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Via Regulations.gov and Email


The International Code Council (ICC) is a member-focused association dedicated to helping the building community and the construction industry provide safe, resilient, and sustainable construction through the development and use of model codes (I-Codes) and standards used in the design, build, and compliance processes. Most U.S. states and communities, federal agencies, and many global markets choose the I-Codes to set the standards for regulating construction, plumbing and sanitation, fire prevention, and energy conservation in the built environment. ICC appreciates the opportunity to submit the following comments on the Notice of Data Availability published August 3, 2018 (2018 NODA) in the above-named matter before the U.S. Department of Energy (DOE).

Part I below offers ICC’s support for the adoption of DOE’s Energy Conservation Standards for Manufactured Housing as proposed on June 17, 2016 (“2016 proposed rule” or “proposed rule”) with copyright protections for the International Energy Conservation Code (IECC). Should DOE seek to revisit the 2016 proposed rule, Part II suggests additional considerations pertaining to the cost baseline and product specifications and urges the Department to utilize the IECC’s climate zones. Part III describes DOE’s obligation to adhere to the IECC under statute and raises concerns with proposals in the 2018 NODA that do not justify deviation from the IECC. Part IV includes ICC’s comments on implementation of the energy conservation standards, and offers ICC’s support for (1) product labeling and tiered labeling for homes exceeding minimum standards, (2) private sector-driven enforcement, (3) ensuring proper inspector and plan reviewer training through IECC certification, and (4) utilization of the IECC’s ventilation requirements.

I. DOE Should Finalize its 2016 Proposed Rule with Copyright Protections for the IECC

Excepting its copyright concerns, which are reiterated below, ICC supports the adoption of the 2016 proposed rule. The proposed rule reflects consensus recommendations of a broadly diverse working group and brings manufactured housing energy efficiency standards closer to the IECC and energy efficiencies employed in site-built homes. It is a critical step in providing housing choices that are

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2 ICC raised concerns over the 2016 proposed rule’s failure to recognize the IECC as copyright material in its August 12, 2016 comments to that proposed rule.
affordable to purchase and affordable to operate, heat, and cool. The proposed rule would have produced annual cost savings of $345 to $490, which is particularly valuable to households with a medium annual income of $35,000.\(^3\) The Energy Independence and Security Act of 2007 (EISA) mandated DOE complete this rulemaking by December 19, 2011.\(^4\) The proposed rule, although imperfect, would offer immediate and significant value and DOE needs to expedite its finalization. From 2012 to 2017, more than 424,000 manufactured homes have been produced\(^5\) that should have met DOE’s energy conservation standards and didn’t.

**A. DOE Must Protect ICC’s Rights as Copyright Holder in Reproducing All or Part of the IECC**

The 2016 proposed rule published a modified version of the IECC, which is copy written, without observing and protecting the rights of its copyright holder, ICC. ICC notified the Department of this issue in its comments to the proposed rule and does so again here. OMB Circular A-119 spells out how federal agencies are to reference voluntary consensus standards in regulatory activities:

> g. How should my agency reference standards?

Where your agency seeks to incorporate a standard by reference, your agency should **reference the standard, along with sources from which a copy of the standard may be obtained**, in relevant publications, regulations, and related internal documents. The Office of the Federal Register’s regulations at 1 CFR Part 51 govern the use of incorporation by reference in regulation. For all other uses, your agency must determine the most appropriate form of reference. **If a standard is used and published in an agency document, your agency must observe and protect the rights of the copyright holder** and meet any other similar obligations, such as those relating to patented technology that must be used to comply with the standard.\(^6\)

If DOE wishes to publish any part of the IECC in a future rulemaking, in order to comply with OMB Circular A-119, DOE must: (a) expressly acknowledge that the IECC is a copyright protected document, published and owned by ICC; (b) explicitly state that any reproduction or copying of the standard requires express written permission or license from ICC; and (c) state that copies of the IECC may be

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II. Additional Revisions to the 2016 Proposed Rule

As previously stated, ICC supports the prompt adoption of the 2016 proposed rule with minor amendment to appropriately recognize the IECC as copy written material. Should DOE seek to revisit the 2016 proposed rule, ICC, below, has proposed additional baseline and product considerations. ICC also recommends DOE utilize the IECC’s climate zones as opposed to the system adopted in the 2016 proposed rule.

