

# Oklahoma Uniform Building Code Commission

## Public Comment Form for Proposed Rules

### Title 748 O.A.C. Chapter 20 - Adopted Codes

**INSTRUCTIONS:** Please type or print clearly. Form must be signed. Any form not signed or filled out completely, may not be considered. Each requested change must be on a separate form.

**Submitter's Contact Information:**

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Will this proposed change increase the cost of construction? Yes  No

**Which area of the rules should be modified?**

Rule Section 748: 20- 2 - 40 Section Title: Referenced Standards  
 Letter/Item Number: \_\_\_\_\_ Page in proposed rules: 57

**Please check the action to be taken for this proposed change:**

Revise as follows  Delete as follows  Add new text as follows  Delete with substitute

**Show the proposed NEW, REVISED, OR DELETED TEXT in legislative format.** Line through text to be deleted and underline text to be added or revised.

See attached.

\* If your text does not fit in the space provided, type "See Attached" and submit text as a separate file

**Supporting information:** State purpose and reason for the change and provide substantiation to support proposed change.

See attached.

\* If your text does not fit in the space provided, type "See Attached" and submit text as a separate file

Signature: 

Send completed "Public Comment Form" to:  
 Oklahoma Uniform Building Code Commission, PO Box 12540, Oklahoma City, OK 73157  
 Email to: [Kathy.Hehnl@oubcc.ok.gov](mailto:Kathy.Hehnl@oubcc.ok.gov) or Fax to: 405-521-6504

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VIA EMAIL

Cary Williamson  
Chairman  
Oklahoma Uniform Building Code Commission  
2401 NW 23<sup>rd</sup>, Suite # 2F  
Oklahoma City, OK 73107

October 13, 2020

**RE: OAR Docket #20-743 - RECA Comments in Support of Adoption of the 2018 IECC/ASHRAE 90.1-2016 for Commercial Buildings**

Dear Chairman Williamson,

The Responsible Energy Codes Alliance (RECA)<sup>1</sup> submits the following comments in response to the Notice of Permanent Rulemaking published in the September 15, 2020 Oklahoma Register.<sup>2</sup> **RECA urges the Commission to reconsider its decision to replace the 2018 *International Energy Conservation Code (IECC)* with the 2006 edition in the proposed Oklahoma Uniform Building Code update. We strongly support adoption of the 2018 IECC for commercial buildings in Oklahoma.**

Updating the state's commercial energy code from the 2006 *IECC* to the 2018 *IECC* will produce the following benefits for Oklahoma's citizens and businesses:

- The 2018 *IECC* will reduce energy costs by commercial buildings by nearly 1/3, on average, saving building owners and renters money for the life of the building;
- The 2018 *IECC* will provide critical updates to the state's building energy standards and bring them into line with other codes and standards in the state and modern energy codes; and
- The 2018 *IECC* will improve occupant comfort, grid stability, and resiliency, and will provide key health and safety protections.

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<sup>1</sup> RECA is a national coalition of building product and equipment manufacturers, building industry trade groups, and energy and environmental advocates that promotes the adoption of the most recent edition of the International Energy Conservation Code nationwide. For more information, please see [www.reca-codes.com](http://www.reca-codes.com).

<sup>2</sup> See Oklahoma Register, Volume 38 Number 1, Docket No. 20-743 (September 15, 2020).

**1. The 2018 *IECC* will reduce energy costs in commercial buildings by nearly 1/3, on average, saving building owners and renters money for the life of the building.**

The 2018 *IECC* and *ASHRAE* Standard 90.1-2016 (which is a referenced compliance path in the *IECC*) are the most recent versions of the national model energy codes for commercial buildings. By adopting the 2018 *IECC/ASHRAE* 90.1-2016, Oklahoma would incorporate the energy-saving and cost-effective improvements of the last four triennial updates to the model energy codes. With each update of the *IECC* since the 2006 edition (and *ASHRAE* Standard 90.1 since the 2004 edition), the U.S. Department of Energy has found substantial energy savings that will yield benefits to building owners and renters over the expected useful lifetime of these buildings.

Most recently, the U.S. DOE reviewed *ASHRAE* Standard 90.1-2016 and verified it to be an improvement in efficiency over previous editions. The 2016 edition of *ASHRAE* Standard 90.1 incorporates the improvements of all previous update cycles—2007, 2010, 2013, and 2016—which include improved envelope efficiency and more efficient heating, cooling, water heating, and lighting equipment. Adopting the 2018 *IECC/ASHRAE* 90.1-2016 will provide a clear path toward a more efficient, more resilient future for Oklahoma’s citizens.

