Strategic Compliance Plan

DELAWARE

Strategic Compliance Plan
Improving Energy Code Compliance in Delaware’s Buildings

November 2011
The Compliance Planning Assistance Program
Acknowledgements

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www.neep.org

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# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Secure Funding</td>
<td>4</td>
</tr>
<tr>
<td>State and Local Policy</td>
<td>6</td>
</tr>
<tr>
<td>Outreach</td>
<td>8</td>
</tr>
<tr>
<td>Training</td>
<td>14</td>
</tr>
<tr>
<td>Compliance Evaluation</td>
<td>18</td>
</tr>
<tr>
<td>Timeline</td>
<td>20</td>
</tr>
</tbody>
</table>
Introduction

The Strategic Compliance Plan is the final phase of the Compliance Planning Assistance (CPA) program, a collaborative effort by the Building Codes Assistance Project (BCAP) and the Delaware Department of Natural Resources and Environmental Control (DNREC), Division of Energy and Climate (DE&C), beginning in fall 2010. The overarching goal of the project is to document and analyze Delaware’s existing energy codes infrastructure in order to address barriers to widespread energy code compliance. A companion document—the Delaware Gap Analysis—provides an overview of the status of energy codes in the state. Now, as a follow on, the Strategic Compliance Plan charts a course forward to achieve 90 percent energy code compliance with the 2009 International Energy Conservation Code (IECC) by 2017.

The objectives of this Strategic Compliance Plan are twofold:

- Provide a realistic and effective model of a well-functioning energy codes infrastructure, given the current building code environment in Delaware
- Propose a series of near-term critical actions based on existing gaps

Funded by the U.S. Department of Energy under the American Recovery and Reinvestment Act of 2009 (Recovery Act), Delaware was chosen as one of ten states to participate in the second phase of this project, based on input from project stakeholders and the likelihood of plan implementation.

Challenge

Delaware’s buildings account for 48.5 percent of total statewide energy consumption.\(^1\) Therefore, any state-level strategy to advance energy efficiency must address the minimum standard of building energy performance. Energy codes are the easiest and most affordable policy tool for improving the energy efficiency of the building sector at the point of construction or renovation—when savings are highest and most cost-effective—particularly considering that buildings last 40 years or more.\(^2\)

In 2010, Delaware adopted the 2009 IECC as the statewide energy code. Local jurisdictions—often short on both funding and capacity—are responsible for enforcing the code, though the state is required by law to provide guidance. At present, many design and construction professionals and code officials do not have adequate training and resources. As a result, Delaware consumers are unknowingly buying homes and buildings that may fail to meet the state’s mandatory code, thus losing out on the long-term savings of energy-efficient buildings.

This Plan demonstrates a vision for a dynamic, functional energy code infrastructure in Delaware, overseen by a Coalition of interested market actors throughout the state. Illustrated in the figure below, the Plan is organized around five focus areas and their corresponding critical tasks, which lead to buy-in and market transformation activities from key stakeholder groups and, ultimately, full compliance with the energy code.

Given the variability of the political and economic landscape regarding energy efficiency policies, this plan does not and cannot identify every step and market actor that could be involved in the energy codes process. Rather, Delaware should use this Plan as an overarching guideline for making strategic decisions about how and where to allocate funding and resources, with the understanding that new challenges and opportunities may alter the state’s strategy in the future.
The Energy Code Coalition can be a forum where stakeholders discuss and stay involved in energy code compliance issues. Chaired and led by representatives from DE&C, the Coalition can advise on what can realistically be implemented statewide and how to prioritize and carry out the tasks necessary to ensure 90 percent compliance with the energy code.

**Roles of the Energy Code Coalition**

*A Clearinghouse on Code Information*
The Coalition can serve as an authoritative source for code-related information.

*Targeted Outreach*
Using first-hand knowledge of how to reach specific market actors and what arguments compel them, the Coalition can be well-positioned to craft and carry out targeted outreach campaigns.

*Securing Funding for Projects*
Through its expertise and connections, the Coalition can work to secure future funding.

*Support Implementation Programs*
The Coalition can provide DE&C with support on specific implementation programs, including for net-zero and above-code compliance.

**Coalition Members**

Consider the following established stakeholder groups for membership:

- DNREC, DE&C (chair)
- State legislature
- City and county governments
- DBOA and LDMBOA
- HBADE
- AIA Delaware
- ASHRAE Delaware
- ABC Delaware
- USGBC
- Northeast Energy Efficiency Partnerships (NEEP)
- Third-party inspection companies

Additional possibilities for stakeholder groups include:

- Delaware Sustainable Energy Utility (SEU)
- Delmarva Power and Light, Chesapeake Utilities, Delaware Electric Cooperative, Delaware Municipal Electric Corporation
- University of Delaware Center for Energy and Environmental Policy (CEEP)
- Cool Cities Delaware
- DuPont, other product manufacturers in the state
- Consumer protection, low income advocates
- Real estate, appraisal, and mortgage lending communities

**Coalition Structure**

Ideally, the Coalition would meet on a regular basis, as determined by its members. Once per month is likely appropriate. Meetings could be held in a central location, such as Dover, or at relevant functions around the state.