A. Cost Baseline and Product Considerations

DOE based cost effectiveness calculations on incremental cost data provided by the Manufactured Housing working group. The total incremental increase in purchase price resulting from the proposed efficiency standards averaged around $2200 for single wide and $2900 for multi section manufactured homes in climate zone 4. Nationwide retailers in climate zone 4 have indicated a difference of $1000 to $1500 between a base home (a double wide unit of approximately 1600ft²) and an EnergyStar labeled home, which requires greater efficiency (including a lower Uo and specified duct insulation requirements) than the proposed rule. ICC encourages DOE to compare retail costs of baseline HUD-regulated manufactured homes with more energy efficiency models, such as EnergyStar labeled homes, to ensure the cost impacts of the proposed rule realistically portray the net cost impact to consumers. ICC also urges DOE to confirm that the ultimate cost data accounts for scale of acquisition and production.

ICC additionally recommends DOE rephrase §460.201, which requires a ducted system, so as not to preclude the use of efficient ductless systems (mini-splits).

The proposed rule also addresses floor insulation in relation to duct (Table 460.103), duct sealing (§ 460.201) and sealing of duct boots (Table 460.104), but it does not explicitly identify insulation of ducts. ICC recognizes that typical manufactured home construction practices place ducts between insulation and flooring, however recommends that the rule specify that all ducts in other portions of building—and not embedded in floor insulation or completely within the conditioned space—be insulated to an R-6. This would be consistent with 2015/2018 IECC Section R403.3.1.

B. The Energy Conservation Standards Should Utilize the IECC’s Climate Zones

ICC recommends the use of the distinct and comprehensive system of climate zones within the IECC. The proposed rule’s climate zones lack consistency with the IECC climate zones on which much of that code is based. The eight zones within the IECC allow users to clearly distinguish energy efficiency requirements based on climatic zone. Further breakdowns are provided by local jurisdiction in all 50 states. Utilizing the IECC’s climate zones makes sense on several levels:
• The zones have been vetted through an open, balanced, and nationally recognized consensus process. This process ensures input from diverse interests including design, builder, product, and regulatory communities.

• The IECC climate zones are recognized and understood by the product manufacturing and regulatory sectors.

• Nationwide training is currently available for the IECC.

• Consistency within the built environment should be encouraged. Products with performance factors that vary based on geography that are used in both site-built and manufactured homes should adhere to the same requirements.

Neither the HUD climate zones nor the four climate zones DOE delineated in the 2016 proposed rule recognize significant climate differences across a broad swath of the country, where the climate may vary significantly east to west, from a mild maritime to a hot desert environment, or north to south, from a significant heating climate to a significant cooling climate. For example, under these climate zones, northern Minnesota with over 9000 heating degree days (IECC climate zone 7) would have the same efficiency requirements as mild maritime communities of Oregon with less than 5400 heating degree days (IECC climate zone 4) and Las Vegas (IECC climate zone 3) with only 2500 heating degree days, and, significantly, more than 4500 cooling degree days. Consumers benefit from climate zones that are appropriately differentiated.

III. ICC Opposes the NODA’s Unsupported Deviations from the 2016 Proposed Rule and the IECC

EISA requires DOE to establish by regulation standards for the energy efficiency of manufactured housing.7 These standards “shall be based on the most recent version of the International Energy Conservation Code (including supplements), except in cases in which the Secretary finds that the code is not cost-effective, or a more stringent standard would be more cost effective, based on the impact of the code on the purchase price of manufactured housing and on total life-cycle construction and operating costs.”8

In sum, EISA establishes the IECC as the de facto standard for manufactured homes. Where DOE seeks to deviate from that standard, it may do so on a case-by-case basis upon a finding that the IECC is not cost-effective or that a more stringent standard would be more cost effective.9 DOE should ensure that the efficiency standards are affordable and comply with Executive Orders 12866 and 13563, but, as with cost-effectiveness, DOE must have firm footing to justify a deviation from the IECC on affordability.

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8 § 17071(b)(1).
9 Id. (stating that the energy conservation standards “shall be based on the most recent version of the International Energy Conservation Code (including supplements), except in cases in which the Secretary finds that the code is not cost-effective, or a more stringent standard would be more cost effective . . .”) (emphasis added).
grounds. Further, DOE cannot deviate to such an extent as to render EISA inoperative because “affordability” is not a referenced consideration under EISA.

As described below, ICC is concerned that the assertions driving DOE’s consideration around altering the 2016 rule’s life-cycle analysis are not supported. Further, ICC believes that DOE has neither established nor considered whether (1) the requirements in its 2016 proposed rule are not cost-effective or not affordable, and (2) the alternatives the NODA considers (efficiency improvement cost caps or manufactured home price limits) provide for cost-effective and affordable energy conservation improvements.