According to U.S. DOE analyses, the 2016 update to *ASHRAE* 90.1 provides an 8.3% energy cost savings over the previous edition;<sup>3</sup> the 2013 update provides an 8.7% energy cost savings over the 2010 edition;<sup>4</sup> the 2010 update provides a 18.2% energy cost savings over the 2007 edition,<sup>5</sup> and the 2007 edition provides a 4.4% energy cost savings over the 2004 edition<sup>6</sup> (which is the version currently referenced in Oklahoma’s commercial energy code). **Adoption of the combined incremental updates in *ASHRAE* Standard 90.1-2016 will result in a roughly 31.6% cumulative energy cost savings as compared to *ASHRAE* Standard 90.1-2004 (Oklahoma’s current commercial energy code).**

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<sup>3</sup> U.S. Dep’t of Energy, *Energy Savings Analysis: ANSI/ASHRAE/IES Standard 90.1-2016*, at iv (Oct. 2017), available at [https://www.energycodes.gov/sites/default/files/documents/02202018\\_Standard\\_90.1-2016\\_Determination\\_TSD.pdf](https://www.energycodes.gov/sites/default/files/documents/02202018_Standard_90.1-2016_Determination_TSD.pdf).

<sup>4</sup> U.S. Dep’t of Energy, *ANSI/ASHRAE/IES Standard 90.1-2013 Determination of Energy Savings: Quantitative Analysis*, at iv (Aug. 2014), available at [https://www.energycodes.gov/sites/default/files/documents/901-2013\\_finalCommercialDeterminationQuantitativeAnalysis\\_TSD.pdf](https://www.energycodes.gov/sites/default/files/documents/901-2013_finalCommercialDeterminationQuantitativeAnalysis_TSD.pdf).

<sup>5</sup> U.S. Dep’t of Energy, *National Cost-Effectiveness of ASHRAE Standard 90.1-2010 Compared to ASHRAE Standard 90.1-2007*, at iii (Nov. 2013), available at <https://www.energycodes.gov/sites/default/files/documents/PNNL-22972.pdf>.

<sup>6</sup> U.S. Dep’t of Energy, *ANSI/ASHRAE/IESNA Standard 90.1-2007 Final Determination Quantitative Analysis*, at 11.1-11.2 (May 2011), available at <https://www.energycodes.gov/ansiASHRAEIESna-standard-901-2007-final-determination-quantitative-analysis>.

Code Edition	ASHRAE Standard 90.1-2007	ASHRAE Standard 90.1-2010	ASHRAE Standard 90.1-2013	ASHRAE Standard 90.1-2016
Energy Cost Savings over Previous Edition	4.4%	18.2%	8.7%	8.3%

U.S. DOE has also found the improvements in model energy code updates to be cost-effective over the useful life of the building.<sup>7</sup> These energy and cost savings will allow the owners of commercial buildings to spend far less to heat and cool buildings, and to invest more productively in Oklahoma’s economy. The owners and occupants of Oklahoma’s commercial buildings deserve to receive all the benefits of the most current model energy codes.

**2. The 2018 IECC will provide critical updates to the state’s building standards and bring them into line with other codes and standards in the state and modern energy codes.**

Adopting the 2018 *IECC* as the statewide commercial energy code would achieve greater consistency among all of Oklahoma’s building codes. The Draft Rule proposes replacing a reference to the 2018 *IECC* with a reference to the 2006 *IECC*, which would cause confusion and ignore improvements in building technology and design that have occurred over the last decade. We recommend updating the reference to the *IECC* from the 2006 to the 2018 edition, making it consistent with nearly every other building code proposed to be adopted by Oklahoma.

There are several advantages to updating the energy code at the same time as all other statewide codes:

- The most recent versions of the International Codes are the result of a consensus-based process that involves America’s building code officials, design professionals, builders, manufacturers, and building experts. Building designs, uses, and associated technologies have changed significantly over the last decade, and it is critical that these changes be adopted as soon as reasonably possible.
- The International Codes are interrelated and self-referencing documents. The IBC, for example, references specific section numbers and requirements from all of the other

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<sup>7</sup> See, e.g., U.S. Dep’t of Energy, *National Cost-Effectiveness of ANSI/ASHRAE/IES Standard 90.1-2013* (Jan. 2015), U.S. Dep’t of Energy, *National Cost-Effectiveness of ASHRAE Standard 90.1-2010 Compared to ASHRAE Standard 90.1-2007* (Nov. 2013), and U.S. Dep’t of Energy, *Achieving the 30% Goal: Energy and Cost Savings Analysis of ASHRAE Standard 90.1-2010* (May 2011). A cost-effectiveness analysis for ASHRAE Standard 90.1-2016 has not yet been released, but we expect the results to be similar to previous updates.

International Codes. To update all other codes to the 2018 editions yet continue to leave the energy code at the 2006 edition, would not be good policy. This approach will foster confusion and inconsistency in the field.

