

**DEPARTMENT OF ENERGY (DOE)**  
**OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY (EERE)**

**BUILDING AMERICA INDUSTRY PARTNERSHIPS FOR HIGH PERFORMANCE  
HOUSING INNOVATION**

**Funding Opportunity Announcement (FOA) Number: DE-FOA-0001395**

**FOA Type: Initial**

**CFDA Number: 81.086**

<b>FOA Issue Date:</b>	11/18/2015
<b>Informational Webinar:</b> <a href="https://attendee.gotowebinar.com/register/3467376259542266370">https://attendee.gotowebinar.com/register/3467376259542266370</a>	11/30/2015
<b>Submission Deadline for Concept Papers:</b>	12/21/2015, 5:00pm ET
<b>Submission Deadline for Full Applications:</b>	02/08/2016, 5:00pm ET
<b>Expected Submission Deadline for Replies to Reviewer Comments:</b>	03/08/2016, 5:00pm ET
<b>Expected Date for EERE Selection Notifications:</b>	Spring 2016
<b>Expected Timeframe for Award Negotiations</b>	Summer 2016

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

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# **I. FUNDING OPPORTUNITY DESCRIPTION**

## **A. DESCRIPTION/BACKGROUND**

### **Background**

The Office of Energy Efficiency and Renewable Energy (EERE), within the U.S. Department of Energy (DOE), invests in high-risk, high-value research, development and deployment in energy efficiency and renewable energy technologies. EERE, through the Building Technologies Office (BTO) seeks to develop technologies, techniques, and tools for making buildings more energy efficient, productive, and affordable. BTO's strategic goal is to significantly improve the energy efficiency of new and existing buildings to reduce national energy demand and allow the nation to work toward greater energy independence and a cleaner environment.

Residential buildings accounted for 22% (21 quadrillion BTU) of the primary energy consumption in the United States in 2010, and space-heating and cooling accounted for the largest portion – over 43% (9 quadrillion BTU), of residential building primary energy use<sup>1</sup>. Cost-effective increases to energy efficiency in our homes, particularly reducing space conditioning loads, provides a tremendous opportunity to reduce national energy consumption, saving money for households, creating jobs, and reducing greenhouse gas emissions. McKinsey & Company's 2009 report<sup>2</sup> estimates 71% of the end-use potential in residential buildings (53% of primary energy potential) resides in improving the building shell and heating and cooling equipment.

### **Program Goals**

BTO's overarching long-term goal is to reduce the energy use per square foot of U.S. buildings by 50% compared to 2010 levels. Based on current analysis of the building sector and BTO program planning, BTO has established a goal of reducing building energy use intensity (EUI) 30% by 2030<sup>3</sup>. To deliver on these goals, BTO employs a three-pronged strategy for advancing building technologies and practices: 1) Research & Development of advanced technologies; 2) Market Stimulation of Innovations; and 3) Codes and Standards development and implementation to raise minimum industry standards once higher performance technologies are proven cost-effective at scale.

BTO's Residential Building Integration (RBI) Program 2025 market outcome goals include: 1)

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<sup>1</sup> DOE 2011, *2011 Buildings Energy Data Book* tables 1.1.3 and 2.1.5

<sup>2</sup> McKinsey & Company's 2009 report, "Unlocking Energy Efficiency in the US Economy", available for public download at:

[http://www.mckinsey.com/client\\_service/electric\\_power\\_and\\_natural\\_gas/latest\\_thinking/unlocking\\_energy\\_efficiency\\_in\\_the\\_us\\_economy](http://www.mckinsey.com/client_service/electric_power_and_natural_gas/latest_thinking/unlocking_energy_efficiency_in_the_us_economy).

<sup>3</sup> DOE Building Technology Office (BTO) Draft Multi-Year Program Plan, available at

[http://energy.gov/sites/prod/files/2015/10/f27/BTO\\_Draft\\_MYPP\\_0.pdf](http://energy.gov/sites/prod/files/2015/10/f27/BTO_Draft_MYPP_0.pdf)

a 35% EUI reduction in the heating, cooling, and water heating end uses in existing single-family homes; and 2) cost-effective design and construction of new single-family homes that will consume 50% less energy per square foot for heating, cooling, and water heating relative to typical homes in 2010.

The Building America Research Program is the RBI Program's premier applied research program. The Program is responsible for over 40 housing innovations to date that have enabled technology and market advancements in residential energy efficiency. Since 1994, the rigor of the national residential building energy code has increased over 40% by applying high performance building envelope innovations proven with Building America research and demonstration.

The primary RBI performance goal for Building America is to develop and demonstrate bundles of cost-effective, climate-specific technologies and practices by 2020 that can reduce the EUI of new single-family homes by at least 60% and existing single-family homes by at least 40%, relative to the average homes in each of the seven climate zones in 2010, with a focus on reducing heating, cooling, and water heating loads.

### **FOA Purpose and Objectives**

With this FOA, RBI will select additional building science project teams in 2016 for the Building America Program to address RBI's "Demonstrating and Integrating Technology" performance goal<sup>4</sup> in the residential building sector. This FOA builds on work begun in the 2015 Building America FOA.

Awardees will conduct applied research, development, and demonstration (RD&D) in real world houses of cost-effective technologies and practices that can help reduce the energy use intensity (EUI) of new single-family homes by 60% and existing single-family homes by 40%, relative to the 2010 average home EUI in each climate zone, by 2020, with a focus on reducing heating and cooling loads.

This FOA has 2 topics:

Topic 1: Building America Technology to Market Roadmap Projects

Topic 2: Home Improvement RD&D Projects

For both topics, applicants will address the potential market impact and how their proposed solutions can be implemented at scale.

### **Project Performance Metrics**

Performance metrics for proposed solution(s) in both topics include as appropriate:

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<sup>4</sup> DOE Building Technology Office (BTO) Draft Multi-Year Program Plan, available at [http://energy.gov/sites/prod/files/2015/10/f27/BTO\\_Draft\\_MYPP\\_0.pdf](http://energy.gov/sites/prod/files/2015/10/f27/BTO_Draft_MYPP_0.pdf)

- quantified energy savings (site and source) relative to Building America 2010 benchmark (new) or pre-upgrade (existing)
- quantified contribution to Building America whole house energy savings targets: 40% (existing) or 50% (new)
- number of buildings built or retrofitted with subject Building America innovations
- number of buildings potentially impacted (e.g., future partner commitments)
- private sector dollars leveraged/invested as a result of this Federal funding
- overall building envelope assembly R-value and % above International Energy Conservation Code (IECC) 2009 baseline
- measured air-tightness relative to IECC 2009 baseline
- measured or estimated comfort improvement (T, RH, MRT and/or distribution efficiency)
- measured or estimated reduction in risk of Indoor Air Quality (IAQ) or moisture-related failure
- measured reduction in defects/callbacks (\$ or %)
- change in profitability (\$ or %)
- measured improvement in quality assurance (QA) compliance/commissioning
- cost-effectiveness, considering impact on materials, labor, & non-energy aspects

#### **Additional Requirements for Selected Teams**

In addition to project activities, recipients will be required to conduct certain routine activities not limited to RD&D documentation, information dissemination and Building America program coordination. For budgeting purposes, the following activities should be included:

- Develop and manage industry partnerships necessary for project success (i.e., with builders, developers, DOE Zero Energy Ready Homes partners, WAP agencies, HPWES contractors, other home improvement trades, home energy raters, auditors, manufacturers, vendors, transaction professionals, other researchers, etc.);
- Attend Building America stakeholder, expert and program planning meetings;
- Present results of Building America projects in technical webinars and conference presentations;
- Collect and submit building characteristics & performance data as appropriate using appropriate data protocols – e.g., HPXML;
- Participate in Building America technical peer review process – i.e., review draft reports of other Building America Teams;
- Participate in BTO Peer Review to present project results, upon request;
- Participate in Building Science Education infrastructure development associated with awarded project topic area;
- Participate in DOE Race to Zero Student Design Competition as jurors and mentors; and
- Develop & submit Building America draft and final case studies, guidance documents, and Building America Solution Center content as appropriate using DOE requested templates.

## B. TOPIC AREAS

This FOA has two (2) topics, described below:

### 1. TOPIC 1: BUILDING AMERICA TECHNOLOGY TO MARKET ROADMAP PROJECTS

Topic 1 addresses three integrated technology gaps focused on achieving high performance residential buildings and overcoming market barriers to adoption at scale, including:

- A) High Performance Moisture-Managed Building Envelope Systems;
- B) Optimized Comfort Systems for Low-Load Homes; and
- C) High Performance Ventilation Systems & IAQ Strategies.

This topic applies to either new construction or existing home retrofits or both, as it focuses on remaining technical challenges that slow the adoption of high performance envelopes and heating, ventilation, air conditioning (HVAC) systems, affecting both the new construction and home improvement industries. This topic primarily focuses on solutions for U.S. climate zones with the greatest need – i.e., Hot/humid, Mixed Humid, and Cold climates. Detailed objectives for this topic have been expanded through the Building America planning process described in the *Building America Program Research to Market Plan*, available at:

[energy.gov/eere/buildings/downloads/building-america-program-research-market-plan](https://energy.gov/eere/buildings/downloads/building-america-program-research-market-plan)

Primary roadmap objectives are summarized below:

#### A. High Performance Moisture-Managed Building Envelope Systems

**Challenge:** High-R building envelope assemblies (i.e., foundation, walls, roof) are the biggest potential home energy saving measures - heating & cooling loads are over 40% of home energy use on average and can be much higher. However, advanced envelope systems are rarely selected by building designers. Current solutions are expensive and/or unfamiliar – therefore perceived as risky - to many designers, builders, contractors, and code officials. Furthermore, the dominant perceived risk is durability specifically related to condensation and moisture accumulation in insulated building assemblies. In addition, some high-R envelope solutions are limited by International Residential Code (IRC) code barriers (e.g., fire and structural).

#### Roadmap Objectives:

1. **Moisture risk management**, identifying high performance (i.e., high-R) designs that are least likely to encounter moisture problems in each climate zone, and development of tools and standards to encourage industry adoption of moisture-managed high performance designs at scale:
  - a. Develop moisture managed guidance/tools & best practice specifications for priority high-R envelope systems in each climate;
  - b. Conduct lab and field research to better characterize moisture durability risk, and associated drivers, for priority high-R assemblies & materials;



- c. Support development or improvement of moisture risk assessment tools (e.g., envelope design decision support “expert system”) & modeling standards (e.g., ASHRAE Standard 160).
- 2. **High-performance envelope systems**, developing best practice guidance and specifications for envelope systems with high thermal performance and minimal risk (e.g., moisture risk, structural risk, and fire risk) based on validated performance:
  - a. Validate/demonstrate high performance envelope specifications in real world test homes;
  - b. Develop specifications for voluntary program standards, i.e., DOE Zero Energy Ready Home (ZERH), EPA Energy Star for New Homes (ESH) & Home Performance with Energy Star (HPwES);
  - c. Enable moisture managed high-R envelopes to be addressed in 2021 IECC and IRC.

## B. Optimized Comfort Systems for Low-Load Homes

**Challenge:** Installed performance of HVAC systems, especially distribution system effectiveness and latent performance (i.e., humidity control), is typically suboptimal in American homes, and often significantly compromised due to design and/or installation defects. Compromised HVAC system performance can result in energy waste, building durability problems, and occupant discomfort. These can be critical risks in low-load homes due to lower system airflows and/or less operation time. Distribution system and RH optimization are not often ensured by equipment manufacturers or regulated by codes or standards, and current solutions are labor intensive and/or expensive.

### Roadmap Objectives:

1. **System design** ensuring occupant comfort can be efficiently maintained uniformly throughout the home for the entire year:
  - a. Develop system design procedures/tools & comfort metrics/criteria for low-load homes that address whole-house humidity & distribution;
  - b. Validate/demonstrate comfort system solutions in low-load homes using comfort metrics/criteria;
  - c. Develop best practice guidance/training/tools on system design, installation/commissioning, & maintenance;
  - d. Enable system design standards to address comfort criteria in low-load homes (i.e., ACCA and ASHRAE design standards).
2. **Smart systems and equipment** capable of efficiently and consistently conditioning low-load homes are available on the market:
  - a. Assess load profiles/market demand for low-load homes;
  - b. Support manufacturers to develop low-load HVAC and dehumidification for whole house comfort and address design & installation issues;
  - c. Support manufacturers to develop automated fault detection and diagnostics (FDD) & optimization controls, address equipment & distribution/comfort performance, learning & wireless sensors/controls ;

- d. Enable development of FDD, sensors/controls, metrics & performance validation standards (e.g., Air-Conditioning Contractors of America (ACCA) or American Society for Testing and Materials (ASTM) standards);
- e. Validate/demonstrate smart HVAC & advanced dehumidification systems
- f. Develop best practice guidance on automated smart HVAC operation, controls, & maintenance.

### C. High Performance Ventilation Systems & IAQ Strategies

**Challenge:** Basic mechanical ventilation has become standard in new homes, building codes, and home performance and weatherization programs, but current solutions are limited (i.e., climate, control capability, pollutant source, and cost limitations) and standards do not help optimize either IAQ or energy performance. Yet there is substantial evidence that improved IAQ can encourage adoption of high-performance home technologies and systems.

