U.S. Department of Energy
Building Technologies Office

Bipartisan Infrastructure Law: Resilient and Efficient Codes Implementation (RECI)

Funding Opportunity Announcement (FOA) Number: DE-FOA-0003225
FOA Type: Initial
Assistance Listing Number: 81.117

FOA Issue Date:	March 4, 2024
Submission Deadline for Concept Papers:	April 5, 2024, 5:00 p.m. ET
Submission Deadline for Full Applications:	June 6, 2024, 5:00 p.m. ET
Expected Submission Deadline for Replies to Reviewer Comments:	July 1, 2024, 5:00 p.m. ET
Expected Date for DOE Selection Notifications:	July 31, 2024
Expected Timeframe for Award Negotiations:	July 31, 2024 – October 30, 2024

- Applicants must submit a Concept Paper by 5 p.m. ET on the due date listed above to be eligible to submit a Full Application.

- To apply to this FOA, applicants must register with and submit application materials through the Office of Energy Efficiency and Renewable Energy (EERE) eXCHANGE at https://eere-eXCHANGE.energy.gov/, EERE's online application portal.

- Applicants must designate primary and backup points-of-contact in EERE eXCHANGE with whom EERE will communicate to conduct award negotiations. If an application is selected for award negotiations, it is not a commitment to issue an award. It is imperative that the applicant/selectee be responsive during award negotiations and meet negotiation deadlines. Failure to do so may result in cancelation of further award negotiations and rescission of the selection.

- **Unique Entity Identifier (UEI) and System for Award Management (SAM)** - Each applicant (unless the applicant is excepted from those requirements under 2 CFR 25.110) is required to: (1) register in the SAM at https://www.sam.gov before submitting an application; (2) provide a valid UEI number in the application; and (3)

maintain an active SAM registration with current information when the applicant has an active federal award or an application or plan under consideration by a federal awarding agency. DOE may not make a federal award to an applicant until the applicant has complied with all applicable UEI and SAM requirements and, if an applicant has not fully complied with the requirements by the time DOE is ready to make a federal award, DOE will determine that the applicant is not qualified to receive a federal award and use that determination as a basis for making a federal award to another applicant.

NOTE: Due to the high number of UEI requests and SAM registrations, entity legal business name and address validations are taking longer than expected to process. Entities should start the UEI and SAM registration process as soon as possible. If entities have technical difficulties with the UEI validation or SAM registration process, they should use the HELP feature on SAM.gov. SAM.gov will address service tickets in the order in which they are received and asks that entities not create multiple service tickets for the same request or technical issue. Additional entity validation resources can be found here: GSAFSD Tier 0 Knowledge Base - Validating your Entity.

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I. Funding Opportunity Description

A. Background and Context

The U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) Building Technologies Office (BTO) is issuing this Funding Opportunity Announcement (FOA). Awards made under this FOA will be funded, in whole or in part, with funds appropriated by the Infrastructure Investment and Jobs Act,[1] more commonly known as the Bipartisan Infrastructure Law (BIL).

BIL is a once-in-a-generation investment in modernizing and upgrading American infrastructure to enhance U.S. competitiveness and resilience, drive the creation of good-paying union jobs, tackle the climate crisis, and ensure strong access to economic, environmental, and other benefits for disadvantaged communities[2] BIL appropriates more than $62 billion to the U.S. Department of Energy (DOE)[3] to invest in American manufacturing and workers; expand access to energy efficiency and clean energy; deliver reliable, clean, and affordable power to more Americans; and demonstrate and deploy the technologies of tomorrow through clean energy demonstrations.

DOE's BIL investments will support efforts to build a clean and equitable energy economy that achieves a zero-carbon electricity system by 2035, and to put the United States on a path to achieve net-zero emissions economy-wide by no later than 2050[4] to benefit all Americans.

[1] Infrastructure Investment and Jobs Act, Public Law 117-58 (November 15, 2021). https://www.congress.gov/bill/117th-congress/house-bill/3684. This FOA uses the more common name Bipartisan Infrastructure Law.

[2] Pursuant to E.O. 14008, "Tackling the Climate Crisis at Home and Abroad," January 27, 2021, and the Office of Management and Budget's Interim Justice40 Implementation Guidance Addendum to M-21-28 and M-23-09, DOE recognizes disadvantaged communities as identified by the White House Council on Environmental Quality's Climate and Economic Justice Screening Tool (CEJST), located at https://screeningtool.geoplatform.gov/, and as defined to include all Federally Recognized Tribes and Tribal entities, whether or not they have land. See M-23-09., https://www.whitehouse.gov/wp-content/uploads/2023/01/M-23-09_Signed_CEQ_CPO.pdf. For information on other aspects of Justice40 implementation, see DOE's Justice40 Implementation Guidance, located at https://www.energy.gov/sites/default/files/2022-07/Final%20DOE%20Justice40%20General%20Guidance%20072522.pdf.

[3] U.S. Department of Energy. November 2021. "DOE Fact Sheet: The Bipartisan Infrastructure Deal Will Deliver for American Workers, Families and Usher in the Clean Energy Future." https://www.energy.gov/articles/doe-fact-sheet-bipartisan-infrastructure-deal-will-deliver-american-workers-families-and-0

[4] Executive Order (EO) 14008, "Tackling the Climate Crisis at Home and Abroad," January 27, 2021.

EERE plays a critical role in supporting these investments and the equitable transition to a clean-energy economy by 2050. One of EERE's key programmatic priorities is reducing the carbon footprint of America's buildings, which BTO directly upholds through the development, demonstration and adoption of technologies, techniques, tools, and services that enable high-performing, energy-efficient and demand-flexible residential and commercial buildings. BTO accomplishes this through a continuum of market transformation initiatives, including technology research and development (R&D), market stimulation and technology deployment, as well as ensuring that cost-effective technologies and practices can be incorporated into standard design and construction practices through building codes and equipment standards. This work is critical, as the United States spends over $400 billion each year to power our homes and commercial buildings, which consume 75 percent of our nation's electricity, 40 percent of our total energy, and account for 35 percent of national CO_2 emissions.[5] Energy efficiency represents a proven and low-cost way to save money and reduce energy burden for home and building owners, while supporting and increasing the competitiveness of our businesses and ultimately helping mitigate the climate crisis.[6]

i. Program Purpose

Section 40511 of the Bipartisan Infrastructure Law (BIL), titled *Cost-Effective Codes Implementation for Efficiency and Resilience*, invests $225 million over five (5) years, encompassing fiscal years (FY) 2022 through 2026, to "enable sustained cost-effective implementation of updated building energy codes." EERE announced an initial $90 million in funding through the first installment of the Resilient and Efficient Codes Implementation (RECI) FOA on July 2023[7]. The current FOA represents the second installment in the RECI initiative, which maintains the same broad format, flexibility, and crosscutting areas of interest, while emphasizing and prioritizing specific gaps, needs, and opportunities to support building energy codes identified as focal points through the first RECI FOA and continued stakeholder engagement. This FOA will continue to support the goals and specification of BIL Section 40511, as well as a broader government-wide approach to advancing building codes and supporting their successful implementation. The FOA will continue to support States, and Tribal and local governments pursuing more efficient building energy codes that save money for American homes and businesses, while maximizing the benefits of the clean energy transition, empowering workers, supporting resilience, and

[5] https://www.energy.gov/articles/secretary-granholm-announces-new-building-energy-codes-save-consumers-money-reduce-impacts

[6] https://www.energy.gov/eere/buildings/about-building-technologies-office

[7] https://www.energy.gov/articles/biden-harris-administration-announces-90-million-support-resilient-and-efficient-building

advancing environmental justice. Updated energy codes, as supported by this FOA, can have an even larger impact on disadvantaged communities by reducing energy bills and energy burden on households, as well as improving climate resilience to allow occupants to maintain comfort and safety when extreme temperatures coincide with a loss of energy systems. This FOA also supports the Biden-Harris Administration's National Initiative to Advance Building Codes, launched in June 2022 by the National Climate Task Force, to accelerate adoption of modern building codes to improve resiliency, create good-paying jobs, and lower energy bills.

Since inception of this BIL Section 40511 initiative, additional federal assistance supporting building energy codes has also been made available via the Inflation Reduction Act (IRA).[8] Section 50131 of the IRA, titled *Assistance for Latest and Zero Building Energy Code Adoption*, provides an additional $1 billion in grants supporting adoption and implementation of the latest model energy codes and zero energy codes, or codes with equivalent or greater energy savings.[9] See Section I.A.iii for more information on the relationship between the BIL and IRA initiatives, and how each can be leveraged toward common goals supporting energy code adoption and implementation.

The following sections provide further background on DOE's support for building energy codes, opportunities to support their adoption and implementation, and the resulting benefits to States, [10] local and Tribal governments as well as homes and businesses across the U.S.

DOE Support for Building Energy Codes

The U.S. Department of Energy has over a 30-year history of providing technical assistance supporting the advancement of building energy codes. This role spans the spectrum of building energy code policy development and implementation, including: (1) Support for the development of next-generation model codes and standards; (2) Support for States and local governments as they adopt, implement, and enforce energy codes; (3) Support for the design and construction industry in embracing the latest building standards in terms of workforce development and increased building resilience. By statute, DOE is directed to participate in industry development and consensus processes to review and update model building energy codes, review published editions of

[8] See Inflation Reduction Act of 2022 - Section 50131. Assistance for Latest and Zero Building Energy Code Adoption. https://www.congress.gov/bill/117th-congress/house-bill/5376/text.

[9] See IRA Codes for more information: https://www.energy.gov/scep/technical-assistance-adoption-building-energy-codes.

[10] "State" includes each of the several States, the District of Columbia, the Commonwealth of Puerto Rico, and any territory and possession of the United States.

the International Energy Conservation Code (IECC) and Standard 90.1 and issue *determinations* as to whether the updated editions will increase energy efficiency in residential and commercial buildings, respectively. Following the promulgation of these determinations, DOE is directed by statute to provide technical assistance supporting the implementation of State building energy efficiency codes. Collectively, these activities directly impact the advancement of energy codes and innovative approaches, such as building performance standards for existing buildings, and help ensure a more resilient, efficient, and decarbonized building future.

Section 40511 of the Bipartisan Infrastructure Law (BIL) directs the Secretary of Energy to establish a competitive program enabling sustained cost-effective implementation of updated building energy codes. This complements—and significantly amplifies—DOE's traditional role, enabling the Department to expand its technical and financial assistance and increase its overall impact on building energy codes and standards. This FOA encompasses the directive issued under Section 40511 and is a primary mechanism by which DOE is expanding its technical assistance offerings, with the goal of bolstering the successful, widespread, and sustained implementation of updated building energy codes by States, Tribal and local governments, and across the United States and a range of critical stakeholders.

Role of Building Energy Codes

Building energy codes establish minimum levels of energy efficiency for certain residential and commercial buildings. Model energy codes, such as the International Energy Conservation Code (IECC) and ANSI/ASHRAE/IES Standard 90.1,[11] are developed and updated through national consensus processes. States and local and Tribal governments ultimately implement energy codes, which is handled through various adoption, compliance, and enforcement processes and can vary widely across the United States. The implementation of building energy codes also depends on a significant number of entities, including State, Tribal and local and Tribal government agencies, building and safety departments, builders, contractors, and design professionals, as well as a number of affected community interests. Successful implementation of the latest building codes and standards is critical to ensuring their benefits, including utility bill savings, are realized in American homes and businesses.

Building energy codes have long been utilized by States, local and Tribal governments to regulate energy efficiency and conservation in the built

[11] Standard 90.1 is administered and published by the American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE) in partnership with the American National Standards Institute (ANSI) and the Illuminating Engineering Society (IES).

environment while delivering utility bill savings. Increasingly, States, local, and Tribal governments are also relying on building codes, including energy codes, as a primary means of supporting their broader affordability, energy, climate, and resilience goals. There is an emergence of innovative approaches which are complementary to more traditional building energy codes while still being measurable, verifiable, and enforceable. Innovative codes include "stretch codes," which make use of the latest technologies, design, and construction practices, and target advanced levels of efficiency and performance in new construction and major renovations, and building performance standards for existing buildings. States and municipalities are working to address excess emissions and energy use in existing buildings by enacting measurable, verifiable, and enforceable building performance standards, which set requirements for a building to meet certain performance targets or implement cost-effective retrofits and upgrades if targets are not met.

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. Energy codes can be adopted directly as a standalone code, such as the IECC, which is commonly adopted by States and local governments. However, they are also fundamental components of some of the most broadly adopted building codes in the world, including the International Building Code (IBC) and International Residential Code (IRC), which are referenced in the United States as "parental" codes.[12] Energy codes are often described as a subset of these broader building codes, representing distinct chapters of the IBC and IRC alongside other commonly recognized provisions, such as those pertaining to structural, plumbing or electrical requirements, and other basic aspects of building design and construction. In addition, updates to refrigerant approvals at the State and local level that allow for the installation of equipment that utilize refrigerants with lower global warming potential in accordance with the Environmental Protection Agency's Significant New Alternatives Policy Program along with energy code updates helps to support the transition to a clean energy economy.

Building Resilience

Adopting the current building codes helps ensure that building design and construction adheres to modern standards, which are continually evolving and improving based on the latest construction practices and technological advancements. This serves to protect the health and life-safety of building occupants, as well as optimize building performance. One key area where energy codes work in concert with other building code provisions, like fire, mechanical,

[12] The IBC and IRC are published by the International Code Council (ICC)

and plumbing requirements, is to enhance building resilience. Building *energy resilience* can take multiple forms, with the two most prominent benefits being passive survivability and grid resilience. Passive survivability is the ability of building occupants to safely shelter in-place during an extreme temperature event that coincides with a power outage. Energy code measures like high efficiency windows and wall insulation greatly reduce heat loss in a building (i.e., allowing it to remain comfortable longer) which helps ensure the habitability and safety of occupants until power and energy systems are restored. As noted in a recent DOE study, a home built to the latest model code (2021 IECC) can increase the number of days an occupant can safely shelter in place, compared to an average existing home, depending on the climate zone and type of extreme event—while implementing a more efficient stretch code can increase the number of "days of safety" even further.[13] Not only do energy codes save building owners money on utility bills and improve comfort, but they also save lives in the communities where they are implemented.

Similarly, grid resilience measures can help decrease the risk of power system failures or provide benefits in the form of a more dynamic power system. Distributed energy resources (DERs) and grid-flexible appliances, like grid-connected water heaters or thermal and battery storage technologies, can be managed by utility companies to reduce energy consumption during times of peak demand, potentially helping to avert major power outages on the grid.

Adopting and implementing the latest building energy codes help create buildings which are affordable, healthy, safe, comfortable, and resilient—for decades into the future.

Latest National Model Energy Codes

The latest model energy codes, the 2021 IECC and ANSI/ASHRAE/IES Standard 90.1-2022, represent the most up-to-date minimum energy-efficient design and construction practice requirements available to States and jurisdictions to reduce building energy use, utility costs, and greenhouse gas emissions.[14] Updated model energy codes provide significant energy savings and environmental benefits, as exhibited through recent DOE model energy code

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

[14] DOE is directed by federal law to review published editions of the national model codes, the IECC and Standard 90.1, and issue a *determination* as to whether the updated edition will increase energy efficiency and residential and commercial buildings, respectively (42 USC 6833). Learn more about DOE's role in issuing energy savings determinations at www.energycodes.gov/determinations.

determinations.[15,16] Figure 1 shows historical energy code improvements over time.

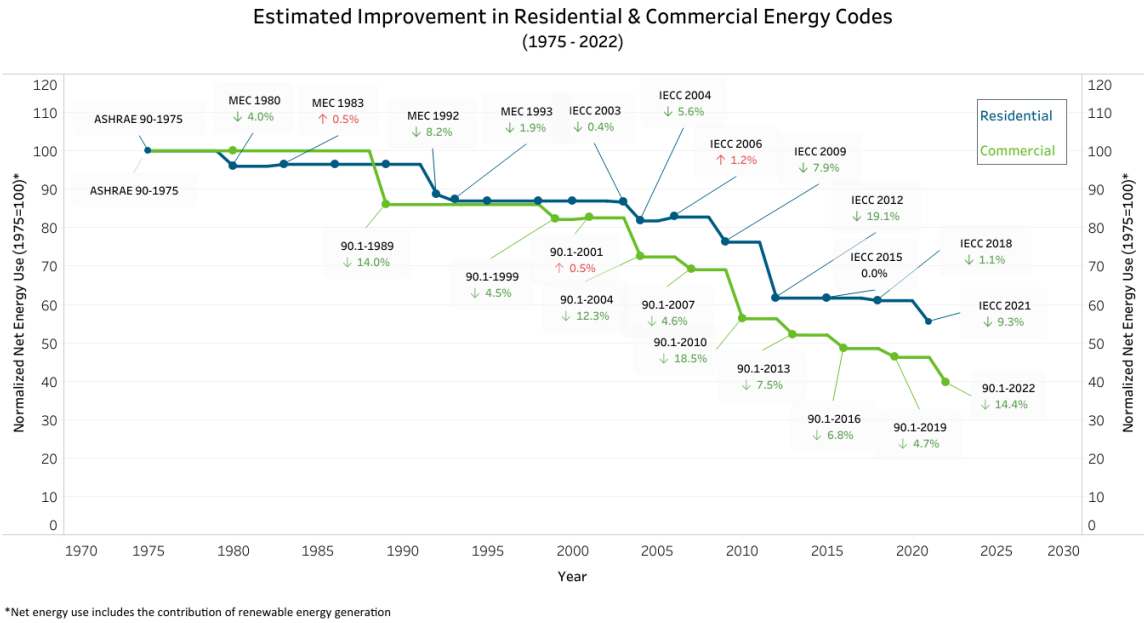

Figure 1 *Model residential and commercial energy codes continue to improve, due to ongoing efforts to improve building construction through higher efficiency windows and walls, lighting, HVAC, and other components and practices.*

Current Energy Code Adoption Status

While model codes have improved significantly in recent years, many States and local governments are still using relatively older and outdated energy codes. The BIL and IRA provisions supporting building energy codes are intended to provide much needed support for States, Tribal and local governments updating and implementing their energy codes. Significant benefits can be realized by adopting and implementing the latest energy codes for residential and commercial buildings. Further, many States and local governments are integrating traditional policy mechanisms, like building codes, with innovative concepts such as "stretch" codes,[17] zero energy or zero carbon codes, and building performance standards.[18] As jurisdictions consider updates to their building energy codes, DOE emphasizes the importance of developing

[15] Determination of Energy Savings for ANSI/ASHRAE/IES Standard 90.1-2022, https://www.energycodes.gov/determinations

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

[17] Stretch codes can take many forms, but generally represent advanced standards above and beyond minimum code requirements.

[18] Building performance standards (BPS) are codes for existing buildings that, in combination with new construction codes, enable a life-cycle approach to building energy and emissions performance.

sustainable plans to support such updates over time. The current state of adoption of residential and commercial building energy codes varies across the country as displayed in Figures 2 and 3, respectively.

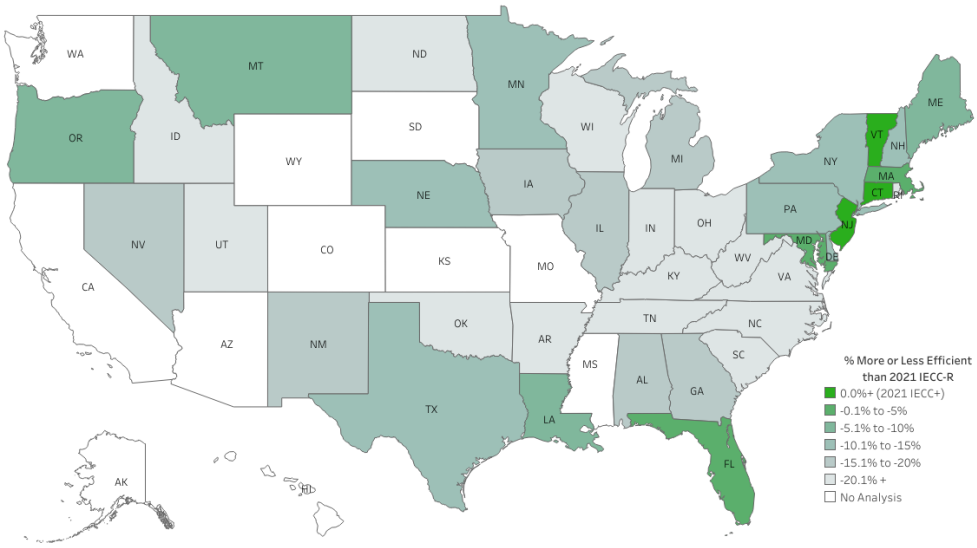

Figure 2 *Status of energy code adoption across U.S. states relative to the 2021 IECC for residential buildings. As of 12/28/2023.*

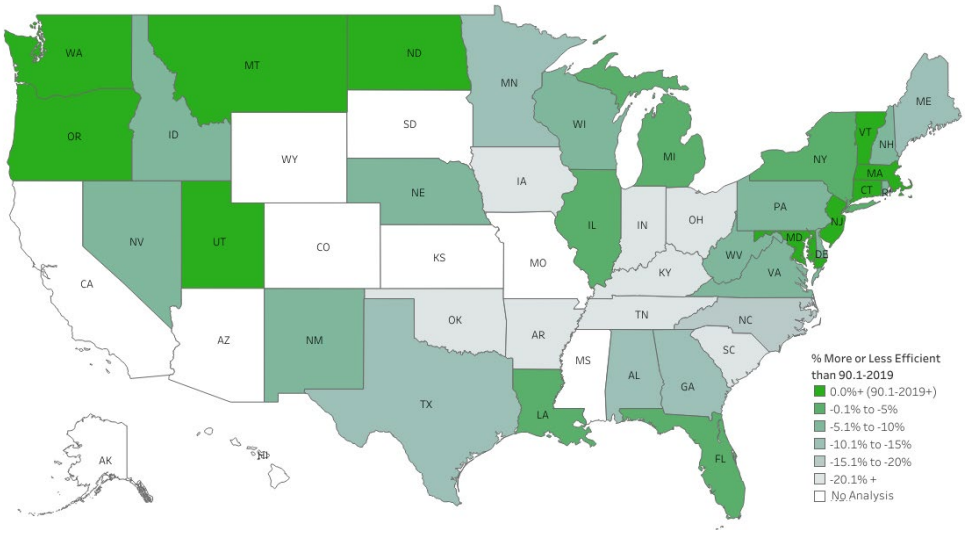

Figure 3 *Status of energy code adoption across U.S. states relative to ANSI/ASHRAE/IES Standard 90.1 -2019 for commercial buildings. As of 12/28/2023.*

Support for Code Compliance

In addition to code adoption, building energy code compliance and enforcement helps ensure that the energy efficiency, cost savings, health, and resilience benefits associated with energy codes are realized in practice. It is well-established that building energy codes provide significant benefits to building owners, homeowners, and residents when regularly updated and effectively

implemented at the State and local level.[19] However, effective code compliance is dependent on a wide range of dissociated actors, from design professionals, to builders and trades, manufacturers, suppliers and industry trade organizations, to building officials, existing across a spectrum of national, regional, State, Tribal and localized entities and organizations. This range of actors highlights the integrated nature of compliance, and critical role of partnerships in supporting the successful implementation of energy codes.

A primary barrier to effective energy code implementation is ensuring adequate resources are available at the State, Tribal and local level, particularly for State agencies and bodies responsible for adopting and administering codes, and local building departments who are charged with enforcing building codes. State and local jurisdictions commonly cite insufficient funding, time and personnel—including lack of specialized skillsets to review plans and conduct field inspections—as impeding the successful implementation of building energy codes. BIL provides a unique opportunity to address this barrier, with the potential to support State, Tribal and local jurisdictions in hiring compliance and enforcement personnel (sometimes referenced as "capacity building") to help implement and enforce their energy codes, including the specialized skillsets and third-party personnel, where needed.

Field validation studies, often referenced as compliance studies, have also demonstrated additional benefits in the form of energy, cost, and GHG emissions savings through improved rates of compliance. This is often achieved through education and training initiatives, compliance tools and other compliance-improvement programs. A series of recent pilot studies across seven states found that potential lost savings from non-compliance was high—$18 million annually across the pilot states—and targeted education and training programs were effective at improving compliance rates and thereby reducing energy, costs and GHG emissions. Cumulatively, education and training in these pilot states were estimated to have a savings potential of over $3.5 billion, and to reduce carbon emissions of over 100 million metric tons (CO_2e),[20] over 30 years.[21] Based on these initial pilot studies, which were supported through a previous DOE building energy code technical assistance initiative, over 30 states have subsequently implemented energy code field studies to better understand compliance trends, identify common energy technologies and practices being applied in the field, better target ongoing energy code education and training initiatives and increase return-on-investment (ROI), and to validate the overall impacts of their codes.

[19] National and State Level Energy Code Analyses: https://www.energycodes.gov/national-and-state-analysis
[20] Carbon dioxide equivalent
[21] Field Validation Studies: https://www.energycodes.gov/residential-energy-code-field-studies

Energy Code Impacts

The positive impacts from the advancement and effective implementation of energy codes and standards at the State, Tribal and local level cannot be overstated. Model energy codes are projected to deliver over $182 billion energy cost savings and 840 million metric tons of avoided CO_2 emissions to American homes and businesses (2010 through 2040).[22] This is in addition to the everyday benefits offered by building codes in the form of increased health, comfort, life-safety, durability, and performance. However, these benefits can only be fully realized if States, Tribal and local governments regularly update and successfully implement their energy codes, including active compliance and enforcement programs, in accordance with the latest standards.

The impact of building energy codes at the State, Tribal and local levels are influenced by factors such as the efficiency of adopted codes, total construction, and degree to which they are implemented, including high rates of compliance and widespread enforcement. Jurisdictions with outdated codes, particularly those with outdated codes or significant construction volume, will see significant long-term energy, cost, and emissions savings by adopting the latest model codes. DOE has provided a series of infographics in Appendix B highlighting the potential energy cost savings associated with State code updates.

In addition, jurisdictions adopting modern energy codes will see benefits in the form of improved health, comfort, durability, and resilience outcomes. The latest energy codes enable building occupants to shelter in place during hazard events and save lives under extreme temperatures[23]. Energy codes also support more equitable outcomes for building occupants, ensuring that minimum standards for energy efficiency and performance are met for all residential and commercial buildings, and locking in energy and cost savings over the life of the building. Among the top States with the greatest energy cost savings potential, through adoption of the latest codes, many also exhibit the greatest percentage of census tracts with high energy burden[24].

This FOA is intended to support a broad range of energy code activities and outcomes and will ensure the many known and quantifiable benefits of energy codes become a reality across the United States.

[22] https://www.energycodes.gov/impact-analysis
[23] https://www.energycodes.gov/energy-resilience
[24] https://www.census.gov/library/stories/2023/05/persistent-poverty-areas-with-long-term-high-poverty.html

ii. Strategic Goals and Program Structure

This FOA seeks applications with project teams ready to advance building energy codes within a particular region, state, or local jurisdiction. To drive sustained improvements, BIL emphasizes the importance of strategic partnerships, which must include a State or Tribal government agency, and may include other organizations, such as State or local building departments, builders, contractors, architects, engineers, other design and construction professionals, academia, research, trade organizations, consumer advocates, regional or community energy efficiency organizations, labor unions, apprenticeship programs, and other stakeholders who play an important role supporting the successful adoption and implementation of building codes. Funding provided through this FOA is specifically designed to update building energy codes and ensure the cost-effective implementation of these updated codes at the state and local level.

DOE recognizes that there are many strategies which can help ensure effective implementation of building energy codes. Common examples include workforce development initiatives, from registered apprenticeships to more traditional energy code training programs (virtual or in-person) and mapping of career pathways supporting building codes, to tools and other resources enabling increased compliance and reduced enforcement burden, including compliance tools, and resources supporting plan review and in-field assessments. DOE also recognizes that challenges impeding energy code compliance can vary widely across states, localities, and construction regions, and there is no single solution. DOE conducted an extensive stakeholder engagement process in anticipation of this BIL initiative, which is available to applicants and the public, but is ultimately relying on project teams to identify the most appropriate approach and strategy, and to understand the unique challenges, needs, motivations, and diverse perspectives of stakeholders in the targeted region.

As part of the whole-of-government approach to advance equity and encourage worker organizing and collective bargaining,[25,26,27] and in alignment with BIL sections 40511, *Cost-Effective Codes Implementation for Efficiency and Resilience*, this FOA and any related activities will also seek to encourage applicants to participate in meaningful engagement and participation of workforce organizations, including labor unions, as well as disadvantaged communities, including Indian Tribes. Consistent with Executive Order 14008,[28]

[25] EO 13985, "Advancing Racial Equity and Support for Underserved Communities Through the Federal Government," January 20, 2021. EO 14091, "Further Advancing Racial Equity and Support for Underserved Communities Through the Federal Government," February 16, 2023.
[26] EO 14025, "Worker Organizing and Empowerment," April 26, 2021.
[27] EO 14052, "Implementation of the Infrastructure Investment and Jobs Act," November 18, 2021.
[28] EO 14008, "Tackling the Climate Crisis at Home and Abroad," January 27, 2021.

this FOA is designed to help meet the goal of the President's Justice40 Initiative that 40% of the overall benefits of the Administration's investments in clean energy and climate solutions be delivered to disadvantaged communities, as identified using the Climate and Economic Justice Screening Tool,[29] and to drive creation of accessible, good-paying jobs with the free and fair chance for workers to join a union. DOE believes that modern building codes, including energy codes and associated implementation activities, can help meet these objectives, and is supporting activities which can address climate impacts, affordability challenges and alleviate energy insecurity, while pursuing housing that is energy efficient, comfortable, safe, healthy, and resilient. Teams that can effectively engage a diverse group of stakeholders at the state and local level are essential in meeting the goals of the Justice40 Initiative, the Administration's good jobs priorities, and ensuring the clean energy transition in buildings is lasting and equitable across the U.S.

In preparing for this FOA and BIL technical assistance initiative, DOE conducted extensive engagement and stakeholder outreach to identify prominent needs and challenges impeding energy code implementation, explore, prioritize, and validate topics of interest, and establish key desired outcomes. Several topics are specified directly in Section 40511 of the BIL, while others were confirmed as key priorities through the engagement process.

The key areas of interest targeted under the current FOA include:

1. State and Local Code Adoption
2. High Impact States and Local Jurisdictions*
3. Rural Communities*
4. Tribal Governments*
5. Workforce Development
6. Implementation and Compliance
7. Innovative Approaches
8. Utility Data and Partnerships*
9. Energy, Equity, and Environmental Justice
10. Partnerships

* Indicates new area of interest since previous RECI FOA

Each is discussed in further detail in the Topics section of this FOA. Several of these topics are consistent with those targeted in the initial installment of BIL funding under the previous RECI FOA, recognizing that these activities are critical

[29] See https://screeningtool.geoplatform.gov. Federally Recognized Tribes and Tribal entities are also disadvantaged or Justice40 communities, whether or not they have land.

to supporting building energy code adoption and implementation, and consistent support is needed in these areas. In addition, DOE has identified several additional areas of interest through the previous RECI FOA, as well as through continued stakeholder engagement. These additional areas of interest represent gaps, needs and opportunities to further support code adoption and implementation, and have been added to this next funding installment under the RECI initiative.[30] Applicants are encouraged to incorporate these new areas of interest into their project plans, while also addressing additional areas of interest and needs in the targeted region.

