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Frequently Asked Questions on the 2012 Commercial Building Package

What is EC 147and the 2012 IECC Commercial Package and why is it widely supported?

The International Code Council (ICC) is considering the most far-reaching improvements in commercial building energy codes in decades. New Buildings Institute (NBI), American Institute of Architects (AIA) and the Department of Energy (DOE) are **proposing comprehensive changes (EC 147) to the commercial chapter of the IECC that will achieve practical, feasible and necessary energy use reductions of 20% to 30% for commercial buildings*.** Two additional NBI-AIA proposals (EC 157 and EC 165) to improve the commercial chapter of the IECC's current opaque envelope table and fenestration table will also be considered at the hearings.

EC 147 was developed collaboratively by NBI, AIA and U.S. DOE in response to many national goals of increasing the energy efficiency of new commercial construction by 30%. It is designed to modify the Chapter 5 requirements of the building envelope, mechanical and lighting systems to meet this goal. All three proposals (EC 147, EC 157 and EC 165) were approved by the IECC Code Development Committee during hearings in Baltimore in October 2009. The proponents pledged to work with all interested and affected parties and solicit their comments and input in order to improve on the code change proposal for the Final Action Hearings in October 2010. Numerous comments were received from parties representing industry and product groups, enforcement agencies and the building and design industry. The comments helped to provide consensus agreements on several issues raised during testimony, clarified code language, increased readability and strengthened the proposals.

Because of broad stakeholder involvement in the proposal development process, these proposals received widespread support at the Baltimore hearings, and EC147 will be debated at Charlotte with 34 comments submitted in support, and only two submitted in opposition.

If not now, when?

While the energy savings represents a significant increase from current codes, the requirements to achieve the savings are **practical, achievable and affordable.** Savings offered by 2012 IECC Commercial Package would also meet the near-term goals of the AIA's 2030 goals for carbon neutrality in all buildings, and proposed federal legislation that would direct states to achieve a 30% improvement in building efficiency.

Energy efficiency improvements in a 2012 IECC will only be implemented gradually, as states adopt the new code over the years following its publication. With our nation's current energy crisis and with buildings using 40% of US energy, can we really afford to wait until the 2015 IECC to strengthen this critical pillar of the nation's energy efficiency? With rising energy costs that seem to have no end in sight and increasing consensus and concern about the potential impact of global climate change, now is definitely the time. Thirty-four states have or are developing climate action plans, and building codes are one of the most important components of state strategies.

The next time the full ICC votes on a new edition of the code will be the 2015 IECC. A three year delay in boosting the IECC's energy efficiency will mean that millions of homes and buildings – each lasting decades – will be wasting more energy than they need and we will be paying the price of that wasted energy in their utility bills.

*Savings estimates are based on NBI analysis.

What are the key features of the Commercial Package?

Key elements of the proposals as modified by the Public Comments are:

