DE 15-137
Energy Efficiency Resource Standard (EERS)
Sensitivity Analysis
Staff's Model Write-up (8-5-2015)

Background

Our initial step in estimating EERS savings targets and related costs is determining an appropriate baseline. Staff uses the savings and related costs contained in the approved 2014 Core filing to establish a baseline.[1] This baseline provides relevant information about utilities' cost effective energy efficiency programs including program designs and strategies, targeted savings assumptions and costs required to achieve targeted savings.

In addition, Staff uses annual kWh sales (i.e., year 2012) as the basis for measuring savings targets.[2] A similar annual kWh sales measurement is used by other states; thus, it provides a common platform for comparison.[3] By 2025, the last year of this study, the electric utilities achieve annual electric kWh savings of 1.31 percent of 2012 annual kWh sales.[4] The gas utilities achieve annual MMBtu savings that are 7.63 percent of 2012 MMBtu sales.

Definition of Savings Targets

Savings can be described in various ways; so, for clarity, we provide the following definitions:

> Annual Savings: Represent savings that are installed during a calendar year.
>
> Cumulative Savings: Represent the sum of annual savings. For instance, cumulative savings for Year 2018 represents the annual savings for years 2015, 2016, 2017 and 2018.
>
> Lifetime Savings: Represent annual savings, multiplied by the estimated lifetime of the measures installed.[5]

The various types of savings are shown on the attached Schedule 1. For the year 2025, the kWh savings values are illustrated as follows:

	Year 2025
Annual Savings	140,247,616 kWh
Cumulative Savings	1,044,379,826 kWh
Lifetime Savings	2,017,274,834 kWh

[1] Docket No. 12-262, Order No. 25,615.
[2] Source: Savings are from Utility Annual Reports and sales for 2012 are from the Commission's website.
[3] For instance, our electric EERS annual savings for the year 2015 is 0.65 percent of 2012 electric kWh sales. By comparison, the Massachusetts percentage was 2.05 percent in 2013 (ACEEE's 2014 Scorecard) and increases to 2.60 percent in 2015 (Docket DPU 12-111).
[4] Note: Annual electric kWh savings are stated in terms of "equivalent" kwh savings – i.e., they represent pure electric kWh savings plus fossil MMBtu savings, converted to kWh savings. Staff uses a conversion factor of 293 kWh per MMBtu. Equivalent savings are used because the electric efficiency programs approved by the Commission are fuel-neutral programs and include both pure electric kWh savings and fossil MMBtu savings.
[5] Lifetime savings is used to determine cost effectiveness of programs.

Components of EERS Analysis

Annual Savings Targets:

The first component of the analysis pertains to savings targets. Staff developed savings targets based on a review of other New England states, coupled with judgment as to what a reasonable target level might be for New Hampshire. Attached Schedule 3 shows reported annual saving percentages for other New England states for year 2013 that range between 0.78 percent of sales (i.e., Maine) to 2.09 percent (i.e., Rhode Island). Based on 2012 actual sales, our analysis for electric utilities recommends a gradual scaling up of annual savings targets from the current approved level of 0.68 percent in 2014 to 1.31 percent in 2025.[6] See Schedule 2.

For natural gas utilities, Staff develops savings targets based on a review of other New England states, coupled with judgment as to what a reasonable target level might be for New Hampshire. Attached Schedule 2 shows savings target percentages for other New England states for year 2013 that range between 0.15 percent (i.e., Maine) and 1.47 percent (i.e., Vermont). Based on 2012 actual MMBtu sales, our analysis for natural gas utilities recommends a gradual scaling up of annual savings targets from 0.65 percent of sales in year 2014 to 0.70 percent in 2016 and remaining years. See Schedule 2.

Cumulative Savings Targets

Cumulative savings targets represent a stacking of annual savings. For electric utilities, we recommend cumulative savings in year 2025 of 9.76 percent of actual 2012 kWh sales. See Schedule 1.

For gas utilities, we recommend cumulative savings in year 2025 of 7.63 percent of actual 2012 MMBtu sales. See Schedule 2.

Installed Cost to Achieve Target Savings:

We begin with 2014 unit costs required to achieve 2014 savings. These costs are "installed" costs – i.e., utility costs plus customer costs – and are the same costs as reflected in the 2014 Core Update filing. We adjust these costs for estimated inflation at 2.5 percent[7] per year through year 2025. We then develop an estimate for "narrow" (versus "broad") and "partial" (versus "full") decoupling[8] and include these estimates in the cost to achieve annual electric and gas savings.

Assumptions:

Key assumptions used in our analysis are as follows:

[6] The percentages are calculated by dividing savings targets by 2012 kWh and MMBtu sales.
[7] Source: ISO-NE FCM Energy Efficiency Forecast Report, 2018-2023.
[8] Decoupling is designed to (1) offset revenues loss due to energy efficiency programs, (2) offset revenue loss due to temperature patterns, and (3) offset revenue loss due to economic conditions. This is referred to as "broad" decoupling. Staff analysis reflects "narrow" decoupling – i.e., it considers only the potential revenue losses due to energy efficiency programs. In addition, decoupling could be "full" or "Partial". Full decoupling allows for recover of amounts above any established cap to be recovered in future years. Partial decoupling allows for recovery of decoupling amounts only in year one, up to any established cap. Staff analysis reflects "partial" decoupling.

- *Fuel-neutral programs*: Electric energy efficiency programs include both electric and non-electric savings, consistent with the Commission's approval of fuel-neutral design.[9] We developed electric and non-electric savings based on the percentage electric and non-electric savings in the 2014 Core Update filing – i.e., approximately 72 percent electric and 28 percent non-electric).

- *Installed costs*: Installed costs represent utility costs plus customer costs. We developed an estimate of utility costs versus customer costs based on the percentage utility and customer costs in the 2014 Core Update filing – i.e., approximately 60 percent utility cost and 40 percent customer costs.

Decoupling Costs: To Be Determined.

Funding:

Electric energy efficiency programs are funded by three primary sources:

- System Benefits Charge (SBC),
- A portion of RGGI funding
- ISO-NE Forward Capacity Market (FCM) revenues.

Our analysis assumes that the level of SBC funding will be based on a rate of $0.0018 per kWh RGGI funding, or approximately $19.0 million per year. RGGI funding will continue at approximately $3.0 million per year for 2015-2025; and, ISO-NE FCM funding will continue at $2.5 million per year for 2015-2025. At these funding levels, our analysis indicates that certain short-fall in funding will result.

Natural gas energy efficiency programs are funded by the Local Distribution Adjustment Clause (LDAC) mechanism. Our analysis assumes that the level of LDAC funding will continue at approximately $7 million per year through 2025. At these funding levels, our analysis indicates that certain short-fall in funding will result; but, such shortfalls could be incorporated into the LDAC.

[9] Reference Commission Order No. 24,974 dated June 4, 2009.