Initially, DE&C could include established energy code stakeholders (see list above) and expand to new market actors through a consensus process.
Secure Funding

Energy Code Funding Mechanisms: What’s Working Around the U.S.?

Stable and sufficient funding at the state and local levels is a prerequisite for successful energy code implementation activities. Below are some funding approaches that are being used successfully in other states.

Energy Efficiency Resource Standard

Best Option for Delaware

In 2009, Delaware adopted an energy efficiency resource standard (EERS) of 15 percent electricity consumption and peak demand savings and 10 percent natural gas consumption savings by 2015. Since the capital costs for building new power generation sources raises consumer rates, an EERS helps keep the cost of energy affordable by avoiding and/or delaying the need for building new facilities.

Some states—Arizona, California, Massachusetts, Minnesota, and Washington—allow utilities to get credit toward EERS goals for energy efficiency programs related to codes and standards, often for estimated savings resulting from training and compliance activities. Typically, utility-backed energy codes initiatives are funded through a System Benefits Charge or a similar volumetric fee imposed on consumers’ energy bills (see #2), though the Sustainable Energy Utility (SEU) and the Regional Greenhouse Gas Initiative (RGGI) provide other avenues for Delaware to explore. The current state effort to draft EERS regulations is promising. BCAP urges the state to include a similar provision to allow utilities to claim energy efficiency savings for substantive energy code training.

Systems Benefit Charge

A Systems Benefit Charge (SBC) is a small, fixed fee added to customers’ electricity bills each month that goes towards public benefit funding for energy programs. SBCs are usually collected from customers of investor-owned utilities, and the funds are administered by a state agency, a third-party or the utility. New York is one example of a state successfully using funds collected from their SBC for energy code related work. Should energy code implementation efforts become part of the state’s EERS regulations, utilities should consider this option.

State Appropriations

A common way to fund energy code work is via the State Energy Program (SEP), Department of Energy (DOE) formula and competitive grants, or through direct appropriations by the state. In Texas, the state appropriates funding to the Texas State Energy Conservation Office (SECO) for programmatic use. SECO then allocates a portion of these dollars to energy code training and outreach. In 2009, New Hampshire’s Office of Energy and Planning (OEP) put together a $600,000, two-and-a-half-year energy code training and outreach program with one-time SEP funds through the Recovery Act.

In order to access federal funding opportunities, Delaware must have a strategic plan in place and devote sufficient resources to respond in a timely fashion to federal proposals. Another promising short-term option is to use remaining Recovery Act funds to offer a one-time statewide training and/or outreach program.

Raising Permit and Re-Inspection Fees

Raising permit fees and instituting re-inspection fees for failed inspections are two straightforward ways to offset the additional cost of energy code compliance activities at the local level. In Michigan, the state mandates that local governments cover the cost of code enforcement through building permit fees. In this case, permit and re-inspection fees are based on a suggested fee schedule published by the state and flow directly into a local Construction Code Fund, which may only be used to support local code compliance activities.
Another possibility is to create a trust fund administered by the state that is used to pay for projects that benefit the state's citizens, such as energy code-related work. For example, in 1997 in Illinois, electric-industry restructuring legislation created a fund that provides $3 million annually to be used for renewable energy and residential energy efficiency. Delaware's new Energy Efficiency Investment Fund might be such a vehicle, even though its current scope does not permit energy code implementation support. Rather than continually funding costly retrofits to inefficient buildings, Delaware should devote a portion of this funding to build the infrastructure needed to ensure that all new construction meets the state’s energy code—at a fraction of the cost of future retrofits.

While it is incumbent on the state to provide funding for the training needed to bring the construction industry up to speed on new energy codes, in some cases it can charge a nominal fee for energy code training. Although fees would only offset a proportion of the cost, they introduce a model to “cost share” the expense incurred to offer training statewide. A nominal training fee also encourages attendance (after enrollment), as trainees are interested in a return on their investment. Delaware could consider this option if other sources do not produce the necessary amount of funding to meet the state’s training needs.

### Funding Options for Energy Code Compliance

<table>
<thead>
<tr>
<th>Option</th>
<th>Sufficient in Scale</th>
<th>Stability of Funding</th>
<th>Political Feasibility</th>
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<tbody>
<tr>
<td>Energy Efficiency Resource Standard (EERS)*</td>
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<td>Systems Benefit Charge (SBC)</td>
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<td>Trust Fund</td>
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<td>State Appropriations</td>
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<tr>
<td>Subsidized Training Fees</td>
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<tr>
<td>Raise Permit Fees, Impose Re-inspection Fees</td>
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* Energy Efficiency Resource Standard (EERS) is not a funding mechanism by itself, but a state policy that sets annual energy efficiency targets. It provides a strong policy incentive for energy code funding.
By setting clear, thorough guidelines and delineating roles and responsibilities for energy code implementation activities, states and localities provide direction to all stakeholders regarding what is expected of them to achieve compliance. State and local policies also have the ability to move the market by establishing new funding streams, licensing procedures, above-code incentives, and more.

