

Seattle City Light and Northwest Energy Efficiency Alliance Single Family/Multifamily Residential Building Stock Assessment 2012

Overview

The Northwest Energy Efficiency Alliance (NEEA) is conducting a comprehensive assessment of residential buildings in the Pacific Northwest. A number of member utilities, including Seattle City Light, have paid for additional sampling to produce statistically valid results for their service territories. This summary describes the regional study and then reviews detail specific to the oversampling for City Light.

The principal goal of the study is to characterize the residential sector throughout the region to inform future energy conservation planning efforts. The results will help to identify what energy efficiency utility programs make sense for the region's utilities to offer, including Seattle City Light. The residential building characteristics being collected include building shell (insulation and windows), home heating and cooling systems, lighting, appliances and a limited plug load survey focusing on electronics and home entertainment. The sample size and methodology have been designed to produce statistically representative results.

Regional Study Objectives

The study will develop a profile of the existing residential building stock in the Northwest, based on data from a sample of existing residences, in three categories: single-family, multifamily, and manufactured housing. The analysis will be done from four geographic perspectives: the whole Region, by state, by whole BPA service territory, and by BPA sub-region.

Regionally the data will be used for several important purposes:

- Utilities conducting conservation potential assessments, program planning and program design;
- Load forecasting and conservation planning for the 7th Regional Power Plan;
- BPA tracking of non-programmatic energy efficiency savings;
- Updating energy savings estimates for standardized conservation measures;
- Strategic planning for energy efficiency and conservation organizations; and
- Assessing changes in energy efficiency and conservation during the recent past and in the future.

Seattle City Light Targeted Objectives:

Seattle City Light contracted with NEEA to include oversamples in its service territory. Seattle's oversample uses the same procedures as the main Residential Building Stock Assessment sample, including participant recruiting procedures and data collection protocols. As a result, Seattle's individual study can include the sites already drawn for the regional RBSA, minimizing the effort and cost required to produce statistically valid results individually for City Light's service territory.

The objectives and uses of the more detailed study for City Light mirror those of the regional study (see above). Because of the significant amount and diversity of multifamily housing in its service territory, City Light also specified that its multifamily sector study should include three separate categories of buildings: stick frame built before 1980, stick frame built since 1980, and concrete and steel high-rise.

Billing Analysis

The study includes billing analysis to estimate average energy consumption and its variability based on a number of key building characteristics. These include heating fuel, heating system, water heating fuel, square footage, level of insulation, and window type.

The current billing analysis will supplement a Residential Customer Characteristics Survey carried out in 2009 which included billing analysis of a variety of self-reported customer, household and building characteristics. That report is available on the web at http://www.seattle.gov/light/Conserve/Reports/Evaluation_15.pdf.

Data/Report Deliverables

The results of the regional study will be provided to Seattle, as well as NEEA and the Northwest Power and Conservation Council, in the form of data tables accompanied by a database with basic predefined reports and queries. A written summary report of characteristics specific to Seattle's service territory along with associated data tables will also be provided to Seattle.

Schedule

The current schedule has the City Light single family building characteristic data available in summary tables this month and a searchable database in December, with a final report including the characteristics and billing analysis completed in March, 2013. The multifamily data is scheduled to be available in mid-December with a final report including characteristics and billing analysis completed by March, 2013.