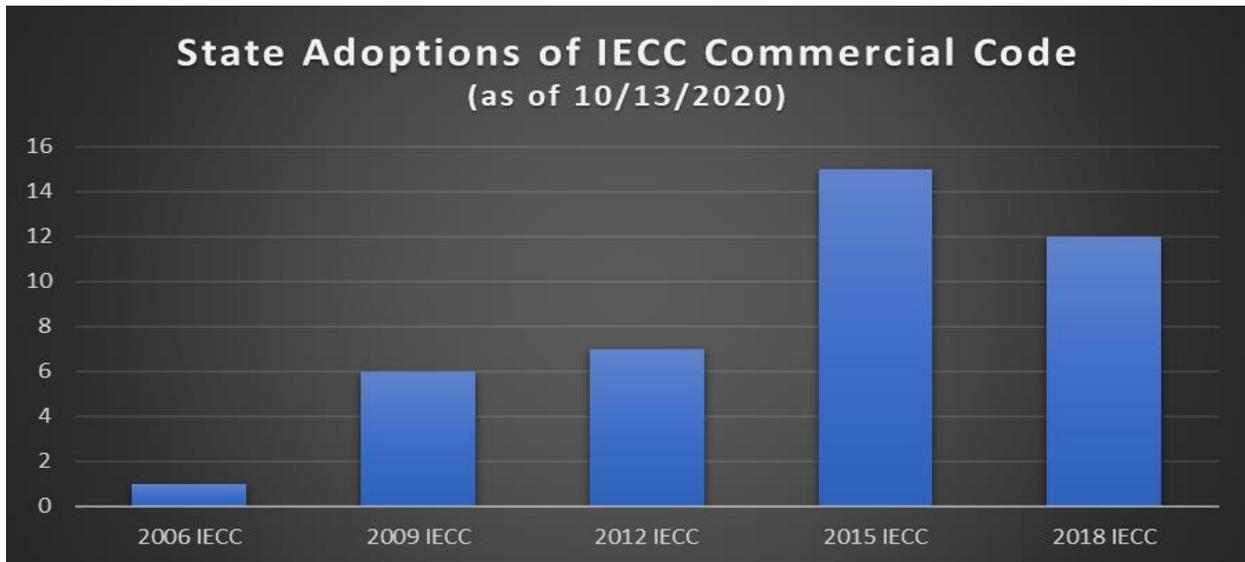
- Compliance software, trainings, and many free resources are all tied to the most recent version of the model codes. States that implement the latest codes can benefit from a multitude of resources that will improve the quality of commercial buildings. By contrast, the current reference to the 2006 *IECC* for Oklahoma’s commercial energy code leaves design professionals and builders without the materials they need to build safe, energy-efficient buildings. For example, U.S. DOE’s free commercial energy code compliance software, COMcheck, which is widely used by design professionals, building officials, and builders across the U.S., does not support the use of the 2006 *IECC*.<sup>8</sup>

The Draft Rule proposes that Oklahoma adopt the 2018 editions of the International Building Code, International Existing Building Code, International Fire Code, International Fuel Gas Code, International Mechanical Code, and the International Plumbing Code. To maintain consistency, promote up-to-date building energy approaches, and to take full advantage of the resources available to support the latest model energy code, Oklahoma should also adopt the 2018 edition of the *IECC*.

We also note that the states surrounding Oklahoma with statewide codes have all adopted more recent editions of the *IECC*. Texas enforces the 2015 *IECC*, and Arkansas enforces the 2009 *IECC* (and is currently considering the 2018 *IECC* for adoption). Kansas and Missouri do not have statewide codes, but several large jurisdictions have adopted the 2015 or 2018 *IECC* for commercial buildings. **Of the states enforcing various editions of the *IECC*, Oklahoma is the only state currently enforcing the 2006 edition.** The chart below shows the breakdown of the code edition in effect in states around the country, as of today. (We also note that a number of additional states will have completed the process of adopting the 2018 *IECC* commercial provisions by the end of this year.)

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<sup>8</sup> See U.S. Dep’t of Energy, *COMcheck*, <https://www.energycodes.gov/comcheck> (last accessed Feb. 25, 2020) for a list of supported codes.



**3. The 2018 IECC will improve occupant comfort, grid stability, and resiliency, and will provide key health and safety protections.**

Adopting the latest model energy codes will provide many health and safety benefits to Oklahoma citizens, will improve the resiliency of residential and commercial buildings, and will provide a multitude of other benefits.

