

The Compliance Planning Assistance Program

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ABSTRACT

In June 2010, the Building Codes Assistance Project (BCAP) initiated an 18 month program to assist 15 states in the development of plans to achieve 90 percent compliance with their updated building energy code(s) by 2017¹, as stipulated by the American Recovery and Reinvestment and Act of 2009 (hereafter “Recovery Act”). The program consisted of in-depth research of state infrastructure and processes that help or hinder energy code compliance. This research resulted in 15 “Gap Analysis Reports” developed in close partnership with each state’s Energy Office or other agency, and in some cases, other stakeholders chosen by the state. Of the 15 states analyzed, 10 states were chosen for further follow-up in the form of multi-year Strategic Compliance Plans, which articulate short and medium term actions that will improve code compliance. In addition, BCAP helped three more states create Strategic Compliance Plans outside of this program’s scope.

This paper shares important findings from this large body of work. These findings include:

- An assessment of shared and divergent challenges between states that create or hinder a successful infrastructure for energy code compliance;
- Essential elements for any state’s energy code strategic compliance planning, including current best practices from around the nation;
- Lessons-learned in regards to political and/or other barriers in these states;
- The role of a State Energy Code Compliance Collaborative in a successful compliance strategy;
- A discussion of needed resources and policies both at the state and federal levels to facilitate 90% compliance with the energy code;
- An evaluation of the CPA program’s methodology and effectiveness.

Energy Codes: Federal and State Policies

Energy codes are one of the principal instruments in a state’s energy efficiency policy toolbox. Energy codes benefit society in a number of important ways, as they: reduce energy use, which decreases greenhouse gas emissions and pollution; save consumers and businesses money through lower utility bills; lessen peak energy demand; increase utility system reliability, and improve indoor air quality.

Recent improvements in the stringency of the model energy codes—and the development of the first green codes—continue to raise the minimum standards as well as more ambitious

¹ The American Recovery and Reinvestment Act of 2009 (ARRA), Section 410, required each state to develop a plan to achieve 90% compliance with the adopted building energy codes within 8 years, or by 2017.

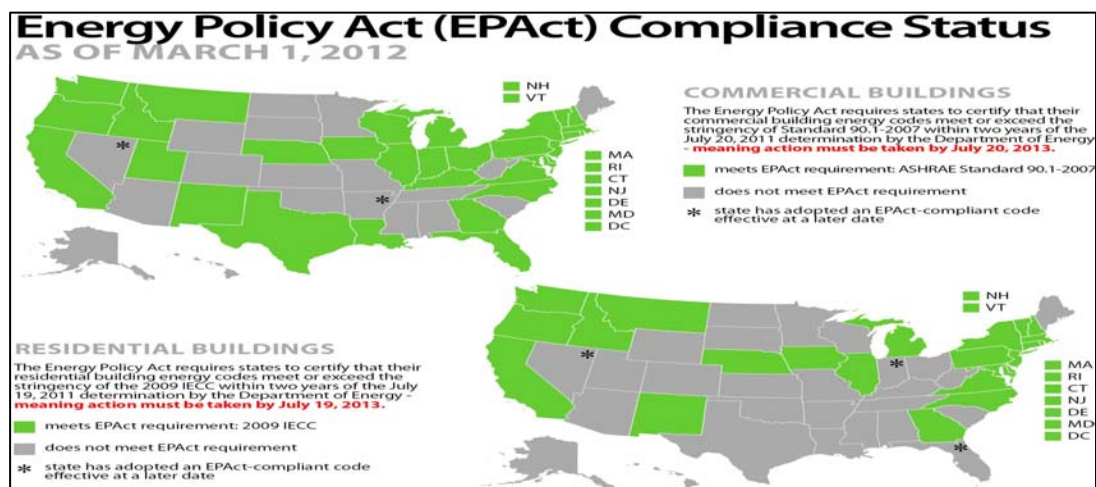
“reach” goals for energy-efficient design and construction to levels that were almost unimaginable a few short years ago. Meanwhile, the American Recovery and Reinvestment Act (Recovery Act), provided states and cities with unprecedented funding and incentives to adopt the model energy code, and more jurisdictions than ever before are taking advantage of these opportunities.