In addition, DOE has identified several key outcomes targeted under the FOA:

- Developing the next-generation workforce
- Facilitating energy code updates
- Improving energy code compliance
- Advancing new and innovative codes approaches and tools
- Increasing equity in codes and planning

Applicants are encouraged to align their project objectives and activities with these outcomes to the greatest extent possible, practicable, and as appropriate within a targeted region. DOE understands that projects may contain aspects that fit into multiple areas of interest, and as a result, applicants are not limited to submitting project ideas that only align with one area of interest, and are encouraged to address multiple areas of interest in a crosscutting manner, as applicable within the targeted state or project region. To aid in this, DOE has provided a series of infographics in Appendix B highlighting relevant state and local code implementation trends, including current state adoption status relative to the latest editions of the model energy codes, states and local governments with the potential to adopt stretch codes, and states who have conducted a recent compliance study, among others. Applicants are encouraged to review these infographics, and consider related trends, when tailoring their activities supporting code implementation.

The remainder of this section focuses on program structure and is intended to communicate key issues and criteria which are specified in the BIL or fundamentally shape the initiative.

[30] Newly added areas of interest are marked with an asterisk (*) and are discussed further under the Topics section of this FOA.

Eligible Entities

The BIL specifies eligible entities as a relevant State agency (including Territorial agencies) or Tribal government, as determined by the Secretary of Energy. Examples include state building code agencies, state energy offices, or Tribal energy offices. In addition, partnerships are eligible entities, which must include a state agency or Tribal government, and one or more of the following:

- local building code agencies;
- codes and standards developers;
- associations of builders and design and construction professionals;
- local and utility energy efficiency programs;
- consumer, energy efficiency and environmental advocates; and
- other entities as determined by the Secretary.

Further, Section 40511 of the BIL indicates that *priority shall be given to applications from partnerships*.

DOE encourages project teams to be as inclusive as possible and emphasize the need to engage a range of affected interests, particularly those who are critical to energy code updates and implementation. DOE recognizes that there are a wide variety of entities and stakeholder interests beyond the list specified above, who play a critical role in support building code adoption and implementation, including State and local housing agencies, financing agencies, insurance providers, and regulatory agencies, among others. Although a State or Tribal Government agency is eligible to apply for this FOA independently, partnerships are preferred. Under a partnership, a State or Tribal Government agency is not required to serve as the prime applicant or prime recipient, and funding does not need to flow through these agencies. Applications should include robust and effective regional, State and/or community and Tribal partnerships with a demonstrated capacity to successfully implement the project in a sustainable way. Where capacity does not exist for successful implementation of the project, applications should incorporate capacity-building strategies as part of the project proposal. Applicants are required to demonstrate commitment from partners and key stakeholders, where applicable based on the eligibility criteria,[31] including at least one State and/or Tribal Government agency as part of each partnership. Formal letters of support are required as a means of demonstrating requisite partnerships.[32] Applicants should establish a partnership and team structure which best supports the goals, objectives, and activities of the

[31] See above and as outlined in Section III of the FOA

[32] This includes scenarios where a state agency is not a funded project partner but must still actively participate as part of a project partnership

proposed project, and which can maximize available resources, while supporting the overall goals of the program.

Additionally, DOE recognizes the important role of local governments, and expects to receive applications from entities other than States and Tribal agencies within a given State. A local government is not required to apply with the State from which it resides, but the local government must apply as part of a partnership with at least one eligible entity. Several key activities specified in the BIL can, or may be best positioned to, be carried out at the local level, whether by local governments, community organizations, or other localized stakeholders. For example, energy code education and training programs can be administered by a State agency, but in other cases may be administered locally, or by an industry or academic body such as a trade organization or community college, respectively. The emergence of innovative approaches, such as stretch codes, zero energy codes, zero carbon codes, and building performance standards, has taken place largely at the local level, and DOE foresees interest from various local governments in these topics. Recognizing these factors, that some States provide *home rule* authority,[33] and that some States may choose not to participate in this program, DOE may accept applications where one or more State agencies partner with other States, local governments, and other stakeholders in a cohort-based approach. The role of the relevant State or Tribal agencies must be clearly documented, so as to assure necessary support for the project, as well as to meet the eligibility criteria as specified in Section 40511 of the BIL.

Building Code Updates

Section 40511 of the BIL directs the Secretary of Energy to establish a program enabling sustained cost-effective implementation of updated building energy codes. The BIL defines an "updated building energy code" as:

> *An update to a building energy code under this section, including an amendment that results in increased efficiency compared to the previously adopted building energy code, shall include any update made available after the existing building energy code, even if it is not the most recent updated code available.*

DOE interprets this definition to mean that more recent code editions, relative to the currently adopted code, qualify as eligible. For example, a State that has currently adopted the 2009 IECC would be eligible for support if it pursued adoption of the 2015 IECC. DOE also anticipates more nuanced scenarios where

[33] States where the authority to adopt energy codes is delegated to local levels of government

a State, Tribal or local government does not undertake a comprehensive update (i.e., updating from one code edition to a more recent edition), but makes updates via specific amendments to their code (e.g., requiring more efficient windows or increased levels of insulations). States, local governments or Tribal governments[34] who are adopting a building energy code for the first time (i.e., did not previously adopt a building energy code) would also be viewed as meeting the definition of a code update under Section 40511.

While DOE interprets the BIL provisions as not requiring State, Tribal or local governments to adopt the latest editions of the model codes[35] as a condition of support under this initiative, it should be noted that DOE is also directed by the same provision of the BIL to: (1) Implement a competitive award program, meaning that applications will be evaluated based on merit; and (2) Consider impact in making the awards. DOE anticipates that projects oriented around more recent code editions will demonstrate greater overall impact, and therefore will score more favorably through the competitive evaluation process. Impacts are discussed further in the following section.

Evaluation of Impacts

Under the BIL, DOE is directed to consider the following impact criteria and priorities:

1. Prospective energy and emissions savings and plans to measure the savings[36];
2. Long-term sustainability of those measures and cost, energy, and emissions savings;
3. Prospective benefits, and plans to assess the benefits, including benefits relating to resilience and peak load reduction, occupant safety and health, and environmental performance;
4. Demonstrated capacity of the eligible entity to carry out the proposed project; and
5. Need of the eligible entity for assistance.

DOE is then directed to give priority to applications from partnerships, as discussed above.

These criteria add significant importance and weight to proposed activities, as a function of the specified metrics (e.g., energy and emissions savings and other

[34] States, local governments, and Tribal governments with the authority to adopt building codes.
[35] The 2021 IECC and Standard 90.1-2022 are the latest model codes, as of publication of this FOA, for which DOE has issued an affirmative energy savings determination.
[36] Sample methods are discussed in the BIL Section 40511 (c)(1)

benefits). Applicants should indicate whether a targeted region, State or locale has established a plan for supporting energy code implementation or has made formal commitments to similarly increasing energy efficiency or resilience in buildings. Applicants should demonstrate the existence of plans or commitments at the appropriate level (i.e., based on whether codes are adopted at the State or local level in the target region, and applicable activities supporting code implementation), and identify how their proposed objectives and activities support those plans or commitments. DOE encourages applicants to clearly articulate needs based on relevant factors, such as availability of similar programs in the region, availability of funding, lack of building energy codes or implementation mechanisms, or similar variables.

Applicants shall also develop impact statements based on the list of metrics specified above. (See Appendix A for further information on required impact calculations.) Applicants are strongly encouraged to tailor their impact statements based on their specific project goals, objectives, and activities, and provide appropriate estimates. For example, a project supporting a State in moving from the 2015 IECC to the 2021 IECC might estimate the energy, cost and GHG savings impacts of adopting the updated code, as well as anticipated resilience or health benefits. A project providing a statewide training program based on Standard 90.1 should, at a minimum, specify needs (e.g., as identified through a gap analysis), identify audiences who require training, as well as specify how many events and participants will be targeted, key training topics and opportunities, but should also articulate expected project impacts in terms of expected energy savings and environmental benefits, as a factor of increased statewide code compliance rates, for instance.

DOE solicited input from the public on which metrics the Department should consider when evaluating the impacts of code updates.[37] Responses generally aligned with the metrics specified in the BIL, citing (in order of prevalence): Emissions reductions, energy and cost savings, impacts in high-construction markets, resilience, number of affected stakeholders, electrification potential, and equity and environmental justice considerations. DOE also asked what Energy, Equity, and Environmental Justice (EEEJ) concerns are most relevant to this initiative, with the public highlighting: Affordable housing, targeting funding and benefits to local communities, community engagement, reducing energy burden via building codes and standards. Many respondents recommended specific approaches for DOE to identify and prioritize disadvantaged communities, in alignment with the Justice40 Initiative, evaluating criteria like

[37] See Community Engagement Process below for further information on the process used by the Department to solicit input and feedback from the public in developing this BIL initiative

area median income (AMI), and considering factors like energy burden. Other suggestions for DOE to consider in its evaluation and prioritization included population growth, housing starts, market dynamics, diversity of partnerships, and communities that are projected to be most impacted by climate change.

Further, DOE notes that the stated purpose of this initiative is to enable sustained cost-effective implementation of updated building energy codes. DOE therefore emphasizes that applications and proposed activities must be clearly articulated in terms of how they support updated codes, as defined by the BIL.

Eligible Activities

Section 40511 of BIL specifies several activities which applicants may pursue:

- Create or enable State, Tribal or regional partnerships to provide training and materials to:
    - Builders, contractors and subcontractors, architects, and other design and construction professionals, relating to meeting updated building energy codes in a cost-effective manner; and
    - Building code officials, relating to improving implementation and compliance with building energy codes.
- Collect and disseminate quantitative data on construction and codes implementation, including pathways, performance metrics, and technologies used;
- Develop and implement a plan for highly effective codes implementation, including measuring compliance;
- Address various implementation needs in rural, suburban, and urban areas; and
- Implement updates in energy codes for:
    - New residential and commercial buildings (including multifamily buildings); and
    - Additions and alterations to existing residential and commercial buildings (including multifamily buildings).

In addition, BIL Section 40511 specifies several related topics, indicating that training and materials provided may include information on the relationship between energy codes and:

- Cost-effective, high-performance, and zero-net energy buildings;
- Improving resilience, health, and safety;
- Water savings and other environmental impacts; and
- Economic impacts of energy codes.

DOE interprets these as a permissive list. These activities should be prioritized, as specified directly in BIL, but the Department may consider additional activities

which fall within the general scope and spirit of these activities. DOE also emphasizes the importance of selecting activities which are of particular relevance, importance, and impact to the target State, locality, or regional construction market (as discussed Evaluation of Impacts section above).

Additional Considerations

Section 40511 of BIL specifies several areas which can be prioritized when evaluating applications. Anticipating a wide range of proposed activities and recognizing that many will be fundamentally different in comparison to one another (e.g., compliance tools vs. training programs vs. resilience planning), DOE identified several areas of potential contrast and asked stakeholders to provide input. The following represent some of these additional issues, and how DOE plans to balance priorities across the overall BIL initiative.

A. **Residential vs. Commercial and New vs. Existing Buildings**: DOE intends to prioritize both residential and commercial construction, as well as both new and existing buildings.

B. **Rural vs. Urban areas**: DOE intends to pursue a balanced approach—activities supporting both rural and urban areas. DOE recognizes the disparities between urban and rural communities—noting that urbanized and suburban regions often exhibit more recent codes and higher rates of construction activity (i.e., higher overall impact), while rural communities, although low in construction activity, tend to have older or no energy codes and greater implementation challenges (i.e., higher per capita impact).

C. **Disadvantaged vs. Non-disadvantaged Communities:** DOE intends to place an emphasis on disadvantaged communities, where possible, noting that the positive impacts of reduced energy burden and improved climate resilience tend to be higher in disadvantaged communities when compared to non-disadvantaged communities.

D. **Tribal Governments: "**Tribal energy offices" are specified as eligible entities under Section 40511 of the BIL, creating a unique opportunity to support energy code improvements in their territories. DOE references Federally recognized Tribal Governments as an area of interest and intends to support their efforts in this FOA.

Ability to Leverage Additional Funding Sources

DOE intends to support applications which rely solely on funding associated with BIL Section 40511, but also encourages applicants to leverage other funding sources, wherever feasible and appropriate. Examples include federal programs

such as DOE's IRA code funding opportunities,[38] State Energy Program (SEP), Energy Efficiency and Conservation Block Grants (EECBG), FEMA's Building Resilient Infrastructure and Communities (BRIC) program[39], and other applicable technical and financial assistance programs offered by the U.S. Department of Housing and Urban Development (HUD) and the U.S. Department of Agriculture (USDA). In addition, the IRA provides another opportunity for complementary assistance supporting building energy codes, such as the Environmental Protection Agency's Greenhouse Gas Reduction Fund[40] and Climate Pollution Reduction Grants[41], and DOE's State-Based Home Energy Efficiency Contractor Training Grants[42], among others. In combination, these programs—all of which can support building code implementation—represent a substantial opportunity to leverage federal funding toward common energy efficiency and resilience goals, and to extend the reach, impact, and sustainability of BIL funding.

Section I.A.iii includes further discussion on of BIL and IRA objectives, including coordination of their respective provisions supporting building energy codes.

Community Engagement

During the development of the FY23 RECI FOA, DOE engaged a wide range of entities and the general public through an extensive engagement process, including steps such as a Request for Information, workshop, and Notice of Intent, and presentations at industry conferences, including the National Energy Codes Conference. After FY23 FOA selections were announced, based on the first installment of the RECI FOA, DOE has continued to engage affected stakeholders through national and regional conferences, including DOE's own National Energy Codes Conference, a robust technical assistance program, and conversations with States, local governments, and stakeholders to determine key challenges, needs, and priorities when adopting and implementing updated energy codes. In addition, DOE reviewed FY23 RECI applications and selections to determine key gaps and areas of need that were not previously addressed.

This continued engagement process helps DOE refine the goals and priorities of the BIL initiative, ensuring that they continue to evolve over time to meet traditional and emerging challenges faced by States and local governments.

[38] https://www.energy.gov/scep/technical-assistance-adoption-building-energy-codes

[39] In the FY23 NOFO, FEMA will provide a "Building Code Plus-up," making available up to $2 million available to each state and $25 million to Tribal governments to carry out eligible building code adoption and enforcement activities. https://www.fema.gov/grants/mitigation/notice-funding-opportunities/fy2023-nofo

[40] https://www.epa.gov/greenhouse-gas-reduction-fund

[41] https://www.epa.gov/inflation-reduction-act/climate-pollution-reduction-grants

[42] https://www.energy.gov/scep/state-based-home-energy-efficiency-contractor-training-grants

More information on community engagement is available on the DOE Building Energy Codes Program website.[43]

iii. Coordination of BIL and IRA Objectives

Since inception of this BIL Section 40511 initiative, additional federal assistance supporting building energy codes has also been made available via the Inflation Reduction Act (IRA).[44] Section 50131 of the IRA, titled *Assistance for Latest and Zero Building Energy Code Adoption*, provides an additional $1 billion in grants supporting adoption and implementation of the latest model energy codes and zero energy codes.[45] The IRA provision is also administered by DOE, recently announcing $400 million in formula grants for States and territories, as well as an additional $530 million in competitive grants for eligible States, territories and local governments.[46] Financial assistance under the IRA is applicable to States, and units of local government with authority to adopt building codes, to adopt the latest building energy codes or zero energy codes, or their equivalent.

The BIL and IRA provisions supporting building energy codes are complementary in nature, target similar activities, and can be leveraged toward common goals. Both initiatives support States and local governments in adopting and successfully implementing building energy codes. BIL is comparatively wider in scope and flexibility, allowing for a broader range of targeted activities and outcomes. While the BIL provision is focused on energy codes, it also emphasizes the importance of increasing *resilience* in building through energy codes. The BIL initiative, as well as funding available under the IRA, prioritizes a variety of activities supporting code implementation, ranging from workforce education and training, to compliance measurement, data and tools, to research and analysis activities which can help validate design and construction trends, as well as the energy, health and environmental impacts of building energy codes.

While the BIL and IRA initiatives supporting building energy codes are distinct, DOE is actively coordinating these provisions, as well as the resulting funding initiatives, awards, technical assistance, and activities. Specific program guidance, targeted activities and selection criteria are included in each funding installment under BIL and IRA, whether through competitive mechanisms, including this FOA, as well as formulaic funding for States issued under the IRA. Through a collaborative approach, DOE hopes to align the BIL and IRA initiatives

[43] https://www.energycodes.gov/RECI
[44] See Section 50131 of the IRA at https://www.congress.gov/117/bills/hr5376/BILLS-117hr5376enr.pdf
[45] Section 50131 of the IRA targets adoption of the latest model codes specified as ASHRAE Standard 90.1-2019 and IECC 2021 (or those which achieve equivalent or greater energy savings), as well as adoption of zero energy codes (or an equivalent stretch code).
[46] https://www.energy.gov/scep/technical-assistance-adoption-building-energy-codes

to the greatest extent possible, while avoiding duplication, maximizing impact, and encouraging applicants to leverage both programs. DOE also notes the presence of other federal funding initiatives which have the potential to support building energy codes and complementary goals, such as the IRA's Greenhouse Gas Reduction Fund and contractor training grants, among others. DOE's State Energy Program (SEP) and Energy Efficiency and Conservation Block Grants (EECBG) both have the potential to support energy code adoption and implementation, further complementing the objectives of BIL and the IRA. In addition, FEMA's Building Resilient Infrastructure and Communities (BRIC) initiative provides funding supporting the adoption of building codes and for the purpose of increasing resilience in residential and commercial buildings.

Applicants are encouraged to pursue the funding mechanism which can best support their goals, whether it be the BIL or IRA initiative, a combination of both, or in concert with other federal funding. While applicants must apply separately to each initiative, application reviews and selection will be completed with consideration for funds provided or requested under both initiatives, including previous applications as well as any outstanding applications. Applicants must be cognizant of the respective requirements under each initiative, including federal financial assistance regulations, which expressly prohibit practices such as duplication of funds. Please refer to Section IV.D.xx Current and Pending Support and Section IV.D.xxiii Potentially Duplicative Funding Notice for additional information. Funds from one source cannot be used to apply for other competitive federal funding. For example, BIL funds cannot be used to apply for IRA funds. DOE has also created overlapping application periods under the BIL and IRA initiative, so as to ensure applicants have the ability to appropriately weigh and understand the objectives and conditions of each opportunity, while also maximizing application deadlines, particularly in recognition of administrative burdens faced by States and other applicants.

A detailed description of the topic areas and activities of particular interest under BIL Section 40511 and this FOA are outlined in the following section.

B. Topic Areas

This FOA includes one topic area broadly focused on the cost-effective implementation of updated building energy codes. The implementation of modern building energy codes will save energy, lower utility bills, reduce greenhouse gas (GHG) emissions and encourage more resilient buildings. This FOA embodies Section 40511 of the BIL, addresses the challenges outlined in the previous section, and supports the Administration's priorities around

modernizing and advancing building codes, improving energy and climate resilience, and reducing energy costs for American homes and businesses.[47]

i. Areas of Interest

DOE may consider and evaluate a variety of projects and activities under this FOA. Projects should primarily concentrate on the adoption and implementation of updated energy codes, and address the areas of interest specified in this section, with emphasis on new areas of interest added for the current FOA. Additional activities may all be considered, so long as they meet the specification of BIL Section 40511. Further discussion on targeted activities, outcomes, impacts and additional considerations is discussed in Section I.A.ii.

Each area of interest for this FOA is outlined in the following sections. Several of these topics are consistent with those targeted in the initial installment of BIL funding under the previous RECI FOA, recognizing that these activities are critical to supporting building energy code adoption and implementation, and consistent support is needed in these areas. In addition, DOE has identified additional areas of interest through the previous RECI FOA, as well as through continued stakeholder engagement. These additional areas of interest represent gaps, needs and opportunities to further support code adoption and implementation, and are emphasized under this next funding installment under the RECI initiative[48].

The following list describes the types of applications DOE expects to receive and may potentially fund as a result of the funding opportunity. * Indicates new area of interest since previous RECI FOA.

1. **State and Local Code Adoption:** The development and subsequent adoption of an updated building energy code and standards in States and localities throughout the United States is an important foundational step to ultimately realizing the energy, cost, resilience, and emissions benefits associated with building codes. Increased levels of insulation, better windows, and other measures deliver energy and cost savings year after year for the life of the building and can aid in spurring domestic manufacturing of energy efficient and clean energy technologies. Because all buildings must meet the energy code, designers and builders benefit from fair competition and a level playing field when they construct energy efficient buildings. During code adoption and code update processes, cities and States can benefit from technical

[47] https://www.whitehouse.gov/briefing-room/statements-releases/2022/06/01/fact-sheet-biden-harris-administration-launches-initiative-to-modernize-building-codes-improve-climate-resilience-and-reduce-energy-costs/

[48] Newly added areas of interest are marked with an asterisk (*)

support to help evaluate proposed code changes and the potential impacts for their unique region, climate type, construction practices and other factors. DOE believes technical assistance associated with building energy code updates, as well as broader energy, climate, and resilience planning, is essential to supporting adoption of the latest building codes. DOE is specifically interested in adoption processes, plans and policies that enable more predictable and sustainable building code updates over time, and that help bolster energy efficiency and resilience in the built environment. Applicants responding to this area of interest should be cognizant of federal funding available under IRA Section 50131, which provides $330 million supporting the adoption and implementation of the latest model energy codes or codes with equivalent or greater energy savings. [49]

- *Example activities may include but are not limited to: Providing direct technical assistance and support for States and local governments on specific code updates for energy and resilience; conducting impact studies around code updates or amendments for specific States or jurisdictions to better understand benefits (including GHG emissions mitigation and utility bill savings) of code updates; and aligning code updates with broader State and local energy, sustainability, resilience, or climate goals.*

2. **High Impact States and Local Jurisdictions***: To achieve national climate and resilience goals and enhance building performance in homes and businesses throughout the U.S., this funding targets improvements to energy codes in all 56 States and territories. Energy codes provide significant long-term impacts as a function of energy efficiency and construction volume, meaning States and local jurisdictions with a combination of outdated energy codes and high construction volumes, will experience significant energy, emissions, cost savings and other benefits through the adoption and implementation of the latest energy codes. For example, when compared to all States moving to the 2021 IECC-R and ASHRAE Standard 90.1-2019, the RECI impacts calculator indicates that just 10 States (AZ, FL, IN, KY, NC, OH, OK, SC, TN, TX) represent over 50% of the total energy savings. DOE recognizes that many of these States and local jurisdictions may be seeking an incremental improvement rather than going straight to the latest model code and will need additional support in the way of workforce development, compliance and enforcement tools, and technical resources to prepare the industry for continued code advancements. Many high-impact jurisdictions also face unique challenges to improving their building stock, and DOE is specifically interested in innovative

[49] Specific IRA Codes funding opportunities include Formula Funding for States and Territories, and the Latest and Zero Building Energy Codes FOA. More information about these opportunities can be found at https://www.energy.gov/scep/technical-assistance-adoption-building-energy-codes.

approaches to improve building performance through more efficient and resilient energy codes and standards.

- *Example activities may include but are not limited to: Providing direct technical assistance and support for States and local governments on specific code updates for energy and resilience; conducting impact studies around code updates or amendments for specific States or jurisdictions to better understand benefits (including GHG emissions mitigation and utility bill savings) of code updates; and aligning code updates with broader State and local energy, sustainability, resilience, or climate goals.*

3. **Rural Communities***: According to the 2020 U.S. Census, approximately 20% of the population lives in a rural community. Despite only representing 1/5th of the total population, rural communities represent 97% of the U.S. landmass and roughly 60% of the total number of counties.[50] In terms of building codes, and particularly energy codes, rural communities face significant challenges to ensuring their effective implementation. Similar challenges—such as enforcement constraints, skilled trade gaps, and lack of education and training—are also faced in urban areas but are more acutely felt in rural areas. In addition, rural areas face many challenges unique to them, including not having building codes, lack of enforcement authority or capacity, lengthy distances between inspections (or lack of access altogether), or even just a single building inspector on staff to enforce *all* building codes and regulations (e.g., structural, mechanical, electrical, and plumbing codes, as well as local zoning, among others). These challenges not only impact the building department enforcing the code, but also cause delays for the builder or developer constructing the building and can lead to compliance challenges, resulting in unintended consequences for those who ultimately own or occupy the building. In order to help rural jurisdictions advance their energy codes and overall building performance, direct and robust adoption and implementation support is needed. To achieve these goals and address some of the common challenges faced by rural jurisdictions, DOE is specifically interested in projects which provide comprehensive implementation support, from growing the workforce and expanding enforcement capacity to supporting long-term planning and future adoption efforts.

   - *Example activities may include but are not limited to: Support the adoption of energy codes and standards to improve building efficiency*

[50] Based on 2020 Census data, 10 states (AL, AR, KY, ME, MS, MT, NH, SD, VT, WV) have over 40% of their population living in a rural community. https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural.html

and resilience; developing programs to expand and diversify construction workforce; build capacity to enforce local building and energy codes, including plan review, permitting and inspections; design and implement unique approaches to overcome rural code implementation challenges, such as remote virtual inspections, 3rd party compliance programs, and inclusive education and training opportunities; and facilitating a cohort-based rural communities model to support advancements in building efficiency and resilience.

4. **Tribal Governments***: The federal government recognizes 574 American Indian and Alaska Native Tribal Nations in the U.S. as sovereign governments. In addition, Alaska contains a number of Federally Recognized Alaska Native Regional Corporations (ANRCs) and Alaskan Native Village Corporations (ANVCs), which also quality as Indian Tribes. As specified under Section 40511 of the BIL, Tribal governments (i.e., Tribal energy office) are deemed an eligible entity that can either receive funding directly or be a qualifying partner on an application. Historically, Tribal governments have not been engaged heavily in efforts to adopt or implement energy codes. With Tribal Governments being represented in 35 States and each climate zone in the U.S., there is significant opportunity and need to draw on existing research, implement State and climate zone specific best practices, and collaborate with State or regional efforts to support policies and programs to improve building efficiency and resilience in Tribal Governments. In particular, DOE has seen success with regional jurisdictional cohorts in supporting advancements in building policy adoption and implementation – a similar cohort-based approach may be well suited for Tribal Governments given their unique structure and potential similarities in terms of needs and opportunities.

   - *Example activities may include but are not limited to: Support the adoption of energy codes and standards to improve building efficiency and resilience through Tribal Governments at a regional level; ensuring representation of Tribal Governments and their interests through national, regional and localized building energy code development, adoption, and implementation processes; developing programs to expand and diversify construction workforce; and facilitating a cohort-based Tribal Governments model to share information, leverage limited resources, and support advancements in building efficiency and resilience.*

5. **Workforce Development**: Robust and inclusive workforce development and training programs are integral to the effective implementation of energy

codes at the State and local levels, and help enrich the professional workforce with quality, good-paying jobs oriented around modern standards. Upskilling opportunities coupled with worker retention strategies help ensure that the range of design and construction professionals who work with energy codes are aware of recent updates and key requirements, can take advantage of the latest technologies and practices, and gain a competitive advantage in the labor market. Accessible, impactful, and high-quality energy code education and training programs are critical to delivering energy savings and related benefits, as well as the continued advancement of construction practices around the U.S. DOE believes that additional support for workforce education and training programs, correlated with demand, could help develop, attract, and train new workers and better retain incumbent workers to bolster a skilled and diverse workforce that is well-versed in modern building standards, can keep up with rapidly changing technology, and which can help ensure successful implementation of resilient and efficient codes. Maintaining and supporting a highly skilled and trained workforce is foundational for meeting our clean energy and energy efficiency goals in an equitable manner.

Section 40511 of the BIL emphasizes workforce development opportunities, particularly energy code education and training which can support industry professionals and the construction workforce in building to modern codes and embracing the latest technologies and practices. The BIL specifies the creation of State or regional partnerships to provide training and materials to builders, contractors, architects, and other design and construction professionals, relating to meet updated building energy codes in a cost-effective manner. In addition, the BIL identifies several related topics, including training and materials on the relationship energy codes and (A) cost-effective, high-performance, and zero-net-energy buildings; (B) improving resilience, health, and safety; (C) water savings and other environmental impacts; and (D) the economic impacts of energy codes. Ensuring design and construction professionals, labor unions, apprenticeship programs, as well as the broader construction workforce, are familiar with the latest technologies and practices is a focal point of the BIL and this FOA, and applicants are encouraged to identify workforce development opportunities which can support the successful implementation of updated energy codes. In doing so, applicants should evaluate existing workforce development and training initiatives in the targeted region, including infrastructure that can be leveraged such as licensing, credentialing, and continuing education requirements prominent within a given State or industry. DOE encourages applicants to identify solutions which are responsive to varying needs across urban, rural, and suburban regions, each

of which can present unique challenges, and recognizing shortages of skilled trades and a professionally trained workforce in rural areas. Applicants should attempt to leverage and supplement wherever possible, although DOE will also consider new initiatives where demonstrated necessary and where appropriate buy-in exists from the affected industry and stakeholders.

- *Example activities may include but are not limited to: Statewide or industry-targeted energy code training programs for licensed professionals and building trades; advanced training targeting high-performance and zero-net-energy buildings, complementary topics on resilience, health, safety, water savings and other environmental impacts, as well as underlying building science and resulting economic benefits; training modules targeting critical topics and industry professionals, as well as for university or community college (including Historically Black Colleges and Universities and other Minority Serving Institutions), or registered apprenticeship programs targeting professional and construction trades workers; incentives to overcome workforce development barriers, such as paid time for professionals to participate in energy code training; tools and resources to support efficient and advanced construction practices, including both energy efficiency and demand-response technologies and strategies; and development of quality pre-apprenticeship programs and comprehensive support services to improve diversity and inclusion in building occupations by reducing systemic barriers to high-quality training and employment.*

6. **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. States and local jurisdictions commonly cite lack of necessary staff, expertise, or resources as a key barrier to energy code compliance[51] and stand to benefit from additional capacity for implementation and enforcement activities. Activities like energy code compliance studies help States validate the impacts of their codes, and quantify the associated impacts (e.g., energy, cost or GHG savings). States and local governments that regularly evaluate compliance trends are able to identify prevalent building technologies and construction practices as a function of what's being applied in the field, which helps ensure building standards—and standard practice—keeps pace with innovation, which helps ensure not just an energy efficient and resilient building stock, but one that also optimizes

[51] https://www.mckinsey.com/capabilities/operations/our-insights/bridging-the-labor-mismatch-in-us-construction

health and wellness, life-safety, comfort and productivity. This benefits not only the design and construction industry, but the general public. In addition, these studies inform energy code training programs by identifying specific areas where code requirements are being achieved successfully or where compliance could be improved, and greater benefits achieved. This helps keep the professional workforce up to date with the latest construction practices, as well as maximize the return-on-investment for ongoing training programs and other compliance-improvement initiatives.[52] Software tools can also improve energy code implementation by streamlining the compliance, enforcement and permitting processes, thereby reducing the time and cost required to comply with modern codes. DOE believes that additional support for implementation and compliance processes will improve cost-effective implementation of energy codes, and ultimately help maximize their impacts across the U.S. building design and construction industry.

- *Example activities may include but are not limited to: Development of code implementation plans; research and validation studies to measure compliance rates and assess construction trends; developing code compliance tools, particularly ones that can streamline the code and reduce compliance and enforcement burden; and State and local energy code implementation and compliance collaboratives.*

7. **Innovative Approaches:** States and localities have developed several unique and innovative code approaches to increasing building energy efficiency. Many of these innovative approaches present opportunities for further validation or replication across the country. For example, some States and local governments are adopting "stretch" codes, which are based on the latest technologies and construction practices to improve energy efficiency and resilience, in support of advanced energy and climate goals.[53] Other innovative codes aimed at improving America's existing building stock is a building performance standard (BPS). Cities like St. Louis, Washington D.C., New York City, and many others have enacted a BPS, and can share best practices and guidance. These cities can also serve as a model by which to replicate and expand efforts to address the nation's existing building stock by upgrading existing buildings.[54] The building design and construction industry

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

[53] A stretch energy code is a set of building standards or compliance requirements, more advanced than the base code, which can be a voluntary alternative or locally mandated

[54] 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/

is working to improve energy code permitting and compliance processes through modern technology such as drones, portable tech, 360-degree imaging, software and tools which can digitize and streamline data collection and compliance evaluation processes. These are aimed at reducing time, cost, and regulatory burdens while achieving equitable compliance outcomes. Further, States and local jurisdictions are employing circuit riders to implement energy codes, which is a strategy that helps address the fact that many building departments, particularly in rural jurisdictions, often lack specialized expertise on energy codes and building energy systems. DOE believes these innovative approaches, among others, can significantly streamline and improve energy code implementation across States, municipalities, and the industry and thereby deliver increased benefits. Applicants responding to this area of interest should be cognizant of federal funding available under IRA Section 50131, which provides $670 million supporting the adoption and implementation of zero energy codes or innovative codes with equivalent or greater energy savings, such as a building performance standards, that are measurable, verifiable, and enforceable.

