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## Topic Brief 3: Onsite Compliance Evaluations

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**Pacific Northwest**  
NATIONAL LABORATORY



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## 1.0 Introduction

The American Recovery and Reinvestment Act (Recovery Act) requires the governors to notify the Secretary of Energy that the governor has obtained assurances that the state or applicable units of local government will implement a plan for achieving compliance<sup>1</sup> with the state or local government building energy code(s) in at least 90% of the new and renovated residential and commercial building space. This document discusses the manpower needs, qualifications, certification, accreditation and funding mechanisms associated with measuring and reporting the rate of compliance with adopted energy codes. Section 2.0 provides examples of various evaluation approaches; Section 3.0 explores evaluator<sup>2</sup> credentials and programs that can assist in training and certifying those evaluators. Section 4.0 addresses issues associated with the manpower needed to conduct evaluations. Section 5.0 addresses funding models to support state measurement and reporting of compliance. A recent Building Codes Assistance Project (BCAP) publication, [Residential Building Energy Codes – Enforcement & Compliance Study](#)<sup>3</sup>, which lists lack of manpower as the third largest barrier to enforcing residential building energy codes and lack of funding as the fifth largest barrier, provides additional information on the topics addressed below.

## 2.0 Evaluation Approaches

A determination of compliance requires the availability of individuals or entities<sup>4</sup> to gather relevant information concerning compliance. There are three basic approaches that can be used to evaluate building plans and construction with respect to code compliance:

- **First Party.** A first party evaluation would involve self-reporting of data and self-certification of any results associated with compliance (e.g., “I certify that...”). In this case the entities designing and constructing the building state they comply. While self-certification could be considered by state and local government for a code compliance program, it is not deemed an acceptable approach for a formal code compliance evaluation.
- **Second Party.** A second party evaluation would be performed by the entity responsible for validating compliance, such as state or local government, through their direct oversight of those designing and constructing buildings (e.g., “you comply with ...”). This is beyond the first approach in that state or local government would actually check the plans and building construction as opposed to accepting a statement of compliance from the subject entity concerning their own work.
- **Third Party.** A third party evaluation would be performed through a third party that acts on behalf of the state or local agency. In this case, the building owner/developer can retain an accredited and recognized third party entity who acts on behalf of the state or local agency to conduct a review of the design and construction for purposes of ensuring compliance. Alternatively, the agency responsible for compliance could retain the third party. For the Recovery Act effort, a third party acting on behalf of state or local government is recommended as the most objective approach.

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<sup>1</sup> Compliance is achieved through a number of activities associated with conformity assessment, also known as compliance assessment. This includes those activities needed to determine, directly or indirectly, that a process, product, or service meets relevant standards and fulfills relevant requirements.

<sup>2</sup> The term evaluator is used throughout this document to refer to individuals that will visit local jurisdictions to gather data from building plans and conduct field inspections of buildings. Evaluators in this context perform similar tasks to energy auditors and building inspectors, but the terms auditor and inspector are associated with slightly different functions and so are not used in this context.

<sup>3</sup> Residential Building Energy Codes – Enforcement & Compliance Study. 2008. Building Codes Assistance Project. <[http://bcap-energy.org/files/Residential\\_Survey\\_Report\\_Oct08.pdf](http://bcap-energy.org/files/Residential_Survey_Report_Oct08.pdf)>

<sup>4</sup> Individuals are considered independent contractors working alone. Entities are considered corporations, associations, etc. where the corporation or association is ultimately responsible for the services provided and uses any of a number of employees to conduct work on their behalf.

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For example, some states require regular automobile safety inspections. A first party evaluation would consist of the automobile owner completing a safety inspection themselves and signing and sending in the results. Some method for determining their competence to do so and penalties for falsifying data and/or compliance statements would be needed to make this approach worthy of consideration. A second party evaluation would consist of the state regulatory agency conducting the inspection themselves. A third party evaluation would have someone other than the vehicle owner perform the evaluation as an authorized agent of the state, such as a service station. In this case the state would develop and implement a program to certify or accredit those entities acting on its behalf.

In developing programs to address energy code compliance, several different evaluation approaches can be considered.