The heightened interest in energy codes is part of a larger transformation in the way advocates, policymakers, industry and utility representatives, and the general public view energy efficiency as a viable and cost-effective component of a comprehensive solution to our current economic, environmental, and energy concerns. Energy efficiency is widely considered the most cost-effective “low-hanging fruit,” for reducing energy use, as the cheapest and cleanest fuel source is that which we simply avoid using. Nowhere is this more apparent than in the building sector, which accounts for almost 40 percent of total U.S. energy consumption and 70 percent of U.S. electricity consumption.ⁱ

Yet, for all this recent progress and promise, the on-the-ground efficacy of energy codes as a policy tool is still falling short of its potential. In municipalities across the country, energy code enforcement and compliance remain woefully insufficient or completely absent. While development and adoption are the necessary first steps of the energy codes process, they alone do not guarantee compliance. To ensure that energy codes accomplish the mission to reduce energy use and save money, states and cities must develop and carry out effective and realistic energy code implementation strategies.

The federal government has not been overtly involved in states’ adoption of energy codes. The Energy Policy Actⁱⁱ (EPAct) of 1992 required the Department of Energy (DOE) to determine whether current model energy codes would improve energy efficiency for residential and commercial buildings. It also mandated that the DOE make a new determination within twelve months for every subsequent revision of these codes. Each state then has two years to certify that it has revised its own energy code to meet or exceed the requirements of the latest iteration of the national model code. A state can decline to adopt a residential energy code (but it cannot opt out of adopting the commercial code) by submitting a statement to the Secretary of the DOE detailing its reasons for doing so. As shown in Figure 1, states may or may not choose to act based on EPAct requirements.

Figure 1. EPAct Compliance Statusⁱⁱⁱ



Source: the Building Codes Assistance Project 2011

In 2009, Congress passed the Recovery Act which provided states with stimulus funds through the State Energy Program (SEP) and the Energy Efficiency and Conservation Block Grants (EECBG) to adopt the 2009 International Energy Conservation Code (IECC) (or equivalent) for residential construction and the ASHRAE Standard 90.1-2007 (or equivalent) for commercial construction, as well as to develop a plan to achieve 90 percent compliance with the codes by 2017. Each governor in the country provided written assurances that these provisions would be met as a condition of receiving Recovery Act SEP funding.^{iv} Despite these assurances, states struggle to develop and implement the policies and programs needed to support and enforce building energy codes. The most common state-sponsored code-related activity is to provide code training in isolation of a broader evaluation of market barriers to code compliance. Significant barriers include local policies, inadequate labor for code inspections, lack of tracking for building professionals, measurement and verification capability, and feedback mechanisms, as well as targeted training that addresses pervasive issues within the building sector.

The goals of the Compliance Planning Assistance (CPA) program were to leverage: 1) the availability of federal financing for state and local energy code implementation activity with Recovery Act requirements for state code adoption and compliance; and 2) the opportunity to position states for success in implementing stronger energy codes in the near future. In summary, this project set out to assist states in achieving greater energy efficiency outcomes through building codes than would otherwise occur.

Compliance Planning Assistance

The Compliance Planning Assistance Program consists of two main components: Gap Analysis reports and Strategic Compliance Plans. Concept development for the Gap Analysis reports and Strategic Compliance Plans were created and vetted through a collaborative process with national advocates, including the Regional Energy Efficiency Organizations, hereafter “REEOs”, the national Association of State Energy Officials (NASEO), the Pacific Northwest National Laboratory (PNNL), National Energy Technology Laboratory (NETL), the United States Green Building Council (USGBC), the Sierra Club, Mathis Group, the Institute for Market Transformation (IMT), DOE and other stakeholders.

