Bipartisan Infrastructure Law (BIL): Request for Information
Resilient and Efficient Codes Implementation (RECI)
DE-FOA-0002755

DATE: April 12, 2022
SUBJECT: Request for Information (RFI) and Public Workshop Announcement

Description

This Request for Information (RFI) is being issued by the US Department of Energy's (DOE) Building Energy Codes Program, on behalf of the Office of Energy and Renewable Energy (EERE) Building Technologies Office (BTO). The intent of this RFI is to obtain public input regarding the solicitation process and structure of a potential DOE Funding Opportunity Announcement (FOA) to fund sustained cost-effective implementation of building energy codes, in accordance with the Infrastructure Investment and Jobs Act.[1] This will be referred to throughout the document as the Resilient and Efficient Codes Implementation (RECI) FOA. Specifically, this RFI seeks input on:

- Energy Code Implementation Criteria and Requirements for Key Topic Areas
- Advanced Energy Codes and Building Resilience
- Methods to Support Sustained State Energy and Building Resilience Code Implementation
- Funding, Partnerships, Eligible Entities, and Evaluation Criteria
- Energy and Environmental Justice (EEJ) Priorities

Information collected from this RFI will be used by DOE for planning purposes to develop a potential FOA. The information collected will not be published.

A public workshop to gather additional input on this potential FOA will be held on April 27, 2022. Additional information on the public workshop is available at: https://www.energycodes.gov/RECI-codes-workshop.

Background

On November 15, 2021, President Joseph R. Biden, Jr. signed the Infrastructure Investment and Jobs Act (Public Law 117-58), also known as the Bipartisan Infrastructure Law (BIL). The BIL is a once-in-a-generation investment in infrastructure, which provides the backbone for a more sustainable, resilient, and equitable economy through enhancing U.S. competitiveness in the

[1] Infrastructure Investment and Jobs Act, Public Law 117-58 (November 15, 2021), Subtitle B – Buildings, Section 40511 – Cost-Effective Codes Implementation for Efficiency and Resilience. https://www.congress.gov/bill/117th-congress/house-bill/3684

world, diversifying regional economies to include supply chain and manufacturing industries, creating good union jobs, and ensuring stronger access to these economic benefits for underserved communities. The BIL appropriates more than $62 billion to DOE to ensure the clean energy future delivers true economic prosperity to the American people by:

- Investing in American manufacturing and workers, including good-paying jobs with the right to join a union, and effective workforce development to upskill incumbent and dislocated workers.
- Expanding access to energy efficiency and clean energy for families, communities, and businesses.
- Delivering reliable, clean, and affordable power to more Americans.
- Building the technologies of tomorrow through clean energy demonstrations.

This effort also provides a historic opportunity to advance building energy codes for efficiency and resilience in states and local jurisdictions throughout the United States. As outlined in *Section 40511. Cost-Effective Codes Implementation for Efficiency and Resilience,* $225 million has been appropriated over the next five (5) years, encompassing fiscal years (FYs) 2022 through 2026, to be made available to an eligible entity (i.e., relevant state agency) - or an organizational partnership including an eligible entity - through a competitive bid process. The overall goal is to provide support to States that will "enable sustained cost-effective implementation of updated building energy codes." This RFI seeks to gather input from all stakeholders on the characteristics of that potential RECI FOA.

In the Energy Policy Act of 1992 (Pub. L. 102–486 (Oct. 24, 1992)), Congress recognized the important role of state and local governments in realizing the benefits of energy codes by directing DOE to offer technical assistance and financial support to advance the adoption and effective implementation of building energy codes through amendments to Title III of the Energy Conservation and Production Act (See 42 U.S.C 6832 *et seq.*).[2] Section 40511 of the BIL amends this Act by providing additional funding to build on a long history of the U.S. DOE Building Energy Codes Program (BECP) providing research and analysis, direct technical assistance, and competitive funding opportunities to support the development, adoption and implementation of building energy codes at the national, state and local level.

[2] http://uscode.house.gov/view.xhtml?hl=false&edition=prelim&req=granuleid%3AUSC-prelim-title42-section6833&num=0&saved=%7CKHRpdGxlOjQyIHNlY3Rpb246NjgzMSBlZGl0aW9uOnByZWxpbSk%3D%7C%7C%7C0%7Cfalse%7Cprelim

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Research, analysis and field verification have continually demonstrated that building energy codes provide a significant return on investment to building owners, homeowners, and residents when regularly updated and effectively implemented at the state and local level.[3] The latest model codes, the 2021 International Energy Conservation Code (IECC) and ANSI/ASHRAE/IES Standard 90.1-2019, represent the most up-to-date minimum energy-efficient design and construction practice requirements available to states and jurisdictions to cost-effectively reduce building energy use, utility costs, and greenhouse gas emissions. According to the most recent DOE determination, the latest national model codes will save 4.7% and 9.4% in site energy savings and 4.3% and 8.7% in energy cost savings for commercial and residential building owners as compared to ANSI/ASHRAE/IES Standard 90.1-2016 and the 2018 IECC, respectively.[4][5] Figure 1 shows historical energy code improvements over time.

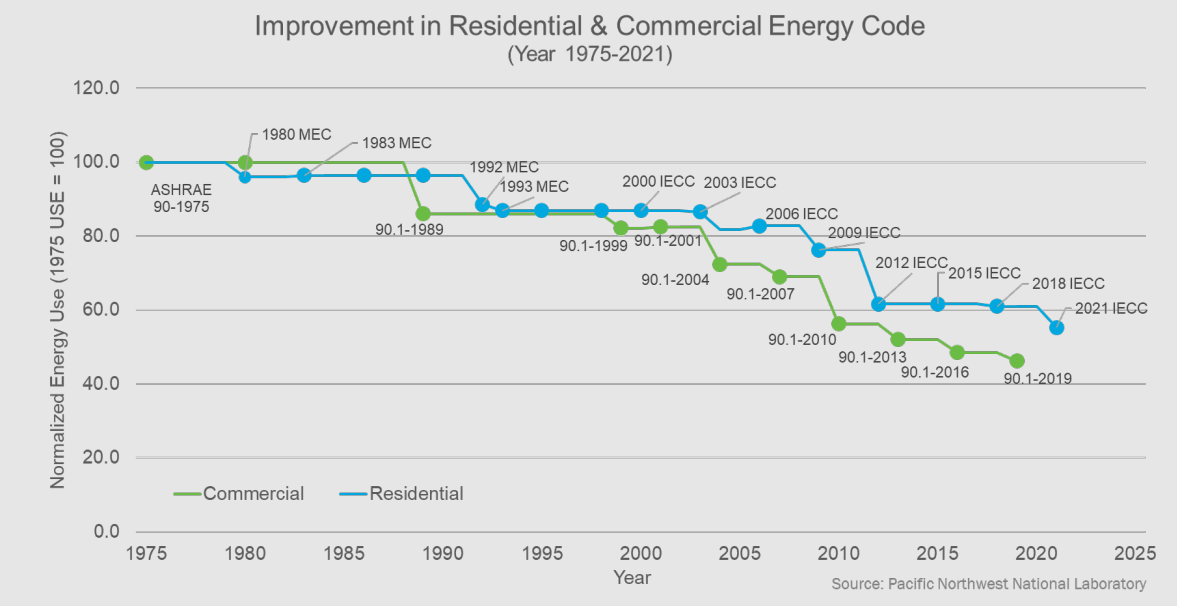

Figure 1 *Model residential and commercial energy codes continue to improve, due to ongoing efforts to improve building construction through higher efficiency windows and walls, lighting, HVAC, and other components and practices.*

