



August 7, 2023

U.S. Department of Housing and Urban Development
Regulations Division, Office of General Counsel
451 7th Street SW, Room 10276
Washington, DC 20410-0500

Via Regulations.gov

Re: Comments of the International Code Council on the Preliminary Determination and Solicitation of Comment regarding the Adoption of Energy Efficiency Standards for New Construction of HUD- and USDA-Financed Housing; Docket No. FR- 6271-N-01

The International Code Council (ICC) is a nonprofit organization of roughly 700 employees, driven by the engagement of its more than 60,000 members, that is dedicated to helping communities and the building industry provide safe, resilient and sustainable construction through the development and use of model codes (I-Codes) and standards used in design, construction and compliance processes. Most U.S. states and communities, federal agencies and many global markets choose the International Codes (I-Codes) to set the standards for regulating construction and major renovations, plumbing and sanitation, fire prevention and energy conservation in the built environment.

The Code Council is dedicated to providing the building industry with the tools necessary to realize broader safety, sustainability and resiliency goals. This includes achieving decarbonization goals through the effective use of energy efficiency and greenhouse gas (GHG) reduction solutions captured in building energy codes such as the International Energy Conservation Code (IECC) and International Green Construction Code (IgCC).

In March 2021, the Code Council Board of Directors released a new framework, [Leading the Way to Energy Efficiency: A Path Forward on Energy and Sustainability to Confront Climate Change](#), leveraging the success of the IECC and IgCC, plus additional resources to help all levels of government advance their climate goals. The framework establishes a new scope and intent for future editions of the IECC that commits to continued improvement and the inclusion of zero energy pathways today and by 2030. The 2021 IECC provides cost-effective reduction of energy use over previous editions and includes net-zero appendices for both residential and commercial buildings to provide options for jurisdictions with ambitious climate goals. The 2021 and future editions of the IECC are therefore positioned to support the achievement of the Biden-Harris Administration's [goal](#) to achieve net-zero emissions economywide by 2050.

Recognizing the need for a coordinated and deliberate approach to decarbonization, in September 2022, the Code Council Board of Directors approved [Decarbonization of The Built Environment: Solutions from the International Code Council](#), which recognizes the significant impact of buildings on the environment and the need for a coordinated set of solutions to support the achievement of energy and GHG reduction goals set by governments. The report also calls for expanded activities that support a coordinated approach across the I-Codes, standards and other solutions. This highlights the Code



Council’s ongoing commitment to deliver the tools that federal, state and local governments need to realize their climate-related goals.

The Code Council appreciates the opportunity to provide comment on the U.S. Department of Housing and Urban Development (HUD) and U.S. Department of Agriculture’s (USDA’s) preliminary determination to adopt modern energy efficiency standards for new construction of federally-financed housing through the Energy Independence and Security Act of 2007 (EISA).

I. HUD/USDA Should Update Minimum Standards for Federally Assisted Infrastructure

The International Code Council urges the Federal Government to require modern building and energy codes for all federally funded and financed projects to ensure resiliency, energy and climate goals are achieved.

Implementation of current codes in HUD- and USDA-financed housing will have additional benefits beyond the individual properties impacted. Architects, engineers, contractors, homebuilders and others will become familiar with the latest advancements (even if not required on other projects), leading to improved practices across projects and potentially smoothing the adoption of updated requirements for all projects in a jurisdiction. Locking in improved energy efficiency may also reduce the burden on other federally funded programs including the Low-Income Home Energy Assistance Program (LIHEAP).

In recent years, the Federal Government has increasingly moved towards ensuring that federally assisted infrastructure adheres to modern construction standards. Such an approach was advanced during the prior Administration within the federal government’s [National Mitigation Investment Strategy](#)—developed by the Mitigation Federal Leadership Group of which HUD is a member—and continued by the current Administration through the [National Initiative to Advance Building Codes](#) (NIABC). The NIABC’s goal is “to ensure that building activities receiving federal funding or financing will meet or exceed the latest building codes.” In the NIABC, HUD specifically committed to requiring “resilient construction in HUD-assisted housing wherever feasible.” Implementation of this proposed rule would put HUD’s commitment into action.