Phase I – Gap Analysis

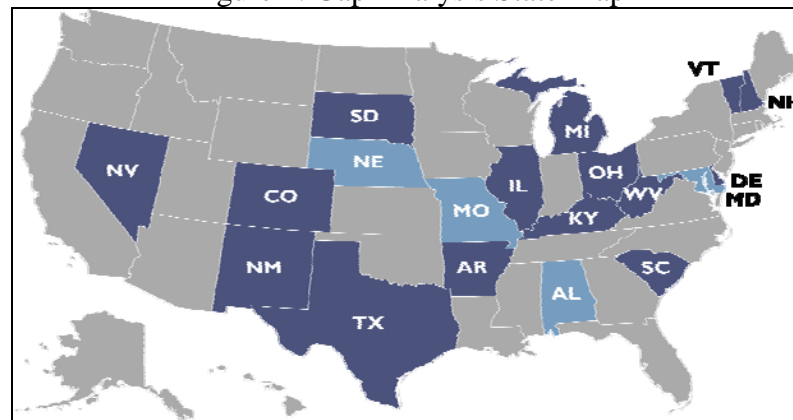
The objective of the Gap Analysis Report is twofold: 1) document and analyze the strengths and weaknesses of the state’s existing energy code adoption and implementation infrastructure and policies; 2) recommend potential actions state agencies, local jurisdictions, and other stakeholders can take to achieve 90 percent compliance with the model energy codes. The reports are organized into four sections: Introduction, Adoption, Implementation, and Conclusion and average 60 pages in length. The Adoption and Implementation sections both conclude by listing some of the state’s current best practices and making multiple recommendations that would improve energy code compliance. The data gathered for each state included:

- *Construction* – permits; projected construction rates;
- *Energy* – production; consumption; pricing;
- *Code Adoption* – state agency responsibility, activity, and level of code support; state advocates and opponents,

- *State Policy* – restricting and supportive legislative language; pending legislation; support for above code activity, code requirements (technical); amendments increasing/decreasing efficiency;
- *Local Policy* – population centers and percent of construction covered by code; adoption of International Building Code (IBC), International Residential Code (IRC), and IECC; local climate/green initiatives;
- *Community Standards* – rural and urban enforcement strategies including third party; available resources; evaluation measures in place;
- *Enforcement Issues* – energy code priority; code official familiarity with energy; persistent compliance problems;
- *Certification Process* – certification requirement and/or standard process; continuing education requirements;
- *Products, Manufacturers, Services* – effect of codes on jobs; available products and services;
- *Code Inspectors* – materials/resources utilized; Continuing Education Units (CEU) hours; permitting fees/funding for inspectors;
- *Building Professionals* – available training/education; builder/architect association/certification board; existence of tracking participants;
- *Content – scope and detail* – incorporation of state compliance issues

The 15 states were chosen partly based on their desire to actively participate in the project. The selected states for the *Gap Analysis* are represented in Figure 2 shaded in dark blue. Four additional states, shaded in light blue, had similar analysis performed under separate funding sources.

Figure 2. Gap Analysis State Map



Source: the Building Codes Assistance Project 2011

Research for the Gap Analysis Reports included the development and use of comprehensive questionnaires <http://bcap-ocean.org/resource/gap-analysis-questionnaire-master>. The questionnaires were used as guides for oral interviews conducted with hundreds of code officials, builders, designers, city and state officials, trade associations, manufacturers, and other stakeholder groups. The number of gaps and recommendations identified in each state exceeded 30 in some states. In receipt of early drafts of each report, many state energy offices began to

address these gaps even before the Gap Analysis Reports, were written. Examples of recommendations in these reports include:

For Adoption:

1. Adopt the model energy code
2. Lead by example with state and municipal buildings – go above code
3. Move from a legislative to a regulatory code adoption process
4. In Dillon’s rule² states: allow uniform innovation at local level
5. Home rule states: develop and utilize local policy action kits
6. Incorporate codes into statewide environmental plans

For Compliance:

1. Enforcement and plan review & inspection: each state was given state-specific recommendations for their process
2. Offer statewide ongoing training programs
3. License and certify construction trades
4. Require continuing education for construction trades with mandatory energy code training
5. Expand resources available on the state energy code website
6. Evaluate compliance
7. Support third-party enforcement as an option for showing compliance
8. Support implementation in counties, rural, or unincorporated areas