- **Building department.** The state or local building regulatory agency verifies compliance as they do on a regular basis through plan review and inspection. This could be viewed as another form of self-certification in that the building department staff would be gathering data that would be used to assess their own work associated with building plan review and inspection.
- **Public sector third party agency.** A state agency, commission, or other official arm of state government not having direct responsibility for code compliance verifies compliance. This is done in some states where a state agency has oversight of local government enforcement of a state building or fire code. The state agency can accredit local government agencies, who would not have a vested interest in the outcome, to enforce the state code. As an example, state compliance programs associated with statewide modular construction regulatory programs could be tasked with evaluating energy code compliance at the local level for residential buildings.
- **Private sector third party entities.** Anyone who does not have a vested interest in the outcome of a compliance evaluation and is not a public sector agency would be classified as a private sector third party agency. These can include any number of individuals and entities such as Home Energy Raters (HERS), energy service providers (utilities), architects, engineers, contractors, builders, code officials and others. Included as private sector third parties are energy consultants with experience in this field who have conducted energy code compliance and audit studies. If third party evaluators are paid by the entity being evaluated, appropriate measures should be in place to ensure their objectivity. For the Recovery Act effort, the preferred approach would be for evaluators to be under contract with the state or local jurisdictions, rather than being under contract with the entity being evaluated. In all instances these third parties would need to be adjudged as having the qualifications to conduct the required work.

While the Building Energy Codes Program (BECP) recommends a third party evaluation for the formal 90% compliance determination, states may want to expend initial efforts in measuring their current compliance rate via pilot studies and/or self-assessments using local building department staff. These smaller and/or less formal approaches could also be used to address the Recovery Act legislation pertaining to “*measurement of the rate of compliance each year*”. This approach is discussed in more detail in *Topic Brief 7: Compliance Roadmap*.

In determining who should gather compliance-related information, the states should consider these approaches in relation to the current building regulatory process, licensing, and enforcement conditions in the state. What may work well for one state may not work well for another. It will be important for the state to choose a defensible and objective evaluation approach that fits its capabilities and works within or in concert with its current building regulatory programs and funding mechanisms.

## **2.1 Compliance Determination**

The data collected from building evaluations needs to be assessed in order to determine and report compliance on each building evaluated. The checklists and instructions being developed by the BECP are described in *Topic Brief 6: Evaluation Checklists*. The compliance determination based on these checklists is also described, and includes instructions for weighting the individual checklist items and deriving an overall rate of compliance for the state for both residential and commercial buildings. Just as there are several approaches for who performs the

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building evaluations, there are several approaches for who should compute compliance percentages from the data gathered:

- The compliance determination on each building can be done by the evaluators themselves
- The completed checklists can be turned over to the state who can derive compliance percentages
- The state can enlist the BECP to help electronically capture and store the checklist data, automate the scoring of each building sample, and automate the derivation of the final state metrics

The BECP anticipates developing an online tool to assist in the electronic ingest and scoring of checklist data. The tool could be used by evaluators if desired. If paper checklists are used for data collection, the evaluator will need to enter the data into the online form by hand. If spreadsheet checklists are used, the BECP can provide an automated method for loading the checklist information from the spreadsheet. While overall building compliance can be determined manually and documented on each checklist, one of the major values in this effort is consolidation of the data being gathered. This effort has the potential to produce the largest volume of information related to energy code compliance ever produced in this country. The BECP is hopeful that regardless of the approach chosen, each state will provide its data for consolidation into a national database on energy code compliance. Assuming that the state does agree to contribute its data to such a national resource, the more effective approach is to load the data into an electronic format first, and let the computer software derive the resulting compliance scores.

### **3.0 Certification and Accreditation**

A complete program to evaluate compliance should include verification or certification of those individuals or entities performing the evaluations. Such a program should verify their competence in gathering and/or evaluating information related to compliance. In short, are they qualified to do the work and who is qualified to make that judgment? Since the building design and construction process involves many steps, from plan review to final inspection, evaluating the qualifications can become quite complex, as each step requires different knowledge and experience. An expert in performing energy analysis based on building plans is not necessarily qualified to conduct inspections of heating, ventilating, and air conditioning (HVAC) systems or lighting control systems.