[3] U.S. DOE Building Energy Codes Program. National and State Level Energy Code Analyses: https://www.energycodes.gov/national-and-state-analysis

[4] Determination of Energy Savings for ANSI/ASHRAE/IES Standard 90.1-2019, https://www.regulations.gov/document/EERE-2020-BT-DET-0017-0010

[5] Determination of Energy Savings for the 2021 International Energy Conservation Code (IECC), https://www.regulations.gov/document/EERE-2021-BT-DET-0010-0006

The energy code is just one of several types of building codes that help contribute to the overall health, safety, efficiency, and long-term resilience of buildings. For example, continued improvements in the fire code help ensure the latest fire saving measures and technologies are incorporated into building construction and design to protect building occupants during a fire. One key area where energy codes work in concert with these other codes like fire, mechanical, and plumbing to improve buildings is by providing resiliency benefits. These benefits take two main forms: passive survivability and grid flexibility. Passive survivability enables buildings to maintain safe indoor conditions for occupants in the event of an extended loss of energy or power. Energy code measures like high efficiency windows and wall insulation, while helping to save building owners money on utility bills, can also greatly reduce heat loss in a building (i.e., allowing it to remain warm or cool longer) which helps ensure the comfort and safety of occupants until power and energy are restored. Similarly, grid flexibility measures can help decrease the risk of power system failures in the first place. Distributed energy resources (DERs) and grid-flexible appliances, like grid-connected water heaters or thermal and battery storage technologies, can be managed by utilities to reduce energy consumption during times of peak demand, potentially helping to avert major power outages on the grid.

The current state of adoption of residential and commercial building energy code varies across the country as displayed in Figure 2, and extensive savings can be gained from states updating their energy and other building codes to more recent versions along with integrating code approaches such as stretch codes modules and building performance standards. As States consider updates to their building energy codes, DOE emphasizes the importance of developing sustainable plans to support such updates over time and including resiliency measures. For example, if a state were to update its residential code that is currently based on the 2009 IECC to the 2021 IECC, renters and homeowners of new residential units in the state would see an average annual energy savings of $687 (28.5%) and a life-cycle savings of over $15,000. This update would also save over $930 million in energy costs, approximately 14 million in CO_2 emissions, and create nearly 8,000 jobs across the State over the next 30 years.

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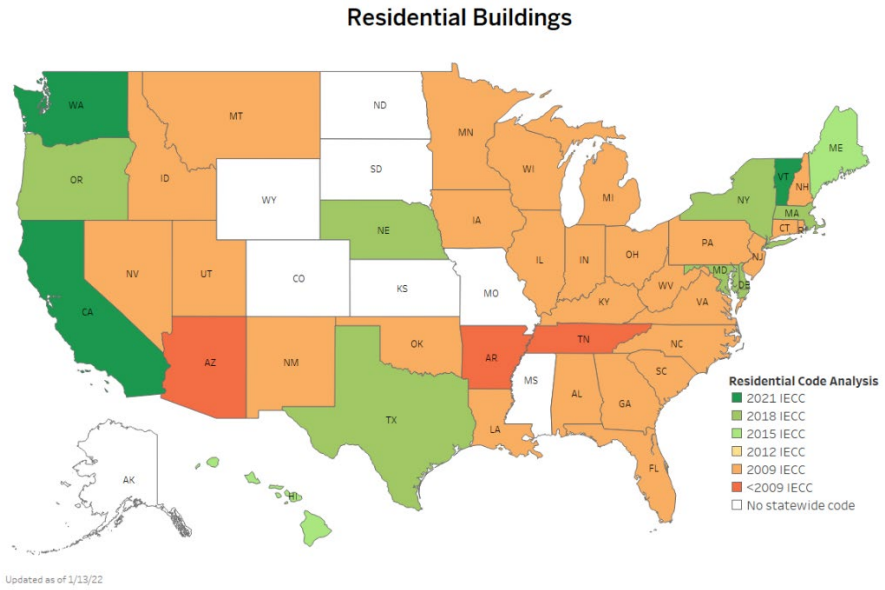

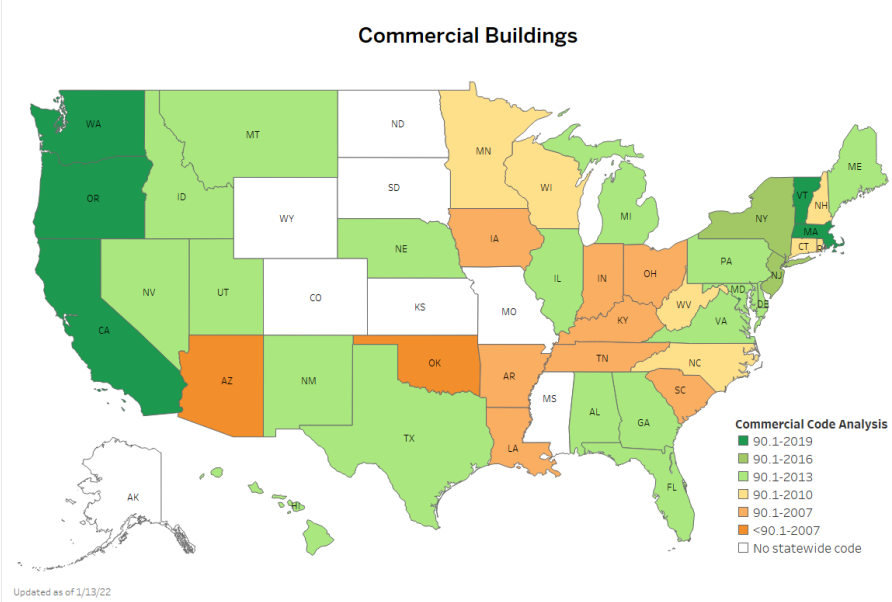

***Figure** 2 Status of Residential (top) and Commercial (bottom) State Energy Codes (as of 1/13/22). This map is derived from a quantitative EUI analysis of each state energy code to determine each state's energy index. The energy index is then compared to the energy indices of the latest six iterations of the IECC-R and IECC-C to determine a code category by which to label each*

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state.[6] Note that the energy index may not correspond with the actual version code adopted by the state, but instead indicates which code version the state code is most equivalent to, after considering amendments.