Phase II – Strategic Compliance Plans

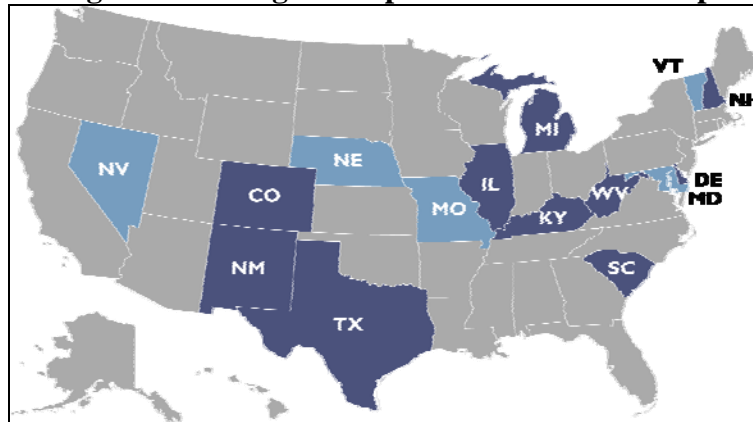
In the second phase of the CPA program, BCAP worked with ten states to develop long-term *Strategic Compliance Plans* for advancing energy code implementation to meet the goal of 90 % compliance by 2017. The ten participating states (Figure 3) were selected from the pool of states that participated in the first phase of the project and completed a Gap Analysis. Five additional states, shaded in light blue, created strategic plans under separate funding. States were selected based on BCAP recommendations and input from stakeholders (including DOE, NASEO, and the REEOs); taking into consideration the likelihood that selected states would implement the plans. In this phase of the CPA project, BCAP expanded on the compliance shortfalls identified in the Gap Analysis and focused on how the state could make improvements. Over several months, working with the selected states, and local organizations within the states, BCAP ensured that practical, state-specific approaches were developed that are broadly supported among state and local agencies and the larger code community and, in addition, that these approaches will:

- Strengthen policy

² “Dillon rule” state refers to states that do not allow local jurisdictions to adopt a more stringent code than the one adopted at the state level.

- Improve compliance infrastructure
- Deliver effective outreach and training
- Establish durable funding sources
- Establish an evaluation program (based on DOE protocols), and
- Create feedback loops to provide continuous evaluation and improvement in all these areas.

Figure 3. Strategic Compliance Plans State Map



Source: the Building Codes Assistance Project 2011

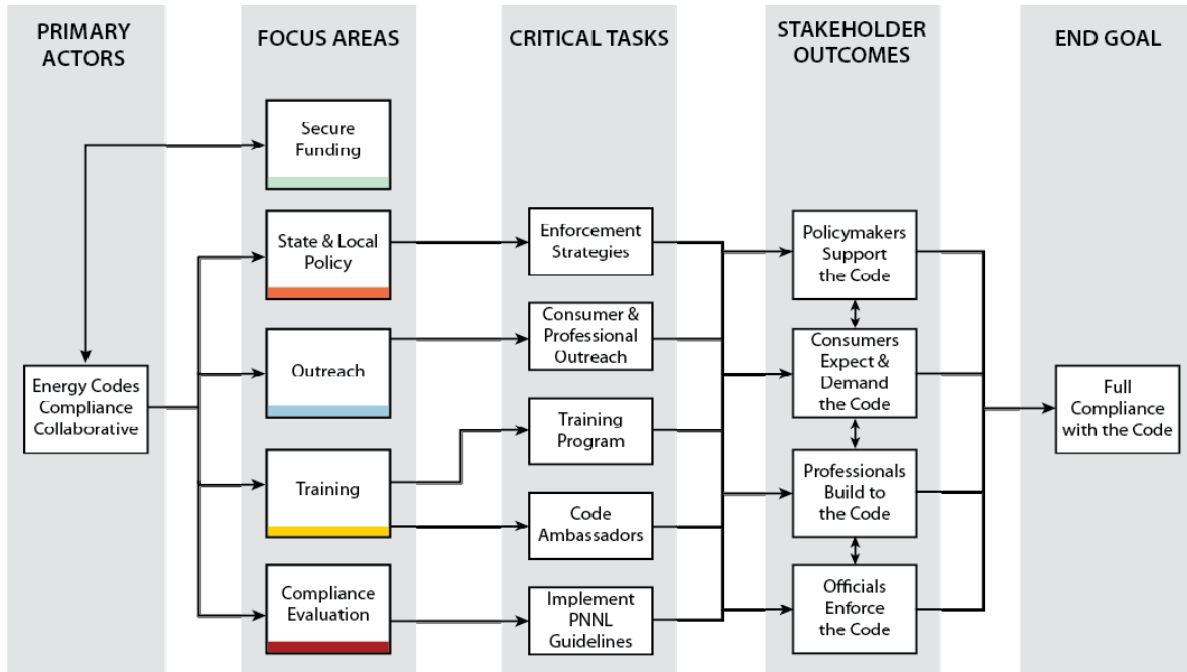
Finally, the *Strategic Compliance Plans* detailed the implementation steps needed to follow a larger strategy to achieve 90% code compliance by 2017. BCAP assisted each state in developing a multi-year plan that meets state goals and priorities while taking into account state/local resources. Each plan provided the state with a checklist of activities on a timeline that can track progress and can be used to assign tasks and responsibilities to various stakeholders and agencies. Detailed in Figure 4, this flowchart of focus areas and tasks was typical of each states strategic plan. Each plan is approximately 20 pages in length and full of graphics and easy to access concepts. Each focus area in Figure 4 comprises two to six pages of detail in the plan. The last two-page spread is a timetable that plots activities with boxes to check off as goals are met. Each state plan is available for viewing or download on the OCEAN website <http://energycodesocean.org/strategic-compliance-plans>.

