

DEPARTMENT OF ENERGY (DOE)
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY (EERE)
HYDROGEN AND FUEL CELL TECHNOLOGIES RESEARCH,
DEVELOPMENT, AND DEMONSTRATIONS
AREA OF INTEREST 4: ANALYSIS

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- 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 cancellation of further award negotiations and rescission of the Selection.

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I. FUNDING OPPORTUNITY DESCRIPTION

A. DESCRIPTION/BACKGROUND

The Fuel Cell Technologies Office (FCTO) is a key component of the Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) portfolio. Fuel cells powered by hydrogen from renewable or low-carbon resources can lead to substantial energy savings and reductions in imported petroleum and carbon emissions. The FCTO aims to provide clean, safe, secure, affordable, and reliable energy from diverse domestic resources, providing the benefits of increased energy security and reduced criteria pollutants and green-house gas emissions (GHG) by adopting a technology-neutral approach toward research, development and demonstration (RD&D) to address both key technical challenges for fuel cells and hydrogen fuels (i.e. hydrogen production, delivery and storage) and institutional barriers such as hydrogen codes and standards.

The DOE's goals for hydrogen and fuel cells are driven by the following legislation:

- Energy Policy Act of 2005 (EPAcT 2005) Public Law 109-58, Section 801 et seq.
- Energy Independence and Security Act (EISA) of 2007 (Public Law 110-140)

Section 805, Activities, of EPAcT 2005 states:

The Secretary of Energy, in partnership with the private sector, shall conduct programs to address -

6) Development of safe, durable, affordable, and efficient fuel cells, including fuel-flexible fuel cell power systems, improved manufacturing processes, high-temperature membranes, cost-effective fuel processing for natural gas, fuel cell stack and system reliability, low temperature operation, and cold start capability;

Section 805, Program Goals, of EPAcT states:

3) FUEL CELLS — The goals for fuel cells and their portable, stationary, and transportation applications are to enable —

- A) safe, economical, and environmentally sound hydrogen fuel cells;
- B) fuel cells for light duty and other vehicles; and
- C) other technologies consistent with the Department's plan.

The central mission of FCTO is to enable the widespread commercialization of a portfolio of hydrogen and fuel cell technologies through applied research, technology development and demonstration, and diverse efforts to overcome institutional and market challenges. Fuel cells can address our critical energy challenges in all sectors - commercial, residential, industrial, and transportation. They can use diverse fuels, including biomass-based fuels, natural gas, and hydrogen produced from renewable resources. Fuel cells can be used in a wide range of applications, including near-term markets such as distributed primary and backup power, lift trucks, and portable power; mid-term markets such as residential combined-heat-and-power

(CHP) systems, auxiliary power units, and fleet vehicles; and longer-term markets such as wide-scale commercialization of light-duty passenger vehicles.

This Funding Opportunity Announcement (FOA) will provide funding up to \$35M in to meet FCTO's goals for Hydrogen Production and Delivery, Hydrogen Storage, Fuel Cell Technologies, Technology Validation, Manufacturing, and Analysis Programs.

This FOA supports two FCTO general objectives:

- (1) To address Research and Development (R&D) technology gaps, drive down cost and improve the performance of fuel cell and hydrogen fuel systems and technologies. This objective will be accomplished by supporting R&D projects focusing on advanced high-temperature water splitting (HTWS) for hydrogen production, advanced compression technologies for delivery infrastructure, and advanced insulation for cryogenic fuel storage for automotive applications. Further, this FOA will support the National Laboratory Consortia Strategy being launched by FCTO. The FOA will support projects that will work with Lab Consortia already established in the areas of fuel cell performance and durability, and advanced hydrogen storage materials. Further efforts in the areas of cost and performance analysis for Fuel Cells, Hydrogen Storage and Hydrogen Production and Delivery will be supported also. More detailed descriptions of the FCTO Program, including technical and cost targets, can be found in the Multi-Year Research, Development and Demonstration Plan (MYRD&D) at <http://www1.eere.energy.gov/hydrogenandfuelcells/mypp/>.

