Synapse
Energy Economics, Inc.

January 26, 2021

Crystal Henwood
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: M09943 - EfficiencyOne - 2020 Rate and Bill Impact Analysis Report

Dear Ms. Henwood:

Synapse Energy Economics, Inc. (Synapse) respectfully submits the following comments in regard to the 2020 Rate and Bill Impact Analysis (R&BIA) filed by EfficiencyOne on December 18, 2020.

Background

Two updates were implemented since the last R&BIA filing in 2019, both of which have received some stakeholder review and comment in the interim.

First, EfficiencyOne removed the static rate class avoided cost allocation factors from its 2019 R&BIA model (Attachment 1 – 2019 Historical Rate and Bill Model, 'Attribution' tab). In place of these static allocation factors, EfficiencyOne's 2020 R&BIA model (Attachment 1 – 2020 Rate and Bill Model) uses rate class avoided cost allocation factor inputs from a Nova Scotia Power Inc. (NSPI) analysis (Appendix E – 2020 NSP Historical Rate Model). The avoided cost allocation factors provided in NSPI's analysis more closely align with NSPI's Cost of Service Study such that rate impacts presented in the R&BIA more accurately reflect NSPI's cost recovery across all rate classes. NSPI presented its inputs and methodology for analysis during a technical session on July 23, 2020. EfficiencyOne requested feedback from the Demand Side Management Advisory Group (DSMAG) on the technical session by August 6, 2020. On July 27, 2020, Synapse requested the analysis showing NSPI's proposed cost of service allocation methodology and more time to prepare comments. NSPI provided the analysis on August 4, 2020. By email, EfficiencyOne indicated that it would accept comments through August 13, 2020 and Synapse provided its comments on that date. Synapse's comments noted, "This timing did not provide the

DSMAG the opportunity to review, vet, and discuss [NSPI's analysis] with NSPI, EfficiencyOne, and other stakeholders."[1] The 2020 R&BIA filing is the first time Synapse is reviewing NSPI's analysis in detail.

Table 1 below provides Synapse's calculations of the changes to the avoided cost allocation.[2] A key difference between 2020 R&BIA and the 2019 R&BIA is the removal of avoided demand-related cost allocations for the Residential and Small General rate classes. This change appears to be partially offset by an increase in avoided energy-related cost allocations in the 2020 R&BIA for the Residential and Small General rate classes.

Rate Classes	2019 R&BIA 2011-2035 AVG		2020 R&BIA 2011-2035 AVG	
	Avoided Energy-Related Costs	Avoided Demand-Related Costs	Avoided Energy-Related Costs	Avoided Demand-Related Costs
Residential	49.8%	60.2%	68.3%	0.0%
Small General	2.5%	2.7%	3.7%	0.0%
General	24.6%	20.6%	14.5%	62.9%
Large General	4.2%	2.9%	2.4%	7.4%
Small Industrial	2.8%	2.5%	1.7%	7.4%
Medium Industrial	6.8%	5.1%	2.8%	9.6%
Large Industrial	7.7%	4.5%	5.2%	7.0%
Municipal Utility	1.7%	1.4%	0.6%	2.2%

Table 1 – Rate Class Avoided Cost Allocation Factors, 2020 R&BIA vs. 2019 R&BIA

Second, NSPI provided updated avoided transmission and distribution costs. NSPI indicated by email that it sought comments on the avoided transmission and distribution cost methodology by August 14, 2020. The Consumer Advocate submitted questions by email on July 28, 2020 regarding NSPI's avoided transmission and distribution valuation methodology. On July 30, 2020, NSPI responded that it planned to provide answers to questions posed by the Consumer Advocate by August 11, 2020 and that

[1] Synapse Energy Economics. *Comments on the Rate and Bill Impact Analysis technical session*. Submitted to the Nova Scotia Demand Side Management Advisory Group. August 13, 2020.

