



James R. Gogan

Direct Dial: (902) 563-5920

E-Mail: jim@bretonlawgroup.com

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Nova Scotia Utility and Review Board
3rd Floor, 1601 Lower Water Street
Halifax, NS B3J 3P6

Attention: Doreen Friis, Regulatory Affairs Officer / Clerk

Dear Ms. Friis:

Re: M07544 – EfficiencyOne – Incentive Setting Methodology (E-ENS-R-16)

EfficiencyOne and CLEAResult have reviewed the letters of comment filed by Nova Scotia Power Inc. (NS Power), the Small Business Advocate (SBA), and Synapse Energy Economics Inc. (Synapse) in regard to CLEAResult's Incentive Setting Methodology Report ("the Report") and EfficiencyOne's Implementation Plan. We appreciate the opportunity to provide the response of EfficiencyOne and CLEAResult on this matter and offer the following comments.

Issues of Process and Implementation Plan

Response to SBA's Letter of Comment

The SBA raised concerns regarding the adequacy of the scope of the Report and concern that the Report does not provide any methodology or plan as to how Incentive Setting should take place.

Regarding the scope of the report, the SBA expressed concern that "...none of the key stakeholders were ever contacted by the writers of the report".¹ EfficiencyOne acknowledges this fact, noting that it was never the intention for writers of the Report to contact stakeholders directly. EfficiencyOne further notes that the tasks and activities which CLEAResult undertook were consistent with the scope of work.

The SBA provided input into, and guidance on, the drafting of this scope of work. The comments received from the SBA on November 17th, 2015, during development of the final scope of work, did not indicate a request for key stakeholders to be contacted by the Report writers.²

¹ M07544/E-ENS-R-16, Comments – SBA, *EfficiencyOne - Incentive Setting Methodology Review and Recommendations* (3 August 2016), at 1.

² Requests to expand the scope of work (outside of Nov 2015 discussions at the time of scope development) arose in May 2016. Given that: i) the substantive research for the report was complete at this stage and compliant with the Scope of Work developed by the DSM Advisory Group; ii) the financial implications of revising the scope of

The SBA expressed concern about a lack of methodology or plan as to how Incentive Setting should take place. EfficiencyOne submits that, in fact, the primary focus of the Report is to provide a methodology, and the Report also provides support for implementation of such a methodology (e.g., Pages 52-53 of report).³ EfficiencyOne's Implementation Plan considers CLEAResult's proposed methodology for integration into EfficiencyOne's business practices.

Response to NS Power's Letter of Comment – Implementation Plan Issues

Non-Financial Incentives

NS Power, in their letter of comment, suggested that "...the E1 report investigate how non-financial incentives can be incorporated into E1's DSM program delivery to induce participant behavior."⁴ EfficiencyOne and CLEAResult assert that the incentive setting methodologies that CLEAResult researched and recommendations reported on provide a framework for the assessment of all incentive types, whether they are monetary, financial or non-financial. All types of incentives can be assessed using cost-effective tests, impacts to program budget and market research that assesses perceived value to the customer.

All types of incentives represent a cost to EfficiencyOne, hence their ability to be directly compared to other incentive types in terms of cost-effectiveness and ability to garner participation. Furthermore, Efficiency Nova Scotia's (ENS's) current portfolio of programs includes a diverse range of non-financial incentives, including appliance pick-up, energy audits, strategic energy management support for large customers, and design assistance for new home construction. EfficiencyOne remains committed to using the appropriate incentive vehicle that best overcomes customer barriers, at the lowest cost.

Other Incentives

EfficiencyOne agrees with NS Power that sources of other incentives should be documented in the Technical Reference Manual, and be considered when designing or reviewing incentive levels. EfficiencyOne will clarify this in its Action Plan, should the Board consider it appropriate.

Programs with Highest Unit Cost

NS Power has also requested that "programs with the highest unit cost" be reviewed in the first quarter of 2017.⁵ In its Implementation Plan, EfficiencyOne committed to conducting a financial simulation on all ENS DSM Programs prior to the first quarter of 2017.⁶ This review is intended to assess the appropriateness of individual incentive levels within ENS's DSM portfolio. ENS has contacted NS Power to confirm that this satisfies their request and has not received a response. Until notified otherwise, EfficiencyOne will presume that it does.

work and the report at this stage would require notable and unbudgeted ratepayer investments; and iii) the upcoming filing deadline, ENS did not believe it to be prudent to modify the scope at this stage.

³ M07544/E-ENS-R-16, E-1, *EfficiencyOne - Incentive Setting Methodology Review and Recommendations* (30 June 2016), at Appendix A, pp 52-53.