#### Roadmap Objectives:

1. **Targeted pollutant solutions** that effectively control pollutants of concern as close to the pollutant source as possible:
  - a. Support manufacturers to develop targeted IAQ solutions, including smart range hoods, advanced air cleaning & humidity control systems;
  - b. Validate/demonstrate targeted IAQ solutions;
  - c. Enable targeted IAQ solutions to be addressed in Home Ventilating Institute (HVI) certification, ASHRAE Standard 62.2, & 2021 IECC & IRC.
2. **Smart ventilation technology solutions** that deliver adequate outside air for general pollutant dilution and odor control, while optimizing the delivery to minimize energy associated costs:
  - a. Support manufacturers to develop smart ventilation equipment & real time controls (using indoor/outdoor conditions & home operation data);
  - b. Validate/demonstrate smart ventilation & real time controls;
  - c. Enable adoption of smart ventilation specifications for EPA Indoor airPLUS, ZERH, ESH, & HPwES;
  - d. Enable adoption of smart ventilation specifications in ASHRAE Standard 62.2, 2021 IECC & IRC, & HERS standards.
3. **IAQ valuation** that enables IAQ standards to encourage optimization of IAQ strategies while allowing design flexibility and cost optimization:
  - a. Develop IAQ baselines & valuation metrics, develop thresholds/targets, measure targeted pollutants;
  - b. Develop IAQ guidance & assessment tools for new home designs & retrofit strategies;
  - c. Enable ASHRAE Standard 62.2 transition to IAQ equivalence & smart systems.

### 2. TOPIC 2: HOME IMPROVEMENT RD&D PROJECTS

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Topic 2 addresses RD&D related to innovative energy efficiency upgrade opportunities for trade contractors during home improvements. Topic 2 projects must offer significant potential for increasing the energy efficiency of existing homes by addressing cost and/or market entry barriers related to home improvement trades adding energy efficiency measures during typical home improvement transactions. Applicants may propose RD&D projects in the following home improvement sectors:

1. Envelope upgrades (i.e., roofing, siding, & window replacements, foundation repairs, or other home envelope improvements related to achieving energy savings)
2. Mechanical system upgrades (i.e., HVAC service & replacements with the potential for significant energy savings above standard practice)

In addition, DOE will also consider Topic 2 project proposals that develop and/or demonstrate:

3. Innovative, cost saving methods/technologies for assessing home performance, either during inspections or real time operation.

In general, successful proposals will address cost reduction, savings potential, likelihood of home improvement contractor adoption, and integration issues such as control for health and safety risks. For each area, a problem statement and detailed objectives are summarized below:

### **Building Envelope Upgrade Opportunities**

#### Problem/Opportunity:

Air sealing and insulating are often the most cost effective measures for improving the energy and comfort performance of homes. Specifically, infiltration is recognized as one of the biggest energy wasters in single-family homes. Environmental Protection Agency (EPA) studies have found that, in a typical American house, infiltration accounts for 25-40% of the heating and cooling loads. Similarly, adding insulation to uninsulated or poorly insulated building cavities can lead to significant energy savings, as well as comfort and sound improvements. However, house air sealing and insulation upgrades are not common home improvements. Considering that windows, doors, siding, and roofs are repaired or replaced in millions of homes every year for maintenance and aesthetic reasons, the potential is large to improve energy efficiency and comfort during these millions of transactions by adding air-sealing and insulation. Yet, several significant barriers remain to realizing this opportunity in the market, including additional costs, installation time and potential for project delays, and other business factors. DOE is seeking innovative technical approaches to overcome some or all of these barriers.

#### Objectives:

- Develop and validate simple exterior insulation details for adding a continuous insulation system of R-5 or higher at time of re-siding using current standard insulation practices where possible.
- Develop and validate innovative insulation/air-sealing approaches that are affordable and feasible for trades to perform during roof replacement or repair.
- Develop and validate innovative efficient window upgrade solutions that are low-cost, aesthetically pleasing, offer increased envelope efficiency, and durability and moisture control. Example solutions include, but are not limited to:
  - Simple window retrofit flashing materials and/or kits for exterior insulation system installations.

- Low-e storm windows as a low-cost and non-invasive window upgrade.
- Develop and validate other innovative approaches to improving building envelope efficiency through add-on services to typical home improvement transactions.

### **HVAC System Upgrade Opportunities**

#### Problem/Opportunity:

HVAC often accounts for over half of a home's energy use. In addition, HVAC repairs and replacement are among the most common home improvement projects. Energy efficient improvements to HVAC systems can reduce energy use, increase comfort, and improve indoor air quality. Yet, many HVAC replacements and repairs do not upgrade the systems beyond existing system efficiency or minimum appliance efficiency standards. In addition, equipment replacements are rarely upgraded to include duct system improvements (i.e., duct sealing and repair). These are all missed opportunities.

#### Objectives:

- Develop and validate strategies to improve distribution efficiency during equipment upgrade, including duct sealing, duct insulation, system balancing and/or modification to the distribution system if necessary.
- Develop and validate dehumidification strategies in low-load homes, and/or in homes with load reductions before cooling system replacement is necessary.
- Develop and validate integrated IAQ and humidity control for retrofitted HVAC systems.
- Develop and validate low-cost balanced ventilation systems incorporated in HVAC upgrades.
- Develop and validate affordable ventilation strategies in areas with high outdoor pollutant concentrations (e.g., dust and allergens, particulate, pesticide applications, elevated CO levels, elevated ozone levels).
- Develop and validate other innovative approaches to improve comfort system efficiency through add on services to typical home improvement transactions.

### **Innovative Approaches to Home Performance Measurement and Assessment**

#### Problem/Opportunity:

Innovative, low-cost, labor-saving tools and methods to assess home energy use will increase the ability of industry professionals to implement energy efficient upgrades in existing homes.

#### Objectives:

- Develop and validate technologies that enable ongoing measurement of the largest home energy end uses, specifically HVAC systems (e.g., smart thermostats, smart meters, and onboard HVAC monitoring).
- Develop and validate technologies for lower cost, faster home performance diagnostics, ideal with equal or better accuracy and repeatability compared to state of the art.
- Enable contractors to access home energy use (utility) data, leveraging smart meters, thermostats and other sensors to improve diagnostics and quality assurance feedback, and develop guidance to use this data.
- Develop and validate other innovative approaches to improve accuracy and reduce cost of home performance assessments.

All work under EERE funding agreements must be performed in the United States. See Section IV.J.3 and Appendix C.

### **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 Section I.B of the FOA.
- Applications for proposed technologies that are not based on sound scientific principles (e.g., violates the laws of thermodynamics).

### **D. AUTHORIZING STATUTES**

The programmatic authorizing statute is EPOA of 2005, section 911.

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

## **II. AWARD INFORMATION**

### **A. AWARD OVERVIEW**

#### **1. ESTIMATED FUNDING**

EERE expects to make approximately \$5,500,000 of Federal funding available for new awards under this FOA, subject to the availability of appropriated funds. EERE anticipates making approximately 3-8 awards under this FOA. EERE may issue one, multiple, or no awards.

Individual awards may vary between \$500,000 and \$2,000,000.

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

Topic 1: Building America Technology to Roadmap Projects

Please refer to Section I.B.1 of the FOA for this topic area's description. EERE may issue approximately 2 to 4 awards in this topic area, with an average award amount between \$500,000 and \$2,000,000.

Topic 2: Home Improvement RD&D Projects

Questions about this FOA? Email [BUILDING\\_AMERICA\\_FOA@ee.doe.gov](mailto:BUILDING_AMERICA_FOA@ee.doe.gov).

Problems with EERE Exchange? Email EERE- [EERE-ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov) Include FOA name and number in subject line.

Please refer to Section I.B.2 of the FOA for this topic area's description. EERE may issue approximately 1 to 4 awards in this topic area, with an average award amount between \$500,000 and \$2,000,000.

EERE 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. Before the expiration of the initial budget period(s), EERE may perform a down-select among different recipients and provide additional funding only to a subset of recipients.

## **2. PERIOD OF PERFORMANCE**

EERE anticipates making awards that will run up to 36 months in length. Project continuation will be contingent upon satisfactory performance and go/no-go decision review. At the go/no-go decision points, EERE will evaluate project performance, project schedule adherence, meeting milestone objectives, compliance with reporting requirements, and overall contribution to the program goals and objectives. As a result of this evaluation, EERE will make a determination to continue the project, re-direct the project, or discontinue funding the project.

## **3. NEW APPLICATIONS ONLY**

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

# **B. EERE FUNDING AGREEMENTS**

Through Cooperative Agreements and other similar agreements, EERE provides financial and other support to projects that have the potential to realize the FOA objectives. EERE does not use such agreements to acquire property or services for the direct benefit or use of the United States Government.

## **1. COOPERATIVE AGREEMENTS**

EERE generally uses Cooperative Agreements to provide financial and other support to Prime Recipients.

Through Cooperative Agreements, EERE 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.

EERE has substantial involvement in all projects funded via Cooperative Agreement. See Section VI.B.9 of the FOA for more information on what substantial involvement may involve.

## **2. FUNDING AGREEMENTS WITH FFRDCs**

In most cases, Federally Funded Research and Development Centers (FFRDC) 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.

## **3. GRANTS**

Although EERE has the authority to provide financial support to Prime Recipients through Grants, EERE generally does not fund projects through Grants. EERE may fund a limited number of projects through Grants, as appropriate.

## **4. TECHNOLOGY INVESTMENT AGREEMENTS**

In rare cases and if determined appropriate, EERE will consider awarding a Technology Investment Agreement (TIA) to a non-FFRDC applicant. TIAs, governed by 10 CFR Part 603, are assistance instruments used to increase the involvement of commercial entities in the Department's research, development, and demonstration programs. A TIA may be either a type of cooperative agreement or an assistance transaction other than a cooperative agreement, depending on the intellectual property provisions. In both cases, TIAs are not necessarily subject to all of the requirements of 2 CFR Part 200 as amended by 2 CFR Part 910.

In a TIA, EERE may modify the standard Government terms and conditions, including but not limited to:

- Intellectual Property Provisions: EERE may negotiate special arrangements with recipients to avoid the encumbrance of existing intellectual property rights or to facilitate the commercial deployment of inventions conceived or first actually reduced to practice under the EERE funding agreement.
- Accounting Provisions: EERE may authorize the use of generally accepted accounting principles (GAAP) where recipients do not have accounting systems that comply with Government recordkeeping and reporting requirements.

EERE will be more amenable to awarding a TIA in support of an application from a consortium or a team arrangement that includes cost sharing with the private sector, as opposed to an application from a single organization. Such a consortium or teaming arrangement could include a FFRDC. If a DOE/NNSA FFRDC is a part of the consortium or teaming arrangement, the value of, and funding for the DOE/NNSA FFRDC portion of the work will be authorized and funded under the DOE field work authorization system and performed under the laboratory's Management and Operating contract. Funding for a non-DOE/NNSA FFRDC would be through an interagency agreement under the Economy Act or other statutory authority. Other appropriate contractual accommodations, such as those involving intellectual property, may be



made through a “funds in” agreement to facilitate the FFRDCs participation in the consortium or teaming arrangement. If a TIA is awarded, certain types of information described in 10 CFR 603.420(b) are exempt from disclosure under the Freedom of Information Act for five years after DOE receives the information.

An applicant may request a TIA if it believes that using a TIA could benefit the RD&D objectives of the program (see section 603.225) and can document these benefits. If an applicant is seeking to negotiate a TIA, the applicant must include an explicit request in its Full Application. After an applicant is selected for award negotiation, the Contracting Officer will determine if awarding a TIA would benefit the RD&D objectives of the program in ways that likely would not happen if another type of assistance agreement (e.g., cooperative agreement subject to the requirements of 2 CFR Part 200 as amended by 2 CFR Part 910). The Contracting Officer will use the criteria in 10 CFR 603, Subpart B, to make this determination.

### **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 initial requirements, it will be considered non-responsive, removed from further evaluation, and ineligible for any award.

#### **A. ELIGIBLE APPLICANTS**

##### **1. INDIVIDUALS**

U.S. citizens and lawful permanent residents are eligible to apply for funding as a Prime Recipient or Subrecipient.

##### **2. DOMESTIC ENTITIES**

For-profit entities, educational institutions, and nonprofits that are incorporated (or otherwise formed) under the laws of a particular State or territory of the United States are eligible to apply for funding as a Prime Recipient or Subrecipient. 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.

State, local, and tribal government entities are eligible to apply for funding as a Prime Recipient or Subrecipient.

DOE/NNSA Federally Funded Research and Development Centers (FFRDCs) and DOE Government-Owned, Government-Operated laboratories (GOGOs) will not be eligible to apply for funding as a Prime Recipient, but they are eligible to apply for funding as a Subrecipient. National Renewable Energy Lab (NREL)/Alliance for Sustainable Energy, LLC will be precluded from applying to this FOA entirely.



Non-DOE/NNSA FFRDCs are eligible to apply for funding as a Subrecipient, but are not eligible to apply as a Prime Recipient.

Federal agencies and instrumentalities (other than DOE) are eligible to apply for funding as a Subrecipient, but are not eligible to apply as a Prime Recipient.

### **3. FOREIGN ENTITIES**

Foreign entities, whether for-profit or otherwise, are eligible to apply for funding under this FOA. Other than as provided in the “Individuals” or “Domestic Entities” sections above, all Prime Recipients receiving funding under this FOA must be incorporated (or otherwise formed) under the laws of a State or territory of the United States. If a foreign entity applies for funding as a Prime Recipient, it must designate in the Full Application a subsidiary or affiliate incorporated (or otherwise formed) under the laws of a State or territory of the United States to be the Prime Recipient. The Full Application must state the nature of the corporate relationship between the foreign entity and domestic subsidiary or affiliate.

Foreign entities may request a waiver of the requirement to designate a subsidiary in the United States as the Prime Recipient in the Full Application (i.e., a foreign entity may request that it remains the Prime Recipient on an award). To do so, the Applicant must submit an explicit written waiver request in the Full Application. [Appendix C lists the necessary information that must be included in a request to waive this requirement.](#) The applicant does not have the right to appeal EERE’s decision concerning a waiver request.