Certification involves the process of determining if an individual or entity has necessary qualifications to gather the requisite data and/or perform an evaluation based on those data. Accreditation involves the evaluation and validation of programs or entities that offer certification. Building departments, acting in an accreditation role, can and do allow others such as architects and engineers to conduct plan review and inspection on their behalf or on behalf of building owners to speed up the approval process when those entities have been approved by the building department and can provide assurances they have no vested interest in the outcome of their efforts.

States will need to validate the objectivity and competence of those who conduct compliance evaluations. Uniformity could be achieved through state recognition of one or more accredited professional certification programs or by having the state develop and implement a program itself to train and evaluate individuals and entities as to their ability to conduct the compliance-related work. Where the state does not directly oversee the work of these individuals, third parties must be used and the competency of other entities to accredit compliance-related programs becomes a consideration.

Determining competency of individuals and entities involves the following:

1. A description of the evaluation tasks to be done and qualifications needed to do those tasks in a competent manner.
2. Testing that can be used as a basis for determining if a particular individual is competent to perform the tasks.
3. Ongoing certification to check on the performance of those individuals to determine their continued acceptability to perform the tasks.

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4. Registration with appropriate public or private sector entities to identify who is qualified to perform the tasks.
  5. In some cases, the state may want to consider the availability of accreditation by another entity to validate the competency of those administering tests and issuing certifications.

As reported by the US Bureau of Labor Statistics (<http://www.bls.gov/oco/ocos004.htm>), many states and local jurisdictions require some type of license or certification for employment as a construction and building inspector. Requirements for licensure or certification may include:

- a minimum level of education
- previous experience
- a state-approved license or certification
- purchase of liability insurance of a certain amount

Some states have developed their own unique licensing programs for inspectors, while others may reference and require certification by national associations in lieu of developing and maintaining their own programs. For instance, some states require home inspectors to obtain a state-issued license or certification. Certification renewal is typically required every few years and annual continuing education is almost always required. States that have such programs may already have a foundation for validating the acceptability of those who would be involved in energy code compliance evaluations. Another basis for validating evaluator competency to address energy code compliance could include existing state licensing regulations and programs for designers and/or contractors. State-specific licensing and certification requirements are provided at <http://www.hometraining.com/certif.htm> and on the American Society of Home Inspectors website at <http://www.ashi.org/customers/state.asp>, which lists 32 states having regulations affecting home inspectors.

The most obvious national certifications for this effort come from the organizations responsible for the target codes named in the Recovery Act legislation, the International Code Council (ICC) and the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE).

ICC's certification programs are geared towards code officials. ICC's website (<http://www.iccsafe.org/>) has considerable information about certification programs, but the most relevant information can be found at <http://www.iccsafe.org/certification/inspector/national.html>. ICC certifications include:

- Commercial Energy Inspector
- Commercial Energy Plans Examiner
- Residential Energy Insp./Plans Examiner

ASHRAE's website (<http://www.ashrae.org/>) lists its certification program at <http://www.ashrae.org/certification/>. Their high performance building design professional certification includes Standard 90.1-2004, but does not yet include 90.1-2007. This is a "design certification" and not an "inspection certification," as ASHRAE is not an inspection or enforcement agency. However, knowledge of Standard 90.1 is certainly helpful and relevant to commercial building energy code compliance. Also available is an online list of ASHRAE Certified Professionals by category - most relevant will be those listed under High-Performance Building Design.

Some ongoing national, state or local building quality assurance and quality control programs employ qualified individuals and/or certify the competency of individuals. Examples include:

- American Home Inspectors Training Institute ([www.ahit.com](http://www.ahit.com)) trains and certifies home inspectors
- American Institute of Architects (<http://www.aia.org/index.htm>) requires architects to participate in continuing education as a condition for retaining recognition by the institute
- Building Performance Institute ([www.bpi.org](http://www.bpi.org)) certifies individuals as to competency for energy auditing of homes associated with the DOE Building America Program
- Construction Specifications Institute ([www.csinet.org](http://www.csinet.org)) offers certification for construction specifiers

