLIL) method used a conservative approach by only considering the total load of top consumer companies that have been in the MH service territory since 1983/84, thus excluding the historical load of three companies that are currently in the top consumers sector. Daymark

estimated that the conservative PLIL method used in 2017 forecasted 523 GWh less load than would have been forecasted using the 2014 methodology over the forecast period from 2017/18 to 2036/37.

Question:

a) Please confirm whether the conservative approach to forecasting for top consumers biases Manitoba Hydro's load forecast downward relative to the 50/50 forecast.

Rationale for Question:

RESPONSE:

Yes. The conservative approach to forecasting for top consumers biases MH's load forecast downward relative to the 50/50 forecast based on methodology change between from 2014 load forecast analysis to 2017 analysis.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

COALITION/IEC (DAYMARK LOAD) – 7

Tab and Appendix:	**Daymark Load Forecast Review**	**Page No. (and line no. if applicable):**	**Page 3**
Topic:	**Population trends**		
Sub Topic:			
Issue:	**Under-forecasting of population trends**		

Preamble to IR (If Any):

On page 3 of Daymark's Load Forecast Review, it is stated that "MH has historically under-forecasted population trends, a predictive variable that underlies the residential and general service mass market forecasts of customer count."

Question:

a) Please indicate whether this under-forecasting by Manitoba Hydro of population trends has been occurring for a long time or is a recent phenomenon.

b) If the issue is more recent, is it traceable to a shorter term phenomenon, such as higher immigration?

c) Given that Manitoba Hydro blends several forecasts, are there certain forecasts that systematically under-forecast? If so, should they be discarded?

Rationale for Question:

RESPONSE:

a) Daymark used retrospective analysis of population forecast prepared by MH to suggest that MH has historically under-forecasted population trends. As mentioned in the Load Forecast Review Report (Pages 30-31), MH estimates the forecast errors using their population forecast and the actual historical population numbers. The data used to create Figure 10, page 31 is the average of annual N-year ahead forecast errors. MH calculated average N-year ahead population forecast errors by comparing actual and forecasted population from 1989 to 2016. For example, a 5-year ahead forecast error of any year is the percentage difference between actual population of that year and the population forecast of the same year created 5 years in advance. And 5-year ahead average forecast error included in Figure 10 is the average of each year's 5-year ahead forecast error estimated by MH.

   When looking at each year's n-year ahead population forecast, there is no consistent trend in the historical annual forecast errors estimated by MH that show under-forecasting or over-forecasting. However, as mentioned in Page 31 of Load Forecast Review Report, when average n-year ahead forecast errors are calculated by taking each year's n-year ahead forecast errors, "… the average percentage error varies, on average, from 0.033% in 1-year ahead comparisons to 2.01% in 10-year ahead forecasts."

b) In order to respond to COALITION/IEC (DAYMARK LOAD) – 7 Part (b), Daymark reviewed the forecast errors estimated by MH by using actual and forecasted population only after 2010. The forecast errors calculated by MH since 2010 show that N-year ahead error percentages are mostly negative. The negative error percentages denote that actual population is lower than the forecasted population, meaning the since 2010 actual population is lower than the forecasted population used in MH's analysis.

c) Daymark is unable to respond to part (c) primarily because Daymark compared the 2017 forecast to recent MH forecasts but does not have the historical information for

the independently developed forecasts relied on in creating MH's population forecast.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

COALITION/IEC (DAYMARK-LOAD FORECAST) - 8

Tab and Appendix:	**IEC Report: Load Forecast Review**	**Page No. (and line no. if applicable):**	**Pages 5 & 63**
Topic:			
Sub Topic:			
Issue:			

Preamble to IR (If Any):

Question:

a) Daymark identified a number of issues regarding Manitoba Hydro's Load Forecast some of which (e.g., Top Consumers PLIL Model) would suggest the forecast is too low while others (e.g., Fuel Switching Consideration) would suggest the forecast is too high. Overall, is it Daymark's view that Manitoba Hydro's load forecast for 2026/27 and for 2033/34 is too high or too low.

b) For each of these years (i.e., 2026/27 and 2033/34) please indicate by how much (i.e., GWh) Manitoba Hydro's load forecast over/under estimates the P50 value.

Rationale for Question:

To understand the implications of Daymark's findings.

