

Energy Code Compliance

Each Compliance & Enforcement Dollar Spent Yields \$6 in Energy Savings

Strong building energy codes are one of the most affordable and effective mechanisms for advancing energy efficiency in buildings, yet compliance with energy codes is often poor. By simply enforcing existing energy codes, local governments can achieve dramatic energy reductions at a relatively modest cost. Each dollar spent on energy code compliance yields \$6 in energy savings.¹

Background

Buildings that comply with energy codes are more energy-efficient and use less energy in their lifetimes. The benefits of adopting, implementing and enforcing codes extend well beyond utility bill savings. Energy codes can improve occupant comfort, increase our country's energy independence, and reduce emissions of harmful pollutants. Moreover, and perhaps even more importantly in the current economic climate, well-enforced building energy codes can provide local jobs at all skill levels in the building inspection, construction, and design industries.



Increasing energy code compliance and enforcement is a simple solution for increased efficiency.

Energy codes can deliver their potential energy savings only when projects actually comply with the code.

Although many local jurisdictions have adopted or will soon adopt the latest model energy codes, many new and renovated structures fail to comply with mandatory energy efficiency requirements, consuming far more energy and money to operate than they should. Many jurisdictions lack the necessary training and enforcement resources to ensure compliance, and compliance rates in many states, cities and towns are well below 50 percent. To maximize the benefits of building energy codes, local efforts to enforce codes must be enhanced by providing education, training and resources to local code officials, plan reviewers and industry stakeholders.

Benefits

Reducing Consumer Energy Costs. Every dollar invested in energy code compliance and enforcement yields \$6 in energy savings, according to research by the Institute for Market Transformation. This ratio includes the incremental costs to the private sector of constructing to code. Achieving 90 percent energy code compliance by 2017, as every U.S. state has now pledged, would yield average annual energy savings ramping up to \$2.7 billion in 2020 and more than \$10.2 billion in 2040 and each year thereafter.¹

Reducing Energy Consumption. Many jurisdictions are enacting building energy codes with strong energy efficiency requirements for new construction and renovations, however these codes must be enforced to deliver the promised energy savings. Energy code compliance and enforcement activities ensure that codes work as they are intended.

Increasing Occupant Health and Productivity. Energy-efficient buildings can save energy and money, but they can also increase occupant health and productivity by producing better indoor environments.² Energy code compliance and enforcement are critical to achieving these benefits.

Getting Started

Increasing code compliance and enforcement can be achieved by providing education and training to building code officials, plan reviewers and industry stakeholders, and providing the appropriate resources to departments in charge of building codes. Local jurisdictions may need to work collaboratively with their state government, which typically has more authority and resources to improve code compliance.

Step 1: Assess Energy Code Compliance Needs. Most energy codes are enforced at the local level. Jurisdictions should begin by assessing the status of energy code compliance and enforcement, including:

- Reviewing the local energy code for provisions that may make compliance and enforcement difficult
- Estimating the rate of energy code compliance for new construction and renovation projects
- Reviewing current code compliance practices
- Determining funding, staffing and training needs in building code departments for energy-related portions of the code. This may involve existing staff or new personnel.

Step 2: Provide Training to Code Officials and Industry Stakeholders. Jurisdictions should facilitate training workshops for code officials and plan reviewers, as well as industry professionals such as builders, architects, appraisers and engineers, to enhance the understanding, usability and enforceability of codes. Jurisdictions assess opportunities to increase resources to provide training and outreach, which may include state partnerships, utility assistance or training fees.

Step 3: Engage Utilities in Code Compliance Activities. In some jurisdictions, utilities are providing resources to support increased code compliance and enforcement. To help facilitate this support, jurisdictions should work with state policymakers and state regulatory commissions to enable utilities to count energy savings from building energy codes toward energy efficiency resource standards, utility filed energy efficiency programs, or air quality standards.

Existing Policies or Programs

New York City, NY: Energy Conservation Code

http://www.nyc.gov/html/planyc2030/downloads/pdf/energy_code_summary_for_website.pdf

- **Adopted:** December 2009 / **Effective:** July 2010
- **Affected Property Types:** Nearly All
- **Key Requirements:**
 - Based largely upon the Energy Conservation Construction Code of New York State, but with amendments to more broadly apply it to renovations of existing buildings.³
 - For existing buildings, the State Energy Code only applies when an alteration leads to the replacement of at least fifty percent of a building's system or subsystem, meaning there are no energy efficiency requirements for many renovation projects of a lesser magnitude or lower threshold. As a result, New York City [has failed historically] to reap the benefits of energy improvements as the building fabric is updated in those situations.⁴
 - The NYC Energy Conservation Code requires nearly all building renovation and alteration projects to comply with the energy code.