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- U.S. Department of Housing and Urban Development ([www.hud.gov](http://www.hud.gov)) offers accreditation of design review and in-plant inspection agencies for manufactured housing
  - Residential Energy Services Network (RESNET) ([www.natresnet.org](http://www.natresnet.org)) offers training and certification of home energy raters and offers an online directory of RESNET raters
  - US Green Building Council (<http://www.usgbc.org/>) offers Leadership in Energy and Environmental Design (LEED) professional accreditation
  - National Certification Program for Construction Code Inspectors (NCPCCI) ([www.prometric.com/ncpcci](http://www.prometric.com/ncpcci)) offers personnel certification for building, mechanical, plumbing, fire and electrical issues
  - National Inspection, Testing and Certification Corporation (NITC) (<http://www.nationalitc.com/>) offers personnel certification for selected mechanical- and plumbing-related inspections
  - Contacts for State Licensing Boards for architects and engineers are available online, including at [http://www.constructionweblinks.com/Industry\\_Topics/Licensing\\_Industry\\_Topics/Finding\\_Tools\\_Licensing/finding\\_tools\\_licensing.html](http://www.constructionweblinks.com/Industry_Topics/Licensing_Industry_Topics/Finding_Tools_Licensing/finding_tools_licensing.html)

In considering the recognition of any certification program, it is important to consider the basis for acceptance of those who are certified pursuant to the program. Where states decide to implement their own accreditation of personnel certification programs, the following may prove useful:

- ISO Standard 17020 entitled "General Criteria for the Operation of Various Types of Bodies Performing Inspection" ([http://www.iso.org/iso/catalogue\\_detail.htm?csnumber=29342](http://www.iso.org/iso/catalogue_detail.htm?csnumber=29342))
- ISO/IEC Standard 17024 "General Criteria for Bodies Operating Certification of Persons" ([http://www.iso.org/iso/iso\\_catalogue/catalogue\\_ics/catalogue\\_detail\\_ics.htm?ics1=03&ics2=120&ics3=20&csnumber=52993](http://www.iso.org/iso/iso_catalogue/catalogue_ics/catalogue_detail_ics.htm?ics1=03&ics2=120&ics3=20&csnumber=52993))
- American National Standards Institute (ANSI) administers two accreditation programs for personnel certification agencies (<https://www.ansica.org/wwwversion2/outside/PERgeneral.asp?menuID=2>)
- International Accreditation Service (<http://www.iasonline.org>) accredits building departments as to their ability to carry out building regulatory program implementation. They also accredit third-party permitting, plan review and inspection service providers using IAS acceptance criteria AC 402.

#### 4.0 Manpower

Regardless of the approach taken to validate compliance, additional manpower resources will be needed to gather data directly from the field, oversee third party evaluation efforts, and/or evaluate the collected data. Where compliance is below 90%, resources will also be needed to develop and implement programs to address compliance issues. Knowing the reasons for lack of compliance can help state and local agencies more effectively allocate their limited resources to those areas needing the most reinforcement and yielding the biggest payoff in increased rates of compliance.

Even where state and local agencies already conduct plan review and inspection to validate code compliance, many agencies will not have available resources to conduct evaluations, especially since such resources are funded through permitting revenue and when construction activity is down (as it is now), fewer resources are available. Recovery Act activities might additionally not be covered by permitting funds since they are over and above what is covered by the permitting function.

Several options exist to secure the additional manpower resources needed to enhance energy code compliance, noting that they are affected by available funding as discussed in more detail in Section 5.0.