As indicated in Figure 4, the key element for each strategic plan is the formation of a “Compliance Collaborative” or in some states called the “Compliance Coalition” that acts as a nexus of compliance activity in the state and guides the process of executing the other elements of the plan. The Energy Code Compliance Collaborative establishes a diverse group of stakeholders with the focus of carrying out the necessary tasks to ensure greater compliance with the energy code.

BCAP identified the need for states to have this *state-based, stakeholder working group* to manage compliance activities. Many states have adoption-focused collaboratives or coalitions, not focused or prepared to deal with compliance and implementation of the code. The Compliance Collaborative effort mimics a best practice found in Idaho where the energy code collaborative remained assembled since 2000 after adoption of the code to take on the important responsibilities of code compliance in order to actualize energy savings inherent in code

adoption. Since early 2012, through Foundation funding, BCAP is helping five CPA states form compliance collaboratives.

Figure 4. Strategic Compliance Plans Flow Chart^v



Source: the Building Codes Assistance Project 2011

Challenges and Findings: The Grit

Some interesting findings were uncovered during the research process. For instance, often states have two agencies that deal with energy codes: the energy office (or equivalent) and the codes agency in charge of all codes (not just energy). In some states this poses some practical implementation challenges. The energy office, for its part, is the agency which receives Recovery Act or State Energy Program monies, the administration of which was typically all-consuming of their limited staff time, such that energy codes were considered the responsibility of another agency, and therefore not included in the planning and development of programs in some cases. At best, the energy office may administer programs that support the energy code through training events. The building code agency is sometimes charged with updating and/or administering and enforcing codes and is not normally consulted when funding is being allocated. In some cases these relationships are strained and this affects the implementation of and compliance with the energy code. The CPA program was a unique opportunity that brought these two agencies together. Funders such as DOE can do well to anticipate these dynamics at the state level before allocating subsequent funding for codes. These coordination challenges are best addressed by forming an energy code compliance collaborative which can bring all stakeholders to the table on a playing field leveled with common goals, thus helping to avert political disputes.

Another interesting challenge we found is that few states, if any, have an accurate estimate of construction permitting activity. This can be problematic on several levels. Without

knowing how much construction is taking place, states cannot determine: 1. the need for resources; 2. the amount of potential energy, dollar, or carbon savings from codes which most funding is hinged upon; and 3. the correct sampling size for a compliance evaluation study. Although the U.S. Census Bureau provides data for residential buildings, in some cases we found these values in disagreement with local and state information. Commercial sector activity, by contrast, is not available from the Census but available from private sector companies at a steep price out of the range of state officials. Data is also scarce for both commercial and residential renovations, although utility companies and other stakeholder may be able to help with this important data point, as they collect information on new service installations. Moving forward, states could enlist utilities to obtain information to evaluate quantity, size, and types of buildings being constructed.

In Texas we discovered an interesting phenomenon. Although the major metropolitan areas are covered by an energy code, lower density areas are not. With tremendous suburban and exurban development, most of the new construction is happening outside of city lines where builders and contractors are not subject to enforcement of *any* codes. No one interviewed knew how much construction this represents but everyone agreed that it's significant. Unincorporated regions of states denote a "black hole" in compliance, but these are areas that desperately need attention, especially in high-growth states.

