From: Eric Lacey <eric@reca-codes.com>
Sent: Thursday, March 17, 2022 1:34 PM
To: CodesStandards, DAS
Subject: RECA Comments Supporting Adoption of 2021 IECC
Attachments: RECA Comments Supporting 2021 IECC in CT 3-17-22.pdf; RECA Comments Supporting 2021 IECC in CT 5-20-21.pdf

Chairman Free,

Please see the attached comments on behalf of the Responsible Energy Codes Alliance supporting the proposed adoption of the 2021 IECC for residential and commercial construction. If you have any questions, please feel free to call or email me.

Thank you,
Eric

Eric Lacey, Chairman
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Submitted via Email

March 17, 2022

Louis J. Free
Chairman, Code Amendments Subcommittee
Department of Administrative Services
Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103

RE: RECA Comments Supporting the Adoption of the 2021 International Energy Conservation Code in Connecticut

Dear Chairman Free,

The Responsible Energy Codes Alliance[1] submits these comments in response to a request for public comment in the Notice of Intent to Adopt the 2022 Connecticut State Building Code.[2] **RECA supports Connecticut's proposed adoption of the 2021 International Energy Conservation Code (*IECC*) for residential and commercial construction and encourages the Department to finalize and implement the new codes as soon as practicable.** Updating the statewide energy codes from the 2015 *IECC* to the 2021 *IECC* will provide a range of energy efficiency, cost savings, and emissions reduction benefits for the owners and occupants of buildings in Connecticut.

Energy and Cost Savings

As we noted in our May 2021 comments (attached hereto) and in testimony we provided at the February 23, 2022 Public Hearing, adopting the 2021 *IECC* will provide substantial energy and cost savings to Connecticut building owners and occupants. It is well-documented that the 2021 *IECC* (and by reference, *ASHRAE* Standard 90.1-2019) will provide cost-effective energy savings for residential and commercial buildings in Connecticut. Since our previous letter, U.S. DOE has conducted additional analyses specific to Connecticut regarding the benefits of adopting the 2021 *IECC* for residential construction and *ASHRAE* Standard 90.1-2019. Below is a summary of DOE's findings:

[1] The Responsible Energy Codes Alliance is a broad coalition of energy efficiency professionals, regional efficiency organizations, product and equipment manufacturers, trade associations, and environmental organizations with expertise in the development, adoption, and implementation of building energy codes nationwide.
[2] Dep't of Administrative Services, *Notice of Intent to Adopt the 2022 Connecticut State Building Code* (Jan. 31, 2022), *available at* https://portal.ct.gov/-/media/DAS/Office-of-State-Building-Inspector/2022-CSBC-Notice-Flex-Fiscal.pdf.

Summary of U.S. Department of Energy's Energy and Cost Savings Analyses of the Latest Model Energy Codes for Connecticut

Residential[3]			Commercial[4]		
Residential Model Code	Energy Cost Savings over Current CT Code	Life Cycle Cost Savings over Current CT Code	Commercial Model Code	Energy Cost Savings over Current CT Code	Avg Life Cycle Cost Savings over Current CT Code
2021 *IECC*	**8.8%**	**$4,077**	***ASHRAE* Std. 90.1-2019**	**1.7% - 8.0%**	**$3.93/ft²**

Progress Toward Emissions-Reduction Goals

The full adoption of the latest model energy codes for residential and commercial construction will also help Connecticut achieve the General Assembly's goal of reducing greenhouse gas emissions by at least 45% by 2030 and by at least 80% by 2050.[5] The Governor's Council on Climate Change, in its Phase 1 Near-Term Actions Report, specifically calls out the adoption of building energy codes as a means of accelerating energy efficiency:

> The state should continue to keep pace with adopting the International Energy Conservation Code (IECC) and consider strategies to further enhance opportunities to improve energy efficiency through high-performance and stretch codes and construction and renovation practices.[6]

According to the U.S. Energy Information Administration, residential and commercial buildings account for nearly 40% of total energy consumption,[7] so in order for Connecticut to make meaningful progress toward reducing air pollutant emissions as envisioned by the General Assembly, the energy used in buildings must be addressed. The adoption of the 2021

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[3] U.S. Dep't of Energy, *Cost-Effectiveness of the 2021 IECC for Residential Buildings in Connecticut* (July 2021), *available at* https://www.energycodes.gov/sites/default/files/2021-07/ConnecticutResidentialCostEffectiveness_2021.pdf.

[4] U.S. Dep't of Energy, *Cost-Effectiveness of ANSI/ASHRAE/IES Standard 90.1-2019 for Connecticut* (July 2021), *available at* https://www.energycodes.gov/sites/default/files/2021-07/Cost-effectiveness_of_ASHRAE_Standard_90-1-2019-Connecticut.pdf.