Federal agencies adopt I-Codes and Standards because they are national “voluntary consensus standards” under Office of Management and Budget (OMB) Circular A-119 and the National Technology Transfer Advancement Act (NTTAA), meaning they are developed in an open forum—with a balance of interests represented and due process—that, ultimately, ensures a consensus outcome. All I-Codes are updated every three years. The NTTAA, supplemented by OMB Circular A-119, directs federal agencies to use voluntary consensus standards wherever possible in their procurement and regulatory activities in lieu of expending public resources developing government unique standards. The OMB Circular “directs agencies to use standards developed or adopted by voluntary consensus standards bodies rather than government-unique standards, except where inconsistent with applicable law or otherwise impractical.”

As required by the Cranston-Gonzalez National Affordable Housing Act of 1990 (Cranston-Gonzalez) and amended by the Energy Independence and Security Act of 2007 (EISA), the U.S. Department of Housing and Urban Development and the U.S. Department of Agriculture are to update their requirements

within 1 year of publication of a revised IECC and ASHRAE Standard 90.1 unless the Secretaries determine that compliance with such revised code or standard would not result in a significant increase in energy efficiency or would not be technologically feasible or economically justified. However, HUD and USDA have not updated their energy efficiency standards since 2015, at which time they adopted the 2009 edition of the IECC and the 2007 edition of Standard 90.1.^{1,2}

As noted in the Federal Register Notice, modern energy codes provide energy savings for residents, GHG emissions reduction, improved health and resilience against extreme hot or cold weather events without negatively affecting the availability or affordability of new construction of single and multifamily housing. The International Code Council strongly encourages HUD and USDA to update their energy standards in order to realize the social, economic and environmental benefits highlighted in their preliminary determination, and to meet their statutory requirement to do so under EISA.

Modern building energy codes have made significant progress in advancing efficiency over the last 40 years. Each new edition of the energy code has provided for the cost-effective reduction of energy use. The 2021 IECC represents a roughly 40 percent improvement in energy efficiency for buildings compared to the 2006 edition, along with corresponding improvements in building, mechanical and material science and technology. The Pacific Northwest National Laboratory (PNNL) found that energy code updates could save consumers \$138 billion and provide 900 million metric tons of CO₂ savings from 2010 through 2040.³ These savings equate to the annual emissions of 108 million homes.

The Department of Energy (DOE) has also observed that energy efficiency is a low-cost resource across the country that can reduce household energy costs regardless of a given state's climate, heating fuel and energy price factors. Implementation of updated energy codes is foundational to achieving energy savings and GHG emissions reductions across the national building stock, both for residential and commercial buildings. PNNL's final determination on the 2021 IECC found a 9.4 percent site energy savings improvement and an 8.7 percent reduction in carbon emissions for residential buildings relative to the 2018 edition, saving homeowners an average of \$2,320 over the life of a typical mortgage.⁴ Similarly, DOE found that the commercial provisions of the 2021 IECC (which includes multifamily buildings over three stories) provide a 12.1 percent improvement in site energy use and a 10.2 percent improvement in GHG emissions over the 2018 edition.⁵

DOE has also found that modern building energy codes play an important role in community resilience, both in grid resilience as well as passive survivability of structures built to the latest editions of the IECC.⁶ A recent report by DOE and three national labs⁷ found that the 2021 IECC can reduce deaths during a disaster-induced power outage coupled with extreme heat by 80% and extreme cold by 30%.

¹ Rule, [80 FR 5199](#), March 31, 2015.

² HUD/USDA Final Determination, [80 FR 25901](#), May 6, 2015.

³ Pacific Northwest National Laboratory (PNNL), *Impacts of Model Building Energy Codes – Interim Update*, https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-31437.pdf.

⁴ DOE, EERE, *Determinations*, <https://www.energycodes.gov/determinations>.

⁵ DOE, EERE, *Energy and Energy Cost Savings Analysis of the 2021 IECC for Commercial Buildings*.

⁶ DOE, EERE, *Energy Resilience*, <https://www.energycodes.gov/energy-resilience>.

⁷ https://www.energycodes.gov/sites/default/files/2023-07/Efficiency_for_Building_Resilience_PNNL-32727_Rev1.pdf.