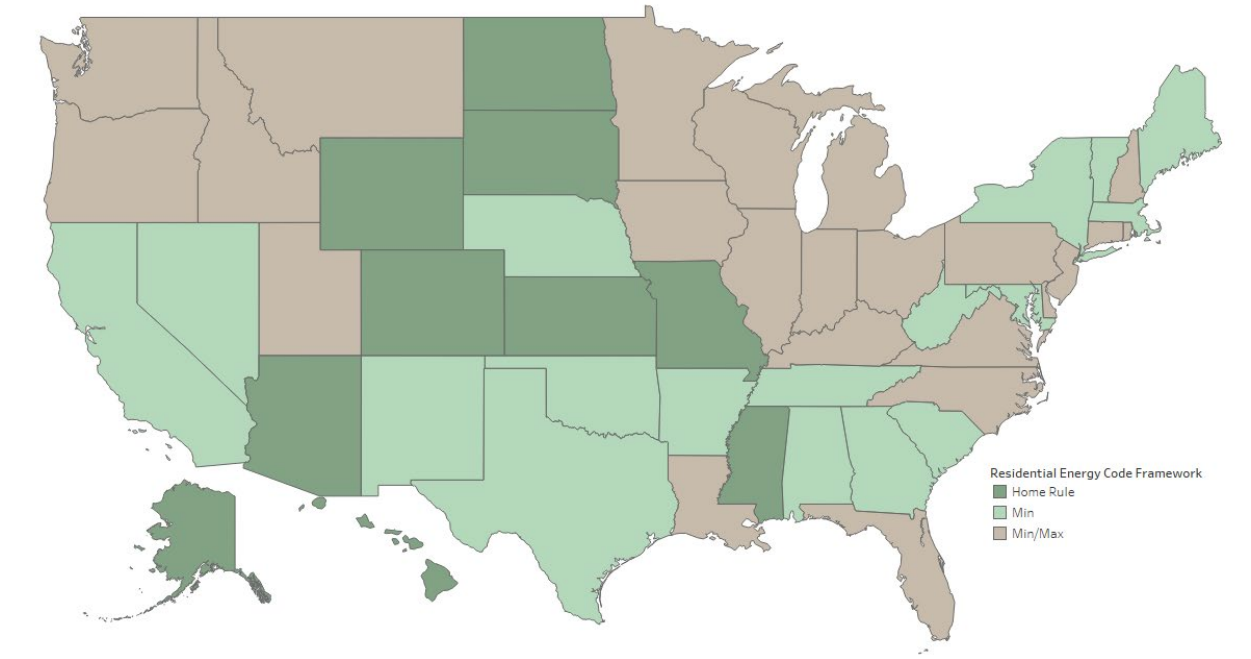
In addition to code adoption, building energy code enforcement and compliance helps ensure that the energy efficiency, cost savings, health, and resilience benefits associated with each adopted code reach the consumer. As demonstrated through a series of pilot residential energy code compliance field studies, significant energy, cost, and GHG emissions can be saved through improved rates of compliance by implementing education, training, compliance tools and other innovative solutions. The three-phase pilot studies, 1) assessed overall compliance trends and determined the total potential savings due to non-compliance, 2) administered targeted education and training on key non-compliant measures, and 3) determined the level of improved compliance and associated savings from the education and training program. Findings across seven states demonstrated that potential lost savings from non-compliance was high ($18 million annually) and targeted education and training programs are effective at improving compliance rates and thereby reducing energy, costs and GHG emissions. Cumulatively, education and training in these states provides an estimated savings of over $3.5 billion, and a reduction in over 100 MMT of CO_2e, over 30 years.[7] Since these initial studies, over a dozen states have subsequently implemented residential energy code field studies to understand compliance trends and provide targeted energy code training.

The BIL energy code provision will help provide critical technical and financial resources to states and their partners to support sustained energy and other building code adoption and implementation. The positive impacts from the advancement and effective implementation of energy codes and building energy policies at the state and local level cannot be overstated. Model energy codes are projected to deliver $138 billion energy cost savings, 900 MMT of avoided CO_2 emissions and 13.5 quads of energy in cumulative benefits to residents across the country from 2010 to 2040.[8] Funding provided through a potential Resilient and Efficient Codes Implementation FOA will help ensure the known benefits of building codes, including energy and resilience provisions can become a reality across the United States, while supporting sustainable building energy policies over time.

In addition to states, city and local governments are critical partners in the advancement of building codes. For example, local governments play a key role in states without a statewide energy code, commonly referred to as home rule states. These states, which include states like

[6] More information on BECP's state energy code analysis can be found at https://www.energycodes.gov/status
[7] More information on pilot field studies can be found at https://www.energycodes.gov/residential-energy-code-field-studies
[8] https://www.energycodes.gov/impact-analysis

Alaska, Arizona, and Colorado, rely on their city and local governments to develop, adopt, and enforce their own energy codes. In 2017, Boulder, CO adopted a stretch code requiring new buildings to meet net zero emission by 2031. [9] In addition, local governments in some states with statewide energy codes can adopt energy codes that exceed the state's code, including in states like California, Texas, Georgia, and Massachusetts. Cities like Austin, TX and Nashville, TN have chosen to adopt energy codes that exceed the statewide requirements. In other cases, states like California and Massachusetts develop an optional stretch code that goes well beyond the state's minimum energy code, which communities like Cambridge, MA or Santa Monica, CA have modified and adopted for their own use. More detailed information on municipal code adoption and state allowances and restrictions are detailed in Figure 3.



[9] https://betterbuildingssolutioncenter.energy.gov/bca/residential-codes-standards#:~:text=Boulder%20also%20adopted%20a%20Net-Zero%20Energy%20Code%20in,the%20first%20state%20to%20adopt%20a%20%E2%80%9Cstretch%20code%E2%80%9D.

