Measuring Energy Code Compliance in Utah: A Case Study

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Summary

More and more states are looking to energy code programs as a source of energy savings potential both for state resource standards and to comply with the American Recovery and Reinvestment Act (ARRA) funding requirement to achieve 90% compliance with energy codes by 2017. A two phase, pilot study was conducted in Utah using a Department of Energy (DOE) checklists and self-assessment survey to assess energy code compliance.

Assessment Approach

An assessment approach, developed by the Department of Energy, using detailed checklists was piloted in Utah to determine just how effective checklists are for measuring energy code compliance with the IECC 2006 for residential construction and IECC 2009/ASHRAE 90.1-2007 for nonresidential construction, across four building types: 1) residential new construction, 2) residential renovations, 3) commercial new construction, and 4) commercial renovations.

Phase 1 Activities Conducted. A consulting team was hired to assist the state of Utah to work with local building departments to: 1) measure and report on Utah's current building energy code compliance rates using U.S. Department of Energy's Building Energy Codes Program's (BECP) methodologies and tools; 2) provide comments, lessons learned, and suggest improvements to BECP methodologies, checklists, and other tools; 3) record, track, and report on time and number of trips required to evaluate each building type; and 4) provide feedback on whether or not participants were adequately trained and prepared on use of checklists and assessments. The goal of the pilot study was to assist the State of Utah to develop best practices to measure and increase energy code compliance rates; and to provide feedback and suggested improvements and refinements to BECP measuring tools and training materials.

The pilot project identified barriers and issues discovered through a self-assessment survey developed by Pacific Northwest National Laboratory. These aspects were ranked in terms of contribution to reduced compliance. Recommendations focused on ways to address the short- and long-term barriers to energy code compliance, areas of enforcement requiring attention, specific strengths and weaknesses in the compliance tools/methodologies, and programs and activities to enhance training and education on energy code compliance in Utah. A Utah Code Compliance Roadmap to illustrate the best path forward was developed to ensure that critical lessons learned from the evaluation are addressed and the recommended actions are realistic and achievable.

Phase 2 Activities Conducted. Using BECP's Sample Generator, a statistically valid, random sample of single-family new residential construction was developed and the DOE checklists were used to conduct assessments with the IECC 2006.