Department of Energy (DOE)
Building Technologies Office

Bipartisan Infrastructure Law: Resilient and Efficient Codes Implementation

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FOA Issue Date:	December 19, 2022
Submission Deadline for Concept Papers:	January 31, 2023 by 5:00pm ET
Submission Deadline for Full Applications:	March 27, 2023 by 5:00pm ET
Expected Submission Deadline for Replies to Reviewer Comments:	April 17, 2023 by 5:00pm ET
Expected Date for DOE Selection Notifications:	June 26, 2023
Expected Timeframe for Award Negotiations:	June 26 through August 29, 2023

- Applicants must submit a Concept Paper by 5:00pm 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 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.

- **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 utilize the HELP feature on SAM.gov. 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.**

Table of Contents

Table of Contents i

I. Funding Opportunity Description 1

A. Background and Context 1
ii. Strategic Goals and Program Structure 10
B. Topic Areas 19
iii. Teaming Partner List 27
C. Applications Specifically Not of Interest 27
D. Community Benefits Plan: Job Quality and Equity 28
E. Authorizing Statutes 28
F. Notice of Bipartisan Infrastructure Law-Specific Requirements 29

II. Award Information 29

A. Award Overview 29
i. Estimated Funding 29
ii. Period of Performance 30
iii. New Applications Only 30
B. DOE Funding Agreements 30
i. Cooperative Agreements 30
ii. Funding Agreements with Federally Funded Research and Development Center (FFRDCs) 31

III. Eligibility Information 31

A. Eligible Applicants 31
i. Domestic Entities 32
ii. Foreign Entities 32
iii. Incorporated Consortia 33
iv. Unincorporated Consortia 33
B. Cost Sharing 34
i. Legal Responsibility 34
ii. Cost Share Allocation 34
iii. Cost Share Types and Allowability 34
iv. Cost Share Contributions by FFRDCs 35
v. Cost Share Verification 35
vi. Cost Share Payment 36
C. Compliance Criteria 36
D. Responsiveness Criteria 37
E. Other Eligibility Requirements 37
i. Requirements for DOE/NNSA and non-DOE/NNSA FFRDCs Included as a Subrecipient 37
ii. Agreement Requirements for DOE/NNSA FFRDCs Participating as a Subrecipient 38
F. Limitation on Number of Concept Papers and Full Applications Eligible for Review 39
G. Questions Regarding Eligibility 39

IV. Application and Submission Information 39

A. Application Process 39
i. Additional Information on EERE Exchange 40
B. Application Forms 40
C. Content and Form of the Concept Paper 40
D. Content and Form of the Full Application 42
i. Full Application Content Requirements 42

ii. Technical Volume 43
iii. Resumes 47
iv. Letters of Commitment 48
v. Partnership Documentation 49
vi. Community Benefits Documentation 49
vii. Statement of Project Objectives (SOPO) 50
viii. SF-424: Application for Federal Assistance 50
ix. Budget Justification Workbook 50
x. Summary for Public Release 50
xi. Summary Slide 51
xii. Subrecipient Budget Justification (if applicable) 51
xiii. Budget for DOE/NNSA FFRDC (if applicable) 52
xiv. Authorization for non-DOE/NNSA or DOE/NNSA FFRDCs (if applicable) 52
xv. SF-LLL: Disclosure of Lobbying Activities (required) 52
xvi. Waiver Requests (if applicable) 53
xvii. Open Source Software Distribution Plan 53
xviii. Community Benefits Plan: Job Quality and Equity 53
xix. Current and Pending Support 57
xx. Locations of Work 60
xxi. Project Impacts Calculation 60
E. Content and Form of Replies to Reviewers Comments 61
F. Post Selection Information Requests 61
G. Unique Entity Identifier (UEI) and System for Award Management (SAM) 62
H. Submission Dates and Times 62
I. Intergovernmental Review 62
J. Funding Restrictions 63
i. Allowable Costs 63
ii. Pre-Award Costs 63
iii. Performance of Work in the United States (Foreign Work Waiver) 64
iv. Construction 64
v. Foreign Travel 65
vi. Equipment and Supplies 65
vii. Buy America Requirements for Infrastructure Projects 65
viii. Davis-Bacon Act Requirements 66
ix. Lobbying 68
x. Risk Assessment 69
xi. Invoice Review and Approval 69
xii. Prohibition related to Foreign Government-Sponsored Talent Recruitment Programs 70
xiii. Affirmative Action and Pay Transparency Requirements 71

V. Application Review Information 72

A. Technical Review Criteria 72
i. Concept Papers 72
ii. Full Applications 72
iii. Criteria for Replies to Reviewer Comments 77
B. Standards for Application Evaluation 77
C. Other Selection Factors 77
i. Program Policy Factors 77
D. Evaluation and Selection Process 78
i. Overview 78
ii. Pre-Selection Interviews 79
iii. Pre-Selection Clarification 79
iv. Recipient Integrity and Performance Matters 80

v. Selection 80
E. Anticipated Notice of Selection and Award Negotiation Dates 80

VI. Award Administration Information 81

A. Award Notices 81
i. Ineligible Submissions 81
ii. Concept Paper Notifications 81
iii. Full Application Notifications 81
iv. Successful Applicants 81
v. Alternate Selection Determinations 82
vi. Unsuccessful Applicants 82
B. Administrative and National Policy Requirements 82
i. Registration Requirements 82
ii. Award Administrative Requirements 83
iii. Foreign National Participation 83
iv. Subaward and Executive Reporting 84
v. National Policy Requirements 84
vi. Environmental Review in Accordance with National Environmental Policy Act (NEPA) 84
vii. Applicant Representations and Certifications 85
viii. Statement of Federal Stewardship 87
ix. Statement of Substantial Involvement 87
x. Subject Invention Utilization Reporting 87
xi. Intellectual Property Provisions 88
xii. Reporting 88
xiii. Go/No-Go Review 88
xiv. Conference Spending 89
xv. Uniform Commercial Code (UCC) Financing Statements 90
xvi. Implementation of Executive Order 13798, Promoting Free Speech and Religious Liberty 90
xvii. Participants and Collaborating Organizations 90
xviii. Current and Pending Support 91
xix. U.S. Manufacturing Commitments 91
xx. Interim Conflict of Interest Policy for Financial Assistance 92
xxi. Data Management Plan (DMP) 93
xxii. Fraud, Waste and Abuse 93

VII. Questions/Agency Contacts 95

VIII. Other Information 96

A. FOA Modifications 96
B. Government Right to Reject or Negotiate 96
C. Commitment of Public Funds 96
D. Treatment of Application Information 96
E. Evaluation and Administration by Non-Federal Personnel 97
F. Notice Regarding Eligible/Ineligible Activities 98
G. Notice of Right to Conduct a Review of Financial Capability 98
H. Requirement for Full and Complete Disclosure 98
I. Retention of Submissions 98
J. Title to Subject Inventions 98
K. Government Rights in Subject Inventions 99
L. Rights in Technical Data 100
M. Copyright 101
N. Export Control 101
O. Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment 101

P. Personally Identifiable Information (PII) 102
Q. Annual Independent Audits 102

Appendix A – Impact Calculator 104

Appendix B – Infographics Depicting State and Local Implementation Trends 106

Appendix C – Waiver Requests For: 1. Foreign Entity Participation; and 2. Foreign Work 112

Appendix D – Required Use of American Iron, Steel, Manufactured Products, and Construction Materials Buy America Requirements for Infrastructure Projects 115

Appendix E – Open Source Software 119

Appendix F – List of Acronyms 123

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 (IIJA),[1] more commonly known as the Bipartisan Infrastructure Law (BIL).

The BIL is a once-in-a-generation investment in infrastructure, designed to modernize and upgrade American infrastructure to enhance United States competitiveness, drive the creation of good-paying union jobs, tackle the climate crisis, and ensure stronger access to economic, environmental, and other benefits for disadvantaged communities.[2] The BIL appropriates more than $62 billion to the 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.

As part of and in addition to upgrading and modernizing infrastructure, 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 puts the United States on a path to achieve net-zero emissions economy-wide by no later than 2050[4] to benefit all Americans.

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

[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 and the Office of Management and Budget's Interim Justice40 Implementation Guidance M-21-28, DOE has developed a definition and tools to locate and identify disadvantaged communities. These resources can be located at https://energyjustice.egs.anl.gov. DOE will also recognize disadvantaged communities as defined and identified by the White House Council on Environmental Quality's Climate and Economic Justice Screening Tool (CEJST), which can be located at https://screeningtool.geoplatform.gov/.

[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.

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, supporting and increasing the competitiveness of our businesses while helping mitigate the climate crisis.[6]

Section 40511 of the BIL, titled *Cost-Effective Codes Implementation for Efficiency and Resilience*, invests $225 million over five (5) years, encompassing fiscal years (FYs) 2022 through 2026, to "enable sustained cost-effective implementation of updated building energy codes." The activities to be funded under this FOA support the BIL, as well as a broader government-wide approach to advance building codes and support their successful implementation. The primary focus centers around updating to more efficient building energy codes that save money for American homes and businesses, reduce greenhouse gas (GHG) emissions, and encourage more resilient buildings. 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.

As part of the whole-of-government approach to advance equity and encourage worker organizing and collective bargaining,[7,8,9] and in alignment with BIL *Section 40511. Cost-Effective Codes Implementation for Efficiency and Resilience*, this FOA and any related activities will seek to encourage meaningful engagement and participation of workforce organizations, including labor

[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] EO 13985, "Advancing Racial Equity and Support for Underserved Communities Through the Federal Government" January 20, 2021.
[8] EO 14025, "Worker Organizing and Empowerment," April 26, 2021.
[9] EO 14052, "Implementation of the Infrastructure Investment and Jobs Act," November 18, 2021.

unions, as well as underserved communities and underrepresented groups, including consultation with Tribal Nations.[10, 11] Consistent with Executive Order 14008,[12] this FOA is designed to help meet the goal that 40% of the overall benefits of certain investments in clean energy and climate solutions flow to disadvantaged communities , as defined by the Department pursuant to the Executive Order and to drive the creation of good-paying jobs with the free and fair chance for workers to join a union.