⁴ M07544/E-ENS-R-16, Comments – NSPI, *EfficiencyOne - Incentive Setting Methodology Review and Recommendations* (3 August 2016), at 1.

⁵ *Ibid* at 2.

⁶ *Supra* note 3 at 10.

Issues with regard to the Report

The following responses have been prepared with the assistance of CLEAResult, and their technical insight.

Response to NS Power's Letter of Comment – Report Issues

Jurisdictional Scan

NS Power also recommended that the Study should scan other jurisdictions with a lower cost of DSM delivery.⁷ EfficiencyOne and CLEAResult maintain that the jurisdictions selected within the jurisdictional scan are appropriate and sufficient, and that NS Power's requested changes would not result in any more relevant data points that would alter the recommendations or approach to the Nova Scotia market. CLEAResult selected the jurisdictions to be analyzed based on the following criteria:

- Considered best-in-class;
- similar size to Nova Scotia;
- similar market structure, energy efficiency policy environment and energy efficiency program delivery structure to Nova Scotia; and
- similar climate to Nova Scotia.⁸

One of the primary purposes of conducting the jurisdictional scan was to gain insight into incentive design practices, as opposed to offering a comparison of unit costs. Selecting mature, well-established organizations maximizes the likelihood of obtaining valuable insights into best-in-class incentive design than would be available from less mature and established markets. EfficiencyOne and CLEAResult submit that including other jurisdictions based solely on their low cost of DSM delivery, and not on their relevance to the Nova Scotian market or experience in a DSM market, would not add any additional value of the Report.

Response to Synapse Letter of Comment

The Use of Incremental Cost

In their letter of comment, Synapse indicates that incremental costs should form the basis of the customer cost incentive threshold. Further, Synapse indicates that incremental costs are an appropriate threshold "...for most project and program types" and that "incremental costs are generally easy to apply for most project types."⁹

EfficiencyOne and CLEAResult agree that where a program or measure targets end-of-life replacement decisions, Synapse's definition of incremental costs (with an adjustment for potential incremental installation costs) should form the basis of the customer cost threshold.

EfficiencyOne, however, respectfully disagrees that incremental costs are applicable for most program and project types, using Synapse's definition of incremental costs. For measures primarily intended to

⁷ *Supra* note 4 at 2.

⁸ *Supra* note 3 at Appendix A, p 22.

⁹ M07544/E-ENS-R-16, Comments – Synapse, *EfficiencyOne - Incentive Setting Methodology Review and Recommendations* (3 August 2016), at page 3.

replace or supplement functioning equipment, total project cost should inform the customer incentive threshold. To otherwise assess an early-retirement project using Synapse's definition of incremental costs would have little relevance to the actual project costs incurred by a participant.

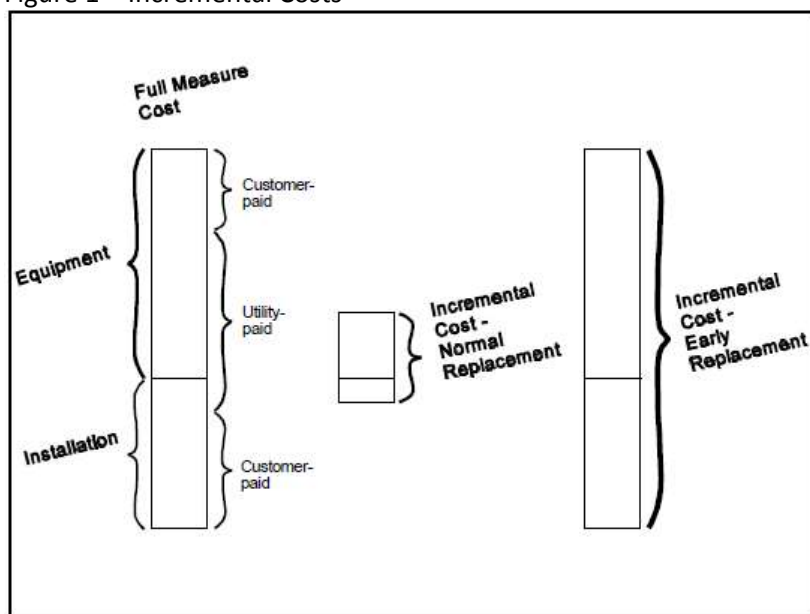
EfficiencyOne and CLEAResult agree to further clarify what costs should be used, under what scenarios (i.e., early-retirement or end-of-life replacement), within the Report.