**What Constitutes Compliance?**

DE&C is required by law to “promulgate procedures for certification of compliance with these codes and standards to be utilized by respective local governments.” Due to staffing and budget concerns, DE&C have yet to carry out this mandate. The Coalition provides an appropriate venue for supporting DE&C in promulgating such procedures through discussion and consensus-building among members on what constitutes certification of compliance.

**Ideas the Coalition could consider:**

**Minimum Action**

DE&C disseminates certification guidelines to all code officials and design and construction professionals.

**Best Practice for Delaware**

Through an official process, the Delaware General Assembly updates Title 16, Chapter 76 to include the new certification guidelines.

**Third-Party Testing**

Third-party testing has become more common with the rise in above-code construction. Looking ahead, code officials and the construction industry need clear direction on topics such as who should be allowed to conduct testing and what the code official’s responsibility is for inspecting buildings that also receive testing. The state can provide guidance to ensure appropriate testing procedures and improve uniformity throughout the state.

New York offers BPI certification through its community college system: [www.hvcc.edu/ceebs/trainings.html](http://www.hvcc.edu/ceebs/trainings.html)

Georgia specifies in writing what constitutes a certified tester. It uses a menu approach, citing multiple nationally recognized certifications and its own state certification: [www.dca.state.ga.us/development/ConstructionCodes/programs/DET.asp](http://www.dca.state.ga.us/development/ConstructionCodes/programs/DET.asp)
The Delaware Code also mandates that, “as of December 31, 2025, all new residential building construction in the State of Delaware shall be zero net energy capable. As of December 31, 2030, all new commercial building construction must also be zero net energy capable.”

To reach these goals, DE&C is responsible for setting up “programs to promote the construction of zero net energy homes” in consultation with the HBADE Green Building Council. So far, DE&C and HBADE have not made substantive progress on this goal.

Delaware could look to Austin, TX, as an example of a community implementing a realistic plan to achieve net-zero energy capable homes by 2015. The city’s Zero Energy Capable Homes Task Force put together a set of policy recommendations that would incrementally raise the efficiency of residential buildings in Austin, including code amendments and goals for future code adoptions.

See the Task Force’s final report for more information: [www.ci.austin.tx.us/council_meetings/wams_item_attach.cfm?recordID=7329]

Reaching net-zero energy capability is imperative for Delaware’s long-term economic and environmental health. However, at this time, the state’s priority should be reaching 90 percent compliance with the 2009 IECC. Such actions will lay the foundation from which the state can build towards net-zero energy.
Successful energy code implementation requires buy-in, support, and input from a diverse group of audiences with different interests and needs. Outreach efforts attempt to:

1) raise awareness of codes among stakeholders; and
2) identify the value propositions that will compel them to change behaviors.

**Current Status**

The Delaware SEU raises awareness of building energy efficiency through its Energize Delaware campaign, which provides consumers and businesses with incentives for energy efficiency retrofits, upgrades, and above-code programs. Meanwhile, DE&C has worked in the past few years to establish relationships with code officials, HBADE, AIA, and other involved groups and hopes to engage the real estate community in the near future. These activities have only scratched the surface of the state’s potential to engage market actors.

**Cost Estimates for Coordinating a Multi-Media Campaign**

Based on previous campaigns in other states, below are some relative cost, reach, and impact estimates for different types of outreach using a high-medium-low scale.
Consumer and Professional Outreach Strategies  
CRITICAL TASK 2

Engaging the public as advocates for energy codes through public outreach provides support for policy-makers to counter arguments against stronger energy code adoption and implementation. It also builds public demand for energy-efficient construction—and ultimately, builders will build what consumers demand.

However, most consumers assume new homes are energy-efficient simply because they are new. They’re unaware of widespread compliance failures. Even so, consumers intuitively understand the value of codes. According to a nationwide survey of more than 5,000 households conducted by BCAP and Consumers Union (makers of the popular magazine Consumer Reports):

- 82% believe that homeowners have a right to a home that meets national energy standards;
- 79% believe that disclosing a home’s energy usage would enable them to make an informed decision about a new home purchase;
- 84% believe that more energy-efficient buildings will reduce energy use and pollution;
- 74% believe that energy code standards will help ensure that homeowner and taxpayer dollars are used wisely and efficiently as new building will be required to be built right the first time.

Use Public Service Advertisements (PSAs)

Do research

Energy codes are confusing to consumers. Prior to designing a PSA, conduct focus group studies with your target audience to test different messages and determine which resonate well. Prior to producing a PSA, test your planned PSA to determine if it’s compelling.