In the waiver request, the applicant must demonstrate to the satisfaction of EERE that it would further the purposes of this FOA and is otherwise in the economic interests of the United States to have a foreign entity serve as the Prime Recipient. EERE may require additional information before considering the waiver request.

A foreign entity may receive funding as a Subrecipient.

### **4. INCORPORATED CONSORTIA**

Incorporated consortia, which may include domestic and/or foreign entities, are eligible to apply for funding 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 in foreign countries, please refer to the requirements in “Foreign Entities” above.

Each incorporated 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 EERE Contracting Officer.

### **5. UNINCORPORATED CONSORTIA**

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Unincorporated Consortia, which may include domestic and foreign entities, must designate one member of the consortium to serve as the Prime Recipient/consortium representative. The Prime Recipient/consortium representative must be incorporated (or otherwise formed) under the laws of a State or territory of the United States. The eligibility of the consortium will be determined by the eligibility of the Prime Recipient/consortium representative under Section III.A of the FOA.

Upon request, unincorporated consortia must provide the EERE 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 discuss, among other things, 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.

## **B. COST SHARING**

### **Cost Share 20%, Cost Share Waiver Not Utilized**

The cost share must be at least 20% of the total allowable costs for research and development projects (i.e., the sum of the Government share, including FFRDC costs if applicable, and the recipient share of allowable costs equals the total allowable cost of the project) and must come from non-Federal sources unless otherwise allowed by law. (See 2 CFR 200.306 and 2 CFR 910.130 for the applicable cost sharing requirements.)

To assist applicants in calculating proper cost share amounts, EERE has included a cost share information sheet and sample cost share calculation as Appendices B and C to this FOA.

### **1. LEGAL RESPONSIBILITY**

Although the cost share requirement applies to the project as a whole, including work performed by members of the project team other than the Prime Recipient, the Prime Recipient is legally responsible for paying the entire cost share. The Prime Recipient's cost share obligation is expressed in the Assistance Agreement as a static amount in U.S. dollars (cost share amount) and as a percentage of the Total Project Cost (cost share percentage). 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.

### **1. COST SHARE ALLOCATION**

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

### **2. COST SHARE TYPES AND ALLOWABILITY**

Every cost share contribution must be allowable under the applicable Federal cost principles, as described in Section IV.J.1 of the FOA. In addition, cost share must be verifiable upon submission of the Full Application.

Project Teams may provide cost share in the form of cash or in-kind contributions. Cash contributions may be provided by the Prime Recipient or Subrecipients. Allowable in-kind contributions include, but are not limited to: personnel costs, indirect costs, facilities and administrative costs, rental value of buildings or equipment, and the value of a service, other resource, or third party in-kind contribution.

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 Prime 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 as amended by 2 CFR 910.130 & 10 CFR 603.525-555 for additional guidance on cost sharing.

### **3. COST SHARE CONTRIBUTIONS BY FFRDCs**

Because FFRDCs are funded by the Federal Government, costs incurred by FFRDCs generally may not be used to meet the cost share requirement. FFRDCs may contribute cost share only if the contributions are paid directly from the contractor's Management Fee or another non-Federal source.

### **4. 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. Please refer to Appendix A of the FOA.

### **5. COST SHARE PAYMENT**

EERE 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).

In limited circumstances, and where it is in the government's interest, the EERE 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**

**Concept Papers and Full Applications must meet all Compliance criteria listed below or they will be considered noncompliant. EERE will not review or consider noncompliant submissions.**

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including Concept Papers, Full Applications, and Replies to Reviewer Comments that were: submitted through means other than EERE Exchange; submitted after the applicable deadline; and/or submitted incomplete. EERE will not extend the submission deadline for applicants that fail to submit required information due to server/connection congestion.

## **1. COMPLIANCE CRITERIA**

### *i. Concept Papers*

Concept Papers are deemed compliant if:

- The Concept Paper complies with the content and form requirements in Section IV.C of the FOA; and
- The applicant successfully uploaded all required documents and clicked the “Submit” button in EERE Exchange by the deadline stated in this FOA.

### *ii. Full Applications*

Full Applications are deemed compliant if:

- The applicant submitted a compliant Concept Paper;
- The Full Application complies with the content and form requirements in Section IV.D of the FOA; and
- The applicant successfully uploaded all required documents and clicked the “Submit” button in EERE Exchange by the deadline stated in the FOA.

### *iii. Replies to Reviewer Comments*

Replies to Reviewer Comments are deemed compliant if:

- The Reply to Reviewer Comments complies with the content and form requirements in Section IV.E of the FOA; and
- The applicant successfully uploaded all required documents to EERE Exchange by the deadline stated in the FOA.

## **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**

### **1. REQUIREMENTS FOR DOE/NNSA AND NON-DOE/NNSA FEDERALLY FUNDED RESEARCH AND DEVELOPMENT CENTERS 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:

#### *i. 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.

#### *ii. 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.

#### *iii. 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 contractor through the DOE field work proposal system and non-DOE/NNSA FFRDC through an interagency agreement with the sponsoring agency.

#### *iv. Cost Share*

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

#### *v. 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 contractor.

*vi. Limit on FFRDC Effort*

The scope of work to be performed by the FFRDC may not be more significant than the scope of work to be performed by the applicant.

**F. LIMITATION ON NUMBER OF CONCEPT PAPERS AND FULL APPLICATIONS ELIGIBLE FOR REVIEW**

Applicants may submit more than one Full Application to this FOA, provided that each application describes a unique, scientifically distinct project.

**G. QUESTIONS REGARDING ELIGIBILITY**

EERE 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 will include two 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.** At each phase, EERE performs an initial eligibility review of the applicant submissions to determine whether they meet the eligibility requirements of Section III of the FOA. EERE will not review or consider submissions that do not meet the eligibility requirements of Section III. All submissions must conform to the following form and content requirements, including maximum page lengths (described below) and must be submitted via EERE Exchange at <https://eere-exchange.energy.gov/>, unless specifically stated otherwise. **EERE will not review or consider submissions submitted through means other than EERE Exchange, submissions submitted after the applicable deadline, and incomplete submissions.** EERE will not extend deadlines for applicants who fail to submit required information and documents due to server/connection congestion. A control number will be issued when an applicant begins the Exchange application process. This control number must be included with all Application documents, as described below.

The Concept Paper, Full Application, and Reply to Reviewer Comments must conform to the following requirements:

- Each must be submitted in Adobe PDF format unless stated otherwise.
- Each must be written in English.

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- 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 Times New Roman 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.
- The Control Number must be prominently displayed on the upper right corner of the header of every page. Page numbers must be included in the footer of every page.
- 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, EERE will review only the authorized number of pages and disregard any additional pages.

Applicants are responsible for meeting each submission deadline. **Applicants are strongly encouraged to submit their Concept Papers and Full Applications 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, the applicant must resubmit the Concept Paper, Full Application, or Reply to Reviewer Comments before the applicable deadline.

EERE urges applicants to carefully review their Concept Papers and Full Applications and to allow sufficient time for the submission of required information and documents. All Full Applications that pass the initial eligibility review will undergo comprehensive technical merit review according to the criteria identified in Section V.A.2 of the FOA.

#### **1. 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 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 Application should contact the Exchange helpdesk for assistance ([EERE-ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov)). The Exchange helpdesk and/or the EERE Exchange system administrators will assist Applicants in resolving issues.

Applicants that experience issue with submissions that result in late submissions: In the event that an applicant experiences technical difficulties so severe that they are unable to submit

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their application by the deadline, the applicant should contact the Exchange helpdesk for assistance ([EERE-ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov)). The Exchange helpdesk and/or the EERE Exchange system administrators will assist the applicant in resolving all issues (including finalizing submission on behalf of and with the applicant's concurrence). PLEASE NOTE, however, those applicants who are unable to submit their application on time due to their waiting until the last minute when network traffic is at its heaviest to submit their materials will not be able to use this process.

## 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 10MB. Files in excess of 10MB cannot be uploaded, and hence cannot be submitted for review. If a file exceeds 10MB 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:

**ControlNumber\_LeadOrganization\_Project\_Part\_1**

**ControlNumber\_LeadOrganization\_Project\_Part\_2**, etc.

## C. CONTENT AND FORM OF THE CONCEPT PAPER

To be eligible to submit a Full Application, applicants must submit a Concept Paper by the specified due date and time.

### 1. CONCEPT PAPER CONTENT REQUIREMENTS

EERE will not review or consider ineligible Concept Papers (see Section III of the FOA).

Each Concept Paper must be limited to a single concept or technology. Unrelated concepts and technologies should not be consolidated into a single Concept Paper.

The Concept Paper must conform to the following content requirements:

SECTION	PAGE LIMIT	DESCRIPTION
<b>Cover Page</b>	1 page maximum	The cover page should include the project title, the FOA Topic Area being addressed, the specific Topic Area focus (i.e., Roadmap(s) addressed for Topic 1 or home improvement sector(s) addressed for Topic 2), both the technical and business points of contact, names of all team member organizations, and any statements regarding confidentiality.
<b>Technology Description</b>	2 pages maximum	Applicants are required to describe succinctly:

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		<ul style="list-style-type: none"> <li>• The Primary problems the proposal will solve and how the solutions will address the Building America Roadmap objectives (Topic 1), or the need for innovative approaches to integrate energy efficiency upgrades into conventional home improvement projects (Topic 2).</li> <li>• Overview of proposed technologies and practices, including how the proposed approach is unique and innovative;</li> <li>• Why the proposed technologies and practices are important for the target market segments addressed;</li> <li>• Overview of research to market strategy; target level of performance or other key success metrics for each technology and practice proposed (Applicants should provide technical data or other support to show how the proposed target could be met);</li> <li>• The current state-of-the-art in the relevant field and application, including key shortcomings, limitations, and challenges;</li> <li>• How the proposed technologies and practices will overcome the shortcomings, limitations, and challenges in the relevant field and application;</li> <li>• The potential quantifiable impacts that the proposed project would have on the relevant fields, applications, or market segments and how to measure them;</li> <li>• Key technical risks/issues associated with the proposed project plan; and</li> <li>• Other potential funding sources and anticipated cost share.</li> </ul>
<b>Addendum</b>	4 pages maximum	<p>Applicants may provide graphs, charts, or other data to supplement their Project Description.</p> <p>Applicants are required to describe succinctly the qualifications, experience, and capabilities of the proposed Project Team, including:</p> <ul style="list-style-type: none"> <li>• Whether the Principal Investigator (PI) and Project Team have the skill and expertise needed to successfully execute the project plan;</li> <li>• Whether the Applicant has prior experience which demonstrates an ability to perform tasks of similar risk and complexity;</li> <li>• Whether the Applicant has worked together with its teaming partners on prior projects or programs;</li> <li>• Industry partners that the Applicant plans to work with and whether third party cost share commitments have been made; and</li> <li>• 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.</li> </ul>

EERE makes an independent assessment of each Concept Paper based on the criteria in Section V.A.1 of the FOA. EERE will encourage a subset of applicants to submit Full Applications. Other applicants will be discouraged from submitting a Full Application. An applicant who receives a “discouraged” notification may still submit a Full Application. EERE will review all eligible Full Applications. However, by discouraging the submission of a Full Application, EERE intends to convey its lack of programmatic interest in the proposed project in an effort to save the applicant the time and expense of preparing an application that is unlikely to be selected for award negotiations.

EERE may include general comments provided from reviewers on an applicant’s Concept Paper in the encourage/discourage notification sent to applicants at the close of that phase.

#### **D. CONTENT AND FORM OF THE FULL APPLICATION**

Applicants must submit a Full Application by the specified due date and time to be considered for funding under this FOA. Applicants must complete the following application forms found on the EERE Exchange website at <https://eere-Exchange.energy.gov/>, in accordance with the instructions.

Applicants will have approximately 30 days from receipt of the Concept Paper Encourage/Discourage notification 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. Applicants will receive a control number upon submission of their Concept Paper, and should include that control number in the file name of their Full Application submission (i.e., *Control number\_Applicant Name\_Full Application*).

##### **1. FULL APPLICATION CONTENT REQUIREMENTS**

EERE will not review or consider ineligible Full Applications (see Section III of the FOA).

Each Full Application shall be limited to a single concept or technology. Unrelated concepts and technologies shall not be consolidated in a single Full Application.

Full Applications must conform to the following requirements:

SUBMISSION	COMPONENTS	FILE NAME
<b>Full Application (PDF, unless</b>	Technical Volume (See Chart in Section IV.D.2)	ControlNumber_LeadOrganization_Technical Volume
	Statement of Project Objectives (Microsoft Word format) (12 page limit)	ControlNumber_LeadOrganization_SOPO

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<b>stated otherwise)</b>	SF-424	ControlNumber_LeadOrganization_App424
	Budget Justification (EERE 335) (Microsoft Excel format. Applicants must use the template available in EERE Exchange)	ControlNumber_LeadOrganization_Budget_Justification
	Summary for Public Release (1 page limit)	ControlNumber_LeadOrganization_Summary
	Summary Slide (1 page limit, Microsoft PowerPoint format)	ControlNumber_LeadOrganization_Slide
	Subaward Budget Justification (EERE 335) (Microsoft Excel format. Applicants must use the template available in EERE Exchange)	ControlNumber_LeadOrganization_Subaward_Budget_Justification
	Budget for FFRDC, if applicable	ControlNumber_LeadOrganization_FWP
	Authorization from cognizant Contracting Officer for FFRDC, if applicable	ControlNumber_LeadOrganization_FFRDCAuth
	SF-LLL Disclosure of Lobbying Activities	ControlNumber_LeadOrganization_SF-LLL
	Foreign Entity and Performance of Work in the United States waiver requests, if applicable	ControlNumber_LeadOrganization_Waiver
	U.S. Manufacturing Plans	ControlNumber_LeadOrganization_USMP
	Data Management Plan	ControlNumber_LeadOrganization_DMP

**Note:** The maximum file size that can be uploaded to the EERE Exchange website is 10MB. Files in excess of 10MB cannot be uploaded, and hence cannot be submitted for review. If a file exceeds 10MB 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:

**ControlNumber\_LeadOrganization\_TechnicalVolume\_Part\_1**  
**ControlNumber\_LeadOrganization\_TechnicalVolume\_Part\_2**, etc.

