

BUILDING ENERGY CODES

Helping Improve Energy Efficiency in the Nation's Buildings

The U.S. Department of Energy's (DOE) Building Energy Codes Program (BECP) promotes adoption and implementation of stronger building energy codes for residential and commercial buildings. The Program collaborates with federal, state, and local government; national code organizations; and industry. Working together, we improve energy codes to make way for new technologies and better practices, and help states implement and enforce these new codes.

BECP develops, promotes, and integrates energy technologies and practices to make buildings more efficient and affordable and communities more livable.

BECP Takes a Comprehensive Approach

The Program recognizes that energy codes maximize energy efficiency only when they are fully embraced by users and other stakeholders and supported through adequate education, implementation, and enforcement. Our comprehensive approach includes the following key areas:

Research and Development

The Program works closely with national codes organizations, states, and code user groups to develop more stringent and easy-to-understand building energy codes and assess code barriers to new energy-efficient practices and technologies. R&D efforts focus on developing improved national model energy codes that can be easily adopted by state and local governments. Activities also include improving building energy codes for federal buildings.

Implementation

The Program develops easy-to-use code compliance tools and training materials

to help building professionals comply with code requirements. Key products include **REScheck™** (formerly **MECcheck**) and **COMcheck-EZ™** energy code compliance software. These are based on the International Energy Conservation Code or ANSI/ASHRAE/IESNA Standard 90.1 requirements—the national model energy codes that serve as the basis of most state codes. We support the software with accompanying software users' guides, training materials and videotapes, and code compliance manuals.

Deployment

The Program is engaged in a variety of activities that inform, educate, and empower code officials,

designers, builders, and others to more easily comply with or enforce building energy codes. Deployment includes outreach efforts such as the Energy Codes website (www.energycodes.gov) and the *Setting the Standard* newsletter; as well as training opportunities, buildings-related conferences, technical assistance, and incentive grants.

Every dollar DOE has spent on the Program has yielded more than \$105 in annual energy savings.

BECP Benefits the Bottom Line

The Program has helped improve the energy efficiency of almost 3 billion square feet of new commercial floor space and 4 million new homes. Cumulative energy cost savings is estimated at more than \$4.2 billion—enough to meet the energy requirements of more than 3 million homes for a year.

Research and Development Forms the Foundation

BECP actively participates in the code development work of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE), Illuminating Engineering Society of North America (IESNA), and International Code Council (ICC). These organizations are the primary authors of ANSI/ASHRAE/IESNA Standard 90.1 and the International Energy Conservation Code (IECC)—the most commonly used model energy codes.

We work with these and other organizations to identify new energy-efficient practices and technologies and remove impediments to these practices and technologies during revisions to model energy codes.

Examples of research and development include

- **Proposing new commercial lighting power allowances.** We helped develop a new lighting power allowance proposal that incorporates the latest IESNA standards for illumination in commercial spaces. Developed in conjunction with the Standard 90.1 lighting subcommittee, the proposal was submitted for consideration at ICC code hearings. It will deliver significant energy savings by lowering and standardizing the lighting power allowances of both the IECC and Standard 90.1.
- **Developing new climate zones for model energy codes.** Using traditional climatology principles, we developed 15 new large-scale zones that capture much of the applicable climate variation in the United States. The larger zones offer the benefit of fewer zones per state and the potential for more simplified code compliance. We are submitting these climate zones to both the ICC and ASHRAE for inclusion in model energy codes.



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Implementation Improves Energy Code Compliance

The Program's energy code compliance software—**REScheck™** and **COMcheck-EZ™**—is used nationwide by designers, builders, product manufacturers, and code officials. Together with accompanying users' guides, videotapes, training materials, and compliance manuals, these tools streamline compliance with the IECC and Standard 90.1. They deliver greater energy savings by making energy code compliance and enforcement easier.

Important implementation activities include

- **Software Upgrades.** The Program is continually enhancing software tools to keep up with computing technologies, respond to feedback and requests from users, and incorporate new national and state codes. New Internet-based versions of **REScheck™** and **COMcheck-EZ™** have been and continue to be developed. The latest release of **COMcheck-EZ™** includes support for ANSI/ASHRAE/IESNA Standard 90.1-1999. The latest release of **REScheck™** includes support for Georgia's newest energy code changes and also was enhanced to run on the Macintosh platform.
- **Support Materials.** The Program also develops and maintains a full line of code compliance materials to support its mission of increasing code adoption and enforcement. These materials support the Program's software products, provide alternative methods for compliance, and provide training tools. A recently developed compliance alternative for builders who do not have computer access is the **REScheck™** Prescriptive Package Field Guides. The guides, developed for each of the 19 climate zones, provide single-page summaries of the zone's 1998/2000 IECC requirements for insulation and glazing.

Deployment Supports Stakeholders

State and local jurisdictions, industry groups, and other stakeholders benefit from the Program's outreach activities, training opportunities, technical assistance, incentive grants, and conferences.

Important deployment activities include

- **Distribution.** Over 6500 copies of **REScheck™** and 3800 copies of **COMcheck-EZ™** are distributed each month via the website, training events, conferences, and Energy Codes Hotline.
- **Outreach.** The Program's award-winning website (www.energycodes.gov) offers the opportunity to download compliance software, publications, and training materials free of charge. The Energy Codes Technical Support Services is widely used by building professionals and serves as a valuable resource to states that have recently adopted or updated energy codes. Our newsletter, *Setting the Standard*, is another award winner that keeps stakeholders current on the latest energy code news.
- **Training.** The Program offers training and training materials on **REScheck™**, **COMcheck-EZ™**, and the national model energy codes and standards through classroom presentations, video, and CD.
- **Technical Assistance to States.** The Program provides technical assistance to help states and local jurisdictions adopt, implement, and enforce building energy codes. We help states modify national model energy codes to meet state needs and develop state-specific code compliance software and training materials. We also provide code compliance training and analyze the energy and economic impact of state and local energy codes.
- **Special Projects Grants.** The DOE State Energy Program (SEP) provides direct funding to states through Special Projects grants. States use the money to train building professionals, evaluate and study current construction practices, develop or enhance state energy codes, and support the energy code activities of state energy offices.
- **Buildings-related Conferences.** We attend stakeholder conferences including NAHB, AIA, and the DOE-sponsored annual National Workshop on State Building Energy Codes—the only national workshop focused on the adoption, implementation, and enforcement of building energy codes.

CONTACT INFORMATION

Building Energy Codes Website:
www.energycodes.gov

Tech Support:
www.energycodes.gov/helpdesk.cfm

REScheck™ and **COMcheck-EZ™** can be downloaded directly from the website.

The International Energy Conservation Code can be obtained from the International Code Council at **703-931-4533**.

The ANSI/ASHRAE/IESNA Standard 90.1-1999 can be obtained from the ASHRAE Customer Service at **404-636-8600**.

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A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.



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