EE-08: Prescriptive Measure Level TRC Calculation and Record Keeping for Pre-qualifying Measures

New York State Department of Public Service
Office of Energy Efficiency & the Environment

Energy Efficiency Guidance

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I. Purpose:

This Energy Efficiency Guidance document provides guidance to the OEEE Staff and to the Program Administrators (PAs) regarding the calculation of prescriptive measure level Total Resource Cost with Carbon (TRC) and the auditable records that must be maintained to pre-qualify prescriptive measures with either fixed dollar amount or fixed percentage rebates.

Energy Efficiency Guidance documents are developed to clarify energy efficiency program issues and to provide guidance for Energy Efficiency Program Administrators and OEEE Staff in consistently interpreting and uniformly applying Public Service Commission Orders.

All Energy Efficiency Guidance documents are in effect until revised, rescinded or superseded.

II. Background:

By Order issued December 26, 2013, the Commission eliminated the requirement to pre-screen installations of prescriptive measures which have been demonstrated to be cost-effective in a majority of actual installations, whether the rebates are fixed dollar amounts or fixed percentages, but required PAs to maintain auditable records sufficient to demonstrate that each type of prescriptive measure is cost-effective in a majority of actual installations.[1]

[1] Case 07-M-0548, Order Approving EEPS Program Changes, issued December 26, 2013, pages 41-43.

III. Guidance:

In order to offer a measure on a pre-qualified basis, PAs shall maintain auditable records to demonstrate that the measure is likely to be cost-effective in most applications based on typical costs and savings in the PA's service territory. A measure may be considered pre-qualified when the TRC calculation results in a value equal to or greater than 1.05. Auditable records shall be readily available for Staff inspection. An active spreadsheet showing the full formulas, values, and units must be included in the auditable records. All work papers, including source references, supporting the TRC value calculated must be available for inspection by Staff at any time.

Prescriptive Measure Level TRC Calculation

The TRC is generally[2] calculated as follows:

TRC = Incremental Benefits / Incremental Cost

Incremental Benefits

Incremental benefits in the TRC calculation include the monetized values of incremental Electric Energy Savings, incremental Electric Demand Savings, incremental Gas Savings, and incremental CO_2 Emissions Reduction Savings, and are defined as the Net Present Value (NPV) of the long run avoided costs (LRACs) over the effective useful life (EUL) of the installed measure as compared to the installation of a baseline measure. For Electric Energy Savings and Electric Demand Savings only, there is an adjustment for line loss. Appendix 1 outlines the inputs to be used in calculating the benefits.

Incremental Cost

Incremental costs are defined as the costs incurred above the cost that would have been incurred for a baseline measure. These costs include the incremental equipment and materials cost, as well as the incremental installation costs, where applicable. All costs should represent the equipment, material and installation costs in the appropriate New York State market at the time of installation. Costs should be derived from manufacturer, contractor, or retail pricing, reports/studies such as Incremental Cost Studies performed by the Northeast Energy Efficiency Partnership (NEEP) or other 3rd party/industry accepted sources, or Technical Resource Manuals from other states where regional similarities exist. The PA should research the available choices, and apply costs that reasonably represent the typical installation based on its knowledge and experience.

[2] As described in the New York Standard Approach for Estimating Energy Savings from Energy Efficiency Programs (TRM), there are certain instances for which a PA may use other than incremental benefits and costs.

Table 1 - Inputs to Calculating TRC Benefits

Input	Applicability	Definition/Value	Source	Acceptable Alternative Source
Measure Savings	ALL	First year savings of the installed measure incremental to the baseline energy consumption.	TRM	If not addressed by the TRM: Technical Resource Manuals from other States; reports; studies.
Baseline Energy Consumption	ALL	Energy usage of the baseline equipment, process, or standard.	TRM	If not addressed by the TRM, should comply with New York State energy efficiency codes[1] and U. S. Department of Energy, (DOE) Office of Energy Efficiency and Renewable Energy[2] codes. If standard baseline installation practices do not align with energy codes, PAs must document how the standard baseline installation is determined.
EUL	ALL	Effective Useful Life of Measure	TRM	Appendix, July 18, 2011 Order in Case 08-E-1003, et al
Price Forecast	Electric Energy Savings	NYISO LBMP Price Forecast	Appendix 2, Table 1, January16, 2009 Order in Case 08-E-1003, et al[3]	N/A
	Electric Demand Savings	Marginal Generation Capacity Costs	Appendix 2, Table 2, January16, 2009 Order in Case 08-E-1003, et al[3]	N/A
	Electric Demand Savings	Marginal Distribution Capacity Costs	Appendix 2, Table 2, January16, 2009 Order in Case 08-E-1003, et al[3]	N/A
	Gas Savings	Natural Gas Price Forecast	Appendix 2, Tables 1 and 2, April 9, 2009 Order in Case 08-G-1004, et al[3]	N/A
	CO_2 Emissions Reduction Savings	$15 per ton	Appendix 3, Page 2, June 23, 2008 Order in Case 07-M-0548[3]	N/A
End Use Load Shape Factor	Electric Energy Savings	Savings multiplier which adjusts Price Forecast to reflect the measure's time of use.	Energy software programs with pricing & load data (e.g. Cadmus); Reports/Studies (NEEP Load Shape Studies or other 3rd party/industry accepted sources.)	Cadmus load shapes adjusted by ORE and OEEE factors using MAPS data (Table 2 below).
Real Discount Rate	ALL	5.5% over the EUL of the measure	Page 1 of December 3, 2007 Staff Supplemental Filing, Case 07-M-0548	N/A
Line Loss Factor	Electric Energy Savings Electric Demand Savings	7.2% (divide costs by 0.928)	Appendix 2, Tables 1 & 2 Notes, January 16, 2009 Order in Case 08-E-1003, et al	N/A

[1] Many of the pertinent New York State codes relating to energy efficiency are contained in the Energy Conservation Construction Code of New York State, Published by the New York State Department of State, Division of Code Enforcement and Administration. At present, the 2010 version of this code is the controlling publication.

[2] The minimally-compliant DOE energy usage baseline for many home and commercial appliances can be located at: http://energy.gov/eere/buildings/appliance-and-equipment-standards-result-large-energy-economic-and-environmental

[3] To adjust for inflation from 2008 to 2014, values in these tables should be multiplied by 1.09 based on historical GDP data and forecasts for GDP price indices from the March 2014 Blue Chip Economic Indicators.

Table 2 - End Use Load Shape Factors

(Cadmus load shapes adjusted by ORE and OEEE factors using MAPS data)

End Use	Zones A-F Upstate	Zones G-I Hudson Valley	Zone J NYC
Commercial Space Cooling	1.1	1.0	1.0
Commercial Space Heating	1.0	1.0	0.9
Large Office Heat Pump	1.1	1.0	1.0
Large Office Space Heating	1.1	1.0	1.0
Large Office Ventilation	1.1	1.1	1.1
MF High Rise Ventilation	1.0	1.1	1.0
MF HVAC	1.0	1.0	1.1
MF Space Cooling	1.1	1.1	1.1
MF Space Heating	0.9	1.0	1.0
Misc. Non-residential Space Cooling	1.0	1.1	1.0
Office Lighting	1.1	1.1	1.1
Office Space Cooling	1.0	1.2	1.2
Retail Space Cooling	1.1	1.1	1.1
School DHW	1.1	1.0	1.0
Single Family Space Cooling	1.1	1.1	1.1
Singe Family Space Heating	1.0	1.0	0.9
Other	1.0	1.0	1.0