- *Example activities may include but are not limited to: Establishing circuit-rider training programs; developing and implementing performance-based energy codes or compliance tools; developing or implementing a State or local BPS; and implementing stretch codes, zero-energy and zero-carbon codes, or zoning ordinances that go beyond minimum energy codes in a sustainable fashion.*

8. **Utility Data and Partnerships*:** Utilities have long established programs to serve their customers and reduce energy use through energy efficiency programming that drives new technologies, energy retrofits, and workforce development. These programs are viewed as a win-win, providing the customer with increased energy resilience and lower operating costs, while helping utilities benefit through energy reduction goals. Historically, most utilities have had little engagement with energy codes. However, some utilities, particularly those in California, have well-established codes and standards programs that fit within their broader efficiency program framework and generate significant consumer savings at low cost. Through such programs, DOE believes that utilities are uniquely positioned to not only support code development and implementation, but to also validate their energy and cost savings through access to real-time utility use data. Using data to validate energy savings is a critical feedback mechanism to support updated codes and their successful implementation. This requires close partnerships and collaboration between State utility regulators, code making

bodies, local governments, manufacturers, the broader construction and enforcement industry, and building owners and developers. DOE is interested in applications which can help increase engagement by utilities in code processes and enhance validation of energy code impacts as a function of measured energy use in residential and commercial buildings.

- *Example activities may include but are not limited to: Establishing partnerships between States, regulatory bodies and utilities which enable data exchange and greater efficiency through codes and standards; coordination of utility energy efficiency programs with efforts to increase building energy code adoption and compliance; research and analysis to quantify impacts of building codes and standards on actual building energy use; and utility programs which directly support improved energy code and standard implementation.*

9. **Energy, Equity and Environmental Justice (EEEJ):** The Biden-Harris Administration established the government-wide Justice40 Initiative, setting a goal that 40 percent of the overall benefits of certain federal investments flow to disadvantaged communities that have been marginalized by underinvestment and overburdened by pollution.[55] This includes DOE investments in energy efficiency and clean energy, as well as workforce development and training, prioritizing decreased energy burden and environmental exposure in disadvantaged communities, increased clean energy jobs and training for individuals from disadvantaged communities, increased parity among clean energy technology access and adoption, and increased resiliency in disadvantaged communities, among others.[56] DOE believes that modern building codes, including energy codes and associated implementation activities, can help meet these objectives, and is supporting activities which can address climate impacts, affordability challenges and alleviate energy insecurity, while pursuing housing that is energy efficient, comfortable, safe, healthy, and resilient.[57] Initial activities have focused on increasing transparency and inclusiveness in energy code updates, adoption and implementation processes, aiding States and local governments in establishing metrics which can enhance environmental justice through

[55] The Justice40 Initiative sets a goal that 40% of the overall benefits of certain federal investments flow to disadvantaged communities. 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

[56] https://www.whitehouse.gov/wp-content/uploads/2021/07/M-21-28.pdf

[57] https://ebs.pnnl.gov/ViewSolicitation.aspx?SolID=1131

building codes and related approaches and communicating the benefits of the latest codes. To expand these efforts, DOE has identified a number of specific areas where energy codes, and activities supporting their implementation, can support equitable outcomes for disadvantaged communities. Commonly cited examples include: The role of energy codes in supporting affordable housing, increasing funding and targeted benefits to disadvantaged communities, increased community engagement around EEEJ issues and with disadvantaged communities, and activities which reduce overall energy burden, particularly for low-to-moderate income (LMI) households.[58]

- *Example activities may include but are not limited to: Convening representatives of disadvantaged or underserved communities; development of equity-focused code language; providing support to participate in code update and consensus processes; financial assistance or consulting services to help disadvantaged communities participate in code development, adoption and implementation processes; studies to better understand specific needs and barriers faced by disadvantaged communities; innovative solutions to address split incentives, as well as electric infrastructure, and coordination between energy codes and other building codes, such as electrical codes which impact building and community design in existing communities; the implementation of education and training programs targeting and benefitting disadvantaged communities, as well as those supporting affordable single-family and multifamily housing and related standards, including those administered across federal agencies (e.g., those established by the U.S. Department of Housing and Urban Development (HUD) and the Department of Agriculture (USDA)).*

10. **Partnerships:** Building code processes—whether development, adoption, or implementation—involve a wide range of participants from national, State, and local entities and organizations to the many individual stakeholder interests who engage in these processes. The design and construction industry consists of millions of professionals, most of who are affected by building codes and standards in some manner. There also exists a wide range of adopted codes and standards in place across the U.S., fragmented by various degrees of authority (e.g., States vs. local adoption authority), as well as varying compliance and enforcement practices across thousands of local jurisdictions. Due to this complexity, it is essential that diverse professional

[58] https://www.energycodes.gov/RECI

and stakeholder interests are included in efforts to update and implement building energy codes. Partnerships should be comprised of organizations and interests who can lend technical expertise to code processes, who are responsible for updating and administering codes (i.e., State and local government agencies), as well as the range of professionals and stakeholders—from builders, labor unions, architects, engineers and the trades, to academia, consumer and environmental advocacy organizations, and others who are affected by building codes. DOE views effective, strategic partnerships as essential to supporting impactful and lasting change, through which a diverse range of viewpoints can be considered, information and resources can be shared, and challenges can be addressed across States, localities, and regional markets.

- *Example activities may include but are not limited to: National, regional, and State energy codes collaboratives; a regional energy code implementation forum; technical assistance bodies which can support and inform States and local resilience planning; and a consortium of energy code training programs.*

In considering whether to apply for this FOA, and which areas of interest to address, applicants should review the existing collection of awards made through previous installments of the RECI FOA. [59] DOE encourages applicants to build on current and previous activities, and to avoid duplication of effort, so as to help maximize the overall reach and impact of the BIL initiative. In addition, applicants should review opportunities and awards made under IRA Section 50131[60], which provides similar assistance supporting States and local governments in adopting and implementing building energy codes but is a separate initiative with unique programmatic requirements and eligibility criteria. [61]

Applicants to this FOA are required to provide an estimate of impacts using the RECI Impacts Calculator tool, which provides estimates of key metrics across the different areas of interest. See Appendix A for further guidance.

For additional background information, including DOE infographics depicting the status of currently adopted codes, ability of States or cities to pursue stretch codes, and activities supporting energy code implementation, see Appendix B.

[59] https://www.energy.gov/eere/buildings/articles/meet-btos-newest-projects-support-more-resilient-and-efficient-building
[60] https://www.energy.gov/scep/technical-assistance-adoption-building-energy-codes
[61] See Section A.iii. BIL and IRA Coordination for more information.

All work for projects selected under this FOA must be performed in the United States. See Section IV.J.iii. and Appendix C.

ii. Teaming Partner List

DOE is compiling and providing a Teaming Partner List to facilitate the formation of project teams for this FOA. The Teaming Partner List allows organizations that may wish to participate on a project to express their interest to other applicants and explore potential partnerships.

The Teaming Partner List will be available on EERE eXCHANGE and will be regularly updated to reflect new teaming partners who provide their organization's information.

SUBMISSION INSTRUCTIONS: View the Teaming Partner List by visiting the EERE eXCHANGE homepage and clicking on "Teaming Partners" within the left-hand navigation pane. This page allows users to view published Teaming Partner Lists. To join the Teaming Partner List, submit a request within eXCHANGE. Select the appropriate Teaming Partner List from the drop-down menu, and fill in the following information: Investigator Name, Organization Name, Organization Type, Topic Area, Background and Capabilities, Website, Contact Address, Contact Email, and Contact Phone.

DISCLAIMER: By submitting a request to be included on the Teaming Partner List, the requesting organization consents to the publication of the above-referenced information. By facilitating the Teaming Partner List, DOE is not endorsing, sponsoring, or otherwise evaluating the qualifications of the individuals and organizations that are identifying themselves for placement on this Teaming Partner List. DOE will not pay for the provision of any information, nor will it compensate any applicants or requesting organizations for the development of such information.

C. Applications Specifically Not of Interest

The following types of applications will be deemed nonresponsive and will not be reviewed or considered (See Section III.D. of the FOA):

- Applications that fall outside the technical parameters specified in Sections I.A. and I.B. of the FOA.
- Applications for proposed technologies that are not based on sound scientific principles (e.g., violates the laws of thermodynamics).

- Applicants that do not include a State or Tribal Government agency, and therefore do not qualify as an "eligible entity" under Section 40511 of the BIL.[62]
- Applications that do not support a recent or planned energy code update, or which does not meet the definition of an "Updated Building Energy Code" per Section 40511 of the BIL.[63]

D. Community Benefits Plan: Job Quality and Equity

To support the goal of building a clean and equitable energy economy, BIL-funded projects are expected to (1) support meaningful community and labor engagement; (2) invest in America's workforce; (3) advance diversity, equity, inclusion, and accessibility (DEIA); and (4) contribute to the President's goal that 40% of the overall benefits of certain federal investments flow to disadvantaged communities (the Justice40 Initiative).[64] To ensure these goals are met, applications must include a Community Benefits Plan that describes how the proposed project would incorporate the four objectives stated above.

Applicants are encouraged to submit community and stakeholder partnership documentation from established stakeholder and community-based organizations that demonstrate the applicant's ability to achieve the above goals as outlined in the Community Benefits Plan. Within the Community Benefits Plan, the applicant is encouraged to provide details on how to ensure the delivery of measurable community and jobs benefits through meaningful participation and engagement with disadvantaged communities, underrepresented stakeholder groups, and State coalitions. See Section IV.D.xix for the Community Benefits Plan content requirements.

E. Authorizing Statutes

The programmatic authorizing statute is the Energy Conservation and Production Act (ECPA) (Pub. L. No. 94-385), as amended (42 U.S.C. §§ 6831 through 6838), and Section 40511 the Bipartisan Infrastructure Law (BIL) (Pub. 117-58) (codified at 42 U.S.C. § 6838).

[62] Eligible entities are defined as a state agency (such as a state building code agency, state energy office, or Tribal energy office) or a "partnership". See full definition in Section 40511 of the BIL.

[63] Section 50311 defines updated building energy codes as "An update to a building energy code under this section, including an amendment that results in increased efficiency compared to the previously adopted building energy code, shall include any update made available after the existing building energy code, even if it is not the most recent updated code available."

[64] The Justice40 initiative, established by E.O. 14008, sets a goal that 40% of the overall benefits of certain federal investments flow to disadvantaged communities as identified by the White House Council on Environmental Quality's Climate and Economic Justice Screening Tool (CEJST).

Awards made under this announcement will fall under the purview of 2 CFR Part 200 as amended by 2 CFR Part 910.

F. Notice of Bipartisan Infrastructure Law–Specific Requirements

Be advised that special terms and conditions apply to projects funded by the BIL relating to:

- Reporting, tracking, and segregation of incurred costs;
- Reporting on job creation and preservation;
- Publication of information on the internet;
- Access to records by Inspectors General and the Government Accountability Office;
- Requiring all of the iron, steel, manufactured goods, and construction materials used in the infrastructure activities of applicable projects are produced in the United States;
- Ensuring laborers and mechanics employed by contractors or subcontractors on BIL-funded projects are paid wages equivalent to prevailing wages on similar projects in the area;
- Protecting whistleblowers and requiring prompt referral of evidence of a false claim to an appropriate inspector general; and
- Certification and registration.

Recipients of funding appropriated by the BIL must comply with requirements of all applicable federal, State, and local laws, regulations, DOE policy and guidance, and instructions in this FOA. Recipients must flow down the requirements to subrecipients to ensure the recipient's compliance with the requirements.

II. Award Information

A. Award Overview

i. Estimated Funding

DOE expects to make a total of approximately $90,000,000 of federal funding available for new awards under this FOA, subject to the availability of appropriated funds. DOE anticipates making approximately 20 to 40 awards under this FOA. DOE may issue one, multiple, or no awards. Individual awards may vary between $500,000 and $10,000,000.

DOE may issue awards in one, multiple, or none of the following topic areas:

Topic Area Title	Anticipated Number of Awards	Anticipated Minimum Award Size for Any One Individual Award (Fed Share)	Anticipated Maximum Award Size for Any One Individual Award (Fed Share)	Approximate Total Federal Funding Available for All Awards	Anticipated Period of Performance (months)
Resilient and Efficient Code Implementation	20 to 40	$500,000	$10,000,000	Up to $90,000,000	12 to 60

DOE may establish more than one budget period for each award and fund only the initial budget period(s). Funding for all budget periods, including the initial budget period, is not guaranteed.

ii. Period of Performance

DOE anticipates making awards that will run from 1 year up to 5 years, comprised of one or more budget periods. Project continuation will be contingent upon several elements, including satisfactory performance and DOE's Go/No-Go decision. For a complete list and more information on the Go/No-Go review, see Section VI.B.xiii.

iii. New Applications Only

DOE will accept only new applications under this FOA. DOE will not consider applications for renewals of existing DOE-funded awards through this FOA.

B. DOE Funding Agreements

Through cooperative agreements and other similar agreements, DOE provides financial and other support to projects that have the potential to realize the FOA objectives. DOE does not use such agreements to acquire property or services for the direct benefit or use of the U.S. government.

i. Cooperative Agreements

DOE generally uses cooperative agreements to provide financial and other support to prime recipients.

Through cooperative agreements, DOE provides financial or other support to accomplish a public purpose of support or stimulation authorized by federal statute. Under cooperative agreements, the government and prime recipients share responsibility for the direction of projects.

DOE has substantial involvement in all projects funded via cooperative agreement. See Section VI.B.ix. of the FOA for more information on what substantial involvement may involve.

ii. Funding Agreements with Federally Funded Research and Development Center (FFRDCs)[65]

In most cases, FFRDCs are funded independently of the remainder of the project team. The FFRDC then executes an agreement with any non-FFRDC project team members to arrange work structure, project execution, and any other matters. Regardless of these arrangements, the entity that applied as the prime recipient for the project will remain the prime recipient for the project. See Section III.E.i.

III. Eligibility Information

To be considered for substantive evaluation, an applicant's submission must meet the criteria set forth below. If the application does not meet these eligibility requirements, it will be considered ineligible and removed from further evaluation.

A. Eligible Applicants

Section 40511 specifies eligibility criteria which must be met by all applicants. Eligible entities are defined as a relevant State agency (including Territorial agencies) or Tribal government, as determined by the Secretary of Energy. Examples include State building code agencies, State energy offices, Territorial energy offices or Tribal energy offices. In addition, *partnerships* are eligible entities, which must include a State agency and/or Tribal Government, and one or more of the following:

- Local building code agencies;
- codes and standards developers;
- associations of builders and design and construction professionals;
- local and utility energy efficiency programs;
- consumer, energy efficiency and environmental advocates; and
- other entities as determined by the Secretary.

Further, Section 40511 of the BIL indicates that priority shall be given to applications from partnerships. Eligible entities are further discussed in Section I.A.ii of the FOA.

[65] FFRDCs are public-private partnerships that conduct research for the U.S. government. A listing of FFRDCs can be found at http://www.nsf.gov/statistics/ffrdclist/.

i. Domestic Entities

The proposed prime recipient and subrecipient(s) must be domestic entities. The following types of domestic entities are eligible to participate as a prime recipient or subrecipient of this FOA:

1. Institutions of higher education;
2. For-profit entities;
3. Nonprofit entities; and
4. State and local governmental entities and Tribal energy offices (or other similar subdivision of a Tribal Government).

To qualify as a domestic entity, the entity must be organized, chartered, or incorporated (or otherwise formed) under the laws of a particular State or territory of the United States; have majority domestic ownership and control; and have a physical place of business in the United States.

DOE/ National Nuclear Security Administration (NNSA) FFRDCs are eligible to apply for funding as a subrecipient but are not eligible to apply as a prime recipient.

Non-DOE/NNSA FFRDCs are eligible to participate as a subrecipient but are not eligible to apply as a prime recipient.

Federal agencies and instrumentalities (other than DOE) are eligible to participate as a subrecipient but are not eligible to apply as a prime recipient.

Entities banned from doing business with the U.S. government, such as entities debarred, suspended, or otherwise excluded from or ineligible for participating in federal programs, are not eligible.

Nonprofit organizations described in Section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995, are **not** eligible to apply for funding.

ii. Foreign Entities

In limited circumstances, DOE may approve a waiver to allow a foreign entity to participate as a prime recipient or subrecipient. A foreign entity may submit a Full Application to this FOA, but the Full Application must be accompanied by an explicit written waiver request. Likewise, if the applicant seeks to include a foreign entity as a subrecipient, the applicant must submit a separate explicit

written waiver request in the Full Application for each proposed foreign subrecipient.

Appendix C lists the information that must be included in a foreign entity waiver request. The applicant does not have the right to appeal DOE's decision concerning a waiver request.

iii. Incorporated Consortia

Domestic incorporated consortia are eligible to participate as a prime recipient or subrecipient. For consortia incorporated (or otherwise formed) under the laws of a State or territory of the United States, please refer to "Domestic Entities" above. For consortia incorporated (or otherwise formed) in a foreign country, please refer to the requirements in "Foreign Entities" above.

Each consortium must have an internal governance structure and a written set of internal rules. Upon request, the consortium must provide a written description of its internal governance structure and its internal rules to the DOE Contracting Officer. If the consortium includes foreign members, the applicant must submit a separate explicit written waiver request in the Full Application for each foreign member. See Appendix C.

iv. Unincorporated Consortia

Unincorporated Consortia must designate one member of the consortium to serve as the prime recipient/consortium representative. The prime recipient/consortium representative must qualify as a domestic entity.

Upon request, unincorporated consortia must provide the DOE Contracting Officer with a collaboration agreement, commonly referred to as the articles of collaboration, which sets out the rights and responsibilities of each consortium member. This agreement binds the individual consortium members together and should include the consortium's:

- Management structure;
- Method of making payments to consortium members;
- Means of ensuring and overseeing members' efforts on the project;
- Provisions for members' cost sharing contributions; and
- Provisions for ownership and rights in intellectual property developed previously or under the agreement.

If the consortium includes foreign members, the applicant must submit a separate explicit written waiver request in the Full Application for each foreign member. See Appendix C.

B. Cost Sharing

Applicants are bound by the cost share proposed in their Full Applications if selected for award negotiations. Cost sharing is encouraged but not required under this FOA.

i. Legal Responsibility

Although the cost share requirement applies to the project as a whole, including work performed by members of the project team other than the prime recipient, the prime recipient is legally responsible for paying the entire cost share. If the funding agreement is terminated prior to the end of the project period, the prime recipient is required to contribute at least the cost share percentage of total expenditures incurred through the date of termination.

The prime recipient is solely responsible for managing cost share contributions by the project team and enforcing cost share obligation assumed by project team members in subawards or related agreements.

ii. Cost Share Allocation

Each project team is free to determine how best to allocate the cost share requirement among the team members. The amount contributed by individual project team members may vary, as long as the cost share requirement for the entire project is met.

iii. Cost Share Types and Allowability

Every cost share contribution must be allowable under the applicable federal cost principles, as described in Section IV.J.i. of the FOA. In addition, cost share must be verifiable upon submission of the Full Application. Cost share may be provided in the form of cash or cash equivalents, or in-kind contributions. Cost share must come from non-federal sources (unless otherwise allowed by law), such as project participants, State or local governments, or other third-party financing. DOE Loan Guarantee, cannot be leveraged by applicants to provide the required cost share or otherwise support the same scope that is proposed under a project.

Cost share may be provided by the prime recipient, subrecipients, or third parties (entities that do not have a role in performing the scope of work). Vendors/contractors may not provide cost share. Any partial donation of goods or services is considered a discount and is not allowable.

Cash contributions include but are not limited to personnel costs, fringe costs, supply and equipment costs, indirect costs, and other direct costs.

In-kind contributions are those where a value of the contribution can be readily determined, verified, and justified but where no actual cash is transacted in securing the good or service comprising the contribution. Allowable in-kind contributions include but are not limited to the donation of volunteer time or the donation of space or use of equipment.

Project teams may use funding or property received from State or local governments to meet the cost share requirement, so long as the federal government did not provide the funding to the State or local government.

The recipient may not use any of the following sources to meet cost share obligations:

- Revenues or royalties from the prospective operation of an activity beyond the project period;
- Proceeds from the prospective sale of an asset of an activity;
- Federal funding or property (e.g., federal grants, equipment owned by the federal government); or
- Expenditures that were reimbursed under a separate federal program.

Project teams may not use the same cash or in-kind contributions to meet cost share requirements for more than one project or program.

Cost share contributions must be specified in the project budget, verifiable from the prime recipient's records, and necessary and reasonable for proper and efficient accomplishment of the project. As all sources of cost share are considered part of total project cost, the cost share dollars will be scrutinized under the same federal regulations as federal dollars to the project. Every cost share contribution must be reviewed and approved in advance by the Contracting Officer and incorporated into the project budget before the expenditures are incurred.

Applicants are encouraged to refer to 2 CFR 200.306 and 2 CFR 910.130 for additional cost sharing requirements.

iv. Cost Share Contributions by FFRDCs

Because FFRDCs are funded by the federal government, costs incurred by FFRDCs generally may not be used to meet the cost share requirement. FFRDCs may

contribute cost share only if the contributions are paid directly from the contractor's Management Fee or another non-federal source.

v. Cost Share Verification

Applicants are required to provide written assurance of their proposed cost share contributions in their Full Applications.

Upon selection for award negotiations, applicants are required to provide additional information and documentation regarding their cost share contributions.

vi. Cost Share Payment

DOE requires prime recipients to contribute the cost share amount incrementally over the life of the award. Specifically, the prime recipient's cost share for each billing period must always reflect the overall cost share ratio negotiated by the parties (i.e., the total amount of cost sharing on each invoice when considered cumulatively with previous invoices must reflect, at a minimum, the cost sharing percentage negotiated). As FFRDC funding will be provided directly to the FFRDC(s) by DOE, prime recipients will be required to provide project cost share at a percentage commensurate with the FFRDC costs, on a budget period basis, resulting in a higher interim invoicing cost share ratio than the total award ratio.

In limited circumstances, and where it is in the government's interest, the DOE Contracting Officer may approve a request by the prime recipient to meet its cost share requirements on a less frequent basis, such as monthly or quarterly. Regardless of the interval requested, the prime recipient must be up to date on cost share at each interval. Such requests must be sent to the Contracting Officer during award negotiations and include the following information: (1) a detailed justification for the request; (2) a proposed schedule of payments, including amounts and dates; (3) a written commitment to meet that schedule; and (4) such evidence as necessary to demonstrate that the prime recipient has complied with its cost share obligations to date. The Contracting Officer must approve all such requests before they go into effect.

C. Compliance Criteria

All applicant submissions must:

- Comply with the applicable content and form requirements listed in Section IV. of the FOA;
- Include all required documents;
- Be uploaded and submitted to EERE eXCHANGE https://eere-eXCHANGE.energy.gov; and

- Be submitted by the deadline stated in the FOA.

DOE will not review or consider submissions submitted through means other than EERE eXCHANGE, submissions submitted after the applicable deadline, or incomplete submissions.

Applicants are strongly encouraged to submit their Concept Papers, Full Applications, and Replies to Reviewer Comments at least 48 hours in advance of the submission deadline. Under normal conditions (i.e., at least 48 hours before the submission deadline), applicants should allow at least one hour to submit a Concept Paper, Full Application, or Reply to Reviewer Comments. Once the Concept Paper, Full Application, or Reply to Reviewer Comments is submitted in EERE eXCHANGE, applicants may revise or update that submission until the expiration of the applicable deadline. If changes are made to any of these documents, the applicant must resubmit the Concept Paper, Full Application, or Reply to Reviewer Comments before the applicable deadline. DOE will not extend the submission deadline for applicants that fail to submit required information by the applicable deadline due to server/connection congestion.

D. Responsiveness Criteria

All Applications Specifically Not of Interest, as described in Section I.C. of the FOA, are deemed nonresponsive and are not reviewed or considered.

E. Other Eligibility Requirements

i. Requirements for DOE/NNSA and Non-DOE/NNSA FFRDCs Included as a Subrecipient

DOE/NNSA and non-DOE/NNSA FFRDCs may be proposed as a subrecipient on another entity's application subject to the following guidelines:

a. Authorization for non-DOE/NNSA FFRDCs
The federal agency sponsoring the FFRDC must authorize in writing the use of the FFRDC on the proposed project and this authorization must be submitted with the application. The use of a FFRDC must be consistent with its authority under its award.

b. Authorization for DOE/NNSA FFRDCs
The cognizant Contracting Officer for the FFRDC must authorize in writing the use of the FFRDC on the proposed project and this authorization must be

submitted with the application. The following wording is acceptable for this authorization:

> Authorization is granted for the Laboratory to participate in the proposed project. The work proposed for the Laboratory is consistent with or complementary to the missions of the Laboratory and will not adversely impact execution of the DOE assigned programs at the Laboratory.

c. Funding, Cost Share, and Subaward with FFRDCs

The value of and funding for the FFRDC portion of the work will not normally be included in the award. DOE/NNSA FFRDCs participating as a subrecipient on a project will be funded directly through the DOE field work proposal (WP) process. Non-DOE/NNSA FFRDCs participating as a subrecipient will be funded through an interagency agreement with the sponsoring agency.

Although the FFRDC portion of the work is excluded from the award, the applicant's cost share will be based on the total cost of the project, including the applicant's, the subrecipient's, and the FFRDC's portions of the project.

Unless instructed otherwise by the DOE Contracting Officer for the DOE award, all FFRDCs are required to enter into a Cooperative Research and Development Agreement[66] (CRADA) or, if the role of the DOE/NNSA FFRDC is limited to technical assistance and intellectual property is not anticipated to be generated from the DOE/NNSA FFRDC's work, a Technical Assistance Agreement (TAA), with at least the prime recipient before any project work begins. Any questions regarding the use of a CRADA or TAA should be directed to the cognizant DOE field intellectual property (IP) counsel.

The CRADA or TAA is used to ensure accountability for project work and provide the appropriate management of IP, e.g., data protection and background IP. The CRADA or TAA must be agreed upon by all parties and submitted to DOE or other sponsoring agency, when applicable, for approval, or submitted to DOE for notice under the Master Scope of Work process, when applicable, using any DOE or other sponsoring agency approved CRADA or TAA template without substantive changes by the time the award is made to the prime recipient.

[66] A cooperative research and development agreement is a contractual agreement between a national laboratory contractor and a private company or university to work together on research and development. For more information, see https://www.energy.gov/gc/downloads/doe-cooperative-research-and-development-agreements

d. Responsibility
The prime recipient will be the responsible authority regarding the settlement and satisfaction of all contractual and administrative issues, including but not limited to disputes and claims arising out of any agreement between the prime recipient and the FFRDC.

e. Limit on FFRDC Effort
The FFRDC effort, in aggregate, shall not exceed 50% of the total estimated cost of the project, including the applicant's and the FFRDC's portions of the effort.

F. Limitation on Number of Concept Papers and Full Applications Eligible for Review

An entity may submit more than one Concept Paper and Full Application to this FOA, provided that each application describes a unique, scientifically distinct project and an eligible Concept Paper was submitted for each Full Application.

G. Questions Regarding Eligibility

DOE will not make eligibility determinations for potential applicants prior to the date on which applications to this FOA must be submitted. The decision whether to apply in response to this FOA lies solely with the applicant.

IV. Application and Submission Information

A. Application Process

The application process includes multiple submission phases: Concept Paper and Full Application. **Only applicants who have submitted an eligible Concept Paper will be eligible to submit a Full Application**.

All submissions must conform to the form and content requirements described below, including maximum page lengths.

- Each must be submitted in Adobe PDF format unless stated otherwise;
- Each must be written in English;
- All pages must be formatted to fit on 8.5" x 11" paper with margins not less than one inch on every side. Use Calibri typeface, a black font color, and a font size of 12-point or larger (except in figures or tables, which may be 10-point font). A symbol font may be used to insert Greek letters or special characters, but the font size requirement still applies. References must be

included as footnotes or endnotes in a font size of 10 or larger. Footnotes and endnotes are counted toward the maximum page requirement;

- A **control number** will be issued when an applicant begins the EERE eXCHANGE application process. The control number must be included with all application documents. Specifically, the control number must be prominently displayed on the upper right corner of the header of every page and included in the file name (i.e., *Control Number_Applicant Name_Full Application*);
- Page numbers must be included in the footer of every page; and
- Each submission must not exceed the specified maximum page limit, including cover page, charts, graphs, maps, and photographs when printed using the formatting requirements set forth above and single spaced. If applicants exceed the maximum page lengths indicated below, DOE will review only the authorized number of pages and disregard any additional pages.

i. Additional Information on EERE eXCHANGE

EERE eXCHANGE is designed to enforce the deadlines specified in this FOA. The "Apply" and "Submit" buttons will automatically disable at the defined submission deadlines.

Applicants who experience technical difficulties with submission PRIOR to the FOA deadline should contact the EERE eXCHANGE helpdesk for assistance (EERE-eXCHANGESupport@hq.doe.gov).

B. Application Forms

To access application forms and instructions available on EERE eXCHANGE, go to https://eere-eXCHANGE.energy.gov and select the appropriate funding opportunity number.

Note: The maximum file size that can be uploaded to the EERE eXCHANGE website is 50MB. Files larger than 50MB cannot be uploaded and hence cannot be submitted for review. If a file is larger than 50MB but is still within the maximum page limit specified in the FOA, it must be broken into parts and denoted to that effect. For example:

TechnicalVolume_Part_1
TechnicalVolume_Part_2

DOE will not accept late submissions that resulted from technical difficulties due to uploading files that exceed 50MB.

C. Content and Form of the Concept Paper

Each Concept Paper must be limited to a single concept or technology. The Concept Paper must conform to the requirements listed below, including the stated page limits.

Section	Page Limit	Description
Cover Page	1 page maximum	The cover page should include the project title, the specific announcement Topic Area being addressed (if applicable), both the technical and business points of contact, names of all team member organizations, the project location(s), and any statements regarding confidentiality.
Project Description	3 pages maximum	Applicants are required to describe succinctly: • The proposed project, including its basic principles and how it is unique and impactful; • The proposed technical assistance and expected impacts (applicants will be required to estimate impact as part of the Full Application and should include any preliminary estimates at the Concept Paper stage); • The current baseline scenario, including key shortcomings, limitations, and challenges; • How the proposed project will overcome the shortcomings, limitations, and challenges; • Anticipated community benefits and activities to advance meaningful engagement and participation from diverse stakeholders and communities; • The potential impact that the proposed project would have on the relevant field and application; • How the proposed structure, staffing and location of the proposed project will support long-term success; • The key technical risks/issues associated with the proposed project and approach; and • The impact that DOE funding would have on the proposed project.
Addendum	2 pages maximum	Applicants are required to succinctly describe the qualifications, experience, and capabilities of the proposed project team, including: • Whether the Principal Investigator (PI) and project team have the skill and expertise needed to successfully execute the project plan; • Whether the applicant has prior experience which demonstrates an ability to perform tasks of similar risk and complexity;

		• Whether the applicant has worked together with its teaming partners on prior projects or programs; • Whether the applicant has adequate access to equipment and facilities necessary to accomplish the effort and/or clearly explain how it intends to obtain access to the necessary equipment and facilities; and • Applicants may provide graphs, charts, or other data to supplement their Project Description.