Benefit-cost ratios for these resilience benefits ranged from 2 to 6 to 1. These benefits are additive to the energy bill savings the IECC provides. Given the trend that extreme weather events are growing in severity and frequency, the resilience benefits associated with current energy codes represent a meaningful piece of our national resilience to hazard events.

a. Implementation should Ensure the Effort's Success

Adoption of current model energy codes is the first step to tapping into cost-effective energy savings. Adoption is typically followed by training and full implementation of the adopted code. The gap that exists between the efficiency levels required in codes and the efficiency levels achieved in the field is influenced by the extent of code officials'—and the design, engineering, and construction professionals'—training on the energy code. DOE has observed, across 7 states studied, that training code officials and the construction community on adopted codes can also help reduce annual energy costs due to varying levels of code compliance by an average of about 45 percent.⁸ Enhancing the overall energy efficiency workforce and further supporting energy code compliance training will also benefit overall compliance, energy and cost savings, and emissions reduction for the entire national building stock moving forward.

As the above paragraph notes, a gap between theoretical energy savings and realized energy savings exists. In implementing energy code updates, HUD and USDA can take steps to best ensure intended benefits are achieved, including by aligning implementation with state activities and federal incentives.

The last HUD/USDA update became effective at the end of 2015. It took HUD/USDA a year to finalize the preliminary determination with a subsequent 180-day phase-in for FHA-insured and USDA-guaranteed loans. When that update became effective, the HUD/USDA requirement was tethered to the least stringent of three published IECC editions (2009 through 2015). The Preliminary Determination proposes an implementation timetable roughly 1.5 years faster.

Extending the implementation timeline can aid execution in the field—particularly with respect to FHA-insured and USDA-guaranteed loans, which present the greatest implementation challenges⁹— to the extent that additional state and local governments adopt codes that meet or exceed the 2021 IECC in the interim. Extending the implementation timeline for these loans may also be necessary to align the proposed HUD/USDA requirements with Inflation Reduction Act sec. 50131 funding, through which DOE can provide up to \$330 million to assist jurisdictions in the adoption and effective implementation of energy codes that meet or exceed the 2021 IECC. DOE has yet to finalize that program or establish a timeline for applications, awards, and implementation. Given these considerations, and were HUD/USDA to tether efficiency requirements to the 2021 IECC, extending the implementation timeline would be prudent.

⁸ DOE, EERE, *Residential Energy Code Field Studies* <https://www.energycodes.gov/residential-energy-code-field-studies>.

⁹ FHA-insured and USDA-guaranteed loans are two of the most popular mortgage options, offering lower barriers to entry and reduced income requirements in comparison to conventional loans. In total, and per the proposed rule, these loans assist more than 120,000 units each here.

The Code Council recognizes that extending implementation would have impacts on the energy conservation features of federally backed loans. One means to mitigate this could be through interim requirements, which HUD could adopt as interim alternative compliance pathways. For instance, although less efficient than the 2021 IECC, the 2018 IECC remains 25% more efficient than the 2009 edition.

The Code Council also recognizes that, in some instances, achieving the increased efficiency requirements contained in current codes result in increased construction costs—but with a resulting reduction in operational costs. As HUD and USDA prioritize housing affordability and home ownership, allowing people to remain in their homes is essential. We encourage HUD and USDA to work with lenders to identify mechanisms to capture the impact of reduced operating costs (alongside Principal, Interest, Taxes and Insurance (PITI)) within the underwriting process.

b. Alternative Compliance Pathways Can Ease Implementation

The Code Council supports the alternative compliance pathways towards achieving compliance with the proposed rule. Permitting additional compliance options that achieve equivalent savings provides more pathways for builders, to residents' benefit. In its final determination, the Code Council recommends expanding the listed compliance options to explicitly include the 2021 IECC for high-rise buildings, the 2024 IECC for all construction types, and equivalent scoring using the RESNET/ICC 301-2022 *Standard for the Calculation and Labeling of the Energy Performance of Dwelling and Sleeping Units using an Energy Rating Index*.