**EERE will not accept late submissions that resulted from technical difficulties due to uploading files that exceed 10MB.**

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

## **2. TECHNICAL VOLUME**

The Technical Volume must be submitted in Adobe PDF format. The Technical Volume must conform to the following content and form requirements, including maximum page lengths. If applicants exceed the maximum page lengths indicated below, EERE will review only the authorized number of pages and disregard any additional pages. This volume must address the Merit Review Criteria as discussed in Section V.A.2 of the FOA. Save the Technical Volume in a single PDF file using the following convention for the title:  
 "ControlNumber\_LeadOrganization\_TechnicalVolume".

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

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The Technical Volume to the Full Application may not be more than 30 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 evaluation criteria (see Section V.A.2 of the FOA) when preparing the Technical Volume.

SECTION/PAGE LIMIT	DESCRIPTION
<b>Cover Page</b>	The cover page should include the project title, the FOA Topic Area being addressed, the specific Topic Area focus (i.e., Roadmap(s) addressed for Topic 1 or home improvement sector(s) addressed for Topic 2), both the technical and business points of contact, names of all team member organizations, and any statements regarding confidentiality.
<b>Project Overview</b> (This section should constitute approximately 10% of the Technical Volume)	<p>The Project Overview should contain the following information:</p> <ul style="list-style-type: none"> <li>• <b>Background:</b> The applicant should discuss the background of their organization, including the history, successes, and current research and development status (i.e., the technical baseline) relevant to the technical topic being addressed in the Full Application.</li> <li>• <b>Project Goal:</b> The applicant should explicitly identify the targeted improvements to the baseline technology and the critical success factors in achieving that goal.</li> <li>• <b>DOE Impact:</b> 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.</li> </ul>
<b>Technical Description, Innovation, and Impact</b> (This section should constitute approximately 30% of the Technical Volume)	<p>The Technical Description should contain the following information:</p> <ul style="list-style-type: none"> <li>• <b>Relevance and Outcomes:</b> The applicant should provide a detailed description of the technology, 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 DOE technical targets or other relevant performance targets. The applicant should clearly specify the expected outcomes of the project.</li> <li>• <b>Feasibility:</b> The applicant should demonstrate the technical feasibility of the proposed technology and capability of achieving the anticipated performance targets, including a description of previous work done and prior results.</li> <li>• <b>Innovation and Impacts:</b> The applicant should describe the current state of the art in the applicable field, the specific innovation of the proposed technology, the advantages of proposed technology over current and emerging technologies, and the overall impact on advancing the state of the art/technical baseline if the project is successful.</li> </ul>

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<p><b>Workplan and Market Transformation Plan</b> (This section should constitute approximately 40% of the Technical Volume)</p>	<p>The Workplan should include a summary of the Project Objectives, Technical Scope, Work Breakdown Structure, Milestones, Go/No-Go Decision Points, and Project Schedule. A detailed Statement of Project Objectives (SOPO) is separately requested. The Workplan should contain the following information:</p> <ul style="list-style-type: none"> <li>• <b>Project Objectives:</b> 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.</li> <li>• <b>Technical Scope Summary:</b> 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.</li> <li>• <b>Work Breakdown Structure (WBS) and Task Description Summary:</b> 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 work breakdown structure (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.</li> <li>• <b>Milestone Summary:</b> The applicant should provide a summary of appropriate milestones throughout the project to demonstrate success, where success is defined as technical achievement rather than simply completing a task. To ensure that milestones are relevant, applicants should follow the SMART rule of thumb, which is that all milestones should be <b>Specific, Measurable, Achievable, Relevant, and Timely</b>. 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 (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.</li> <li>• <b>Go/No-Go Decision Points:</b> The applicant should provide a summary of project-wide go/no-go decision points at appropriate points in the Workplan. A go/no-go decision point 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. Unless otherwise specified in the FOA, the minimum requirement is that</li> </ul>
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	<p>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. The Applicant should also provide the specific technical criteria to be used to make the go/no-go decision. The summary provided should be consistent with the SOPO.</p> <ul style="list-style-type: none"> <li>• <b>Project Schedule (Gantt Chart or similar):</b> The applicant should provide a schedule for the entire project, including task and subtask durations, milestones, and go/no-go decision points.</li> <li>• <b>Project Management:</b> The applicant should discuss the team's proposed management plan, including the following: <ul style="list-style-type: none"> <li>○ The overall approach to and organization for managing the work</li> <li>○ The roles of each Project Team member</li> <li>○ Any critical handoffs/interdependencies among Project Team members</li> <li>○ The technical and management aspects of the management plan, including systems and practices, such as financial and project management practices</li> <li>○ The approach to project risk management</li> <li>○ A description of how project changes will be handled</li> <li>○ If applicable, the approach to Quality Assurance/Control</li> <li>○ How communications will be maintained among Project Team members</li> </ul> </li> <li>• <b>Market Transformation Plan:</b> The applicant should provide a market transformation plan, including the following: <ul style="list-style-type: none"> <li>○ Identification of target market, competitors, and distribution channels for proposed technology along with known or perceived barriers to market penetration, including a mitigation plan</li> <li>○ Identification of a product development and/or service plan, commercialization timeline, financing, product marketing, legal/regulatory considerations including intellectual property, infrastructure requirements, data dissemination, U.S. manufacturing plan etc., and product distribution.</li> <li>○ Optional: If your application includes the development of software tools, please include in your application a description of how you plan to distribute the software (e.g., via commercial licensing or via open-source licensing), and how the distribution plan furthers the goals of this FOA.</li> </ul> </li> </ul>
<b>Technical Qualifications and Resources</b> (Approximately 20% of the Technical Volume)	<p>The Technical Qualifications and Resources should contain the following information:</p> <ul style="list-style-type: none"> <li>• Describe the Project Team's unique qualifications and expertise, including those of key Subrecipients.</li> <li>• Describe the Project Team's existing equipment and facilities 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.</li> </ul>



	<ul style="list-style-type: none"> <li>• This section should also include relevant, previous work efforts, demonstrated innovations, and how these enable the applicant to achieve the project objectives.</li> <li>• Describe the time commitment of the key team members to support the project.</li> <li>• Attach one-page resumes for key participating team members as an appendix. Resumes do not count towards the page limit. Multi-page resumes are not allowed.</li> <li>• Describe the technical services to be provided by DOE/NNSA FFRDCs, if applicable.</li> <li>• Attach letters of commitment from all Subrecipient/third party cost share providers as an appendix. Letters of commitment do not count towards the page limit.</li> <li>• Attach any letters of support from partners/end users as an appendix (1 page maximum per letter). Letters of support do not count towards the page limit.</li> <li>• For multi-organizational or multi-investigator projects, describe succinctly: <ul style="list-style-type: none"> <li>○ The roles and the work to be performed by each PI and Key Participant;</li> <li>○ Business agreements between the applicant and each PI and Key Participant;</li> <li>○ How the various efforts will be integrated and managed;</li> <li>○ Process for making decisions on scientific/technical direction;</li> <li>○ Publication arrangements;</li> <li>○ Intellectual Property issues; and</li> <li>○ Communication plans</li> </ul> </li> </ul>
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### **3. STATEMENT OF PROJECT OBJECTIVES**

Applicants are required to complete a Statement of Project Objectives (SOPO). A SOPO template is available on EERE Exchange at <https://eere-Exchange.energy.gov/>. The SOPO, including the Milestone Table, must not exceed 12 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. Save the SOPO in a single Microsoft Word file using the following convention for the title "ControlNumber\_LeadOrganization\_SOPO".

### **4. 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

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project period. Save the SF-424 in a single PDF file using the following convention for the title “ControlNumber\_LeadOrganization\_App424”.

### **5. BUDGET JUSTIFICATION WORKBOOK (EERE 335)**

Applicants are required to complete the Budget Justification Workbook. This form is available on EERE Exchange at <https://eere-Exchange.energy.gov/>. Prime Recipients 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, and provide all requested documentation (e.g., a Federally-approved rate agreement, vendor quotes). Applicants should include costs associated 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 “ControlNumber\_LeadOrganization\_Budget\_Justification”.

### **6. SUMMARY/ABSTRACT FOR PUBLIC RELEASE**

Applicants are required to submit a one-page summary/abstract of their project. The project summary/abstract must contain a summary of the proposed activity 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), and major participants (for collaborative projects). 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 project 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 convention for the title “ControlNumber\_LeadOrganization\_Summary”.

### **7. SUMMARY SLIDE**

Applicants are required to provide a single PowerPoint slide summarizing the proposed project. The slide must be submitted in Microsoft PowerPoint format. This slide is used during the evaluation process. Save the Summary Slide in a single file using the following convention for the title “ControlNumber\_LeadOrganization\_Slide”.

The Summary Slide template requires the following information:

- A technology Summary;
- A description of the technology’s impact;
- Proposed project goals;
- Any key graphics (illustrations, charts and/or tables);

- The project's key idea/takeaway;
- Project title, Prime Recipient, Principal Investigator, and Key Participant information; and
- Requested EERE funds and proposed applicant cost share.

#### **8. SUBAWARD BUDGET JUSTIFICATION (EERE 335)**

Applicants must provide a separate budget justification, EERE 335 (i.e., budget justification for each budget year and a cumulative budget) for each subawardee 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 subaward budget justification in a Microsoft Excel file using the following convention for the title "ControlNumber\_LeadOrganization\_Subawardee\_Budget\_Justification".

#### **9. BUDGET FOR DOE/NNSA FFRDC (IF APPLICABLE)**

If a DOE/NNSA FFRDC contractor is to perform a portion of the work, the applicant must provide a DOE Field Work Proposal (FWP) in accordance with the requirements in DOE Order 412.1, Work Authorization System. DOE Order 412.1 and DOE O 412.1 (Field Work Proposal form) area available at the following link, under "DOE Budget Forms": <https://www.directives.doe.gov/directives/0412.1-BOrder-a/view>. Save the FWP in a single PDF file using the following convention for the title "ControlNumber\_LeadOrganization\_FWP".

#### **10. AUTHORIZATION FOR NON-DOE/NNSA OR DOE/NNSA FFRDCs (IF APPLICABLE)**

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

#### **11. SF-LLL: DISCLOSURE OF LOBBYING ACTIVITIES**

Prime 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.

Prime Recipients and Subrecipients are required to complete and submit SF-LLL, "Disclosure of Lobbying Activities" (<http://www.whitehouse.gov/sites/default/files/omb/grants/sflllin.pdf>) if any non-Federal funds have been paid or will be paid to any person for influencing or attempting to influence any of the following in connection with your 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 “ControlNumber\_LeadOrganization\_SF-LLL”.

## **12. WAIVER REQUESTS: FOREIGN ENTITIES AND PERFORMANCE OF WORK IN THE UNITED STATES**

### *i. Foreign Entity Participation:*

As set forth in Section III.A.3, all Prime Recipients receiving funding under this FOA must be incorporated (or otherwise formed) under the laws of a State or territory of 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 necessary information that must be included in a request to waive this requirement.

### *ii. Performance of Work in the United States*

As set forth in Section IV.J.3, all work under EERE funding agreements must be performed in the United States. This requirement does not apply to the purchase of supplies and equipment, so a waiver is not required for foreign purchases of these items. However, the Prime Recipient should make every effort to purchase supplies and equipment within the United States. Appendix C lists the necessary information that must be included in a request to waive the Performance of Work in the United States requirement.

## **13. U.S. MANUFACTURING COMMITMENTS**

As part of the application, applicants are required to submit a U.S. Manufacturing Plan. The U.S. Manufacturing Plan represents the applicant’s measurable commitment to support U.S. manufacturing as a result of its award.

The weight given to the U.S. Manufacturing Plans during the review and selection process varies based on the particular FOA. Applicants should review Section V.A.2 of this FOA to determine the weight given to the U.S. Manufacturing Plans under this FOA.

A U.S. Manufacturing Plan should contain the following or similar preamble: “If selected for funding, the applicant agrees to the following commitments as a condition of that funding:” and, after the preamble, the plan should include one or more specific and measureable commitments. For example, an applicant may commit particular types of products to be manufactured in the U.S. In addition to or instead of making a commitment tied to a particular product, the applicant may make other types of commitments still beneficial to U.S. manufacturing. An applicant may commit to a particular investment in a new or existing U.S. manufacturing facility, keep certain activities based in the U.S. (i.e., final assembly) or support a

certain number of jobs in the U.S. related to the technology and manufacturing. For an applicant which is likely to license the technology to others, especially universities for which licensing may be the exclusive means of commercialization the technology, the U.S. manufacturing plan may indicate the applicant's plan and commitment to use a licensing strategy that would likely support U.S. manufacturing.

When an applicant that is a domestic small business, domestic educational institution, or nonprofit organization is selected for an award, the U.S. Manufacturing Plan submitted by the applicant becomes part of the terms and conditions of the award. The applicant/awardee may request a waiver or modification of the U.S. Manufacturing Plan from DOE upon a showing that the original U.S. Manufacturing Plan is no longer economically feasible.