Since inception of this new building energy codes technical assistance initiative under Section 40511 of the BIL, additional federal assistance supporting building energy codes has also been made available via the Inflation Reduction Act (IRA).[13] 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 equivalent.[14] This assistance is applicable to states and units of local government with authority to adopt the latest building energy codes or zero energy code policies. DOE recognizes that there are similarities in terms of targeted activities and outcomes under both the BIL and IRA and intends to actively coordinate both initiatives in a manner that is complementary and avoids duplication. While this initial FOA encompasses a broad range of code activities, including support for the adoption of innovative code polices like zero-energy codes and building performance standards, DOE expects that future installments of competitive funding under Section 40511 of the BIL may be further tailored based on the upcoming IRA initiative, and to maximize the reach and impact of these programs across the collective portfolio of projects and technical assistance activities.

i. Program Purpose

The U.S. Department of Energy, through its Building Energy Codes Program,[15] has over a 30-year history of providing technical assistance supporting the advancement of building energy codes. This role spans the spectrum of building

[10] EO 13175, November 6, 2000 "Consultation and Coordination With Indian Tribal Governments", charges all executive departments and agencies with engaging in regular, meaningful, and robust consultation with Tribal officials in the development of federal policies that have Tribal implications.
[11] Presidential Memo, January 26, 2021 "Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships" at https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/26/memorandum-on-tribal-consultation-and-strengthening-nation-to-nation-relationships.
[12] EO 14008, "Tackling the Climate Crisis at Home and Abroad," January 27, 2021.
[13] See Section 50131 of the IRA at https://www.congress.gov/117/bills/hr5376/BILLS-117hr5376enr.pdf
[14] The IRA targets adoption of the latest model codes (or those which achieve equivalent or greater energy savings), as well as adoption of zero energy codes (or an equivalent stretch code)
[15] Learn more about the DOE Building Energy Codes Program at www.energycodes.gov

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 the International Energy Conservation Code (IECC) and Standard 90.1[16] 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.[17] Collectively, these activities directly impact the advancement of energy codes and adjacent building energy policies, 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 adjacent policies. 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, 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,[18] are developed and updated through national consensus processes. States and local governments ultimately implement energy codes, which is handled

[16] The IECC and Standard 90.1 are the congressionally recognized national model energy codes for residential and commercial buildings, respectively. The IECC is administered and published by the International Code Council (ICC) and Standard 90.1 is administered and published by the American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE).

[17] 42 USC 6833 and 6836

[18] Standard 90.1 is administered and published by ASHRAE in partnership with the American National Standards Institute (ANSI) and the Illuminating Engineering Society (IES)

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 stakeholders, including state and local 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 and local governments to regulate energy efficiency and conservation in the built environment while delivering utility bill savings. Increasingly, states and local 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 policy instruments which are complementary to building energy codes, including "stretch codes" which make use of the latest technologies, design, and construction practices, and target advanced levels of efficiency and performance. In addition, municipalities are also working to address excess emissions and energy use in existing buildings by enacting building performance standards, which set requirements for a building to meet certain performance targets, and potentially 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.[19] 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.

Adopting the current building codes help 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

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

occupants, as well as optimize building performance. One key area where energy codes work in concert with other building code provisions, like fire, mechanical, 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 concept of enabling building occupants to shelter in-place during and following a hazard event, including maintaining safe indoor conditions for occupants in the event of an extended loss of energy or power. Energy code measures like high efficiency windows and wall insulation, while helping to save building owners money on utility bills, can also greatly reduce heat loss in a building (i.e., allowing it to remain comfortable longer) which helps ensure the habitability and safety of occupants until power and energy systems are restored. 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 codes, the 2021 IECC and ANSI/ASHRAE/IES Standard 90.1-2019, represent the most up-to-date minimum energy-efficient design and construction practice requirements available to states and jurisdictions to cost-effectively reduce building energy use, utility costs, and greenhouse gas emissions.[20] According to the most recent DOE determinations, the latest national model codes will save 4.7% and 9.4% in site energy savings for commercial and residential building owners, respectively (as compared to the previous 2018 IECC and Standard 90.1-2016 editions).[21,22] Figure 1 shows historical energy code improvements over time.

[20] 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.

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

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

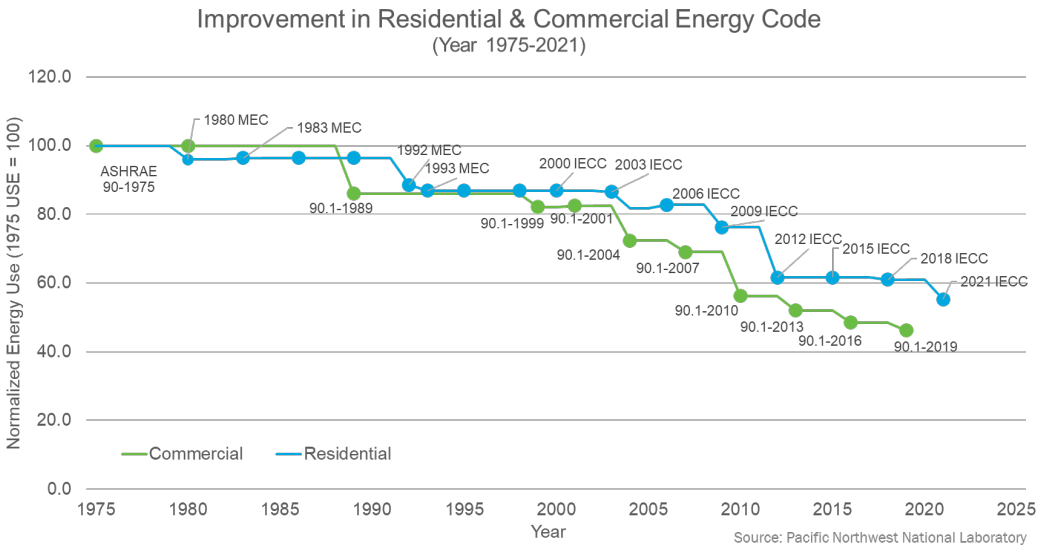


Figure 1 *Model residential and commercial energy codes continue to improve, due to ongoing efforts to improve building construction through higher efficiency windows and walls, lighting, HVAC, and other components and practices.*

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. 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,[23] zero energy or zero carbon codes, and building performance standards.[24] As states consider updates to their building energy codes, DOE emphasizes the importance of developing 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.

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

[24] Building performance standards (BPS) are an outcome-based mechanism pertaining to existing buildings that, in combination with new construction codes, enable a life-cycle approach to building energy and emissions performance.

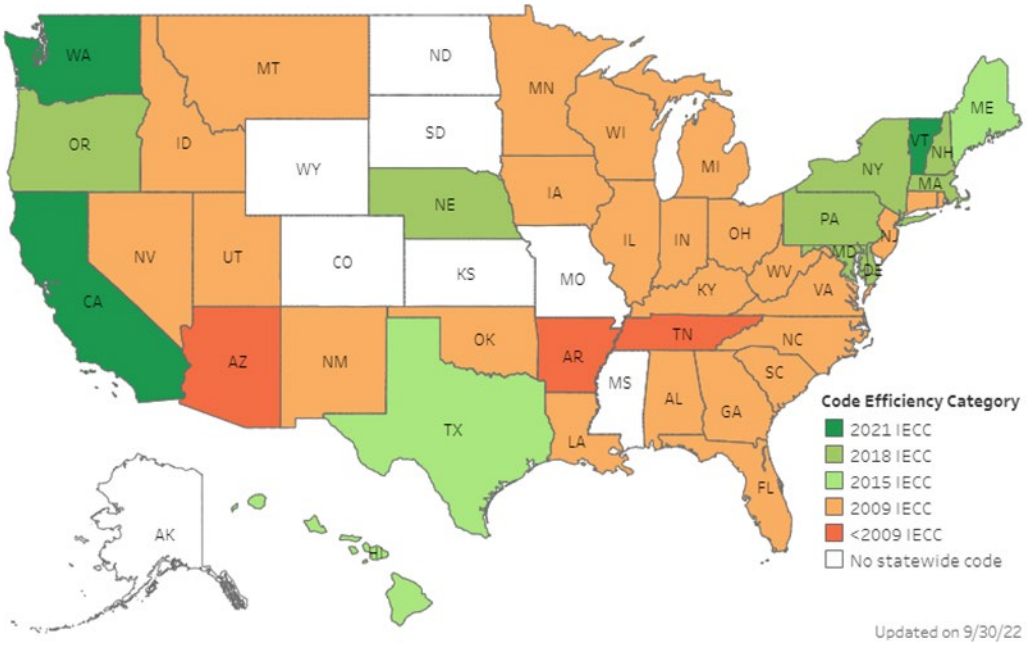


Figure 2 *Status of energy code adoption across U.S. states relative to recent editions of the International Energy Conservation Code (IECC), the national model code for residential buildings.*

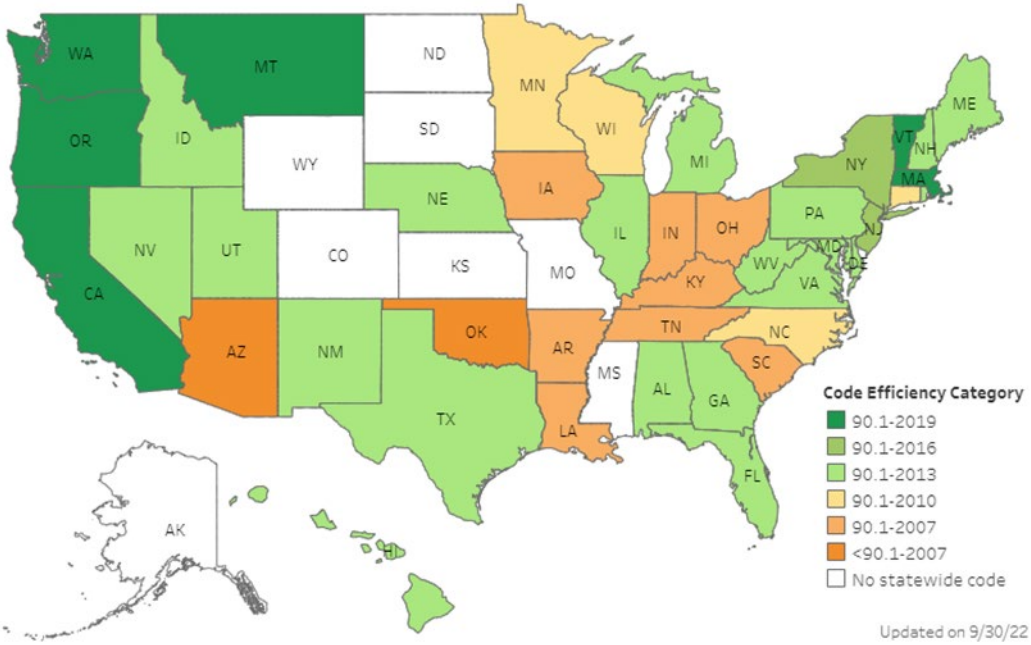


Figure 3 *Status of energy code adoption across U.S. states relative to recent editions of ANSI/ASHRAE/IES Standard 90.1, the national model code for commercial buildings.*

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.[25] 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),[26] over 30 years.[27] 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 ROI, and to validate the overall impacts of their codes.