DOE makes an independent assessment of each Concept Paper based on the criteria in Section V. of the FOA. DOE will encourage a subset of applicants to submit Full Applications. Other applicants will be discouraged from submitting a Full Application. See Section VI.A.

D. Content and Form of the Full Application

Applicants must complete the following application forms found on the EERE eXCHANGE website at https://eere-eXCHANGE.energy.gov/.

Applicants will have approximately 30 days from receipt of the Concept Paper Encourage/Discourage notification on EERE eXCHANGE to prepare and submit a Full Application. Regardless of the date the applicant receives the Encourage/Discourage notification, the submission deadline for the Full Application remains the date and time stated on the FOA cover page.

All Full Application documents must be marked with the control number issued to the applicant.

i. Full Application Content Requirements

Each Full Application must be limited to a single concept. Full Applications must conform to the following requirements and must not exceed the stated page limits.

Component	File Format	Page Limit	File Name
Technical Volume	PDF	15	ControlNumber_LeadOrganization_ TechnicalVolume
Resumes	PDF	1 page each	ControlNumber_LeadOrganization_ Resumes
Cost Share Commitments	PDF	1 page each	ControlNumber_LeadOrganization_ CostShare

Partnership Documentation	PDF	1 page each	Control Number_Lead Organization_PartnershipDocumentation
Community Benefits Documentation	PDF	10	ControlNumber_LeadOrganization_CommunityBenefit
Statement of Project Objectives (SOPO)	MS Word	10	ControlNumber_LeadOrganization_SOPO
SF-424: Application for Federal Assistance	PDF	n/a	ControlNumber_LeadOrganization_App424
Budget Justification Workbook	MS Excel	n/a	ControlNumber_LeadOrganization_Budget_Justification
Summary/Abstract for Public Release	PDF	1	ControlNumber_LeadOrganization_Summary
Summary Slide	MS PowerPoint	1	ControlNumber_LeadOrganization_Slide
Subrecipient Budget Justification	MS Excel	n/a	ControlNumber_LeadOrganization_Subrecipient_Budget_Justification
Project Impact Calculation	MS Excel	n/a	Control Number_Lead Organization_Impact
DOE Work Proposal for FFRDC, if applicable (see DOE O 412.1A, Attachment 2)	PDF	n/a	ControlNumber_LeadOrganization_WP
Authorization from cognizant Contracting Officer for FFRDC	PDF	n/a	ControlNumber_LeadOrganization_FFRDCAuth
SF-LLL Disclosure of Lobbying Activities	PDF	n/a	ControlNumber_LeadOrganization_SF-LLL
Foreign Entity Waiver Requests and Foreign Work Waiver Requests	PDF	n/a	ControlNumber_LeadOrganization_Waiver
Open-source Software Distribution Plan (if applicable)	PDF	n/a	ControlNumber_LeadOrganization_OSSDP
Community Benefits Plan: Job Quality and Equity	PDF	5	ControlNumber_LeadOrganization_CBP
Current and Pending Support	PDF	n/a	ControlNumber_LeadOrganization_CPS
Location(s) of Work	Excel	n/a	ControlNumber_LeadOrganization_LOW
Transparency of Foreign Connections	PDF	n/a	BusinessSensitive_ControlNumber_LeadOrganization_TFC
Potentially Duplicative Funding Notice	PDF	n/a	ControlNumber_LeadOrganization_PDFN

Note: The maximum file size that can be uploaded to the EERE eXCHANGE website is 50MB. See Section IV.B.

DOE provides detailed guidance on the content and form of each component below.

ii. Technical Volume

The Technical Volume must conform to the following content and form requirements. This volume must address the technical review criteria as discussed in Section V. of the FOA. Save the Technical Volume in a single PDF file using the following convention for the title: "ControlNumber_LeadOrganization_TechnicalVolume".

Applicants must provide sufficient citations and references to the primary research literature to justify the claims and approaches made in the Technical Volume. However, DOE and reviewers are under no obligation to review cited sources.

The Technical Volume to the Full Application may not be more than 15 pages, including the cover page, table of contents, and all citations, charts, graphs, maps, photos, or other graphics, and must include all information in the table below. The applicant should consider the weighting of each of the technical review criteria (see Section V. of the FOA) when preparing the Technical Volume.

The Technical Volume should clearly describe and expand upon information provided in the Concept Paper.

Technical Volume Content Requirements	
SECTION/PAGE LIMIT	**DESCRIPTION**
Cover Page	The cover page should include the project title, the specific FOA Topic Area being addressed (if applicable), both the technical and business points of contact, names of all team member organizations, names of project managers, Key Personnel and their organizations, the project location(s), and any statements regarding confidentiality.
Project Overview (Approximately 10% of the Technical Volume)	The Project Overview should contain the following information: • Background: The applicant should discuss the background of its organization, including the history, successes, and status (i.e., the technical assistance baseline) relevant to the technical topic being addressed in the Full Application. • Project Goal: The applicant should explicitly identify baseline condition, including currently adopted building energy code(s), proposed code(s) and pre-existing efforts to support energy code implementation, as well as the critical success factors in achieving that goal, including the ways in which the proposed project location and related infrastructure,

	skilled workforce, community benefits, etc. will contribute to the success of the project. • DOE Impact: The applicant should discuss the impact that DOE funding would have on the proposed project toward targeted outcomes, such as energy and environmental impacts, increased resilience, improved health, comfort, affordability, and a more robust and diversified workforce, among others. Applicants should specifically explain how DOE funding, relative to prior, current, or anticipated funding from other public and private sources, is necessary to achieve the project objectives.
Technical Description, Innovation, and Impact (Approximately 30% of the Technical Volume)	The Technical Description should contain the following information: • Relevance and Outcomes: The applicant should provide a detailed description of the project or focus area, including the scientific and other principles and objectives that will be pursued during the project. This section should describe the relevance of the proposed project to the goals and objectives of the FOA, including the potential to meet specific goals and objectives or other relevant performance targets. The applicant should clearly specify the expected outcomes of the project. • Feasibility: The applicant should demonstrate the technical feasibility of the proposed project and capability of achieving the anticipated outcomes, including a description of previous work done and prior results. This section should also address the project's access to necessary stakeholders and ability to influence energy code adoption and implementation in the targeted region. • Impacts: The applicant should describe the current baseline scenario, the advantages of proposed approach over current or previous approaches, and the overall impact on advancing the technical baseline if the project is successful.
Workplan (Approximately 40% of the Technical Volume)	The Workplan should include a summary of the Project Objectives, Technical Scope, Work Breakdown Structure (WBS), Milestones, Go/No-Go decision points, and Project Schedule. A detailed SOPO is separately requested. The Workplan should contain the following information: • Project Objectives: The applicant should provide a clear and concise (high-level) statement of the goals and objectives of the project as well as the expected outcomes. • Technical Scope: The applicant should provide a summary description of the overall work scope and approach to achieve the objective(s). The overall work scope is to be divided by performance periods that are separated by discrete, approximately annual decision points (see below for more information on Go/No-Go decision points). The applicant should describe the specific expected end result of each performance period, including milestones in the Community Benefits Plan. • Task Summary: The Workplan should describe the work to be accomplished and how the applicant will achieve the milestones, will

	accomplish the final project goal(s), and will produce all deliverables. The Workplan is to be structured with a hierarchy of performance period (approximately annual), task and subtasks, which is typical of a standard WBS for any project. The Workplan shall contain a concise description of the specific activities to be conducted over the life of the project. The description shall be a full explanation and disclosure of the project being proposed (i.e., a statement such as "we will then complete a proprietary process" is unacceptable). It is the applicant's responsibility to prepare an adequately detailed task plan to describe the proposed project and the plan for addressing the objectives of this FOA. The summary provided should be consistent with the SOPO. The SOPO will contain a more detailed description of the WBS and tasks. • Milestone Summary: The applicant should provide a summary of appropriate milestones throughout the project to demonstrate success. A milestone may be either a progress measure (which can be activity based) or a SMART technical milestone. SMART milestones should be Specific, Measurable, Achievable, Relevant, and Timely, and must demonstrate a technical achievement rather than simply completing a task. Unless otherwise specified in the FOA, the minimum requirement is that each project must have at least one milestone per quarter for the duration of the project with at least one SMART technical milestone per year (depending on the project, more milestones may be necessary to comprehensively demonstrate progress). The applicant should also provide the means by which the milestone will be verified. The summary provided should be consistent with the Milestone Summary Table in the SOPO. • Go/No-Go Decision Points (See Section VI.B.xiii. for more information on the Go/No-Go Review): The applicant should provide a summary of project-wide Go/No-Go decision points at appropriate points in the Workplan. At a minimum, each project must have at least one project-wide Go/No-Go decision point for each budget period (12 to 18-month period) of the project. See Section VI.B.xii. The applicant should also provide the specific technical and community benefits plan criteria to be used to evaluate the project at the Go/No-Go decision point. The summary provided should be consistent with the SOPO. Go/No-Go decision points are considered "SMART" and can fulfill the requirement for an annual SMART milestone. • End of Project Goal: The applicant should provide a summary of the end of project goal(s). At a minimum, each project must have one SMART end of project goal. The summary provided should be consistent with the SOPO. • Project Schedule (Gantt Chart or similar): The applicant should provide a schedule for the entire project, including task and subtask durations, milestones, and Go/No-Go decision points. • Buy America Requirements for Infrastructure Projects: Within the first two pages of the Workplan, include a short statement on whether the

	project will involve the construction, alteration, and/or repair of infrastructure in the United States. See Appendix D for applicable definitions and other information to inform this statement.
	• Project Management: The applicant should discuss the team's proposed management plan, including the following:
	  ○ The overall approach to and organization for managing the work;
	  ○ The roles of each project team member;
	  ○ Any critical handoffs/interdependencies among project team members;
	  ○ The technical and management aspects of the management plan, including systems and practices, such as financial and project management practices;
	  ○ The approach to project risk management, including a plan for securing a qualified workforce and mitigating risks to project performance including but not limited to community or labor disputes;
	  ○ A description of how project changes will be handled;
	  ○ If applicable, the approach to Quality Assurance/Control;
	  ○ How communications will be maintained among project team members.
	• Market Transformation Plan: The applicant should provide a market transformation plan, including the following:
	  ○ Identification of target market, critical participants and stakeholders, and communication channels for proposed technical assistance along with known or perceived barriers, including a mitigation plan.

Technical Qualifications and Resources (Approximately 20% of the Technical Volume)	The Technical Qualifications and Resources should contain the following information: • A description of the project team's unique qualifications and expertise, including those of key subrecipients; • A description of the project team's existing equipment and facilities, or equipment or facilities already in place on the proposed project site, that will facilitate the successful completion of the proposed project; include a justification of any new equipment or facilities requested as part of the project; • Relevant, previous work efforts, demonstrated innovations, and how these enable the applicant to achieve the project objectives; • The time commitment of the key team members to support the project;

	• A description of the technical services to be provided by DOE/NNSA FFRDCs, if applicable;
	• The skills, certifications, or other credentials of the construction and ongoing operations workforce;
	• For multi-organizational projects, describe succinctly:
	  ○ The roles and the work to be performed by the project manager and Senior/Key Personnel at the prime and sub levels;
	  ○ Business agreements between the applicant and sub;
	  ○ How the various efforts will be integrated and managed;
	  ○ Process for making decisions on technical direction;
	  ○ Publication arrangements;
	  ○ Intellectual property issues; and
	  ○ Communication plans.

iii. Resumes

A resume provides information reviewers can use to evaluate an individual's relevant skills and the experience of the key project personnel. Applicants must submit a 1-page resume for each project manager and Key Personnel that includes the following:

1. Contact information;
2. Education: All academic institutions attended, major/area, degree;
3. Training: (e.g.,) certification or credential from a Registered Apprenticeship or Labor Management Partnership
4. Professional experience: Beginning with the current position, list professional/academic positions in chronological order with a brief description;
5. List all current academic, professional, or institutional appointments, foreign or domestic, at the applicant institution or elsewhere, whether or not remuneration is received, and whether full-time, part-time, or voluntary; and
6. There should be no lapses in time over the past 10 years or since age 18, whichever period is shorter.

As an alternative to a resume, it is acceptable to use the biographical sketch format approved by the National Science Foundation (NSF). The biographical sketch format may be generated by the Science Experts Network Curriculum Vita (SciENcv), a cooperative venture maintained at https://www.ncbi.nlm.nih.gov/sciencv/. The use of a format required by another

agency is intended to reduce the administrative burden to researchers by promoting the use of common formats.

Save the resumes in a single PDF file using the following convention for the title: "ControlNumber_LeadOrganization_Resumes".

iv. Cost Share Commitments

Submit letters of cost share commitment, if applicable, from all subrecipient and third-party cost share providers. If applicable, the letter must state that the third party is committed to providing a specific minimum dollar amount or value of in-kind contributions allocated to cost sharing. The following information for each third party contributing to cost sharing should be identified: (1) the name of the organization; (2) the proposed dollar amount to be provided; and (3) the proposed cost sharing type (cash or in-kind contributions). Cost share is encouraged under the FOA, but not required. Therefore, cost share commitments are only required for applicants proposing to provide cost share as part of their award. Each letter must not exceed one page. Save the letters of commitment in a single PDF file using the following convention for the title: "ControlNumber_LeadOrganization_CostShare".

Letters of support or endorsement for the project from entities that do not have a substantive role in the project will not be accepted.

v. Partnership Documentation

Section 40511 of the BIL establishes specific requirements for eligible entities and partnerships under this FOA. All project partners, including at least one State agency, must submit a *Letter of Commitment*. Each partner Letter of Commitment shall demonstrate their support for the overall project and specific role within the project team. Letters of Commitment should highlight specific roles, skillsets, or expertise that can address critical barriers and challenges addressed by the project work plan, or aid in providing access to, or participation of, critical stakeholders. As examples, a project focused on a workforce training initiative may require Letters of Commitment from relevant State agencies, such as those which have responsibility for professional licensure, certification, or continuing education, industry organizations which provide relevant credentialing or certifications, or relevant training providers and participants. Letters of Commitment shall be in the form of a letter on the entity's letterhead (or other appropriate media) outlining the planned partnership and signed by an authorized officer of the entity. Partnerships are also encouraged to establish a Memorandum of Understanding (MOU), or other similar agreement, among its members. Letters of Commitment must state the specific nature of the partnership, support provided and role in the project, and must not be general

letters of support. Applicants and partnerships shall provide the Letters of Commitment in a single PDF file using the following convention for the title "Control Number_Lead Organization_PartnershipDocumentation".

Partnership documentation from Tribal Governments (who are not the prime applicant) should meet the criteria above, and can take one of two forms:

- A letter of support from Tribal leadership. The letter should be signed by an authorized representative of the Indian Tribe, typically an elected official (e.g., Chief, Chairman, Chairwoman, Governor, Nation Representative, President, Chief Executive Officer, Chief Financial Officer, Speaker of the Council, Speaker of the Congress). The signer must be holding their position at the time the award is open for applications.
- A Tribal Council Resolution, Board resolution, or act from a relevant legislative body.

vi. Community Benefits Documentation

In support of the Community Benefits Plan, applicants may submit documentation to demonstrate existing or planned partnerships with community entities, such as organizations that work with local stakeholders most vulnerable to or affected by the project. Examples of such entities include organizations that carry out workforce development programs, labor unions, Tribal organizations, and community-based organizations that work with disadvantaged communities. The partnership documentation can be a letter on a partner's letterhead outlining the planned partnership and signed by an officer of the entity, a Memorandum of Understanding, or another similar agreement. Such letters must state the specific nature of the partnership and must not be general letters of support. If the applicant intends to enter into workforce and community agreements as part of the Community Benefits Plan, they should include letters from proposed partners. Each letter must not exceed one page. Save the partnership documentation in a single PDF file using the following convention for the title:
"ControlNumber_LeadOrganization_CommunityBenefit".

vii. Statement of Project Objectives (SOPO)

Applicants must complete a SOPO. A SOPO template is available on EERE eXCHANGE at https://eere-eXCHANGE.energy.gov/. The SOPO, including the Milestone Table, must not exceed 10 pages when printed using standard 8.5" x 11" paper with 1" margins (top, bottom, left, and right) with font not smaller than 12-point (except in figures or tables, which may be 10-point font). Save the SOPO in a single Microsoft Word file using the following convention for the title: "ControlNumber_LeadOrganization_SOPO".

viii. SF-424: Application for Federal Assistance

Applicants must complete the SF-424: Application for Federal Assistance, which is available on EERE eXCHANGE at https://eere-eXCHANGE.energy.gov/. The list of certifications and assurances in Field 21 can be found at http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms, under Certifications and Assurances. Note: The dates and dollar amounts on the SF-424 are for the complete project period and not just the first project year, first phase, or other subset of the project period. Save the SF-424 in a single PDF file using the following convention for the title: "ControlNumber_LeadOrganization_424".

ix. Budget Justification Workbook

Applicants must complete the Budget Justification Workbook, available on EERE eXCHANGE at https://eere-eXCHANGE.energy.gov/. Applicants must complete each tab of the Budget Justification Workbook for the project, including all work to be performed by the prime recipient and its subrecipients and contractors. Applicants should include costs associated with implementing the various BIL-specific requirements (e.g., Buy America requirements for infrastructure projects, Davis-Bacon, Community Benefits Plan, reporting, oversight) and with required annual audits and incurred cost proposals in their proposed budget documents. Such costs may be reimbursed as a direct or indirect cost. Applicants must account for scope outlined in the Community Benefits Plan as separate costs within their budget justification workbook. The "Instructions and Summary" included with the Budget Justification Workbook will auto-populate as the applicant enters information into the Workbook. Applicants must carefully read the "Instructions and Summary" tab provided within the Budget Justification Workbook. Save the Budget Justification Workbook in a single Microsoft Excel file using the following convention for the title: "ControlNumber_LeadOrganization_Budget_Justification".

x. Summary for Public Release

Applicants must submit a one-page summary of their project that is suitable for dissemination to the public. It should be a self-contained document that identifies the name of the applicant, the lead project manager/principal investigator(s), the project title, the objectives of the project, a description of the project, including methods to be employed, the potential impact of the project (e.g., benefits, outcomes), major participants (for collaborative projects), and the project's commitments and goals described in the Community Benefits Plan. This document must not include any proprietary or business-sensitive information, as DOE may make it available to the public after selections are made. The summary must not exceed one page when printed, using standard 8.5" x 11" paper with 1" margins (top, bottom, left, and right) with font not smaller than 12-point. Save

the Summary for Public Release in a single PDF file using the following naming convention: "ControlNumber_LeadOrganization_Summary".

xi. Summary Slide

Applicants must provide a single slide summarizing the proposed project. The Summary Slide template is available on EERE eXCHANGE at https://eere-eXCHANGE.energy.gov/ and must include the following information:

- A technology summary;
- A description of the technology's impact;
- Proposed project goals;
- Any key graphics (illustrations, charts and/or tables);
- The project's key idea/takeaway;
- Topline community benefits;
- Project title, prime recipient, PI/LPM, and Senior/Key Personnel information; and
- Requested DOE funds and proposed applicant cost share.

Save the Summary Slide in a single Microsoft PowerPoint file using the following convention for the title: "ControlNumber_LeadOrganization_Slide".

xii. Subrecipient Budget Justification (if applicable)

Applicants must provide a separate budget justification for each subrecipient that is expected to perform work estimated to be more than $250,000 or 25% of the total work effort, whichever is less. The budget justification must include the same justification information described in the "Budget Justification" section above. Save each subrecipient budget justification in a Microsoft Excel file using the following convention for the title: "ControlNumber_LeadOrganization_Subrecipient_Budget_Justification".

xiii. Project Impact Calculation

Applicants must provide an estimate of project impacts, including energy, cost, and emissions savings using the RECI Impact Calculator tool. See Appendix A for further discussion on project impact calculations. The spreadsheet-based tool provides such estimates for code updates (both model and stretch codes) in new construction, improvements to existing buildings (such as building performance standards), and improvements in energy codes compliance. Applicants must use the Impact Calculator tool and attach their completed work (i.e., spreadsheet file), including all inputs and resulting estimates, as part of their application submission. Applicants may include supporting materials that help justify or clarify calculator inputs and assumptions in the application submission.

Applicants may also provide additional impact justification beyond what is required by the RECI Impact Calculator tool. Additional projections are permitted, particularly in instances where the activities being proposed are not captured accurately or sufficiently by the standardized Impact Calculator tool. Any additional impact estimates provided by the applicant must be clearly articulated, and based on technically sound, commonly accepted, and defensible calculation methods. In all cases, applicants should document relevant inputs and assumptions, to ensure clarity around how impacts are calculated.

Applicants must report estimated impacts as part of their Summary Slide and their Project Summary document (abstract). Save the completed spreadsheet as a MS Excel file using the following convention for the title "Control Number_Lead Organization_Impact".

xiv. Budget for DOE/NNSA FFRDC (if applicable)

If a DOE/NNSA FFRDC is to perform a portion of the work, the applicant must provide a DOE work proposal (WP) in accordance with the requirements in DOE Order 412.1A, Work Authorization System, Attachment 2, available at: https://www.directives.doe.gov/directives-documents/400-series/0412.1-BOrder-a-chg1-AdmChg. Save the WP in a single PDF file using the following convention for the title: "ControlNumber_LeadOrganization_WP".

xv. Authorization for Non-DOE/NNSA or DOE/NNSA FFRDCs (if applicable)

The federal agency sponsoring the FFRDC must authorize in writing the use of the FFRDC on the proposed project and this authorization must be submitted with the application. The use of a FFRDC must be consistent with the contractor's authority under its award. Save the Authorization in a single PDF file using the following convention for the title: "ControlNumber_LeadOrganization_FFRDCAuth".

xvi. SF-LLL: Disclosure of Lobbying Activities (required)

Recipients and subrecipients may not use any federal funds to influence or attempt to influence, directly or indirectly, congressional action on any legislative or appropriation matters.

Recipients and subrecipients are required to complete and submit SF-LLL, "Disclosure of Lobbying Activities" (https://www.grants.gov/web/grants/forms/sf-424-individual-family.html) to ensure that non-federal funds have not been paid and will not be paid to any

person for influencing or attempting to influence any of the following in connection with the application:

- An officer or employee of any federal agency;
- A member of Congress;
- An officer or employee of Congress; or
- An employee of a member of Congress.

Save the SF-LLLs in a single PDF file using the following convention for the title: "ControlNumber_LeadOrganization_SF-LLL".

xvii. Waiver Requests (if applicable)

Foreign Entity Participation
For projects selected under this FOA, all recipients and subrecipients must qualify as domestic entities. See Section III. To request a waiver of this requirement, the applicant must submit an explicit waiver request in the Full Application. Appendix C lists the information that must be included in a waiver request.

Foreign Work Waiver Request
As set forth in Section IV.J.iii., all work for projects selected under this FOA must be performed in the United States. To request a waiver of this requirement, the applicant must submit an explicit waiver request in the Full Application. Appendix C lists the information that must be included in a foreign work waiver request.

Save the Waivers in a single PDF file using the following convention for the title: "ControlNumber_LeadOrganization_Waiver".

xviii. Open-Source Software Distribution Plan

When applicants pursue activities involving software development, applicants must submit an Open-Source Software Distribution Plan as part of their Full Application. This plan describes how software produced under this FOA will be distributed. Failure to submit a complete Plan may result in a determination of non-compliance for your Full Application. Guidance for preparing this plan is included in Appendix E of the FOA. Save the Open-source Software Distribution Plan in a single Microsoft Word file using the following convention for the title: "ControlNumber_LeadOrganization_OSSDP".

xix. Community Benefits Plan: Job Quality and Equity

The Community Benefits Plan: Job Quality and Equity (Community Benefits Plan or Plan) must set forth the applicant's approach to ensuring that federal investments advance four goals:

1) support meaningful community, Tribal, and labor engagement;
2) engage and support a skilled and qualified workforce;
3) advance diversity, equity, inclusion, and accessibility (DEIA); and
4) contribute to goals of the Justice40 Initiative.

To ensure these goals are met, as part of their application for funding, applicants must create a Community Benefits Plan that describes how their codes program will incorporate the four objectives stated above.
For your convenience, a Community Benefits Plan template is available at: About Community Benefits Plans. Applicants are strongly encouraged to use the template to complete their specific Plan.

The applicant's Community Benefits Plan must include at least one Specific, Measurable, Attainable, Realistic and Timely (SMART) milestone per budget period to measure progress on the proposed actions. The Plan will be evaluated as part of the technical review process. If DOE selects a project, DOE will incorporate the Community Benefits Plan into the award and the recipient must implement its Community Benefits Plan when carrying out its project. In addition, DOE will evaluate the recipient's progress during the award period of performance, including as part of the Go/No-Go review process.

The Community Benefits Plan must not exceed 5 pages. It must be submitted in PDF format using the following convention name for the title: "Control Number_LeadOrganization_CBP." This Plan must address the technical review criterion titled "Community Benefits Plan: Job Quality & Equity." See Section V. of the FOA.

For additional information, see About Community Benefits Plans.

The Community Benefits Plan must address the following:
1. Community and Labor Engagement: The Community Benefits Plan must describe the applicant's actions to date and plans to engage with community partners, such as local and/or Tribal Governments, labor unions, and community-based organizations including those that support or work with disadvantaged communities as defined for purposes of the Justice40 Initiative.[67] By facilitating community input, social buy-in, and accountability, such engagement can

[67] See https://screeningtool.geoplatform.gov/en/.

improve and accelerate code updates, content and creation and implementation.

Applicants must describe what important stakeholder or community engagement and outreach strategies they will utilize to reach contractor and workforce organizations, disadvantaged communities, low-income households, and communities with environmental justice concerns. Applicants are strongly encouraged to establish partnerships with and provide funding to community-based organizations, labor unions, contractor organization, utilities, existing program implementers, community colleges and trade schools, and other organizations that represent or work with low-income or disadvantaged households to reach and engage with these communities effectively over the life of the code development, creation, design and implementation.

Applicants should also provide community and stakeholder partnership documentation from representative organizations reflecting substantive engagement.

2. Investing in Job Quality and Skilled Workforce: A well-qualified, skilled, trained, and stable workforce is necessary to ensure that the adopted codes are fully and successfully implemented. High-quality jobs are critical to attracting and retaining the qualified workforce required to ensure successful and durable energy savings from a newly adopted code. The Community Benefits Plan should describe the applicant's approach to providing ongoing workforce education and training, ensuring jobs are of sufficient quality to attract and retain skilled workers. Applicants must describe how they are supporting education and training of both new and incumbent workers.

As the 1935 National Labor Relations Act states, employees' ability to organize, bargain collectively, and participate, through labor organizations of their choosing, in decisions that affect them contributes to the effective conduct of business and facilitates amicable settlements of any potential disputes between employees and employers, providing assurances of project efficiency, continuity, and multiple public benefits. Applicants should provide a description of they plan to support worker development and training services. This might include investing in workforce and education through joint labor-management training programs, supports for the development of a resilient, skilled, and stable workforce including by utilizing registered apprentices on projects and paying at or above the local prevailing wages, establishing or encouraging use of project labor or community workforce agreements, and other commitments or pledges.

3. Diversity, Equity, Inclusion, and Accessibility (DEIA): The Community Benefits Plan must include a section describing how DEIA objectives will be incorporated into the project. The section should detail how the applicant will support underrepresented businesses, educational institutions (e.g., Minority Serving Institutions), and training organizations that serve workers who face barriers to accessing quality jobs, and/or other project partners to help address DEIA.

The following is a list of potential DEIA actions that could be included in a Plan. This list is offered to provide guidance to applicants and is not intended to be comprehensive:

- Commit to partnering with socially disadvantaged businesses (e.g., veterans, new entrants, etc.);
- To fill open positions for code officials or other energy efficiency jobs, partner with workforce training organizations serving underrepresented communities and those facing systemic barriers to quality employment, such as those with disabilities, women, returning citizens, opportunity youth, and veterans;
- Partner with organizations who can provide workers with comprehensive support services, such as childcare, mentoring, and transportation, to increase representation and access in energy codes, energy efficiency, and construction jobs.

4. Justice40 Initiative: Applicant must provide an overview of benefits to disadvantaged communities that codes can deliver, supported by measurable milestones. The Justice40 Initiative section of the Community Benefits Plan must include:

A) Tracking Benefits to disadvantaged communities

Under this funding opportunity, code changes and updates or other positive outcomes (see below for examples) that may impact residential and commercial buildings in communities identified by the Climate and Environmental Justice Screening Tool (CEJST) may qualify as benefits that flow to disadvantaged communities.[68].

B) A description of how the applicant will assure that applicable benefits flow to disadvantaged communities

Applicants should specifically identify how their programs will deliver benefits in CEJST-identified areas (or their DOE-approved alternative definition of aa

[68] https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5

disadvantaged community), such as how a modernized code will reduce energy bills and improve indoor air quality.[69] Where applicable, applicants should outline how applicant-Tribal partnerships will ensure building code adoption, implementation, and compliance within Tribal jurisdictions. DOE encourages the applicants to consider how funding resources will be equitably shared with Tribes. For workforce-related activities, applicants should also discuss how their programs will create high-quality jobs for members of disadvantaged communities and increase workforce training opportunities for disadvantaged communities. Benefits might also include opportunities that increase participation within code development and adoption processes of stakeholder groups identified in the earlier sections of the Community Benefits Plan described above. Specific examples of energy code-related activities in support of the Justice40 Initiative can be in the following resource: Equity-Focused Building Energy Code Activities.

Proposed benefits should align with DOE's Justice40 policy priorities identified below: Benefits are measurable direct or indirect investments or positive project outcomes that achieve or contribute to the following in disadvantaged communities:

1) a decrease in energy burden;
2) an increase in housing quality and durability;
3) an increase in energy resilience;
4) a decrease in environmental exposure and burdens;
5) an increase in access to low-cost capital;
6) an increase in job creation, the clean energy job pipeline, and job training for individuals;
7) increases in clean energy enterprise creation and contracting (e.g., socially disadvantaged business enterprises);
8) increases in energy democracy and energy code-related processes; and
9) increased parity in clean energy technology access and adoption.

For projects funded under this FOA, DOE will provide specific reporting guidance for the benefits described above.

xx. Current and Pending Support

Current and pending support is intended to allow the identification of potential duplication, overcommitment, potential conflicts of interest or commitment, and all other sources of support. As part of the application, the Principal Investigator or Lead Project Manager and all senior/key personnel at the applicant and

[69] DOE's General Guidance for Justice40 Implementation is available here: https://www.energy.gov/sites/default/files/2023-07/DOE%20Justice40%20General%20Guidance%2072523.pdf

subrecipient level must provide a list of all sponsored activities, awards, and appointments, whether paid or unpaid; provided as a gift with terms or conditions or provided as a gift without terms or conditions; full-time, part-time, or voluntary; faculty, visiting, adjunct, or honorary; cash or in-kind; foreign or domestic; governmental or private-sector; directly supporting the individual's research or indirectly supporting the individual by supporting students, research staff, space, equipment, or other research expenses. All connections with foreign government-sponsored talent recruitment programs must be identified in current and pending support.

For every activity, list the following items:

- The sponsor of the activity or the source of funding;
- The award or other identifying number;
- The title of the award or activity. If the title of the award or activity is not descriptive, add a brief description of the research being performed that would identify any overlaps or synergies with the proposed research;
- The total cost or value of the award or activity, including direct and indirect costs and cost share. For pending proposals, provide the total amount of requested funding;
- The award period (start date through end date); and
- The person-months of effort per year dedicated to the award or activity.

To identify overlap, duplication of effort, or synergistic efforts, append a description of the other award or activity to the current and pending support.