1. 2021 IECC (Commercial)

DOE found that the commercial provisions of the 2021 IECC (which includes multifamily buildings over three stories) provide a 12.1 percent improvement in site energy use and a 10.2 percent improvement in GHG emissions over the 2018 edition.¹⁰ The determination concluded that, on a national weighted average basis, the 2021 IECC-Commercial is 6.5 percent more efficient for site energy use and 3.3 percent more efficient for energy costs than ASHRAE Standard 90.1-2019. For these reasons, HUD/USDA should recognize the 2021 IECC-Commercial as an alternative compliance pathway.

2. 2024 IECC (All Occupancies)

Although not yet final, preliminary analyses performed by PNNL found that the 2024 IECC-Residential provides a 6.66% reduction in site energy use from the 2021 IECC-R while the 2024 IECC-Commercial provides a 16.4% reduction in site energy use compared with the 2021 IECC-C. The 2024 IECC is expected to be finalized by the end of 2023 or early 2024. Some states have focused on adoption of the 2024 IECC in lieu of the 2021 edition.¹¹ Given its imminent finalization and state support, HUD's explicit

¹⁰ DOE, EERE, [Energy and Energy Cost Savings Analysis of the 2021 IECC for Commercial Buildings](#).

¹¹ Some leading energy efficiency-minded jurisdictions have committed to the adoption of the 2024 IECC prior to its publication. In January 2023, the State of Rhode Island's General Assembly passed [S0855](#) requiring the state's building code standards committee to adopt the 2024 IECC within one year of the model code's release. The State of New York, which includes New York City, has also expressed their intent to update the New York State Energy Conservation Code to meet or exceed the 2024 IECC after skipping their previous code update cycle.

recognition of the 2024 IECC, or future IECC editions that meet or exceed the 2021 IECC, would provide a meaningful, additional implementation path. An additional potential benefit of future IECC adoption includes efforts to more closely integrate energy conservation with water conservation, the latter of which is a likely consideration of future IECC editions.

3. RESNET/ICC 301

HERS raters are able to model, inspect, and rate buildings' energy use using the RESNET/ICC 301 standard. There are thousands of HERS Raters across the country, including in every state. Through a partnership with ICC, hundreds of HERS Raters are IECC/HERS Compliance Specialists, meaning they are also capable of verifying IECC compliance.¹² In states that have not yet adopted energy codes that meet or exceed the HUD/USDA requirements, HERS Raters and IECC/HERS Compliance Specialists provide a readily available resource to ensure new construction meets the HUD/USDA efficiency requirements. Establishing a compliance pathway through the RESNET/ICC 301 standard provides an additional compliance alternative with readily available implementers. Such an approach would be consistent with the National Green Construction Code (ICC 700), which permits performance and ERI (Energy Rating Index) compliance pathways, and which the Preliminary Determination already recognizes.

II. The Importance of Consistency in HUD/USDA Code Requirements

As HUD and USDA work to update their energy standards for federally-assisted housing under EISA, the International Code Council encourages the Agencies to continue to leverage the energy efficiency and emissions reductions provisions of the IECC through adoption of periodic revisions on a three-year cycle similar to the model code development process. Ensuring the requirements for federally-assisted buildings and major renovations are based on current provisions of the IECC will ensure the Federal Government can drive progress towards meeting national climate, affordability, resilience, and energy goals while also leading by example and charting a path forward for jurisdictions across the nation.

The Code Council encourages HUD and USDA to, at minimum, tie energy conservation standards to current codes, which in practice captures the most recent code edition and the next most recent edition. States and local jurisdictions that regularly update building codes typically do so between 6 months and 3 years from the publication of the latest code edition, meaning that these states will typically utilize the second most recent edition for the 6 months to 3 years prior to their adoption of the most recent edition. Once the most recent edition has been adopted, they will remain on the most recent edition for anywhere from a few months to a couple years until the Code Council publishes the next edition. To illustrate, California adopts updated building codes roughly 18 months after publication, with an effective date 6 months subsequent, meaning that California is utilizing the second most recent code edition for two years and the most recent edition every third year. This phased in publication/adoption/implementation practice allows for the development and dissemination of necessary training materials to ensure practitioners are up to date on the latest requirements. It also provides greater market certainty upon which industry can plan, as opposed to the 8 year delay between EISA and the prior 2015 HUD/USDA final rule and the 8 year gap between the 2015 rule and

¹² <https://www.iccsafe.org/content/ecs-designation/>.

this year’s proposal. Lengthier periods between updates increases the extent of catch up that’s required, given the extent of changes between code editions scales significantly across multiple editions. The end result is that less frequent updates makes implementation harder. By contrast, regular updates can facilitate shorter phase-ins. Given codes continue to improve in energy efficiency, more regular updates provide affordability, resilience, and sustainability benefits.