Energy Code Impacts

The positive impacts from the advancement and effective implementation of energy codes and building energy policies at the state and local level cannot be overstated. Model energy codes are projected to deliver over $138 billion energy cost savings and 900 million metric tons of avoided CO_2 emissions to American homes and businesses (2010 through 2040).[28] 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 and local governments regularly update and successfully implement their energy codes, including active compliance and enforcement programs, in accordance with the latest standards. Funding provided through this FOA is intended to support these updates and will ensure the many known and quantifiable benefits of energy codes and adjacent building energy policies, such as building performance standards, can become a reality across the United States.

[25] National and State Level Energy Code Analyses: https://www.energycodes.gov/national-and-state-analysis
[26] Carbon dioxide equivalent
[27] Field Validation Studies: https://www.energycodes.gov/residential-energy-code-field-studies
[28] https://www.energycodes.gov/impact-analysis

ii. Strategic Goals and Program Structure

This FOA seeks applications with project teams ready to advance building energy codes and other building efficiency policies within a particular region, state, or local jurisdiction. To drive sustained improvements, the BIL emphasizes the importance of strategic partnerships, which must include a state 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 energy efficiency organizations, and other stakeholder interests who play an important role supporting the successful 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. In addition to traditional state and local code updates, DOE seeks to advance innovative approaches—leveraging the many state and local efforts across the country—which include stretch codes, building performance standards, and related policies to address energy efficiency, increase resilience and help decarbonize the building stock, while integrating new technologies such as electric vehicle charging, energy storage, and other grid-flexible technologies (e.g., grid-integrated thermostats and water heaters).

DOE recognizes that there are many strategies which can help ensure effective implementation of building energy codes. Common examples include workforce development initiatives, from 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, resources supporting plan review and in-field assessments. Challenges impeding energy code compliance can vary widely across states, localities, and construction regions, and there is no single solution. DOE is 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.

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.[29] DOE believes that modern building codes, including energy codes and associated implementation activities,

[29] 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

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 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 stakeholder outreach and engagement 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 stakeholder engagement process.

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

1. State and Local Code Adoption
2. Workforce Development
3. Implementation and Compliance
4. Innovative Approaches
5. Equity, Energy and Environmental Justice
6. Partnerships

Each is discussed in further detail in the Topics section of this FOA.

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 polices and tools
- Increasing equity in code-related policies 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. 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.

Section 40511 of the BIL makes several specifications dictating the structure of the new technical assistance initiative and which translate to this FOA. For example, the BIL specifies certain eligibility criteria and sample activities which can be undertaken and supported by the funding. To build on the direction in the BIL, DOE issued a request for information (RFI) and held a public workshop to seek input from interested and affected stakeholders regarding the solicitation process of a potential FOA.[30] DOE appreciates the robust comments submitted by a broad range of stakeholders, which helped shape and guide this new initiative.

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.

Eligible Entities

The BIL specifies eligible entities as a relevant state agency, 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, 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. Although a state agency is eligible to apply for this potential FOA independently, partnerships are preferred. Under a partnership, a state agency is not required to serve as the prime applicant or prime recipient, and funding does not need to flow through a state agency. Applications should include robust and effective regional, state and/or

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

community 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 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 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 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 state agency. 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 solutions, 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 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:

[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

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

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 a state 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., adding provisions for electric vehicle charging).

While DOE interprets the BIL provisions as not requiring state or local governments to adopt the latest editions of the model codes[34] as a condition of support under this initiative, it should be noted that DOE is also directed by the same provisions 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[35];
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.

[34] The 2021 IECC and Standard 90.1-2019 are the latest model codes as of publication of this Notice

[35] Sample methods are discussed in the BIL Section 40511 (c)(1)

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 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, 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 benefits. A project providing a statewide training program based on Standard 90.1-2019 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, but should also articulate expected project impacts in terms of larger 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.[36] Stakeholder 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

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

to this initiative, with stakeholders highlighting: Affordable housing, targeting funding and benefits to EEEJ communities, community engagement, reducing energy burden via building codes and standards. Many respondents recommended specific approaches for DOE to identify and prioritize disadvantaged and underserved communities, in alignment with the Justice40 Initiative, evaluating criteria like 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.

In general terms, DOE is interested in applications that include the following:

- Overall impacts as a function of energy, emissions, and cost savings
- Activities supporting adoption and implementation of:
  - The latest model energy codes (i.e., the 2021 IECC and 90.1-2019);
  - Innovative and advanced concepts which exceed the latest model codes, including zero energy codes and building performance standards; or
  - Codes that demonstrate significant impact and improvement over currently adopted codes or existing activities supporting code implementation.
- Long-term sustainability of measures and savings (i.e., longevity of impacts)
- Ability to leverage other funding sources beyond the BIL, such as building energy codes technical assistance and funding via the Inflation Reduction Act (IRA), state or localized funding, State Energy Program[37] funding, Energy Efficiency and Conservation Block Grants,[38] utility partnerships, and other private sources along with a cohesive implementation plan that show how all the funding sources will together address the climate, energy, and policy goals of more-efficient buildings
- Ability to positively impact building and grid resilience, occupant safety and health, and the natural environment
- Ability to support domestic economic interests though the workforce development and support for domestically manufactured building materials and equipment.
- Capacity to assess, track, and measure project-related impacts
- Ability to address EEEJ priorities, including plans that will address underserved community needs
- Established need by an eligible entity for assistance

[37] https://www.energy.gov/eere/wipo/state-energy-program

[38] https://www.energy.gov/eere/wipo/energy-efficiency-and-conservation-block-grant-program-bipartisan-infrastructure-law-2021

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 proposed activities must be clearly articulated in terms of how they support updated codes, as defined by the BIL.

Eligible Activities

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

- Create or enable State 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.
- Collection 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, including labor market and domestic manufacturing.

DOE interprets these as a permissive list. These activities should be prioritized, as specified directly in the 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 the 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—while noting that urbanized regions often exhibit more recent codes and higher rates of construction activity (i.e., higher impact). In addition, suburban communities are of particular importance where there is significant new construction of residential and commercial buildings.

Cost Share and Ability to Leverage Additional Funding Sources

DOE intends to support applications which rely solely on DOE 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 State Energy Program (SEP), Energy Efficiency and Conservation Block Grants (EECBG), FEMA's Building Resilient Infrastructure and Communities (BRIC) program, 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 recent passage of the Inflation Reduction Act (IRA) provides another opportunity complementary technical assistance supporting building energy codes. 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. While cost share is not a requirement under this FOA, leveraging other federal and non-federal sources of funding in a cohesive and layered manner to maximize sustained impact is highly encouraged.

Stakeholder Engagement Process

In formulating this new initiative established under Section 40511 of the BIL, DOE engaged a wide range of stakeholders and the general public through a series of related actions:

- **Request for Information (RFI)**: On April 12, 2022, DOE issued a public request for information to obtain public input regarding the solicitation process and structure of a potential FOA, in accordance with the BIL, and which could be used by DOE for planning purposes supporting the new BIL initiative.

- **Stakeholder Workshop**: On April 27, 2022, DOE held a public workshop in conjunction with the RFI, highlighting key provisions from the BIL, related technical assistance and work supported by DOE, and inviting interested and affected stakeholders to provide input on key challenges, needs and priorities surrounding building energy code implementation.

- **Notice of Intent (NOI)**: On July 21, 2022, DOE published a notice of intent to issue a FOA supporting Section 40511 of the BIL. The NOI confirmed overarching priorities for the initiative, areas of interest, and provided guidance on several key questions identified through the stakeholder engagement and planning process.

This engagement process allowed the Department to interface with a wide and diverse range of interested and affected stakeholders, identify many critical issues impacting building energy code implementation, and will help DOE hone its technical assistance offerings through the new FOA initiative and beyond. More information on each of the above is available on the DOE Building Energy Codes Program website.[39]

A detailed description of the topic areas and activities of particular interest under this FOA are outlined below.

B. Topic Areas

This FOA includes one topic area broadly focused on the cost-effective implementation of updated 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, including grid-flexibility and stability, storage, durability, and better protection against extreme weather events. This FOA will advance the Administration's priorities around modernizing

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

and advancing building codes, improving energy and climate resilience, and reducing energy costs for American homes and businesses.[40]

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, implementation, and compliance with updated energy codes. In addition, projects that focus on improving equity, energy, and environmental justice (EEEJ) in the energy codes industry, develop strategic codes partnerships, as well as advance innovative codes activities like stretch codes or codes-adjacent activities like Building Performance Standards (BPS) may all be considered. Further discussion on targeted activities, outcomes, impacts and additional considerations is discussed in Section I.A.ii.

The following list describes the types of applications DOE expects to receive and may potentially fund as a result of the funding opportunity.

1. **State and Local Code Adoption:** The development and subsequent adoption of an updated building energy code and related building policies 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 dollar 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 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 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.

[40] 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/

- *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. **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 readily available 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. In addition, the construction industry is experiencing significant labor shortages and high turnover, particularly in the skilled trades, a problem which has been exacerbated by the COVID-19 pandemic. DOE believes that additional support 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, 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.*

3. **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[41] 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 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.[42] 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, utility code support and engagement programs; developing code compliance software tools; and state and local energy code implementation and compliance collaboratives.*

4. **Innovative Approaches:** States and localities have developed several unique and innovative approaches to increasing building energy efficiency through building codes and adjacent policies. 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

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

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

to improve energy efficiency and resilience, in support of advanced energy and climate goals.[43] An emerging policy mechanism 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.[44] The building design and construction industry 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.

- *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.*

5. **Equity, Energy, 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.[45] This includes DOE investments in energy efficiency and clean energy, as well as workforce development and training, prioritizing decreased energy burden and environmental exposure

[43] 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

[44] 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/

[45] 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

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.[46] 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.[47] 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 building codes and related policies 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 energy, environmental justice, and disadvantaged populations. Commonly cited examples include: The role of energy codes in supporting affordable housing, increasing funding and targeted benefits to EEEJ communities, increased community engagement around EEEJ issues and with disadvantaged or underserved populations, and activities which reduce overall energy burden, particularly for low-to-moderate income (LMI) households.[48]

- *Example activities may include but are not limited to: Convening representatives of disadvantaged communities or underserved populations; development of equity-focused code language; providing support to participate in code update and consensus processes; financial assistance or consulting services to help disadvantaged or underserved interests 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 populations, as well as those supporting affordable single-family and multifamily housing and related standards, including those administered across federal agencies (e.g., those*

[46] https://www.whitehouse.gov/wp-content/uploads/2021/07/M-21-28.pdf
[47] https://ebs.pnnl.gov/ViewSolicitation.aspx?SolID=1131
[48] https://www.energycodes.gov/RECI

established by the U.S. Department of Housing and Urban Development (HUD) and the Department of Agriculture (USDA)).