Have only one “call to action”

What do you want the consumer to do upon seeing or hearing your ad, (e.g., visit a website)? During focus groups, test to ensure that the URL is memorable.

PSAs are advertisements that you pay to create, but don’t pay to place. Rather, PSAs are given free placements in unsold advertising space. They can be created in any format that regular ads come in: TV, radio, internet, billboards, and print. The cost depends on the type of ad. For example, a TV ad is significantly more expensive than a radio ad. Free placements are not guaranteed, and there’s lots of competition for unsold ad space from other good causes. However, given the economic downturn, there may be more unsold ad space available compared to a few years ago.

Utilize a ready-made PSA. New Hampshire is willing to share their radio PSA with other states free-of-charge (you just pay to customize the call-to-action for your state). You can listen to this ad here: [www.nhenergycode.wordpress.com/2011/08/29/psa-highlights-the-advantages-of-building-to-new-hampshire%E2%80%99s-energy-code/]
Consumer and Professional Outreach Strategies
CRITICAL TASK 2 CONTINUED

Garner Earned Media

Draft Press Releases and Articles
Press releases and articles can appear in newspapers, magazines, newsletters, and more. Newsworthy topics may include: the added cost to a new home vs. energy savings, how energy codes help reduce strain on aging utility infrastructure, and how energy codes help keep rates low by reducing the need to build new power plants. Send the news release or article to reporters and follow up with a phone call. See some examples at:


Meet with editorial boards
Editorial boards determine and write a newspaper’s or magazine’s official position on issues. Meeting with editorial boards to inform them about the importance of energy codes is a no-cost activity that can go a long way toward raising public awareness.

Produce a News Story with B-Roll
DE&C can make it easier for a TV station to cover an energy code story by providing it with ready-made interviews and video (called “b-roll”). These 1-2 minute news-style stories save TV stations time, as they don’t have to travel to get good images of energy efficiency. An example of one such story is found here:

[www.youtube.com/watch?v=D6cumG9i_egg&feature=youtu.be]

Conduct a Media Tour with a Local Expert
Another inexpensive way to gain exposure is to pitch interviews with an energy “expert” (e.g. local government official, code advocate) to local TV and radio news broadcasts (e.g., morning shows or evening news shows). Develop talking points and practice interviews ahead of time. Conducting back-to-back interviews over a set period of time allows your expert to reach multiple radio and TV stations in just a few hours or days. This can be especially successful if planned in advance of an upcoming event (e.g., an important state meeting, regional energy rate hike, or even just “energy awareness month” in October).

Earned media refers to publicity gained through outreach efforts other than paid advertising. This is a low-cost way to reach thousands of people via regular media outlets. Reporters are always looking for new and compelling stories with great visuals. Energy codes can meet these needs when pitched the right way. DE&C can put together stories that describe the benefits of energy codes to consumers and pitch these stories to consumer or political reporters. DE&C can also develop a concise, one-page media “backgrounder,” including facts and benefits of energy codes for a reporter’s reference. One example of earned media can be seen here: [www.ksl.com/index.php?id=148&sid=14492845]
Consumer and Professional Outreach Strategies

Professional Outreach to Gain Support

Policymakers, design and construction industry representatives, and other professionals are typically not energy experts. They learn about energy codes from whoever presents information to them (e.g., code officials, home builders, advocates). Thus, they need and appreciate information from the state about the benefits of codes. Though these stakeholders will be reached by public awareness campaigns, targeted outreach builds added support for codes and creates buy-in among disengaged groups. The Coalition can go where necessary to reach these professionals: public hearings, conferences, home shows. It may be more effective to reach out directly to stakeholder associations, such as the Delaware League of Local Governments or AIA, to gain support from the top.

Three non-traditional groups to target are lenders, appraisers, and real estate professionals, who can make a major impact on support for codes by officially increasing the value of energy-efficient homes or simply raising homebuyer awareness. This will require a longer-term effort that could be led by the Coalition.

Dissemination

When designing resources for stakeholders, it’s helpful to engage potential partners who can ultimately assist in the dissemination of the final product. The success of your resources is only as good as:

1. whether the messages resonate with and motivate your target audience; and
2. getting it into their hands. Your dissemination plan should include using the media and partners to get resources out.

Call to Action

For all media outreach efforts, your “call to action” should entice your target audience to visit your website for more in-depth information. Below is an example of some resources the state can make available to professionals through outreach and by publishing on its website.
Creating and Disseminating Factsheets and Checklists

CRITICAL TASK 3

Delaware can improve energy code compliance—and the demand for it—by providing consumers and professionals with educational materials that highlight the many benefits of energy codes. As the chart on page 8 shows, factsheets and checklists are low-cost, high-impact outreach tools.

**Know Your Resources: Use What’s Out There!**

Launching campaigns to reach a wide variety of stakeholders with useful materials can be daunting. However, utilities, federal agencies, and national and regional energy efficiency organizations have already developed a number of resources Delaware could use “as is” or adapt to fit its needs.

