Memo

To: RI Energy Efficiency & Resource Management Council
From: Consultant Team *Policy & Strategic Planning Group*
Date: December 6, 2017
Subject: Updated Cost of Energy Efficiency and Supply Methodology

CONSULTANT TEAM

Relevance of Topic	Following questions from Council members and subsequent review by the Consultant Team, National Grid updated the methodology used to calculate the cost of energy efficiency and the cost of energy supply. This change was made following review of the first draft of the 2018 Energy Efficiency plan and updates were incorporated in the second draft of the plan.
Content of memo	The memo provides additional explanation on the updated methodology and explains why the Consultant Team believes that it is appropriate approach to use in planning.
Expected Outcome	The memo aims to address Council members' questions about the approach and increase understanding of the updated methodology.

Rhode Island's Least Cost Procurement statute requires that the cost of energy efficiency procured be less expensive than the cost of supply. At the September 21, 2017 Council meeting, a Council member raised questions about whether the Residential Standard Offer used by National Grid to represent the cost of supply is the most appropriate comparison to the cost of energy efficiency. Following that, the Consultant Team carefully reviewed the section of the 2018 annual plan addressing cost of energy efficiency and supply (First Draft Energy Efficiency Plan, Main Text, Page 5) and recommended two changes to improve the methodology:

1. Remove customer contributions from the calculation of cost of energy efficiency.
2. Base the cost of supply on the Standard Offer Charge for all Residential, Commercial and Industrial customers rather than solely the Residential Standard Offer charge.

These changes to the methodology were incorporated into the second and final draft of the 2018 plan (2018 Energy Efficiency Plan, Main Text, Page 5), and will be used in future energy efficiency plans in Rhode Island. This memo provides more information on these changes, and also explains how the comparison of the cost of efficiency to the cost of supply differs from cost-benefit testing.

Cost of Energy Efficiency

In the first draft of the 2018 Energy Efficiency plan, as well as in the Three-Year plan for 2018-2020, National Grid calculated the cost of energy efficiency to include the following:

- Spending by National Grid on incentives and program administration; and
- Spending by customers on energy efficiency measures, known as the customer contribution.

For example, a Rhode Island homeowner might participate in the EnergyWise program and complete $4,000 in recommended air sealing and insulation upgrades. Of this cost, National Grid would contribute

$3,000 in incentives and the customer would contribute $1,000. This is the "customer contribution" to the project cost.

In reviewing this section of the 2018 plan, the Consultant Team realized that the methodology used in the first draft of the plan was not in line with best practices for comparing the cost of energy efficiency to the cost of energy supply. Supply-side spending only includes utility costs, not customer contributions. The appropriate comparison is therefore how much it costs National Grid to procure energy through energy efficiency vs. energy supply.

The Consultant Team worked with National Grid to review best practices for calculating the cost of saved energy, including documents from Lawrence Berkeley National Laboratory (LBNL)[1] and the American Council for an Energy-Efficient Economy (ACEEE).[2] LBNL refers to the cost of energy efficiency as the "cost of saved energy (CSE)" or "program administrator cost" and defines it as follows:

- Program administrator costs include administration, education, marketing, and EM&V costs, as well as financial incentives paid to customers or contractors.
- Program administrator costs **exclude participant costs,** as well as program administrator performance incentives.[3]

National Grid's updated methodology to calculate the cost of energy efficiency excluding customer contributions is in line with this LBNL definition, and is therefore the most appropriate basis for comparison with the cost of supply. According to LBNL, "the program administrator's cost of saved energy (CSE) is a useful metric for… comparing an energy efficiency option to other demand and supply choices for serving energy needs. The CSE is comparable to the levelized cost of energy (LCOE), which represents the per-kilowatt hour cost (in real dollars) of building and operating a generating plant over an assumed financial life and duty cycle."[4]

Standard Offer Charge

The other change that National Grid made for the second draft of the 2018 plan was to base the cost of energy supply on the Standard Offer Charge for all Residential, Commercial and Industrial customers rather than solely the Residential Standard Offer charge. Under the updated methodology, the supply cost is based on the average Standard Offer Charge effective from October 1, 2016 until March 31, 2017 for all Residential, Commercial and Industrial customers weighted by the lifetime savings in each sector in the 2018 Plan and levelized over the average lifetime of all measures in the plan.

---

[1] LBNL, The Program Administrator Cost of Saved Energy for Utility Customer-Funded Energy Efficiency Programs, http://utilityscalesolar.lbl.gov/sites/all/files/lbnl-6595e.pdf.
[2] ACEEE, The Best Value for America's Energy Dollar: A National Review of the Cost of Utility Energy Efficiency Programs, http://aceee.org/research-report/u1402.
[3] LBNL, The Program Administrator Cost of Saved Energy for Utility Customer-Funded Energy Efficiency Programs, http://utilityscalesolar.lbl.gov/sites/all/files/lbnl-6595e.pdf.
[4] *Ibid.*

This change was made to more accurately reflect the cost of energy supply across the entire portfolio and all customer classes. The cost of energy efficiency for the entire portfolio, as described above, is the total cost of all energy savings divided by the total lifetime energy savings. The cost of the avoided Standard Offer Charge for these savings is the total avoided Charge divided by the total lifetime savings. The Standard Offer price differs by sector because the sectors have different usage patterns, which translate into different costs. Therefore, the realized avoided Standard Offer Charges is the average of the Charge for each sector, weighted by the lifetime savings from that sector. In short, the average weighted Standard Offer Charge is exactly the correct value against which to compare the cost of supply of the efficiency portfolio, because both are weighted by lifetime savings.

How this is Different than the RI Test

It is important to note that the comparison of the cost of energy efficiency to the cost of supply is distinct from cost-benefit testing using the Rhode Island Test. The former focuses on the cost to the utility to procure energy via efficiency vs. supply, whereas the RI Test compares the broader costs and benefits of energy efficiency to the economy as a whole, not just to the utility.