When an applicant that is a domestic large business is selected for an award, a class patent waiver applies as set forth in Section VIII. L. Under this class patent 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 patent waiver, a domestic large business must agree that any products embodying or produced through the use of an invention conceived or first actually reduced to practice under the award will be substantially manufactured in the United States, unless DOE agrees that the commitments proposed in the U.S. Manufacturing Plan are sufficient.

For other entity types that are selected for award, please see Section VIII.L regarding U.S. manufacturing commitments.

#### **14. DATA MANAGEMENT PLAN**

Applicants whose Full Applications are selected for award negotiations will be required to submit a Data Management Plan during the award negotiations phase. The Data Management Plan is a document that outlines the proposed plan for data sharing or preservation. Submission of this plan is required, and failure to submit the plan may result in the termination of award negotiations. As a courtesy, guidance for preparing a Data Management Plan is provided in Appendix D of the FOA.

### **E. CONTENT AND FORM OF REPLIES TO REVIEWER COMMENTS**

EERE will provide applicants with reviewer comments following evaluation of all eligible Full Applications. Applicants will have a brief opportunity to review the comments and to prepare a short Reply to Reviewer Comments responding to comments however they desire or supplementing their Full Application. The Reply to Reviewer Comments is an optional submission; applicants are not required to submit a Reply to Reviewer Comments. EERE will notify applicants via email when the Reviewer Comments are available for reply. The expected

submission deadline is on the cover page of the FOA; however, it is the applicant's responsibility to monitor email 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 email or relying on the expected date alone. Applicants should anticipate having approximately three (3) business days to submit Replies to Reviewer Comments.

EERE will not review or consider ineligible Replies to Reviewer Comments (see Section III of the FOA). EERE will review and consider each eligible Full Application, even if no Reply is submitted or if the Reply is found to be ineligible.

Replies to Reviewer Comments must conform to the following content and form requirements, including maximum page lengths, described below. If a Reply to Reviewer Comments is more than three pages in length, EERE will review only the first three (3) pages and disregard any additional pages.

SECTION	PAGE LIMIT	DESCRIPTION
<b>Text</b>	2 pages max	Applicants may respond to one or more reviewer comments or supplement their Full Application.
<b>Optional</b>	1 page max	Applicants may use this page however they wish; text, graphs, charts, or other data to respond to reviewer comments or supplement their Full Application are acceptable.

## **F. POST-AWARD INFORMATION REQUESTS**

If selected for award, EERE reserves the right to request additional or clarifying information for any reason deemed necessary, including but not limited to:

- Indirect cost information
- Other budget information
- Commitment Letters 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
- Environmental Questionnaire

## **G. DUN AND BRADSTREET UNIVERSAL NUMBERING SYSTEM NUMBER AND SYSTEM FOR AWARD MANAGEMENT**

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: (i) Be registered in the System

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for Award Management (SAM) at <https://www.sam.gov> before submitting its application; (ii) provide a valid Dun and Bradstreet Universal Numbering System (DUNS) number in its application; and (iii) 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 DUNS 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 may 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.

## **H. SUBMISSION DATES AND TIMES**

Concept Papers, Full Applications, and Replies to Reviewer Comments must be submitted in EERE Exchange no later than 5 p.m. Eastern 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**

### **1. ALLOWABLE COSTS**

All expenditures must be allowable, allocable, and reasonable in accordance with the applicable Federal cost principles.

Refer to the following applicable Federal cost principles for more information:

- FAR Part 31 for For-Profit entities; and
- 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.

### **2. PRE-AWARD COSTS**

Selectees 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 Contracting Officer assigned to the award.

Pre-award costs cannot be incurred prior to the Selection Official signing the Selection Statement and Analysis. Pre-award costs can only be incurred if such costs would be reimbursable under the agreement if incurred after award.

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.

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

EERE'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 EERE completing the NEPA review process.

EERE does not guarantee or assume any obligation to reimburse costs where the Prime Recipient incurred the costs prior to receiving written authorization from the Contracting Officer. If the applicant elects to undertake activities that 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 and such costs may not be recognized as allowable cost share. Likewise, if a project 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 EERE 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. Nothing contained in the pre-award cost reimbursement regulations or any pre-award costs approval letter from the Contracting Officer override these NEPA requirements 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.

**3. PERFORMANCE OF WORK IN THE UNITED STATES**

a. Requirement.

All work performed under EERE Awards must be performed in the United States. This requirement does not apply to the purchase of supplies and equipment; however, the Prime Recipient should make every effort to purchase supplies and equipment within the United States. The Prime Recipient must flow down this requirement to its Subrecipients.

b. Failure to Comply.

If the Prime Recipient fails to comply with the Performance of Work in the United States requirement, EERE 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 if the work is performed by the Prime Recipient, Subrecipients, contractors or other project partners.

c. Waiver.

There may be limited circumstances where it is in the interest of the project to perform a portion of the work outside the United States. To seek a waiver of the Performance of Work in the United States requirement, the applicant must submit a written waiver request to EERE. Appendix C lists the necessary information that must be included in a request to waive the Performance of Work in the United States requirement.

The applicant must demonstrate to the satisfaction of EERE that a waiver would further the purposes of the FOA and is in the economic interests of the United States. EERE may require additional information before considering a waiver request. Save the waiver request(s) in a single PDF file titled "ControlNumber\_PerformanceofWork\_Waiver". The applicant does not have the right to appeal EERE's decision concerning a waiver request.

#### **4. CONSTRUCTION**

Recipients are required to obtain written authorization from the Contracting Officer before incurring any major construction costs.

#### **5. FOREIGN TRAVEL**

Foreign travel costs are not allowable under this FOA.

#### **6. EQUIPMENT AND SUPPLIES**

To the greatest extent practicable, all equipment and products purchased with funds made available under this FOA should be American-made. This requirement does not apply to used or leased equipment.

Property disposition will be required at the end of a project if the current fair market value of property exceeds \$5,000. The rules for property disposition are set forth in 2 CFR 200.310 – 200.316 as amended by 2 CFR 910.360.

#### **7. 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” (<http://www.whitehouse.gov/sites/default/files/omb/grants/sflllin.pdf>) if any non-Federal funds have been paid or will be paid to any person for influencing or attempting to influence any of the following in connection with your 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.

## **8. RISK ASSESSMENT**

Prior to making a Federal award, the DOE is required by 31 U.S.C. 3321 and 41 U.S.C. 2313 to review information available through any OMB-designated repositories of government-wide eligibility qualification or financial integrity information, such as SAM Exclusions and “Do Not Pay.”

In addition, DOE evaluates the risk(s) posed by applicants before they receive Federal awards. This evaluation may consider: results of the evaluation of the applicant's eligibility; the quality of the application; financial stability; quality of management systems and ability to meet the management standards prescribed in this part; history of performance; reports and findings from audits; and the applicant's ability to effectively implement statutory, regulatory, or other requirements imposed on non-Federal entities.

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

# **V. APPLICATION REVIEW INFORMATION**

## **A. TECHNICAL REVIEW CRITERIA**

### **1. CONCEPT PAPERS**

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

#### **Topic 1**

Questions about this FOA? Email [BUILDING AMERICA\\_FOA@ee.doe.gov](mailto:BUILDING_AMERICA_FOA@ee.doe.gov).

Problems with EERE Exchange? Email EERE- [EERE-ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov) Include FOA name and number in subject line.

**Concept Paper Criterion: Overall FOA Responsiveness and Viability of the Project (Weight: 100%)**

- The applicant clearly describes the proposed technology or approach, describes how the project is unique and innovative, and how it will advance the current state-of-the-art;
- The applicant has identified risks and challenges, including possible mitigation strategies;
- The applicant has shown the potential impact that the proposed project would have on the relevant field and application;
- The proposed approach provides for quantification of impact;
- The applicant has the qualifications, experience, capabilities and other resources necessary to complete the proposed project; and
- The proposed work, if successfully accomplished, would clearly meet objectives of one or more of the Building America Roadmaps: A) High Performance Moisture Managed Envelope Solutions, B) Optimal Comfort Systems for Low-Load Homes, and/or C) Optimal Ventilation & IAQ Solutions.

**Topic 2**

**Concept Paper Criterion: Overall FOA Responsiveness and Viability of the Project (Weight: 100%)**

- The applicant clearly describes the proposed technology or approach, how it is unique and innovative, and how it will advance the current state-of-the-art in home improvement;
- The applicant has identified risks and challenges, including possible mitigation strategies;
- The applicant has shown the potential impact that the proposed project would have on the relevant home improvement trade and application;
- The proposed approach provides for quantification of impact;
- The applicant has the qualifications, experience, capabilities and other resources necessary to complete the proposed project;
- The proposed approach reduces the cost of, and/or addresses existing technological and market barriers to, energy efficiency upgrades, and can be implemented through conventional trades;
- The proposed work, if successfully accomplished, would increase the energy efficiency of existing homes through innovative upgrades during typical home improvement transactions.

**2. FULL APPLICATIONS**

Questions about this FOA? Email [BUILDING\\_AMERICA\\_FOA@ee.doe.gov](mailto:BUILDING_AMERICA_FOA@ee.doe.gov).

Problems with EERE Exchange? Email EERE- [EERE-ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov) Include FOA name and number in subject line.

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

## **Topic 1**

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

#### **Technical Merit and Innovation**

- Extent to which the proposed technology or process is innovative;
- Degree to which the current state of the technology and the proposed advancement are clearly described;
- Extent to which the application specifically and convincingly demonstrates how the applicant will move the state of the art to the proposed innovation; and
- Sufficiency of technical detail in the application to assess whether the proposed work is scientifically meritorious and revolutionary, including relevant data, calculations and discussion of prior work in the literature with analyses that support the viability of the proposed work.

#### **Impact of Proposed Innovation**

- How effectively the proposal addresses specific objectives of the Building America Technology to Market Roadmaps; and
- The potential quantifiable impact of the project on advancing results in the market if successful.

### **Criterion 2: Project Research and Market Transformation Plan (20%)**

#### **Project Approach and Workplan**

- Degree to which the approach and critical path have been clearly described and thoughtfully considered; and
- Degree to which the task descriptions are clear, detailed, timely, and reasonable, resulting in a high likelihood that the proposed Workplan will succeed in meeting the project goals.

#### **Identification of Technical Risks**

- Discussion and demonstrated understanding of the key technical risk areas involved in the proposed work, and
- Quality of the mitigation and response strategies to address identified risks.

#### **Baseline, Metrics, and Deliverables**

- The level of clarity in the definition of the baseline, metrics, and milestones;
- The degree to which defined metrics and milestones align with the goals and objectives of the Building America Roadmaps; and
- Relative to a clearly defined experimental baseline, the strength of the quantifiable metrics, milestones, and a mid-point deliverables defined in the application, such that meaningful interim progress will be made.

Questions about this FOA? Email [BUILDING\\_AMERICA\\_FOA@ee.doe.gov](mailto:BUILDING_AMERICA_FOA@ee.doe.gov).

Problems with EERE Exchange? Email EERE- [EERE-ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov) Include FOA name and number in subject line.

### Market Transformation Plan

- Identification of target market, competitors, and distribution channels for proposed innovation;
- Understanding of known or perceived barriers to market penetration; and
- The quality of strategies for overcoming market barriers.

### **Criterion 3: Team and Resources (40%)**

- The capability of the Principal Investigator(s) and the proposed team to address all aspects of the proposed work with a good chance of success.
- Qualifications, relevant expertise, and time commitment of the individuals on the team;
- The capability of the proposed team to recruit and partner with industry stakeholders to create opportunities for developing and demonstrating innovative system and process solutions;
- The capability of the proposed team to anticipate, understand and resolve innovation risks and barriers;
- The capability of the proposed team to develop technology system and process solutions that can be successfully communicated to and implemented by residential market leaders;
- The capability of the proposed team to facilitate and expedite market transformation through leveraged stakeholder actions that lead to broader market adoption of Building America research results;
- The sufficiency of the facilities to support the work, if applicable;
- The capability of the proposed team to track and evaluate market impacts of their innovations;
- Level of participation by project participants as evidenced by letter(s) of commitment and how well they are integrated into the Workplan; and
- Reasonableness of budget and spend plan for proposed project and objectives.

## **Topic 2**

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

#### Technical Merit and Innovation

- Extent to which the proposed technology or process is innovative and has the potential to advance the state of the art in energy efficient home improvement applications;
- Degree to which the current state of the technology or market and the proposed innovation are clearly described;
- Extent to which the application specifically and convincingly demonstrates how the applicant will support successful implementation of the proposed innovation; and

- Sufficiency of technical detail in the application to assess whether the proposed work is credible and innovative.

#### Impact of Proposed Innovation

- Demonstrated ability for proposed innovation to be implemented through conventional trades
- Degree to which the proposed innovation or approach supports and complements Building America , other RBI initiatives, and/or other BTO program strategies; and
- The potential quantifiable impact of the project on advancing results in the market if successful.

### **Criterion 2: Project Research and Market Transformation Plan (30%)**

#### Project Approach and Workplan

- Degree to which the approach and critical path have been clearly described and thoughtfully considered; and
- Degree to which the task descriptions are clear, detailed, timely, and reasonable, resulting in a high likelihood that the proposed Workplan will succeed in meeting the project goals.

#### Identification of Technical Risks

- Discussion and demonstrated understanding of the key technical risk areas involved in the proposed work, and
- Quality of the mitigation and response strategies to address identified risks.

#### Baseline, Metrics, and Deliverables

- The level of clarity in the definition of the baseline, metrics, and milestones; and
- Relative to a clearly defined experimental baseline, the strength of the quantifiable metrics, milestones, and a mid-point deliverables defined in the application, such that meaningful interim progress will be made.