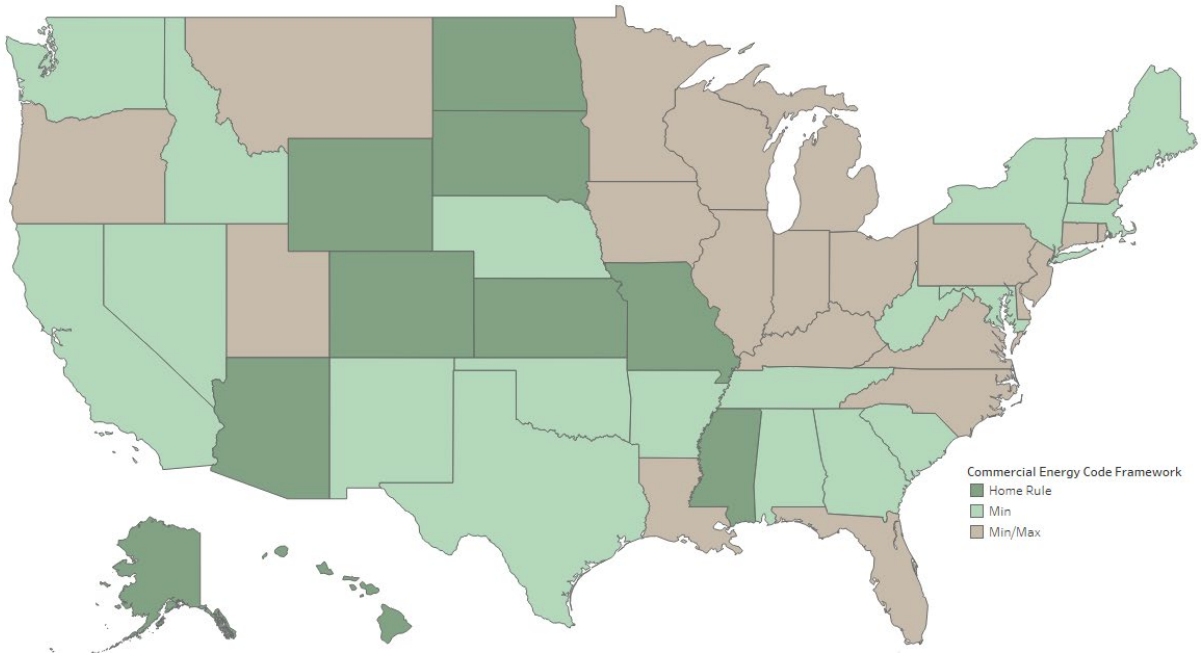


***Figure** 3 Status of State Residential (top) and Commercial (bottom) Energy Code Framework shows how energy codes are structured across the U.S. States in dark green have no statewide code (home rule), states in light green set a minimum code and allow municipalities to exceed it (min), and states in light brown set a minimum code which cannot be exceeded by municipalities (min/max).*

Strengthening prosperity – by expanding good, safe union jobs and supporting job growth through investments in domestic manufacturing – are key goals set by President Biden, discussed in depth in his Executive Orders on Ensuring the Future Is Made in All of America by All of America's Workers (EO 14005), Tackling the Climate Crisis at Home and Abroad (EO 14008), Worker Organizing and Empowerment (EO 14025), and Promoting Competition in the American Economy (EO 14036). The *Section 40511. Cost-Effective Codes Implementation for Efficiency and Resilience* will support the creation of good-paying jobs with the free and fair

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choice to join a union, the incorporation of strong labor standards, and high-road workforce development, especially registered apprenticeship and quality pre-apprenticeship.[10, 11]

Section 40511. Cost-Effective Codes Implementation for Efficiency and Resilience

Section 40511 of the BIL provides direction to "enable sustained cost-effective implementation of updated building energy codes." It defines state agencies, including, but not limited to, a state building code agency, state energy office or tribal energy office as entities eligible to apply for this competitive funding. And, it prioritizes state agencies that apply as part of a partnership. Partnerships include a team comprised of a state agency partnered with relevant organizations, including, but not limited to, local governments (e.g., cities and counties), equity institutions, regional partnership organizations, building trade associations, academic and other research institutions, energy efficiency program administrators, environmental advocates, builders and other design and construction professionals, building code agencies, and workforce training organizations. In addition, a partnership could encompass a regional team

[10] Registered Apprenticeship Program (RAPs) are a proven model of job preparation, registered by DOL or a DOL-recognized State Apprenticeship Agency (SAA), which employ workers and combine paid On-the-Job Learning (OJL) (also referred to as On-the-Job Training (OJT)) with Related Instruction (RI) to progressively increase workers' skill levels and wages. RAPs are also a business-driven model that provide an effective way for employers to recruit, train, and retain highly skilled workers. RAPs allow workforce partners, educators, and employers to develop and apply industry standards to training programs, thereby increasing the quality of the workforce and workforce productivity. RAPs offer job seekers immediate employment opportunities that pay sustainable wages and offer advancement along a career path as they complete their training. Registered Apprentice completers receive industry-recognized certificates of completion leading to long-term career opportunities. For more information on RAPs, please visit www.apprenticeship.gov.

[11] The US Department of Labor has developed a framework for Quality Pre-Apprenticeship Programs:

- Training and curriculum based on industry standards, approved by the Registered Apprenticeship sponsor with whom the pre-apprenticeship program is partnering.
- Strategies that increase Registered Apprenticeship opportunities for disadvantaged and under-represented individuals that will allow the participant to meet the entry requirements for a Registered Apprenticeship program upon completion. These involve:
  - » Strong recruitment efforts for populations under-represented in Registered Apprenticeship programs
  - » Educational and pre-vocational services that prepare participants to meet the minimum qualifications for entry into a Registered Apprenticeship program
  - » Activities introducing participants to Registered Apprenticeship programs and assistance in applying for those programs
- Access to support services that help participants remain in the program (such as childcare, transportation, counseling, and ongoing career services).
- Collaboration with Registered Apprenticeship sponsors to promote apprenticeship to other employers as a quality approach to attain and retain a skilled workforce.
- Hands-on experience that simulates the work performed in the Registered Apprenticeship, while observing proper supervision and safety protocols.
- Formal agreements, wherever possible, with Registered Apprenticeship sponsors for entry into Registered Apprenticeship programs upon successful completion of the pre-apprenticeship program.

For additional information on pre-apprenticeship, please review USDOL's Training and Employment Notice 13-12.

with similar policy objectives that are comprised of a state, regional support organizations, various local governments from one state or multiple states, and supporting organizations trying to achieve a common goal. Partnerships could also encompass local community organizations that can help directly connect States to underserved communities, such that those in need are directly benefiting from updated building energy codes and better buildings. As described in Section 309(b), under this law, DOE shall award funding to, "eligible entities to enable sustained cost-effective implementation of updated building energy codes." An updated building energy code includes any amendment or code update resulting in increased energy efficiency as compared to the previously adopted code. States are situated differently with regards to their current building energy code and their opportunities for code updates. DOE plans to grant awards that enable code updates that result, "in increased efficiency compared to the previously adopted building energy code" and may include, "any update made available after the existing building energy code, even if it is not the most recent updated code available." Proposed activities by states or state partnerships in their efforts to update and implement new energy and other building codes will be considered based on an established set of priority criteria. Such criteria will likely include:

- Energy savings resulting from the building energy code updates
- Established need by an eligible entity for assistance
- Demonstrated capacity to carry out the project
- Ability to positively impact building and grid resilience, occupant safety and health, and the natural environment
- Long-term sustainability of measures and savings
- Capacity to assess, track, and measure project-related energy savings impacts
- Ability to address DOE Energy and Environmental Justice (EEJ) priorities

In addition to the above set of criteria, applications with strong partnerships representing a diverse group of stakeholders and communities are expected to be given priority.