[5] *See* Conn. Gen. Stat. § 22a-200a.

[6] *See* Governor's Council on Climate Change, *Taking Action on Climate Change and Building a More Resilient Connecticut for All, Phase 1 Report: Near-Term Actions*, at 33 (Jan. 2021), *available at* https://portal.ct.gov/-/media/DEEP/climatechange/GC3/GC3_Phase1_Report_Jan2021.pdf.

[7] *See* U.S. Energy Infrastructure Admin., *Frequently Asked Questions (FAQs): How Much Energy is Consumed in U.S. Buildings,* https://www.eia.gov/tools/faqs/faq.php?id=86&t=1s.

IECC and *ASHRAE* Standard 90.1-2019 will clearly set the state on a path toward reduced greenhouse gas emissions. In addition to reviewing the latest model codes for cost-effectiveness, U.S. DOE also analyzed the reductions in greenhouse gas emissions that would result from statewide adoption of these codes. A summary of DOE's findings is below:

Statewide CO2 Emissions Reduction Impact from Adoption of 2021 IECC (Residential)[8] and ASHRAE Standard 90.1-2019 (Commercial)[9]

Code Edition	CO2 Emissions Reduction (First Year)	CO2 Emissions Reduction (30 Years Cumulative)
2021 IECC (residential)	4,456 Metric Tons	1,975,000 Metric Tons
ASHRAE Standard 90.1-2019 (commercial)	2,437 Metric Tons	1,708,000 Metric Tons

State-Specific Weakening Amendments

Although we support Connecticut's proposed code update and encourage the Subcommittee and Department to move forward, we encourage the Subcommittee to work toward eliminating state-specific weakening amendments so that citizens can enjoy the full benefits of the latest model codes. As we noted in our testimony at the February 23, 2022 Public Hearing, the proposed code maintains a current state amendment in section R402.4.1.2 which allows sampling of air leakage for buildings with more than seven units. We continue to believe that each home should be verified to be meet the *IECC's* envelope air tightness; the purchasers of new homes or multifamily dwelling units expect that their home has been verified to meet the code requirements. We encourage the Subcommittee and Department to move forward with the finalization of the 2021 *IECC* as proposed, but we urge the Subcommittee to remove this unnecessary weakening amendment in this or a future code update.

Conclusion

RECA supports the hard work of the Code Amendments Subcommittee and the Department in their efforts to improve the lives of Connecticut citizens. The adoption of the 2021 *IECC* will help maintain Connecticut's regional and national leadership in energy conservation. We offer our assistance and experience as you work to maximize energy

[8] *See* U.S. Dep't of Energy, *Cost-Effectiveness of the 2021 IECC for Residential Buildings in Connecticut*, at iii (July 2021).

[9] *See* U.S. Dep't of Energy, *Cost-Effectiveness of ANSI/ASHRAE/IES Standard 90.1-2019 for Connecticut*, at 1 (July 2021).

efficiency in residential and commercial buildings. Please contact us if you have any questions or would like to discuss how RECA can be of assistance.

Sincerely,

Eric Lacey
RECA Chairman

RECA is a broad coalition of energy efficiency professionals, regional efficiency organizations, product and equipment manufacturers, trade associations, and environmental organizations with expertise in the development, adoption, and implementation of building energy codes nationwide. RECA is dedicated to improving the energy efficiency of homes throughout the U.S. through greater use of energy efficient practices and building products. It is administered by the Alliance to Save Energy, a non-profit coalition of business, government, environmental and consumer leaders that supports energy efficiency as a cost-effective energy resource under existing market conditions and advocates energy-efficiency policies that minimize costs to society and individual consumers. Below is a list of RECA Members that endorse these comments.

Air Barrier Association of America

Alliance to Save Energy

American Chemistry Council

American Council for an Energy-Efficient Economy

CertainTeed LLC

EPS Industry Alliance

Extruded Polystyrene Foam Association

Institute for Market Transformation

Johns Manville Corporation

Knauf Insulation

National Fenestration Rating Council

Natural Resources Defense Council

North American Insulation Manufacturers Association

Owens Corning

Polyisocyanurate Insulation Manufacturers Association

Submitted Via Email

May 20, 2021

Louis J. Free
Chairman, Code Amendments Subcommittee
Department of Administrative Services
Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103

RE: Comments of the Responsible Energy Codes Alliance (RECA) Supporting the Adoption of the 2018 and 2021 International Energy Conservation Code

Dear Chairman Free,

The International Code Council recently published the 2021 version of the *International Energy Conservation Code* (*IECC*), which is a clear and substantial improvement over the 2015 and 2018 versions of the *IECC*. The Responsible Energy Codes Alliance supports adoption of this latest, updated, state-of-the-art version of the *IECC* for residential and commercial construction in Connecticut and nationwide.