#### Market Transformation Plan

- Identification of target market, competitors, and supply chain for proposed innovation;
- Understanding of known or perceived barriers to market penetration, from the perspectives of both the contractor and the customer; and
- The quality of strategies for overcoming the barriers.

### **Criterion 3: Team and Resources (30%)**

- The capability of the Principal Investigator(s) and the proposed team to address all aspects of the proposed work with a good chance of success. Qualifications, relevant expertise, and time commitment of the individuals on the team;
- The capability of the proposed team to recruit and partner with industry stakeholders to create opportunities for developing and demonstrating innovative system and process solutions;

- The capability of the proposed team to anticipate, understand and resolve innovation risks and barriers;
- The capability of the proposed team to develop technology system and process solutions that can be successfully communicated to and implemented by residential market leaders;
- The capability of the proposed team to facilitate and expedite market transformation through leveraged stakeholder actions that lead to broader market adoption of Building America research results;
- The sufficiency of the facilities to support the work, if applicable;
- The capability of the proposed team to track and evaluate market impacts of their innovations;
- Level of participation by project participants as evidenced by letter(s) of commitment and how well they are integrated into the Workplan; and
- Reasonableness of budget and spend plan for proposed project and objectives.

### **3. CRITERIA FOR REPLIES TO REVIEWER COMMENTS**

EERE 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 "Department of Energy Merit Review Guide for Financial Assistance," which is available at: <http://energy.gov/sites/prod/files/meritrev.pdf>.

## **C. OTHER SELECTION FACTORS**

### **1. 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:

- The degree to which the proposed project, including proposed cost share, optimizes the use of available EERE funding to achieve programmatic objectives;
- The level of industry involvement and demonstrated ability to commercialize energy or related technologies;
- Technical, market, organizational, and environmental risks associated with the project;

- Whether the proposed project is likely to lead to increased employment and manufacturing in the United States;
- Whether 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;
- Whether the proposed project will enhance vs. duplicate/overlap with other EERE funded work;
- Whether the proposed project contributes to underserved strategic priorities in the Building America technology roadmap or technology to market strategy;
- Comprehensiveness of commercialization plan if the project will result in IP; and
- Whether the proposed project will advance the goals of the Climate Action Champion initiative, as committed to by the designated Champion pursuant to its designation agreement. The Climate Action Champion initiative goals include improving climate resilience and reducing greenhouse gas emissions.

Note: The Climate Action Champion initiative program policy factor is only applicable to (1) projects proposed by Climate Action Champions<sup>5</sup> as designated under DOE's Request for Applications DE-FOA-0001189; (2) projects proposed by a member of a regional collaboration or consortium designated as a Champion; and (3) projects proposed in a Climate Action Champion community where the applicant submits a letter from the Champion confirming the proposed project would further the Champion's goals under the Climate Action Champion initiative. If an applicant is seeking to receive consideration under (3), the applicant must contact the applicable Champion to obtain a letter of support.

## **D. EVALUATION AND SELECTION PROCESS**

### **1. 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.

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<sup>5</sup> In recognition of the importance of the dual policy goals of reducing greenhouse gas emissions and enhancing climate resilience, the U.S. Department of Energy (DOE) – in close collaboration with other Federal agencies – launched the Climate Action Champion initiative to identify and showcase U.S. local and tribal governments that have proven to be climate leaders through pursuing opportunities to advance both of these goals in their communities. Recently, DOE selected sixteen (16) U.S. local governments and tribal governments – or regional collaborations or consortia thereof – that demonstrated a strong and ongoing commitment to implementing strategies that both reduce greenhouse gas emissions and enhance climate resilience, with a particular emphasis on strategies that further both goals. <http://www.whitehouse.gov/blog/2014/12/03/announcing-first-class-climate-action-champions>

## **2. PRE-SELECTION INTERVIEWS**

As part of the evaluation and selection process, EERE 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.3 of the FOA). The invited applicant(s) will meet with EERE representatives to provide clarification on the contents of the Full Applications and to provide EERE an opportunity to ask questions regarding the proposed project. The information provided by applicants to EERE through Pre-Selection Interviews contributes to EERE's selection decisions.

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

EERE 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.

EERE may obtain additional information through Pre-Selection Interviews that will be used to make a final selection determination. EERE may select applications for funding and make awards without Pre-Selection Interviews. Participation in Pre-Selection Interviews with EERE does not signify that applicants have been selected for award negotiations.

## **3. PRE-SELECTION CLARIFICATION**

EERE 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, and will be limited to information already provided in the application documentation. 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 EERE's written clarification questions or video or conference calls with EERE representatives.

The information provided by applicants to EERE through pre-selection clarifications is incorporated in their applications and contributes to the merit review evaluation and EERE's selection decisions. If EERE 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.

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



#### **4. 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 DATES**

EERE anticipates notifying applicants selected for negotiation of award by Spring 2016 and making awards by Summer 2016.

## **VI. AWARD ADMINISTRATION INFORMATION**

### **A. AWARD NOTICES**

#### **1. 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.

#### **2. CONCEPT PAPER NOTIFICATIONS**

EERE will notify applicants of its determination to encourage or discourage the submission of a Full Application. EERE will send a notification letter by email to the technical and administrative points of contact designated by the applicant in EERE Exchange.

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, EERE 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.

A notification letter encouraging the submission of a Full Application does not authorize the applicant to commence performance of the project. Please refer to Section IV.J.2 of the FOA for guidance on pre-award costs.

#### **3. FULL APPLICATION NOTIFICATIONS**

EERE 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, EERE 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.

#### **4. *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 EERE 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 EERE 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, EERE will cancel the award negotiations and rescind the Selection. EERE reserves the right to terminate award negotiations at any time for any reason.

Please refer to Section IV.J.2 of the FOA for guidance on pre-award costs.

#### **5. *ALTERNATE SELECTION DETERMINATIONS***

In some instances, an applicant may receive a notification that its application was not selected for award and EERE designated the application to be an alternate. As an alternate, EERE 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. EERE may ultimately determine to select or not select the Full Application for award negotiations.

#### **6. *UNSUCCESSFUL APPLICANTS***

EERE 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**

#### **1. *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:

*i. 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.**

*ii. DUNS Number*

Obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number (including the plus 4 extension, if applicable) at <http://fedgov.dnb.com/webform>.

*iii. System for Award Management*

Register with the System for Award Management (SAM) at <https://www.sam.gov>. Designating an Electronic Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in SAM registration. Please update your SAM registration annually.

*iv. 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 [http://www.fedconnect.net/FedConnect/Marketing/Documents/FedConnect\\_Ready\\_Set\\_Go.pdf](http://www.fedconnect.net/FedConnect/Marketing/Documents/FedConnect_Ready_Set_Go.pdf).

*v. 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.

*vi. Electronic Authorization of Applications and Award Documents*

Questions about this FOA? Email [BUILDING AMERICA\\_FOA@ee.doe.gov](mailto:BUILDING_AMERICA_FOA@ee.doe.gov).

Problems with EERE Exchange? Email EERE- [EERE-ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov) Include FOA name and number in subject line.

Submission of an application and supplemental information under this FOA through electronic systems used by the Department of Energy, including EERE Exchange and FedConnect.net, constitutes the authorized representative's approval and electronic signature.

## **2. 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.

## **3. FOREIGN NATIONAL ACCESS TO DOE SITES**

All applicants that ultimately enter into an award resulting from this FOA will be subject to the following requirement concerning foreign national involvement. Upon DOE's request, Prime Recipients must provide information to facilitate DOE's responsibilities associated with foreign national access to DOE sites, information, technologies, and equipment. A foreign national is defined as any person who was born outside the jurisdiction of the United States, is a citizen of a foreign government, and has not been naturalized under U.S. law. If the Prime Recipient or Subrecipients, contractors or vendors under the award, anticipate utilizing a foreign national person in the performance of an award, the Prime Recipient is responsible for providing to the Contracting Officer specific information of the foreign national(s) to satisfy compliance with all of the requirements for access approval.

## **4. 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.

## **5. 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>.

## **6. ENVIRONMENTAL REVIEW IN ACCORDANCE WITH NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)**

EERE's decision whether and how to distribute federal funds under this FOA is subject to the National Environmental Policy Act (42 USC 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 <http://nepa.energy.gov/>.

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 costs to prepare the necessary records may be included as part of the project costs.

## **7. APPLICANT REPRESENTATIONS AND CERTIFICATIONS**

### *i. 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.

### *ii. Corporate Felony Conviction and Federal Tax Liability Representations*

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

(1) It is **not** a corporation that has been convicted of a felony criminal violation under any Federal law within the preceding 24 months, and

(2) 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.

### *iii. Nondisclosure and Confidentiality Agreements Representations*

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

(1) 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 contractors 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.

(2) 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:

- a. *“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.”*
- b. The limitation above shall not contravene requirements applicable to Standard Form 312, Form 4414, or any other form issued by a Federal department or agency governing the nondisclosure of classified information.
- c. 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.

#### **8. STATEMENT OF FEDERAL STEWARDSHIP**

EERE will exercise normal Federal stewardship in overseeing the project activities performed under EERE Awards. Stewardship Activities include, but are not limited to, conducting site visits; reviewing performance and financial reports, providing assistance and/or temporary intervention in usual 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.

#### **9. STATEMENT OF SUBSTANTIAL INVOLVEMENT**

Questions about this FOA? Email [BUILDING AMERICA\\_FOA@ee.doe.gov](mailto:BUILDING_AMERICA_FOA@ee.doe.gov).

Problems with EERE Exchange? Email EERE- [EERE-ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov) Include FOA name and number in subject line.

EERE has substantial involvement in work performed under Awards made as a result of this FOA. EERE does not limit its involvement to the administrative requirements of the Award. Instead, EERE 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. EERE shares responsibility with the recipient for the management, control, direction, and performance of the Project.
2. EERE 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. EERE may redirect or discontinue funding the Project based on the outcome of EERE's evaluation of the Project at that the Go/No Go decision point(s).
4. EERE participates in major project decision-making processes.
5. EERE reserves the right to direct which resources, including the assistance of and input from National Laboratories and FFRDC's that it will use to conduct the independent validation and analysis of project results.

#### ***10. INTELLECTUAL PROPERTY MANAGEMENT PLAN***

Within 30 days of selection, applicants must submit an executed IP Management Plan between the members of the consortia or team.

The award will set forth the treatment of and obligations related to intellectual property rights between EERE and the individual members. The IP Management Plan should describe how the members will handle intellectual property rights and issues between themselves while ensuring compliance with Federal IP laws, regulations, and policies (see Sections VIII.L-VIII.O of this FOA for more details on applicable Federal IP laws and regulations). Guidance regarding the contents of IP Management Plans is available from EERE upon request.

The following is a non-exhaustive list of examples of items that the IP Management Plan may cover:

- The treatment of confidential information between members (i.e., the use of non-disclosure agreements);
- The treatment of background IP (e.g., any requirements for identifying it or making it available);
- The treatment of inventions made under the project (e.g., any requirements for disclosing to the other members, filing patent applications, paying for patent

prosecution, and cross-licensing or other licensing arrangements between the members);

- The treatment of data produced, including software, under the project (e.g., any publication process or other dissemination strategies, copyrighting strategy or arrangement between members);
- Any technology transfer and commercialization requirements or arrangements between the members;
- The treatment of any intellectual property issues that may arise due to a change in membership of the consortia or team; and
- The handling of disputes related to intellectual property between the members.

### ***11. SUBJECT INVENTION UTILIZATION REPORTING***

In order to ensure that Prime Recipients and Subrecipients holding title to subject inventions are taking the appropriate steps to commercialize subject inventions, EERE may require that each Prime Recipient holding title to a subject invention submit annual reports for 10 years from the date the subject invention was disclosed to EERE 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 EERE may specify.

### ***12. 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>.

### ***13. REPORTING***

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. The checklist can be accessed at [http://energy.gov/sites/prod/files/2013/05/f0/Attch\\_FA\\_RepReqChecklist\\_COMBINED\\_FINAL\\_4-23-13%20%283%29\\_0.pdf](http://energy.gov/sites/prod/files/2013/05/f0/Attch_FA_RepReqChecklist_COMBINED_FINAL_4-23-13%20%283%29_0.pdf).

### ***14. 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. Federal funding beyond the Go/No Go decision point (continuation funding), is contingent on (1) the availability of funds appropriated by Congress for the purpose of this program and the availability of future-year budget authority; (2) meeting the objectives, milestones, deliverables, and decision point criteria of recipient's approved project and obtaining approval from EERE to continue work on the project; and (3) the submittal of required reports in accordance with the Statement of Project Objectives.

Questions about this FOA? Email [BUILDING AMERICA\\_FOA@ee.doe.gov](mailto:BUILDING_AMERICA_FOA@ee.doe.gov).

Problems with EERE Exchange? Email EERE- [EERE-ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov) Include FOA name and number in subject line.



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, EERE may take appropriate action, including but not limited to, redirecting, suspending or terminating the award.

### **15. 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 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.

## **VII. QUESTIONS/AGENCY CONTACTS**

Upon the issuance of a FOA, EERE 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 the content of this FOA must be submitted to: BUILDING\_AMERICA\_FOA@ee.doe.gov. Questions must be submitted not later than 3 business days prior to the application due date and time.

All questions and answers related to this FOA will be posted on EERE Exchange at: <https://eere-exchange.energy.gov>. **Please note that you must first select this specific FOA Number in order 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](mailto:EERE-ExchangeSupport@hq.doe.gov).

## **VIII. OTHER INFORMATION**

Questions about this FOA? Email [BUILDING\\_AMERICA\\_FOA@ee.doe.gov](mailto:BUILDING_AMERICA_FOA@ee.doe.gov).

