

# How To Guide: Maximize energy savings through building standards

*This activity promotes the adoption, implementation, and enforcement of building energy codes. States that adopt national model energy codes and implement them properly can help ensure that new buildings meet a minimum level of energy efficiency. Efficient buildings create multiple benefits, including lower operating costs for building owners, increased comfort and safety for occupants, and improved air quality locally and globally. States can capitalize on the synergies between environmental and economic drivers to leverage investment in energy-efficient buildings.*

## **Desired Outcome:**

To reduce the baseline energy use in buildings by supporting the adoption and implementation of building energy codes.



## Program Design

### Steps

1. Determine the status of residential and commercial energy codes in your State. For example, Is there a Statewide code, or are codes adopted at the local level? How are energy codes implemented and enforced in your State, and who is involved in this process? Who are the energy code advocates and adversaries in your State? What beyond-code energy efficiency programs are being implemented in your State? DOE can help you with answers to these and other questions. Call the BSGP Hotline at 1-800-270-CODE.
2. Prepare a strategy for supporting building energy codes based on what you learned in Step 1, and establish objectives associated with this strategy. Activities may involve the following:
  - Build grassroots support for updating codes. The Building Codes Assistance Project (BCAP) can help. Contact [www.bcapenergy.org](http://www.bcapenergy.org).
  - Work with code officials, legislature, regulatory authorities, and policy makers at the State and local level to encourage the adoption, implementation, and enforcement of the latest national model codes and standards.
  - Seek buy-in and support from partners at the State and local level, and ensure the approach and activities build upon activities already underway.
  - Provide testimony at legislative or regulatory hearings.
  - Train local code officials and builders/contractors on the energy code and accompanying code compliance software tools such as MECcheck and COMcheck.
  - Train building designers on the energy code and accompanying code compliance software tools and support materials.
  - Coordinate with utility companies, market transformation groups, and others to link energy codes with beyond code energy-efficiency programs.
3. Evaluate how well you met your stated objectives in Step 2, and refine strategy as needed.



## Partners and Possible Incentives

- **State/Local code enforcement agencies and associations:** Shared goals - these agencies welcome additional support.
- **Product manufacturers:** Opportunity to increase sales of energy-efficient products.
- **Utilities:** Can link support of energy codes to beyond-code programs
- **Realtors:** Can “sell” energy-efficiency, and can provide buyers with information they need for possible energy efficiency financing.
- **Insurance Industry:** Code-compliant buildings can lead to fewer property losses.
- **Federal Resources:** Department of Energy Building Standards and Guidelines Program (BSGP) assists States with the adoption, implementation, and enforcement of building energy codes.
- The Building Code Assistance Project provides advocacy assistance and grass roots building advice when invited by authorized State administrations or legislative committees. It is the mission of this organization.