[2] Please note that these values were calculated by Synapse using NSPI's analysis and do not appear in NSPI's analysis or in E1's 2020 R&BIA.

stakeholders may submit comments by August 18, 2020. Synapse submitted separate comments on the transmission and distribution methodology on August 19, 2020.[3]

Table 2 below provides a comparison of the avoided transmission and distribution cost values applied in the 2019 and 2020 R&BIAs. The System Wide avoided transmission cost inputs to the R&BIA more than doubled in the 2020 R&BIA as compared to the 2019 R&BIA, and the System Wide avoided distribution cost inputs more than tripled. Constrained System avoided transmission and distribution costs were produced in 2020 but not applied to the current R&BIA. Constrained System values were roughly three times the System Wide values for both avoided transmission and distribution costs.

		2019 R&BIA Values (2020$ kW-yr)	2020 R&BIA Values (2020$ kW-yr)	2020 as a % of 2019
Avoided Transmission Costs	System Wide	$11.17	$24.23	217%
	Constrained System	n/a	$73.33 *	n/a
	Constrained System as a % of System Wide	n/a	303%	
Avoided Distribution Costs	System Wide	$4.63	$16.99	367%
	Constrained	n/a	$49.86 *	n/a
	Constrained System as a % of System Wide	n/a	293%	

* Please note that constrained values were produced but not applied in the 2020 R&BIA.

Table 2 – Avoided Transmission and Distribution Costs, 2020 R&BIA vs. 2019 R&BIA

Summary of findings

We appreciate the hard work of EfficiencyOne, NSPI, and stakeholders in making these updates. We also appreciate the documentation of NSPI's analysis, as provided in *Appendix D: NS Power Pricing Methodology* in the 2020 R&BIA. Overall, we feel the updates made by EfficiencyOne and NSPI are improving the R&BIA. However, we note that NSPI's analysis lacks the organization that would facilitate review by external stakeholders including Synapse. We request that, at a minimum:

- All data be clearly labeled and units, sources, and assumptions be clearly documented.

[3] Synapse Energy Economics. *Comments on Nova Scotia Power's proposed avoided transmission and distribution methodology for the Rate and Bill Impact Analysis*. Submitted to the Nova Scotia Demand Side Management Advisory Group. August 19, 2020.

- Each workbook include an index tab that explains what information is provided and what is being calculated on each tab.
- Wherever possible, values are calculated within the workbook rather than hard-coded.
- If hard-coded inputs are necessary, these inputs are formatted differently than calculated values to distinguish them, and a key provided to explain the meaning of all formats used in the workbook.

We ask that these changes be made well before EfficiencyOne's next R&BIA filing in late October. Further, we request that NSPI provide a reformatted analysis to the DSMAG in the early fall, if not sooner, and provide the DSMAG with a demonstration of the analysis and an opportunity to ask questions on its functions and assumptions.

While Synapse presents calculations of the changes in avoided cost allocation factors by rate class in Table 1, we wish to confirm our calculations and understanding are accurate. We request that NSPI provide these calculations for stakeholders in its reformatted analysis in the early fall of this year.

In combination, the change in how avoided costs are allocated to rate classes and the update to the avoided transmission and distribution values produced the following in the 2020 R&BIA relative to the 2019 R&BIA:

(1) a similar range of rate and bill impacts across rate classes,

(2) an increase in the magnitude of rate impacts for rate classes with lower consumption and a decrease in the magnitude of rate impacts for rate classes with higher consumption, and

(3) a decrease in the magnitude of participant bill reductions for rate classes with lower consumption and an increase in the magnitude of participant bill reductions for rate classes with higher consumption.

Pages 20-21 of the 2020 R&BIA provide NSPI's explanation of the changes as follows:

> Classes whose total cost of service bear a relatively higher share of fuel costs, such as the Large Industrial, Municipal, Medium Industrial and Large General, see higher reduction rate benefits due to the DSM-induced reduction in system costs because more of the utility cost savings come from the reduced fuel consumption than lower utilization of its fixed cost infrastructure. The opposite holds true for rate classes with higher responsibility for the fixed infrastructure costs such as the Domestic [Residential] and Small General classes.

From an equity perspective, it will be important to continue to encourage comprehensive participation by non-participants in Residential and Small General rate classes, as both continue to have the highest bill impacts. The Residential rate class is the only rate class with a significant increase in non-participant bill impacts in the 2020 R&BIA as compared to the 2019 R&BIA. Additionally, the Residential and Small

General participant bill reductions are lower in the 2020 R&BIA as compared to the 2019 R&BIA while participant bill reductions for all other rate classes are higher.