The law also outlines example activities and related topics, such as zero energy buildings, resilience, health, water conservation, and economic and environmental benefits, to be considered by project teams and funders. As described in Section 309(d), example activities include:

- Developing a state and/or regional training partnership;
- Collecting and disseminating data of energy code measures, compliance pathways, key metrics, and technologies used;
- Facilitating highly effective codes implementation, including measuring compliance; and
- Addressing energy code implementation needs in rural, suburban, and urban areas.

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- Implementing updates in energy codes for 1) new residential and commercial buildings (including multifamily buildings) and 2) additions and alterations to existing residential and commercial buildings (including multifamily buildings).

Purpose

The purpose of this RFI is to solicit feedback from state and local government agencies, building officials, contractors, designers, builders, other industry representatives, community organizations, academia, research laboratories, and other stakeholders on issues related to building energy policy implementation. EERE is specifically interested in information on the Resilient and Efficient Codes Implementation FOA goals and design. A description of this potential RECI FOA and key questions posed in this RFI are outlined in the following sections. **This is solely a request for information and not a FOA. EERE is not accepting applications.**

Draft FOA Topic Areas

Based on this clear direction from the BIL, DOE plans to make a significant investment in technical assistance activities with the potential to maximize energy, emissions, and cost saving opportunities through the advancement and effective implementation of energy codes and related building energy policies in states and localities throughout the United States. This financial investment will be administered through a potential FOA. DOE's current thinking on how to develop and administer this potential RECI FOA is included in this section for which DOE is seeking comment.

To achieve the intent of section 40511, DOE intends to organize a potential Resilient and Efficient Codes Implementation FOA in six distinct topic areas: 1) adoption, 2) workforce development, 3) implementation and compliance, 4) innovative approaches, 5) energy equity, and 6) partnerships. Each topic area is briefly described below.

Adoption

The development and subsequent adoption of an updated building energy code and related building energy policies in states and localities throughout the United States is perhaps the most important foundational step to ultimately realizing the energy, cost, and emissions benefits of codes. The responsibility for building energy code policies falls to state and local governments. Even though DOE makes a determination that the latest version of the model energy codes – IECC and ASHRAE 90.1 – saves energy and triggers a process of reviewing at the state level, each State makes a determination on whether it will adopt the code outright, decide not to adopt the code, or adopt the code with amendments specific to that state. Cities

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and municipalities also frequently undergo the same process, especially in home rule states that lack a statewide code and in states where cities may exceed the statewide code. During the adoption process, cities and states often need help understanding proposed code changes and the potential impacts when adopting a code for their unique region, climate type, and other factors. DOE believes technical assistance associated with building energy code updates and sustainable plans surrounding building energy code policies for sustainable updates over time are essential.

Examples of potential activities under this topic area may include, but are not limited to, providing direct technical support, training or resources to an adopting state or local agency, conducting impact studies around code updates and amendments for specific states or jurisdictions, and aligning code updates with broader state and local energy, sustainability, or climate change goals.

Workforce Development

DOE intends for workforce development to be an important focus of this potential RECI FOA. A robust workforce development and energy code training program is integral to the effective implementation of energy codes at the state and local levels, delivering energy savings and related benefits to building owners and renters, and the continued advancement of construction practices around the country. The current state of the workforce necessary to build a decarbonized future has been rapidly declining over the years, and this trend has been further exacerbated by the COVID-19 pandemic. According to 2020 and 2021 data, the median age of professionals in the construction industry is 42.5[12] and the median age for building inspectors is 49.[13] Additionally, the projected rate of growth for building inspectors is -3% between now and 2030[14], indicating more inspectors will leave the field without being replaced. The need to address this aging workforce problem and invest in the workforce of the future is evident and is critical to effectively implementing new energy codes. In tandem with bringing in new professionals, the current workforce requires educational opportunities to keep up with the latest code requirements in their states and learn about new construction practices and building technologies.

According to a recent report, it is anticipated that the construction industry will see nine shifts that will fundamentally change the construction ecosystem, which range from productization or

[12] https://www.bls.gov/cps/cpsaat18b.htm
[13] https://datausa.io/profile/soc/construction-building-inspectors#:~:text=The%20median%20age%20of%20Construction,than%20than%20their%20Female%20counterparts.
[14] https://www.bls.gov/ooh/construction-and-extraction/construction-and-building-inspectors.htm

modular construction to increasing sustainability considerations over the next 5 to 20 years,[15] while at the same time, needing to overcome the 3.8 million unit housing supply shortage and continue to plan for future demand.[16] To meet this ever increasing construction demand, and to incorporate needed advancements in construction practices, significant investment is needed in sustained workforce development programs.

Examples of potential activities under this topic area may include, but are not limited to, a statewide or local professional energy code training program, university, and community college or apprenticeship programs and tools and resources to support energy efficient and advanced construction practices, aligned with the building energy policies being pursued by states and local governments across the country.

Implementation and Compliance

Following the adoption of a new energy code, implementation and compliance activities at the local, state, regional, and national level are vital to achieve stated energy, climate, and resilience goals Activities like energy code field studies can help a state assess its energy savings from codes, energy code compliance, and general trends in construction practices to better understand the impact of newly constructed buildings.[17] Field studies can also help inform training programs by identifying specific areas where code compliance could be improved, which helps keep a state's workforce up to date with the latest code and construction practices. Understanding construction practices and trends within a state or jurisdiction can also inform long-term strategic planning. Strategic planning grounded by current trends can help identify a more focused set of strategies necessary to achieve local and state goals, such as the advancement of sustainability, resiliency and new technologies and construction practices in the built environment.

Examples of potential activities under this topic area may include, but are not limited to, development of code implementation plans, implementation of energy efficiency field studies, utility code support and engagement programs, and state and local implementation and compliance collaboratives.

[15] https://www.mckinsey.com/~/media/McKinsey/Industries/Capital%20Projects%20and%20Infrastructure/Our%20Insights/The%20next%20normal%20in%20construction/The-next-normal-in-construction.pdf

[16] http://www.freddiemac.com/research/insight/20210507_housing_supply.page#:~:text=As%20of%20the%20fourth%20quarter,target%20vacancy%20rate%20of%2013%25.