In addition to improving housing through energy codes, HUD and USDA have the ability to implement additional code-based requirements that enhance resilience to the growing impacts of natural hazards. The Code Council encourages HUD and USDA to leverage their authorities to similarly require current editions of the other International Codes (e.g., the International Residential Code, International Building Code, International Wildland-Urban Interface Code, etc.) that FEMA and others have determined as necessary to advance hazard resistance in the build environment. Analysis by both FEMA and the National Institute of Building Sciences (NIBS) have found that the adoption of code requirements is highly cost-effective. Such requirements further protect federal investments while also reducing the impacts on communities in a disaster event—particularly for low- and moderate-income households.

III. Responses to Specific Questions the Preliminary Determination Poses

The Code Council’s responses to specific questions delineated in the preliminary determination follow:

(2) HUD and USDA request comments from code officials on the current status of code adoption in their states, and the anticipated timetable for adopting the next revision of the IECC and/or ASHRAE codes, their equivalent, or higher, as well as from code officials in home rule jurisdictions that may adopt the codes independently of state action. HUD and USDA wish to establish the extent to which adoption of the latest IECC and ASHRAE 90.1 standards aligns with state or local home rule adoption of these codes

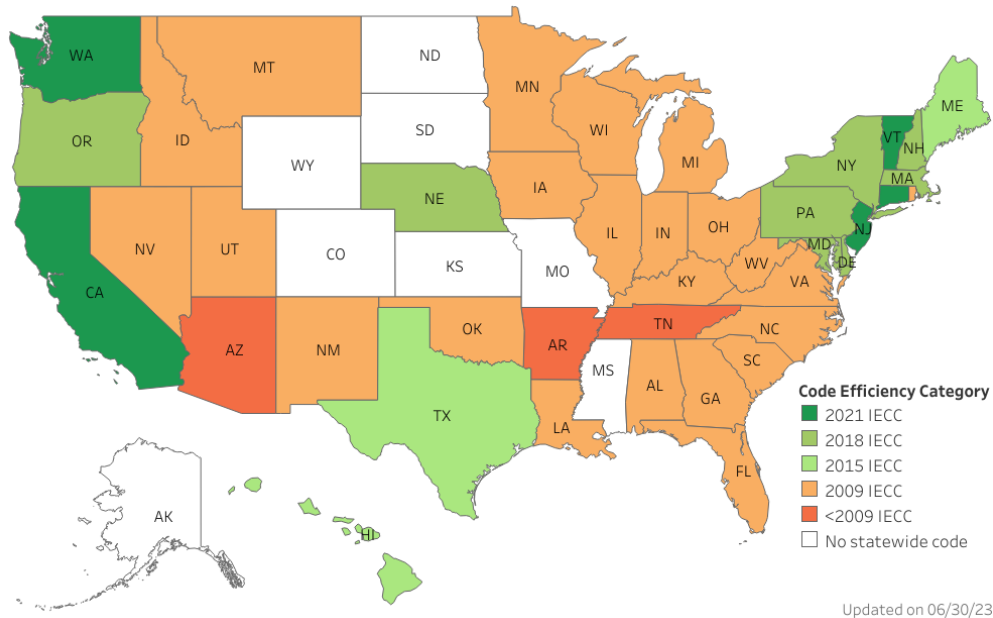
Communities that regularly adopt the IECC save money for residents and businesses and improve community health and resilience. Some jurisdictions routinely amend the most recent model code with additional energy-saving code provisions or programs or adopt stretch codes. To date, the 2021 IECC is currently adopted statewide in 7 states, in use in 14 states, and is required by the Federal Emergency Management Agency (FEMA) for post-disaster recovery construction.¹³ See Figure 1 for the landscape of 2021 IECC statewide adoptions, which can also be accessed via the DOE Building Energy Codes Program’s state energy code adoption portal.¹⁴ Since the June update of the statewide status map, the States of Maryland and Illinois have both adopted the 2021 IECC.