While this results in different rate and bill impacts by rate class in the 2020 R&BIA as compared to the 2019 R&BIA, we find that the rate and bill impacts remain reasonable for customers. The four figures below show rate, average non-participant bill, participant bill, and total customers bill impacts.

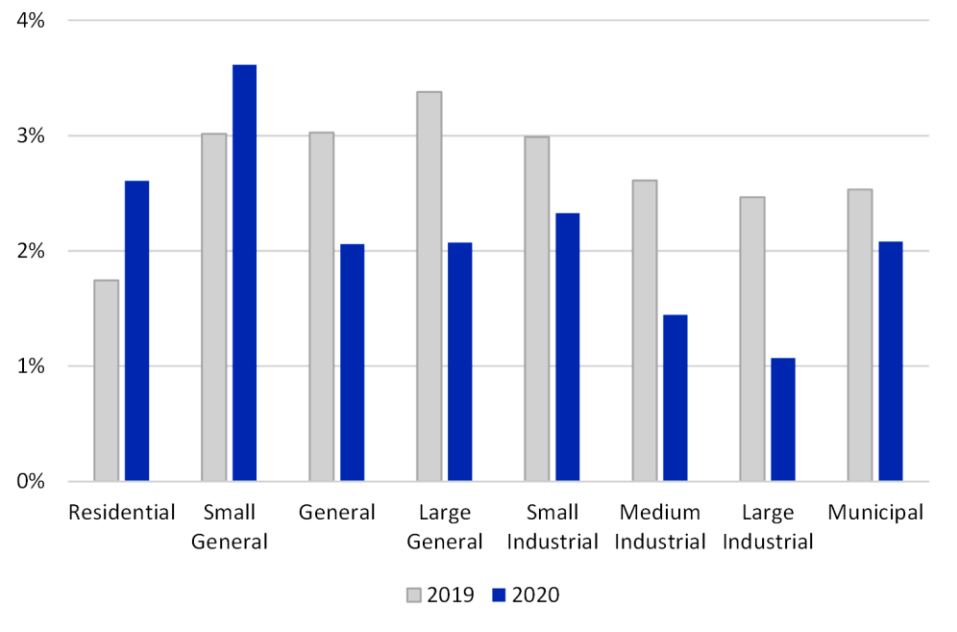

Figure 1 – Rate Impacts by Rate Class, 2020 vs. 2019

Figure 1 shows that, across rate classes, rate impacts ranged from 1.1 percent to 3.6 percent in the 2020 R&BIA, as compared to a range of 1.7 percent to 3.4 percent in the 2019 R&BIA. Rate impacts for the Residential and Small General rate classes increased from the 2019 R&BIA to the 2020 R&BIA, while rate impacts decreased for all other rate classes. Comparing rate impacts of the different rate classes, the Residential and Small General rate classes experienced higher rate impacts and the Medium and Large Industrial rate classes experienced relatively lower rate impacts according to the 2020 R&BIA.