6. **Partnerships:** Building code processes—whether development, adoption, or implementation—involve a wide range of participants, from national, state, and local entities to the many stakeholder interests who engage in these processes. The design and construction industry consists of millions of professionals, most of whose jobs 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 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, 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.*

Applicants 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 information, including DOE infographics depicting the status of currently adopted codes, where field studies have been conducted, current EV and PV requirements, and state adoption laws that make it possible for cities to pursue activities like stretch codes, see Appendix B.

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

iii. Teaming Partner List

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

Updates to the Teaming Partner List will be available in the EERE Exchange website under this FOA posting. The Teaming Partner List will be regularly updated to reflect new teaming partners who provide their organization's information.

SUBMISSION INSTRUCTIONS: Any organization that would like to be included on this list should submit the following information: Organization Name, Contact Name, Contact Address, Contact Email, Contact Phone, Organization Type, Area of Technical Expertise, Brief Description of Capabilities, and Area of Interest. Interested parties should email the information to becp@pnnl.gov with the subject line "RECI FOA: Teaming Partner Information."

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 self-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.
- Applicants that do not include a state agency, and therefore do not qualify as an "eligible entity" under Section 40511 of the BIL.[49]

[49] Eligible entities are defined as a state agency or a "partnership". See full definition in Section 40511 of the BIL.

- 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.[50]

D. Community Benefits Plan: Job Quality and Equity

To support the goal of building a clean and equitable energy economy, the 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; and (4) contribute to the President's goal that 40 percent of the overall benefits of certain federal investments flow to disadvantaged communities (i.e., align with the Justice40 Initiative).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 letters of support from relevant labor 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 specific detail on how to ensure the delivery of measurable community and jobs benefits, e.g., through the use of tools such as good neighbor agreements, community workforce agreements, project labor agreements, other collective bargaining agreements, or similar agreements (collectively referred to throughout this FOA as "Workforce and Community Agreements"). See Section IV.D.xviii. 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 USC §§ 6831 through 6838).

Section 40511 of the BIL (codified at 42 U.S.C. § 6838).

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

[50] 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."

F. Notice of Bipartisan Infrastructure Law-Specific Requirements

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

1. Reporting, tracking and segregation of incurred costs;
2. Reporting on job creation and preservation;
3. Publication of information on the Internet;
4. Access to records by Inspectors General and the Government Accountability Office;
5. 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;
6. 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;
7. Protecting whistleblowers and requiring prompt referral of evidence of a false claim to an appropriate inspector general; and
8. 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 up to $45,000,000 of federal funding available for new awards under this FOA, subject to the availability of appropriated funds. DOE anticipates making approximately 10 to 30 awards under this FOA. DOE may issue one, multiple, or no awards. Individual awards may vary between $500,000 and $10,000,000.

Topic Area Number	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)
1	Resilient and Efficient Code Implementation	10 to 30	$500,000	$10,000,000	Up to $45,000,000	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 12 up to 60 months in length, 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 United States 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)[51]

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.

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

In addition, Section 40511 specifies eligibility criteria which must be met by all applicants. Eligible entities are defined as a relevant state agency, 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, 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.

[51] Federally Funded Research and Development Centers (FFRDC) - FFRDCs are public-private partnerships which conduct research for the United States government. A listing of FFRDCs can be found at http://www.nsf.gov/statistics/ffrdclist/.

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.

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. Non-profit entities; and
4. State and local governmental entities, and tribal nations.

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/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 United States 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 subrecipient. 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 cost share 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 among the team members. The amount contributed by individual project team members may vary.

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 if included in the Full Application.

Project teams may provide cost share in the form of cash or in-kind contributions. 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 funding was not provided to the state or local government by the federal government.

The recipient may not use the following sources to meet its cost share obligations including, but not limited to:

- 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 as cost share. 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 successfully uploaded in EERE Exchange https://eere-Exchange.energy.gov, including clicking the "Submit" button; 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 in advance of the submission deadline), applicants should allow at least 1 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. Value/Funding
The value of and funding for the FFRDC portion of the work will not normally be included in the award to a successful applicant. Usually, DOE will fund a DOE/NNSA FFRDC through the DOE field work proposal (WP) system and non-DOE/NNSA FFRDC through an interagency agreement with the sponsoring agency.

d. Cost Share
Although the FFRDC portion of the work is usually excluded from the award to a successful applicant, 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.

e. 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.

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

ii. Agreement Requirements for DOE/NNSA FFRDCs Participating as a Subrecipient

DOE/NNSA FFRDCs participating as a subrecipient on a project and funded directly through the DOE WP System are required to establish a Cooperative Research and Development Agreement[52] (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 intellectual property (IP), e.g., data protection

[52] 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

and background IP. The CRADA or TAA must be agreed upon by all parties and submitted to DOE for approval or submitted to DOE for notice under the Master Scope of Work process, when applicable, using any DOE approved CRADA or TAA template without substantive changes by the time the award is made to the prime recipient.

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 provided that 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 submit an application in response to this FOA lies solely with the applicant.

IV. Application and Submission Information

A. Application Process

The application process includes multiple phases: a Concept Paper phase and a Full Application phase. **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 inch 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. Should applicants experience problems with EERE Exchange, the following information may be helpful.

Applicants that experience issues with submission PRIOR to the FOA deadline: In the event that an applicant experiences technical difficulties with a submission, the applicant should contact the EERE Exchange helpdesk for assistance (EERE-ExchangeSupport@hq.doe.gov). The EERE Exchange helpdesk and/or the EERE Exchange system administrators will assist applicants in resolving issues.

B. Application Forms

The application forms and instructions are available on EERE Exchange. To access these materials, 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 in excess of 50MB cannot be uploaded, and hence cannot be submitted for review. If a file exceeds 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 technical assistance project. 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 area of interest being addressed (as 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 • 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 describe succinctly 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 approach and work plan.

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	Control Number_Lead Organization_Technical Volume
Resumes	PDF	3 pages each	Control Number_Lead Organization_Resumes
Letters of Commitment	PDF	1 page each	Control Number_Lead Organization_LOCs
Partner Commitments	PDF	N/A	Control Number_Lead Organization_Partnership Documentation
Statement of Project Objectives (SOPO)	MS Word	5	Control Number_Lead Organization_SOPO
SF-424	PDF	N/A	Control Number_Lead Organization_App424
Budget Justification Workbook	MS Excel	N/A	Control Number_Lead Organization_Budget Justification
Summary/Abstract for Public Release	PDF	1	Control Number_Lead Organization_Summary
Summary Slide	MS PowerPoint	1	Control Number_Lead Organization_Slide

Subrecipient Budget Justification	MS Excel	N/A	Control Number_Lead Organization_Subrecipient Budget Justification
Impact Calculation	MS Excel	N/A	Control Number_Lead Organization_Impact
DOE Work Proposal for FFRDC, if applicable (see DOE O 412.1A, Attachment 3)	PDF	N/A	Control Number_Lead Organization_WP
Authorization from cognizant Contracting Officer for FFRDC	PDF	N/A	Control Number_Lead Organization_FFRDCAuth
SF-LLL Disclosure of Lobbying Activities	PDF	N/A	Control Number_Lead Organization_SF-LLL
Foreign Entity Waiver Requests and Foreign Work Waiver Requests	PDF	N/A	Control Number_Lead Organization_Waiver
Open Source Software Distribution Plan	PDF	N/A	Control Number_Lead Organization_OSSDP
Community Benefits Plan	PDF	5	Control Number_Lead Organization_CBenefits
Current and Pending Support	PDF	N/A	Control Number_Lead Organization_CPS
Locations of Work	MS Excel	N/A	Control Number_Lead Organization_LOW

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 "Control Number_Lead Organization_Technical Volume".

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 of the information in the table below. The applicant should consider the weighting of each of the technical review criterion (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 areas of interest being addressed (if applicable), both the technical and business points of contact, names of all team member organizations, names of project managers, senior/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 their organization, including the history, successes, and current needs (i.e., the technical assistance baseline) relevant to the topic being addressed in the Full Application. • Project Goal: The applicant should explicitly identify the targeted improvements to the project baseline condition and the critical success factors in achieving the project goals, including the ways in which the proposed project location and related infrastructure, skilled workforce, community benefits, etc. will contribute to the success of the overall project. • Impact: The applicant should discuss the impact that DOE funding would have on the proposed project. 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. 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: • Goals and 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): 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.xiii. 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 2 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: • Describe the project team's unique qualifications and expertise, including those of key subrecipients. • Describe 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. • This section should also include relevant, previous work efforts, demonstrated innovations, and how these enable the applicant to achieve the project objectives. • Describe the time commitment of the key team members to support the project. • Describe the technical services to be provided by DOE/NNSA FFRDCs, if applicable. • Describe the skills, certifications, or other credentials of the project team members. • 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 that can be used by reviewers to evaluate the individual's relevant skills, 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: Include 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 ten years or since age 18, which ever time 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/, and is also available at https://nsf.gov/bfa/dias/policy/nsfapprovedformats/biosketch.pdf. 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 "Control Number_Lead Organization_Resumes".

iv. Letters of Commitment

Submit letters of commitment 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). Each letter must not exceed 1 page. Save the letters of commitment in a single PDF file using the following convention for the title "Control Number_Lead Organization_LOCs".

Letters of support or endorsement for the project from entities that do not have a substantive role in the project are not 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 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_Partnership Documentation".

vi. Community Benefits Documentation

In support of the Community Benefits Plan, applicants should submit documentation to demonstrate existing or planned partnerships with community entities, such as, organizations that work with local stakeholders such as residents and businesses, organizations that carry out workforce development programs, trade associations, worker organizations including labor unions, and community-based organizations that work with disadvantaged communities. The Partnership Documentation could be in the form of a letter on the partner's letterhead outlining the planned partnership signed by an officer of the entity, a Memorandum of Understanding, or other 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 a Workforce and Community Agreement as part of the Community Benefits Plan, please include letters from proposed partners as appropriate. Each letter must not exceed 1 page, and do not count against the page limit for the overall Community Benefits

Plan. Save the partnership documentation in a single PDF file using the following convention for the title "Control Number_Lead Organization_CBenefits".

vii. Statement of Project Objectives (SOPO)

Applicants are required to 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 5 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 "Control Number_Lead Organization_SOPO".

viii. SF-424: Application for Federal Assistance

Complete all required fields in accordance with the instructions on the form. 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 "Control Number_Lead Organization_424".

ix. Budget Justification Workbook

Applicants must complete the Budget Justification Workbook, which is available on EERE Exchange at https://eere-Exchange.energy.gov/. Applicants must complete each tab of the Budget Justification Workbook for the project as a whole, including all work to be performed by the prime recipient and its subrecipients and contractors. Applicants should include costs associated with implementing the Community Benefits Plan and with required annual audits and incurred cost proposals in their proposed budget documents. 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 "Control Number_Lead Organization_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 project director/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. All summaries should include an estimate of project impacts, including a summary of relevant inputs, assumptions, calculations and resulting impact estimates[53]. This document must not include any proprietary or sensitive business information as DOE may make it available to the public after selections are made. The summary must not exceed 1 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 "Control Number_Lead Organization_Summary".

xi. Summary Slide

Applicants must provide a single slide summarizing the proposed project. The Summary Slide template must include the following information:

- A technical assistance summary;
- A description of the project's impact, including impact estimates calculated using the provided RECI Impact Calculator tool[54];
- Proposed project goals;
- Any key graphics (illustrations, charts and/or tables);
- The project's key ideas and takeaways;
- Topline impacts and benefits;
- Project title, prime recipient, Principal Investigator, 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 "Control Number_Lead Organization_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 percent 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

[53] See Appendix A for more information on impact calculations.