## Resources Available

- Department of Energy, Regional Offices and Building Standards and Guidelines Program ([www.eren.doe.gov/buildings/codes\\_standards/buildings](http://www.eren.doe.gov/buildings/codes_standards/buildings)) Provide a range of financial and technical assistance in support of the adoption, implementation, and enforcement of building energy codes.
- Building Codes Assistance Project ([www.bcap-energy.org](http://www.bcap-energy.org)) Provides energy code advocacy support.
- Model Code Groups are dedicated to preserving the public health, safety and welfare in the built environment through the effective, efficient use and enforcement of Model Codes. Building Officials and Code Administrators International (BOCA) ([www.bocai.org](http://www.bocai.org)); International Conference of Building Officials (ICBO) ([www.icbo.org](http://www.icbo.org)); Southern Building Code Congress International (SBCCI) ([www.sbcci.org](http://www.sbcci.org)); International Code Council (ICC) ([www.intlcode.org](http://www.intlcode.org))
- The American Society of Heating, Refrigerating and Air-Conditioning Engineers cosponsors the consensus process that produces and maintains a model code, ASHRAE/IESNA Standard 90.1, Energy Standard for Buildings Except Low-Rise Residential Buildings. They provide continuing education training on energy codes. ([www.ashrae.org](http://www.ashrae.org))
- The Illuminating Engineering Society of North America provides continuing education training on energy codes. ([www.iesna.org](http://www.iesna.org))
- The New Buildings Institute ([www.newbuildigs.org](http://www.newbuildigs.org)) A national collaborative to encourage and support workable energy codes and design guidelines.
- Home Energy Rating Systems Council ([www.hers-council.org](http://www.hers-council.org)) Provides information on energy rating processes and guidelines.
- The Utility Connection ([www.utilityconnection.com](http://www.utilityconnection.com)) Refers to public electric, gas, water, and financial resources sites.
- National Institute of Building Sciences ([www.nibs.org/nibshome.html](http://www.nibs.org/nibshome.html)) Source of knowledge and advice on building regulations, science, and technology.
- National Conference of States on Building Codes and Standards ([www.ncsbcs.org](http://www.ncsbcs.org)) Promotes the development of an efficient, cooperative system of building regulation to ensure the public's safety in all buildings.
- The American Institute of Architects ([www.aiaonline.org](http://www.aiaonline.org))
- Residential Energy Services Network ([www.natresnet.org](http://www.natresnet.org)) A national network of mortgage companies, real estate brokerages, builders, and others whose objective is to expand the national availability of mortgage financing options and home energy ratings.
- The National Association of Home Builders ([www.nahb.com](http://www.nahb.com)) Addresses issues of importance to builders nationwide.
- Green Energy Finance ([www.energyfinance.org](http://www.energyfinance.org)) One-stop shop of energy efficiency financing resources for building managers, lending institutions, architects, and others.



## Resources Needed

- Funding for staff and materials
- Staff for training, outreach, and code enforcement
- Training materials and guides
- Code compliance software



## Key Conditions/ Factors

- Identify status of energy codes in the State
- Regulatory atmosphere conducive to updating building codes



## Special Opportunities for Success

- State's regular code adoption/review cycle
- Concerns about the reliability of electric supply under deregulation may spur demand for energy efficiency and renewable energy
- DOE determinations that new editions of the model energy codes will increase energy efficiency in new buildings. States are required to review their codes and advise DOE of their actions within 2 years of a DOE positive determination.



## Success Boosters

- Strong alliances with State energy code advocacy groups
- Industry support prior to introducing energy code upgrades to the legislature
- Be sensitive to the concerns of industry groups - especially builders; try to find common ground



## Technology Transfer Plan

- Presentations at conferences; peer exchanges with other States/agencies
- Energy code training for builders, code officials, designers, and others
- Provide testimony at code hearings
- Post information on State web site; establish 1-800 number for information
- Energy-efficient design curriculum for architectural and engineering schools



## Barriers and Potential Solutions

- **Code officials prioritize health/life safety-related code requirements over energy requirements:** Provide information on the importance of energy codes, and distribute easy-to-use compliance forms and software.
- **Resistance from builders to change from standard practice:** Meeting energy codes does not have to be difficult, and training builders/contractors on energy efficiency measures can help them recognize this.
- **Builders' concern that more stringent energy codes will increase housing costs:** Awareness campaigns to help dispell this myth. Energy efficiency can improve affordability by reducing heating/cooling costs. Many measures have little/no first cost.
- **Lack of understanding of energy code requirements by builders and design professionals:** Make it easier to demonstrate code compliance through the use of code compliance software like MECcheck and COMcheck.
- **Lack of consumer demand/awareness:** Market benefits of efficient buildings to consumers to spur demand.



## Metrics

### Primary:

- Successful adoption/upgrades of State building energy code
- Reduction in energy consumption in code-compliant buildings (BTUs per square foot)
- Increase in code-compliant buildings

### Other Indicators:

- Number of code officials, designers, builders, and subcontractors trained
- Number of hits on the web site or calls to the 1-800 number
- Number of requests for software, support tools, and training materials received
- Decreased State annual energy costs, adjusted for weather and construction
- Increased sale of energy measures