Problems with EERE Exchange? Email EERE- [EERE-ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov) Include FOA name and number in subject line.

## **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. INFORMATIONAL WEBINAR**

EERE will conduct one informational webinar during the FOA process. It will be held after the initial FOA release but before the due date for Concept Papers.

Attendance is not mandatory and will not positively or negatively impact the overall review of any applicant submissions. As the webinar will be open to all applicants who wish to participate, applicants should refrain from asking questions or communicating information that would reveal confidential and/or proprietary information specific to their project. Specific dates for the webinar can be found on the cover page of the FOA.

## **C. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE**

EERE 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.

## **D. 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.

## **E. TREATMENT OF APPLICATION INFORMATION**

In general, EERE will only use data and other information contained in applications for evaluation purposes, unless such information is generally available to the public or is already the property of the Government.

Applicants should not include trade secrets or commercial or financial information that is privileged or confidential 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. Applications containing trade secrets or commercial or financial information that is privileged or confidential, which the applicant does not want disclosed to the public or used by the Government for any purpose other than application evaluation, must be marked as described in this section.

Questions about this FOA? Email [BUILDING AMERICA\\_FOA@ee.doe.gov](mailto:BUILDING_AMERICA_FOA@ee.doe.gov).

Problems with EERE Exchange? Email EERE- [EERE-ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov) Include FOA name and number in subject line.

The cover sheet of the application must be marked as follows and identify the specific pages containing trade secrets or commercial or financial information that is privileged or confidential:

Notice of Restriction on Disclosure and Use of Data:

Pages [list applicable pages] of this document may contain trade secrets or commercial or financial information that is privileged or confidential, and is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes or in accordance with a financial assistance or loan agreement between the submitter and the Government. The Government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source.  
[End of Notice]

The header and footer of every page that contains trade secrets or commercial or financial information that is privileged must be marked as follows: “May contain trade secrets or commercial or financial information that is privileged or confidential and exempt from public disclosure.”

In addition, each line or paragraph containing trade secrets or commercial or financial information that is privileged or confidential must be enclosed in brackets.

The above markings enable EERE to follow the provisions of 10 CFR 1004.11(d) in the event a Freedom of Information Act (FOIA) request is received for information submitted with an application. Failure to comply with these marking requirements may result in the disclosure of the unmarked information under a FOIA request or otherwise. The U.S. Government is not liable for the disclosure or use of unmarked information, and may use or disclose such information for any purpose.

Subject to the specific FOIA exemptions identified in 5 U.S.C. 552(b), all information submitted to EERE by a FOA applicant is subject to public release under the Freedom of Information Act, 5 U.S.C. §552, as amended by the OPEN Government Act of 2007, Pub. L. No. 110-175. It is the applicant’s responsibility to review FOIA and its exemptions to understand (1) what information may be subject to public disclosure and (2) what information applicants submit to the Government that are protected by law. In some cases, DOE may be unable to make an independent determination regarding which information submitted by an applicant is releasable and which is protected by an exemption. In such cases, DOE will consult with the applicant, in accordance with 10 C.F.R. §1004.11, to solicit the applicant’s views on how the information should be treated.

## **F. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL**

Questions about this FOA? Email [BUILDING AMERICA\\_FOA@ee.doe.gov](mailto:BUILDING_AMERICA_FOA@ee.doe.gov).

Problems with EERE Exchange? Email EERE- [EERE-ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov) Include FOA name and number in subject line.

In conducting the merit review evaluation, the Go/No-Go Review and Peer Review, 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. The applicant, by submitting its application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign conflict of interest and non-disclosure agreements prior to reviewing an application. Non-Federal personnel conducting administrative activities must sign a non-disclosure agreement.

#### **G. 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.

#### **H. NOTICE OF RIGHT TO CONDUCT A REVIEW OF FINANCIAL CAPABILITY**

EERE 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).

#### **I. NOTICE OF POTENTIAL DISCLOSURE UNDER FREEDOM OF INFORMATION ACT**

Applicants should be advised that identifying information regarding all applicants, including applicant names and/or points of contact, may be subject to public disclosure under the Freedom of Information Act, whether or not such applicants are selected for negotiation of award.

#### **J. 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.

#### **K. RETENTION OF SUBMISSIONS**

Questions about this FOA? Email [BUILDING AMERICA\\_FOA@ee.doe.gov](mailto:BUILDING_AMERICA_FOA@ee.doe.gov).

Problems with EERE Exchange? Email EERE- [EERE-ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov) Include FOA name and number in subject line.

EERE expects to retain copies of all Concept Papers, Full Applications, Replies to Reviewer Comments, and other submissions. No submissions will be returned. By applying to EERE for funding, applicants consent to EERE's retention of their submissions.

## **L. 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, unless DOE agrees that the commitments proposed in the U.S. Manufacturing Plan are sufficient.

- Advance and Identified Waivers: Applicants 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 EERE within the timeframes set forth in the award's intellectual property terms and conditions. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784.
- Determination of Exceptional Circumstances (DEC): Each applicant is required to submit a U.S. Manufacturing Plan as part of its application. If selected, the U.S. Manufacturing Plan shall be incorporated into the award terms and conditions for domestic small businesses and nonprofit organizations. DOE has determined that exceptional circumstances exist that warrants the modification of the standard patent rights clause for small businesses and non-profit awardees under Bayh-Dole to the extent necessary to implement and enforce the U.S. Manufacturing Plan. For example, the commitments and enforcement of a U.S. Manufacturing Plan may be tied to subject inventions. Any

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Bayh-Dole entity (domestic small business or nonprofit organization) affected by this DEC has the right to appeal it.

## **M. GOVERNMENT RIGHTS IN SUBJECT INVENTIONS**

Where Prime Recipients and Subrecipients retain title to subject inventions, the U.S. Government retains certain rights.

### **1. GOVERNMENT USE LICENSE**

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

### **2. MARCH-IN RIGHTS**

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

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

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

## **N. RIGHTS IN TECHNICAL DATA**

Questions about this FOA? Email [BUILDING AMERICA\\_FOA@ee.doe.gov](mailto:BUILDING_AMERICA_FOA@ee.doe.gov).

Problems with EERE Exchange? Email EERE- [EERE-ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov) Include FOA name and number in subject line.

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

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

Government rights in Technical Data Produced Under Awards: The U.S. Government normally retains unlimited rights in technical data produced under Government financial assistance awards, including the right to distribute to the public. However, pursuant to special statutory authority, certain categories of data generated under EERE awards may be protected from public disclosure for up to five years after the data is generated (“Protected Data”). For awards permitting Protected Data, the protected data must be marked as set forth in the awards intellectual property terms and conditions and a listing of unlimited rights data (i.e., non-protected data) must be inserted into the data clause in the award. In addition, invention disclosures may be protected from public disclosure for a reasonable time in order to allow for filing a patent application.

## **O. COPYRIGHT**

The Prime Recipient and Subrecipients may assert copyright in copyrightable works, such as software, first produced under the award without EERE 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.

## **P. PROTECTED PERSONALLY IDENTIFIABLE INFORMATION**

In responding to this FOA, applicants must ensure that Protected Personally Identifiable Information (PII) is not included in the application documents. These documents will be used by the Merit Review Committee in the review process to evaluate each application. PII is defined by the Office of Management and Budget (OMB) and EERE as:

Any information about an individual maintained by an agency, including but not limited to, education, financial transactions, medical history, and criminal or employment history and information that can be used to distinguish or trace an individual’s identity, such as their name, social security number, date and place of birth, mother’s maiden name, biometric records, etc., including any other personal information that is linked or linkable to an individual.

This definition of PII can be further defined as: (1) Public PII and (2) Protected PII.

**Public PII:** PII found in public sources such as telephone books, public websites, business cards, university listing, etc. Public PII includes first and last name, address, work telephone number, email address, home telephone number, and general education credentials.

**Protected PII:** PII that requires enhanced protection. This information includes data that if compromised could cause harm to an individual such as identity theft.

Listed below are examples of Protected PII that applicants must not include in the files listed above to be evaluated by the Merit Review Committee. This list is not all inclusive.

- Social Security Numbers in any form
- Place of Birth associated with an individual
- Date of Birth associated with an individual
- Mother's maiden name associated with an individual
- Biometric record associated with an individual
- Fingerprint
- Iris scan
- DNA
- Medical history information associated with an individual
- Medical conditions, including history of disease
- Metric information, e.g. weight, height, blood pressure
- Criminal history associated with an individual
- Employment history and other employment information associated with an individual
- Ratings
- Disciplinary actions
- Performance elements and standards (or work expectations) are PII when they are so intertwined with performance appraisals that their disclosure would reveal an individual's performance appraisal
- Financial information associated with an individual
- Credit card numbers
- Bank account numbers
- Security clearance history or related information (not including actual clearances held)

## **Q. ANNUAL COMPLIANCE AUDITS**

If a for-profit entity is a Prime Recipient or Subrecipient and has expended \$750,000 or more of DOE funds during the entity's fiscal year, an annual compliance audit performed by an independent auditor is required. For additional information, please refer to 2 C.F.R. § 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 funds during the non-



Federal entity's fiscal year, then a single or program-specific audit is required. For additional information, please refer to 2 C.F.R. § 200.501 and Subpart F.

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

## **APPENDIX A – COST SHARE INFORMATION**

### **Cost Sharing or Cost Matching**

The terms “cost sharing” and “cost matching” are often used synonymously. Even the DOE Financial Assistance Regulations, 2 CFR 200.306, use both of the terms in the titles specific to regulations applicable to cost sharing. EERE almost always uses the term “cost sharing,” as it conveys the concept that non-federal share is calculated as a percentage of the Total Project Cost. An exception is the State Energy Program Regulation, 10 CFR 420.12, State Matching Contribution. Here “cost matching” for the non-federal share is calculated as a percentage of the Federal funds only, rather than the Total Project Cost.

### **How Cost Sharing Is Calculated**

As stated above, cost sharing is calculated as a percentage of the Total Project Cost. FFRDC costs must be included in Total Project Costs. Following is an example of how to calculate cost sharing amounts for a project with \$1,000,000 in federal funds with a minimum 20% non-federal cost sharing requirement:

- Formula: Federal share (\$) divided by Federal share (%) = Total Project Cost  
Example: \$1,000,000 divided by 80% = \$1,250,000
- Formula: Total Project Cost (\$) minus Federal share (\$) = Non-federal share (\$)  
Example: \$1,250,000 minus \$1,000,000 = \$250,000
- Formula: Non-federal share (\$) divided by Total Project Cost (\$) = Non-federal share (%)  
Example: \$250,000 divided by \$1,250,000 = 20%

### **What Qualifies For Cost Sharing**

While it is not possible to explain what specifically qualifies for cost sharing in one or even a couple of sentences, in general, if a cost is allowable under the cost principles applicable to the organization incurring the cost and is eligible for reimbursement under an EERE grant or cooperative agreement, then it is allowable as cost share. Conversely, if the cost is not allowable under the cost principles and not eligible for reimbursement, then it is not allowable as cost share. In addition, costs may not be counted as cost share if they are paid by the Federal Government under another award unless authorized by Federal statute to be used for cost sharing.

The rules associated with what is allowable as cost share are specific to the type of organization that is receiving funds under the grant or cooperative agreement, though are generally the same for all types of entities. The specific rules applicable to:

- FAR Part 31 for For-Profit entities, (48 CFR Part 31); and
- 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.

In addition to the regulations referenced above, other factors may also come into play such as timing of donations and length of the project period. For example, the value of ten years of donated maintenance on a project that has a project period of five years would not be fully allowable as cost share. Only the value for the five years of donated maintenance that corresponds to the project period is allowable and may be counted as cost share.

Additionally, EERE generally does not allow pre-award costs for either cost share or reimbursement when these costs precede the signing of the appropriation bill that funds the award. In the case of a competitive award, EERE generally does not allow pre-award costs prior to the signing of the Selection Statement by the EERE Selection Official.

### **DOE Financial Assistance Rules 2 CFR Part 200 as amended by 2 CFR Part 910**

As stated above, the rules associated with what is allowable cost share are generally the same for all types of organizations. Following are the rules found to be common, but again, the specifics are contained in the regulations and cost principles specific to the type of entity:

(A) Acceptable contributions. All contributions, including cash contributions and third party in-kind contributions, must be accepted as part of the Prime Recipient's cost sharing if such contributions meet all of the following criteria:

- (1) They are verifiable from the recipient's records.
- (2) They are not included as contributions for any other federally-assisted project or program.
- (3) They are necessary and reasonable for the proper and efficient accomplishment of project or program objectives.
- (4) They are allowable under the cost principles applicable to the type of entity incurring the cost as follows:
  - a. For-profit organizations. Allowability of costs incurred by for-profit organizations and those nonprofit organizations listed in Attachment C to OMB Circular A-122 is determined in accordance with the for-profit cost principles in 48 CFR Part 31 in the Federal Acquisition Regulation, except that patent prosecution costs are not allowable unless specifically authorized in the award document. (v) Commercial Organizations. FAR Subpart 31.2—Contracts with Commercial Organizations

- b. Other types of organizations. For all other non-federal entities, allowability of costs is determined in accordance with 2 CFR Part 200 Subpart E.
- (5) They are not paid by the Federal Government under another award unless authorized by Federal statute to be used for cost sharing or matching.
- (6) They are provided for in the approved budget.