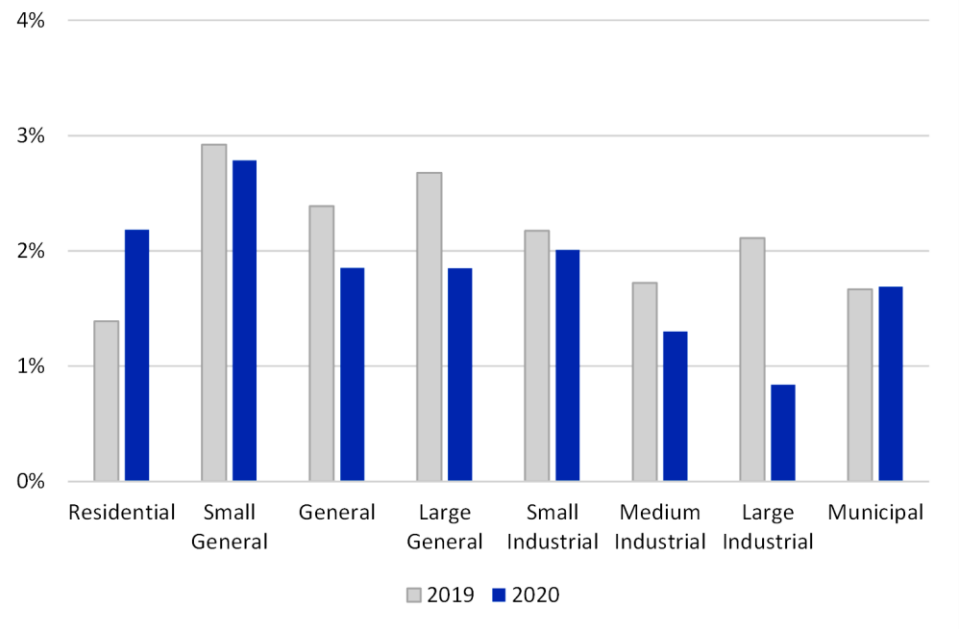

Figure 2 – Average Non-Participant Bill Impacts by Rate Class, 2020 vs. 2019

Figure 2 shows that, across rate classes, non-participant bill impacts ranged from 0.8 percent to 2.8 percent in the 2020 R&BIA, as compared to a range of 1.4 percent to 2.9 percent in the 2019 R&BIA. Non-participant bill impacts increased for the Residential and Municipal rate classes and decreased for all other rate classes. Relative to the other rate classes, the Residential and Small General rate classes experienced higher non-participant bill impacts in the 2020 R&BIA, and the Medium and Large Industrial rate classes experienced relatively lower non-participant bill impacts.

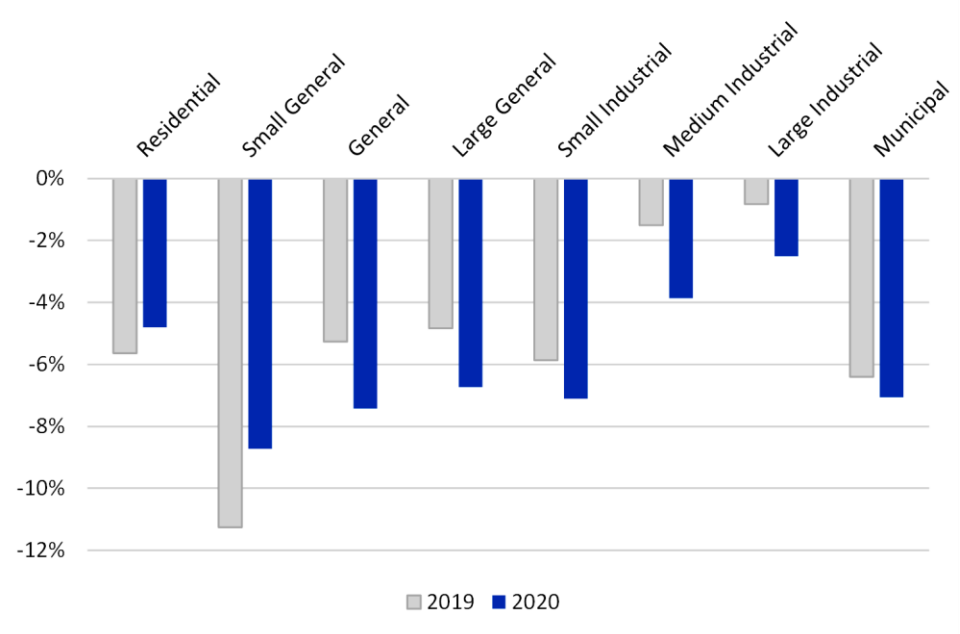

Figure 3 – Average Participant Bill Impacts by Rate Class, 2020 vs. 2019

Across rate classes, participant bill impacts ranged from -2.5 percent to -8.7 percent according to the 2020 R&BIA and -0.8 percent to -11.3 percent in the 2019 R&BIA, as shown in Figure 3. According to the 2020 R&BIA, participant bill impacts decreased for the Residential and Small General rate classes relative to the findings of the 2019 R&BIA and increased for all other rate classes. The 2020 R&BIA finds that the Small General rate class experienced higher participant bill impacts relative to other rate classes, and the Medium and Large Industrial rate classes experienced lower participant bill impacts.

