Claiming Energy Savings from Appliance Standards

Introduction

Appliance and equipment efficiency standards are among the most impactful energy- and emissions-saving policies. These regulations keep energy-inefficient products out of marketplaces and ensure minimum energy and water efficiency levels are reached by all products. The Department of Energy (U.S. DOE) Building Technology Office (BTO) implements minimum energy efficiency standards for a variety of products across the country. States, however, may adopt standards for products that do not have an existing federal standard may increase the efficiency standards for products that are already regulated. Despite the fact that appliance standards offer highly cost-effective energy savings and emissions savings opportunities, states do not always consider how appliance standards can be a part of energy efficiency programs. In states with adopted appliance standards, states and utilities can develop and implement programs similar to existing energy code compliance attribution programs to receive these savings from standards too. States without adopted standards can use the potential savings from appliance standards attribution programs as a way to encourage future adoption. Code compliance attribution programs often provide funding for education, trainings, and consensus building to increase the adoption of more progressive energy codes.

Claiming Savings from Energy Code Compliance Attribution: A 101 Course

1. Determine potential savings from adopting or amending an energy code. Potential savings are based on construction activity, baseline usage, and the new required level of efficiency.
2. Evaluate gross savings potential, which is calculated by determining the level of compliance with the code change with the noncompliance savings loss, since 100 percent compliance is not assumed.
3. Determine net savings through naturally occurring market adoption, meaning that gross energy savings are adjusted for normally occurring market adoption of energy efficiency building practices.
4. Calculate level of attribution savings to determine net program savings, which is then allocated to the PAs and utilities based on relative contribution to savings.

Energy Code Compliance Attribution Programs

NEEP conducted a study on Energy Code Compliance Attribution for National Grid, which explored how National Grid can claim savings for improving code compliance in newly constructed buildings through attribution programs in Massachusetts and Rhode Island. This study was based on NEEP's report Attributing Building Energy Code Savings to Energy Efficiency Programs. The case study outlines how program administrators (PAs) at National Grid can be incentivized to support energy code compliance since building energy codes, when enforced and complied with, provide highly cost-effective energy savings opportunities for states and utilities. Attribution is defined as the

determination of the amount of energy savings that should be credited to PA efforts in the code development, adoption, and compliance processes. Both of these resources show how PAs, states, and utilities can unlock opportunities for energy savings through code compliance programs. Utilities/PAs can use a similar framework to design attribution programs for adopted appliance standards and can expand them to calculate emissions savings of adopting appliance standards.

Although energy- and emissions- savings from appliance standards are typically calculated at the individual consumer/homeowner level, states and utilities benefit from adopting standards as well. The Appliance Standards Awareness Project (ASAP) found that states with adopted appliance standards, similar to those with adopted energy codes, save significant amounts of energy and money every year, not only at the household level, but also at the state-level. Since these savings can be calculated on a larger scale, states and utilities have the opportunity to unlock more energy- and emissions- savings through implementing appliance standards attribution programs[1].

States in the NEEP Region with Appliance Standards

As of December 2022, six states in the NEEP region have adopted, are in the process of adopting, or have been directed to adopt appliance standards. These states are Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, and the District of Columbia. More information on NEEP's Appliance Standards Program, including the State Appliance Standards Database (SASD), can be found here.

Appliance Standard Compliance Program Design

To develop and implement an appliance standards attribution program, states and utilities must research more specifically how these programs can result in energy savings. NEEP is conducting additional research on how states and utilities can claim attribution savings from appliance standards and will publish those resources in the new year. Some of the critical activities that states should focus on when developing an attribution program for standards include:

1. Regulatory policy to include savings from appliance standards programs as a part of energy efficiency programs;
2. Methods to quantify savings from statewide adoption of standards; and
3. Development of an attribution framework with utilities and other stakeholders.[2]

Utilities can help with developing and implementing appliance standard attribution programs by providing technical assistance to states and supporting implementation of these standards. Their relationships with

[1] More information on enforcement best practices can be found here: enforcement_best_practices.pdf (neep.org)

[2] NEEP believes an attribution framework for appliance standards can mirror existing attribution framework for energy codes. Some examples of these frameworks can be found here: TITLE OF PRESENTATION HERE (cee1.org) and here: How to Use Your Computer And Omni Papermaker® (iepec.org)

customers and trade allies can also help educate markets about the effects of new standards. Utilities that operate voluntary efficiency programs can also coordinate their incentive and education programs, gearing voluntary incentive targets to the standards.[3]

Conclusion

States have the opportunity to ensure that both residents and utilities can unlock the benefits from the adoption of appliance standards. Residents will benefit from cost-savings as a result of more efficient standards lowering the cost of equipment and energy bills. With attribution programs in place, utilities will benefit from increased savings through the implementation of programs to increase the adoption of new appliances and will help inform residents of the benefits of appliance standards. Although states do not typically claim energy savings from appliance standards attribution programs, the success and savings of energy code programs show that states have the opportunity to develop similar programs for appliance standards to claim even more energy and emissions savings.

[3] 2015 Energy and Environment Guide to Action: Chapter 4.4 (epa.gov)