



October 6, 2016

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

Dear Ms. Friis:

As expert consultant to Board Counsel of the Nova Scotia Utility and Review Board, Synapse Energy Economics (Synapse) respectfully submits the following reply comments to the August 17, 2016 letter response of EfficiencyOne and CLEAResult regarding CLEAResult's Incentive Setting Methodology Review and Recommendations report.

**INCENTIVES FOR EARLY REPLACEMENT**

In its response letter, EfficiencyOne (E1) indicates that it “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 replace or supplement functioning equipment, total project cost should inform the customer incentive threshold” (p. 3-4). Synapse agrees that total incentives targeting early replacement should be different from those targeting replace-on-burnout situations. However, Synapse’s definition of the incremental cost is applicable even for early-retirement projects. According to a 2014 Northeast Energy Efficiency Partnerships (NEEP) study, the cost of an early-retirement project can be calculated as “the cost of the new efficient equipment minus the present value (“PV”) of the cost that is avoided in the future for the code/standard equipment.”<sup>1</sup> In other words, under this method the early-retirement project cost is the premium or incremental cost of an energy efficient system beyond the net present value of the future capital outlay to buy and install a standard system to replace the old existing system, assuming no program intervention. The key assumption underlying this approach is that customers will eventually replace their existing, old equipment in the future even without program intervention. We regard this as a realistic assumption. Developing incentives based on the total installed costs implicitly makes the unrealistic assumption that customers would never replace their existing, old equipment in the future.

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<sup>1</sup> Northeast Energy Efficiency Partnerships 2014. “Early Replacement Measures Scoping Study: Phase I Research Report” Available at <http://www.neep.org/sites/default/files/resources/Final-Early-Replacements-Report-081514.pdf>.

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NEEP's incremental cost method for early replacement measures results in a cost that is slightly higher than the simple difference between the cost of an efficiency measure and the cost of a standard measure today, but is still much lower than the total project cost of the measure. The NEEP study conducted an extensive survey of methodologies to calculate early retirement measure costs across various jurisdictions and made recommendations as to how to estimate the cost of early retirement measures. We regard NEEP's recommended approach as the best practice in the industry.

E1 and CLEAResult agreed "to further clarify what costs should be used, under what scenarios (i.e., early-retirement or end-of-life replacement), within the Report," as the CLEAResult report does not describe which E1 programs and measures attempt to induce early replacement. Synapse agrees that this change should be made to the report. More fundamentally, however, we note that E1's 2016-2018 DSM Resource Plan does not clearly identify programs and measures that are intended to induce early retirement. In this resource plan, only the Custom Incentives program clearly includes discretionary retrofits—i.e., efficient components are intended to replace existing equipment before the end of its useful life as a cost-effective retrofit.<sup>2</sup> As an important aspect of energy efficiency program design, the focus on discretionary versus end-of-life replacement should be clearly indicated in DSM program plans as well as in the incentive-setting report.

#### **OTHER FACTORS FOR INCENTIVE OPTIMIZATION**

E1 and CLEAResult critiqued our suggestions to include other factors for incentive optimization, such as simple payback years and benefit-cost ratios with the PAC test and the participant cost test. They said that "Using the other metrics ... would provide unpredictable changes to participation... This is due to many of the metrics mentioned by Synapse quantifying the Program Administrator's ....benefits, and not the customers perceived value" (E1 response letter, p. 5). It is not clear how these metrics would result in unpredictable changes to participation, despite E1 and CLEAResult's assertion. In addition, we also note that CLEAResult's key framework for setting incentive levels includes both the perceived value to customers and the program administrator and society's return on investment, which should include benefit/cost ratios with the PAC test.

#### **PERCEIVED VALUE VS. BENEFITS TO PARTICIPANTS**

E1 disagrees with Synapse's suggestion to change "perceived value" to "benefits to participants," because E1 assumes that "benefits to participants" is only intended to reflect participants' perception of their future return on investment (E1 response letter, p. 6). We intended for the term "benefits to participants" to include any financial and non-financial benefits or values experienced by participants. We suggest a smaller modification to CLEAResult's terminology to provide greater clarity:

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<sup>2</sup> Evidence of EfficiencyOne as Holder of the Efficiency Nova Scotia Franchise, February 27, 2015, Appendix A, p. 14.