The need for decisive action to reduce energy demands and the production of greenhouse gases is clearer than ever before, and the 2021 *IECC* provides a solution that will not only address this important policy objective, but will also make buildings more resilient, reduce costs for owners and occupants, help promote local job creation, and improve the state's building infrastructure for generations to come. While eliminating state-specific weakening amendments and adopting the unamended 2018 *IECC* at this time would certainly be an improvement over the current code,[1] adopting the new 2021 *IECC* presents an important leadership opportunity for states and cities that wish to be on the forefront of building efficiency. As a result, we recommend that the Code Amendments Subcommittee consider the full range of long-term benefits of adopting the 2021 *IECC* for residential and commercial construction in the state.

[1] According to a recent analysis prepared by U.S. DOE's Pacific Northwest National Laboratory, Connecticut homes built to the 2018 *IECC* (unamended) would be 2.1% more efficient, on average, than homes built to the current Connecticut code, saving homeowners over $782.52 over the first 30 years of the home's useful life. *See* https://www.energycodes.gov/sites/default/files/documents/ConnecticutResidentialCostEffectiveness_2018.pdf RECA intends to submit a proposal to eliminate weakening amendments to the Connecticut Building Code in order to help align the Code with the *IECC* going forward.

Energy and Cost Savings

The *IECC* is the most widely adopted model energy code for residential and commercial construction, and earlier versions have been adopted in Connecticut and nearly every state that has a statewide energy code. For the last fifteen years, the *IECC* has improved in efficiency with every new edition, providing straightforward energy and cost savings for the owners of homes and commercial buildings, and providing an important policy tool for state and local governments to achieve energy and carbon reduction goals.

The U.S. Department of Energy analyzes and provides cost savings determinations for each new edition of the *IECC* for residential construction and *ASHRAE* Standard 90.1 for commercial construction. (Standard 90.1 is incorporated as a compliance option in the commercial chapter of the *IECC*, and the energy savings figures for the *IECC* and *ASHRAE* are typically very close.) Below is a summary of the energy cost savings for states in climate zone 5A (which includes the whole state of Connecticut) can expect from adopting the two most recent editions of these model codes.

Residential		**Commercial**	
Model Code	Energy Cost Savings over previous model code	Model Code	Energy Cost Savings over previous model code
2018 *IECC* (Residential)	**2.1%[2]**	***ASHRAE* Std. 90.1-2016**	**8.5%[3]**
2021 *IECC* (Residential)	**7.44%[4]**	***ASHRAE* Std. 90.1-2019**	**4.2%[5]**

[2] *See* U.S. Dep't of Energy, *Cost-Effectiveness Analysis of the Residential Provisions of the 2018 IECC for Connecticut*, at 2 (June 2020), *available at* https://www.energycodes.gov/sites/default/files/documents/ConnecticutResidentialCostEffectiveness_2018.pdf.

[3] *See* U.S. Dep't of Energy, *Energy Savings Analysis: ANSI/ASHRAE/IES Standard 90.1-2016*, at 23 (Oct. 2017), *available at* https://www.energycodes.gov/sites/default/files/documents/02202018_Standard_90.1-2016_Determination_TSD.pdf.

[4] *See* U.S. Dep't of Energy, *Preliminary Energy Savings Analysis: 2021 IECC for Residential Buildings*, at 22 (May 2021), *available at* https://www.energycodes.gov/sites/default/files/documents/2021_IECC_PreliminaryDetermination_TSD.pdf.

[5] *See* U.S. Dep't of Energy, *Preliminary Energy Savings Analysis: ANSI/ASHRAE/IES Standard 90.1-2019*, at 24 (Apr. 2021), *available at* https://www.energycodes.gov/sites/default/files/documents/20210407_Standard_90.1-2019_Determination_TSD.pdf.

Greenhouse Gas Reduction

Connecticut has stated its intent to be a national leader in reducing Greenhouse Gas Emissions through the 2018 Act Concerning Climate Change Planning and Resiliency, which established a mandate to achieve a 45% reduction in greenhouse gases by 2030.[6] The Governor's Council on Climate Change explicitly recognized the value of building efficiency in meeting those climate goals:

> **"Connecticut must continue to adopt progressive building codes that incorporate the latest International Energy Conservation Code (*IECC*) standards, including product-efficiency and resiliency standards, while working regionally with other states to advance federal product-efficiency standards."**[7]

By adopting the 2021 *IECC*, Connecticut can leap ahead and capture the important energy-saving and carbon-reducing improvements incorporated into both the 2018 and 2021 versions of the *IECC*.[8]

Broad Support for 2021 IECC Improvements

Of course, some updates to the model energy codes are more noteworthy than others. The 2021 *IECC*, in particular, represents a considerable step forward. Like previous versions of the *IECC*, it was developed with the direct input of the nation's leading architects, building code officials, builders, manufacturers, environmental groups, and sustainability experts in a consensus-based code development process.