Synapse defines incremental costs as "...the cost premium of energy efficiency equipment or practice over the cost of standard equipment or practice."¹⁰ This definition is appropriate for one particular equipment replacement scenario, known as "end-of-life replacement", "normal replacement" or "replace-on-burnout". In this scenario, equipment at its end-of-life is replaced, and a more energy-efficient option is selected, as compared to "standard" replacement options. Incremental installation costs are typically included in this definition as well.

The second main installation scenario to be considered is an "early-retirement scenario". In this scenario, functioning equipment is removed prior to its end-of-life and replaced with more energy efficient equipment. In this scenario, the incremental costs to be considered are the total material and installation costs for the project.¹¹

The following figure, from Lawrence Berkley National Laboratory (LBNL),¹² illustrates the above points:

Figure 1 – Incremental Costs



¹⁰ *Ibid* at 1.

¹¹ Some jurisdictions use a more complex calculation for incremental costs in early-retirement scenarios, involving the inclusion of a discounted cost savings from deferring the end-of-life of the now replaced equipment.

¹² Eto *et al.*, Lawrence Berkeley National Laboratory, *Where Did the Money Go? The Cost and Performance of the Largest Commercial Sector DSM Programs* (December 1995) (LBL-38201), at 27.

The majority of ENS's program components target early-retirement scenarios, including the following:

- Small Business Energy Solutions
- Green Heat
- Home Energy Assessment
- Residential Direct Installation
- Low Income (HomeWarming)
- Residential Direct Installation
- Rental Properties and Condominiums
- Energy Management Information Systems
- Strategic Energy Management

In addition, other ENS program components feature measures that are largely deployed in early-retirement scenarios.

For the above reasons, EfficiencyOne supports the LBNL definition of incremental costs (i.e., incremental material and installation costs in end-of-life scenarios, and full material and installation costs for early-retirement scenarios), and its application to the customer cost threshold.

EfficiencyOne also respectfully submits that, contrary to Synapse's assertion, incremental costs are not easy to apply. Obtaining accurate incremental costs can be highly challenging and costly. For example, California's most recent 2014 CPUC Measure Cost Study determined incremental costs for 109 measure types – the project took three years to complete at a cost of \$2 Million USD.¹³

Incentive Optimization Tools

Once incentives have been initially established, Synapse also states as factors for optimization: "[f]actors to consider include simple payback years, benefit cost ratios under the PAC and participant cost tests, gross benefits, benchmarking programs in other jurisdictions, evaluation study results including free-ridership ratios, and customer and supply chain surveys." EfficiencyOne submits that of the factors mentioned, only two (customer surveys and benchmarking programs) are likely to be directly related to the customer purchase decision and produce any desired change to customer uptake with any accuracy. Using the other metrics Synapse has suggested would provide unpredictable changes to participation, at least insofar as they would produce results no better than arbitrary changes. This is due to many of the metrics mentioned by Synapse quantifying the Program Administrator's (and the electricity system as a whole) benefits, and not the customers perceived value.

EfficiencyOne supports the inclusion of historical program experience as an important factor for consideration.

Perceived Value vs. Benefits to Participants

In its letter, Synapse argues that customer simple payback, and by extension, the Participant Cost (PC) test is a valuable metric by which to inform incentive levels. In addition, Synapse suggests changing language around "perceived value" to "benefits to participants".

¹³Ting, Mike, Itron, *Energy Efficiency Measure Cost Studies* (24 September, 2014), SEE Action Webinar – EM&V Working Group, at slide 14.

EfficiencyOne agrees with this notion for larger, more sophisticated Commercial and Industrial customers. Indeed, Table 13 of the Report describes its applicability with respect to large purchases for Commercial and Industrial clients.¹⁴ As described in the Report, ENS's Custom Incentives program uses simple payback to limit incentive levels for individual projects.

For smaller businesses and consumers, EfficiencyOne respectfully disagrees with both of Synapse's proposed modifications. The selection of the term "perceived value" was specific and deliberate. To propose that customers make purchase decisions largely based on the future return they will receive aligns with neoclassical economic theory, but disregards advances into the understanding of behavioural economics.¹⁵

Behavioural economics does not entirely discount the use of financial metrics such as simple payback, but introduces certain limitations as distortions of economic reality that decision-makers are subject to.¹⁶ Examples of these factors include Prospect Theory, Bounded Rationality, Heuristic Decision-Making, loss aversion, risk aversion, status quo bias, Satisficing, sunk cost mentality, temporal and spatial discounting, reward and altruism motivation and trust based decision making.¹⁷ These factors are likely an important reason why human decision-making shows discrepancies as compared to what would be predicted under neoclassical economics (e.g., decision makers don't always make the "best" economic decisions). As such, ENS submits that it would be inaccurate to use project simple payback in incentive design for smaller customers, because of its disregard to patterns of "real-world" decision-making.