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- The Recovery Act is a job creation program. The funding is intended to provide for new jobs, and Recovery Act reporting requirements include showing how the funding has resulted in new jobs<sup>5</sup>. This is an opportunity to train more individuals on building construction and energy topics through job programs, in colleges and universities, and in trade schools. Personnel can be hired to augment existing state and local agency staff. Agencies can draw from the unemployed, youth entering the job market, or personnel with backgrounds in construction, utility, consulting, lending or real estate industries.
  - Energy code provisions relate to building, mechanical, plumbing and electrical issues. Personnel currently focused on non-energy-related aspects of the code could be cross-trained to supplement their expertise, enabling them to inspect energy code requirements along with their typical inspections. This leverages Recovery Act funding to support not only enhanced energy code compliance but concurrently to reinforce needed health and life safety considerations.
  - Creative opportunities exist to not only support enhancement of local government staff but also state agency staff that can be available to assist local government. For example, some states have a state code agency with staff responsible for assisting local government. The Recovery Act could be used to bolster the staff in such agencies, providing additional assistance to local government.
  - The Recovery Act can also be used to retain third parties to oversee and/or conduct compliance efforts. This could be implemented in a number of different ways.
    - State or local government could use a more traditional code enforcement approach and simply retain third parties to augment state and local resources as needed.
    - State or local government could develop and administer a program to accredit and certify third parties, who in turn could be retained by owners/developers to document and validate code compliance. Such third parties could include consultants, designers, engineers, code officials, utility staff, realtors, and any other individual or entity having the necessary qualifications to conduct the needed work.
    - State or local government could rely on self-certification by licensed builders and contractors and use new resources to manage the licensing program, conduct spot inspections and suspend the licenses of those found in non-compliance. While this is not a recommended approach for the Recovery Act effort (self-certified buildings will need to be evaluated if included in the state sample), it is mentioned here as a potential long-term approach for improving energy code compliance.
  - Although unlikely, states might consider the possibility of recruiting volunteers. With growing interest in reduction of greenhouse gas emissions and in energy conservation, it may be possible to find recruits that would donate time in exchange for free training and certification.

## 5.0 Funding

The cost of developing and administering any program to measure code compliance must be considered. Funding is needed not only for the manpower resources noted above, but for indirect costs such as data management, communication, and program administration. In the short term, funding available under the Recovery Act can jump-start and help support these costs. In the long term, since the Recovery Act legislation covers an 8-year period, and its goals will continue to have merit beyond those 8 years, activities to foster compliance will need to be maintained. For example, while the BECP guidelines for addressing the Recovery Act legislation recommends a total sample of 44 residential and 44+ commercial buildings, evaluated by third-party entities, there is value in continuous training, self-assessment, and spot checking buildings on a smaller scale each year. Spot checks and

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<sup>5</sup> The Recovery Act was designed to save and create jobs, as well as to cushion the economic downturn and make crucial public investments. A Council of Economic Advisers (CEA) report (<http://blogs.cbh.com/govserv/?p=266>) specifies procedures to be used by recipients for estimating job creation going forward; discusses reporting requirements for job creation; and describes the procedures the CEA will use to evaluate the job creation and retention benefits of the Recovery Act.

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self-assessments are suggested as a way to meet the annual reporting requirements and as a method for ensuring continued compliance after the 8-year period (see *Topic Brief 7: Compliance Roadmap*). Where existing building regulatory programs will not be able to support such efforts, state and local government will need to develop and implement alternative programs that can be sustained under a solid business model. This section discusses some sources of revenue that the state and local jurisdictions might pursue in funding the Recovery Act requirements and in continuing compliance evaluations.

**BECP Support.** The BECP state compliance evaluation procedures and corresponding training materials are provided as part of the program's technical assistance to the states. The procedures are being developed so the states and their constituents do not have to spend their own funding and resources to develop 50 different sets of procedures. There is no requirement for a state to use these tools and materials, but they are available to help defer costs that may be incurred in implementing the Recovery Act requirements. BECP support is also available to help establish state building sample sets, compile and evaluate the results of compliance evaluations, and to provide additional marketing and training materials.

**Recovery Act Funding.** BECP technical assistance has then been coupled by \$3.1 billion in State Energy Program Recovery Act funding and \$3.2 billion in Energy Efficiency and Conservation Block Grant funding. Portions of this funding were permitted to be used by the states for such activities such as code compliance. Every state has received this funding, and the amounts awarded can be found at <http://www.energy.gov> (on the left-hand bar, see the selection box labeled "In Your State"). As a precondition to receiving certain State Energy Program funds, the Governors of each state were required to notify the Secretary of Energy that the Governor has received the necessary assurances that specified energy efficiency efforts would occur. Included in those necessary assurances was an assurance that the State, or the applicable units of local government that have authority to adopt building codes, will implement a plan for the jurisdiction achieving compliance with the specified updated building energy code or codes within 8 years of the date of enactment of the Recovery Act in at least 90 percent of new and renovated residential and commercial building space. All Governors of all states provided the Secretary the required notification.