### Consumer Factsheets and Checklists

Consumers have an important stake in the affordability of their homes and businesses. However, few know anything about energy codes and assume these buildings already meet recognized standards.

<table>
<thead>
<tr>
<th>Messages</th>
<th>Potential Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Your home or business might not meet code—costing you money every month</td>
<td>- Big-box retailers, Delaware State Housing Authority, Delaware Housing Coalition, Sierra Club Delaware Chapter, HBADE, Delaware Association of Realtors, DBOA and LDMBOA</td>
</tr>
<tr>
<td>- Check the energy efficiency of the building before you buy or rent</td>
<td></td>
</tr>
<tr>
<td>- Energy code checklists give you the power to be a smart consumer</td>
<td></td>
</tr>
<tr>
<td>- Rolled into a standard mortgage, net savings begin within the first year</td>
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</table>

### Professional Factsheets and Checklists

Traditionally, the energy code receives little attention compared to other building codes. Shifting this paradigm requires code officials and design and construction professionals to understand why code enforcement and compliance is critical and know how to access the resources they need.

<table>
<thead>
<tr>
<th>Messages</th>
<th>Potential Partners</th>
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<tbody>
<tr>
<td>- Energy codes reduce utility bills and protect consumers</td>
<td>HBADE, AIA Del., ASHRAE Del., ABC Del., DBOA and LDMBOA</td>
</tr>
<tr>
<td>- It’s cheaper than you think to build to the energy code</td>
<td></td>
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<tr>
<td>- Rolled into a standard mortgage, net savings begin within the first year</td>
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</tr>
<tr>
<td>- Energy codes are much more cost-effective than expensive energy efficiency retrofits</td>
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### Dissemination Strategies

- Home and trade shows, Presentations at annual conferences and monthly meetings

### Additional Strategies

- Newspaper articles, Local TV, Radio features

### Ready-made Resources

- Available from BCAP at: [www.bcap-ocean.org/consumers-take-action]
- NEEP Energy efficiency at home video (for Bedford, MA, but applicable to Del.): [www.vimeo.com/16891099]
### Policymakers Factsheets

Policymakers set the rules by which other market actors participate. They need to understand the value energy codes present to their citizens and communities and set policies—and budgets—that incentivize code-compliance construction.

| Messages | • Energy codes reduce utility bills for citizens, businesses, and public buildings  
• Full compliance with the 2009 IECC in Delaware would yield roughly $99 million in annual energy cost savings for households and businesses, or $783 million from 2011-30
• By 2030, 8-13 percent annual energy savings would equal 8 trillion Btu of energy  
• Energy codes improve grid reliability and reduce pollution  
• Energy codes are much more cost-effective than expensive energy efficiency retrofits  
• Energy codes protect citizens from substandard construction |
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<tbody>
<tr>
<td>Potential Partners</td>
<td>• Delaware General Assembly, Local governments, DBOA and LDMBOA</td>
</tr>
<tr>
<td>Dissemination Strategies</td>
<td>• City council hearings, Mayors offices, Legislative conferences</td>
</tr>
<tr>
<td>Additional Strategies</td>
<td>• Newspaper articles, Local TV, Radio features, Petitions</td>
</tr>
</tbody>
</table>
• The Institute for Market Transformation (IMT) is currently researching the connection between energy codes and job creation. Furthermore, IMT already calculated that every $1 spent on energy code implementation yields $6 in energy savings: [www.imt.org/files/PolicymakerFactsheet-EnergyCodeCompliance.pdf]  
• BCAP created a one-page factsheet for policymakers that can be tailored for Delaware: [www.bcap-ocean.org/resource/why-energy-codes-matter-what-policymakers-need-know] |

### Real Estate, Lending, and Appraisal Community Factsheets and Checklists

The largest untapped resources for improving energy code compliance are the real estate, lending, and appraisal communities, which have significant influence on the marketability and value of homes and buildings, as well as buyers’ and renters’ awareness of energy-efficient construction.

| Messages | • Energy codes reduce utility bills for citizens and businesses  
• Full compliance with the 2009 IECC in Delaware would yield roughly $99 million in annual energy cost savings, or $783 million from 2011-30  
• Code-compliant homes are less likely to default on their mortgage payments  
• Code-compliant homes can be a significant selling point |
<table>
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<tbody>
<tr>
<td>Potential Partners</td>
<td>• Delaware State Housing Authority, Delaware Housing Coalition, Delaware Association of Realtors, Delaware Association of Appraisers, Inc., Delaware Mortgage Bankers Association</td>
</tr>
<tr>
<td>Dissemination Strategies</td>
<td>• Home and trade shows, annual conferences and monthly meetings</td>
</tr>
<tr>
<td>Potential Outcomes</td>
<td>• Update MLS listings, Adjust lending criteria, Adjust appraisal criteria</td>
</tr>
</tbody>
</table>

Energy codes cover all elements of building science and design, from lighting and insulation to windows, HVAC, and more. Even experienced code officials and design and construction professionals require hours of training to understand their meaning and application in the field. Fortunately, training is one of the most cost-effective ways to improve energy code compliance.