During this process, the efficiency improvements proposed for the 2021 *IECC* were endorsed by a broad range of organizations, including mayors, code officials, state energy officials, sustainability directors, and other governmental representatives from every region of the U.S. The U.S. Conference of Mayors unanimously adopted a Resolution endorsing improvements that would achieve a 10% improvement in the 2021 IECC, finding that:

> "… **building energy codes, by setting minimum efficiency requirements for all newly constructed and renovated residential, multi-family, and commercial buildings, provide measurable and permanent energy**

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[6] 2018 Act Concerning Climate Change Planning and Resiliency, Public Act No. 18-82 (2018), *available at* https://www.cga.ct.gov/2018/act/pa/2018PA-00082-R00SB-00007-PA.htm.

[7] *See* Governor's Council on Climate Change, *Building a Low-Carbon Future for CT, GHG Reduction Strategies and Recommendations* at 35 (Dec. 2018) (emphasis added), *available at* https://portal.ct.gov/DEEP/Climate-Change/Climate-Change.

[8] For an estimate of energy and carbon savings associated with the latest model energy codes, download the Building Energy Codes Emissions Calculator at https://www.imt.org/resources/building-energy-codes-emissions-calculator/.

savings and carbon emissions reductions over the century-long life spans of these buildings …"[9]

The 2021 *IECC* is the result of voting by governmental members who participated directly in the ICC process. These members voted in record numbers to improve almost every aspect of the *IECC*, paving the way for a more efficient, more sustainable future.

The 2021 *IECC* contains reasonable and significant energy-saving and carbon-reducing improvements for the entire building, including:

- Improved building envelopes, providing year-round comfort and energy savings for occupants;
- Improved requirements for verification, certificates, and other consumer protections;
- More efficient mechanical and lighting systems and automated controls designed with occupant health and safety in mind;
- Additional flexibility for builders and design professionals to optimize their design choices without reducing efficiency;
- Improved resilience, protecting occupants from environmental and climate-related risks and helping protect the investment of building owners; and
- A framework for jurisdictions to customize efficiency and net-zero requirements to adapt the *IECC* to meet energy and climate goals.

Delaying the adoption of potential efficiency improvements in the energy code could also have significant long-lasting negative consequences. Buildings constructed today are designed to last 70 years or more, and the vast majority of features that affect efficiency will be chosen and set in place at construction. The failure to grasp the opportunity to build more efficient buildings at the outset is a tremendous loss; any delay in adoption will result in the construction of buildings with less efficiency, a condition that will last for many years and possibly for the life of the buildings. For many families, a home is often the largest single investment, and it is critical that each new home provide comfort, resilience, and energy savings from day one. Likewise, the owners and occupants of commercial buildings depend on the state to regulate buildings in a way that optimizes energy and cost savings and that will be consistent with Connecticut's long-term energy and climate goals. The 2021 *IECC* provides a consensus-driven, adaptable blueprint for Connecticut's future.

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[9] *See* U.S. Conference of Mayors, *Meeting Mayors' Energy and Climate Goals by Putting America's Model Energy Code on a Glide Path to Net Zero Energy Buildings by 2050*, USCM Resolution 59 (July 1, 2019) (emphasis added), *available at* https://energyefficientcodes.org/wp-content/uploads/2019-07-1-Putting-the-*IECC*-on-a-Glide-Path-to-Net-Zero-Energy-Buildings-by-2050.pdf.

Conclusion

RECA's members and supporters have been involved in energy code development and adoption for over twenty years, and we offer our assistance and experience as you work to maximize energy efficiency in residential and commercial buildings. Please contact us if you have any questions or would like to discuss how RECA can be of assistance.

Sincerely,

Eric Lacey
RECA Chairman

RECA is a broad coalition of energy efficiency professionals, regional efficiency organizations, product and equipment manufacturers, trade associations, and environmental organizations with expertise in the development, adoption, and implementation of building energy codes nationwide. RECA is dedicated to improving the energy efficiency of homes throughout the U.S. through greater use of energy efficient practices and building products. It is administered by the Alliance to Save Energy, a non-profit coalition of business, government, environmental and consumer leaders that supports energy efficiency as a cost-effective energy resource under existing market conditions and advocates energy-efficiency policies that minimize costs to society and individual consumers. Below is a list of RECA Members that endorse these comments.

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