Education and training are key for high energy code compliance –as was voiced repeatedly from builders, code officials, and designers. The majority of the energy code training in the country is what we have termed "Level One" training. Level One training is "overview" training, usually consisting of a ½ day spent on the residential energy code and a half day on commercial. We found best practices for training in Colorado, Illinois, and New Hampshire, where the state supports an energy code training *program*, not just overview training. In each of our strategic compliance plans we recommend that states do such. There is still a need for overview training to familiarize people to the technical requirements of the code in general, and to repeat this level of training if there is a new code adopted. However, if a state's goal is high compliance, a multi-level approach is optimal. The "intermediate level", or "Level Two", would include code provisions, and a full day spent on the residential energy code and a full day on the commercial. "Advanced training" or "Level Three" would include focus areas such as HVAC sizing and installation, performance modeling, lighting design, etc. In addition, we suggest videotaping, and posting trainings online. Webinars might also be attempted. Train-the-trainer programs will help to build in-state capacity.

Another interesting discovery involves one of the items in our original "theoretical 100% compliant model". We speculated that it could be beneficial if there was state enforcement of codes, especially for those unincorporated areas with no enforcement. Most states have some capability and professional oversight of state buildings and other state funded construction projects. Four CPA states, Kentucky, Michigan, Ohio, and New Mexico, have varying levels of state enforcement of building codes. This is beneficial on two levels; 1. No construction happens anywhere without a permit and oversight; and 2. There may be a greater chance to implement improvements in energy code implementation if it is a state priority. The concerns related to this scenario are that that state can't separate the energy code from the rest of the building codes, and state agencies are often understaffed and have tremendous responsibility of life, health, and safety codes to contend with first and foremost.

The Recovery Act did not require states to spend recovery funding on codes. That is, the stipulation for receiving a portion of these dollars was only for action to be taken to adopt and

plan compliance with energy codes. As with EPAct requirements, the acknowledgment of the stipulation for accepting this funding was greatly ignored. This was compounded with the fact that 28 governors were replaced during this time frame, and many ignored the commitment letters signed by the previous administrations. However, some proactive state officials seized the opportunity to leverage this language to get codes adopted as well as initiated renewed work on code-related compliance issues.

Best Practices From The Trenches

As indicated in Table 1. Noteworthy Best Practices in CPA States, there are best practices to be shared in every state. These range from state-run enforcement to certification for code officials. Those listed in Table 1 below represent only a snapshot of the larger list of Best Practices highlighted in the Gap Analysis reports for participating states.

Table 1. Noteworthy Best Practices in CPA States

ARKANSAS
Arkansas Energy Office’s “Code Cards” – small quick-reference guides for the requirements of the Arkansas Energy Code – have been a major, visible educational resource.
Fayetteville’s “Code Ranger” program has been an innovation outreach tool promoting construction standards through a Code Activity Book, a Code Education Program, and Program Guide.
COLORADO
With recent work advancing energy code implementation, the state has taken the lead on providing support to local inspection departments, building professionals, and other interested parties. Significant resources from the Recovery Act were provided for energy code work at the state and local level. Its training workshop series goes beyond the prototypical statewide training effort in scope and reach.
Cities such as Parker and Aspen provide examples of how sustained commitment to energy code implementation leads to stronger compliance, while Thornton demonstrates a model for outreach, particularly to the design and construction communities.
Regional inspection departments take advantage of shared resources to improve services for constituents and increase building code consistency across larger areas in which smaller communities might not have sufficient resources to enforce building codes on their own. Finally,
Fort Collins’ work on measurement and verification was a pioneering endeavor and could inform other city or state efforts in the future.
DELAWARE
In connection with the CPA project, Delaware has done an admirable job creating a database of information on infrastructure, training, enforcement, and other relevant topics from almost all of the inspection departments in the state. Expanding the role of the Delaware Department of Natural Resources and Environmental Control to coordinate and support inspection departments, provide training, and set uniform standards is crucial to achieving the state’s goals.
Delaware is the first CPA state to initiate a Compliance Collaborative.
Delaware’s Office of Management and Budget’s program to measure and track energy use in state-owned buildings is an exciting initiative that has already demonstrated quantifiable results. With code compliance issues central to actual energy reduction, the state has begun an important effort that gets to the heart of how and why buildings often underperform.
KENTUCKY
The Governor is demonstrating leadership by having released a seven-part energy strategy to achieve energy independence, reduce per capita carbon emissions, optimize use of renewable energy, and more. The first of the seven strategies is to “improve the energy efficiency of Kentucky’s homes, buildings, industries, and transportation fleet”.