Current Status

In 2010, DNREC funded BCAP and Newport Ventures to conduct two half-day residential and two half-day commercial workshops each in Newark, Dover and Georgetown. A total of 184 code officials and design and construction professionals attended at least one session, with many attending two. In additional to the standard lecture and Q&A format, the workshops included several hands-on demonstrations. In 2011, the Northeast Energy Efficiency Partnerships (NEEP) held one full-day residential and one full-day commercial training session in Dover. 75 code officials and design and building professionals attended.

Expanding a Training Program

To reach 90 percent compliance, Delaware must build on these efforts. In the short-term, it can provide all code officials and design and construction professionals in the state with a more in-depth “core” understanding of the energy code provisions of the 2009 IECC. In the long-term, it can establish a multi-tiered statewide training program in conjunction with the state’s tentative adoption of the 2012 IECC/ASHRAE Standard 90.1-2010 in June 2013.

To design an appropriate training series, DE&C should first reference the training assessment conducted by Newport Ventures and BCAP following their workshops, as well as any feedback from NEEP staff involved in their training sessions.

Focus on: On-site training

On-site training is widely considered the most useful type of training. Attendees augment their theoretical knowledge of energy code provisions with hands-on experience of where and how they apply to actual buildings. Instructors can also demonstrate the principles of building science with real-world examples, such as duct-blasted and blower-door tests.

One possibility is for a train-the-trainer program, such as Energy Code Ambassadors, that gives select code officials additional expertise in energy code enforcement. These code officials can then provide on-site training to colleagues in their area through a circuit-rider program.
Opportunity: DE&C has remaining Recovery Act funding to put towards energy code compliance activities. No plan is currently in place. This funding presents an opportunity DE&C cannot afford to pass up. DE&C should put these funds towards holding additional energy code training sessions on the 2009 IECC and ASHRAE Standard 90.1-2007.

Tiered Training

<table>
<thead>
<tr>
<th>Basic Training</th>
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<tbody>
<tr>
<td>AUDIENCE: All code officials and design and construction professionals</td>
</tr>
<tr>
<td>LENGTH (RESIDENTIAL): Half-day training residential</td>
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<tr>
<td>LENGTH (COMMERCIAL): Half-day training commercial</td>
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<tr>
<td>COVERAGE: Basic energy code provisions</td>
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<tr>
<td>FREQUENCY: Ongoing; revamped after every code adoption or update</td>
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<td>ADDITIONAL: Online</td>
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<table>
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<th>Intermediate Training</th>
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<tr>
<td>AUDIENCE: Code officials and building professionals with working energy code knowledge</td>
</tr>
<tr>
<td>LENGTH (RESIDENTIAL): Full-day training</td>
</tr>
<tr>
<td>LENGTH (COMMERCIAL): Full-day training</td>
</tr>
<tr>
<td>COVERAGE: All energy code provisions</td>
</tr>
<tr>
<td>FREQUENCY: Ongoing around new code adoption — six months prior and after effective</td>
</tr>
<tr>
<td>ADDITIONAL: Videotape training to post online in digestible segments</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Advanced Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUDIENCE: Code officials and building professionals with previous energy code compliance experience and/or training</td>
</tr>
<tr>
<td>LENGTH (RESIDENTIAL): Full-, multi-day training, or on-site</td>
</tr>
<tr>
<td>LENGTH (COMMERCIAL): Full-, multi-day training, or on-site</td>
</tr>
<tr>
<td>COVERAGE: All energy code provisions; In-depth coverage of individual aspects of the energy code:</td>
</tr>
<tr>
<td>• HVAC, lighting systems, envelope, scope and administration, etc.</td>
</tr>
<tr>
<td>• Coverage of installation, advanced building techniques</td>
</tr>
<tr>
<td>• Additional code interpretation</td>
</tr>
<tr>
<td>FREQUENCY: Ongoing, revamped after every code adoption or update</td>
</tr>
<tr>
<td>ADDITIONAL: On-site training, Train-the trainer, part of technical/community college program</td>
</tr>
</tbody>
</table>
Advanced Statewide Training Program

CRITICAL TASK 4

Moving beyond the one-size-fits-all approach, Delaware can offer intermediate training in conjunction with advanced training for those that have already taken multiple training courses in the past two years. At least four full-day trainings (residential and commercial, intermediate and advanced) would take place in at least two cities in each county annually, particularly in preparation for the adoption of the 2012 IECC and ASHRAE Standard 90.1-2010, tentatively scheduled for June 2013. Advanced training should focus on individual aspects of the energy code. Colorado’s three-tiered training program\(^1\) offers a model Delaware could adapt to fit its budget and needs.

\(^1\)[www.colorado.gov/cs/Satellite/DOLA-Main/CBON/1251591390175]

Cost

Based on previous trainings in the state and the BCAP Code Calculator, the following can be used as an estimate for pricing training workshops. Cost can change greatly depending on a number of variables.