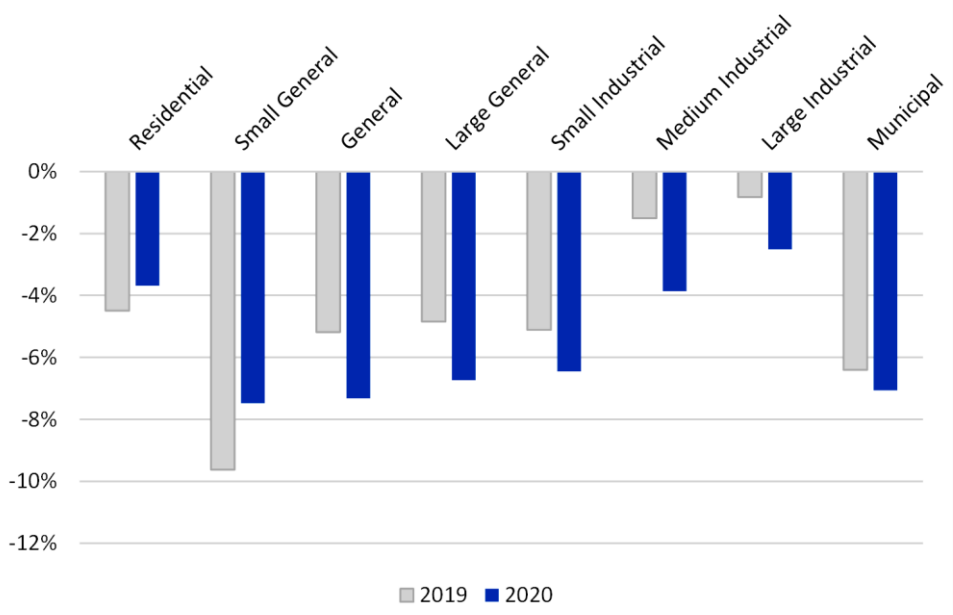

Figure 4 – Total Customers Bill Impacts by Rate Class, 2020 vs. 2019

Across rate classes, bill impacts for all customers (including participants and non-participants alike) ranged from -2.5 percent to -7.5 percent according to the 2020 R&BIA and -0.8 percent to -9.6 percent per the 2019 R&BIA, as shown in Figure 4. Relative to the findings of the 2019 R&BIA, total customer bill impacts for 2020 decreased for the Residential and Small General rate classes and increased for all other rate classes. In the 2020 R&BIA, the Small General, General, Large General, Small Industrial and Municipal rate classes experienced higher bill impacts relative to lower bill impacts experienced by the Residential, Medium Industrial, and Large Industrial rate classes.

Avoided energy and capacity costs and sensitivity analyses

We note that the energy and capacity avoided costs used in the 2020 R&BIA continue relying on the values from the 2014 Integrated Resource Plan (IRP), which are very dated and may be inaccurate. While NSPI filed a final IRP on November 27, 2020, these avoided costs were not updated. We do not have a specific date when we can expect the next update of these avoided costs from NSPI, though there is a possibility that these updates will be provided prior to the next R&BIA filing (in association with the next DSM plan in late 2021 or early 2022). Until updated energy and capacity avoided costs are integrated in the R&BIA model, we request that EfficiencyOne and NSPI continue to provide the two sensitivity analyses included in the 2020 R&BIA, which adjust all avoided costs (energy, capacity, transmission, and distribution) by plus and minus 25 percent. Once updated energy and capacity avoided costs are integrated into the R&BIA model, sensitivity analyses on avoided costs may no longer be necessary.

We also note that the Constrained System transmission and distribution avoided costs are significantly higher than the System Wide transmission and distribution avoided costs. We request that

EfficiencyOne clarify whether and how it intends to use the Constrained System values moving forward. One option is to use the Constrained System transmission and distribution avoided costs to assess the cost-effectiveness of targeted DSM initiatives as a sensitivity analysis. This methodology will be useful when EfficiencyOne expands its targeted DSM efforts beyond the pilot effort in the Kentville area to customers in the geographical areas identified as constrained by the avoided transmission and distribution cost analysis.

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

Sincerely,

Jennifer Kallay, Senior Associate

Alice Napoleon, Senior Associate