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December 9, 2022

U.S. General Services Administration
Public Buildings Service Office of Acquisition Management
Acquisitions Services Division
1800 F Street, N.W.
Washington, DC 20405

Via SAM.gov

Re: Comments of the International Code Council on GSA and DOE's joint Request for Information for Emerging Technologies for Net-Zero Carbon Buildings, Green Proving Ground Program (Notice ID: FY23RFI1011122)

The International Code Council (ICC) is a nonprofit organization of roughly 600 employees, driven by the engagement of its more than 63,000 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 General Services Administration (GSA) relies on the I-Codes including the International Green Construction Code (IgCC) as the basis for its P100 design requirements. The Department of Energy (DOE) have also acknowledged the significant role of modern energy codes in achieving climate and decarbonization goals by unlocking over $1B in energy code funding through the Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act (IRA). We applaud the Federal Government Agencies' efforts to address the impacts of the buildings it constructs and leases. The Code Council is dedicated to providing the building industry with the tools necessary to realize safety, sustainability, and resilience goals. This includes achieving decarbonization goals through the effective use of emerging greenhouse gas (GHG) reduction technologies.

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 International Energy Conservation Code (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 is therefore positioned to support the achievement of the Biden-Harris Administration's goal to achieve net-zero emissions economywide by 2050.

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Contained in the framework, the Board of Directors approved formation of an Energy and Carbon Advisory Council. The Advisory Council is made up of leaders from a broad cross-section of the economy whose policy and economic experience can inform our codes and standards development efforts and other activities. The Advisory Council is positioned to provide recommendations to the Board of Directors on a wide spectrum of topics including priorities for the advancement of the International Energy Conservation Code (IECC), energy efficiency and GHG reduction resources, and other solutions that can help meet the individual goals and needs of governments, the building industry and other market actors including the finance sector.

Recognizing the need for a coordinated and deliberate approach to decarbonization, in September, 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 communities need to realize their climate-related goals.

While we recognize this RFI is focused specifically on the availability of emerging technologies to drive net-zero buildings and decarbonization in the built environment, we wanted to provide GSA and DOE with information that can support the effective selection of such technologies and best practices.

The IECC has made significant progress in advancing efficiency. The 2021 IECC represents a roughly 40% improvement in energy efficiency for buildings compared to the 2006 edition. DOE's final determination on the 2021 IECC found a 9.4% site energy savings improvement and an 8.7% reduction in carbon emissions for residential buildings relative to the 2018 version. The commercial provisions of the 2021 IECC (which includes multifamily buildings) provide a 12.1 percent improvement in site energy use and a 10.2 percent improvement in GHG emissions over the 2018 edition. The determination concluded that, on a national weighted average basis, the 2021 IECC-Commercial is 6.5% more efficient for site energy use and 3.3% more for energy costs than Standard 90.1-2019.

As evidenced by the billions of dollars allocated towards low-carbon materials in the IRA, not only is operational energy an important component to addressing decarbonization of buildings, but embodied carbon and energy also play a significant role.

The IgCC provides a holistic approach to addressing sustainability—including through materials and energy efficiency and water conservation. The IgCC already includes measures in Chapter 9 on the carbon impacts of materials and the use of environmental product declarations (EPDs) and life cycle analysis. We commend GSA for its recognition of the IgCC as a valuable tool in advancing sustainability and encourage the agency to leverage the provisions in Chapter 9 as it sets its materials related policies.

The Code Council has also begun the development process for an American National Standard to assess carbon emissions across the entire building life cycle. ASHRAE/ICC Standard 240P – *Evaluating Greenhouse Gas (GHG) and Carbon Emissions in Building Design, Construction and Operation,* will provide a whole life carbon approach to support emissions reductions in buildings. The standard will

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establish how to measure and verify the GHG and carbon emissions of a building, or group of buildings, over the entire life cycle. The goal is to provide consistent procedures and data to be referenced by policies, codes, and other standards that address new and existing building performance. The Code Council is engaging organizations both in the U.S. and internationally to assure the standards are broadly applicable and can support a global approach. Work will get underway later this year for a target completion in 2025.

In addition to the energy impacts of products, their safety and ability to deliver other important performance attributes, as outlined in the building code or owner's design requirements, is essential. Environmental product declarations (EPDs) are essential in understanding the environmental attributes of products. At the same time, product evaluation that ensures adherence to performance requirements contained in building codes provides assurance around other important attributes, including structural, mechanical, chemical, and other properties. Product evaluations examining these performance attributes help assure that new and newly formulated products do not compromise safety. For example, the ICC Evaluation Service (ICC-ES), an accredited provider of both EPDs and product evaluations, recently developed acceptance criteria for the evaluation of low-carbon alternative cements relative to code requirements, like compressive strength.

As GSA and DOE look to deploy new products, requiring both EPDs and product evaluation allows for streamlined approvals and assurance that necessary testing requirements have been fulfilled. A high-profile failure of DOE/GSA to promote innovative building products would have wide ranging detrimental consequences for the growth of this nascent sector. Setting an appropriate bar that ensure both safety and environmental performance is critical.

Additionally, ICC-ES serves as certifying body for both solar thermal and small wind generation products. All solar thermal and small wind products should be required to obtain certifications from the Solar Rating & Certification Corporation (SRCC) and Small Wind Certification Council (SWCC), respectively. Requiring certification for solar thermal and small wind products ensures their conformity with performance and safety standards and provides trusted third-party energy performance ratings for each. ICC, together with SRCC, publishes ANSI consensus standards for solar thermal collectors and systems. Most building codes in the U.S. require compliance with ICC/SRCC solar standards for safety, which is addressed in the SRCC certifications.

There is already significant precedence for the use of SRCC and SWCC certifications in Federal programs. The U.S. Internal Revenue Service (IRS) requires SRCC certification for performance of Solar Water Heating equipment under the Federal Residential Investment Tax Credit (§ 25D(b)(2)). SWCC certifications also help manufacturers meet the Federal Investment Tax Credit requirements for small and medium wind turbine systems in accordance with AWEA 9.1 Small Wind Turbine Standard and IEC 61400 standards. In addition, the ENERGY STAR Residential Water Heater Specification also requires SRCC OG-300 certification to qualify for ENERGY STAR domestic solar water heater certification. The Department of Housing and Urban Development also references SRCC standards used in the OG-300 certification program in their Use of Materials Bulletin for the Building Products Standards and Certification Program. Lastly, the U.S. Department of Agriculture recognizes SRCC certifications for solar

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thermal products and SWCC certification for small wind turbines to comply with some of the requirements for funding under the Rural Energy for America Program (REAP).

The Code Council strongly encourages GSA and DOE to consider these outlined solutions as mechanisms to support the Green Proving Ground Program.

We look forward to continued work with GSA and DOE to improve the performance of the federal building stock.

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

Sincerely,

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