RESPONSE:

Responses to parts (a) and (b)

Daymark indicated in the IEC Load Forecast report that we could not develop full implications of the recommended modifications on Manitoba Hydro's forecast. The executive summary provides our best estimate of potential implications. Based on proposed Top Consumers methodological modifications and the population forecast findings, the overall load forecast appears to be conservative.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

COALITION/IEC (DAYMARK-LOAD FORECAST) - 9

Tab and Appendix:	**IEC Report: Load Forecast Review**	**Page No. (and line no. if applicable):**	**Pages 6 and 50**
Topic:			
Sub Topic:			
Issue:			

Preamble to IR (If Any):

Question:

a) Please confirm that the comparison being made in this section is between the 10-year growth rates, starting in 2014, per the 2014 Load Forecast and the 10-year growth rate, staring in 2017, from the 2017 Load Forecast. If not what periods from each forecast as being compared.

b) How much of the difference in growth rates (i.e., 1.46% versus 0.81%) is due to changes in input assumptions (e.g. population forecast) versus changes in methodology (e.g. PLIL methodology)?

Rationale for Question:

To understand the implications of Daymark's findings.

RESPONSE:

a) Yes. The 10-year growth rates calculated per the 2014 MH Load Forecast include the period from 2014/15 to 2023/24. Similarly, the 10-year growth rates calculated per the 2017 MH Load Forecast include the period from 2017/18 to 2026/27

b) The effort to quantify the impact of methodological change and input assumptions in the differences in load growth forecasted between 2014 and 2017 takes significant effort. Daymark is working on evaluating the impact of changes affecting the difference in load growth between two years and will provide its analysis when it is completed.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

COALITION/IEC (DAYMARK LOAD) – 10

Tab and Appendix:	**IEC Report: Load Forecast Review**	**Page No. (and line no. if applicable):**	**Pages 12, 16 & 18**
Topic:			
Sub Topic:			
Issue:			

Preamble to IR (If Any):

Question:

a) Please clarify whether the actual average use values set out in Figures 2, 3 and 4 are before or after the load for the sector has been reduced by historic DSM program savings

b) Please clarify whether the average use forecasts set out in Figures 2, 3 and 4 are before or after the load for the sector has been reduced by forecasted future DSM program savings.

c) For the Residential and GSMM-Large sectors (Figures 2 and 4), is it the impact of electricity prices that causes the average use to decline in the initial years or some other factor?

d) If it is “price”, why is there no similar decline for the GSMM-Small&Medium sector?

Rationale for Question:

To understand the usage trends portrayed by Daymark

RESPONSE:

a) Figures 2, 3, and 4 in Daymark's Load Forecast Review Report include historical actual, weather-adjusted average use for each sector included in each figure. They do not include historical DSM savings. So, the actual average usage shown is before adjustments to DSM savings.

b) The average usage forecasts shown in Figures 2, 3, and 4 do not include or have not been reduced for future DSM savings.

c) Yes, the decline in average usage for the Residential and GSMM – Large customers seen in the initial years of MH's load forecast is primarily due to the proposed rate increase and its impact on electric load.

d) The GSMM – Small and Medium customers do not show a similar decline in average usage during the initial years due to the lower electricity price responsiveness (elasticity) estimated by the regression models when compared to the other customer groups. The regression coefficient associated with price, also known as price elasticity, estimated for GSMM – Small and Medium sector is lower than that of the Residential and GSMM-Large sectors. The price elasticity associated with GSMM – Small and Medium sector customer is - 0.13 (Page 64, 2017 LF Report), whereas price elasticity for the Residential sector is - 0.28 (Page 62, 2017 LF Report) and -0.46 (Page 65, 2017 LF Report) for GSMM - Large sector.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

COALITION/IEC (DAYMARK-LOAD FORECAST) - 11

Tab and Appendix:	**IEC Report: Load Forecast Review**	**Page No. (and line no. if applicable):**	**Page 18**
Topic:			
Sub Topic:			
Issue:			

Preamble to IR (If Any):

Question:

a) Were the three customers that were excluded from the PLIL analysis customers that did not exist in 1983/84 or customers that were part of the GSMM sector at that time?

Rationale for Question:

To better understand the change in PLIL methodology.

RESPONSE:

On page 66 of Manitoba Hydro's Electric Load Forecast 2017, the Company mentions that during the 1983/84 to 2016/17 historical period, "3 customers joined the Top Consumers sector." It is not completely clear if these customers did not exist in 1983/84 or were part of the GSMM sector at that time based on the information provided by Manitoba Hydro.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

COALITION/IEC (DAYMARK-LOAD FORECAST) - 12

Tab and Appendix:	**IEC Report: Load Forecast Review**	**Page No. (and line no. if applicable):**	**Page 19**
Topic:			
Sub Topic:			
Issue:			

Preamble to IR (If Any):

Question:

a) Was the 1,363 GWh calculated that was calculated using the 2014 methodology based on Manitoba Hydro's current electricity price forecast or the 2014 electricity price outlook?

Rationale for Question:

To understand the basis for Daymark's comparison.