**State Energy Program (SEP) Funding.** Federal SEP formula and special projects grants have been available to the states for many years, and are likely to continue to be available. Should a state choose to do so, that funding too can be used to support code compliance evaluation work. As the Recovery Act legislation refers to an 8-year energy code compliance evaluation period, the SEP is one source of follow-up funding that can be used to continue efforts started with Recovery Act funding.

**Revolving Loan Funds.** Revolving loan funds (RLF) can be used to establish long-term funding mechanisms that can in turn extend the impact of Recovery Act funds. By creating an RLF, states are not subject to expiration of the funds after the current three-year Recovery Act timeframe. The only restriction is that the entire amount allocated to the loan program must be loaned in the initial three-year time period. Repayment can be stretched over additional years. Money recaptured through loan payments must be used for the same purpose unless an amendment is approved by the DOE redirecting their use. See the link to "[Revolving Loan Funds and the State Energy Program](http://apps1.eere.energy.gov/state_energy_program/recovery_act.cfm)" at [http://apps1.eere.energy.gov/state\\_energy\\_program/recovery\\_act.cfm](http://apps1.eere.energy.gov/state_energy_program/recovery_act.cfm).

**Training and Certification Costs.** Under the third-party approach for compliance evaluation, there is a cost associated with training and certification of the third-party personnel. Generally, the individual desiring professional certification will be required by the issuing entity to pay a fee for taking the required tests and/or demonstrating competence, possibly followed by renewal and training fees for maintaining the certification. In some cases, that fee would be covered by the individual's employer, such as state or local government paying for a code official or other government employee to receive a professional certification. In others cases, the individual may have to pay the cost and would do so because it opens up additional business and/or advancement opportunities that would not otherwise exist for them. Where third-party entities conduct compliance assessments on behalf of government entities, the demand for buildings-related professions (e.g., architects, engineers, and

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contractors) could drive these professionals to establish and maintain their certifications and to participate in code compliance initiatives. Recovery Act funding could be used to jump start the training and certification of a body of professionals qualified to perform third-party evaluations, with a plan for the certification and training costs to later be absorbed by the individuals receiving such training (similar to the approach used for RESNET raters)<sup>6</sup>.

Assessment of Fees. The owner/developer typically pays for all design and specification preparation as well as plan review, approval, construction, commissioning and inspections; although it can be argued that those costs are passed along to purchasers or tenants of their building and their customers. This funding model assumes that whatever means for increasing energy code compliance initially funded via Recovery Act sources would later be absorbed by owners/developers by increasing the fees associated with building permitting and inspection. An increase in permitting fees for all buildings might provide a source of funding that could pay for spot evaluations to be performed on a small sample of those buildings. In many cases, building permit fees go directly into a general fund, which can be a complicating factor in using such fees to fund Recovery Act tasks specifically, but which could be used to permanently establish a protocol for jurisdictional staff to spot check buildings.

While higher fees can be assessed for all buildings, another approach would be to offer additional service that may provide a market advantage and associate that service with additional fees. For example, the time to secure plan approval and a permit to construct and then go through the construction and inspection phase to occupancy can be significant. That time costs owners/developers money in that they have investments tied up - the longer it takes to get the building occupied the longer it is before they can secure a return on their investment. For a larger fee, state and local government may offer an expedited review and approval process. This approach is already used in some localities, where for an additional percentage on the permit fee, government agencies will retain qualified architects and engineers to review the plans on their behalf to expedite review and approval. Key to these expediting efforts is reduced time to occupancy which means more timely availability of revenue for the owner/developer. This approach can be used as a voluntary means of securing additional funding for the jurisdiction, but would have no link to the subset of buildings eventually being evaluated. Recovery Act training and certification efforts may result in a third-party workforce that could be drawn on to provide these services.

The benefits associated with a compliant building include operational savings and enhanced marketability. Another voluntary approach could include providing evaluators with marketing materials that can be passed on to owners/developers who choose to purchase their services to evaluate their buildings. Owners/developers may be more willing to pay the increased costs associated with achieving increased compliance if their building becomes more marketable. Above-code programs, such as RESNET and Energy Star, operate under this model by providing branding that identifies the building as more energy efficient. Recovery Act funding could be used to develop processes, materials, branding, and other marketing tools that assist builders in documenting and marketing their code-compliant or above-code buildings. Software tools that are able to report compliance and above-code compliance percentages or indexes could be used in such efforts.