<table>
<thead>
<tr>
<th>Expense</th>
<th>Basic 12 half-day, 240 attendees</th>
<th>Intermediate 12 full-day, 480 attendees</th>
<th>Advanced Intermediate plus 3 additional full-day, 480 attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative Costs</td>
<td>$7,500</td>
<td>$9,000</td>
<td>$11,000</td>
</tr>
<tr>
<td>Trainers’ Fees</td>
<td>$1,600</td>
<td>$1,600</td>
<td>$1,600</td>
</tr>
<tr>
<td>Food and Drinks</td>
<td>$520</td>
<td>$520</td>
<td>$520</td>
</tr>
<tr>
<td><strong>Total Minus Fee</strong></td>
<td><strong>$14,220-15,720</strong></td>
<td><strong>$20,940-23,940</strong></td>
<td><strong>$26,300-30,800</strong></td>
</tr>
</tbody>
</table>

Minimum Level for Delaware

Delaware offers at least two full-day intermediate training sessions annually (residential and commercial) in all three counties. Trainings would focus on individual aspects of the code, as well as the broader picture. If sufficient funds are not available, DE&C could consider charging a nominal fee, either for all attendees or just design and construction professionals.
One cost-effective way to train code officials and keep them up-to-date on the energy code is an Energy Code Ambassadors Program (ECAP). A train-the-trainer approach keeps costs down by requiring only a few official training sessions. Ambassadors then use their newfound expertise to educate their peers.

**Program Structure**

A well-established energy code trainer gives the initial ECAP training, consisting of three parts: energy code advocacy, residential requirements, and commercial requirements. The size of the class allows the trainer to go at a slower pace, focusing on parts of the code and advanced segments in need of greater attention. In some cases, the instructor may spend a second day reviewing the content of the three ICC energy certification exams before proctoring the tests.

**Ambassador Selection**

DE&C could advertise ECAP through the Coalition, particularly the DBOA and LDMBOA. Well-known and respected ICC members could also be targeted individually. Ambassadors should include at least one plans examiner and/or building inspector from each of Delaware’s three counties.

**Motivation for Participation**

Depending on the funding source and amount, monetary compensation for the Ambassadors is unlikely. Therefore, it is critical that ECAP be free and attendees be reimbursed for any travel expenses, as well as for travel throughout the state to train code officials at other building departments. Additionally, DE&C can provide the attendees with complimentary food, code books, and ICC vouchers.

**Cost Estimate**

Based on ECAP programs in other states, the following table provides a template for pricing the program for three-to-six ambassadors spread over two days. Costs may vary in Delaware.

<table>
<thead>
<tr>
<th>Expense</th>
<th>Cost Each</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainers’ Fee</td>
<td>$1,600</td>
<td>$3,200</td>
</tr>
<tr>
<td>Room Rental</td>
<td>240</td>
<td>1,200-1,920</td>
</tr>
<tr>
<td>Ambassador Travel Reimbursements</td>
<td>1,000</td>
<td>3,000-6,000</td>
</tr>
<tr>
<td>Food and Drinks</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>Code Books</td>
<td>215</td>
<td>645-1,290</td>
</tr>
<tr>
<td>2009 IECC/ASHRAE Standard 90.1-2007</td>
<td>137</td>
<td></td>
</tr>
<tr>
<td>2009 IECC w/ Commentary</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>2009 IECC Workbook</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>ICC Energy Exam Vouchers (3 tests)</td>
<td>180</td>
<td>1,620-3,420</td>
</tr>
<tr>
<td>Oversight Costs (dependent on trainer)</td>
<td>-</td>
<td>8,500 - 16,000</td>
</tr>
<tr>
<td>Program Administration</td>
<td>4,000-7,000</td>
<td></td>
</tr>
<tr>
<td>Curriculum Prep and Development</td>
<td>4,000-7,000</td>
<td></td>
</tr>
<tr>
<td>Trainer’s Travel and Other Expenses</td>
<td>500-2,000</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>$18,365 - 31,850</strong></td>
</tr>
</tbody>
</table>

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Energy Code Ambassadors Program

**CRITICAL TASK 5**

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Training
Compliance Evaluation

Verifying the success of energy code implementation efforts—and satisfying the conditions of the $24.2 million the state accepted in Recovery Act funding—requires a compliance evaluation program.

**Current Status**

Like most states, Delaware has not undertaken any significant compliance evaluation measures.