Details of any obligations, contractual or otherwise, to any program, entity, or organization sponsored by a foreign government must be provided on request to either the applicant institution or DOE. Supporting documents of any identified source of support must be provided to DOE on request, including certified translations of any document.

PIs and senior/key personnel must provide a separate disclosure statement listing the required information above regarding current and pending support. Each individual must sign and date their respective disclosure statement and include the following certification statement:

> I, [Full Name and Title], certify to the best of my knowledge and belief that the information contained in this Current and Pending Support Disclosure Statement is true, complete, and accurate. I understand that any false, fictitious, or fraudulent information, misrepresentations, half-truths, or omissions of

any material fact, may subject me to criminal, civil, or administrative penalties for fraud, false statements, false claims, or otherwise. (18 U.S.C. §§ 1001 and 287, and 31 U.S.C. §§ 3729-3733 and 3801-3812). I further understand and agree that (1) the statements and representations made herein are material to DOE's funding decision, and (2) I have a responsibility to update the disclosures during the period of performance of the award should circumstances change which impact the responses provided above.

The information may be provided in the approved common disclosure format available at Common Form for Current and Pending (Other) Support (nsf.gov).

Save the Current and Pending Support in a single PDF file using the following convention for the title: "ControlNumber_LeadOrganization_CPS".

Definitions:

Current and pending support – (a) All resources made available, or expected to be made available, to an individual in support of the individual's RD&D efforts, regardless of (i) whether the source is foreign or domestic; (ii) whether the resource is made available through the entity applying for an award or directly to the individual; or (iii) whether the resource has monetary value; and (b) includes in-kind contributions requiring a commitment of time and directly supporting the individual's RD&D efforts, such as the provision of office or laboratory space, equipment, supplies, employees, or students. This term has the same meaning as the term Other Support as applied to researchers in NSPM-33: For researchers, Other Support includes all resources made available to a researcher in support of and/or related to all of their professional RD&D efforts, including resources provided directly to the individual or through the organization, and regardless of whether or not they have monetary value (e.g., even if the support received is only in-kind, such as office/laboratory space, equipment, supplies, or employees). This includes resource and/or financial support from all foreign and domestic entities, including but not limited to gifts provided with terms or conditions, financial support for laboratory personnel, and participation of student and visiting researchers supported by other sources of funding.

Foreign Government-Sponsored Talent Recruitment Program – An effort directly or indirectly organized, managed, or funded by a foreign government, or a foreign government instrumentality or entity, to recruit science and technology professionals or students (regardless of citizenship or national origin, or whether having a full-time or part-time position). Some foreign government-sponsored

talent recruitment programs operate with the intent to import or otherwise acquire from abroad, sometimes through illicit means, proprietary technology or software, unpublished data and methods, and intellectual property to further the military modernization goals and/or economic goals of a foreign government. Many, but not all, programs aim to incentivize the targeted individual to physically relocate to the foreign state for the above purpose. Some programs allow for or encourage continued employment at United States research facilities or receipt of federal research funds while concurrently working at and/or receiving compensation from a foreign institution, and some direct participants not to disclose their participation to United States entities. Compensation could take many forms, including cash, research funding, complimentary foreign travel, honorific titles, career advancement opportunities, promised future compensation, or other types of remuneration or consideration, including in-kind compensation.

Senior/key personnel – An individual who contributes in a substantive, meaningful way to the scientific development or execution of a research, development and demonstration (RD&D) project proposed to be carried out with a DOE award.[70]

xxi. Locations of Work

Applicants must complete the Locations of Work Documentation, available on EERE eXCHANGE at https://eere-eXCHANGE.energy.gov/. The applicant must complete the supplied template by listing the city, state, and zip code + 4 digits for each location where project work will be performed by the prime recipient or subrecipient(s). Save the completed template as a Microsoft Excel file using the following convention for the title: "Control Number_LeadOrganization_LOW."

xxii. Transparency of Foreign Connections

Applicants must provide the following as it relates to the proposed recipient and subrecipients. Include a separate disclosure for the applicant and each proposed subrecipient. U.S. National Laboratories, domestic government entities, and institutions of higher education are only required to respond to items 1, 2 and 9, and if applying as to serve as the prime recipient, must provide complete responses for project team members that are not U.S. National Laboratories, domestic government entities, or institutions of higher education.

[70] Typically, these individuals have doctoral or other professional degrees, although individuals at the masters or baccalaureate level may be considered Senior/Key Personnel if their involvement meets this definition. Consultants, graduate students, and those with a postdoctoral role also may be considered Senior/Key Personnel if they meet this definition.

1. Entity name, website address, and mailing address;
2. The identity of all owners, principal investigators, project managers, and senior/key personnel who are a party to any *Foreign Government-Sponsored Talent Recruitment Program* of a foreign country of risk (i.e., China, Iran, North Korea, and Russia);
3. The existence of any joint venture or subsidiary that is based in, funded by, or has a foreign affiliation with any foreign country of risk;
4. Any current or pending contractual or financial obligation or other agreement specific to a business arrangement, or joint venture-like arrangement with an enterprise owned by a foreign state or any foreign entity;
5. Percentage, if any, that the proposed recipient or subrecipient has foreign ownership or control;
6. Percentage, if any, that the proposed recipient or subrecipient is wholly or partially owned by an entity in a foreign country of risk;
7. Percentage, if any, of venture capital or institutional investment by an entity that has a general partner or individual holding a leadership role in such entity who has a foreign affiliation with any foreign country of risk;
8. Any technology licensing or intellectual property sales to a foreign country of risk, during the 5-year period preceding submission of the proposal;
9. Any foreign business entity, offshore entity, or entity outside the United States related to the proposed recipient or subrecipient;
10. Complete list of all directors (and board observers), including their full name, citizenship and shareholder affiliation, date of appointment, duration of term, as well as a description of observer rights as applicable;
11. Complete capitalization table for your entity, including all equity interests (including LLC and partnership interests, as well as derivative securities). Include both the number of shares issued to each equity holder, as well as the percentage of that series and all equity on a fully diluted basis. Identify the principal place of incorporation (or organization) for each equity holder. If the equity holder is a natural person, identify the citizenship(s). If the recipient or subrecipient is a publicly traded company, provide the above information for shareholders with an interest greater than 5%;
12. A summary table identifying all rounds of financing, the purchase dates, the investors for each round, and all the associated governance and information rights obtained by investors during each round of financing; and
13. An organization chart to illustrate the relationship between your entity and the immediate parent, ultimate parent, and any intermediate parent,

as well as any subsidiary or affiliates. Identify where each entity is incorporated.

DOE reserves the right to request additional or clarifying information based on the information submitted.

Save the Transparency of Foreign Connections information in a single PDF file using the following convention for the title: "ControlNumber_LeadOrganization_TFC."

xxiii. Potentially Duplicative Funding Notice

If the applicant or project team member has other active awards of federal funds, the applicant must determine whether the activities of those awards potentially overlap with the activities set forth in its application to this FOA. If there is a potential overlap, the applicant must notify DOE in writing of the potential overlap and state how it will ensure any project funds (i.e., recipient cost share and federal funds) will not be used for identical cost items under multiple awards. Likewise, for projects that receive funding under this FOA, if a recipient or project team member receives any other award of federal funds for activities that potentially overlap with the activities funded under the DOE award, the recipient must promptly notify DOE in writing of the potential overlap and state whether project funds from any of those other federal awards have been, are being, or are to be used (in whole or in part) for one or more of the identical cost items under the DOE award. If there are identical cost items, the recipient must promptly notify the DOE Contracting Officer in writing of the potential duplication and eliminate any inappropriate duplication of funding.

Save the Potentially Duplicative Funding Notice in a single PDF file using the following convention for the title: "ControlNumber_LeadOrganization_PDFN."

See Appendix A for further guidance on impact calculations and previous sections for requirements pertaining to project summaries and abstract submissions.

E. Content and Form of Replies to Reviewer Comments

DOE will provide applicants with reviewer comments following the evaluation of all eligible Full Applications. Applicants have a brief opportunity to prepare a short Reply to Reviewer Comments (Reply). The Reply must not exceed three (3) pages. If a Reply is more than three (3) pages in length, DOE will review only the first three pages and disregard additional pages. Applicants may use the Reply to

respond to one or more comments or to supplement their Full Application. The Reply may include text, graphs, charts, or data.

DOE will post the reviewer comments in EERE eXCHANGE. The expected submission deadline is on the cover page of the FOA; however, it is the applicant's responsibility to monitor EERE eXCHANGE if the expected date changes. The deadline will not be extended for applicants who are unable to timely submit their Reply due to failure to check EERE eXCHANGE or relying on the expected date alone. Applicants should anticipate having approximately three (3) business days to submit a Reply.

Applicants are not required to submit a Reply to Reviewer Comments. DOE will review and consider each eligible Full Application, even if no Reply is submitted or if the Reply is found to be ineligible.

F. Post Selection Information Requests

If selected for award negotiations, DOE reserves the right to require that selected applicants provide additional or clarifying information regarding the application submissions, the project, the project team, the award requirements, and any other matters related to anticipated award. The following is a list of examples of information that may be required:

- Personnel proposed to work on the project and collaborating organizations (See Section VI.B.xvii. Participants and Collaborating Organizations);
- Current and Pending Support (See Sections IV.D.xx. and VI.B.xviii. Current and Pending Support);
- Indirect cost information;
- Other budget information;
- Letters of Commitment from third parties contributing to cost share, if applicable;
- Name and phone number of the Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 CFR 1040.5);
- Information for the DOE Office of Civil Rights to process assurance reviews under 10 CFR 1040;
- Representation of Limited Rights Data and Restricted Software, if applicable;
- Information related to Davis-Bacon Act requirements;
- Information related to any proposed Workforce and Community Agreement, as defined above in "Community Benefits Plan: Job Quality and Equity," that applicants may have made with the relevant community;
- Any proposed or required Project Labor Agreements; and
- Environmental Questionnaire.

G. Unique Entity Identifier (UEI) and System for Award Management (SAM)

Each applicant (unless the applicant is an individual or federal awarding agency that is excepted from those requirements under 2 CFR 25.110(b) or (c), or has an exception approved by the federal awarding agency under 2 CFR 25.110(d)) is required to: (1) Register in the SAM at https://federal.famr.us before submitting an application; (2) provide a valid UEI in the application; and (3) maintain an active SAM registration with current information when the applicant has an active federal award or an application or plan under consideration by a federal awarding agency. DOE may not make a federal award to an applicant until the applicant has complied with all applicable UEI and SAM requirements. If an applicant has not fully complied with the requirements by the time DOE is ready to make a federal award, DOE will determine that the applicant is not qualified to receive a federal award and use that determination as a basis for making a federal award to another applicant.

NOTE: Due to the high demand of UEI requests and SAM registrations, entity legal business name and address validations are taking longer than expected to process. Entities should start the UEI and SAM registration process as soon as possible. If entities have technical difficulties with the UEI validation or SAM registration process, they should use the HELP feature on https://federal.famr.us. SAM.gov will work entity service tickets in the order in which they are received and asks that entities not create multiple service tickets for the same request or technical issue. Additional entity validation resources can be found here: GSAFSD Tier 0 Knowledge Base - Validating your Entity.

H. Submission Dates and Times

All required submissions must be submitted in EERE eXCHANGE no later than 5 p.m. ET on the dates provided on the cover page of this FOA.

I. Intergovernmental Review

This FOA is not subject to Executive Order 12372 – Intergovernmental Review of Federal Programs.

J. Funding Restrictions

i. Allowable Costs

All expenditures must be allowable, allocable, and reasonable in accordance with the applicable federal cost principles. Pursuant to 2 CFR 910.352, the cost principles in the Federal Acquisition Regulations (48 CFR 31.2) apply to for-profit

entities. The cost principles contained in 2 CFR Part 200, Subpart E apply to all entities other than for-profits.

ii. Pre-Award Costs

Applicants selected for award negotiations (selectee) must request prior written approval to charge pre-award costs. Pre-award costs are those incurred prior to the effective date of the federal award directly pursuant to the negotiation and in anticipation of the federal award where such costs are necessary for efficient and timely performance of the scope of work. Such costs are allowable only to the extent that they would have been allowable if incurred after the date of the federal award and **only** with the written approval of the federal awarding agency, through the DOE Contracting Officer.

Pre-award costs cannot be incurred prior to the Selection Official signing the Selection Statement and Analysis.

Pre-award expenditures are made at the selectee's risk. DOE is not obligated to reimburse costs: (1) in the absence of appropriations; (2) if an award is not made; or (3) if an award is made for a lesser amount than the selectee anticipated.

1. **National Environmental Policy Act (NEPA) Requirements Related to Pre-Award Costs**

   DOE's decision whether and how to distribute federal funds under this FOA is subject to NEPA. Applicants should carefully consider and should seek legal counsel or other expert advice before taking any action related to the proposed project that would have an adverse effect on the environment or limit the choice of reasonable alternatives prior to DOE completing the NEPA review process.

   DOE does not guarantee or assume any obligation to reimburse pre-award costs incurred prior to receiving written authorization from the Contracting Officer. If the applicant elects to undertake activities that DOE determines may have an adverse effect on the environment or limit the choice of reasonable alternatives prior to receiving such written authorization from the Contracting Officer, the applicant is doing so at risk of not receiving federal funding for its project and such costs may not be recognized as allowable cost share. Nothing contained in the pre-award cost reimbursement regulations or any pre-award costs approval letter from the Contracting Officer overrides the requirement to obtain the written authorization from the Contracting Officer prior to taking any action that may have an adverse effect on the environment or limit the choice of reasonable alternatives.

Likewise, if an application is selected for negotiation of award, and the prime recipient elects to undertake activities that are not authorized for federal funding by the Contracting Officer in advance of DOE completing a NEPA review, the prime recipient is doing so at risk of not receiving federal funding and such costs may not be recognized as allowable cost share.

iii. Performance of Work in the United States (Foreign Work Waiver)

1. Requirement

All work performed under awards issued under this FOA must be performed in the United States. The prime recipient must flow down this requirement to its subrecipients.

2. Failure to Comply

If the prime recipient fails to comply with the Performance of Work in the United States requirement, DOE may deny reimbursement for the work conducted outside the United States and such costs may not be recognized as allowable recipient cost share. The prime recipient is responsible should any work under this award be performed outside the United States, absent a waiver, regardless of whether the work is performed by the prime recipient, subrecipients, contractors or other project partners.

3. Waiver

To seek a foreign work waiver, the applicant must submit a written waiver request to DOE. Appendix C lists the information that must be included in a request for a foreign work waiver.

Save the waiver request(s) in a single PDF file. The applicant does not have the right to appeal DOE's decision concerning a waiver request.

iv. Construction

Recipients are required to obtain written authorization from the Contracting Officer before incurring any major construction costs. Assessment of applicability will be conducted on a case-by-case basis.

v. Foreign Travel

Foreign travel costs are not allowable under this FOA.

vi. Equipment and Supplies

Property disposition may be required at the end of a project if the current fair market value of property exceeds $5,000. For-profit entity disposition

requirements are set forth at 2 CFR 910.360. Property disposition requirements for other non-federal entities are set forth in 2 CFR 200.310 – 200.316.

However, pursuant to the FY23 Consolidated Appropriations Act (Pub. L. No. 117-328), Division D, Title III, Section 309, the Secretary or a designee of the Secretary may, at their discretion, vest unconditional title or other property interests acquired under this project regardless of the fair market value of the property at the end of the award period.

vii. Build America Buy America Requirements for Infrastructure Projects

Pursuant to the Build America Buy America Act, subtitle IX of BIL (Buy America or BABA), federally assisted projects that involve infrastructure work, undertaken by applicable recipient types, require that:

- All iron, steel, and manufactured products used in the infrastructure work are produced in the United States; and
- All construction materials used in the infrastructure work are manufactured in the United States.

Whether a given project must apply this requirement is project-specific and dependent on several factors, such as the recipient's entity type, whether the work involves "infrastructure," as defined in Section 70914 of the BIL, and whether the infrastructure in question is publicly owned or serves a public function.

Applicants are strongly encouraged to consult Appendix D of this FOA to determine whether their project may have to apply this requirement, both to make an early determination as to the need of a waiver, as well as to determine what impact, if any, this requirement may have on the proposed project's budget.

Please note that, based on implementation guidance from the Office of Management and Budget issued on April 18, 2022, the Buy America requirements of the BIL do not apply to DOE projects in which the prime recipient is a for-profit entity; the requirements only apply to projects whose prime recipient is a "non-Federal entity," e.g., a State, local government, Indian Tribe, Institution of Higher Education, or nonprofit organization. Subawards should conform to the terms of the prime award from which they flow; in other words, for-profit prime recipients are not required to flow down these Buy America requirements to subrecipients, even if those subrecipients are non-Federal entities as defined above. Conversely, prime recipients which are non-

Federal entities must flow the Buy America requirements down to all subrecipients, even if those subrecipients are for-profit entities. Finally, for all applicants—both non-Federal entities and for-profit entities—DOE is including a Program Policy Factor that the Selection Official may consider in determining which Full Applications to select for award negotiations that considers whether the applicant has made a commitment to procure U.S. iron, steel, manufactured products, and construction materials in its project.

The DOE financial assistance agreement will require each recipient to: (1) fulfill the commitments made in its application regarding the procurement of U.S.-produced products and (2) fulfill the commitments made in its application regarding the procurement of other key component metals and domestically manufactured products that are deemed available in sufficient and reasonably available quantities or of a satisfactory quality at the time of award negotiation. Applicants may seek waivers of these requirements in very limited circumstances and for good cause shown. Further details on requesting a waiver can be found in Appendix D and the terms and conditions of an award.

Applicants are strongly encouraged to consult Appendix D for more information.

viii. Davis-Bacon Act Requirements

Projects awarded under this FOA will be funded under Division D of BIL. Accordingly, per Section 41101 of that law, all laborers and mechanics employed by the recipient, subrecipients, contractors, or subcontractors in the performance of construction, alteration, or repair work funded in whole or in part under this FOA shall be paid wages at rates not less than those prevailing on similar projects in the locality, as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code commonly referred to as the Davis-Bacon Act (DBA).

Applicants shall provide written assurance acknowledging the DBA requirements above, confirming that the laborers and mechanics performing construction, alteration, or repair work on projects funded in whole or in part by awards made as a result of this FOA are paid or will be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by subchapter IV of Chapter 31 of Title 40, United States Code (Davis-Bacon Act).

Applicants acknowledge that they will comply with all the Davis-Bacon Act requirements, including but not limited to:

(1) Ensuring that the wage determination(s) and appropriate Davis-Bacon clauses and requirements are flowed down to and incorporated into any applicable subcontracts or subrecipient awards;

(2) Ensuring that if wage determination(s) and appropriate Davis-Bacon clauses and requirements are improperly omitted from contracts and subrecipient awards, the applicable wage determination(s) and clauses are retroactively incorporated to the start of performance;

(3) Being responsible for compliance by any subcontractor or subrecipient with the Davis-Bacon labor standards;

(4) Receiving and reviewing certified weekly payrolls submitted by all subcontractors and subrecipients for accuracy and to identify potential compliance issues;

(5) Maintaining original certified weekly payrolls for three years after the completion of the project and making those payrolls available to DOE or the U.S. Department of Labor (DOL) upon request, as required by 29 CFR 5.6(a)(2);

(6) Conducting payroll and job-site reviews for construction work, including interviews with employees, with such frequency as may be necessary to assure compliance by its subcontractors and subrecipients and as requested or directed by DOE;

(7) Cooperating with any authorized representative of DOL in its inspection of records, interviews with employees, and other actions undertaken as part of a DOL investigation;

(8) Posting in a prominent and accessible place the wage determination(s) and DOL Publication: WH-1321, Notice to Employees Working on Federal or Federally Assisted Construction Projects;

(9) Notifying the Contracting Officer of all labor standards issues, including all complaints regarding incorrect payment of prevailing wages and/or fringe benefits, received from the recipient, subrecipient, contractor, or subcontractor employees; significant labor standards violations, as defined in 29 CFR 5.7; disputes concerning labor standards pursuant to 29 CFR Parts 4, 6, and 8 and as defined in Federal Acquisition Regulation (FAR) 52.222-14; disputed labor standards determinations; DOL investigations; or legal or

judicial proceedings related to the labor standards under this contract, a subcontract, or subrecipient award; and

(10) Preparing and submitting to the Contracting Officer, the Office of Management and Budget Control Number 1910-5165, Davis Bacon Semi-Annual Labor Compliance Report, by April 21 and October 21 of each year. Form submittal will be administered through the iBenefits system (https://doeibenefits2.energy.gov), its successor system, or other manner of compliance as directed by the Contracting Officer.

Recipients of funding under this FOA will also be required to undergo Davis-Bacon Act compliance training and maintain competency in Davis-Bacon Act compliance. The Contracting Officer will notify the recipient of any DOE-sponsored Davis-Bacon Act compliance trainings. DOL offers free Prevailing Wage Seminars several times a year that meet this requirement, at https://www.dol.gov/agencies/whd/government-contracts/construction/seminars/events.

For additional guidance on how to comply with the Davis-Bacon provisions and clauses, see https://www.dol.gov/agencies/whd/government-contracts/construction and https://www.dol.gov/agencies/whd/government-contracts/protections-for-workers-in-construction.

DOE anticipates contracting with a third party for a Davis-Bacon Act electronic payroll compliance software application. Recipients of funding under this FOA must ensure the timely electronic submission of weekly certified payrolls through this software as part of its compliance with the Davis-Bacon Act unless a waiver is granted to a particular contractor or subcontractor because it is unable or limited in its ability to use or access. Applicants should indicate if they will seek a waiver.

ix. Lobbying

Recipients and subrecipients may not use any federal funds to influence or attempt to influence, directly or indirectly, congressional action on any legislative or appropriation matters.

Recipients and subrecipients are required to complete and submit SF-LLL, "Disclosure of Lobbying Activities" (https://www.grants.gov/web/grants/forms/sf-424-individual-family.html) to ensure that non-federal funds have not been paid and will not be paid to any person for influencing or attempting to influence any of the following in connection with the application:

- An officer or employee of any federal agency;
- A Member of Congress;
- An officer or employee of Congress; or
- An employee of a Member of Congress.

x. Risk Assessment

Pursuant to 2 CFR 200.206, DOE will conduct an additional review of the risk posed by applications submitted under this FOA. Such risk assessment will consider:

1. Financial stability;
2. Quality of management systems and ability to meet the management standards prescribed in 2 CFR 200 as amended and adopted by 2 CFR 910;
3. History of performance;
4. Audit reports and findings; and
5. The applicant's ability to effectively implement statutory, regulatory, or other requirements imposed on non-federal entities
6. Qualified workforce availability and continuity

DOE may make use of other publicly available information and the history of an applicant's performance under DOE or other federal agency awards.

Depending on the severity of the findings and whether the findings were resolved, DOE may elect not to fund the applicant.

In addition to this review, DOE must comply with the guidelines on government-wide suspension and debarment in 2 CFR 180 and must require non-federal entities to comply with these provisions. These provisions restrict federal awards, subawards and contracts with certain parties that are debarred, suspended, or otherwise excluded from or ineligible for participation in federal programs or activities.

Further, as DOE invests in critical infrastructure and funds critical and emerging technology areas, DOE also considers possible threats to United States research, technology, and economic security from undue foreign government influence when evaluating risk. If high risks are identified and cannot be sufficiently mitigated, DOE may elect to not fund the applicant. As part of the research, technology, and economic security risk review, DOE may contact the applicant and/or proposed project team members for additional information to inform the review.

xi. Invoice Review and Approval

DOE employs a risk-based approach to determine the level of supporting documentation required for approving invoice payments. Recipients may be required to provide some or all of the following items with their requests for reimbursement:

- Summary of costs by cost categories;
- Timesheets or personnel hours report;
- Proof of compliance with the Davis-Bacon Act and electronic submittals of certified payroll reports;
- Invoices/receipts for all travel, equipment, supplies, contractual, and other costs;
- UCC filing proof for equipment acquired with project funds by for-profit recipients and subrecipients;
- Explanation of cost share for invoicing period;
- Analogous information for some subrecipients; and
- Other items as required by DOE.

xii. Prohibition Related to Foreign Government-Sponsored Talent Recruitment Programs

a. Prohibition

Persons participating in a *Foreign Government-Sponsored Talent Recruitment Program of a Foreign Country of Risk* are prohibited from participating in projects selected for federal funding under this FOA. Should an award result from this FOA, the recipient must exercise ongoing due diligence to reasonably ensure that no individuals participating on the DOE-funded project are participating in a *Foreign Government-Sponsored Talent Recruitment Program of a Foreign Country of Risk*. Consequences for violations of this prohibition will be determined according to applicable law, regulations, and policy. Further, the recipient must notify DOE within five (5) business days upon learning that an individual on the project team is or is believed to be participating in a foreign government talent recruitment program of a foreign country of risk. DOE may modify and add requirements related to this prohibition to the extent required by law.

b. Definitions

1. **Foreign Government-Sponsored Talent Recruitment Program.** An effort directly or indirectly organized, managed, or funded by a foreign

government, or a foreign government instrumentality or entity, to recruit science and technology professionals or students (regardless of citizenship or national origin, or whether having a full-time or part-time position). Some foreign government-sponsored talent recruitment programs operate with the intent to import or otherwise acquire from abroad, sometimes through illicit means, proprietary technology or software, unpublished data and methods, and intellectual property to further the military modernization goals and/or economic goals of a foreign government. Many, but not all, programs aim to incentivize the targeted individual to relocate physically to the foreign state for the above purpose. Some programs allow for or encourage continued employment at United States research facilities or receipt of federal research funds while concurrently working at and/or receiving compensation from a foreign institution, and some direct participants not to disclose their participation to U.S. entities. Compensation could take many forms including cash, research funding, complimentary foreign travel, honorific titles, career advancement opportunities, promised future compensation, or other types of remuneration or consideration, including in-kind compensation.

2. **Foreign Country of Risk.** DOE has designated the following countries as foreign countries of risk: Iran, North Korea, Russia, and China. This list is subject to change.

xiii. Affirmative Action and Pay Transparency Requirements

All applicants must comply with all applicable federal labor and employment laws, including but not limited to Title VII of the Civil Rights Act of 1964, the Fair Labor Standards Act, the Occupational Safety and Health Act, and the National Labor Relations Act, which protects employees' right to bargain collectively and engage in concerted activities for the purpose of workers' mutual aid or protection.

All federally assisted construction contracts exceeding $10,000 annually will be subject to the requirements of Executive Order 11246, Equal Employment Opportunity:

(1) Recipients, subrecipients, contractors, and subcontractors are prohibited from discriminating in employment decisions on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin.

(2) Recipients and contractors are required to take affirmative action to ensure that equal opportunity is provided in all aspects of their

employment. This includes flowing down the appropriate language to all subrecipients, contractors, and subcontractors.

(3) Recipients, subrecipients, contractors, and subcontractors are prohibited from taking adverse employment actions against applicants and employees for asking about, discussing, or sharing information about their pay or, under certain circumstances, the pay of their co-workers.

The Department of Labor's (DOL) Office of Federal Contractor Compliance Programs (OFCCP) uses a neutral process to schedule compliance evaluations. Consult OFCCP's Technical Assistance Guide[71] to gain an understanding of the requirements and possible actions the recipients, subrecipients, contractors, and subcontractors must take. Additional guidance may also be found in the National Policy Assurances, produced by DOE.

xiv. Foreign Collaboration Considerations

a. Consideration of new collaborations with foreign entities, organizations, and governments. The recipient will be required to provide DOE with advanced written notification of any potential collaboration with foreign entities, organizations, or governments in connection with its DOE-funded award scope. The recipient will then be required to await further guidance from DOE prior to contacting the proposed foreign entity, organization, or government regarding the potential collaboration or negotiating the terms of any potential agreement.

b. Existing collaborations with foreign entities, organizations, and governments. The recipient will be required to provide DOE with a written list of all existing foreign collaborations in which has entered in connection with its DOE-funded award scope.

c. Description of collaborations that should be reported. In general, a collaboration will involve some provision of a thing of value to, or from, the recipient. A thing of value includes but may not be limited to all resources made available to, or from, the recipient in support of and/or related to the DOE award, regardless of whether or not they have monetary value. Things of value also may include in-kind contributions (such as office/laboratory space, data, equipment, supplies, employees, students). In-kind contributions not intended for direct use on the DOE award but resulting in provision of a thing of value from or to the DOE award must also be reported. Collaborations do not include routine workshops,

[71] See OFCCP's Technical Assistance Guide at: https://www.dol.gov/sites/dolgov/files/ofccp/Construction/files/ConstructionTAG.pdf?msclkid=9e397d68c4b111ec9d8e6fecb6c710ec Also see the National Policy Assurances http://www.nsf.gov/awards/managing/rtc.jsp

conferences, use of the recipient's services and facilities by foreign investigators resulting from its standard published process for evaluating requests for access, or the routine use of foreign facilities by awardee staff in accordance with the recipient's standard policies and procedures.

V. Application Review Information

A. Technical Review Criteria

i. Concept Papers

Concept Papers are evaluated based on consideration the following factors. All sub-criteria are of equal weight.

Concept Paper Criterion: Overall FOA Responsiveness and Viability of the Project (Weight: 100%)
This criterion involves consideration of the following factors:

- The applicant clearly describes the proposed project, describes how the project is impactful, and how the project will advance the FOA goals and achieve the targeted outcomes, savings and benefits;
- The applicant has identified risks and challenges associated with the project work, including possible mitigation strategies, and has shown the impact that EERE funding and the proposed project would have;
- The applicant has the capacity to carry out the proposed project, including necessary qualifications, experience, capabilities, and other resources;
- The applicant indicates ability and intent to leverage other federal and non-federal funding sources, and identifies how such funding would be used to avoid duplicative efforts and maximize impact;
- The applicant clearly demonstrates need for the proposed project; and
- The proposed work, if successfully accomplished, would clearly meet the objectives as stated in the FOA.

Additional discussion of eligibility criteria, evaluation of impacts, targeted outcomes and other important factors are further discussed in Section I.A.ii of the FOA.

ii. Full Applications

Applications will be evaluated against the technical review criteria shown below. All sub-criteria are of equal weight.

Criterion 1: Technical Merit, Innovation, and Impact (40%)

This criterion involves consideration of the following factors:

Impact of Proposed Project

- Prospective energy savings and plans to measure the savings;
- Long-term sustainability of those measures and savings;
- Prospective additional benefits, and plans to assess those benefits, including resilience and peak load reduction, occupant safety and health, environmental performance, and demonstration of other additional benefits, as appropriate;
- Degree to which the project enables sustained cost-effective implementation of updated building energy codes[72];
- The extent the project supports the FOA objectives and target specifications and metrics, including sample activities specified in Section 40511 of the BIL[73] or as identified through the related DOE Request for Information (RFI) and public workshops[74,75];
- Degree to which application addresses the areas of interest specified in the FOA, with emphasis on new areas of interest added for the current FOA;
- The extent to which the activity is replicable and may lead to future projects within the referenced state or jurisdiction or expand into new states or jurisdictions;
- Extent to which the project demonstrates buy-in and facilitates relationships across new or existing stakeholders to increase the potential for future energy code updates and their successful implementation; and
- Prospective energy, cost, and emissions savings, for new construction and existing buildings, as calculated through the *RECI Impact Calculator* tool (See Appendix A). Any additional impact estimates provided by the applicant are clearly articulated, as well as based on technically sound, commonly accepted, and defensible calculation methods.

[72] Section 40511 of the BIL specifies an updated building energy code as, "An update to a building energy code under this section, including an amendment that results in increased efficiency compared to the previously adopted building energy code, shall include any update made available after the existing building energy code, even if it is not the most recent updated code available."