Utility Funding. Additional funding support may come from energy service providers (utilities). Several approaches have been tried in the past, currently exist, or have been proposed:

- A non-profit Utility Code Group (UCG) in Washington State, formed with utility collaborative funding, trained over 200 individuals to form a third party pool of individuals to augment state compliance efforts. The cost of this service was borne by the permit holder, but the UCG provided reimbursement to the permit holder of approximately \$300-\$375 per project. Although the UCG was disbanded in 1997, the services of these circuit riders were used by approximately 50% of Washington jurisdictions and research indicated that code compliance in buildings inspected by these individuals was very high. See *The*

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<sup>6</sup> Also a consideration is the commissioning of new buildings and ongoing re-commissioning of existing buildings to ensure their continued performance. This process has resulted in the creation of commissioning agents who conduct commissioning activities on behalf of owners and developers. Those conducting data gathering and evaluation of energy code compliance would possess many of the same qualifications that would allow them to also serve as commissioning agents.

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*Washington State Energy Code: Certification for Inspectors and Plan Reviewers for the Non-Residential Energy Code* at [http://www.energycodes.gov/implement/documents/case\\_certify.doc](http://www.energycodes.gov/implement/documents/case_certify.doc) for additional information.

- The Springfield (OR) Utility Board (SUB) has enforced compliance with the non-residential energy code in Oregon as a service to the city, recognizing that non-compliance is a lost opportunity. They requested that the Bonneville Power Administration accept this Non-Residential Energy Code Enhancement program as a qualified research, development and deployment measure eligible for full (dollar for dollar) conservation and renewable discount (C&RD) credit. On December 20, 2001, this proposal was formally accepted, and through that the SUB has been involved in conducting plan review and inspection to ensure energy code compliance.
- Utility rate variations could be offered wherein non-compliant buildings are charged more for their purchased energy. This would be determined by the utility or a third party acting on their behalf. This approach parallels the insurance industry with respect to building and fire code compliance, wherein insurance companies may provide reduced or increased insurance premiums based on an assessment of the building codes effect in the community and how well the community enforces those building codes.
- A utility could set up a market to pay for additional compliance efforts in exchange for energy efficiency credits. Such an approach would require reliable information on code compliance, as well as the ability to measure and predict impacts.
- Utilities may charge an energy efficiency charge, which in turn could be used to help fund activities focused on increased energy compliance. As an example, Efficiency Vermont is funded via an efficiency charge and provides technical and financial incentives to Vermont households and businesses to help them reduce energy codes. See <http://www.encyvermont.com/pages/Common/AboutUs/> for additional information.

See also “Aligning Utility Incentives with Energy Efficiency Investment,” at <http://www.epa.gov/cleanenergy/energy-programs/napee/resources/guides.html#guide2>.

Local, State, and Federal Funding. There may be an opportunity to use state, local, and Federal taxes to continue funding programs initiated with Recovery Act funds. State matching grants could be made to local code agencies to augment existing resources.

Foundation Support from the Community. Recently the Community Foundation for Southeast Michigan awarded a grant to the Eight Mile Boulevard Association to enhance code enforcement along the boulevard. While not specifically related to energy code enforcement, this does provide an example of business and civic involvement in enhancing code compliance (see <http://www.modeldmedia.com/developmentnews/8mile18709.aspx>).

Streamlining Processes. Long-term labor savings can result from improvements in efficiency. For example, if permitting processes are made more efficient, the money saved could be applied to improved inspection processes. Perhaps the most obvious streamlining opportunity comes from automation. Recovery Act funding could be used to upgrade the computing environments and applications used by local jurisdictions, hopefully resulting in more efficient processes. The Alliance for Building Regulatory Reform in the Digital Age provides information and case studies on the savings available through more efficient building regulatory processes, including the following papers:

[www.huduser.org/Publications/pdf/Bldg\\_Reg\\_Process.pdf](http://www.huduser.org/Publications/pdf/Bldg_Reg_Process.pdf)  
[www.commerce.wi.gov/sb/docs/SB-WbsnWibleToolkit.pdf](http://www.commerce.wi.gov/sb/docs/SB-WbsnWibleToolkit.pdf)