State buildings are required to achieve LEED standards, helping to familiarize the construction industry personnel and create demand for greater energy efficiency products and services.
The Kentucky Department of Housing, Buildings and Construction (HBC) successfully works with state the Home Builders Associations and has a more positive relationship with builders than in other states. The Kentucky Department for Energy Development and Independence has developed a collaborative relationship with AIA and partnered on special energy events/contests. Kentucky AIA offers continuing education credits for courses on energy codes.
The HBC provides an “Energy Code Workbook” designed to help builders demonstrate compliance with the 2006 IECC. They also advertise free ICC code books on the Building Codes Enforcement webpage.
The state has two ready-made structures in place for statewide coverage for building inspections: (1) regional HVAC inspectors and (2) regional building inspectors.
HBC is working with the University of Kentucky to develop training modules for commercial energy code implementation.
ILLINOIS
Illinois’ precedent of using systems benefit charges on utility bills has created sustainable funding to support energy codes.
The state has a certification board that oversees the credentialing and continuing education credits of architects, engineers and trades such as HVAC, plumbing and electric.
Within the market transformation portion of the state’s three-year EEPS plan, the “Building Energy Code Compliance Program” includes funding for an initial analysis to establish a baseline for current building code compliance, from which future compliance can be measured beginning in 2012.
MICHIGAN
Michigan’s existing energy codes protocol provides the state with a significant advantage in tackling the challenges of improving code compliance. Currently, the state sets code compliance and enforcement at the state level, mandatory everywhere in the state. Local governments are allowed to create their own building departments at the city or county level, and to charge fees to cover the cost of inspection. However, local governments must follow the same enforcement standards set by the state. The state is responsible for the code enforcement process for any jurisdiction that lacks the infrastructure for a local building department.
NEVADA
Nevada took full advantage of Recovery Act funding to support energy codes in the state. In addition to support for stakeholder outreach and communication, code education, training, and technical assistance, the state created a database of new construction in order to track compliance, and developed a five-year strategic plan.
The state also established an Energy Codes Ambassador Program (ECAP) ^{vi} to support code officials in peer to peer knowledge exchange.
NEW HAMPSHIRE
New Hampshire has made effective use of its Recovery Act funding through the New Hampshire Building Code Compliance Project. Its outreach efforts have achieved some success raising awareness of the updated State Building Code. Meanwhile, its training workshops have educated many professionals from different industries—particularly design and construction professionals.
Energy code enforcement is highly regarded in a number of cities and towns, including Bedford, Durham, and Keene, as well as a few other municipalities with the resources to devote sufficient time to energy code enforcement. With the support of the New Hampshire Building Officials Association and the NH Building Code Compliance Project, code officials are continuing to understand the provisions of the energy code, make them a higher priority, and devote more time to their enforcement.
The state’s utilities have been active in funding energy code trainings and promoting above-code construction through outreach and incentives for above-code construction.
NEW MEXICO
With the NM Construction Industry Division having nearly full jurisdiction over construction code