RESPONSE:

The 1,363 GWh calculated for 2036/37 using the 2014 methodology was based on Manitoba Hydro's current electricity price forecast used in its 2017 load forecast analysis.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

COALITION/IEC (DAYMARK-LOAD FORECAST) - 13

Tab and Appendix:	**IEC Report: Load Forecast Review**	**Page No. (and line no. if applicable):**	**Pages 19&20**
Topic:			
Sub Topic:			
Issue:			

Preamble to IR (If Any):

Question:

a) Has there been an upward or downward trend in Manitoba Hydro's distribution loss percentage over the last 20 years and, if so, is the trend statistically significant?

b) Has there been an upward or downward trend in Manitoba Hydro's transmission loss percentage over the past 20 years and, if so, is the trend statistically significant?

Rationale for Question:

To better understand the reasonableness of Manitoba Hydro's transmission and distribution loss assumptions.

RESPONSE:

Part a:

Based on the graph on page 31 of the “2017 Electric Lord Forecast” report, Manitoba Hydro’s distribution losses have exhibited an upward trend, in terms of GWh, from 1997 to 2017. The same graph forecasts distribution losses to continue this upward trend through to 2037. A simple regression shows that the distribution losses (GWh) have a statistically significant positive trend across the historical period. Using a linear regression of distribution losses over time trend (1997-2017), the calculated coefficient of the trend variable was positive and statistically significant (p-value less than the .01 level). The results of regression results are submitted with the response.

Part b:

On page 34 of the abovementioned 2017 load forecast report, transmission losses demonstrated an upwards trend, in terms of MWh, from 1997 to 2017, with forecasted losses also exhibiting the same trend for future values up to 2037. A simple regression shows that the distribution losses (GWh) have a statistically significant positive trend across the historical period. Using a linear regression of distribution losses over time trend (1997-2017), the calculated coefficient of the trend variable was positive and statistically significant (p-value less than the .01 level).

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

COALITION/IEC (DAYMARK LOAD) – 14

Tab and Appendix:	**IEC Report: Load Forecast Review**	**Page No. (and line no. if applicable):**	**Pages 41-44**
Topic:			
Sub Topic:			
Issue:			

Preamble to IR (If Any):

Figures 12, 13, 14 and 15 compare previous load forecasts with actual load.

Question:

a) Are the load forecasts presented in the Figures taken directly from Manitoba Hydro's load forecast documents or have they been reduced by the forecast of planned DSM program savings that existed when the load forecast was developed?

b) Have any adjustments been made to the actual loads set out in the Figures other than weather normalization (e.g. have they been adjusted for actual DSM program savings)?

c) Based on the responses to parts (a) and (b), please comment on the comparability of the forecast and actual loads set out in the Figures.

Rationale for Question:

To understand the comparisons presented by Daymark.

RESPONSE:

a) The load forecasts presented in Figures 12, 13, 14, and 15 are directly taken from the annual load forecast reports published by MH. The forecasts are not adjusted for any future planned DSM programs savings.

b) No, the actual loads presented in Figures 12, 13, 14, and 15 have only been adjusted by MH's weather normalization methods.

c) In order to compare the actual loads with the forecasted load, one would need to reduce future DSM savings from forecasted load or add achieved DSM savings to the actual loads. Moreover, since seven customers from Top Consumers were moved to GSMM category in 2016 load forecast analysis, we would also need to the annual load of these customers to compare the actual and forecasted load of Top Consumers and GSS categories. Daymark is recreating Figures 12, 13, 14, and 15 to adjust actual load with DSM savings and switch of seven customers from Top Consumers to GSMM category. We plan to issue revised figures in an errata sheet.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

COALITION/IEC (DAYMARK LOAD) – 15

Tab and Appendix:	**IEC Report: Load Forecast Review**	**Page No. (and line no. if applicable):**	**Page 48**
Topic:			
Sub Topic:			
Issue:			

Preamble to IR (If Any):

The Review states: "Many utilities are moving to the use of shorter time-periods to create normal weather temperature profiles".

Question:

a) What evidence does Daymark have that many utilities are moving to the use of shorter time-periods to create normal weather temperature profiles?

b) Does Manitoba Hydro's overall approach to weather normalization bias its load forecast either upwards or downwards?

Rationale for Question:

To clarify Daymark's comments and understand their implications.

