Synapse
Energy Economics, Inc.

December 5, 2018

Doreen Friis
Regulatory Affairs Officer/Clerk of the Board
Nova Scotia Utility and Review Board
3rd Floor
1601 Lower Water Street
Halifax, Nova Scotia B3J 3S3

RE: M09471 - EfficiencyOne - 2019 Rate and Bill Impact Analysis and Model

Dear Ms. Friis:

Synapse Energy Economics, Inc. (Synapse) respectfully submits the following comments in regard to the revised 2019 Rate and Bill Impact Analysis (R&BIA) filed by EfficiencyOne on November 1, 2019.

Sensitivity analysis

In Appendix B of the R&BIA report, EfficiencyOne provides the results of several sensitivities on the base analysis. The magnitude of the impacts from adjusting the avoided transmission and distribution (T&D) values, reflecting the low end of Paul Chernick's estimate of corrected avoided T&D values, are very large: under this sensitivity, all classes experience negative rate impacts (ranging from roughly -1 percent to -4 percent), and bill impacts are strongly negative (ranging from roughly -4 percent to -16 percent). It is our understanding that NS Power has not provided values that address Mr. Chernick's concerns. In light of the lack of input from NS Power, we are not able to take a position on what the T&D values should be. However, we stress the importance of investigating and resolving this issue. NS Power should provide alternate T&D values that address Mr. Chernick's concerns or provide explanation of its methodology and justification for continuing to use this methodology.

Class allocation ratios for avoided costs and lost revenues

In a change from previous R&BIAs, EfficiencyOne estimates the total avoided costs for all sectors combined and then allocates the avoided costs among sectors using energy- and demand-related attribution factors. The R&BIA report states:

> In response to stakeholder recommendations, EfficiencyOne worked with NS Power to develop a means to use different allocation factors for each year of the analysis, instead of a single year. NS Power produced two new sets of allocation factors which EfficiencyOne built into the model. One set is used to allocate energy-related avoided costs and lost revenues to rate classes, and a second set is used to allocate demand-related avoided costs and lost revenues to rate classes. This method is intended to mimic the allocations in a Cost-of-Service Study model in a simplified manner, and the

> equations in Appendix D have been updated to reflect this enhancement. (EfficiencyOne, 2019 Rate and Bill Impact Analysis, p. 6-7)

The report does not, however, provide any basis for the specific attribution factors used, nor does it describe how the attribution factors were derived. In the R&BIA model, these attribution factors are found in the "Attribution" worksheet. The attribution factors are hard-coded, and the worksheet does not provide any information about where they come from or how they were derived. Thus, we cannot evaluate the reasonableness of these factors.

Further, we note the report states that lost revenues are allocated the same way as avoided costs. As noted above, it is not clear how these attribution factors were derived. Further, we note that the R&BIA model calculates lost revenue in two different ways: in the "Lost Revenue" tab, the model calculates the total lost revenue for all customer classes, and in the "Attribution" tab, the model then reallocates the total lost revenue using the rate class attribution factors. The lost revenue estimates under the "Attribution" tab and the "Lost Revenue" tab are not consistent with each other for each customer class. As an example, the lost revenues for the residential customer class for 2011 are about $7.3 million in the "Attribution" tab (cell AK20) and $5.8 million in the "Lost Revenue" tab (cell E6). The model should only take one of the approaches for lost revenues. Further, EfficiencyOne should provide details on the calculation and supporting data for its recommended approach to the DSMAG for review and discussion before the methodology is adopted in the R&BIA.

Even if EfficiencyOne provided adequate justification for the specific allocation factors used in the model, the results are not as accurate as a more straightforward approach that simply estimates the total avoided cost for each sector. This alternative approach would not use avoided distribution costs for large industrial customers, since large customers who receive service on the transmission level or take distribution service at higher voltages incur lower or no distribution costs. EfficiencyOne's current approach would not capture this difference. If the peak demand impacts for large customers are large and the avoided distribution costs are large, the model would show different results. EfficiencyOne should investigate the magnitude of the avoided distribution costs for large industrial customers and make a recommendation for addressing this issue in the next rate and bill impact analysis. In the current proceeding, EfficiencyOne should at least clarify the limitations of the current approach.

Inter-class summary on energy and demand savings

Possibly in response to an issue previously raised by Paul Chernick,[1] EfficiencyOne applies a "Demand Peak-to-Billing Conversion Ratio" for large customers that pay demand charges. See, for example, Column P in the "Lost Revenue" worksheet of the R&BIA model. EfficiencyOne divides customer class peak load impacts by this ratio, thereby increasing the overall peak load impacts. In using this ratio to

[1] Paul Chernick. 2019. "Comments on RBIA Enhancements." Submitted to E1 and DSMAG on February 11, 2019.

adjust peak savings at customer peak hours (relevant for billed customer demand calculations), EfficiencyOne assumes that "for each rate class, the ratio between annual system coincident peak demand contribution and total billed demand is the same as the ratio between annual system coincident peak demand savings and billed demand savings (i.e. the ratio for savings is assumed to be the same as the ratio for load)."[2] However, EfficiencyOne has not provided data to support this assumption. Information on how efficiency peak impacts differ between the system peak and the customer demand charge peak hours, how system peak impacts are currently calculated for various measures, and if and how measure system peak impacts are different from customer peak impacts are necessary to understand and assess the appropriateness of using this factor. We believe that this issue needs a further investigation. Until then, we recommend that EfficiencyOne not apply the Demand Peak-to-Billing Conversation Ratio.

Residential savings data

Energy savings data for the residential class for the 2015 program year have a 16-year measure life, much longer than the values for other years. Other program years have 9-year to 12-year measure lives. EfficiencyOne should explain this or make a correction.

Model format and presentation

The inputs tab for each customer class has the same data for the total energy and peak savings and avoided costs for all customer classes combined. This presentation is very confusing and gives the impression that they represent data specific to each customer class. We recommend that for the next R&BIA, EfficiencyOne (a) create a new tab just for the total customer energy and peak savings; and (b) move the avoided cost unit data from each customer input tab to "Avoided Costs" tab. These changes would facilitate review of the model and the results.

On the Sensitivity tab and elsewhere in the R&BIA model, avoided capacity and T&D costs are shown in terms of dollars per MW. We believe that these should be stated in dollars per MW-year.

We thank the Board for the opportunity to provide these comments.

Sincerely,

Kenji Takahashi, Senior Associate

Alice Napoleon, Senior Associate

[2] EfficiencyOne. 2019 Rate and Bill Impact Analysis, p. 13.