[17] https://www.energycodes.gov/energy-efficiency-field-studies

Innovative Approaches

Innovative approaches can continue to increase the energy savings, environmental and health benefits, and resiliency benefits from building energy codes. States and localities have long been considered laboratories where new ideas can emerge and be proved out for replication in other areas. There are currently many state and city examples of innovative approaches to increasing energy efficiency and improving the resiliency of the building stock as evidenced by President Biden's recently launched National Building Performance Standards (BPS) Coalition, where cities like St. Louis, Washington D.C., New York City, and others who have adopted a BPS can share best practices and guidance.[18] There is no shortage of innovative solutions to explore and potentially implement, and DOE intends to support innovative efforts of eligible entities with this potential RECI FOA topic area.

Examples of potential activities under this topic area may include, but are not limited to, establishing a circuit rider training program, introducing remote virtual inspection (RVI) practices,[19] and developing and implementing a performance-based energy code, a BPS in a new jurisdiction, and a green zoning ordinance or stretch energy code[20] that goes beyond the model energy codes.

Energy and Environmental Justice (EEJ)

There are many opportunities to increase representation and engagement with historically underrepresented and disadvantaged groups within energy code and building energy policy frameworks. From policy development, to adoption, to implementation, disadvantaged communities (DACs)[21] should be represented in every step of the process to help create more equitable outcomes. EEJ benefits will be a high priority as the BIL provisions are implemented. For the purposes of this RFI, DOE has identified the following non-exhaustive list of policy priorities as examples to guide DOE's implementation of Justice40[22] in DACs: (1) decrease

[18] https://www.whitehouse.gov/briefing-room/statements-releases/2022/01/21/fact-sheet-biden-harris-administration-launches-coalition-of-states-and-local-governments-to-strengthen-building-performance-standards/#:~:text=The%20inaugural%20Building%20Performance%20Standards,and%20Local%20Building%20Performance%20Standards.

[19] https://neep.org/sites/default/files/media-files/rvi_neep_meea_formatted.pdf

[20] A stretch energy code is a set of building standards or compliance requirements, more aggressive than the base code, that can be a voluntary alternative or locally mandated.

[21] The Justice40 initiative, established by E.O. 14008, states that 40% of the overall benefits of certain federal investments should flow to disadvantaged communities (DACs). The Justice40 Interim Guidance provides a broad definition of DACs (Page 2): https://www.whitehouse.gov/wp-content/uploads/2021/07/M-21-28.pdf

[22] The Justice40 Initiative states that 40% of the overall benefits of certain federal investments will flow to DACs, and those projects will have minimal negative impacts on communities with environmental justice concerns. The Justice40 Interim Guidance defines benefits as direct and indirect investments (and program outcomes) that positively impact disadvantaged communities and provides examples (Page 4): https://www.whitehouse.gov/wp-content/uploads/2021/07/M-21-28.pdf

energy burden;[23, 24, 25] (2) decrease environmental exposure and burdens;[26] (3) increase access to low-cost capital; (4) increase the clean energy job pipeline and job training for individuals;[27] (5) increase clean energy enterprise creation (e.g., minority-owned or diverse business enterprises); (6) increase energy democracy, including community ownership; (7) increase parity in clean energy technology access and adoption; and (8) increase energy resilience.

Examples of potential activities under this topic area may include, but are not limited to, development of equity-focused code language, studies to understand needs faced by DACs, innovative solutions to address split incentives, or the implementation of targeted E&T programs.

Partnerships

Partnerships are identified as a preference in Section 40511 in the BIL. Given the diverse set of stakeholders involved in energy code processes - whether the development, adoption, or implementation – effective, strategic partnerships are essential to making impactful and lasting change. With the fragmentated nature of energy code implementation, the creation of regional and national partnerships where information and resources can be shared freely and lessons can be learned in real time, may help close the information gap between administrators and practitioners alike in cities, states, and regions. DOE plans to emphasize the importance of strategic partnerships in a potential RECI FOA by funding activities that help foster, grow, and support this type of engagement.

Examples of potential activities under this topic area may include, but are not limited to, a national energy codes compliance collaborative, a regional energy code implementation forum, and a consortium of energy code training programs.

Desired Outcomes

Funding provided through the BIL and administered through a potential Resilient and Efficient Codes Implementation FOA will be instrumental in establishing support needed to effectively implement updated energy codes and establish base-level energy savings critical to achieving

[23] The Initiative for Energy Justice https://iejusa.org/glossary-and-appendix/#glossary_of_terms
[24] DOE's LEAD tool illustrates energy burden in U.S. https://www.energy.gov/eere/slsc/maps/lead-tool
[25] Drehobl, A., Ross, L., and Ayala, R. 2020. How High are Household Energy Burdens? Washington, DC: ACEEE.
[26] Tessum, C., et al., 2019. Inequity in consumption of goods and services adds to racial–ethnic disparities in air pollution exposure. Proceedings of the National Academy of Sciences.
[27] DOE's US Energy & Employment Jobs Report (USEER), https://www.energy.gov/us-energy-employment-jobs-report-useer; Department of Labor, Civilian Labor Force by Sex, https://www.dol.gov/agencies/wb/data/facts-over-time/women-in-the-labor-force

President Biden's bold commitment to achieve an economy-wide 50% reduction in greenhouse gas (GHG) pollution by 2030, and "deliver an equitable, clean energy future, and put the United States on a path to achieve net-zero emissions, economy-wide, by no later than 2050."[28] The building sector accounts for over 40% of GHG emissions in the U.S. economy[29] and building energy codes provide the most cost-effective tool to achieve sustained energy, cost, and GHG emissions savings in the built environment.

As the primary stated goal in the BIL, DOE anticipates the possible resulting outcomes of a potential RECI FOA will increase the successful implementation of updated energy codes and related building energy policies in states and localities throughout the United States. In addition to that foundational goal, DOE anticipates that this funding will make significant progress in achieving the following long-term outcomes:

1. **Develop Next Generation Workforce**: Today's professional workforce is stretched thin and would greatly benefit from consistent and sustained workforce development programs designed to address the latest in energy codes, building science and construction practices, and advanced and grid-integrated technologies. It is anticipated that direct and dedicated funding to support robust education and training programs would result in a workforce equipped to take on the next set of challenges and opportunities in the construction sector.
2. **Facilitate Energy Code Updates**: States and jurisdictions have limited resources to adopt and effectively implement new energy codes. Dedicated funding to effectively implement energy code updates in a sustainable manner will likely result in the adoption of more recent energy codes, future energy code planning, and evaluation strategies at the state and local level to help further sustain regular energy code updates in the future. DOE understands there is not a one-size-fits-all approach to effectively and adopting building codes. However, DOE is interested in both sustained, longer-term approaches to policy adoption with respect to building energy codes as well as approaches that are replicable especially concerning innovative code approaches, addressing underserved communities, and capacity building.
3. **Advance New Policies and Tools**: With near-term workforce issues on the horizon, like a shortage of building code inspectors and lack of resources to support code enforcement, new tools and practices are needed to help ensure buildings achieve their potential. Technologies can help enable new practices like RVI to help extend the reach of building code inspectors. In addition, to help states and localities achieve the targets necessary to

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curb the most damaging impacts of climate change, innovative policies such as BPS and stretch energy codes will be critical in these efforts. Dedicated funding to provide this type of support will be instrumental in creating trusted pathways to utilize these tools on a wider scale.