RESPONSE:

a) In 2013, Itron conducted a survey of energy forecasters for utilities throughout North America to gather growth and accuracy benchmarks. On page 19 of the Daymark-provided "2013 Forecasting Benchmarking Study," Itron explains that their 2013

survey showed “a movement toward shorter time ranges for the normal (weather) calculation” among forecasters. Comparing reported time periods between 2006 and 2013, the most widely used timeframe for normal weather calculations conducted by utility forecasters went from being 30 years to 20 years. Thirty-four percent of utility respondents used a 20-year time period. The second most popular time frame was 30 years (27% of respondents). A 10-year period was the third most popular (22% of respondents). Only 1% of respondents used a 25-year period, which was the period length used by Manitoba Hydro.

b) The impact of MH’s overall weather normalization on its load forecast is not clear without further analysis.

MH assumes that its load forecast is adjusted to reflect what is considered to be ‘normal’ weather. The historical annual loads are adjusted to account for weather variability within its load forecasting process. Specifically, the weather adjustment portion of the load is calculated by using weather regression coefficients and the difference between ‘normal’ and actual year’s HDD and CDDs. MH defines the ‘normal’ weather by using a 25-year rolling average monthly temperature. Annual weather-dependent regression coefficients are estimated by using monthly energy and HDD and CDDs information of the previous two years.

Daymark’s suggestion of using more than two-years of monthly energy and weather information would estimate different weather-dependent regression coefficients than those estimated by MH using two years data. Similarly, the suggestion of using a shorter timeframe to define ‘normal’ year weather would generate different normal HDD and CDD values for that ‘normal’ year than those used by MH based on a 25-year analysis. Daymark’s suggestion of either using a longer than two-year time frame to estimate weather dependent regression coefficients or using a shorter time-period than 25-year to define ‘normal’ weather would impact the weather-adjusted

actual load upon which its regression models are developed, it is not clear how MH's current weather normalization process impacts its load forecast without redoing the forecast, which was not part of the Daymark review scope.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

COALITION/IEC (DAYMARK-LOAD FORECAST - 16

Tab and Appendix:	**IEC Report: Load Forecast Review**	**Page No. (and line no. if applicable):**	**Pages 51-52**
Topic:			
Sub Topic:			
Issue:			

Preamble to IR (If Any):

Question:

a) Please provide a graph similar to Figure 19 but in it set out the historical average use (actual use + C&S + program DSM) along with the 2014 and 2017 forecasts for average use.

b) Please comment on any material differences between the two forecasts.

Rationale for Question:

To determine the change in the average use forecast.

RESPONSE:

Daymark cannot provide the requested 2014 residential average usage by combining actual usage and DSM savings (C&S and program savings). Daymark doesn't have the detailed data for the Residential sector that was developed for the 2014 load forecast which would be necessary to create the requested average usage figure. The Coalition could request that Manitoba Hydro provide this figure.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

COALITION/IEC (DAYMARK-LOAD FORECAST) - 17

Tab and Appendix:	**IEC Report: Load Forecast Review**	**Page No. (and line no. if applicable):**	**Page 54**
Topic:			
Sub Topic:			
Issue:			

Preamble to IR (If Any):

Question:

a) Please provide a graph similar to Figure 20 but in it set out the historical average use (actual use + C&S + program DSM) along with the 2014 and 2017 forecasts for average use. Please provide separate graphs for the GSMM-Small&Medim and GSMM-Large.

b) Please comment on any material differences between the two set of forecasts.

Rationale for Question:

To understand the comparisons presented by Daymark.

RESPONSE:

Daymark is unable to provide the separate average use figures of GSMM – Small and Medium and GSMM – Large by combining actual usage and DSM savings (C&S and program savings). Daymark doesn't have the detailed data for both GSMM groups that was developed for the 2014 load forecast which is necessary to create the requested

average usage figure. The Coalition could request that Manitoba Hydro provide this figure.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

COALITION/IEC (DAYMARK LOAD) – 18

Tab and Appendix:	**IEC Report: Load Forecast Review**	**Page No. (and line no. if applicable):**	**Page 48, Footnote #71**
Topic:			
Sub Topic:			
Issue:			

Preamble to IR (If Any):

Question:

a) Please fully explain how the DSM savings are adjusted via the PLIL Model for provide the Top Consumer category.

Rationale for Question:

To understand how Top Consumer load is adjusted to account for historic DSM.

RESPONSE:

MH added back the historical DSM savings to the historical load of companies included in its Top Consumers category in its PLIL regression modeling methodology. Specifically, the dependent variable of the regression model used in the PLIL methodology is the sum of the annual historical sales of Top Consumer companies and DSM savings. The DSM savings allocated to the Top Consumer category analyzed in the PLIL methodology is 55% of Industrial DSM savings. Industrial DSM Savings is the combination of program-based Industrial DSM savings and C&S DSM savings

associated with Industrial Equipment High Efficiency Motors[1].

[1] Source: "Top Consumer PLIL 2017_Daymark" Excel file shared by MH.