[73] https://www.congress.gov/117/plaws/publ58/PLAW-117publ58.pdf

[74] https://www.energycodes.gov/RECI

[75] See Section I.A.ii for further discussion on eligible activities and Section B for areas of interest and activities targeted under the FOA.

Technical Merit and Innovation

- Extent to which the proposed project is innovative and proposes a technically meritorious approach to supporting the implementation of updated building energy codes;
- Extent to which the application specifically and convincingly demonstrates that a state or jurisdiction will successfully adopt, or has recently adopted, an updated energy code as part of a project[76];
- Sufficiency of technical detail in the application to assess whether the proposed work is meritorious and technically feasible, including relevant data, calculations and discussion of prior work that supports the viability of the proposed work;
- Demonstrated infrastructure to support the proposed project; and
- Need of the eligible entity for assistance.

Criterion 2: Market Transformation Plan (20%)
This criterion involves consideration of the following factors:

Project Management

- Degree to which the activities, milestones and critical path have been clearly described and thoughtfully considered, and to which the task descriptions are clear, detailed, timely, and reasonable, resulting in a high likelihood that the proposed Workplan and SOPO will succeed in meeting the project goals;
- Level of clarity in definition of the project baseline, strength of quantifiable metrics, and mid-point deliverables which can ensure meaningful and measurable interim progress.
- Adequacy of proposed project management systems including the ability to track scope, cost, and schedule progress and changes;
- Adequacy of project budget, including quality of cost estimate and contingency funding based on anticipated risks;
- Adequacy, reasonableness, and soundness of the project schedule, including periodic stage-gate decisions (i.e., "Go/No-Go" decisions) prior to further funds disbursement, interim milestones, and metrics to track process; and
- Extent to which proposed Workplan, SOPO and Budget addresses and mitigates anticipated risks.

Identification of Needs and Risks

- Identification, discussion and demonstrated understanding of key technical, political and other risks which are anticipated to affect the project; and

[76] Section 40511 of the BIL directs DOE to establish this new initiative "…to enable sustained cost-effective implementation of updated building energy codes."

- Discussion of specific strategies and capabilities that will be applied, and quality of mitigation strategies, to overcome such risks.

State or Jurisdiction Implementation Plan

- Degree to which the proposed project identifies critical needs supporting the implementation of building energy codes or innovative approaches, proposes activities to address those needs strategically and successfully, and demonstrates connectivity to building energy code implementation plans in the target region; and
- Identification of how such building energy code implementation plans and proposed activities support complementary policies, plans, or commitments, including broader energy or environmental performance goals in the target region.

Criterion 3: Team and Resources (20%)

This criterion involves consideration of the following factors:

Personnel, Expertise, Resources and Strategic Partnerships

- Degree to which the proposed project team represents a partnership comprised of critical stakeholders, and as specified in the BIL[77];
- Demonstrated capacity to carry out the proposed project;
- Capability of the project team to sufficiently influence the implementation of updated building energy codes in the target region, including demonstration of strategic relationships and skillsets necessary to ensure project success;
- The capability of the project team to address all aspects of the proposed work with a high probability of success, including demonstration of relevant qualifications, expertise, and time commitment of the individuals on the team;
- The diversity of the proposed team and demonstrated success on similar projects, particularly those that are critical to energy code updates and implementation;
- The degree to which the proposed team demonstrates the ability to facilitate and expedite further development of technical assistance the implementation of updated energy codes;
- The level of participation by project participants as evidenced by Letter(s) of Commitment and how well they are integrated into the Workplan;
- Demonstrated ability and intent to leverage other federal and non-federal funding sources, including explanation of how such funding will be used in a

[77] Section 40511 of the BIL defines a "partnership" as part of eligibility criteria and specifies several entities of which an effective partnership may be comprised.

strategic manner to avoid duplication and maximize impact across federal programs[78];
- The reasonableness of the budget for the proposed project and objectives; and
- Need for federal financial assistance.

Criterion 4: Community Benefits Plan (20%)
This criterion involves consideration of the following factors:

Community and Labor Engagement
- Extent to which the applicant demonstrates engagement to date and/or has a clear and appropriately robust plan to engage Tribal entities, local stakeholders, building and energy code professionals and community-based organizations that support or work with ;disadvantaged communities
- Extent to which the applicant has considered accountability to ensure engagement with workers and community stakeholders increases transparency, participation, and valued contribution to energy code project activities; and
- Extent to which the applicant demonstrates that community and labor engagement will lead to the delivery of high-quality jobs, increased representation within state and local energy code processes, and allocation of project benefits to disadvantaged communities.

Job Quality and Workforce
- Extent to which the Community Benefits Plan demonstrates that the proposed project will create and/or retain high quality, good-paying jobs with employer-sponsored benefits for all classifications and phases of work; and
- Extent to which applicant demonstrates that they are a responsible employer, with ready access to a sufficient supply of appropriately skilled labor.

Diversity, Equity, Inclusion, and Accessibility
- Extent to which the Community Benefits Plan includes specific and high-quality actions to meet DEIA goals, which may include DEIA recruitment procedures, supplier diversity plans, and other DEIA initiatives;
- Quality of any partnerships and agreements with apprenticeship readiness programs, or community-based workforce training and support organizations serving workers facing systematic barriers to employment to facilitate participation in the project-related activities; and

[78] See Section I.A.ii for additional discussion of additional federal and non-federal funding sources

- Extent to which applicant proposes activities, actions, including measurable milestones, to increase representation and participation of diverse stakeholder groups and communities within code-related processes.

Justice40 Initiative

- Extent to which the Community Benefits Plan identifies specific, measurable benefits for disadvantaged communities that code can deliver, how the benefits will flow to the disadvantaged communities, and how a modernized code will reduce energy bills and improve the indoor air quality within the disadvantaged communities; and
- Extent to which the project would contribute to meeting the objective that 40% of the benefits of climate and clean energy investments will flow to disadvantaged communities.

iii. Criteria for Replies to Reviewer Comments

DOE has not established separate criteria to evaluate Replies to Reviewer Comments. Instead, Replies to Reviewer Comments are attached to the original applications and evaluated as an extension of the Full Application.

B. Standards for Application Evaluation

Applications that are determined to be eligible will be evaluated in accordance with this FOA, by the standards set forth in EERE's Notice of Objective Merit Review Procedure (76 Fed. Reg. 17846, March 31, 2011) and the guidance provided in the "DOE Merit Review Guide for Financial Assistance," effective September 2020, which is available at: https://energy.gov/management/downloads/merit-review-guide-financial-assistance-and-unsolicited-proposals-current.

C. Other Selection Factors

i. Program Policy Factors

In addition to the above criteria, the Selection Official may consider the following program policy factors in determining which Full Applications to select for award negotiations:

- Degree to which the proposed project demonstrates a code update which will deliver transformative energy savings, emissions reductions, resilience benefits, or equitable outcomes to historically harder to reach jurisdictions or disadvantaged communities though solutions for new construction, existing buildings, and place-based workforce development efforts.

- Degree to which the proposed project demonstrates a comprehensive and effective partnership with capability to support the implementation of updated building energy codes;
- The degree to which the proposed project optimizes the use of available DOE funding to achieve the FOA outcomes, with emphasis on new areas of interest for the FOA, including the need of the eligible entity for assistance;
- Degree to which application addresses new areas of interest, as specified in the FOA, and is differentiated from related federal funding initiatives, particularly IRA Section 50131;
- The degree to which the proposed project exhibits technological diversity when compared to the existing DOE project portfolio and other projects selected from the subject FOA;
- The degree to which the proposed project, including proposed cost share, optimizes the use of available DOE funding to achieve the targeted FOA outcomes and broader programmatic objectives;
- The level of industry involvement and demonstrated ability to accelerate demonstration and commercialization and overcome key market barriers;
- The degree to which the proposed project is likely to lead to increased high-quality employment and manufacturing in the United States;
- The degree to which the proposed project will accelerate transformational technological advances in areas that industry by itself is not likely to undertake because of technical and financial uncertainty;
- The degree to which the proposed project, or group of projects, represent a desired geographic distribution (considering past awards and current applications);
- The degree to which the proposed project has provided access and opportunities for potential applicant or team members from Minority Serving Institutions (e.g., Historically Black Colleges and Universities (HBCUs)/other Minority Serving Institutions); and partnerships with socially disadvantaged Businesses, or Tribal Governments;
- The degree to which the proposed project, when compared to the existing DOE project portfolio and other projects to be selected from the subject FOA, contributes to the total portfolio meeting the goals reflected in the Community Benefits Plan criteria; and
- The degree to which the proposed project will employ procurement of U.S. iron, steel, manufactured products, and construction materials.

D. Evaluation and Selection Process

i. Overview

The evaluation process consists of multiple phases; each includes an initial eligibility review and a thorough technical review. Rigorous technical reviews of eligible submissions are conducted by reviewers that are experts in the subject matter of the FOA. Ultimately, the Selection Official considers the recommendations of the reviewers, along with other considerations such as program policy factors, and risk reviews in determining which applications to select.

ii. Pre-Selection Interviews

As part of the evaluation and selection process, DOE may invite one or more applicants to participate in pre-selection interviews. Pre-selection interviews are distinct from and more formal than pre-selection clarifications (See Section V.D.iii. of the FOA). The invited applicant(s) will meet with DOE representatives to provide clarification on the contents of the Full Applications and to provide DOE an opportunity to ask questions regarding the proposed project. The information provided by applicants to DOE through pre-selection interviews contributes to DOE's selection decisions.

DOE will arrange to meet with the invited applicants in person at DOE's offices or a mutually agreed upon location. DOE may also arrange site visits at certain applicants' facilities. In the alternative, DOE may invite certain applicants to participate in a one-on-one conference with DOE via webinar, videoconference, or conference call.

DOE will not reimburse applicants for travel and other expenses relating to the pre-selection interviews, nor will these costs be eligible for reimbursement as pre-award costs.

Participation in pre-selection interviews with DOE does not signify that applicants have been selected for award negotiations.

iii. Pre-Selection Clarification

DOE may determine that pre-selection clarifications are necessary from one or more applicants. Pre-selection clarifications are distinct from and less formal than pre-selection interviews. These pre-selection clarifications will solely be for the purposes of clarifying the application. The pre-selection clarifications may occur before, during or after the merit review evaluation process. Information provided by an applicant that is not necessary to address the pre-selection

clarification question will not be reviewed or considered. Typically, a pre-selection clarification will be carried out through either written responses to DOE's written clarification questions or video or conference calls with DOE representatives.

The information provided by applicants to DOE through pre-selection clarifications is incorporated in their applications and contributes to the merit review evaluation and DOE's selection decisions. If DOE contacts an applicant for pre-selection clarification purposes, it does not signify that the applicant has been selected for negotiation of award or that the applicant is among the top ranked applications.

DOE will not reimburse applicants for expenses relating to the pre-selection clarifications, nor will these costs be eligible for reimbursement as pre-award costs.

iv. Recipient Integrity and Performance Matters

DOE, prior to making a federal award with a total amount of federal share greater than the simplified acquisition threshold, is required to review and consider any information about the applicant that is in the designated integrity and performance system accessible through SAM (currently FAPIIS) (see 41 U.S.C. § 2313).

The applicant, at its option, may review information in the designated integrity and performance systems accessible through SAM and comment on any information about itself that a federal awarding agency previously entered and is currently in the designated integrity and performance system accessible through SAM.

DOE will consider any written comments by the applicant, in addition to the other information in the designated integrity and performance system, in making a judgment about the applicant's integrity, business ethics, and record of performance under federal awards when completing the review of risk posed by applicants as described in 2 CFR 200.206.

v. Selection

The Selection Official may consider the technical merit, the Federal Consensus Board's recommendations, program policy factors, risk reviews, and the amount of funds available in arriving at selections for this FOA.

E. Anticipated Notice of Selection and Award Negotiation Dates

EERE anticipates notifying applicants selected for negotiation of award and negotiating awards by the dates provided on the cover page of this FOA.

VI. Award Administration Information

A. Award Notices

i. Ineligible Submissions

Ineligible Concept Papers and Full Applications will not be further reviewed or considered for award. The Contracting Officer will send a notification letter by email to the technical and administrative points of contact designated by the applicant in EERE eXCHANGE. The notification letter will state the basis upon which the Concept Paper or the Full Application is ineligible and not considered for further review.

ii. Concept Paper Notifications

DOE will notify applicants of its determination to encourage or discourage the submission of a Full Application. DOE will post these notifications to EERE eXCHANGE. DOE may include general comments provided from reviewers on an applicant's Concept Paper in the encourage/discourage notifications.

Applicants may submit a Full Application even if they receive a notification discouraging them from doing so. By discouraging the submission of a Full Application, DOE intends to convey its lack of programmatic interest in the proposed project. Such assessments do not necessarily reflect judgments on the merits of the proposed project. The purpose of the Concept Paper phase is to save applicants the considerable time and expense of preparing a Full Application that is unlikely to be selected for award negotiations.

iii. Full Application Notifications

DOE will notify applicants of its determination via a notification letter by email to the technical and administrative points of contact designated by the applicant in EERE eXCHANGE. The notification letter will inform the applicant whether or not its Full Application was selected for award negotiations. Alternatively, DOE may notify one or more applicants that a final selection determination on particular Full Applications will be made at a later date, subject to the availability of funds or other factors.

iv. Applicants Selected for Award Negotiations

Successful applicants will receive written notification that they have been selected for award negotiations. Receipt of a notification letter selecting a Full Application for award negotiations does not authorize the applicant to commence performance of the project. If an application is selected for award negotiations, it is not a commitment by DOE to issue an award nor is it a guarantee of federal government funding. Applicants do not receive an award unless and until award negotiations are complete and the Contracting Officer executes the funding agreement, accessible by the prime recipient in FedConnect.

The award negotiation process takes approximately 60 days. Applicants must designate a primary and a backup point-of-contact in EERE eXCHANGE with whom DOE will communicate to conduct award negotiations. The applicant must be responsive during award negotiations (i.e., provide requested documentation) and meet the negotiation deadlines. If the applicant fails to do so or if award negotiations are otherwise unsuccessful, DOE will cancel the award negotiations and rescind the selection. DOE reserves the right to terminate award negotiations at any time for any reason.

Please refer to Section IV.J.ii. of the FOA for guidance on pre-award costs.

v. Alternate Selection Determinations

In some instances, an applicant may receive a notification that its application was not selected for award and DOE designated the application to be an alternate, which means DOE may consider the Full Application for federal funding in the future. A notification letter stating the Full Application is designated as an alternate does not authorize the applicant to commence performance of the project. DOE may ultimately determine to select or not select the Full Application for award negotiations.

vi. Unsuccessful Applicants

DOE shall promptly notify in writing each applicant whose application has not been selected for award or whose application cannot be funded because of the unavailability of appropriated funds.

B. Administrative and National Policy Requirements

i. Registration Requirements

There are several required one-time actions applicants must take before applying to this FOA. Some of these actions may take several weeks, so it is vital

applicants build in enough time to complete them. Failure to complete these actions could interfere with application or negotiation deadlines or the ability to receive an award if selected. These requirements are as follows:

1. **EERE Funding Opportunity Exchange (eXCHANGE)**
   Register and create an account on EERE eXCHANGE at https://eere-eXCHANGE.energy.gov. This account will allow the user to apply to any open EERE FOAs in EERE eXCHANGE.

   To access EERE eXCHANGE, potential applicants must have a Login.gov account. As part of the eXCHANGE registration process, new users will be directed to create an account in Login.gov. Please note that the email address associated with Login.gov must match the email address associated with the eXCHANGE account. For more information, refer to the eXCHANGE Multi-Factor Authentication (MFA) Quick Guide in the Manuals section of eXCHANGE.

   Each organization or business unit, whether acting as a team or a single entity, should use only one account as the contact point for each submission. Applicants must also designate backup points of contact. **This step is required to apply to this FOA.** The eXCHANGE registration does not have a delay; however, **the remaining registration requirements below could take several weeks to process and are necessary for a potential applicant to receive an award under this FOA.**

2. **System for Award Management**
   Register in SAM (https://www.sam.gov). Designating an Electronic Business Point of Contact (EBiz POC) and obtaining a special password called a Marketing Partner ID Number (MPIN) are important steps in SAM registration. Please update your SAM registration annually.

3. **FedConnect**
   Register in FedConnect (https://www.fedconnect.net). To create an organization account, your organization's SAM MPIN is required. For more information about the SAM MPIN or other registration requirements, review the FedConnect Ready, Set, Go! Guide at https://www.fedconnect.net/FedConnect/Marketing/Documents/FedConnect_Ready_Set_Go.pdf.

4. **Grants.gov**

Register in Grants.gov (http://www.grants.gov) to receive automatic updates when Amendments to this FOA are posted. Please note that Concept Papers and Full Applications will **not** be accepted through Grants.gov.

5. **Electronic Authorization of Applications and Award Documents**
   Submission of an application and supplemental information under this FOA through electronic systems used by the DOE, including EERE eXCHANGE and FedConnect, constitutes the authorized representative's approval and electronic signature.

ii. Award Administrative Requirements

The administrative requirements for DOE grants and cooperative agreements are contained in 2 CFR Part 200 as amended by 2 CFR Part 910.

iii. Foreign National Participation

All applicants selected for an award under this FOA and project participants (including subrecipients and contractors) who anticipate involving foreign nationals in the performance of an award may be required to provide DOE with specific information about each foreign national to satisfy requirements for foreign national participation. A "foreign national" is defined as any person who is not a United States citizen by birth or naturalization. The volume and type of information collected may depend on various factors associated with the award. DOE concurrence may be required before a foreign national can participate in the performance of any work under an award.

DOE may elect to deny a foreign national's participation in the award. Likewise, DOE may elect to deny a foreign national's access to a DOE site, information, technologies, equipment, programs or personnel.

iv. Subaward and Executive Reporting

Additional administrative requirements necessary for DOE grants and cooperative agreements to comply with the Federal Funding and Transparency Act of 2006 (FFATA) are contained in 2 CFR Part 170. Prime recipients must register with the new FFATA Subaward Reporting System database and report the required data on their first tier subrecipients. Prime recipients must report the executive compensation for their own executives as part of their registration profile in SAM.

v. National Policy Requirements

The National Policy Assurances that are incorporated as a term and condition of award are located at: http://www.nsf.gov/awards/managing/rtc.jsp.

vi. Environmental Review in Accordance with National Environmental Policy Act (NEPA)

DOE's decision whether and how to distribute federal funds under this FOA is subject to NEPA (42 U.S.C. § 4321, *et seq.*). NEPA requires federal agencies to integrate environmental values into their decision-making processes by considering the potential environmental impacts of their proposed actions. For additional background on NEPA, please see DOE's NEPA website at https://www.energy.gov/nepa.

While NEPA compliance is a federal agency responsibility and the ultimate decisions remain with the federal agency, all recipients selected for an award will be required to assist in the timely and effective completion of the NEPA process in the manner most pertinent to their proposed project. If DOE determines certain records must be prepared to complete the NEPA review process (e.g., biological evaluations or environmental assessments), the recipient may be required to prepare the records and the costs to prepare the necessary records may be included as part of the project costs.

vii. Applicant Representations and Certifications

1. Lobbying Restrictions

By accepting funds under this award, the prime recipient agrees that none of the funds obligated on the award shall be expended, directly or indirectly, to influence Congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. § 1913. This restriction is in addition to those prescribed elsewhere in statute and regulation.

2. Corporate Felony Conviction and Federal Tax Liability Representations

In submitting an application to this FOA, the applicant represents that:

a. It is **not** a corporation that has been convicted of a felony criminal violation under any federal law within the preceding 24 months; and

b. It is **not** a corporation that has any unpaid federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely

manner pursuant to an agreement with the authority responsible for collecting the tax liability.

For purposes of these representations, a corporation is any for-profit or nonprofit entity that has filed articles of incorporation in any of the 50 states, the District of Columbia, or the various territories of the United States [but not foreign corporations].

3. Nondisclosure and Confidentiality Agreements Representations
In submitting an application to this FOA the applicant represents that:

a. It **does not and will not** require its employees or contractors to sign internal nondisclosure or confidentiality agreements or statements prohibiting or otherwise restricting its employees or contactors from lawfully reporting waste, fraud, or abuse to a designated investigative or law enforcement representative of a federal department or agency authorized to receive such information.

b. It **does not and will not** use any federal funds to implement or enforce any nondisclosure and/or confidentiality policy, form, or agreement it uses unless it contains the following provisions:

''These provisions are consistent with and do not supersede, conflict with, or otherwise alter the employee obligations, rights, or liabilities created by existing statute or Executive Order relating to (1) classified information, (2) communications to Congress, (3) the reporting to an Inspector General of a violation of any law, rule, or regulation, or mismanagement, a gross waste of funds, an abuse of authority, or a substantial and specific danger to public health or safety, or (4) any other whistleblower protection. The definitions, requirements, obligations, rights, sanctions, and liabilities created by controlling Executive Orders and statutory provisions are incorporated into this agreement and are controlling.''

(1) The limitation above shall not contravene requirements applicable to Standard Form 312 Classified Information Nondisclosure Agreement (https://fas.org/sgp/othergov/sf312.pdf), Form 4414 Sensitive Compartmented Information Disclosure Agreement (https://fas.org/sgp/othergov/intel/sf4414.pdf), or any other form issued by a federal department or agency governing the nondisclosure of classified information.

(2) Notwithstanding the provision listed in paragraph (a), a nondisclosure or confidentiality policy form or agreement that is to be executed by a person connected with the conduct of an intelligence or intelligence-related activity, other than an employee or officer of the U.S. government, may contain provisions appropriate to the activity for which such document is to be used. Such form or agreement shall, at a minimum, require that the person will not disclose any classified information received during such activity unless specifically authorized to do so by the U.S. government. Such nondisclosure or confidentiality forms shall also make it clear that they do not bar disclosures to Congress, or to an authorized official of an executive agency or the U.S. Department of Justice, that are essential to reporting a substantial violation of law.

viii. Statement of Federal Stewardship

DOE will exercise normal federal stewardship in overseeing the project activities performed under DOE awards. Stewardship activities include but are not limited to conducting site visits; reviewing performance and financial reports; providing assistance and/or temporary intervention in unusual circumstances to correct deficiencies that develop during the project; assuring compliance with terms and conditions; and reviewing technical performance after project completion to ensure that the project objectives have been accomplished.

ix. Statement of Substantial Involvement

DOE has substantial involvement in work performed under awards made as a result of this FOA. DOE does not limit its involvement to the administrative requirements of the award. Instead, DOE has substantial involvement in the direction and redirection of the technical aspects of the project. Substantial involvement includes but is not limited to the following:

1. DOE shares responsibility with the recipient for the management, control, direction, and performance of the project.

2. DOE may intervene in the conduct or performance of work under this award for programmatic reasons. Intervention includes the interruption or modification of the conduct or performance of project activities.

3. DOE may redirect or discontinue funding the project based on the outcome of DOE's evaluation of the project at the Go/No-Go decision point(s).

4. DOE participates in major project decision-making processes.

x. Subject Invention Utilization Reporting

To ensure that prime recipients and subrecipients holding title to subject inventions are taking the appropriate steps to commercialize subject inventions, DOE may require that each prime recipient holding title to a subject invention submit annual reports for 10 years from the date the subject invention was disclosed to DOE on the utilization of the subject invention and efforts made by prime recipient or its licensees or assignees to stimulate such utilization. The reports must include information regarding the status of development, date of first commercial sale or use, gross royalties received by the prime recipient, and such other data and information as DOE may specify.

xi. Intellectual Property Provisions

The standard DOE financial assistance intellectual property provisions applicable to the various types of recipients are located at http://energy.gov/gc/standard-intellectual-property-ip-provisions-financial-assistance-awards.

xii. Reporting

Reporting requirements are identified on the Federal Assistance Reporting Checklist, attached to the award agreement.

Additional reporting requirements apply to BIL-funded projects. DOE may require specific data collection to track progress toward key departmental goals: ensuring justice and equity, investing in the American workforce, boosting domestic manufacturing, reducing greenhouse gas emissions, and advancing a pathway to private sector deployment. Examples of data that may be collected include:

- New manufacturing production or recycling capacity
- Jobs data, including:
    - Number and types of jobs provided, wages and benefits paid
    - Workforce demographics, including local hires
    - Efforts to minimize risks of labor disputes and disruptions
    - Contributions to training; employee certificates and training credentials; ratio of apprentice- to journey-level workers employed
    - Number of trainings completed, trainees placed in full-time employment, or number of trainings with workforce partnerships involving employers, community-based organizations, or labor unions
- Justice and Equity data, including:
    - Socially disadvantaged businesses acting as vendors and subcontractors for bids on supplies, services, and equipment

  - Value, number, and type of partnerships, e.g., with Minority-Serving Institutions (MSIs)
  - Stakeholder engagement events, consent-based siting activities
  - Other relevant indicators from the Community Benefits Plan
- Number and type of energy efficient and clean energy equipment installed
- Funding leveraged, follow-on-funding, intellectual property generation and utilization

xiii. Go/No-Go Review

Each project selected under this FOA will be subject to a periodic project evaluation referred to as a Go/No-Go Review. A Go/No-Go Review is a risk management tool and a project management best practice to ensure that, for the current phase or period of performance, technical success is definitively achieved and potential for success in future phases or periods of performance is evaluated, prior to beginning the execution of future phases. At the Go/No-Go decision points, DOE will evaluate project performance, project schedule adherence, the extent milestone objectives are met, compliance with reporting requirements, and overall contribution to the program goals and objectives. Federal funding beyond the Go/No-Go decision point (continuation funding) is contingent upon (1) availability of federal funds appropriated by Congress for the purpose of this program; (2) the availability of future-year budget authority; (3) recipient's technical progress compared to the Milestone Summary Table stated in Attachment 1 of the award; (4) recipient's submittal of required reports; (5) recipient's compliance with the terms and conditions of the award; (6) DOE's Go/No-Go decision; (7) the recipient's submission of a continuation application;[79] and (8) written approval of the continuation application by the Contracting Officer.

As a result of the Go/No-Go Review, DOE may, at its discretion, authorize the following actions: (1) continue to fund the project, contingent upon the availability of funds appropriated by Congress for the purpose of this program and the availability of future-year budget authority; (2) recommend redirection of work under the project; (3) place a hold on federal funding for the project,

[79] A continuation application is a non-competitive application for an additional budget period within a previously approved project period. At least ninety (90) days before the end of each budget period, the recipient must submit its continuation application, which includes the following information:

i. A progress report on the project objectives, including significant findings, conclusions, or developments, and an estimate of any unobligated balances remaining at the end of the budget period. If the remaining unobligated balance is estimated to exceed 20 percent of the funds available for the budget period, explain why the excess funds have not been obligated and how they will be used in the next budget period.
ii. A detailed budget and supporting justification if there are changes to the negotiated budget, or a budget for the upcoming budget period was not approved at the time of award.
iii. A description of any planned changes from the SOPO and/or Milestone Summary Table.

pending further supporting data or funding; or (4) discontinue funding the project because of insufficient progress, change in strategic direction, or lack of funding.

The Go/No-Go decision is distinct from a non-compliance determination. In the event a recipient fails to comply with the requirements of an award, DOE may take appropriate action, including but not limited to, redirecting, suspending or terminating the award.

xiv. Conference Spending

The recipient shall not expend any funds on a conference not directly and programmatically related to the purpose for which the grant or cooperative agreement was awarded that would defray the cost to the U.S. government of a conference held by any Executive branch department, agency, board, commission, or office for which the cost to the U.S. government would otherwise exceed $20,000, thereby circumventing the required notification by the head of any such Executive Branch department, agency, board, commission, or office to the Inspector General (or senior ethics official for any entity without an Inspector General), of the date, location, and number of employees attending such conference.

xv. Uniform Commercial Code (UCC) Financing Statements

Per 2 CFR 910.360 (Real Property and Equipment) when a piece of equipment is purchased by a for-profit recipient or subrecipient with federal funds, and when the federal share of the financial assistance agreement is more than $1 million the recipient or subrecipient must:

Properly record, and consent to the Department's ability to properly record if the recipient fails to do so, UCC financing statement(s) for all equipment in excess of $5,000 purchased with project funds. These financing statement(s) must be approved in writing by the Contracting Officer prior to the recording, and they shall provide notice that the recipient's title to all equipment (not real property) purchased with federal funds under the financial assistance agreement is conditional pursuant to the terms of this section, and that the government retains an undivided reversionary interest in the equipment. The UCC financing statement(s) must be filed before the Contracting Officer may reimburse the recipient for the federal share of the equipment unless otherwise provided for in the relevant financial assistance agreement. The recipient shall further make any amendments to the financing statements or additional recordings, including appropriate continuation statements, as necessary or as the Contracting Officer may direct.

xvi. Implementation of Executive Order 13798, Promoting Free Speech and Religious Liberty

States, local governments, and other public entities may not condition subawards in a manner that would discriminate against or otherwise disadvantage subrecipients based on their religious character.

xvii. Participants and Collaborating Organizations

If selected for award negotiations, the selected applicant must submit a list of personnel who are proposed to work on the project, both at the recipient and subrecipient level and a list of proposed collaborating organizations prior to award. Recipients will have an ongoing responsibility to notify DOE of changes to the personnel and collaborating organizations and submit updated information during the life of the award.

xviii. Current and Pending Support

If selected for award negotiations, within 30 days of the selection notice the selectee must submit: 1) current and pending support disclosures and resumes for any new PIs or senior/key personnel, and 2) updated disclosures if there have been any changes to the current and pending support submitted with the application. Throughout the life of the award, the recipient has an ongoing responsibility to submit: 1) current and pending support disclosure statements and resumes for any new PI and senior/key personnel, and 2) updated disclosures if there are changes to the current and pending support previously submitted to DOE. Also see Section IV.D.xx.

xix. U.S. Manufacturing Commitments

A primary objective of DOE's multi-billion-dollar research, development, and demonstration investments is to cultivate new research and development ecosystems, manufacturing capabilities, and supply chains for and by United States industry and labor. Therefore, in exchange for receiving taxpayer dollars to support an applicant's project, the applicant must agree to a U.S. Competitiveness provision requiring that any products embodying any subject invention or produced through the use of any subject invention will be manufactured substantially in the United States unless the recipient can show to the satisfaction of DOE that it is not commercially feasible. Award terms, including the specific U.S. Competitiveness Provision applicable to the various types of recipients and projects, are available at https://www.energy.gov/gc/standard-intellectual-property-ip-provisions-financial-assistance-awards.

Please note that a subject invention is any invention conceived or first actually reduced to practice in performance of work under an award. An invention is any invention or discovery which is or may be patentable. The recipient includes any awardee, recipient, sub-awardee, or sub-recipient.

As noted in the U.S. Competitiveness Provision, if an entity cannot meet the requirements of the U.S. Competitiveness Provision, the entity may request a modification or waiver of the U.S. Competitiveness Provision. For example, the entity may propose modifying the language of the U.S. Competitiveness Provision in order to change the scope of the requirements or to provide more specifics on the application of the requirements for a particular technology. As another example, the entity may request that the U.S. Competitiveness Provision be waived in lieu of a net benefits statement or United States manufacturing plan. The statement or plan would contain specific and enforceable commitments that would be beneficial to the United States economy and competitiveness. Examples of such commitments could include manufacturing specific products in the United States, making a specific investment in a new or existing United States manufacturing facility, keeping certain activities based in the United States or supporting a certain number of jobs in the United States related to the technology. DOE may, in its sole discretion, determine that the proposed modification or waiver promotes commercialization and provides substantial United States economic benefits, and grant the request. If granted, DOE will modify the award terms and conditions for the requesting entity accordingly.

More information and guidance on the waiver and modification request process can be found in the DOE Financial Assistance Letter on this topic, available at https://www.energy.gov/management/pf-2022-09-fal-2022-01-implementation-doe-determination-exceptional-circumstances-under. Additional information on DOE's Commitment to Domestic Manufacturing for DOE-funded R&D is available at https://www.energy.gov/gc/us-manufacturing.