4. **Increase Equity in Code Policy Plans**: The current processes by which national, state, and local energy codes are developed have historically been structured in a manner that does not directly address the needs of disadvantaged and marginalized communities. Incorporating equity and increasing energy code participation of underrepresented groups are key priorities for each funded project. This will help ensure building energy code development, adoption and implementation processes more directly account for energy equity and diversity in the built environment.
5. **Improve Energy Code Compliance:** As new codes go into effect, a concerted effort must be made to educate and train the workforce to increase rates of compliance and guarantee that the expected energy code benefits are realized by households and businesses alike. Enhanced collaboration through the development of state and/or regional training partnerships is specifically highlighted and prioritized in the BIL to support the implementation of updated energy codes. Robust training partnerships will provide the necessary infrastructure to educate and train on updated state energy codes and emerging energy code topics to foster widespread compliance, now and in the future.

Request for Information Categories and Questions

Category 1: Technical Requirements

1.1 How can a potential RECI FOA support a professional workforce that is trained on the latest codes, as well as skilled in advanced technologies, decarbonization, construction practices and building science that can be sustained over time? How should DOE prioritize training a new workforce entering the job market versus training the existing workforce on the latest in energy code and building construction trends?

1.2 How can DOE effectively support long-term state and local energy code compliance improvements (e.g., compliance tools, compliance training, etc.)? Are there any successful compliance improvement models that can be emulated? If so, what makes them successful?

1.3 How can a potential RECI FOA be designed to foster innovative approaches to code implementation, such as stretch codes, zero net-energy codes, and building performance standards? What key innovative approaches best support building energy

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code updates? What other applicable example activities should DOE mention for this topic area in a potential FOA?

1.4 How can innovative approaches that address existing buildings (e.g., BPS) complement and be better aligned with energy codes which primarily address new construction? Are there effective models that can be replicated? If so, what are these models and what makes them successful?

1.5 What should DOE include in a potential RECI FOA to encourage consideration of resilience aspects of energy codes, like passive survivability and grid resilience, in addition to energy and emissions savings?

Category 2: Supporting State Code Adoption

2.1 How should DOE prioritize code updates? More specifically, should updates to the model energy code be prioritized based on potential energy and/or carbon savings as compared to the current baseline within each state? How should DOE prioritize updating to a code more advanced than the current model code?

2.2 How should DOE ensure that States have implementation plans to sustain the adoption of model energy codes over time?

2.3 Since each funded project is intended to enable updated building energy codes, what should DOE consider to be "updated" codes? Should it include ongoing code updates and/or planned future code updates? How far in the future is it reasonable to consider code updates? Should in-process code updates be prioritized higher than planned updates?

2.4 How should DOE consider broader building code updates intended to address resilience in addition to energy as part of the prioritization process? How should DOE prioritize those code updates that include both energy and resilience measures?

Category 3: Partnerships, Eligible Entities, and Evaluation Criteria

3.1 What types of strategic partnerships should DOE emphasize that can help best address challenges facing states, local governments, and the broader industry in energy code implementation (e.g., network of states and local governments to enhance implementation, national energy codes collaborative to provide thought leadership on codes activities, etc.)?

3.2 To what extent should DOE prioritize partnerships between a state agency and other entities over sole applicants (which can only be a state agency)?

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3.3 How can DOE best reach local governments in its code development activities? Considering local governments would have to partner with a state in their application for a potential RECI FOA, how can DOE help encourage states to support interested local governments with local policy support, but also connecting with underserved communities at the local level?

3.4 What other considerations should be given to applicants (e.g., geographic distribution, rural vs. urban, traditional vs. new activities)? How can DOE ensure fair and representative distribution across key U.S. demographic areas?

3.5 What external non-project partners/stakeholders (e.g., tribal groups, state and local governments, state energy offices, equity, and environmental justice groups) will be critical to the success of a potential RECI FOA? What types of outreach and engagement strategies are needed to make sure these stakeholders are involved in the implementation of potential RECI FOA activities? Are there best practices for equitably and meaningfully engaging stakeholders?

Category 4: Funding and Period of Performance

4.1 Is a period of performance of 3-5 years reasonable? If not, what is appropriate and why?

4.2 What level of funding would be appropriate to achieve the draft objectives over a 3-to-5 year project period?

4.3 How can this funding best leverage other sources of funding from states, utility programs, and others? Should DOE prioritize projects that leverage other funding sources? How should the applicant's ability to leverage other funding sources be prioritized?

4.4 How could funding under other BIL provisions (e.g., Section 40109: State Energy Program or Section 40552: Energy Efficiency and Conservation Block Grant Program) be leveraged to maximize the impact of the codes BIL funding?

Category 5: Energy and Environmental Justice (EEJ) Priorities

5.1 What EEJ concerns or priorities are most relevant for this Resilient and Efficient Codes potential RECI FOA?

5.2 How can DOE incentivize partnerships with community partners (such as nonprofits), minority-owned businesses and significant engagement of HBCU/MSI/TCU partners?

5.3 What strategies, policies, and practices can this potential Resilient and Efficient Codes Implementation potential FOA deploy to support EEJ goals (e.g., Justice40)? How should these be measured and evaluated?

5.4 What measures should project developers take to ensure that harm to communities with environmental justice concerns are mitigated?

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5.5 How can applicants ensure community-based stakeholders/organizations (especially underserved communities) are engaged and included in the planning, decision-making, and implementation processes (e.g., including community-based organizations on the project team)?

5.6 How can DOE support meaningful and sustained engagement with relevant disadvantaged communities?

Category 6: Other

6.1 How should DOE prioritize projects that will be long-lasting and sustainable beyond BIL funding?

6.2 How should DOE track overall outcomes from this funding? What metrics should DOE request from each project team to better understand impacts?

6.3 Do any of the outlined criteria present limitations to emerging business models? Should other criteria be considered?

6.4 Please provide any additional information or input not specifically requested in the questions above that you believe would be valuable to help DOE develop a potential RECI FOA.

Category 7: Draft Application Requirements

As described in the BIL, in order to be eligible for funding, applications must:

- Be comprised of a team that is led by a state agency (e.g., State Building Department, State Energy Office, Tribal Energy office), or consists of a partnership between a relevant organization (e.g., Local building department, trade association, etc.) and a state agency;
- Include a team with qualifications and expertise to successfully perform the proposed activity; and
- Involve an activity which supports, or is directly tied to, an updated building energy code.