[54] See Appendix A for more information on impact estimates and the RECI Impact Calculator

file using the following convention for the title "ControlNumber_LeadOrganization_SubrecipientBudgetJustification".

xiii. 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 WP in accordance with the requirements in DOE Order 412.1A, Work Authorization System, Attachment 3, 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 "Control Number_Lead Organization_WP".

xiv. 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 "Control Number_Lead Organization_FFRDC Auth".

xv. 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-LLL in a single PDF file using the following convention for the title "Control Number_Lead Organization_SF-LLL".

xvi. Waiver Requests (if applicable)

Foreign Entity Participation
For projects selected under this FOA, as set forth in Section III., 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 "Control Number_Lead Organization_Waiver".

xvii. Open Source Software Distribution Plan

When applicants propose development of software tools, 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. Submission of an Open Source Software Distribution Plan is required; failure to submit a complete Plan may result in a determination of non-compliance for your Full Application. Guidance for preparing an Open Source Software Distribution 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 "Control Number_Lead Organization_OSSDP".

xviii. 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 the following four goals: 1) community and labor engagement; 2) investing in the American workforce 3) advancing diversity, equity, inclusion, and accessibility (DEIA); and 4) contributing to the Justice40 Initiative. The below sections set forth the Plan requirements for each of the foregoing goals. Community Benefits Plan should indicate the applicant's intention to engage meaningfully with community stakeholders on these goals, including the potential of entering into a formal Workforce and Community Agreement.

The applicant's Community Benefits Plan must include at least one Specific, Measurable, Achievable, Relevant, and Timely (SMART) milestone per budget period in order to measure progress on the proposed actions. The Community Benefits Plan will be evaluated as part of the technical review process. If the project is selected, DOE will incorporate the Community Benefits Plan into the award and the recipient will be required to meet the Community Benefits Plan it proposed. During the life of the DOE award, DOE will evaluate the recipient's progress, including as part of the Go/No-Go review process.

The Community Benefits Plan must be submitted in PDF format and must not exceed five pages. This Plan must address the technical review criterion titled, "Community Benefits Plan: Job Quality & Equity." See Section V of the FOA.

Applicants must submit the Community Benefits Plan electronically in a single PDF file saved using the following convention name for the title: "Control Number_Lead Organization_CBenefits."

1. Community and Labor Engagement: The Community Benefits Plan must describe the applicant's actions to date and future plans to engage with community stakeholders – such as labor unions, local governments, Tribal governments, and community-based organizations that support or work with underserved communities, including Disadvantaged Communities as defined for purposes of the Justice40 Initiative. By facilitating community input, social buy-in, and accountability, such engagement can substantially reduce or eliminate stalls or slowdowns, litigation, and other risks associated with project implementation. Community and labor engagement should lay the groundwork for the eventual negotiation of a Workforce and Community Agreement, which could take the form of one or more kinds of negotiated agreements with affected communities, such as Community Benefits Agreements, Project Labor Agreements, or others. More information is detailed in the BIL FOA FAQ found at https://www.energy.gov/bil/community-benefits-plan-frequently-asked-questions-faqs.

Applicants may also provide letters of support from representative organizations reflecting substantive engagement and feedback on applicant's approach to community benefits including the American workforce; diversity, equity, inclusion, and accessibility; and the Justice40 Initiative detailed below.

2. Investing in the American Workforce: A well-qualified workforce is necessary to ensure project stability, continuity, and success, and to meet program goals. Job quality is critical to attracting and retaining the qualified workforce required.

The Plan must describe the applicant's approach to investing in workforce education and training of both new and incumbent workers and ensuring jobs are of sufficient quality to attract and retain skilled workers in the industry.

Specific components of the Plan must include:

A) A summary of the applicant's plan to attract, train, and retain a skilled and well-qualified workforce for both construction and ongoing operations/production activities. A collective bargaining agreement, project labor agreement, labor-management partnership, or other similar agreement would provide evidence of such a plan. Alternatively, applicants may describe:
   i. wages, benefits, and other worker supports to be provided;
   ii. commitments to support workforce education and training, including measures to reduce employee turnover costs for employers, increase productivity from a committed and engaged workforce, and promote a nimble, resilient, and stable workforce for the project; and
   iii. efforts to engage employees in the design and execution of workplace safety and health plans.

For more guidance, see BIL FOA FAQ found at https://www.energy.gov/bil/community-benefits-plan-frequently-asked-questions-faqs.

B) Describe whether workers can form and join unions of their choosing, exercising collective voice. 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.

3. DEIA: The Community Benefits Plan must include a section describing how diversity, equity, inclusion, and accessibility (DEIA) objectives will be incorporated into the project. The section should detail how the applicant will partner with underrepresented businesses, educational 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 non-exhaustive 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 or mandatory.

A) Commitment to partner with Minority Business Enterprises, Minority Owned Businesses, Woman Owned Businesses, and Veteran Owned Businesses for contractor support needs;
B) To fill open positions for the DOE-funded project, partner with workforce training organizations serving under-represented communities and those facing systemic barriers to quality employment such as those with disabilities, returning citizens, opportunity youth, and veterans;

4. Justice40 Initiative: Applicants must provide an overview of benefits to disadvantaged communities that the project can deliver, supported by measurable milestones.

Specifically, activities related to the Justice40 Initiative section must include:

1. *Identification of applicable disadvantaged communities to which the anticipated project benefits will flow*.

2. *Identification of applicable benefits that are quantifiable, measurable, and trackable, including, at a minimum, a discussion of the relevance of each of the eight DOE Justice40 Initiative benefits outlined below.*

   Benefits include (but are not limited to) 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) a decrease in environmental exposure and burdens; (3) an increase in access to low-cost capital; (4) an increase in job creation, the clean energy job pipeline, and job training for individuals; (5) increases in clean energy enterprise creation and contracting (e.g., minority-owned or disadvantaged business enterprises); (6) increases in energy democracy, including community ownership; (7) increased parity in clean energy technology access and adoption; and (8) an increase in energy resilience. In addition, applicants should also discuss how the project will maximize all of the benefits listed in #4.

3. *A description of how and when anticipated benefits are expected to flow to disadvantaged communities.* For example, will the benefits be provided directly within the disadvantaged community(ies) identified in the Justice40 Initiative section, or are the benefits expected to flow in another way? Further, will the benefits flow during project development

or after project completion, and how will applicant track benefits delivered?

4. *A discussion of anticipated negative and cumulative environmental impacts on disadvantaged communities*. Are there anticipated negative or positive environmental impacts associated with the project, and how will the applicant mitigate any negative impacts? Within the context of cumulative impacts created by the project, applicants should use Environmental Protection Agency EJSCREEN tool to quantitatively discuss existing environmental impacts in the project area.

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

xix. 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 and all senior/key personnel at the applicant and 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 – end date); and
- The person-months of effort per year being 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 format approved by the National Science Foundation (NSF), which may be generated by the Science Experts Network Curriculum Vita (SciENcv), a cooperative venture maintained at https://www.ncbi.nlm.nih.gov/sciencv/, and is also available at https://www.nsf.gov/bfa/dias/policy/nsfapprovedformats/cps.pdf. 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. If the NSF format is used, the individual must still include a signature, date, and a certification statement using the language included in the paragraph above.

Save the Current and Pending Support in a single PDF file using the following convention for the title "Control Number_Lead Organization_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 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 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 DOE award.[55]

xx. Locations of Work

The applicant must complete the supplied template by listing the city, state, and zip code + 4 and State for each location where project work will be performed by the prime recipient or subrecipient(s). Save the completed template as a MS Excel file using the following convention for the title "Control Number_Lead Organization_LOW."

xxi. Project Impacts Calculation

Applicants must provide an estimate of project impacts, including energy, cost, and emissions savings using the RECI Impact Calculator tool. 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".

[55] 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.

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 Reviewers Comments (Optional Submission)

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 (3) pages and disregard any 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 in the event that 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, DOE reserves the right to request additional or clarifying information regarding the following (non-exhaustive list):

- 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.xix 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);

- 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; 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) Be registered in the SAM at https://www.sam.gov before submitting its application; (2) provide a valid UEI number in its application; and (3) continue to maintain an active SAM registration with current information at all times during which it 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, the 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 utilize the HELP feature on SAM.gov. 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. EERE 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 their 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 override 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.

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.

vii. 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 that term is defined in Section 70914 of the Bipartisan Infrastructure Law, 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 (OMB) 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 Cooperative Agreement between DOE and the awardee 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 manufactured products domestically 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 the applicant's 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 the Bipartisan Infrastructure Law. 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, and 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 of 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 3 years after the completion of the project and must make those payrolls available to the DOE or the United States 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 the DOE.

(7) cooperating with any authorized representative of the DOL in their 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 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.

(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 to maintain competency in Davis-Bacon Act compliance. The Contracting Officer will notify the recipient of any DOE sponsored Davis-Bacon Act compliance trainings. The 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 entering into a contract with a third-party DBA electronic payroll compliance software application. Recipients of funding under this FOA should plan to ensure the timely electronic submission of weekly certified payrolls through the DOE vendor as part of its compliance with the Davis-Bacon Act unless a waiver is granted to a particular contractor or subcontractor because they are unable or limited in their ability to use or access the DOE vendor.

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.

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 Part 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 funds critical and emerging technology areas, DOE also considers possible vectors of undue foreign influence in evaluating risk. If high risks are identified and cannot be sufficiently mitigated, DOE may elect to not fund the applicant.

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 Davis-Bacon 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 federally assisted construction contracts exceeding $10,000 annually will be subject to the requirements of Executive Order 11246:

(1) Recipients, subrecipients, and contractors 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 contractors for compliance evaluations. OFCCP's Technical Assistance Guide[56] should be consulted to gain

[56] 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

an understanding of the requirements and possible actions the recipients, subrecipients, contractors and subcontractors must take.

