Improved Methods for Evaluating and Reporting Results from All-Fuels Technical Potential Studies – A Case Study from New Hampshire

Ryan R. Capers, GDS Associates, Inc., Manchester, NH

Overview

This poster presents results from a comprehensive electric and non-electric technical potential study completed recently in New Hampshire. Estimates of technical potential, maximum achievable potential, and maximum achievable cost effective potential by the year 2018 (a 10-year period) were developed specifically for electricity, natural gas and related propane and fuel oil savings at the state level and for each of the four New Hampshire retail electricity providers and two natural gas distribution companies. Results from a new potentially obtainable savings scenario are also presented to estimate that portion of the cost effective potential that might be achievable after consideration of customer behavior. Finally, estimates are presented of the installed costs required to achieve resulting savings for each scenario.

Study Features

This study somewhat unique because 1) primary data collection was used to help develop state and sector-specific values for end-use equipment saturations and energy efficiency equipment penetrations; 2) both electric and non-electric benefits were quantified, including savings associated with natural gas and related oil- and propane-using measures; 3) a "potentially obtainable" scenario was developed; and 4) powerful sorting and ranking functionality was added to traditional modeling tools to allow for extensive sector and measure-specific .findings to be screened and analyzed to identify largest savers and end-uses to aid in follow-up program design.

Methods

All results were developed using customized residential, commercial and industrial sector-level energy efficiency potential assessment models and New Hampshire Public Utilities Commission specified cost-effectiveness criteria including the region's most recent avoided energy cost projections. To help inform the assessment models, actual electric and gas utility customer information was collected through a combination of primary data collection efforts utilizing telephone surveys with residential and small commercial/industrial customers and site visits at larger commercial and industrial facilities.

Results

The Potentially Obtainable scenario (which takes into account customer behavior) indicates savings potential from electric and non-electric efficiency measures of approximately nearly 11 percent of projected 2018 kWh sales and over nine percent of projected 2018 non-electric (natural gas, oil and propane) sales. The Potentially Obtainable electric savings is equal to approximately 78 percent of the projected growth in electricity consumption over the next decade. To frame the impact in terms of the environment, the potential carbon reduction under the Potentially Obtainable scenario is equal to taking 170,000 cars off New Hampshire's highways and byways.