DOE is seeking feedback on the following key questions addressing the draft application requirements under development that could be used for implementation of the BIL funding:

7.1 Should the applicant be led by or include a team with a state agency with commensurate qualifications to successfully perform the proposed activity?

7.2 Should DOE only consider applications that contain a state or local code update, including energy or building?

7.3 How can applicants show sustained technical support for effective energy code implementation?

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7.4 Should DOE prioritize energy codes and building measures that provide long-term energy savings?

7.5 How should applicants implement procedures and tools to track and assess the benefits associated with each project?

7.6 How should DOE view applications that consider maximizing non-energy benefits such as building and grid resilience, occupant safety and health, water conservation, embodied carbon, and other environmental externalities?

7.7 Should DOE consider the applicants engagement with a robust group of stakeholders including, but not limited to, builders, contractors, architects, engineers, other design and construction professionals, as well as state and local governments, building officials, academia, research, consumer advocates and NGOs?

7.8 What types of buildings should applicants focus on, including new and/or existing residential, multifamily, and/or commercial buildings?

7.9 How should DOE view applications with innovative solutions to address energy and other inequities within building codes and relevant policies?

7.10 How can the applicants include meaningful engagement with all communities in the region, with a focus on disadvantaged communities, tribal communities and communities with environmental justice concerns, and communities facing the transition away from fossil fuel economies, as well as with labor unions and other key stakeholders as part of the application process?

In addition to the required and intended application specifications, DOE is seeking comment and feedback around these draft application priorities, including:

- Developing robust and long-lasting partnerships;
- Seeking out activities that result in significant and sustained energy, economic and environmental benefits;
- Adopting energy codes and other building energy policies with the largest potential impact;
- Having potential to be sustainable beyond BIL funding (i.e., without additional government funding), where applicable.
- Having a balance of factors including, but not necessarily limited to, the following:
  1. Climate
  2. Regions
  3. Community Type
  4. Scale (e.g., Regional, State, or Local)
  5. Assistance Type
  6. Applicant type

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7. Topic Areas

Disclaimer and Important Notes

This RFI is not a Funding Opportunity Announcement (FOA); therefore, EERE is not accepting applications at this time. EERE may issue a FOA in the future based on or related to the content and responses to this RFI; however, EERE may also elect not to issue a FOA. There is no guarantee that a FOA will be issued as a result of this RFI. Responding to this RFI does not provide any advantage or disadvantage to potential applicants if EERE chooses to issue a FOA regarding the subject matter. Final details, including the anticipated award size, quantity, and timing of EERE funded awards, will be subject to Congressional appropriations and direction.

Any information obtained as a result of this RFI is intended to be used by the Government on a non-attribution basis for planning and strategy development; this RFI does not constitute a formal solicitation for proposals or abstracts. Your response to this notice will be treated as information only. EERE will review and consider all responses in its formulation of program strategies for the identified materials of interest that are the subject of this request. EERE will not provide reimbursement for costs incurred in responding to this RFI. Respondents are advised that EERE is under no obligation to acknowledge receipt of the information received or provide feedback to respondents with respect to any information submitted under this RFI. Responses to this RFI do not bind EERE to any further actions related to this topic.

Confidential Business Information

Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit via email, postal mail, or hand delivery two well-marked copies: one copy of the document marked "confidential" including all the information believed to be confidential, and one copy of the document marked "non-confidential" with the information believed to be confidential deleted. Submit these documents via email or on a CD, if feasible. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

Evaluation and Administration by Federal and Non-Federal Personnel

Federal employees are subject to the non-disclosure requirements of a criminal statute, the Trade Secrets Act, 18 USC 1905. The Government may seek the advice of qualified non-Federal personnel. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The respondents, by submitting their response, consent to EERE providing their response to non-Federal parties. Non-Federal parties given

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access to responses must be subject to an appropriate obligation of confidentiality prior to being given the access. Submissions may be reviewed by support contractors and private consultants.

Request for Information Response Guidelines

Responses to this RFI must be submitted electronically to RECI_RFI@hq.doe.gov no later than 5:00pm (ET) on **May 20, 2022**. Responses must be provided as attachments to an email. It is recommended that attachments with file sizes exceeding 25MB be compressed (i.e., zipped) to ensure message delivery. Responses must be provided as a Microsoft Word (.docx) attachment to the email, and no more than 12 pages in length, 12-point font, 1-inch margins. Only electronic responses will be accepted.

Please identify your answers by responding to a specific question or topic if applicable. Respondents may answer as many or as few questions as they wish.

EERE will not respond to individual submissions or publish publicly a compendium of responses. A response to this RFI will not be viewed as a binding commitment to develop or pursue the project or ideas discussed.

Respondents are requested to provide the following information at the start of their response to this RFI:

- Company / institution name;
- Company / institution contact;
- Contact's address, phone number, and e-mail address.

Teaming Partner List

In addition to responding to the RFI questions above, EERE is compiling a Teaming Partner List to facilitate the widest possible participation for this anticipated Resilient and Efficient Codes Implementation FOA. The list allows organizations with expertise in the topic and wish to participate in an application, but may not wish to apply as the Prime applicant to a potential FOA, to express their interest to potential applicants and to explore potential partnerships. EERE strongly encourages teams from different organizations, scientific disciplines, and technology sectors to form interdisciplinary and cross-sector teams that span organizational boundaries in order to enable and accelerate the achievement of scientific and technological outcomes that were previously viewed as extremely difficult, if not impossible.

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The Teaming Partner List will be available on https://eere-Exchange.energy.gov under this RFI (DE-FOA-0002755) until a potential FOA is posted. After a potential FOA is posted the Teaming Partner List will be available under the Resilient and Efficient Codes Implementation FOA. The Teaming Partner List will be updated at least weekly until the close of the Full Application period, to reflect new Teaming Partners who have provided their information. **Any organization that would like to be included on this list should submit the following information to the Teaming List becp@pnnl.gov with the subject line "RECI FOA: Teaming Partner Information":**

- **Organization Name,**
- **Generic Organization Contact Email,**
- **Generic Contact Phone,**
- **Organization Type,**
- **Area of Technical Expertise (bulleted list less than 25 words), and**
- **Brief Description of Capabilities (less than 100 words).**

By submitting a request to be included on the Teaming Partner List, the requesting organization consents to the publication of the above-referenced information. **Each organization should provide a generic point of contact e-mail address to receive queries. Direct personal e-mail addresses will not be posted.** By facilitating this Teaming Partner List, EERE does not endorse or otherwise evaluate the qualifications of the entities that self-identify themselves for placement on the Teaming Partner List. EERE will not pay for the provision of any information, nor will it compensate any applicants or requesting organizations for the development of such information.

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