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[57];
- The extent the project supports the FOA objectives and target specifications and metrics, including sample activities specified in Section 40511 of the BIL[58] or as identified through the related DOE Request for Information (RFI) and public workshops[59,60];
- 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 or code-adjacent 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.

[57] 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."

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

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

[60] 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 or code-adjacent policies;
- 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[61];
- 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

[61] 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 building energy code or code-adjacent policy implementation, 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[62];
- 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

[62] 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[63];
- The reasonableness of the budget for the proposed project and objectives; and
- Need for federal financial assistance.

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

Overall Approach
- The extent to which applicant's Community Benefits Plan illustrates project viability and social risk mitigation through community and labor engagement; investment in the American workforce; diversity, equity, inclusion, and accessibility, and "Justice40 Initiative" benefits to disadvantaged communities; and
- The extent the actions outlined in the Community Benefits Plan are supported by existing Workforce and Community Agreements (e.g., good neighbor agreements, workforce agreements, project labor agreements, collective bargaining agreements, and similar agreements).

Community and Labor Engagement
- Extent to which the applicant demonstrates community and labor engagement to date and/or a clear and appropriately robust plan to engage local stakeholders, including labor unions and community-based organizations that support or work with disadvantaged communities.

Job Quality
- Extent to which Community Benefits Plan demonstrates that the jobs supported by the proposed project will be quality jobs and provides robust and credible plan to attract, train, and retain skilled workers. Examples of how this could be demonstrated include:
  - Collective bargaining agreement, project labor agreement, labor management partnership, labor peace or labor neutrality agreement, or similar agreement or commitment to workers' free and fair choice to join a union or labor organization of their choosing; and
  - Commitments to fair wages, benefits, or other worker support, including education and training and worker engagement in workplace safety and health plans.

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

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; partnerships with workforce training or support organizations serving workers facing systematic barriers to employment; and other DEIA commitments.

Justice40 Initiative

- Extent to which the Community Benefits Plan identifies specific, measurable benefits for disadvantaged communities, how the benefits will flow to disadvantaged communities, and how negative environmental impacts affecting disadvantaged communities, would be mitigated; and
- Extent to which the project would contribute to meeting the objective that 40% of the overall benefits of climate and clean energy investments 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 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, including the need of the eligible entity for assistance;
- 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 incorporates applicant or team members from Minority Serving Institutions (e.g., Historically Black Colleges and Universities (HBCUs)/Other Minority Serving Institutions); and partnerships with Minority Business Enterprises, Minority Owned Businesses, Woman Owned Businesses, Veteran Owned Businesses, or tribal nations; and
- 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.
- 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, 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, 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. Successful Applicants

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. Applicants do not receive an award until award negotiations are

complete and the Contracting Officer executes the funding agreement, accessible by the prime recipient in FedConnect.

The award negotiation process will take 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. As an alternate, 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 one-time actions before submitting an application in response to this FOA, and it is vital that applicants address these items as soon as possible. Some may take several weeks, and failure to complete them could interfere with an applicant's ability to apply to this FOA, or to meet the negotiation deadlines and receive an award if the application is selected. These requirements are as follows:

1. **EERE Exchange**
   Register and create an account on EERE Exchange at https://eere-Exchange.energy.gov. This account will then allow the user to register for any open EERE FOAs that are currently in EERE Exchange. It is recommended that

each organization or business unit, whether acting as a team or a single entity, use only one account as the contact point for each submission. Applicants should also designate backup points of contact so they may be easily contacted if deemed necessary. **This step is required to apply to this FOA.** The EERE 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 with the SAM at 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 at 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. However, 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.net, 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 foreign national's participation in the award. Likewise, DOE may elect to deny a foreign national's access to a DOE sites, 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 in response 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 the following definitions apply:

   A Corporation includes any 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]. It includes both for-profit and non-profit organizations.

3. **Nondisclosure and Confidentiality Agreements Representations**
   In submitting an application in response 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:

(1) *''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.''*

(2) 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.

(3) 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 United States government, may contain provisions appropriate to the particular 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 in the course of such activity unless specifically authorized to do so by the United States 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 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 as a whole. 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 ten (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 their 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. This helpful EERE checklist can be accessed at https://www.energy.gov/eere/funding/eere-funding-application-and-management-forms. See Attachment 2 Federal Assistance Reporting Checklist, after clicking on "Model Cooperative Agreement" under the Award Package section.

Additional reporting requirements apply to projects funded by BIL. As part of tracking 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 – DOE may require specific data collection. Examples of data that may be collected include:

- Number of trainings completed, trainees placed in full-time employment, and trainings with workforce partnerships involving employers, community-based organizations or labor unions
- Justice and Equity data, including:
    - Minority Business Enterprises, Minority Owned Businesses, Woman Owned Businesses and Veteran Owned Businesses acting as vendors and sub-contractors for bids on supplies, services, and equipment
    - Value, number, and type of partnerships with 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 (IP) Generation and IP 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 actually 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[64]; 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, 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 United States government of a conference held by any Executive branch department, agency, board, commission, or office for which the cost to the United States government

[64] 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.

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 $1,000,000, 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, or other public entities may not condition sub-awards in a manner that would discriminate, or disadvantage sub-recipients 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.xix.

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)[65] is applicable to all non-Federal entities applying for, or that receive, DOE funding by means of a financial assistance award (e.g., a grant, cooperative agreement, or technology investment agreement) 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 their 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

[65] 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.

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. Data Management Plan (DMP)

Each applicant whose Full Application is selected for award negotiations will be required to submit a DMP during the award negotiations phase. A DMP explains how, when appropriate, data generated in the course of the work performed under a DOE award will be shared and preserved in order to validate the results of the proposed work or how the results could be validated if the data is not shared or preserved. The DMP must provide a plan for making all research data displayed in publications resulting from the proposed work digitally accessible at the time of publications.

xxii. 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 (currently FAPIIS). 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.

xxiii. 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.

Federal regulation and the DOE Order require review by an Institutional Review Board (IRB) of all proposed human subjects research projects. The IRB is an interdisciplinary ethics board responsible for ensuring that the proposed research is sound and justifies the use of human subjects or their data; the potential risks to human subjects have been minimized; participation is voluntary; and clear and accurate information about the study, the benefits and risks of participating, and how individuals' data/specimens will be protected/used, is provided to potential participants for their use in determining whether or not to participate.

The recipient shall provide the federal Wide Assurance number identified in item 1) below and the certification identified in item 2) below to DOE prior to initiation of any project that will involve interactions with humans in some way (e.g., through surveys); analysis of their identifiable data (e.g., demographic data and energy use over time); asking individuals to test devices, products, or materials developed through research; and/or testing of commercially available devices in buildings/homes in which humans will be present. Note: This list of examples is illustrative and not all inclusive.

No DOE funded research activity involving human subjects, biospecimens, or identifiable private information shall be conducted without:

1) A registration and a federal Wide Assurance of compliance accepted by the Office of Human Research Protection (OHRP) in the Department of Health and Human Services; and

2) Certification that the research has been reviewed and approved by an Institutional Review Board (IRB) provided for in the assurance. IRB review may be accomplished by the awardee's institutional IRB; by the Central DOE IRB; or if collaborating with one of the DOE national laboratories, by the DOE national laboratory IRB.

The recipient is responsible for ensuring all subrecipients comply and for reporting information on the project annually to the DOE Human Subjects Research Database (HSRD) at https://science.osti.gov/HumanSubjects/Human-Subjects-Database/home. Note: If a DOE IRB is used, no end of year reporting will be needed.

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 as described below. Specifically, questions regarding this FOA must be submitted to: *RECI_FOA@ee.doe.gov*. Questions must be submitted not later than 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 this specific FOA Number to view the questions and answers specific to this FOA**. EERE will attempt to respond to a question within 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 the EERE Exchange website 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 business sensitive (e.g., commercial or financial information that is privileged or confidential), trade secrets, 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 business sensitive, trade secrets, proprietary, or otherwise confidential information, it is furnished to the federal government (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 government's right to use the information if it is obtained from another source.

If an applicant chooses to submit business sensitive, trade secrets, 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 business sensitive, trade secrets, 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 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 business sensitive, trade secrets, proprietary, or otherwise confidential information:

> **Notice of Restriction on Disclosure and Use of Data:**
> Pages [list applicable pages] of this document may contain business sensitive, trade secrets, 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 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 business sensitive, trade secrets, proprietary, or otherwise confidential information must be marked as follows: "Contains Business Sensitive, Trade Secrets, 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 which 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 termination of award negotiations;
- The modification, suspension, and/or termination 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. In order 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: For an applicant not covered by a Class Patent Waiver or the Bayh-Dole Act, the applicant 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 sub-awards, 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 on the website above further DECs 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 United States government retains certain rights.

Government Use License

The United States 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 United States 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 United States 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 United States 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 toto 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 (OSS), 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 uses *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. The term "PII" refers to information which can be used to distinguish or trace an individual's identity, such as their name, social security number, biometric records, alone, or when combined with other personal or identifying information which is linked or linkable to a specific individual, such as date and place of birth, mother's maiden name. (See OMB Memorandum M-07-16 dated May 22, 2007, 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, non-profit 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, then 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 9/30/2022. 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.

