Welcome and Introduction: Opportunities to Realize Savings from Codes and Standards Efforts

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NEEP Codes and Standards Workshop
September 28, 2010

*The comments and opinions in this presentation are solely those of the presenter.

Why Are We Here?

Codes and standards (C&S) are Hot!

- Energy efficiency identified as priority resource—energy savings and affordability, climate, reliability, and economic development
- States setting aggressive new goals for energy savings, emissions reductions, or both, with new resource priorities mandated and EE program funding set at historic levels
- Need to go deeper & broader—all fuels, whole-building approaches, new program strategies, better coordination with other public policies, recognition of the market value of energy efficiency
- Strong interest in C&S savings as a key resource—substantial opportunity for savings through energy-efficiency building codes (new/renovations) and appliance/equipment standards efforts
- American Recovery and Reinvestment Act (ARRA) requires that states meet minimum building code compliance levels by 2018
- US DOE has renewed emphasis on appliance/equipment standards

Why Are We Here (con't)?

- A few states in other regions have ratepayer-funded codes and standards (C&S) programs or program elements, as part of their energy-efficiency program portfolios—designed to operate in their regulatory frameworks
- Interest within state administrations and among regulators to increase savings from codes and standards, to help achieve state policy goals
- Strategic interest in relieving some pressure on ratepayer costs by increasing emphasis on codes and standards for new construction and equipment replacement (political will to lock in savings, rather than ratepayer funding/incentives)
- Some program administrators in the Northeast have begun to develop codes and standards efforts as programs, program elements, or support activities

Issues, Uncertainties, Barriers

- C&S increase the baselines against which conventional EE programs are assessed – reduce available savings for EE programs
- C&S activities do not easily fit into cost-effectiveness screening for ratepayer-funded efficiency programs
- Regulatory treatment of program administrators' codes and standards efforts needs to be clarified, including means of attributing savings or credit for such efforts
- For some equipment types, federal standards preempt state standards, unless a petition for an exemption is approved

NEEP and the EM&V Forum have convened this workshop to help address these issues and barriers, and to identify ways to realize the opportunity of C&S savings for individual states.

What Is the Opportunity?

Summary of Codes and Standards Electricity Impacts in 2020 in the United States: Residential, Commercial, and Industrial Sectors

Scenario	Electricity Use in 2020 (TWh)	Savings from Building Codes (TWh)	Savings from Equipment Standards (TWh)	Total Savings (TWh)	% of Baseline
AEO Baseline Forecast	4,117				
Moderate Scenario	4,012	18	86	104	2.5%
Aggressive Scenario	3,824	59	234	293	7.1%

Source: *Assessment of Electric Savings in the U.S. Achievable through New Appliance/Equipment Efficiency Standards and Building Efficiency Codes (2010-2020)*; Institute for Energy Efficiency, December 2009

What Is the Opportunity?

Estimates of savings through codes and standards efforts by American Council for an Energy-Efficient Economy (ACEEE)*:

- 4.5% savings on electricity use by 2020
- 1.6% savings on natural gas use

Energy savings potential in California IOU service areas from C&S—Potential cumulative annual savings from buildings and equipment/appliance standards during 2006-2008

- Electricity: 1,664,000 MWh and 337MW
- Natural gas: 19.4 million therms

*Source: Fact Sheet: "Energy Savings from Codes and Standards Count Towards EERS Savings Goals," American Council for an Energy-Efficient Economy, April 2009.

What Is Current State of C&S Efforts?

- California:
  - IOUs continue past activities to support C&S
  - IOUs expand role with CA Energy Commission and feds
  - CPUC will provide credit for savings from IOU C&S programs in next round
- Arizona:
  - C&S savings may count towards recently-adopted EE Standards (EERS), and utilities are developing codes and standards programs or C&S support activities
- Nationally:
  - Much emphasis on building energy codes and increasing compliance – roles of EE programs being discussed

What Is Current State of Codes and Standards Efforts in Northeast?