- **EFFICIENCY TABLES.** The revised stringencies in all of the lighting, envelope and mechanical tables reflect product availability and lengthy consultation with numerous stakeholders.
- **BUILDING ENVELOPE.** Comprehensive air barrier language is adapted from the Massachusetts building code. The change also enhances and clarifies the provisions in the code and strengthens the efficiency potential of the code by addressing issues such as cool roofs, and reducing the amount of infiltration allowed through non-opaque components of the building envelope such as vents and dampers.
- **MECHANICAL SYSTEMS.** Improves sections regarding *economizers,* incorporates more use of *demand controlled ventilation,* includes efficiency improvements in mechanical equipment with some climate-specific flexibility and provides additional calculation procedures for determining loads and equipment sizing.
- **QUALITY ASSURANCE.** Incorporates *testing and acceptance requirements* of mechanical systems and performance testing of lighting controls. Both the HVAC acceptance requirements language drawn from the Washington State energy code and the new lighting systems language will ensure greater building performance. A threshold level of mechanical equipment capacity ensures that acceptance requirements will serve those larger systems where energy and cost savings are greatest. The acceptance requirements language is proposed to be included in a new Section 508 of the IECC.
- **LIGHTING.** Reduces energy needed for lighting based on more efficient illuminating equipment and the use of several lighting control strategies. The *revised LPDs* and lighting control criteria are derived from recent addenda to ASHRAE 90.1, consultations with the International Association of Lighting Designers, and the *Core Performance Guide.*
- **DAYLIGHTING.** Includes additional availability of daylight sources combined with *automatic daylight controls,* and comprehensive control strategy for all lighting zones. Daylighting can be a major energy-efficiency asset provided electric lighting is reduced when daylight is available. The daylighting options in EC 165 for the 40% WWR and the 5% skylight area were written in response to broad stakeholder feedback on both glazing issues and daylighting issues
- **ADVANCED EFFICIENCY PACKAGE OPTIONS.** A new Section 506 contains three approximately energy-equivalent packages. These options round out the final 3% in energy savings in the proposal, while also offering important flexibility in striving to approach 30% overall energy savings. These package options include:
  - » A focus on HVAC equipment efficiency using tables derived from the Consortium for Energy Efficiency recommendations (CEE is a North American collaborative effort of utilities, environmental groups and industry).
  - » A focus on further reducing lighting power density with tables calculated using available *high-efficacy illuminating products* reflected in the ASHRAE/IESNA consensus for 90.1-2010, with daylighting alternatives provided in some building types
  - » A package that includes onsite *renewable energy generation.*

How much is this going to cost?

EC 147 employs cost-effective, readily available technologies and design practices that have been demonstrated to use 20-30% less energy. Moreover, builders and architects always have the option to select their own recipe if they do not like a particular prescriptive option, by using the performance compliance path in the code, subject to a few reasonable minimum requirements.

Far from imposing substantial and exorbitant costs to building owners, government research and private studies have shown that high performance commercial buildings generate positive financial returns that exceed the cost of the energy improvements. Studies that verify cost and savings include:

- In 2003, Gregory Kats, of Capital E energy consultants, assessed a number of recently constructed green buildings and showed average cost premium was 1.84 percent.
- In 2007, PNC Financial Group began a major, green bank branch construction program. Their LEED-Certified branches cost PNC $100,000 less to build

and take 45 days less to construct than comparable conventional bank branches. Source: *Sustainable Land Development Today* 10/03/08

- An annual survey of real estate executives by Turner Construction Company in 2008 found that green buildings have lower ongoing costs, including lower energy costs (84 percent); lower overall operating costs (68 percent); lower lifecycle costs over a 10-year span (59 percent). Seventy-five percent of real estate executives surveyed say green buildings create higher property values. Source: Turner Construction *2008 Market Barometer*

Do other options exist to increase the stringency of the commercial portions of the code?

No. While there are individual proposals to change the commercial chapter, there is only one comprehensive proposal to increase the stringency of the overall document: EC 147.

What can I do and why should I support this?

The vote in Charlotte is one of the most important national energy decisions our country will make this decade. **Individuals, organizations and businesses** can:

- Call for better building energy codes now by signing up as a supporter for **the 2012 IECC Commercial proposals.** Visit **www.newbuildings.org/better-energy-codes-buildings-now**.

Government officials eligible to vote in the ICC Final Action Hearings can:

- Make sure your city has joined the International Code Council or renewed its membership by **October 15.** ICC member applications can be downloaded at: **www.iccsafe.org/Membership/Documents/Government_Membership_App.pdf**.
- Submit your city's list of four, eight or twelve voting representatives (based on population) by **October 15 to the ICC.**
- Urge your voting representatives to **support proposals: EC 147, EC 157 and EC 165.**
- **Log on to www.eshow2000.com/iccbwi/lodging_and_transportation.cfm** for special registrant hotel rates, discount airfares and other transportation information.
- *Additional information on ICC's annual conference and Final Action Hearings can be found at **www.eshow2000.com/iccbwi/splash.cfm**.*

For more information about the NBI/AIA/DOE proposals, visit **www.newbuildings.org/comprehensive-iecc-proposal**

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