In addition, customers also typically face other barriers than just return on investment, including required expertise, time-pressures, competing projects, and a lack of information. The majority of these factors can be addressed by non-financial incentives and can induce measure uptake without improving measure or project return on investment; the PC test is blind toward these incentives.

With these factors in mind, EfficiencyOne and CLEAResult maintain that direct analysis of customer perceived value through market research and quantitative analysis is the most effectively adapted strategy employed in the DSM market to optimize incentive levels. Quantitative market research can and does include the evaluation of costs and paybacks as well. We also maintain that the language of "perceived value" is important and appropriate, especially for smaller, less sophisticated customers.

Program Budget as an Incentive Threshold

Synapse has presented an argument that suggests program incentive budgets should drive program design and budgeting, as opposed to *vice versa*.

¹⁴ *Supra* note 3 at Appendix A, p 44.

¹⁵ Elisha R. Fredericks et al., "Household energy use: Applying behavioural economics to understand consumer decision-making and behaviour" (2015) 41 Renewable and Sustainable Energy Reviews 1385-1394; Jason F. Shogren et al., "On Behavioural-Environmental Economics" (2008) Review of Environmental Economics and Policy; Kenneth Gillingham et al., National Bureau of Economic Research, "Energy Efficiency Economics and Policy" NBER Working Paper Series (2009) <<http://www.nber.org/papers/w15031>>.

¹⁶ *Ibid.*

¹⁷ *Ibid.*

In CLEAResult's experience designing and managing energy efficiency programs across North America, program budgets often play one of the largest roles in incentive setting. In an ideal scenario, CLEAResult would suggest a process where programs are designed from the ground up to inform budget creation, but then are rebuilt and designed from the top down based on actual budget allocation. A major challenge encountered is that to design a program that is precisely cost effective and motivates customers to participate through satisfying the cost to customer threshold will require constant recalibration of budget. This is especially true for mass-market programs where it is difficult to limit participation. Based on CLEAResult's experience many jurisdictions are unable to secure and release new budget, or retract allocated budget, in a fluid manner, or regular enough to operate or implement in this manner. Thus budgets are often set and adjusted at predetermined frequencies and often result in influencing incentive levels.

EfficiencyOne and CLEAResult agree with Synapse that during DSM Plan development processes, it is more logical to develop program costs using expected, appropriate, incentive levels than *vice versa*. A caveat is that certain very high-unit cost measures and programs are unlikely to be approved on the basis of their financial impacts to proposed program budgets.

For measure incentive revisions within a planning cycle, it is again important to assess the budget impact of incentive changes within a pre-defined budget. For this reason, EfficiencyOne maintains that in the context of evaluating potential incentive revisions within a planning cycle, the program budget remains an important factor.

As discussed in the Report, all three incentive setting thresholds play a role in determining what the incentive should be. If the incentive meets the required cost to customer threshold and cost effectiveness threshold, but not the program budget threshold, the introduction of the measure may not be a sound management decision.

Van Westendorp Price Sensitivity Meter

Synapse has presented criticisms of the Van Westendorp Price Sensitivity Meter (VWPSM) that include criticisms of its applicability for existing and new markets.¹⁸

EfficiencyOne does not agree that the utility and suitability of the VWPSM should be discounted based on the evidence provided by Synapse. Synapse's assertions seem to be supported by a single unpublished opinion provided by MMR Strategy group, which has not been peer-reviewed. Moreover, the VWPSM has been used extensively over many sectors for conducting pricing research.¹⁹

EfficiencyOne is not committed to the exclusive use of the VWPSM. EfficiencyOne is open to exploring other market research techniques, so long as they provide insight into perceived value as understood by customers. The Report also discusses other possible techniques, such as Conjoint Analysis.

¹⁸ *Supra* note 9 at p 6.

¹⁹ Elana Salamandic, "Price sensitivity measurement depending on brand awareness: a case of Ziede brand" *Procedia – Social and Behavioral Sciences* 156 (2014) 473-478, at p 474.

Role of Financing

Synapse indicates that “[t]he CLEAResult report should discuss financing and incorporate it as a key factor to influence incentive levels, including the diagrams for incentive development processes provided on pages 52 and 53 of the report.”²⁰

EfficiencyOne submits that the methodologies presented in the Report already lend themselves to the analysis of financing-based incentives, as described on page one of this letter. EfficiencyOne and CLEAResult submit that financing-based incentives can be analyzed from a perceived value perspective using multiple techniques, including Conjoint Analysis, and since financing-based incentives represent a cost to EfficiencyOne, no special treatment is required for an analysis of this incentive mechanism.

