

ENERGY EFFICIENCY AND RENEWABLE ENERGY IN RESIDENTIAL BUILDING ENERGY CODES

by
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The role of renewable energy as a way to meet the provisions of residential building energy codes is under discussion as part of the 2018 International Energy Conservation Code (IECC) development process. Energy efficient buildings reduce the electricity required from the grid. Renewable energy resources reduce the emissions associated with generating electricity. The U. S. Department of Energy (DOE) supports both energy efficiency and renewable energy, and following is a summary of the DOE position. The complete DOE position paper can be accessed by following the link in the footnote.¹

Building Codes

Building energy codes have been in place since the 1970's. Code requirements were met by reducing energy use. The 2015 edition of the IECC added a new compliance path, the Energy Rating Index (ERI). The ERI compliance path was modeled after RESNET's Home Energy Rating System (HERS), which gives credit for renewables. The HERS gives credit for renewables so a house with photovoltaics (PV) would not need as much energy efficiency to reach the same score as a house without PV.

DOE Authority on Energy Efficiency and Building Energy Codes²

DOE participates in the code amendment process.

DOE reviews updated editions of the model codes and issues a determination as to whether the new edition will improve energy efficiency in residential and/or commercial buildings.

DOE Position

Any potential tradeoffs between efficiency and renewables should only be allowed at or below the ERI values in Table R406.4 of the 2015 IECC³.

Renewables have a place in future energy codes, but any compliance credit for onsite renewables should consider energy delivered to the home on which they are installed and not gross energy production or system size.

¹ DOE Position on Energy Efficiency and Renewable Energy in Residential Building Energy Codes during the 2018 IECC Code Development Cycle https://www.energycodes.gov/sites/default/files/DOE%20Position%20Brief%20for%20the%202018%20IECC_10062016.pdf (accessed 12/01/2016).

² Title III of the Energy Conservation and Production Act, as amended (42 U.S.C. 6831 *et seq.*).

³ 2015 International Energy Conservation Code [http://codes.iccsafe.org/app/book/content/2015-I-Codes/2015%20IECC%20HTML/Chapter%204%20\[RE\].html](http://codes.iccsafe.org/app/book/content/2015-I-Codes/2015%20IECC%20HTML/Chapter%204%20[RE].html).

Next Steps

DOE will engage with key stakeholders.

DOE will participate in the code hearings to support this position.

DOE will participate in any ANSI/RESNET/ICC 301 Standard process that would establish provisions for counting renewable energy in the HERS score.

DOE will identify a tool that provides location-specific estimates of the amount of annual energy delivered per kW of installed PV panels.

Several proposals were submitted during the 2018 IECC development process attempting to define renewables or limit their use in the ERI compliance path. DOE supports cost effective energy efficiency continuing to increase in new code versions, but does not support unlimited tradeoffs for renewables in the code. However, DOE does support increasing the use of renewable energy outside the building codes.