(B) Valuing and documenting contributions

- (1) Valuing recipient's property or services of recipient's employees. Values are established in accordance with the applicable cost principles, which mean that amounts chargeable to the project are determined on the basis of costs incurred. For real property or equipment used on the project, the cost principles authorize depreciation or use charges. The full value of the item may be applied when the item will be consumed in the performance of the award or fully depreciated by the end of the award. In cases where the full value of a donated capital asset is to be applied as cost sharing or matching, that full value must be the lesser or the following:
  - a. The certified value of the remaining life of the property recorded in the recipient's accounting records at the time of donation; or
  - b. The current fair market value. If there is sufficient justification, the Contracting Officer may approve the use of the current fair market value of the donated property, even if it exceeds the certified value at the time of donation to the project. The Contracting Officer may accept the use of any reasonable basis for determining the fair market value of the property.
- (2) Valuing services of others' employees. If an employer other than the recipient furnishes the services of an employee, those services are valued at the employee's regular rate of pay, provided these services are for the same skill level for which the employee is normally paid.
- (3) Valuing volunteer services. Volunteer services furnished by professional and technical personnel, consultants, and other skilled and unskilled labor may be counted as cost sharing or matching if the service is an integral and necessary part of an approved project or program. Rates for volunteer services must be consistent with those paid for similar work in the recipient's organization. In those markets in which the required skills are not found in the recipient organization, rates must be consistent with those paid for similar work in the labor market in which the recipient competes for the kind of services involved. In either case, paid fringe benefits that are reasonable, allowable, and allocable may be included in the valuation.
- (4) Valuing property donated by third parties.

- a. Donated supplies may include such items as office supplies or laboratory supplies. Value assessed to donated supplies included in the cost sharing or matching share must be reasonable and must not exceed the fair market value of the property at the time of the donation.
  - b. Normally only depreciation or use charges for equipment and buildings may be applied. However, the fair rental charges for land and the full value of equipment or other capital assets may be allowed, when they will be consumed in the performance of the award or fully depreciated by the end of the award, provided that the Contracting Officer has approved the charges. When use charges are applied, values must be determined in accordance with the usual accounting policies of the recipient, with the following qualifications:
    - i. The value of donated space must not exceed the fair rental value of comparable space as established by an independent appraisal of comparable space and facilities in a privately-owned building in the same locality.
    - ii. The value of loaned equipment must not exceed its fair rental value.
- (5) Documentation. The following requirements pertain to the recipient's supporting records for in-kind contributions from third parties:
- a. Volunteer services must be documented and, to the extent feasible, supported by the same methods used by the recipient for its own employees.
  - b. The basis for determining the valuation for personal services and property must be documented.

## **APPENDIX B – SAMPLE COST SHARE CALCULATION FOR BLENDED COST SHARE PERCENTAGE**

The following example shows the math for calculating required cost share for a project with \$2,000,000 in Federal funds with four tasks requiring different Non-federal cost share percentages:

Task	Proposed Federal Share	Federal Share %	Recipient Share %
Task 1 (R&D)	\$1,000,000	80%	20%
Task 2 (R&D)	\$500,000	80%	20%
Task 3 (Demonstration)	\$400,000	50%	50%
Task 4 (Outreach)	\$100,000	100%	0%

Federal share (\$) divided by Federal share (%) = Task Cost

Each task must be calculated individually as follows:

### Task 1

\$1,000,000 divided by 80% = \$1,250,000 (Task 1 Cost)

Task 1 Cost minus federal share = Non-federal share

\$1,250,000 - \$1,000,000 = \$250,000 (Non-federal share)

### Task 2

\$500,000 divided 80% = \$625,000 (Task 2 Cost)

Task 2 Cost minus federal share = Non-federal share

\$625,000 - \$500,000 = \$125,000 (Non-federal share)

### Task 3

\$400,000 / 50% = \$800,000 (Task 3 Cost)

Task 3 Cost minus federal share = Non-federal share

\$800,000 - \$400,000 = \$400,000 (Non-federal share)

### Task 4

Federal share = \$100,000

Non-federal cost share is not mandated for outreach = \$0 (Non-federal share)

The calculation may then be completed as follows:

Tasks	\$ Federal Share	% Federal Share	\$ Non-Federal Share	% Non-Federal Share	Total Project Cost
Task 1	\$1,000,000	80%	\$250,000	20%	\$1,250,000
Task 2	\$500,000	80%	\$125,000	20%	\$625,000
Task 3	\$400,000	50%	\$400,000	50%	\$800,000
Task 4	\$100,000	100%	\$0	0%	\$100,000
Totals	\$2,000,000		\$775,000		\$2,775,000

Blended Cost Share %

Non-federal share (\$775,000) divided by Total Project Cost (\$2,775,000) = 27.9% (Non-federal)

Federal share (\$2,000,000) divided by Total Project Cost (\$2,775,000) = 72.1% (Federal)

## **APPENDIX C – WAIVER REQUESTS: FOREIGN ENTITY PARTICIPATION AS THE PRIME RECIPIENT AND PERFORMANCE OF WORK IN THE UNITED STATES**

### ***1. WAIVER FOR FOREIGN ENTITY PARTICIPATION AS THE PRIME RECIPIENT***

As set forth in Section III.A.3, all Prime Recipients receiving funding under this FOA must be incorporated (or otherwise formed) under the laws of a State or territory of the United States. To request a waiver of this requirement, an applicant must submit an explicit waiver request in the Full Application.

Overall, the applicant must demonstrate to the satisfaction of EERE that it would further the purposes of this FOA and is otherwise in the economic interests of the United States to have a foreign entity serve as the Prime Recipient. A request to waive the *Foreign Entity Participation as the Prime Recipient* requirement must include the following:

- Entity name;
- The rationale for proposing a foreign entity to serve as the Prime Recipient;
- Country of incorporation;
- A description of the project’s anticipated contributions to the US economy;
  - How the project will benefit U.S. research, development and manufacturing, including contributions to employment in the U.S. and growth in new markets and jobs in the U.S.;
  - How the project will promote domestic American manufacturing of products and/or services;
- A description of how the foreign entity’s participation as the Prime Recipient is essential to the project;
- A description of the likelihood of Intellectual Property (IP) being created from the work and the treatment of any such IP;
- Countries where the work will be performed (Note: if any work is proposed to be conducted outside the U.S., the applicant must also complete a separate request for waiver of the Performance of Work in the United States requirement).

EERE may require additional information before considering the waiver request.

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

### ***2. WAIVER FOR PERFORMANCE OF WORK IN THE UNITED STATES***

As set forth in Section IV.J.3, all work under EERE funding agreements must be performed in the United States. This requirement does not apply to the purchase of supplies and equipment, so a waiver is not required for foreign purchases of these items. However, the Prime Recipient

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should make every effort to purchase supplies and equipment within the United States. There may be limited circumstances where it is in the interest of the project to perform a portion of the work outside 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 EERE 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 to waive the *Performance of Work in the United States* requirement must include the following:

- The rationale for performing the work outside the U.S. (“foreign work”);
- A description of the work proposed to be performed outside the U.S.;
- An explanation as to how the foreign work is essential to the project;
- A description of the anticipated benefits to be realized by the proposed foreign work and the anticipated contributions to the US economy;
  - The associated benefits to be realized and the contribution to the project from the foreign work;
  - How the foreign work will benefit U.S. research, development and manufacturing, including contributions to employment in the U.S. and growth in new markets and jobs in the U.S.;
  - How the foreign work will promote domestic American manufacturing of products and/or services;
- A description of the likelihood of Intellectual Property (IP) being created from the foreign work and the treatment of any such IP;
- The total estimated cost (DOE and Recipient cost share) of the proposed foreign work;
- The countries in which the foreign work is proposed to be performed; and
- The name of the entity that would perform the foreign work.

EERE may require additional information before considering the waiver request.

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

## **APPENDIX D - DATA MANAGEMENT PLAN**

A data management plan (“DMP”) explains how data generated in the course of the work performed under an EERE award will be shared and preserved or, when justified, explains why data sharing or preservation is not possible or scientifically appropriate.

### **DMP Requirements**

In order for a DMP to be considered acceptable, the DMP must address the following:

**At a minimum, the DMP must describe how data sharing and preservation will enable validation of the results from the proposed work, or how results could be validated if data are 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 publication.** This includes data that are displayed in charts, figures, images, etc. In addition, the underlying digital research data used to generate the displayed data should be made as accessible as possible in accordance with the principles stated above. This requirement could be met by including the data as supplementary information to the published article, or through other means. The published article should indicate how these data can be accessed.

The DMP should consult and reference available information about data management resources to be used in the course of the proposed work. In particular, a DMP that explicitly or implicitly commits data management resources at a facility beyond what is conventionally made available to approved users should be accompanied by written approval from that facility. In determining the resources available for data management at DOE User Facilities, researchers should consult the published description of data management resources and practices at that facility and reference it in the DMP. Information about other DOE facilities can be found in the additional guidance from the sponsoring program.

The DMP must protect confidentiality, personal privacy, Personally Identifiable Information, and U.S. national, homeland, and economic security; recognize proprietary interests, business confidential information, and intellectual property rights; avoid significant negative impact on innovation, and U.S. competitiveness; and otherwise be consistent with all laws (i.e., export control laws), and DOE regulations, orders, and policies.

## Data Determination for a DMP

The Principal Investigator should determine which data should be the subject of the DMP and, in the DMP, propose which data should be shared and/or preserved in accordance with the DMP Requirements noted above.

For data that will be generated through the course of the proposed work, the Principal Investigator should indicate what types of data should be protected from immediate public disclosure by DOE (referred to as “protected data”) and what types of data that DOE should be able to release immediately. Similarly, for data developed outside of the proposed work at private expense that will be used in the course of the proposed work, the Principal Investigator should indicate whether that type of data will be subject to public release or kept confidential (referred to as “limited rights data”). Any use of limited rights data or labeling of data as “protected data” must be consistent with the DMP Requirements noted above.

## Suggested Elements for a DMP

The following list of elements for a DMP provides suggestions regarding the data management planning process and the structure of the DMP:

Data Types and Sources: A brief, high-level description of the data to be generated or used through the course of the proposed work and which of these are considered digital research data necessary to validate the research findings or results.

Content and Format: A statement of plans for data and metadata content and format including, where applicable, a description of documentation plans, annotation of relevant software, and the rationale for the selection of appropriate standards. Existing, accepted community standards should be used where possible. Where community standards are missing or inadequate, the DMP could propose alternate strategies for facilitating sharing, and should advise the sponsoring program of any need to develop or generalize standards.

Sharing and Preservation: A description of the plans for data sharing and preservation. This should include, when appropriate: the anticipated means for sharing and the rationale for any restrictions on who may access the data and under what conditions; a timeline for sharing and preservation that addresses both the minimum length of time the data will be available and any anticipated delay to data access after research findings are published; any special requirements for data sharing, for example, proprietary software needed to access or interpret data, applicable policies, provisions, and licenses for re-use and re-distribution, and for the production of derivatives, including guidance for how data and data products should be cited; any resources and capabilities (equipment, connections, systems, software, expertise, etc.) requested in the research proposal that are needed to meet the stated goals for sharing and preservation (this could reference the relevant section of the associated research proposal and budget request); and

whether/where the data will be preserved after direct project funding ends and any plans for the transfer of responsibilities for sharing and preservation.

**Protection:** A statement of plans, where appropriate and necessary, to protect confidentiality, personal privacy, Personally Identifiable Information, and U.S. national, homeland, and economic security; recognize proprietary interests, business confidential information, and intellectual property rights; and avoid significant negative impact on innovation, and U.S. competitiveness.

**Rationale:** A discussion of the rationale or justification for the proposed data management plan including, for example, the potential impact of the data within the immediate field and in other fields, and any broader societal impact.

### **Additional Guidance**

In determining which data should be shared and preserved, researchers must consider the data needed to validate research findings as described in the Requirements, and are encouraged to consider the potential benefits of their data to their own fields of research, fields other than their own, and society at large.

DMPs should reflect relevant standards and community best practices and make use of community accepted repositories whenever practicable.

Costs associated with the scope of work and resources articulated in a DMP may be included in the proposed research budget as permitted by the applicable cost principles.

To improve the discoverability of and attribution for datasets created and used in the course of research, EERE encourages the citation of publicly available datasets within the reference section of publications, and the identification of datasets with persistent identifiers such as Digital Object Identifiers (DOIs). In most cases, EERE can provide DOIs free of charge for data resulting from DOE-funded research through its Office of Scientific and Technical Information (OSTI) DataID Service.

### **Definitions**

**Data Preservation:** Data preservation means providing for the usability of data beyond the lifetime of the research activity that generated them.

**Data Sharing:** Data sharing means making data available to people other than those who have generated them. Examples of data sharing range from bilateral communications with colleagues, to providing free, unrestricted access to anyone through, for example, a web-based platform.

Digital Research Data: The term digital data encompasses a wide variety of information stored in digital form including: experimental, observational, and simulation data; codes, software and algorithms; text; numeric information; images; video; audio; and associated metadata. It also encompasses information in a variety of different forms including raw, processed, and analyzed data, published and archived data.

Research Data: The recorded factual material commonly accepted in the scientific community as necessary to validate research findings, but not any of the following: preliminary analyses, drafts of scientific papers, plans for future research, peer reviews, or communications with colleagues. This 'recorded' material excludes physical objects (e.g., laboratory samples). Research data also do not include:

(A) Trade secrets, commercial information, materials necessary to be held confidential by a researcher until they are published, or similar information which is protected under law; and

(B) Personnel and medical information and similar information the disclosure of which would constitute a clearly unwarranted invasion of personal privacy, such as information that could be used to identify a particular person in a research study.”

Validate: In the context of DMPs, validate means to support, corroborate, verify, or otherwise determine the legitimacy of the research findings. Validation of research findings could be accomplished by reproducing the original experiment or analyses; comparing and contrasting the results against those of a new experiment or analyses; or by some other means.

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