A. DOE Assertions on Life-Cycle (Tenancy and Resale) Are Insufficiently Supported

DOE cites a five-year-old Consumer Financial Protection Bureau (CFPB) report in support of assertions that “manufactured housing owners have relatively short tenancies” and that “the resale market for manufactured housing is highly constrained” such that “the original owner will likely not recoup upfront efficiency investments if the payback period exceeds tenancy.”\(^{10}\) These assertions are insufficiently supported.

The statement concerning the tenancy of manufactured housing owners relies on an anecdote offered by a single manufactured home community operator. An anecdote from a single manufacturer is not sufficient, particularly where it being used to determine a statutory phrase (“life-cycle construction and operations cost”) that levels into the cost-effectiveness determination and whether DOE may deviate from the IECC. Furthermore, the average tenancy contended, 13 years, is longer than the 10-year average tenure for home sellers as reported by the National Association of Realtors.\(^{11}\)

The NODA’s assertion on resale is unsupported. The CFPB report DOE cites describes the secondary market for manufactured housing financing, not the actual resale of manufactured homes. Although a constrained secondary market may have implications on available financing options for manufactured home purchase generally, neither the secondary market nor the CFPB report directly speak to resale. DOE also cites a 15-year-old Consumers Union report, which itself relies on 25-year-old data on manufactured home appreciation. This data is too old to have contemporary relevance.

If DOE seeks to rely on resale data to deviate from the IECC on lifecycle cost effectiveness grounds, EISA requires the Department cite contemporary data that directly speaks to the resale of manufactured homes. Any analysis of resale must also consider the value buyers place on efficiency. Several studies have shown that home buyers place a premium on efficiency, including one report that found that buyers would pay an additional $10,732 up front to save $1,000 a year in utilities.\(^{12}\)

\(^{10}\) 83 Fed. Reg. at 38,076-77.
B. DOE Must Justify Dollar Caps for Efficiency Investments

The 2018 NODA seeks comment on proposed front-end energy efficiency investment thresholds of $500, $1,000, and $1,500. But DOE has provided no justification as to how it determined these caps, all of which represent investments below those required within the 2016 proposed rule, or why spending above a given threshold would not be cost effective or affordable. Should DOE seek to deviate from the IECC by setting dollar limitations on efficiency improvements, EISA requires DOE to demonstrate that further investments would not be cost effective.

C. DOE Must Justify the Use of Home Price Thresholds to Limit EISA’s Energy Conservation Requirements

The 2018 NODA appears to propose that homes with retail prices below two price thresholds would be excluded from EISA’s efficiency requirements entirely. Yet DOE offers no explanation as to either limitation’s relevance to cost-effectiveness considerations or affordability, which it must establish in order to deviate from EISA. EISA requires the application of the cost-effective IECC efficiency improvements for manufactured homes, not a subset.

The first threshold would capture homes with a purchase price equal to or less than FHA’s Title I loan limit for manufactured homes, plus 5%. Congress established the Title I loan limit to cover, conservatively, the average cost of a manufactured home. According to the U.S. Census, the average sales price of new manufactured homes in 2017 was around $72,000, which is slightly less than the limit DOE suggests.

Depending on the distribution that makes up the average new home price that the U.S. Census surveys, using the Title I loan limit for manufactured homes as a threshold could exclude a significant proportion of new manufactured homes (as many as 50% under a normal distribution) from EISA’s energy conservation requirements. Such a significant deviation from EISA’s requirements necessitates a firm rationale, moored in the underlying statute. But the basis for the threshold itself counsels against its use as a threshold for exclusion, as the homes DOE proposes to exclude would be eligible for financing with the better terms and rates FHA backing can dictate.

The NODA also appears to suggest a higher price threshold of $294,515, which equates to the FHA loan limit for single-family homes. This limit bears no relation to the cost effectiveness of energy efficiency improvements for manufactured housing or the affordability of purchasing a new manufactured home, nor does DOE offer one. The limit is nearly four times the average cost of a new manufactured home such that excluding manufactured homes priced less than this limit would essentially, and illegally, render inoperative EISA’s energy conservation requirements.