Some examples (more later today):

- Massachusetts Program Administrators (PAs) are considering a residential new construction codes program, leveraging ARRA funds for establishing the baseline, and exploring expansion of codes efforts to the commercial/industrial sector.
- Connecticut Program Administrators are enhancing efforts on building codes through outreach and education, by increasing training for code officials, by implementing whole-building performance tracks (consistent with where codes for 2012 are headed), and by advocating for codes with higher efficiency levels.
- The CT Energy Efficiency Board proposed that the DPUC allow the PAs to receive credit for savings from C&S activities through the development of a well-defined savings attribution methodology for claiming savings from more stringent codes and standards that the PAs are instrumental in developing and/or implementing.
- NYSERDA is leveraging ARRA funding to increase compliance with the building code.

How Do Conventional Energy Efficiency Programs Contribute?

Early Programs:
Resource Acquisition

- Introduce/subsidize technology/practice
- Attract early adopter end-users and market actors
- Low free ridership and spillover

Maturing Programs:
Market Effects/Trans

- Broadened appeal; technology/practice self-sustaining
- Many end-users and market actors accept technology/practice
- Higher free ridership and spillover

Culminating Programs:
Codes and Standards

- Technology/practice possible for everyone
- Remaining end-users and market actors required to adopt technology/practice
- 100%?—Compliance becomes the issue

New floor established—begin again

New Homes – Three Part Approach

- Push the envelope, high performance buildings (zero-net energy)
- Mainstream/mass market (Energy Star and EE programs offer 15-30% energy savings)
- Lock in the savings with building energy codes (IECC or stretch codes)

What Is the Effect on Conventional Energy Efficiency Programs?

Some tensions and disincentives:

- C&S programs displace conventional energy efficiency program savings potential and shift the baselines to higher efficiency levels, making it more challenging to achieve energy savings goals
- Leave conventional programs with harder-to-reach and (often) more expensive savings opportunities

Getting program administrator buy-in and support for codes and standards programs generally means having a path for *claiming* some of the energy savings or otherwise getting *credit* for their efforts

How Should Conventional Energy Efficiency Programs Adapt?

- Link current program efforts to future codes and standards upgrades (plow the ground)
- Promote very efficient technologies and high performance buildings—the next generation
- Emphasize whole-building performance approaches within the EE programs (focus of 2012 codes)
- Focus other program efforts on early replacement and retrofits in existing buildings
- Link codes to ratings of building performance to get "currency" in the market

What Are the Aims of C&S Programs?

- Advocate and provide supporting evidence for new codes and standards or for upgrades to existing codes and standards
  - National
  - State
  - Local “stretch” or “reach” codes and standards
- Provide training and enforcement support to increase compliance
- Document efforts so they are not “lost to history” and so that savings claims can be justified
- Evaluate costs and benefits to assess the overall effectiveness and provide information to allow improvements
- Keep new technologies and practices in the pipeline through conventional energy efficiency programs
- Support relevant and up-to-date federal standards, OR petition for exemption to preemption of state standards by federal stds

The "Simple" Questions

- What are the energy savings from C&S?
- What actions and activities caused the C&S energy savings to happen?
- Who should get the credit/who should be able to claim the savings?

- How are C&S savings organized for goal setting and for planning/forecasting (e.g., the three "buckets" of EE programs, codes, standards)?

Roles for Regulators?

- Oversee program administrators' efforts and results
- Weigh C&S benefits and costs in context of existing mandates or directives—e.g., "all cost-effective savings"
- Consider mechanisms for program administrators to get credit for savings from codes and standards efforts— to encourage PA support of stronger and more effective C&S
  - Evidence-based supported by evaluation—á la California
  - Deemed or stipulated—á la Arizona
- Encourage coordination among regulators, state administrations, PAs, and building departments
- Facilitate/coordinate petitions for exemptions from federal preemption of certain state standards

Roles for NEEP and EM&V Forum?

- Help build coalitions of stakeholders to support C&S upgrades and implementation/enforcement
- Assist in conducting outreach and education in support of C&S adoption and increased compliance with existing codes
- Leverage resources
  - Secure funding for studies
  - Bring in other parties—DOE, EPA, national and international code bodies, other not-for-profit organizations, manufacturers, builders, PAs and regulators outside the Northeast
- Provide information and resources to help address issues (future projects)
- Assist in providing training and materials for code officials, building trades, and product distributors/suppliers
- Facilitate learning from each other
  - Establish working group?
  - This workshop is an important step in the learning and coordinating effort—Thanks for being part of it!