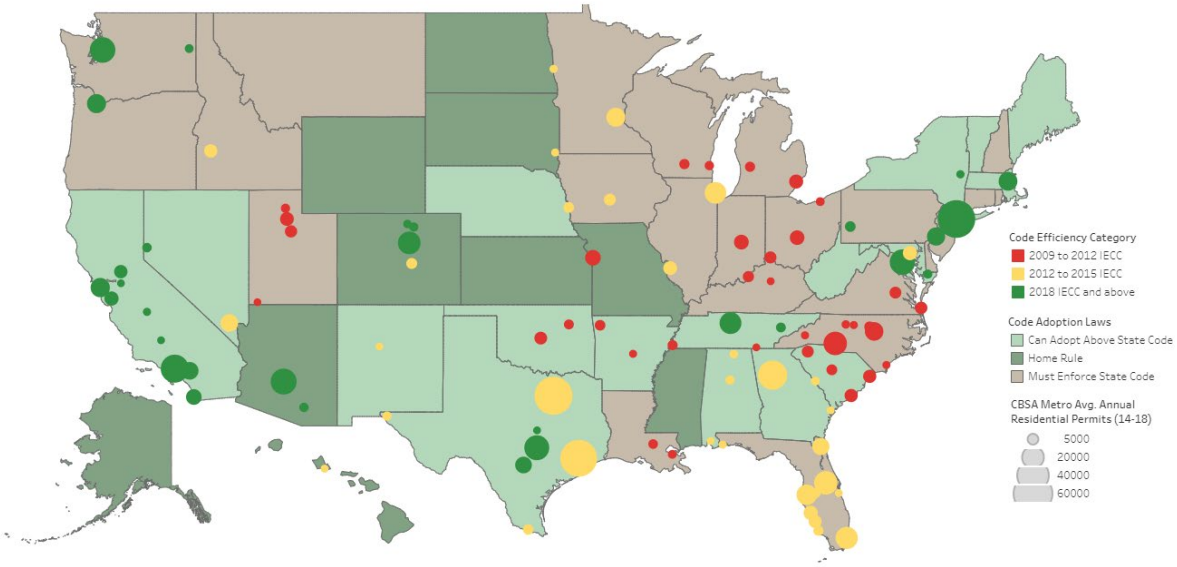


Figure B1 *Status of residential municipal energy code adoption with state code adoption laws for primary cities in the top 100 metro areas by residential construction volume. Cities in dark green (home rule) have authority to adopt any energy code, cities in light green (Min) states can only adopt an 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.*

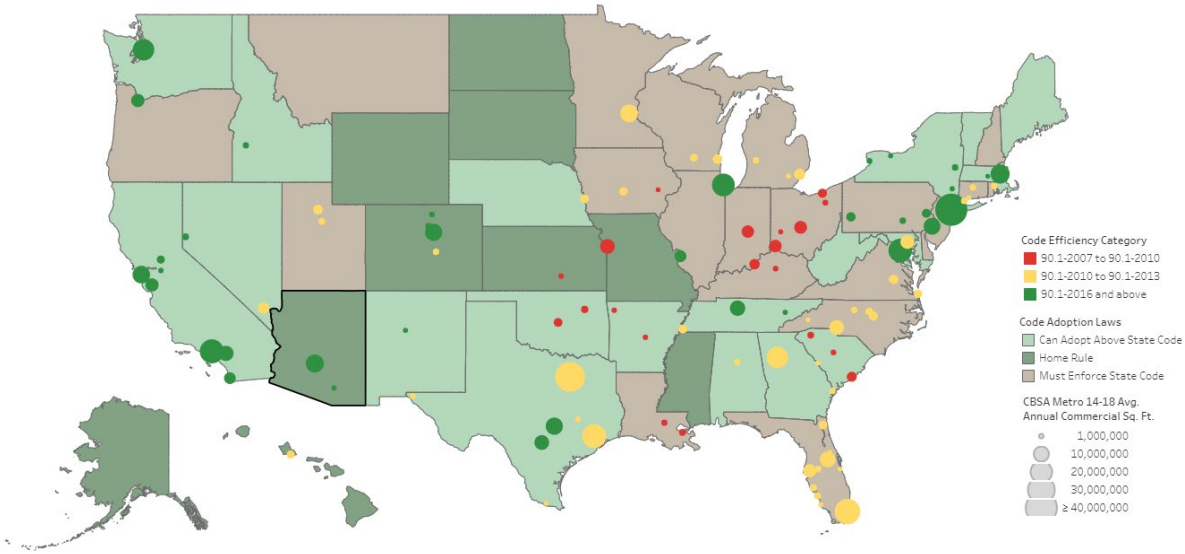
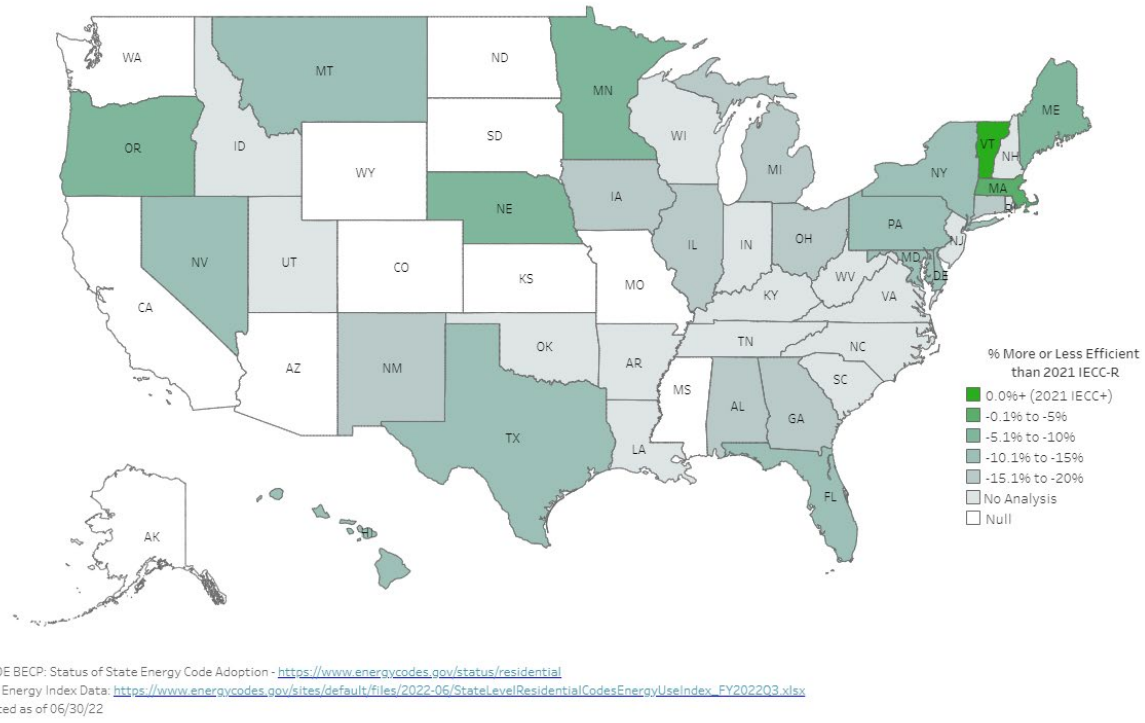


Figure B2 *Status of commercial municipal energy code adoption with state code adoption laws for primary cities in the top 100 metro areas by commercial construction volume. Cities in dark green (home rule) have authority to adopt any energy code, cities in light green (Min) states can only adopt an 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.*

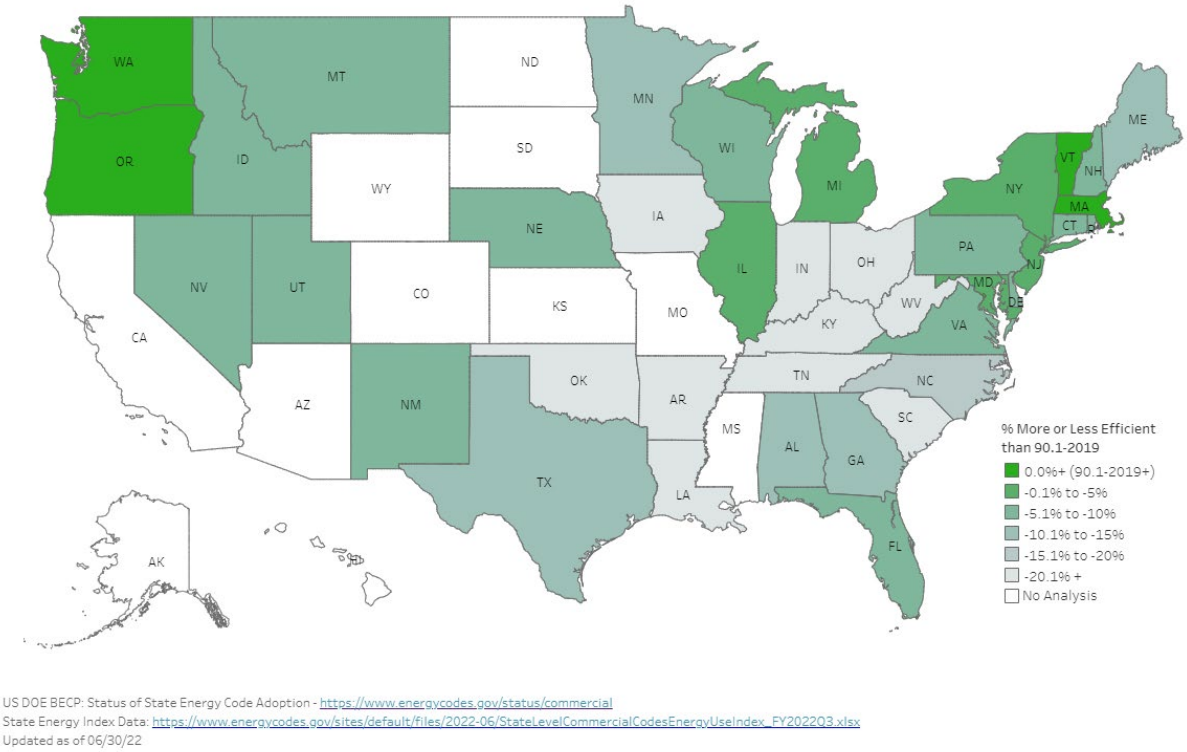
State Code Efficiency

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 latest model energy code (i.e., 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.



US DOE BECP: Status of State Energy Code Adoption - https://www.energycodes.gov/status/residential
State Energy Index Data: https://www.energycodes.gov/sites/default/files/2022-06/StateLevelResidentialCodesEnergyUseIndex_FY2022Q3.xlsx
Updated as of 06/30/22

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



US DOE BECP: Status of State Energy Code Adoption - https://www.energycodes.gov/status/commercial
State Energy Index Data: https://www.energycodes.gov/sites/default/files/2022-06/StateLevelCommercialCodesEnergyUseIndex_FY2022Q3.xlsx
Updated as of 06/30/22

Figure B4 *Status of energy code adoption across U.S. states relative to recent editions of the International Energy Conservation Code (IECC), the national model code for residential 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.