The model codes are designed to support consistency in policy and reflect knowledge and practice from across the building industry. At the same time, the IECC offers design professionals the flexibility to use innovative materials, technologies, designs, and methods to create an efficient building that meets their compliance path of choice. National, state and local governments cannot meet their GHG reduction goals without addressing buildings and having building energy codes that align with the goals.

¹³ [FEMA Recovery Interim Policy FP- 104-009-11 Version 2.1.](#)

¹⁴ It is important to note that this resource only includes statewide adoptions of the 2021 IECC for residential buildings. It does not include local jurisdiction adoptions that occur in states that leave the code adoption responsibility to the local governments.

Figure 1. Status of State Energy Code Adoption (DOE).



(4) Anecdotal reports suggest that because manually operated bathroom fans allowed under the IECC to meet ventilation requirements rely on occupant action to operate them, these may impact indoor air quality and the health of occupants. HUD and USDA request comments on this possible health concern.

The Code Council is not aware of any reports or studies that definitively show the negative effect of not running a bathroom fan when the bathroom is being used. However, air quality can be an issue when not running the fan while a shower is taken. In such a case, the humidity is not removed from the bathroom and can result in the formation of mold, which can result in health issues. Requiring automatic operation can lead to expedited wear on equipment and components and, where such components are designed for intermittent use, could increase the cost of maintenance for homeowners, apartment owners, hotel/motel owners, etc.

Ventilation requirements for the 2021 IECC refer to the International Residential Code (IRC) and the International Mechanical Code. Manual bathroom fans or operable windows for ventilation have been in all editions of the IRC, dating back to the first edition of the I-Codes. The I-Codes are developed through a consensus-based process that supports the identification of issues and development of solutions. Where issues have arisen, the code development process provides a pathway to resolution. Regular adoption of updated codes allows for capturing any changes due to identified issues.

(5) HUD and USDA are requesting comment on the extent to which the 2021 IECC air leakage requirements (3 air changes per hour or 5 air changes per hour at 50 pascals depending on Climate Zone) may present fire code issues for attached single family homes or low-rise multifamily properties, and, if such issues exist, cost-effective solutions that have been developed in the field or are currently being developed to address them.



The Code Council is unaware of any specific fire code issues with single family or multifamily properties in compliance with the 2021 IECC air leakage requirements. The I-Codes function as a coordinated set of codes to help assure that the overall intent of public safety is met. In some circumstances, where fire sprinklers are installed, air leakage requirements may be more difficult to obtain. The ceiling membrane penetration with traditional insulated ceilings allows additional air leakage from the conditioned space. The energy code's intent is not to abridge any safety provisions; the installation of sprinklers would not be eliminated or adjusted to comply with the IECC.

(8) HUD and USDA currently provide incentives or require green building standards for some programs. The agencies are seeking to maximize alignment between the 2021 IECC and ASHRAE 90.1–2019 and those green building standards that are encouraged or incentivized through these programs. During the implementation phase of this Notice, HUD and USDA will seek certifications from all green building or above-code energy performance standard-setting bodies as to their establishing 2021 IECC and ASHRAE 90.1–2019 standards as the baseline against which they measure above-code energy performance. The agencies seek preliminary comments from current green building or above-code energy performance standard-setting bodies on their (1) current minimum IECC and ASHRAE 90.1 requirements; and/or (2) proposed establishment of the 2021 IECC and ASHRAE 90.1–2019 as the baseline for such standards.

The International Code Council believes that HUD should apply its proposed energy efficiency standards rules consistently for all federally-financed housing and renovations. To do otherwise would exempt specific buildings and projects from meeting the energy performance standards requirements and achieving the public policy goals established by the Biden-Harris Administration. Doing so will maximize the impact of emissions reduction of federally-financed housing. It will also help assure that taxpayer funds are leveraged to support some of the most energy-burdened households.

–

Thank you for the opportunity to provide comments. If you have any questions concerning these recommendations, please do not hesitate to contact us.

Sincerely,

Ryan M. Colker, J.D., CAE
Vice President of Innovation
rcolker@iccsafe.org

Gabe Maser
Senior Vice President, Government Relations
gmaser@iccsafe.org