**Goals of Compliance Evaluation**

Compliance measurement is not about looking over the shoulder of local code officials. Instead, a successful program will determine how well construction and design professionals are doing—and help provide all parties with improved resources to build and inspect homes and businesses that meet or go beyond the requirements of the adopted energy code. Goals include, but are not limited to:

1. Establish an energy code compliance baseline;
2. Track progress toward overarching statewide energy efficiency goals;
3. Monitor energy savings attributed to the building energy code; and

**DOE Resources and Pilot Studies**

Delaware should begin planning today so that it has time to assess existing construction practices, build feedback loops, etc. Fortunately, DOE has created a website with videos, best practices, and tools to show how states and local inspection departments might create a tailored plan:

[www.energycodes.gov/arra/compliance_evaluation.stm]

In addition, Delaware can draw on lessons from the nine DOE compliance pilot studies, including Massachusetts, as well as state-funded studies in New York and Rhode Island.

[www.energycodes.gov/states/maps/stateComplianceActivities.stm]
The pilot studies and PNNL protocol have set the stage for Delaware to establish its own compliance evaluation study. However, the state will have the freedom and flexibility to develop a program that meets its unique needs and criteria.

### Structure of the Study

#### Survey

One low-cost option is to analyze the data collected in the 2010 DE&C and BCAP surveys of code officials to gauge self-reported compliance. Or, following Michigan’s lead, DE&C and the Energy Codes Coalition could tailor the DOE compliance survey as they see fit.

#### Evaluators

DOE suggests three options for how to conduct evaluations: first-party evaluations by local inspections departments, second-party inspection by the state, or third-party evaluation by private sector firms. Delaware’s enforcement is primarily first-party, though, given the state’s size, it could consider second- or third-party, as well. The Coalition can help DE&C make this decision. Utilities and/or the PSC could also play an important role in this process, particularly if Delaware pursues EERS regulations that include energy code implementation efforts.

### Cost

The cost could vary depending on a number of factors, including number of buildings evaluated, method of data collection (telephone, plans-only, in-person inspections), number of inspections, state-local cooperation, and contractor cost. Due to these factors, DOE’s pilot compliance studies ranged from $75,000 to as much as $750,000.

### Sample Size

DOE also developed a State Sample Generator\(^1\) to provide states with suggested sample sizes based on the recent number of permits over preceding years. For example, for new single family construction, the Generator suggests New Castle County require a sample of only ten residential buildings out of close to 660 built from 2008 to 2010.

\[\text{[energycode.pnl.gov/SampleGen/]}\]

### Buildings

DE&C and the Coalition will have leeway to choose which buildings to include in the sample. Moreover, DOE will not require the state to track specific buildings throughout every stage of the inspection process. Instead, the state may perform inspections of various code requirements across a larger group of buildings, each at a different level of completeness. For more information, please see the DOE Compliance Evaluation Resource.\(^2\)

\[\text{[energycodes.gov/arra/compliance_evaluation.stm]}\]
Below are some near- and mid-term goals for Delaware that are both reasonable and necessary. Beyond these, the Strategic Compliance Plan outlines those longer-term outcomes that are realistic and expected. This timeline should act as much like a mile marker and reference point as a guide. Moving forward, the state should chart its own course towards energy code compliance, built on a solid foundation of proven practices.

<table>
<thead>
<tr>
<th>Timeframe</th>
<th>Funding</th>
<th>State &amp; Local Policy</th>
<th>Outreach</th>
<th>Training</th>
<th>Compliance Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2012</strong></td>
<td>End of Recovery Act funding</td>
<td>Set EERS regulations to include energy code implementation</td>
<td>Upload useful outreach and training information to DE&amp;C website</td>
<td>Launch Energy Code Ambassadors Program</td>
<td>Evaluate PNNL pilot study protocol</td>
</tr>
<tr>
<td><strong>2013</strong></td>
<td>Implement new funding options</td>
<td>Define compliance certification guidelines</td>
<td>Expand Coalition to include non-traditional actors</td>
<td>Conduct 8-24 trainings in locations around the state</td>
<td>Develop and conduct compliance evaluation study using PNNL protocol</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Provide written guidance on third-party testing criteria</td>
<td>Conduct multi-level training program on IECC</td>
<td>Analyze evaluation findings to inform outreach and training goals</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Establish net-zero energy capable program</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Five years ago, it would have been nearly impossible to predict what the energy codes landscape would look like on the national, state, and local levels. Likewise, the next five years will no doubt bring new realities and opportunities dependent on a host of unknown variables.
2014

Implement new funding options

Expand net-zero energy capable program with HBADE for residential, DE AIA and DE ABC for commercial

Outreach campaign for non-traditional actors

Conduct 24-40 trainings on IECC

Continue to incorporate evaluation study findings into outreach and training programs

2015

Begin net-zero energy capable construction

Conduct multi-level training program on IECC

2016-2017

Submit final compliance evaluation study to meet DOE requirements
For more information on the Delaware Department of Natural Resources and Environmental Control

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DNREC Division of Energy & Climate
1203 College Park Drive, Suite 101
Dover, DE 19904
Crystal.Nagyiski@state.de.us
www.dnrec.delaware.gov

For more information on the Compliance Planning Assistance Program, please email bcap-ocean@ase.org

For more energy code compliance resources, please visit
www.bcap-ocean.org/resources
www.energycodes.gov