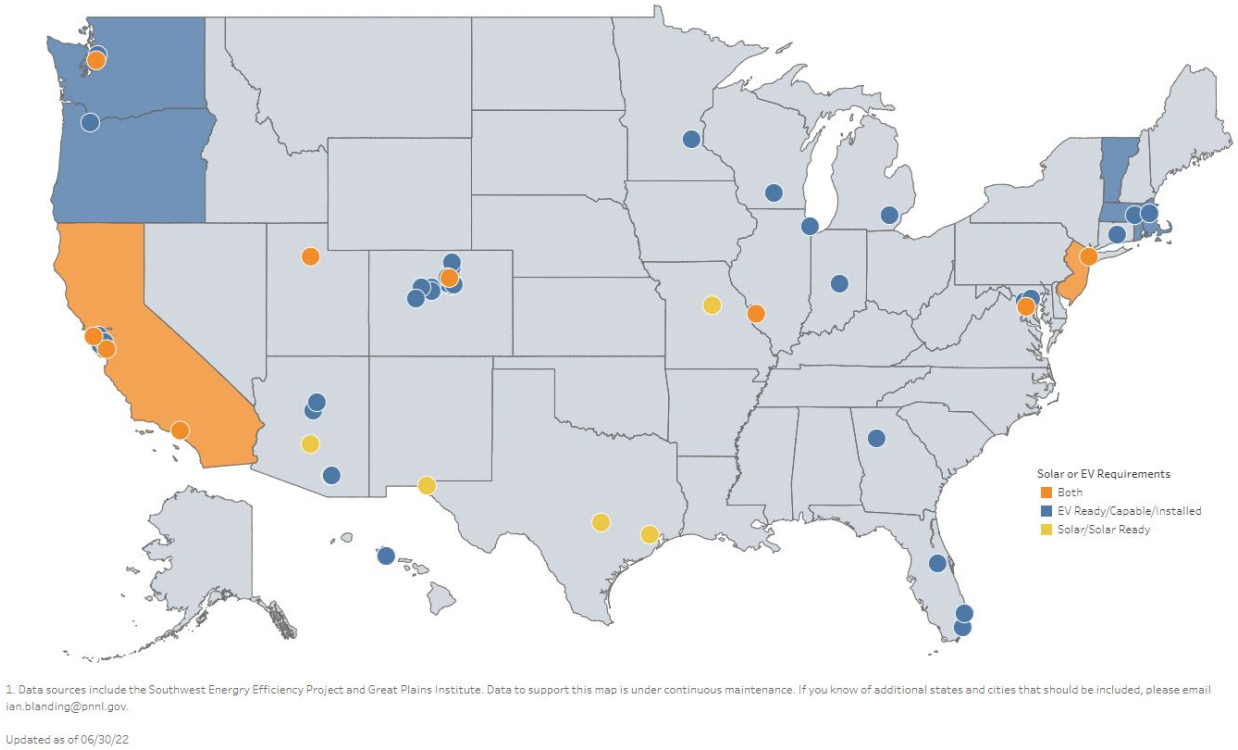


Figure B5 *State and Local Electric Vehicle and Solar Building Requirements. This map provides a high-level overview of where policies, typically either through building code or local ordinance, to support solar and electric vehicle infrastructure in buildings are adopted.*

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[66].

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

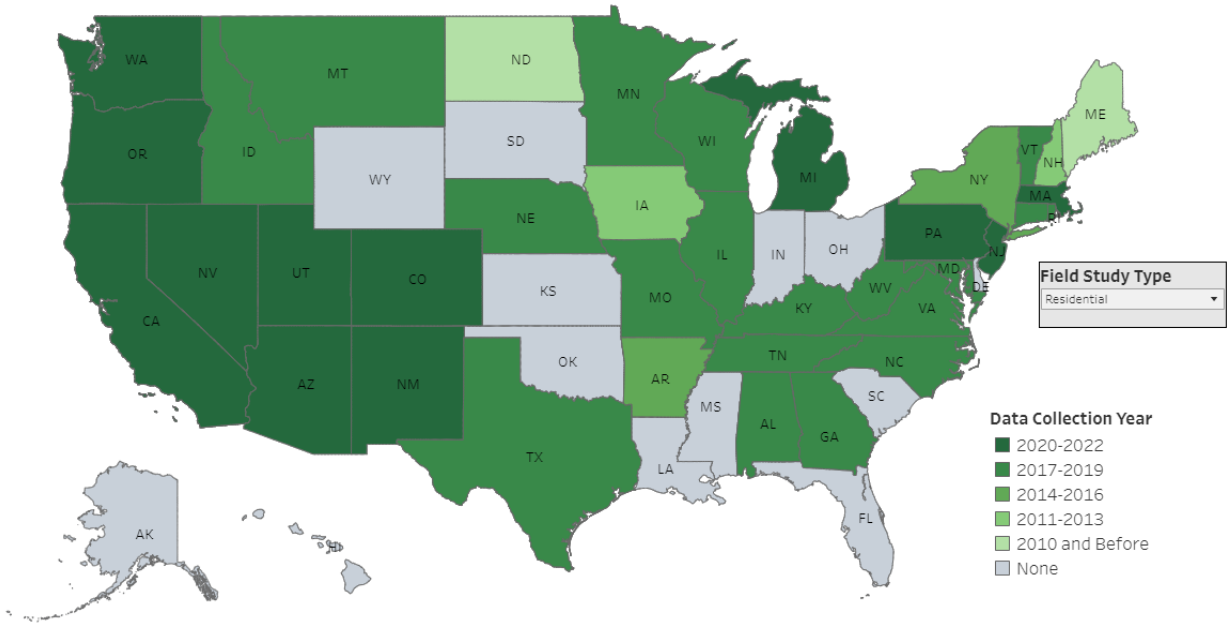


Figure B6 *Residential state energy code compliance field studies by year.*

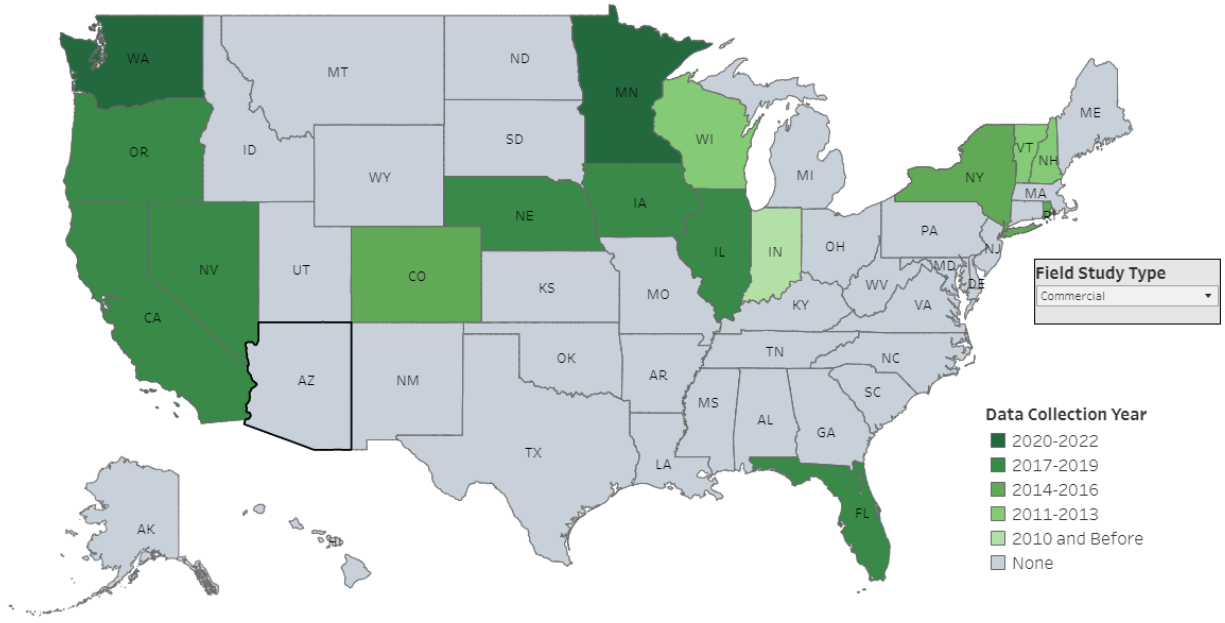


Figure B6 *Commercial state energy code compliance field studies by year.*

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 economy security.[67] 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 U.S. 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

[67] 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 domestic American manufacturing of products and/or services;
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 sub-agreement to protect IP, mitigate risk or other related purposes.

DOE may require additional information before considering the waiver request.

The applicant does not have the right to appeal DOE's decision concerning a waiver request.

2. 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 domestic American manufacturing of products and/or services;
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.

DOE may require additional information before considering the waiver request.

The applicant does not have the right to appeal DOE's decision concerning a waiver request.

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 —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

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 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.

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 Cooperative Agreement between DOE and the awardee 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 manufactured products domestically that are deemed available in sufficient and reasonably available quantities or of a satisfactory quality at the time of award negotiation.

The Cooperative Agreement between DOE and the awardee will require each recipient: (1) to fulfill the commitments made in its application regarding the procurement of U.S.-produced products, subject to a waiver process by DOE assessing the availability and cost (increasing the cost of the overall project by >25%) and (2) to fulfill the commitments made in its application regarding the procurement of other key component metals and manufactured products domestically that are deemed available in sufficient and reasonably available quantities or of a satisfactory quality at the time of award negotiation, again subject to a DOE waiver process. Applicants may also seek a DOE waiver of domestic procurement requirements based on applicable public interest factors, such as relating to minor components, international trade obligations, or other considerations.

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 percent.

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. 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 https://www.energy.gov/management/doe-buy-america-requirement-waiver-requests.

The applicant does not have the right to appeal DOE's decision concerning a waiver request.

APPENDIX E – OPEN SOURCE SOFTWARE

Open Source Software Distribution Plan.

Applicants that are using open source software 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 M&O Contract shall apply and shall 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 plans 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 different 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 must 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
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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 both nonprofit and commercial organizations.

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APPENDIX F – LIST OF ACRONYMS

BECP	Building Energy Codes Program
BIL	Bipartisan Infrastructure Law
BTO	Building Technologies Office
COI	Conflict of Interest
DEC	Determination of Exceptional Circumstances
DEIA	Diversity, Equity, Inclusion, and Accessibility
DMP	Data Management Plan
DOE	Department of Energy
DOI	Digital Object Identifier
EEEJ	Equity, Energy, and Environmental Justice
EERE	Energy Efficiency and Renewable Energy
FAR	Federal Acquisition Regulation
FFATA	Federal Funding and Transparency Act of 2006
FOA	Funding Opportunity Announcement
FOIA	Freedom of Information Act
FFRDC	Federally Funded Research and Development Center
GAAP	Generally Accepted Accounting Principles
IECC	International Energy Conservation Code
IPMP	Intellectual Property Management Plan
M&O	Management and Operating
MPIN	Marketing Partner ID Number
MSI	Minority-Serving institution
NDA	Non-Disclosure Acknowledgement
NEPA	National Environmental Policy Act
NNSA	National Nuclear Security Administration
OMB	Office of Management and Budget
OSTI	Office of Scientific and Technical Information
OTA	Other Transactions Authority
PII	Personal Identifiable Information
R&D	Research and Development
RECI	Resilient and Efficient Codes Implementation
RFI	Request for Information
RFP	Request for Proposal
SAM	System for Award Management
SOPO	Statement of Project Objectives
SPOC	Single Point of Contact
STEM	Science, Technology, Engineering, and Mathematics
TIA	Technology Investment Agreement
UCC	Uniform Commercial Code
UEI	Unique Entity Identifier
WBS	Work Breakdown Structure

WP	Work Proposal