enforcement across the state, New Mexico presents a unique opportunity for investment of code practices and policies and precedence for jurisdictions that enforce their own codes.
NM does an excellent job in marketing and soliciting involvement in the trainings events for the 2009 NMECC. All the code officials we spoke to throughout the state were all aware of the training opportunities.
OHIO
Ohio requires that all building departments be certified through the state. Whenever there are changes to the energy code, the state provides training and requires certified building department personnel to attend.
Technical staff at the Board of Building Standards is available to support certified building departments.
The state building department ensures statewide coverage in commercial code enforcement.
The state assures that local building departments are educated in energy codes by requiring code officials to pass ICC certification tests and obtain CEUs.
SOUTH CAROLINA
South Carolina has done a great deal to aid implementation of the energy codes within the constraints of the home rule enforcement policy that state officials must abide by. The state provides free continuing education and training for code officials, offers its services as an arbiter of code interpretations at the local level, and investigates in the event a complaint is lodged against a contractor, code official, design professional or contractor performs.
The state requires professional trades to register with the state and – in the case of some trades—to stay up-to-date on current practice through continuing education requirements.
TEXAS
All code officials who complete energy inspections must be professionally certified.
The support for energy codes statewide from various stakeholders is best practice for energy codes. While the State Energy Office has no authority to enforce the code, the office advocates for stringent enforcement and together with organizations like TX A&M’s Energy Systems Laboratory (ESL), provides the necessary training to code officials and construction professional on energy codes statewide. ESL also serves as the technical resource to individual building departments, analyzing local codes for stringency and answering any questions on code specifics. The Texas Association of Builders (TAB) advocates for code consistency throughout all of Texas, including unincorporated areas, and assists in energy code compliance and training with other stakeholder groups. The Building Officials Association of Texas (BOAT) brings together code officials at its Building Professional Institutes to discuss and train on enforcement.
WEST VIRGINIA
All plan reviewers, code officials and inspectors must be certified through the state and the International Code Council and recertification requires CEUs.
The state requires contractors to be licensed and polices their work in response to complaints. Further, boards have been established to regulate the certification and training of both architects and engineers and—in the case of some trades—to stay up-to-date on current practice through CEU requirements.

Source: the Building Codes Assistance Project 2011

Conclusion: 90% Compliance: How do we get there?

This project demonstrated that there is no single path to reach 90% compliance; each state must set its own course based on unique local circumstances and attitudes. However, as we’ve identified, there are a number of common structures and focus areas that are necessary for successful energy code compliance in all states. In order to be successful, each state must first identify the gaps in energy code implementation and then bring together key stakeholders to discuss and reach consensus on best practices to solve them. By creating a multi-year strategic compliance plan divided into general categories—policy, funding, training, consumer

engagement, and compliance verification—each state can set clearly identified goals, track its progress, and reevaluate the plan over time.

In order to increase the chances of successful energy code implementation, this program recommends that each state form a collaborative of stakeholders to coordinate the process. Having a diverse set of “code champions” to advise state decision makers will ensure that each step toward compliance is reasonable, fundable, and ultimately in the vision of the state’s strategic compliance plan.

By carefully reviewing current building practice, incentive programs, enforcement approaches, training strategies, stakeholder attitudes and knowledge of energy efficiency, the steps necessary to implement model energy codes will become clearer to each state. With these insights and tools in hand, every state can develop a strategic plan that will help facilitate its energy code and move towards 90% compliance.

References

Energy Information Agency (2009). *United States Energy Explained*. [ONLINE] Available at: http://tonto.eia.doe.gov/energyexplained/index.cfm?page=us_energy_use. [Last Accessed April 19, 2012].

Building Codes Assistance Project (2009). *Energy Policy Act* [ONLINE] Available at: http://tonto.eia.doe.gov/energyexplained/index.cfm?page=us_energy <http://bcap-ocean.org/energy-policy-act-epact-compliance-commercial>. [Last Accessed April 19, 2012].

Building Codes Assistance Project (2009). *Energy Policy Act Compliance - Commercial*. [ONLINE] Available at: Energy Policy Act (EPAct) Compliance - Commercial. [Last Accessed May 7, 2012].

United States Government Printing Office (2009). *One Hundred and Eleventh Congress*. [ONLINE] Available at: <http://www.gpo.gov/fdsys/pkg/BILLS-111hr1enr/pdf/BILLS-111hr1enr.pdf>. [Last Accessed May 7, 2012].

Building Codes Assistance Project (2011). *Illinois Strategic Compliance Plan*. [ONLINE] Available at: <http://energycodesocean.org/resource/illinois-strategic-compliance-plan>. [Last Accessed May 7, 2012].

Building Codes Assistance Project (2012). *Energy Code Ambassadors (ECAP)*. [ONLINE] Available at: <http://energycodesocean.org/resource/energy-code-ambassadors-program-ecap>. [Last Accessed May 7, 2012].