As noted by Synapse, EfficiencyOne currently offers financing options to customers and is quite experienced with this incentive type. In the vast majority of cases, financing is offered in lieu of an upfront monetary incentive.

As noted on page two of this letter, EfficiencyOne will analyze external sources of incentives, including financing, when making incentive level determinations.

Direct Incentive Design

Synapse suggests expanding the scope of the Report to include commentary on new “direct incentive design” mechanisms, as well as program design considerations, including which market actors to target with incentives.²¹

EfficiencyOne maintains that the current scope of the Report satisfies the Board’s Order with respect to undertaking incentive research. In addition, EfficiencyOne has significant experience in the area of program design techniques, including mid- and upstream incentive approaches. EfficiencyOne submits that expanding the scope of the report would provide limited value.

Other Issues

Please refer to the below quotations from Synapse’s letter of comment, with EfficiencyOne and CLEAResult’s responses below:

“First, we recommend CLEAResult offer a detailed definition of the theoretical limits. CLEAResult mentions “[i]ncentives can exceed these limits (and often do), but a reference point that can be used during the design process.” (page 19) It would be valuable to know why these are called “theoretical”, but also how these theoretical limits are related to the “absolute limit” and the “suggested boundary/ceiling” discussed on page 44 of the report.”²²

EfficiencyOne and CLEAResult agree to provide further detailed definitions on incentive limits within the Report, should the Board deem it appropriate.

²⁰ *Supra* note 9, at page 7.

²¹ *Supra* note 9, at pages 7-8.

²² *Supra* note 9, at page 8.

“Second, we suggest CLEAResult remove the dollar sign on the y-axis in Figure 4 because both the percentage of customer cost and the PAC ratio are not expressed in dollars.”²³

The Y-axis on Figure 4 is intended to represent dollars, as it shows example incentive level bounding as suggested by the three limits as described above.

“Third, the percentage of customer cost actually includes the project payback (as mentioned on the same page of the report), in which case a number of years should be used instead of the percentage of customer costs. Thus, we recommend it be simply called “customer cost.” Lastly, the PAC benefits should represent the PAC benefit cost ratio.”²⁴

Percentage of customer cost and PAC benefits represent accurate category titles, but given Synapse’s comment, EfficiencyOne and CLEAResult agree this change would be appropriate.

Table 2 (“Summary of Influences on Incentive Rates”) on pages 19-20 of the report discusses factors that put upward or downward pressure on incentive rates by incentive setting component category. We recommend CLEAResult also include examples for customer costs and PAC benefits (or benefit cost ratio).²⁵

Customer costs and PAC benefits are included in the customer and technology research influences.

EfficiencyOne submits that PAC benefits should not be used to vary incentive levels due to the indirect relationship between the PAC ratio and customer uptake. If customer research indicates that an incentive is attractive to customers at a certain level, and that level causes the measure to fail the PAC test, then simply varying the incentive to a suboptimal point in an effort to pass the PAC test could cause a decrease in participation, an increase in free-ridership and higher program unit costs. The PAC ratio is intended as a “check” as opposed to a mechanism for optimizing incentives.

Conclusion

EfficiencyOne and CLEAResult thank stakeholders for their comments on this matter. EfficiencyOne looks forward to further instruction from the Board, and to implementing the methodologies and tools presented within the Report, as described in its Implementation Plan. EfficiencyOne and CLEAResult can currently commit to the following Implementation Plan and Report changes, should the Board deem them appropriate:

- Modification of the Implementation Plan to indicate the TRM design will include a section for other external incentives;
- Further clarifying what costs should be used, under what scenarios (e.g., early-retirement and end-of-life replacement), within the Report;
- Clarify within the Implementation Plan that EfficiencyOne is open to exploring other market research techniques;

²³ *Ibid.*

²⁴ *Ibid.*

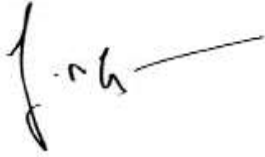
²⁵ *Ibid.*

- Provide further detailed definitions on theoretical incentive limits within the Report, should the Board deem it appropriate; and
- Clarify the PAC benefits category title within the Report.

All of which is respectfully submitted.

Yours very truly,

THE BRETON LAW GROUP

A handwritten signature in black ink, appearing to read 'J. R. Gogan', with a long horizontal line extending to the right.

James R. Gogan

c.c. Bruce Outhouse, QC, Board Counsel
M07544 Participants