The U.S. Competitiveness Provision is implemented by DOE pursuant to a Determination of Exceptional Circumstances (DEC) under the Bayh-Dole Act and DOE Patent Waivers. See Section VIII.J. Title to Subject Inventions of this FOA for more information on the DEC and DOE Patent Waivers.

xx. Interim Conflict of Interest Policy for Financial Assistance

The DOE interim Conflict of Interest Policy for Financial Assistance (COI Policy)[80] is applicable to all non-Federal entities applying for, or that receive, DOE funding

[80] DOE's interim COI Policy can be found at PF 2022-17 FAL 2022-02 Department of Energy Interim Conflict of Interest Policy Requirements for Financial Assistance.

by means of a financial assistance award (e.g., a grant, cooperative agreement, or technology investment agreement (TIA)) and, through the implementation of this policy by the entity, to each Investigator who is planning to participate in, or is participating in, the project funded wholly or in part under the DOE financial assistance award. The term "Investigator" means the PI and any other person, regardless of title or position, who is responsible for the purpose, design, conduct, or reporting of a project funded by DOE or proposed for funding by DOE. Recipients must flow down the requirements of the interim COI Policy to any subrecipient non-federal entities. Further, for DOE funded projects, the recipient must include all financial conflicts of interest (FCOI) (i.e., managed and unmanaged/unmanageable) in its initial and ongoing FCOI reports.

It is understood that non-federal entities and individuals receiving DOE financial assistance awards will need sufficient time to come into full compliance with DOE's interim COI Policy. To provide some flexibility, DOE allows for a staggered implementation. Specifically, prior to award, applicants selected for award negotiations must: ensure all Investigators complete their significant financial disclosures; review the disclosures; determine whether a FCOI exists; develop and implement a management plan for FCOIs; and provide DOE with an initial FCOI report that includes all FCOIs (i.e., managed and unmanaged/unmanageable). Recipients will have 180 days from the date of the award to come into full compliance with the other requirements set forth in DOE's interim COI Policy. Prior to award, the applicant must certify that it is, or will be within 180 days of the award, compliant with all requirements in the COI Policy.

xxi. Fraud, Waste, and Abuse

The mission of the DOE Office of Inspector General (OIG) is to strengthen the integrity, economy, and efficiency of the Department's programs and operations, including deterring and detecting fraud, waste, abuse, and mismanagement. The OIG accomplishes this mission primarily through investigations, audits, and inspections of DOE activities to include grants, cooperative agreements, loans, and contracts.

The OIG maintains a hotline for reporting allegations of fraud, waste, abuse, or mismanagement. To report such allegations, please visit https://www.energy.gov/ig/ig-hotline.

Additionally, recipients of DOE awards must be cognizant of the requirements of 2 CFR 200.113 Mandatory disclosures, which states:

The non-Federal entity or applicant for a Federal award must disclose, in a timely manner, in writing to the Federal awarding agency or pass-through entity all violations of Federal criminal law involving fraud, bribery, or gratuity violations potentially affecting the Federal award. Non-Federal entities that have received a Federal award including the term and condition outlined in appendix XII of 2 CFR Part 200 are required to report certain civil, criminal, or administrative proceedings to SAM.gov. Failure to make required disclosures can result in any of the remedies described in 2 CFR 200.339. (See also 2 CFR part 180, 31 U.S.C. § 3321, and 41 U.S.C. § 2313.) [85 FR 49539, Aug. 13, 2020]

Applicants and subrecipients (if applicable) are encouraged to allocate sufficient costs in the project budget to cover the costs associated for personnel and data infrastructure needs to support performance management and program evaluation needs, including but not limited to independent program and project audits to mitigate risks for fraud, waste, and abuse.

xxii. Human Subjects Research

Research involving human subjects, biospecimens, or identifiable private information conducted with DOE funding is subject to the requirements of DOE Order 443.1C, Protection of Human Research Subjects, 45 CFR Part 46, Protection of Human Subjects (subpart A which is referred to as the "Common Rule"), and 10 CFR Part 745, Protection of Human Subjects. Additional information on the DOE Human Subjects Research Program can be found at: https://science.osti.gov/ber/human-subjects.

VII. Questions/Agency Contacts

Upon the issuance of a FOA, DOE personnel are prohibited from communicating (in writing or otherwise) with applicants regarding the FOA except through the established question and answer process described below. Questions regarding this FOA must be submitted to *RECI_FOA@ee.doe.gov* no later than three (3) business days prior to the application due date and time. Please note, feedback on individual concepts will not be provided through Q&A.

All questions and answers related to this FOA will be posted on EERE eXCHANGE at https://eere-eXCHANGE.energy.gov. **You must first select the FOA Number to view the questions and answers specific to this FOA**. EERE will attempt to respond to a question within three (3) business days unless a similar question and answer has already been posted on the website.

Questions related to the registration process and use of the EERE eXCHANGE website should be submitted to EERE-eXCHANGESupport@hq.doe.gov.

VIII. Other Information

A. FOA Modifications

Amendments to this FOA will be posted on EERE eXCHANGE and the Grants.gov system. However, you will only receive an email when an amendment or a FOA is posted on these sites if you register for email notifications for this FOA in Grants.gov. EERE recommends that you register as soon after the release of the FOA as possible to ensure you receive timely notice of any amendments or other FOAs.

B. Government Right to Reject or Negotiate

DOE reserves the right, without qualification, to reject any or all applications received in response to this FOA and to select any application, in whole or in part, as a basis for negotiation and/or award.

C. Commitment of Public Funds

The Contracting Officer is the only individual who can make awards or commit the government to the expenditure of public funds. A commitment by anyone other than the Contracting Officer, either express or implied, is invalid.

D. Treatment of Application Information

Applicants should not include trade secrets or business-sensitive, proprietary, or otherwise confidential information in their application unless such information is necessary to convey an understanding of the proposed project or to comply with a requirement in the FOA. Applicants are advised to not include any critically sensitive proprietary detail.

If an application includes trade secrets or business-sensitive, proprietary, or otherwise confidential information, it is furnished to the federal government in confidence with the understanding that the information shall be used or disclosed only for evaluation of the application. Such information will be withheld from public disclosure to the extent permitted by law, including the Freedom of Information Act. Without assuming any liability for inadvertent disclosure, DOE will seek to limit disclosure of such information to its employees and to outside reviewers when necessary for merit review of the application or as otherwise authorized by law. This restriction does not limit the federal government's right to use the information if it is obtained from another source.

If an applicant chooses to submit trade secrets or business-sensitive, proprietary, or otherwise confidential information, the applicant must provide **two copies** of the submission (e.g., Concept Paper, Full Application). The first copy should be marked "non-confidential," with the information believed to be confidential deleted. The second copy should be marked "confidential" and must clearly and conspicuously identify the trade secrets or business-sensitive, proprietary, or otherwise confidential information and must be marked as described below. Failure to comply with these marking requirements may result in the disclosure of the unmarked information under the Freedom of Information Act or otherwise. The federal government is not liable for the disclosure or use of unmarked information and may use or disclose such information for any purpose as authorized by law.

The cover sheet of the Full Application, and other applicant submission must be marked as follows and identify the specific pages containing trade secrets or business-sensitive, proprietary, or otherwise confidential information:

> **Notice of Restriction on Disclosure and Use of Data:**
> Pages [list applicable pages] of this document may contain trade secrets or business-sensitive, proprietary, or otherwise confidential information that is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes or in accordance with a financial assistance agreement between the submitter and the government. The government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source. [End of Notice]

In addition, (1) the header and footer of every page that contains trade secrets or business-sensitive, proprietary, or otherwise confidential information must be marked as follows: "Contains Business Sensitive Information, Trade Secrets, or Proprietary or Otherwise Confidential Information Exempt from Public Disclosure," and (2) every line or paragraph containing such information must be clearly marked with double brackets or highlighting. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

E. Evaluation and Administration by Non-Federal Personnel

In conducting the merit review evaluation, the Go/No-Go Reviews and Peer Reviews, the government may seek the advice of qualified non-federal personnel as reviewers. The government may also use non-federal personnel to conduct routine, nondiscretionary administrative activities, including DOE contractors.

The applicant, by submitting its application, consents to the use of non-federal reviewers/administrators. Non-federal reviewers must sign conflict of interest (COI) and non-disclosure acknowledgements (NDA) prior to reviewing an application. Non-federal personnel conducting administrative activities must sign an NDA.

F. Notice Regarding Eligible/Ineligible Activities

Eligible activities under this FOA include those that describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

G. Notice of Right to Conduct a Review of Financial Capability

DOE reserves the right to conduct an independent third-party review of financial capability for applicants that are selected for negotiation of award (including personal credit information of principal(s) of a small business if there is insufficient information to determine financial capability of the organization).

H. Requirement for Full and Complete Disclosure

Applicants are required to make a full and complete disclosure of all information requested. Any failure to make a full and complete disclosure of the requested information may result in:

- The cancellation of award negotiations;
- The modification, suspension, and/or cancellation of a funding agreement;
- The initiation of debarment proceedings, debarment, and/or a declaration of ineligibility for receipt of federal contracts, subcontracts, and financial assistance and benefits; and
- Civil and/or criminal penalties.

I. Retention of Submissions

DOE expects to retain copies of all Full Applications and other submissions. No submissions will be returned. By applying to DOE for funding, applicants consent to DOE's retention of their submissions.

J. Title to Subject Inventions

Ownership of subject inventions is governed pursuant to the authorities listed below:

- Domestic Small Businesses, Educational Institutions, and Nonprofits: Under the Bayh-Dole Act (35 U.S.C. § 200 et seq.), domestic small businesses,

educational institutions, and nonprofits may elect to retain title to their subject inventions;

- All other parties: The Federal Non-Nuclear Energy Act of 1974, 42. U.S.C. § 5908, provides that the government obtains title to new inventions unless a waiver is granted (see below);
- Class Patent Waiver:

DOE has issued a class waiver that applies to this FOA. Under this class waiver, domestic large businesses may elect title to their subject inventions similar to the right provided to the domestic small businesses, educational institutions, and nonprofits by law. To avail itself of the class waiver, a domestic large business must agree that any products embodying or produced through the use of a subject invention first created or reduced to practice under this program will be substantially manufactured in the United States.

- Advance and Identified Waivers: Applicants not covered by a Class Patent Waiver or the Bayh-Dole Act may request a patent waiver that will cover subject inventions that may be invented under the award, in advance of or within 30 days after the effective date of the award. Even if an advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver for identified inventions, i.e., individual subject inventions that are disclosed to DOE within the timeframes set forth in the award's intellectual property data terms and conditions. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784.

- DEC: On June 07, 2021, DOE approved a Determination of Exceptional Circumstances (DEC) under the Bayh-Dole Act to further promote domestic manufacture of DOE science and energy technologies. In accordance with this DEC, all awards, including subawards, under this FOA shall include the U.S. Competitiveness Provision in accordance with Section VI.B.xx. U.S. Manufacturing Commitments of this FOA. A copy of the DEC can be found at https://www.energy.gov/gc/determination-exceptional-circumstances-decs. Pursuant to 37 CFR 401.4, any nonprofit organization or small business firm as defined by 35 U.S.C. § 201 affected by any DEC has the right to appeal it by providing written notice to DOE within 30 working days from the time it receives a copy of the determination.

- DOE may issue and publish further DECs on the website above prior to the issuance of awards under this FOA. DOE may require additional submissions or requirements as authorized by any applicable DEC.

K. Government Rights in Subject Inventions

Where prime recipients and subrecipients retain title to subject inventions, the U.S. government retains certain rights.

Government Use License

The U.S. government retains a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States any subject invention throughout the world. This license extends to contractors doing work on behalf of the government.

March-In Rights

The U.S. government retains march-in rights with respect to all subject inventions. Through "march-in rights," the government may require a prime recipient or subrecipient who has elected to retain title to a subject invention (or their assignees or exclusive licensees), to grant a license for use of the invention to a third party. In addition, the government may grant licenses for use of the subject invention when a prime recipient, subrecipient, or their assignees and exclusive licensees refuse to do so.

DOE may exercise its march-in rights only if it determines that such action is necessary under any of the four following conditions:

- The owner or licensee has not taken or is not expected to take effective steps to achieve practical application of the invention within a reasonable time;
- The owner or licensee has not taken action to alleviate health or safety needs in a reasonably satisfied manner;
- The owner has not met public use requirements specified by federal statutes in a reasonably satisfied manner; or
- The United States manufacturing requirement has not been met.

Any determination that march-in rights are warranted must follow a fact-finding process in which the recipient has certain rights to present evidence and witnesses, confront witnesses and appear with counsel and appeal any adverse decision. To date, DOE has never exercised its march-in rights to any subject inventions.

L. Rights in Technical Data

Data rights differ based on whether data is first produced under an award or instead was developed at private expense outside the award.

"Limited Rights Data": The U.S. government will not normally require delivery of confidential or trade-secret-type technical data developed solely at private expense prior to issuance of an award, except as necessary to monitor technical progress and evaluate the potential of proposed technologies to reach specific technical and cost metrics.

Government Rights in Technical Data Produced Under Awards: The U.S. government retains unlimited rights in technical data produced under government financial assistance awards, including the right to distribute to the public. One exception to the foregoing is that invention disclosures may be protected from public disclosure for a reasonable time in order to allow for filing a patent application.

M. Copyright

The prime recipient and subrecipients may assert copyright in copyrightable works, such as software, first produced under the award without DOE approval. When copyright is asserted, the government retains a paid-up nonexclusive, irrevocable worldwide license to reproduce, prepare derivative works, distribute copies to the public, and to perform publicly and display publicly the copyrighted work. This license extends to contractors and others doing work on behalf of the government. In addition, for those awards requiring distribution of software as Open-Source Software, the additional information in Appendix E must be addressed in the application.

N. Export Control

The United States government regulates the transfer of information, commodities, technology, and software considered to be strategically important to the United States to protect national security, foreign policy, and economic interests without imposing undue regulatory burdens on legitimate international trade. There is a network of federal agencies and regulations that govern exports that are collectively referred to as "Export Controls." All recipients and subrecipients are responsible for ensuring compliance with all applicable United States Export Control laws and regulations relating to any work performed under a resulting award.

The recipient must immediately report to DOE any export control violations related to the project funded under the DOE award, at the recipient or subrecipient level, and provide the corrective action(s) to prevent future violations.

O. Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment

As set forth in 2 CFR 200.216, recipients and subrecipients are prohibited from obligating or expending project funds (federal funds and recipient cost share) to procure or obtain; extend or renew a contract to procure or obtain; or enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that use *covered telecommunications equipment or services* as a substantial or essential component of any system, or as critical technology as part of any system. As described in Section 889 of Public Law 115-232, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

See Public Law 115-232, Section 889, 2 CFR 200.216, and 2 CFR 200.471 for additional information.

P. Personally Identifiable Information (PII)

All information provided by the applicant must to the greatest extent possible exclude PII. "PII" refers to information that can be used to distinguish or trace an individual's identity, such as their name, Social Security number, or biometric records, alone or combined with other personal or identifying information linked or linkable to a specific individual, such as date and place of birth or mother's maiden name. (See Office of Management and Budget, OMB Memorandum M-17-12 dated January 3, 2017 , found at: https://www.whitehouse.gov/wp-content/uploads/legacy_drupal_files/omb/memoranda/2007/m07-16.pdf.)

By way of example, applicants must screen resumes to ensure that they do not contain PII such as personal addresses, personal landline/cell phone numbers, and personal emails. **Under no circumstances should Social Security numbers (SSNs) be included in the application**. Federal agencies are prohibited from the collecting, using, and displaying unnecessary SSNs. (See the Federal Information Security Modernization Act of 2014 (Pub. L. No. 113-283, Dec 18, 2014; 44 U.S.C. § 3551).

Q. Annual Independent Audits

If a for-profit entity is a prime recipient and has expended $750,000 or more of DOE awards during the entity's fiscal year, an annual compliance audit performed by an independent auditor is required. For additional information, please refer to 2 CFR 910.501 and Subpart F.

If an educational institution, nonprofit organization, or state/local government is a prime recipient or subrecipient and has expended $750,000 or more of federal awards during the non-federal entity's fiscal year, a Single or Program-Specific Audit is required. For additional information, please refer to 2 CFR 200.501 and Subpart F.

Applicants and subrecipients (if applicable) should propose sufficient costs in the project budget to cover the costs associated with the audit. DOE will share in the cost of the audit at its applicable cost share ratio.

APPENDIX A – IMPACT CALCULATOR

Applicants are required to estimate the impacts associated with their proposed project. To assist in this effort, and to help ensure use and reporting of consistent savings estimates and assumptions, applicants are required to use the RECI Impact Calculator tool and submit the resulting spreadsheet calculation as part of the Full Application. Applicants must use the Calculator tool and attach their completed work (i.e., spreadsheet file), including all inputs and resulting estimates, as part of their application submission. Applicants may also include supporting materials that help justify or clarify calculator inputs and assumptions in the application submission.

The calculator is a spreadsheet-based tool designed to assess energy, cost, and emissions savings in new and existing buildings from the improved implementation of an energy code in a particular region, state or city. Savings can be generated through both updates to existing energy codes and/or improvements in energy code compliance based on a set of state specific baselines. Energy code baselines for new construction are established from the DOE Status of State Energy Code Adoption EUI analysis which describes the current state codes in effect as of 12/31/2023. Projects that address the existing building stock will use EUIs from CBECS and RECS as the baseline.

The calculator will enable the applicant to finetune their analysis by adjusting the following set of inputs:

- **Jurisdiction**: Specify state or City
- **Scope**: Residential and/or commercial; existing buildings and/or new construction
- **Start year**: Enter the start year of the project (e.g., what year will the target code be adopted)
- **Target code**: If applicable, enter the target code (e.g., 2021 IECC and/or ASHRAE 90.1-2019) or the estimated percentage improvement from the baseline.
- **Population *(needed to assess impacts at jurisdictional level)***: If the project is focused on a particular jurisdiction (town, city, county) or set of jurisdictions in a state, enter the total population to determine potential impacts.
- **Affected Floorspace (only needed to assess impacts in existing buildings)**: If assessing impacts to the existing building stock, estimate the total residential and/or commercial building floorspace you anticipate affecting and input that estimated value in the tool. Units will be million square feet of commercial floorspace and number of dwelling units of low-rise residential buildings.
- **Compliance**: If it is anticipated that the proposed project will improve the rate of compliance, enter the rate at which you predict compliance to improve.

Full instructions for using the RECI Impact Calculator are included in the "Directions" tab in the linked Excel document, available on the EERE Exchange website under "Required Application Documents" under this FOA posting.

Applicants must report estimated impacts as part of their Summary Slide and their Project Summary document (abstract).

Applicants may provide additional impact justification beyond what is required by the RECI Impact Calculator tool. Additional projections are permitted, particularly in instances where the activities being proposed are not captured accurately or sufficiently by the standardized Impact Calculator tool. Any additional impact estimates provided by the applicant must be clearly articulated, and based on technically sound, commonly accepted, and defensible calculation methods. In all cases, applicants should document relevant inputs and assumptions, to ensure clarity around how impacts are calculated.

APPENDIX B – INFOGRAPHICS DEPICTING STATE AND LOCAL IMPLEMENTATION TRENDS

The DOE Building Energy Codes Program tracks and analyzes data related to the adoption, compliance, and implementation with the latest model energy codes. Recently, DOE has compiled this information into easily digestible maps, charts, and other graphics to improve the understanding of building energy code policies across the country. In relation to this FOA, the set of maps and graphics included in this appendix are intended to help provide relevant background information and identify opportunities related to specific areas of interest as described throughout the FOA. For example, this information can help identify key policies or programs which may be most impactful based on a state or local jurisdictions current policy framework, such as energy code equivalency, code adoption laws, past code compliance studies, and complementary building requirements (e.g., electric vehicle or solar). The online version of all DOE Building Energy Codes Program (BECP) infographics, including the maps discussed below, are interactive and embedded with additional information. The interactive versions of these infographics can be found on www.energycodes.gov/infographics. Clicking on the graphic of interest will lead to BECP's Tableau Public Page, which provides additional data, statistics, and insights.

Municipal Building Codes

Figures B1 and B2 provide two basic pieces of information that may be helpful in identifying opportunities to pursue stretch energy codes and other local code advancements. The dots represent the top 100 metro areas by residential (Figure B1) and commercial (Figure B2) construction volume, and the color of each dot indicates the relative efficiency levels of the local code in effect. The state color indicates whether jurisdictions in each state have the ability to adopt an energy code that is more efficient than the state code, if a state code is in effect. States with dark or light green either do not have a state code or allow a jurisdiction to adopt a more efficient code than the state code. Tan states are commonly referred to as Min/Max states and state law typically prohibits a local jurisdiction from adopting or enforcing a code that deviates from the state code. DOE intends to support states and local governments pursuing stretch codes. Applicants are encouraged to review the maps below, which depict current stretch code potential and adoption status, and tailor their activities to support states, local governments and regions with the greatest impact potential.

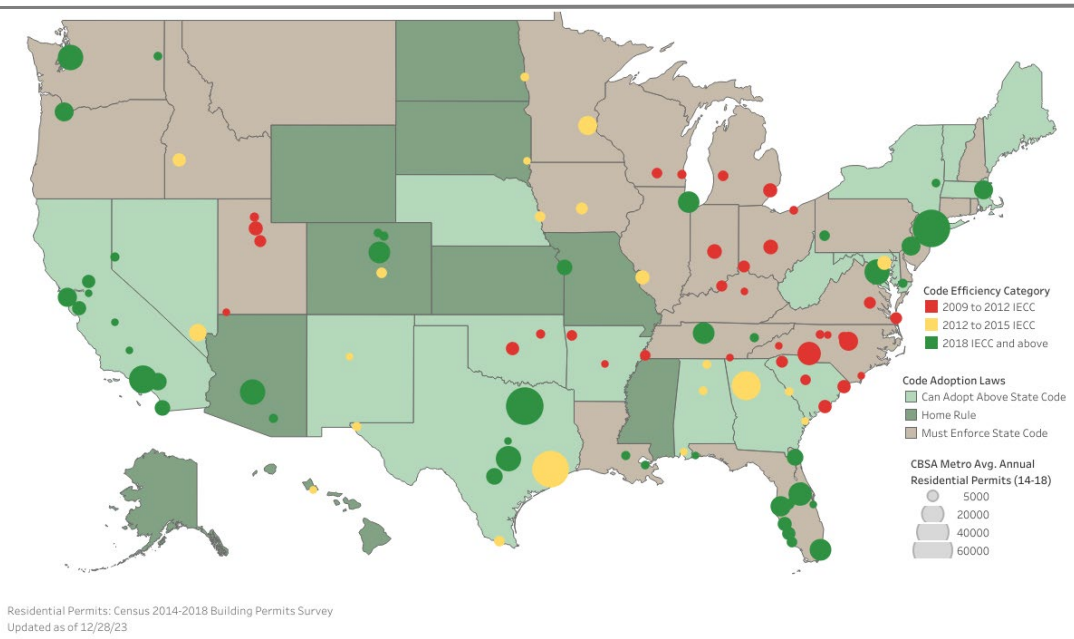

Figure B1 *Status of residential municipal energy code adoption with state code adoption laws for primary cities in the top 100 metro areas by residential construction volume. Cities in dark green (home rule) have authority to adopt any energy code, cities in light green (Min) states can only adopt an energy code that is more efficient than state code, and cities in tan states must adopt the state code. The circle size is proportional to construction volume, and color indicates city code efficiency.*

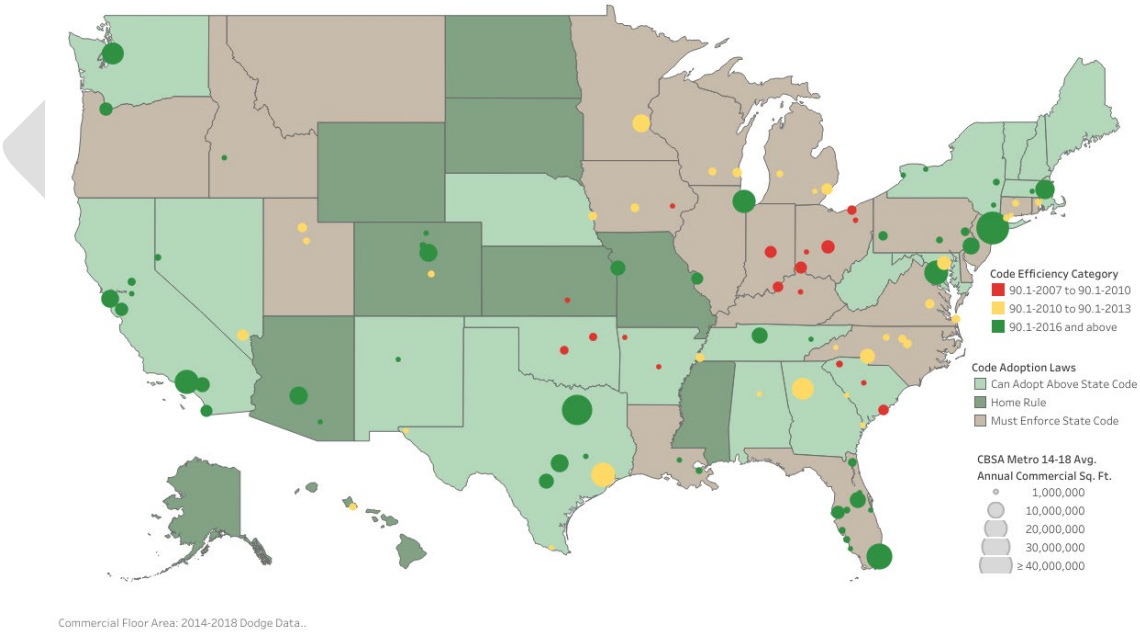

Figure B2 *Status of commercial municipal energy code adoption with state code adoption laws for primary cities in the top 100 metro areas by commercial construction volume. Cities in dark green (home rule) have authority to adopt any energy code, cities in light green (Min) states can only adopt an energy code that is more efficient than state code, and cities in tan states must adopt the state code. The circle size is proportional to construction volume, and color indicates city code efficiency.*

State Code Efficiency

BECP tracks and analyzes energy codes that are adopted at the state level across the country. This quantitative analysis considers the model code referenced by each state including all state specific amendments which impact overall energy use. Figures B3 and B4, utilize the analyzed state code energy index and compares that to the energy index of the 2021 IECC and ASHRAE 90.1-2019 in each state. These maps highlight the percent difference between the residential (Figure B3) and commercial (Figure B4) code state energy index and the latest model energy codes. Dark green indicates the state code is as or more efficient than the national model code, where shades of turquoise and gray indicates a less efficient state code. States in white either do not have a statewide energy code or have a custom code that DOE did not analyze. Applicants are encouraged to consider the overall impact of potential code updates in selecting their activities under the FOA.

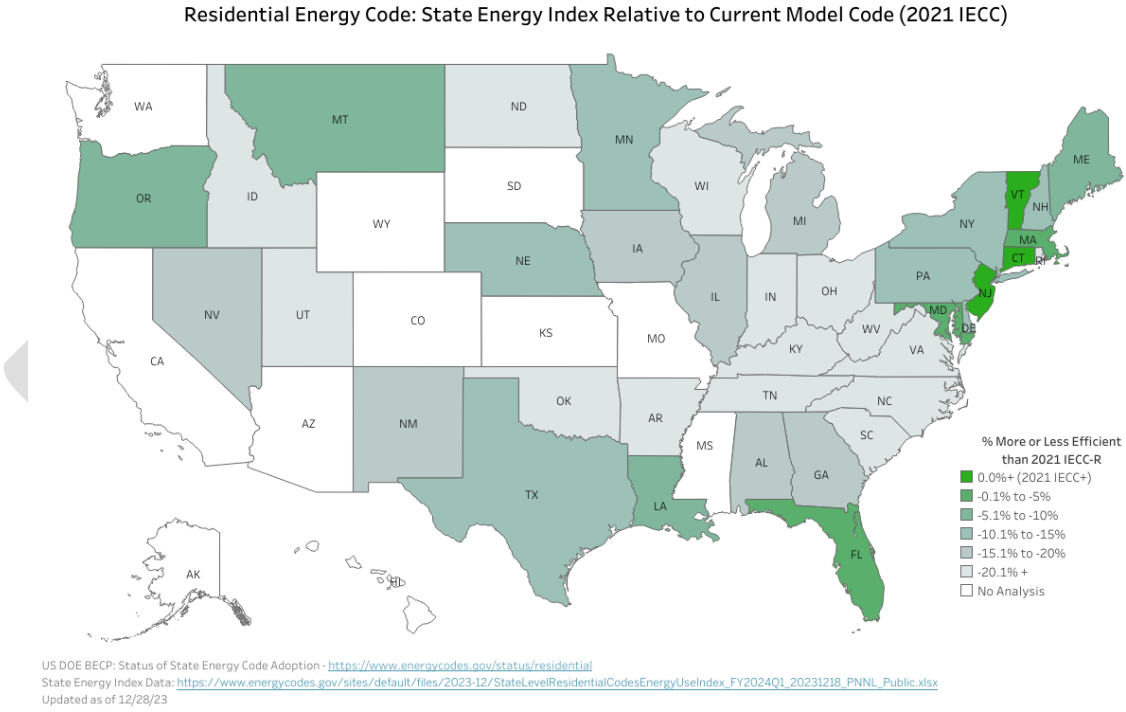

Figure B3 *Status of energy code adoption across U.S. states relative to the 2021 International Energy Conservation Code (IECC) for residential buildings.*

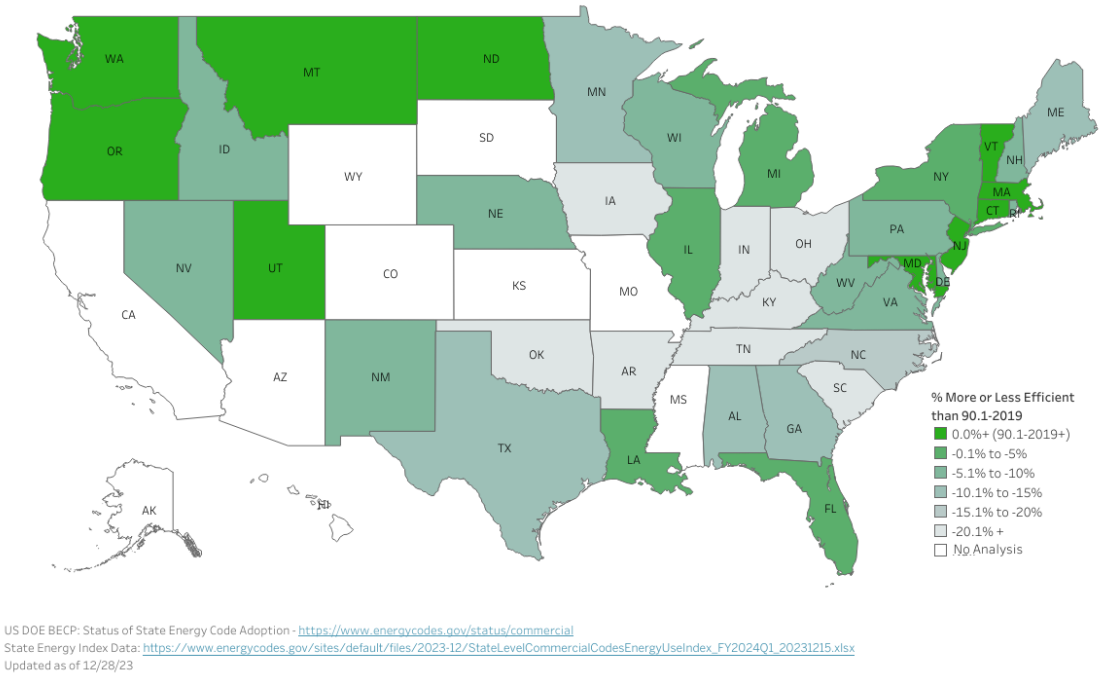

Figure B4 *Status of energy code adoption across U.S. states relative to the 2019 edition of ANSI/ASHRAE/IES Standard 90.1 for commercial buildings.*

State Code Impacts

BECP analyzes the potential long-term impacts associated with states and local governments updating to the latest model energy codes. The impact of building energy codes at the state and local levels are influenced by factors such as the efficiency of adopted codes, total construction, and degree to which they are implemented, including high rates of compliance and widespread enforcement. Jurisdictions with outdated codes, particularly those with outdated codes or significant construction volume, will see significant long-term energy, cost, and emissions savings by adopting the latest model codes. Figure B5 highlights the potential 30-year energy cost savings associated with each state updating to the ASHRAE Standard 90.1-2019 and IECC-2021 for residential and commercial buildings. Each state pie chart represents the ratio of savings between residential and commercial, with the size of the pie indicative of overall potential savings.