D. DOE Must Demonstrate Required Cost-Effective Measures are Not Affordable

The NODA broadly seeks information regarding the affordability of implementing EISA’s conservation requirements. To deviate from cost effective, IECC required, efficiency improvements, DOE must demonstrate that the incremental cost increase would make an initial home purchase or subsequent payments unaffordable. Such an analysis should consider the availability of manufactured homes at all price ranges. It should also consider the likelihood that financing options would cover any incremental increase in initial cost, available income to afford home payments, and the reduction in operating costs resulting from required efficiency improvements.

To illustrate, the efficiency improvements required by the 2016 proposed rule would have increased the average purchase price of a manufactured home by as much as $2,423 for a single-section home.15 Assuming the buyer financed the new home purchase, down payments for manufactured housing loans range from 5-20%.16 At the high end of this range, the proposed rule’s required improvements would increase the upfront cost by about $485 (20% of $2,423), or 1% considering the average cost of a new single-section manufactured home is around $48,300.17

The improvements the 2016 proposed rule required would provide $345 in average annual energy cost savings.18 Assuming the homebuyer utilizes the 20% down 20-year 6.79% financing suggested in the 2014 CFPB report the NODA cites, the buyer could expect immediate net positive operating cost benefits ($177 in annual costs associated with financing the efficiency improvement versus $345 in efficiency savings) with the efficiency benefits allowing for a 5-year repayment of the efficiency investment.19 The efficiency improvements would save the homebuyer about 5% in annual operating expenses as compared the repayment of identical financing for a standard single-section home.

DOE’s analysis should consider whether a 1% increase in down payment that generates an immediate 5% reduction in operating expenses is affordable, based on data on available funds for down payment and annual expenses.

IV. Implementing EISA’s Energy Conservation Requirements

The NODA seeks comment on several areas relevant to the implementation of EISA’s energy conservation requirements. In response, this Part offers ICC’s support for (1) product labeling and tiered labeling for homes exceeding minimum standards, (2) private sector-driven enforcement, (3) ensuring

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16 The CFPB report the NODA cites uses 20% down in its example calculations for manufactured home financing repayment. See also Justin Pritchard, Manufactured and Mobile Home Loans, The Balance (May 9, 2018), available at https://www.thebalance.com/borrowing-tips-for-manufactured-and-mobile-home-loans-4148186.
17 See Census Survey.
19 These calculations utilized Bankrate’s loan calculator: https://www.bankrate.com/calculators/mortgages/loan-calculator.aspx. A 5% down payment still generates net positive operating cost benefits ($211 in annual costs associated with the efficiency improvement versus $345 in efficiency savings) with the same 5-year repayment period.
proper inspector and plan reviewer training through IECC certification, and (4) utilization of the IECC’s ventilation requirements.

A. ICC Supports Product Labeling and Tiered Labeling for Homes Exceeding Minimum Standards

ICC encourages DOE’s consideration of consumer labeling. Labeling would provide consumer awareness of both initial and operating costs, allowing consumers to make informed choices between models and manufacturers based on their household income and interests. Surveys across rural and suburban areas nationwide have shown that consumers do desire energy efficiency and value the ability to make informed choices. Survey results from the National Association of Home Builders indicate nine out of ten buyers would choose a highly energy efficient home with lower utility bills rather than one costing 2-3 percent less without those features. In a Consumers Union and Building Codes Assistance Project survey, 83% of respondents contended that energy efficient homes have a higher resale value. A survey lead by Boise State University shows that in Idaho, homeowners believe that homebuyers should have a right to a home that meets national energy standards. Nearly nine out of ten respondents (87%) support implementation of stronger energy efficiency requirements for new residential and commercial property construction in North Dakota.

However, labeling and the utilization of efficiency tiers (brass, bronze, etc. as discussed in the NODA), is not a replacement for the establishment of minimum energy conservation standards applicable to all manufactured homes. ICC encourages labeling of both minimum efficiency standards and higher tiers of efficiency. This proposal ensures EISA’s proper implementation while helping consumers make choices that are more informed.

B. DOE Should Require Enforcement through Private Sector-Led Certification

ICC urges DOE to ensure conformance with the Department’s energy conservation requirements, as required by statute, through a private sector certification system. Under a certification system, a manufacturer would undergo a conformity assessment process through a competent and accredited conformity assessment body. The conformity assessment process includes many steps—not least of which is regular compliance inspection of manufacturing facilities—and assures continuous compliance of the reviewed product(s) to the DOE-modified IECC requirements. Such a review could cover both the design inspection and primary inspection components addressed in the U.S. Department of Housing and Urban Development’s (HUD) existing enforcement regulations for its manufactured homes requirements. Upon a successful review, the conformity assessment body would produce a publicly

21 See 42 U.S.C. § 17071(c).
reviewable certificate or report. This process draws from many of HUD’s enforcement procedures, but would be private, not public, sector implemented. Evaluation through certification is a central element of the voluntary standards system in the United States. In the construction industry, certification providers assure technical compliance with standards and codes (including the IRC and IECC) for a wide variety of products used throughout the United States. ICC’s affiliate, ICC Evaluation Service (an accredited conformity assessment body) develops technical criteria for products, evaluates manufacturers’ products through rigorous program documentation and inspection, and then publishes reports that document code or standard compliance that are available to government officials and the public at no charge.