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Changing “perceived value” to “participants’ perceived value” would make clearer the contrast with the “return on investment” to the electric system or society.

We also note that many of the ways that “real-world” decision-making (reflecting the factors mentioned on p. 6 of E1’s response) differs from rational decision-making in a perfect market can be addressed by other approaches, *without requiring increases (or in some cases allowing decreases) in incentive levels*. For example, effective marketing and customer outreach activities (including targeted marketing and community-based social marketing approaches), innovative program delivery mechanisms (e.g., a turnkey solution with direct install), innovative incentive design (e.g., upstream, tiered incentive approach, separate incentives for contractors vs. home owners) can all increase participation without increasing incentive levels. A focus on quantifiable benefits and costs to participants would comprise a different incentive price setting framework that focuses more on quantifiable benefits and costs of efficiency measures. This approach may be easier to implement, in that it would not require extensive consumer surveys. Consumer surveys are still useful, but the results of such surveys would be used to change the other aspects of the program mentioned above (e.g., marketing approach, delivery mechanism, incentive structure).

#### **VAN WESTENDORP PRICE SENSITIVITY METER**

E1 states that it does not agree that “the utility and the suitability of the VWPSM [Van Westendorp Price Sensitivity Meter] should be discounted based on the evidence provided by Synapse” (E1 response letter, p. 7). However, E1 and CLEAResult still have not provided any examples of energy efficiency program administrators using this method to inform incentive levels. Given the unique characteristics of this industry, including but not limited to the inelasticity of consumers to electricity prices and the unique market barriers present, a method that has worked in other industries may not be suitable here. E1 and CLEAResult should provide more information about how the Van Westendorp meter has worked specifically with respect to electric efficiency measures and programs.

#### **FINANCING**

E1 and CLEAResult mention that financing-based incentives can be analyzed from a perceived value perspective using multiple techniques (E1 response letter, p. 8). We recommend that the report be modified to (1) clearly indicate which types of incentives are covered in the report, specifically whether financing is included or not, (2) include discussion of how to determine financing incentives, and (3) include discussion of how the presence of financing should influence complementary incentives (e.g., rebates) for the same measures or programs.

#### **USE OF PAC BENEFITS**

E1 maintains that PAC benefits should not be used to vary incentive levels (E1 response letter p. 9). This suggestion appears to be contradictory to CLEAResult’s incentive setting approach, as CLEAResult presents PAC benefits as one of the metrics for theoretical limits, per Figure 4 on page 19 of the report. Further, PAC benefit is one of the key metrics within the return on investment category, one of the two key factors in the incentive setting framework (discussed on p. 17 of the report).

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#### **THEORETICAL LIMITS AND INCENTIVE THRESHOLDS**

E1 and CLEAResult did not provide any explanation for or definition of the theoretical limits and absolute limits, despite the request for further clarification on p. 8 of Synapse's comments.

E1 and CLEAResult also did not respond to our suggestion regarding acceptable incentive thresholds on p. 4 of the Synapse comments. We recommended that the incentive setting report provide evidence to support the specific incentive boundary/ceilings recommended therein. We also raised concerns that many of the suggested incentive boundaries appear to be too high and that the report does not provide sufficient clarity on how these boundaries would be applicable to specific program types.

#### **SUPPLY CHAIN RESEARCH**

E1 and CLEAResult did not respond to our comment regarding supply chain and service provider analysis (p. 6 of the Synapse comments), in which we recommended that the report provide guidance on how to interpret the results of supply chain research studies or how these factors might impact incentive levels.



These comments represent our expert opinion on this matter and were developed based on discussion with staff of the Utility and Review Board.

Sincerely,

A handwritten signature in black ink, appearing to read "Alice Napoleon". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Alice Napoleon, Senior Associate

A handwritten signature in black ink, appearing to read "Kenji Takahashi". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Kenji Takahashi, Senior Associate