- **Reduced Electric Peak Demand.** Improved commercial building efficiency will help curb electric peak demand, which will contribute to lower electric rates for all electric ratepayers (and not just building owners). According to the U.S. Energy Information Administration, nationwide, buildings account for about 40% of total energy use,<sup>9</sup> including approximately 75% of electricity use. An investment today in well-designed, efficient buildings can be a key part of Oklahoma’s long-term energy strategy.
- **More Comfortable Buildings.** Buildings constructed to the 2018 IECC will limit the volatility of indoor temperature swings and keep occupants more comfortable. More efficient windows, better-insulated walls, and modern heating, cooling, and ventilation systems will maintain indoor conditions that are healthy and comfortable for occupants. For example:
  - Fenestration SHGC would improve by up to 37.5%, saving cooling energy and reducing the size of cooling equipment needed to maintain occupant comfort.
  - Fenestration U-factors would improve by 30% for fixed fenestration and 7.7% for operable fenestration, keeping occupants more comfortable in all seasons.

<sup>9</sup> See U.S. Energy Information Administration, *Frequently Asked Questions*, <https://www.eia.gov/tools/faqs/faq.php?id=86&t=1> (last accessed Feb. 25, 2020).

- Above-deck roof insulation would improve from R-15 to R-25 continuous, providing year-round comfort; and
- Wall insulation would improve from R-13 cavity to R-20 cavity or R-13 cavity + 7.5 continuous insulation, providing long-term energy savings.

Nearly every part of the building envelope would be improved through the adoption of the 2018 IECC, resulting in more efficient, healthier buildings for generations of Oklahoma citizens.

- **Solid Investment in Oklahoma’s Infrastructure.** Commercial buildings are expected to have useful lifetimes of 70 years or more. For a modest investment today, Oklahoma can help secure the benefits of well-built, efficient buildings for generations to come. Commercial buildings that are constructed to the requirements of the 2018 *IECC* will be far better investments for owners and occupants than buildings constructed to the 2006 standard.
- **Compliance with Federal Law.** Under Federal Law, each new edition of *ASHRAE* Standard 90.1 is reviewed by the U.S. DOE to determine whether it is an improvement over previous editions. If the determination is positive (as it was with *ASHRAE* 90.1-2016), states then have two years under federal law to certify to the Secretary of Energy that the statewide commercial energy code meets or exceeds the efficiency of the model energy code.<sup>10</sup> That two-year period ends this year.<sup>11</sup>
- **Improved Resiliency.** Energy codes are increasingly being recognized as playing a role in maintaining resilience and passive survivability, particularly during extended power outages. A recent white paper released by the International Code Council (ICC) and the Alliance for National and Community Resilience (ANCR) recommended that “[a]ny policies, guidance or criteria that includes building codes as a strategy should explicitly incorporate energy codes as a fundamental resilience strategy.”<sup>12</sup> Among these resiliency benefits are improved habitability, more grid stability, moisture management, and improved durability of buildings, and others. Adopting the latest model energy codes will clearly go beyond the energy and cost savings and will improve the lives of Oklahoma citizens in many ways.

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<sup>10</sup> See 42 U.S.C. § 6833(b)(2)(B)(ii).

<sup>11</sup> See U.S. Dep’t of Energy, *Final Determination Regarding Energy Efficiency Improvements in ANSI/ASHRAE/IES Standard 90.1-2016: Energy Standard for Buildings, Except Low-Rise Residential Buildings*, 83 Fed. Reg. 8463 (Feb. 27, 2018).

<sup>12</sup> See International Code Council, *The Important Role of Energy Codes in Achieving Resilience*, at 15 (Dec. 2019), available at [https://www.iccsafe.org/wp-content/uploads/19-18078\\_GR\\_ANCR\\_IECC\\_Resilience\\_White\\_Paper\\_BRO\\_Final\\_midres.pdf](https://www.iccsafe.org/wp-content/uploads/19-18078_GR_ANCR_IECC_Resilience_White_Paper_BRO_Final_midres.pdf).

To implement the update to the 2018 *IECC*, we recommend the following revision to Section 748:20-2-40 of the Draft Rules:

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**748:20-2-40. IBC 2018 Chapter 35 Referenced Standards**

Chapter 35 of the IBC 2018 is adopted with the following modifications

(3) The reference to the International Energy Conservation Code® has been modified to change the edition year to ~~2006~~ 2018. This section has been modified to read:  
*IECC*®-~~06~~ 18 International Energy Conservation Code®.

*[Remainder of Proposed Section 748:20-2-40 is unchanged.]*

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**Conclusion**

Overall, we support the Commission's efforts to modernize the statewide codes and to incorporate the latest national standards and building science into commercial buildings. But such an update would be incomplete without a corresponding improvement in building efficiency. We believe that incorporating an update to the 2018 *IECC* will benefit owners and occupants of residential and commercial buildings for generations. We offer our assistance and experience in energy code adoption and implementation as you work to maximize building energy efficiency. Please contact me at (202) 339-6366 if you have any questions or would like to discuss how RECA can be of assistance.

Sincerely,

Eric Lacey  
RECA Chairman