

# Characteristics of ENERGY STAR<sup>®</sup> for New Homes in the Pacific Northwest

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## Introduction

The Northwest Energy Efficiency Alliance (NEEA) is in the midst of evaluating the impacts of the ENERGY STAR<sup>®</sup> Homes Northwest Program that was implemented by numerous utility providers in the Pacific Northwest. The project involves both a quantitative impact evaluation and descriptive housing characteristics analysis based on the results of on-site surveys that were conducted. 345 homes were visited out of the 3,981 program participants in 2006 and 2007.

## Methods

**Building Characteristics & Testing.** We gathered information regarding building types, the sizes of conditioned/unconditioned floor areas and volumes, and the make-up of the building envelope, including percent of façade comprised of windows, wall insulation, roof/attic configuration/insulation and basement configuration/insulation. A blower-door test was conducted in each participant home to determine the extent of air infiltration through the building envelope. These characteristics were compared against those of non-participant homes of similar vintage.

**Lighting Characteristics.** From each participating home, we gathered data regarding the numbers of lighting fixtures, lighting fixture types, lighting control types and lamp types. The percentage of standard, medium screw lamp bases that were CFLs was found to be significantly higher in the participant homes than had been found in the non-participant, baseline homes studied approximately one year earlier.

**HVAC Characteristics & Testing.** We gathered data regarding the heating and air-conditioning systems of participant homes. The system types, sizes, duct configuration were compared with those of non-participant homes. The system airflow was measured for nearly every home with ductwork and reported for both heating and air-conditioning systems. The duct leakage rates were also measured and reported.

## Conclusions

The home construction amongst the ENERGY STAR<sup>®</sup> for New Homes participants was found to be rather different than had been observed amongst the non-participant homes and the study yielded much valuable information to inform future programs or revisions to residential building codes & standards.