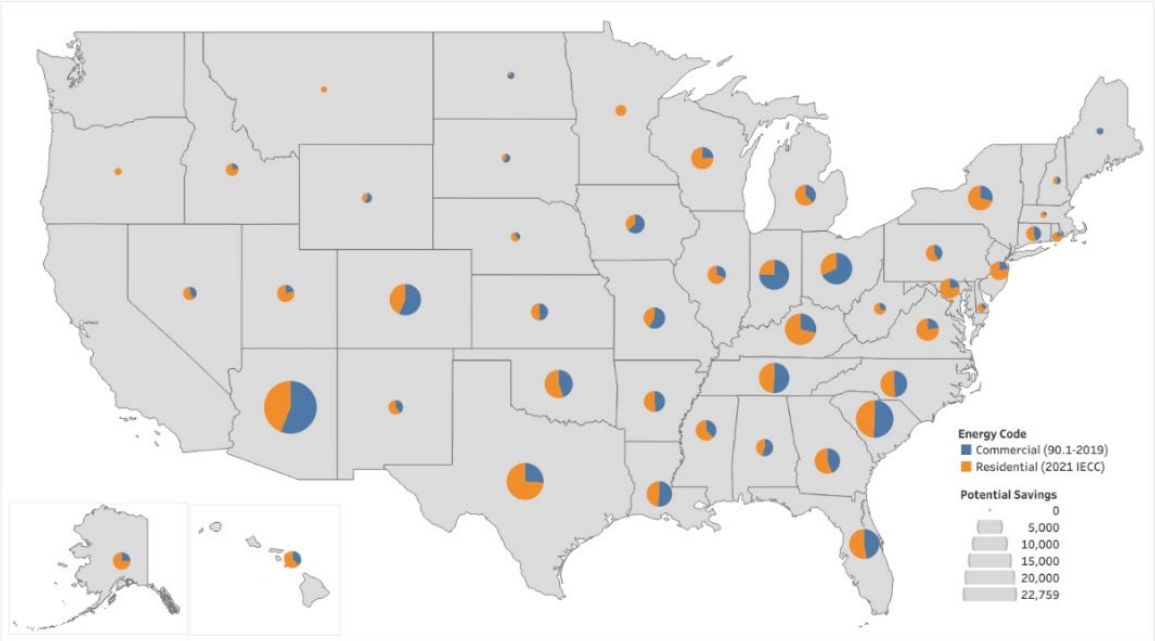

Figure B5 *30-year potential energy cost savings associated with every state updating to the ASHRAE Standard 90.1-2019 and IECC-2021 for residential and commercial buildings.*

Electric Vehicle and Solar Ready Policies

In addition to energy code adoption and implementation, many jurisdictions are adopting building requirements addressing on-site solar and electric vehicle charging infrastructure. There are two primary ways to adopt these policies, either through the building code or a local ordinance. Figure B5 provides a high-level overview of where policies to require solar and electric vehicle infrastructure in buildings have been adopted. Applicants are encouraged to consider complementary policies, such as those supporting solar and electric vehicle charging, when selecting their activities, particularly those which support stretch codes.

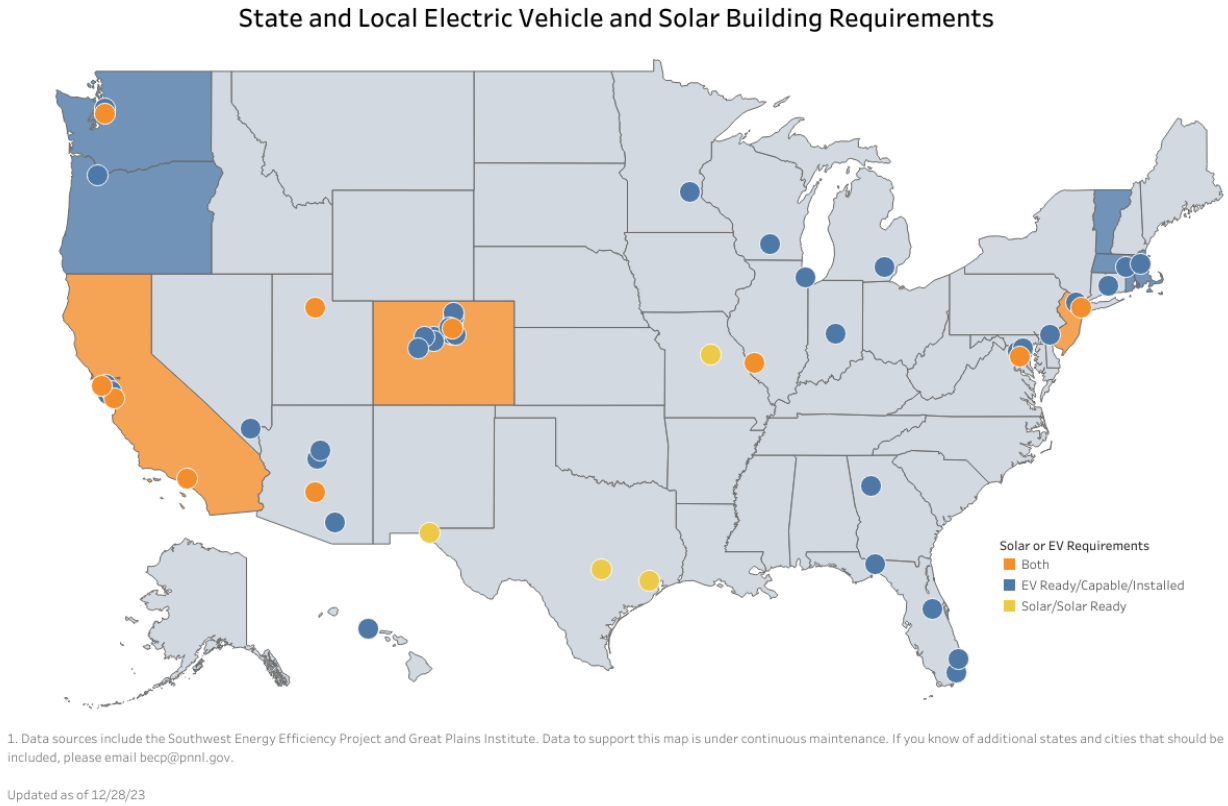

Figure B5 *State and Local Electric Vehicle and Solar Building Requirements. This map provides a high-level overview of where policies, typically either through building code or local ordinance, to support solar and electric vehicle infrastructure in buildings are adopted.*

Energy Code Compliance

BECP has developed research methods to support states in studying the impacts of their building energy codes. The objectives of energy code field studies are to document typical design and construction practices, target areas for improvement through workforce education and training initiatives and quantify energy efficiency and environmental impacts in buildings. States are encouraged to conduct field studies regularly, at least every 3-5 years, to validate the effects of codes and other energy-efficiency programs and benchmark technology trends in residential and commercial construction.

Figures B6 and B7 highlight states that have conducted field studies assessing energy code compliance in single-family, multifamily, or commercial buildings within the last decade. Although DOE funded many of these studies to demonstrate early success, states and jurisdictions have utilized DOE methodologies to fund and facilitate studies outside the DOE program. To read more about states that have conducted a field study based on the standardized DOE methodology, visit energycodes.gov[81].

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

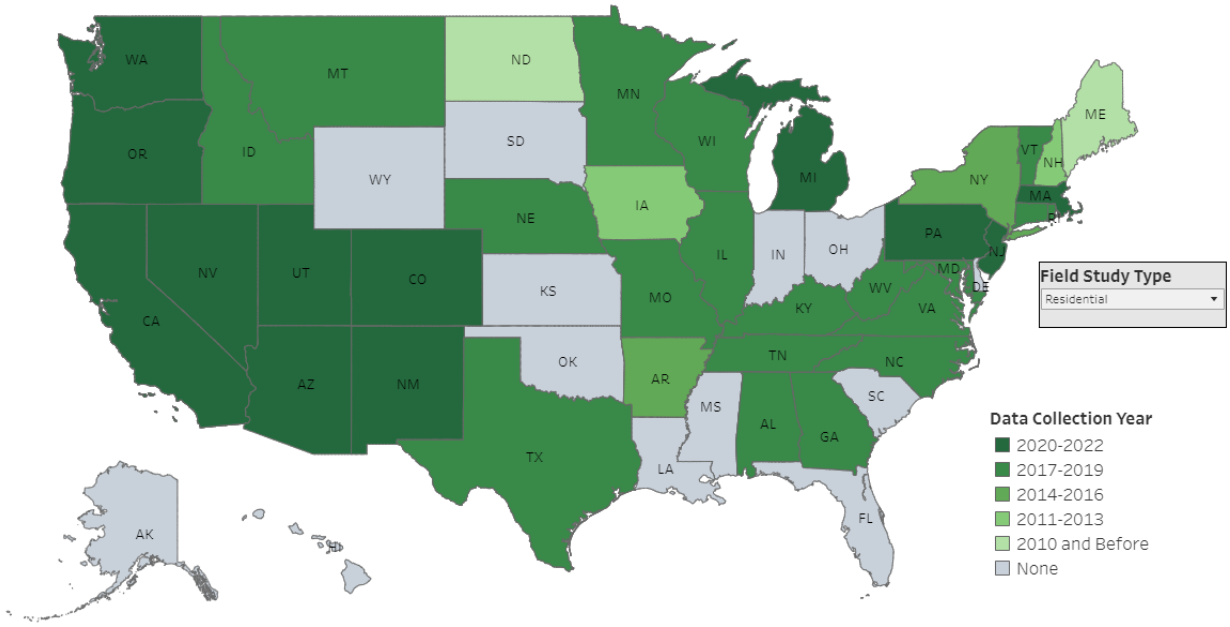

Figure B6 *Residential state energy code compliance field studies by year.*

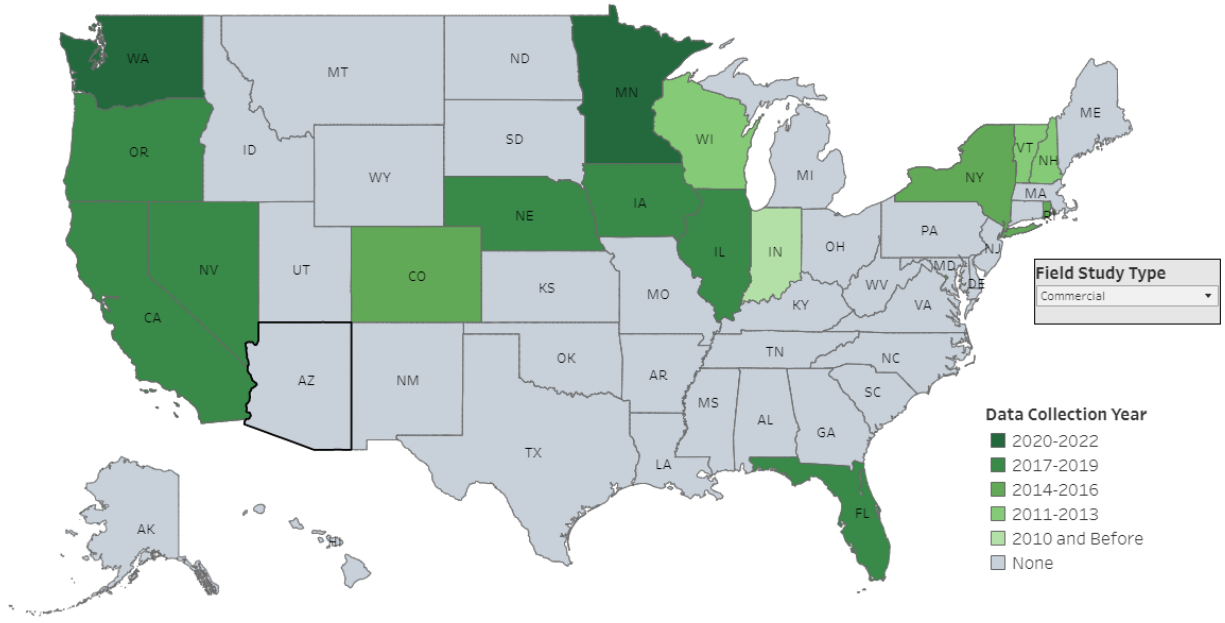

Figure B6 *Commercial state energy code compliance field studies by year.*

APPENDIX C – WAIVER REQUESTS FOR: 1. FOREIGN ENTITY PARTICIPATION; AND 2. FOREIGN WORK

1. Waiver for Foreign Entity Participation

Many of the technology areas DOE funds fall in the category of critical and emerging technologies (CETs). CETs are a subset of advanced technologies that are potentially significant to United States national and economic security.[82] For projects selected under this FOA, all recipients and subrecipients must be organized, chartered or incorporated (or otherwise formed) under the laws of a state or territory of the United States; have majority domestic ownership and control; and have a physical location for business operations in the United States. To request a waiver of this requirement, an applicant must submit an explicit waiver request in the Full Application.

Waiver Criteria

Foreign entities seeking to participate in a project funded under this FOA must demonstrate to the satisfaction of DOE that:

a. Its participation is in the best interest of the United States industry and United States economic development;
b. The project team has appropriate measures in place to control sensitive information and protect against unauthorized transfer of scientific and technical information;
c. Adequate protocols exist between the United States subsidiary and its foreign parent organization to comply with export control laws and any obligations to protect proprietary information from the foreign parent organization;
d. The work is conducted within the United States and the entity acknowledges and demonstrates that it has the intent and ability to comply with the United States Competitiveness Provision (see Section VI.B.xix.); and
e. The foreign entity will satisfy other conditions that may be deemed necessary by DOE to protect United States government interests.

Content for Waiver Request

A Foreign Entity waiver request must include the following:

a. Information about the entity: name, point of contact, and proposed type of involvement in the project;
b. Country of incorporation, the extent of the ownership/level control by foreign entities, whether the entity is state owned or controlled, a summary of the ownership breakdown of the foreign entity, and the percentage of

[82] See Critical and Emerging Technologies List Update (whitehouse.gov).

ownership/control by foreign entities, foreign shareholders, foreign state, or foreign individuals;

c. The rationale for proposing a foreign entity participate (must address criteria above);
d. A description of the project's anticipated contributions to the United States economy;
    - How the project will benefit the United States, including manufacturing, contributions to employment in the United States and growth in new markets and jobs in the United States;
    - How the project will promote manufacturing of products and/or services in the United States;
e. A description of how the foreign entity's participation is essential to the project;
f. A description of the likelihood of Intellectual Property (IP) being created from the work and the treatment of any such IP; and
g. Countries where the work will be performed. (Note: if any work is proposed to be conducted outside the United States, the applicant must also complete a separate request foreign work waiver.)

DOE may also require:

- A risk assessment with respect to IP and data protection protocols that includes the export control risk based on the data protection protocols, the technology being developed, and the foreign entity and country. These submissions could be prepared by the project lead (if not the prime recipient), but the prime recipient must make a representation to DOE as to whether it believes the data protection protocols are adequate and make a representation of the risk assessment – high, medium, or low risk of data leakage to a foreign entity.
- Additional language be added to any agreement or subagreement to protect IP, mitigate risk, or other related purposes.

DOE may require additional information before considering the waiver request.

DOE's decision concerning a waiver request is not appealable.

WAIVER FOR PERFORMANCE OF WORK IN THE UNITED STATES (FOREIGN WORK WAIVER)

As set forth in Section IV.J.iii., all work under funding under this FOA must be performed in the United States. To seek a waiver of the Performance of Work in the United States requirement, the applicant must submit an explicit waiver request in the Full Application. A separate waiver request must be submitted for each entity proposing performance of work outside of the United States.

Overall, a waiver request must demonstrate to the satisfaction of DOE that it would further the purposes of this FOA and is otherwise in the economic interests of the United States to perform work outside of the United States. A request for a foreign work waiver must include the following:

1. The rationale for performing the work outside the United States ("foreign work");
2. A description of the work proposed to be performed outside the United States;
3. An explanation as to how the foreign work is essential to the project;
4. A description of the anticipated benefits to be realized by the proposed foreign work and the anticipated contributions to the United States economy;
5. The associated benefits to be realized and the contribution to the project from the foreign work;
6. How the foreign work will benefit the United States, including manufacturing, contributions to employment in the United States and growth in new markets and jobs in the United States;
7. How the foreign work will promote manufacturing of products and/or services in the United States;
8. A description of the likelihood of Intellectual Property (IP) being created from the foreign work and the treatment of any such IP;
9. The total estimated cost (DOE and recipient cost share) of the proposed foreign work;
10. The countries in which the foreign work is proposed to be performed; and
11. The name of the entity that would perform the foreign work. Information about the entity(ies) involved in the work proposed to be conducted outside the United States. (i.e., entity seek a waiver and the entity(ies) that will conduct the work).

DOE may require additional information before considering the waiver request.

DOE's decision concerning a waiver request is not appealable.

APPENDIX D – REQUIRED USE OF AMERICAN IRON, STEEL, MANUFACTURED PRODUCTS, AND CONSTRUCTION MATERIALS BUY AMERICA REQUIREMENTS FOR INFRASTRUCTURE PROJECTS

A. Definitions

For purposes of the Buy America requirements, based both on the statute and OMB Guidance Document dated April 18, 2022, the following definitions apply:

Construction materials includes an article, material, or supply—other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives[83]—that is or consists primarily of:

- Non-ferrous metals;
- Plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);
- Glass (including optic glass);
- Lumber; or
- Drywall.

Infrastructure includes, at a minimum, the structures, facilities, and equipment for, in the United States, roads, highways, and bridges; public transportation; dams, ports, harbors, and other maritime facilities; intercity passenger and freight railroads; freight and intermodal facilities; airports; water systems, including drinking water and wastewater systems; electrical transmission facilities and systems; utilities; broadband infrastructure; and buildings and real property. Infrastructure includes facilities that generate, transport, and distribute energy.

Moreover, according to the OMB guidance document:

> When determining if a program has infrastructure expenditures, Federal agencies should interpret the term "infrastructure" broadly and consider the definition provided above as illustrative and not exhaustive. When determining if a particular construction project of a type not listed in the definition above constitutes "infrastructure," agencies should consider whether the project will serve a public function, including whether the project is publicly owned and operated, privately operated on behalf of the public, or is a place of public accommodation, as opposed to a project that is privately owned and not open to the public. Projects with the former qualities have greater indicia of infrastructure, while projects with the latter quality have fewer. Projects consisting solely of the

[83] BIL, § 70917(c)(1).

purchase, construction, or improvement of a private home for personal use, for example, would not constitute an infrastructure project.

The Agency, not the applicant, will have the final say as to whether a given project includes infrastructure, as defined herein. Accordingly, in cases where the "public" nature of the infrastructure is unclear but the other relevant criteria are met, DOE strongly recommends that applicants complete their full application with the assumption that Buy America requirements will apply to the proposed project.

Project means the construction, alteration, maintenance, or repair of infrastructure in the United States.

B. Buy America Requirements for Infrastructure Projects ("Buy America" requirements)
In accordance with Section 70914 of the BIL, none of the project funds (includes federal share and recipient cost share) may be used for a project for infrastructure unless:

(1) all iron and steel used in the project are produced in the United States--this means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States;

(2) all manufactured products used in the project are produced in the United States—this means the manufactured product was manufactured in the United States; and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation; and

(3) all construction materials[84] are produced in the United States—this means that all manufacturing processes for the construction material occurred in the United States.

The Buy America requirements only apply to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project. Nor does the Buy America requirements apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project, but are not an integral part of the structure or permanently affixed to the infrastructure project.

[84] Excludes cement and cementitious materials, aggregates such as stone, sand, or gravel, or aggregate binding agents or additives.

These requirements must flow down to all sub-awards, all contracts, subcontracts, and purchase orders for work performed under the proposed project, except where the prime recipient is a for-profit entity. Based on guidance from the Office of Management and Budget (OMB), the Buy America requirements of the BIL do not apply to DOE projects in which the prime recipient is a for-profit entity; the requirements only apply to projects whose prime recipient is a State, local government, Indian Tribe, Institution of Higher Education, or nonprofit organization.

For additional information related to the application and implementation of these Buy America requirements, please see OMB Memorandum M-22-11, issued April 18, 2022: https://www.whitehouse.gov/wp-content/uploads/2022/04/M-22-11.pdf

Note that for all applicants—both non-Federal entities and for-profit entities—DOE is including a Program Policy Factor that the Selection Official may consider in determining which Full Applications to select for award negotiations that considers whether the applicant has made a commitment to procure U.S. iron, steel, manufactured products, and construction materials in its project.

C. Waivers

The DOE financial assistance agreement will require each recipient: (1) to fulfill the commitments made in its application regarding the procurement of U.S.-produced products and (2) to fulfill the commitments made in its application regarding the procurement of other key component metals and domestically manufactured products that are deemed available in sufficient and reasonably available quantities or of a satisfactory quality at the time of award negotiation.

In limited circumstances, DOE may waive the application of the Buy America requirements where DOE determines that:

(1) Applying the Buy America requirements would be inconsistent with the public interest;

(2) The types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality; or

(3) The inclusion of iron, steel, manufactured products, or construction materials produced in the United States will increase the cost of the overall project by more than 25%.

If an applicant or recipient is seeking a waiver of the Buy America requirements, it may submit a waiver request after it has been notified of its selection for award negotiations. A waiver request must include:

- A detailed justification for the use of "non-domestic" iron, steel, manufactured products, or construction materials to include an explanation as to how the non-domestic item(s) is essential to the project
- A certification that the applicant or recipient made a good faith effort to solicit bids for domestic products supported by terms included in requests for proposals, contracts, and nonproprietary communications with potential suppliers
- Applicant/Recipient name and Unique Entity Identifier (UEI)
- Total estimated project cost, DOE and cost-share amounts
- Project description and location (to the extent known)
- List and description of iron or steel item(s), manufactured goods, and construction material(s) the applicant or recipient seeks to waive from Domestic Content Procurement Preference requirement, including name, cost, country(ies) of origin (if known), and relevant PSC and NAICS code for each
- Waiver justification including due diligence performed (e.g., market research, industry outreach) by the applicant or recipient
- Anticipated impact if no waiver is issued

DOE may require additional information before considering the waiver request.

Waiver requests are subject to public comment periods of no less than 15 days and must be reviewed by the Made in America Office. There may be instances where an award qualifies, in whole or in part, for an existing waiver described at DOE Buy America Requirement Waiver Requests.

DOE's decision concerning a waiver request is not appealable.

APPENDIX E – OPEN-SOURCE SOFTWARE

Open-source Software Distribution Plan

Applicants applying to one or more Topic Areas for which development of open-source software is proposed in the application must submit a plan describing how software produced under this FOA will be distributed. For a DOE National Laboratory or a FFRDC, the data rights clause (including rights and requirements pertaining to computer software) in its Management & Operating (M&O) contract shall apply and take precedence over any requirement set forth in this Appendix. The plan must include the following elements:

1. A complete description of any existing software that will be modified or incorporated into software produced under this FOA, including a description of the license rights. The license rights must allow the modified or incorporated software to be distributed as open-source.

2. A discussion of the open-source license that the applicant plans to use for the software it intends to produce under the FOA, and how that choice furthers the goals of this FOA. The discussion must also address how the license conforms to the conditions listed below.

3. A method for depositing the software in a source code repository.

4. A method for sharing and disseminating the software and other information to team members or others when multiple parties will contribute to the development of the software or the FOA requires that the software or other information be shared or disseminated to others.

Open-source Definition: Open-source licenses must conform to all of the following conditions:

Free Redistribution
The license shall not restrict any party from selling or giving away the software as a component of an aggregate software distribution containing programs from several sources. The license shall not require a royalty or other fee for such sale. The rights attached to the software must apply to all to whom the software is redistributed without the need for execution of an additional license by those parties.

Source Code
The program must include source code and allow distribution in source code as well as compiled form. Where some form of a product is not distributed with source code, there must be a well-publicized means of obtaining the source code for no more than a reasonable reproduction cost preferably, i.e., downloading via the Internet without charge. The source

code must be the preferred form in which a programmer would modify the program. Deliberately obfuscated source code and intermediate forms, such as the output of a preprocessor or translator, are not allowed.

Derived Works
The license must allow modifications and derived works, and permit the option of distributing the modifications and derived works under the same terms as the license of the original software.

Integrity of the Author's Source Code
The license may restrict source code from being distributed in modified form only if the license allows the distribution of "patch files" with the source code for the purpose of modifying the program at build time. The license must explicitly permit distribution of software built from modified source code. The license may require derived works to carry a different name or version number from the original software.

No Restriction Against Fields of Endeavor
The license must not restrict anyone from using the program in a specific field of endeavor. For example, it may not restrict the program from being used in a business or for genetic research.

License Must Not Be Specific to a Product or Technology
The rights attached to the program must not depend on the program's being part of a particular software distribution. If the program is extracted from that distribution and used or distributed within the terms of the program's license, all parties to whom the program is redistributed should have the same rights as those that are granted in conjunction with the original software distribution. No provision of the license may be predicated on any individual technology or style of interface.

License Must Not Restrict Other Software
The license must not place restrictions on other software that is distributed along with the licensed software. For example, the license must not insist that all other programs distributed on the same medium be open-source software.

Examples of Acceptable Licenses:

Apache License, 2.0
http://www.apache.org/licenses

The 2.0 version of the Apache License was approved by the Apache Software Foundation (ASF) in 2004. The goals of this license revision were to reduce the number of frequently asked questions, to allow the license to be reusable without modification by any project (including non-ASF projects), to allow the license to be included by reference instead of listed in every file,

to clarify the license on submission of contributions, to require a patent license on contributions that necessarily infringe the contributor's own patents, and to move comments regarding Apache and other inherited attribution notices to a location outside the license terms

The result is a license that is compatible with other open-source licenses, while remaining true to and supportive of collaborative development across nonprofit and commercial organizations.

All packages produced by the ASF are implicitly licensed under the Apache License, Version 2.0, unless otherwise explicitly stated.

GNU General or Public License (GPLv3)
http://www.gnu.org/licenses/gpl.html

The GNU General Public License (GNU GPL or simply GPL) is the most widely used free software license, originally written by Richard Stallman for the GNU Project.

The GPL is the first copyleft license for general use, which means that derived works must be distributed under the same license terms. Under this philosophy, the GPL grants the recipients of a computer program the rights of the free software definition and uses copyleft to ensure the freedoms are preserved, even when the work is changed or additions are made. This aspect distinguishes the GPL from permissive free software licenses, including the BSD licenses. The license's copyright disallows modification of the license. Copying and distributing the license is allowed because the GPL requires recipients to get "a copy of this License along with the Program." According to the GPL FAQ, anyone can make a new license using a modified version of the GPL if they use a different name for the license, do not mention "GNU," and remove the preamble, though the preamble can be used in a modified license if permission to use it is obtained from the Free Software Foundation (FSF).

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The GNU Lesser General Public License (or LGPL, formerly the GNU Library General Public License) is a free software license published by the Free Software Foundation (FSF). It was designed as a compromise between the strong-copyleft GNU General Public License or GPL and permissive licenses such as the BSD licenses and the MIT License. The GNU Library General Public License (as the LGPL was originally named) was published in 1991 and adopted the version number 2 for parity with GPL version 2. The LGPL was revised in minor ways in the 2.1 point release, published in 1999, when it was renamed the GNU Lesser General Public License to reflect the FSF's position that not all libraries should use it. Version 3 of the LGPL was published in 2007 as a list of additional permissions applied to GPL version 3.

The LGPL places copyleft restrictions on the program governed under it but does not apply these restrictions to other software that merely link with the program. There are, however, certain other restrictions on this software.

The LGPL is primarily used for software libraries, although it is also used by some stand-alone applications, most notably Mozilla and OpenOffice.org.

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The MIT License is a free software license originating at the Massachusetts Institute of Technology. It is a permissive license, meaning that it permits reuse within proprietary software provided all copies of the licensed software include a copy of the MIT License terms. Such proprietary software retains its proprietary nature even though it incorporates software under the MIT License. The license is also GPL-compatible, meaning that the GPL permits combination and redistribution with software that uses the MIT License.

Software packages that use one of the versions of the MIT License include Expat, PuTTY, the Mono development platform class libraries, Ruby on Rails, Lua (from version 5.0 onward), and the X Window System, for which the license was written.

Mozilla Public License 2.0 (MPL-2.0)
http://www.mozilla.org/MPL/2.0/

The Mozilla Public License (MPL) is a free and open-source software license. Version 1.0 was developed by Mitchell Baker when she worked as a lawyer at Netscape Communications Corporation and version 1.1 at the Mozilla Foundation. Version 2.0 was developed in the open, overseen by Baker and led by Louis Villa. The MPL is characterized as a hybridization of the modified BSD license and GNU General Public License.

The MPL is the license for the Mozilla Application Suite, Mozilla Firefox, Mozilla Thunderbird and other Mozilla software. The MPL has been adapted by others as a license for their software, most notably Sun Microsystems, as the Common Development and Distribution License for OpenSolaris, the open-source version of the Solaris 10 operating system, and by Adobe, as the license for its Flex product line.

APPENDIX F – LIST OF ACRONYMS

BECP	Building Energy Codes Program
BIL	Bipartisan Infrastructure Law
BTO	Building Technologies Office
CETs	Critical and Emerging Technologies
CEJST	Climate and Economic Justice Screening Tool
COI	Conflict of Interest
CRADA	Cooperative Research and Development Agreement
DEC	Determination of Exceptional Circumstances
DEIA	Diversity, Equity, Inclusion, and Accessibility
DOE	Department of Energy
DOL	Department of Labor
EEEJ	Energy, Equity, and Environmental Justice
EERE	Energy Efficiency and Renewable Energy
FAR	Federal Acquisition Regulation
FCOI	Financial Conflicts of Interest
FFATA	Federal Funding and Transparency Act of 2006
FOA	Funding Opportunity Announcement
FFRDC	Federally Funded Research and Development Center
IECC	International Energy Conservation Code
M&O	Management and Operating
MFA	Multi-Factor Authentication
MPIN	Marketing Partner ID Number
MSI	Minority-Serving institution
NDA	Non-Disclosure Acknowledgement
NEPA	National Environmental Policy Act
NNSA	National Nuclear Security Administration
NSF	National Science Foundation
OFCCP	Office of Federal Contractor Compliance Programs
OIG	Office of Inspector General
OMB	Office of Management and Budget
OSTI	Office of Scientific and Technical Information
PII	Personal Identifiable Information
R&D	Research and Development
RECI	Resilient and Efficient Codes Implementation
RFI	Request for Information
SAM	System for Award Management
SciENcv	Science Experts Network Curriculum Vita
SMART	Specific, Measurable, Attainable, Realistic, and Timely
SOPO	Statement of Project Objectives
TIA	Technology Investment Agreement
TAA	Technical Assistance Agreement

UCC	Uniform Commercial Code
UEI	Unique Entity Identifier
WBS	Work Breakdown Structure