The federal government has long encouraged the use of conformance assessment. OMB Circular A-119 states that “agencies should recognize the possible contribution of private sector conformity assessment activities.” EPA has leveraged this effective model through its EnergyStar and WaterSense programs, in which manufactures’ participation is evaluated through third-party certifiers. HUD’s enforcement procedures for its manufactured housing requirements also explicitly endorse the product certification process: “all [primary inspection agencies (PIAs)] shall accept all product verification programs, labelings, and listings unless the PIA has reason to believe that a particular certification is not acceptable . . . .”

Certification programs allow for product diversity, innovation, flexibility, and quality. They also provide a level playing field for industry. Certification programs are less costly to the government than direct government inspection systems, while achieving high compliance, offering regulators a high level of confidence. The Office of Management and Budget concurs: “When properly conducted, conformity assessments conducted by private sector conformity assessment bodies can increase productivity and efficiency in government and industry, expand opportunities for international trade, conserve resources, improve health and safety, and protect the environment.”

Products are already being certified against the IECC using a process that tracks much of HUD’s existing enforcement guidance. Utilizing certifiers for enforcement leverages this existing experience, minimizes enforcement overhead and compliance costs, and leaves room for innovation.

C. DOE Should Ensure Proper Inspector and Plan Reviewer Training through IECC Certification

Private sector certification and government-run enforcement systems, like HUD’s, require inspection of manufacturers’ facilities and product designs to ensure adherence to program requirements. Facility inspectors and plans examiners must be properly qualified, trained, tested, and certified, as review by unqualified staff may be as ineffective as having little or no inspection at all. Several studies highlight the importance of sufficient training for building inspectors. For example, FEMA’s final report following

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22 See 24 C.F.R §§ 3282.201–211.
23 Although HUD has approved third-party inspection agencies, the vast majority are state entities. See Manufactured Housing: Production Inspection Primary Inspection Agencies (PIAs) and Design Approval Primary Inspection Agencies (DAPIAs), available at https://www.hud.gov/program_offices/housing/rmra/mhs/mhsid.
24 24 C.F.R. § 3282.360.
25 OMB Circular A-119.
Hurricane Andrew pointed to inadequate permit review and inspector training as relevant factors to the residential building damage experienced. Following the Northridge earthquake in 1994, the California Seismic Safety Commission concluded that there would have been less damage had building code inspectors been sufficiently trained. HUD enforcement regulations directly speak to the importance of inspector training, stating that “[e]ach primary inspection agency shall have qualified personnel” and that applicant agencies must submit an outline of the agency’s “training program for assuring that all inspectors and other technicians are properly trained to do each specific job assigned.”

Given the importance of sufficient inspection and plan review to ensuring code compliance, ICC encourages DOE to require inspectors be certified residential energy inspectors and plan examiners in the IECC. ICC and several other organizations offer training and certification exams to ensure competency on this subject matter.

D. DOE Should Leverage the IECC’s Ventilation Requirements

ICC recommends DOE retain consistency with the air sealing requirements of the IECC, and ventilation requirements of the International Mechanical Code (IMC), which are referenced in the IECC. The IECC, since 2012, has referenced the ventilation provisions of the IMC, which allows for both natural and mechanical ventilation. The IMC, Section 401.2 requires mechanical ventilation when air infiltration rates in a dwelling unit are less than five air changes per hour. The air sealing, leakage, and ventilation requirements of the IECC and IMC have been vetted in an open governmental process with an opportunity for consideration of safety and cost.

Where air sealing requires ventilation, DOE should determine whether the increased efficiency from the sealing offsets the cost of required mechanical ventilation and whether the combination of air sealing and mechanical ventilation is cost-effective overall.

Thank you for the opportunity to provide comment. If you have questions concerning ICC’s responses, please do not hesitate to contact me. Sincerely,

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28 24 C.F.R. § 3282.358.