Seattle, WA: Energy Code (Chapter 11 – Admin and Enforcement)

http://www.seattle.gov/DPD/Codes/Energy_Code/Overview/2009_ecupdate.asp



- **Adopted:** February 1980 / **Modified:** August 2010
- **Affected Property Types:** Nonresidential spaces in permit applications submitted on and after Nov. 23, 2010 are subject to the 2009 Seattle Energy Code.
- **Key Requirements:** Nonresidential spaces are subject to Chapters 11-16 of the Seattle Energy Code. As of the 2009 Energy Code, multifamily residential spaces are subject to Chapters 11-15.
 - New construction, alterations, and additions must comply with the Energy Code requirements.
 - Any unconditioned space that is altered to become semi-heated, cooled, or fully heated, or any semi-heated space that is altered to become cooled or fully heated space is required to be brought into full compliance with the Code.
 - Any nonresidential space which is converted to multifamily residential space shall be brought into full compliance with the Code, and any multifamily residential space which is converted to nonresidential space shall be required to comply with the provisions for alterations.
 - See nonresidential and multifamily residential energy tips at:
http://www.seattle.gov/dpd/Codes/Energy_Code/Overview/tips_non.asp

Utility Partnerships in Energy Code Compliance

<http://www.imt.org/files/IEE-IMT-UtilitiesAndBuildingEnergyCodes.pdf>

Overview: Local jurisdictions can work with state policymakers and regulatory commissions to help utilities support code compliance by granting them legislative or regulatory approval to credit energy savings from building energy codes toward mandated energy efficiency goals.⁵ Examples include:

- **Arizona:** Utilities can count the savings from codes and standards programs toward one-third of the annual energy efficiency resource standards target.
- **California:** Verified energy savings from utility involvement in codes and standards “programs” are credited toward energy efficiency targets; such savings amounted to 4 percent of total energy efficiency program savings at a cost of less than 1 percent of total energy efficiency program expenditures.
- **Massachusetts:** Process underway to develop protocols for measuring energy savings from increased code compliance and upgraded stretch codes supported by utilities.
- **Minnesota:** Next Generation Act of 2007 allows utilities to credit energy savings from building codes towards the annual energy savings target of 1.5 percent of annual retail electricity sales. Working group developing protocol for verifying and attributing savings.

Complementary Policies

Complementary Policy Landscape for Energy Code Compliance



For Access to the Commercial Buildings Toolkit visit <http://www.icleiusa.org/commercialenergypolicytoolkit>

For Further Information on Local Sustainability visit www.icleiusa.org & www.imt.org

Complementary policies can make energy code compliance and enforcement much more effective.

- **Workforce development** initiatives support the work necessary for compliance and enforcement activities.
- **Benchmarking and disclosure, audit, and retro-commissioning** policies can provide insight into which buildings may comply and those with performance issues.

References

1. Institute for Market Transformation. “\$810 Million Funding Needed to Achieve 90% Compliance with Building Energy Codes”. 2010.
<http://www.imt.org/files/FactSheet-EnergyCodeComplianceFunding.pdf>
2. Lawrence Berkeley National Laboratory. “Health and Productivity Gains From Better Indoor Environments and their Relationship with Building Energy Efficiency”. 2000.
<http://eetd.lbl.gov/iep/viaq/pubs/FiskAnnualReviewEE2000.pdf>
3. DSIRE. New York City - Energy Conservation Requirements for Existing Buildings.
http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NY16R&re=1&ee=1
4. Local Laws of the City of New York for the Year 2009. Local Law No. 85.
http://www.nyc.gov/html/planyc2030/downloads/pdf/l185of2009_energy_code.pdf
5. Institute for Market Transformation and Institute for Electric Efficiency. “Utilities and Building Energy Codes: Air Quality and Energy Savings Opportunities”. 2011.
<http://www.imt.org/files/IEE-IMT-UtilitiesAndBuildingEnergyCodes.pdf>

Additional Resources

- City of New York. New York City Energy Conservation Code. 2010.
http://www.nyc.gov/html/planyc2030/downloads/pdf/energy_code_summary_for_website.pdf
- U.S. Dept. of Energy Building Energy Codes Program.
<http://www.energycodes.gov/analysis/index.stm>
- Institute for Market Transformation. Fact Sheet: \$810 Million Funding Needed to Achieve 90% Compliance with Building Energy Codes Institute for Market Transformation. Sept. 2010.
<http://www.imt.org/files/FactSheet-EnergyCodeComplianceFunding.pdf>
- Institute for Market Transformation. Policymaker Fact Sheet: Building Energy Code Compliance. Oct. 2010.
<http://www.imt.org/files/PolicymakerFactsheet-EnergyCodeCompliance.pdf>