To encourage early adoption of hydrogen and fuel cell technologies through development, demonstration, and deployment of hydrogen delivery infrastructure and fuel cell electric vehicle (FCEV) technologies. To support this objective the FOA will develop and demonstrate hydrogen infrastructure technologies through component manufacturing. To further encourage early adoption of hydrogen and fuel cell technologies, the FOA will recognize America's Climate Action Champions that are implementing hydrogen and fuel cell technologies.

B. TECHNICAL AREA OF INTEREST

Area of Interest 4: Cost and Performance Analysis for Fuel Cells, Hydrogen Storage and Hydrogen Production and Delivery

Area of Interest 4 (AOI 4) of this FOA is focused on cost and performance analyses for fuel cells, hydrogen storage, and hydrogen production and delivery using state-of-the-art technology developments.

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

AOI 4, Topic 1: Fuel Cell Systems Analysis

Applications are sought for fuel cell system analyses for transportation applications to determine the cost of baseline on-road (in commercial production) and advanced (technology

in the lab) fuel cell systems for various sizes, applications, and manufacturing volumes that are optimized for lifecycle cost. A ground-up cost projection will be based on conceptual designs and related costs of fuel cell system and component manufacturing equipment and processes.

To ensure economic success, transportation fuel cell power systems for applications such as light-duty vehicles, and medium and heavy-duty trucks and buses, must be competitive in terms of performance and cost compared to internal combustion engines. For a technology like the fuel cell, which is not yet in the marketplace in large numbers, a credible and referenceable manufacturing cost estimate is required to accurately gauge the status and the potential of the technology through a bottom-up assessment of the projected future costs (2020 and 2025) that are based on scenarios with the potential to meet the DOE goals. Generating a rigorous cost estimate requires a thorough understanding of current polymer electrolyte membrane (PEM) fuel cell technology, as well as a rigorous design and evaluation methodology, that when applied to the technology will yield optimized (on a lifecycle cost basis) components and manufacturing processes.

The applicant's work scope should include a detailed annual reference report on the cost of transportation fuel cell systems including fuel cell systems for light-duty vehicles, and medium and heavy-duty trucks and buses. The report must document the cost of transportation technologies, reflecting technological advances made to date, and provide a calculated cost per kilowatt of the baseline fuel cell system that could be built with present technology at several application-relevant production rates; for example, at 1,000; 10,000; 30,000; 50,000; 100,000; and 500,000 units/year for light-duty vehicle applications. The analysis will also include an examination of the capital equipment specified in the annual system cost analysis, clarifying which equipment uses existing manufacturing technologies and which equipment costs are higher-risk, conceptually-designed manufacturing methods. The risk of each proposed manufacturing process should be assessed to identify processes that may benefit from further R&D as a method of risk reduction. Manufacturing quality control measures necessary to ensure the high yields and low cost at high annual production rates assumed in the cost analysis should be thoroughly examined and included in the report. As a reference, prior cost analyses may be found under transportation at: <http://energy.gov/eere/fuelcells/fuel-cell-technical-publications>.

It is expected that the cost analyses will include, but not be limited to, literature and patent reviews, component design evaluation with relevant third-parties to ensure sufficient detail to allow accurate definition of bill of materials and the associated costing, detailed manufacturing/assembly process definition, manufacturing equipment design and detailed Design-for-Manufacturing-and-Assembly (DFMA) cost analysis. The recipient will be expected to obtain relevant technical information from the third-party technology developers. The recipient is also expected to work with equipment vendors to obtain necessary equipment manufacturing cost data to be used in the overall system cost analyses. The analyses will include review of the status of selected fuel cell technologies as directed by DOE's Fuel Cell Systems R&D Program.

An initial cost model validation by the recipient may be required. The validation will be done by defining a baseline cost based largely on data from a current, representative, industry accepted

hydrogen fuel cell system which will be selected and approved by DOE's Fuel Cell Systems R&D Program. At the conclusion of this task, a report must be generated documenting the results of the analyses including sensitivity analyses along with standard tornado charts to demonstrate critical correlation cost drivers.

The deliverables will include manufacturing cost estimates and analysis for complete fuel cell systems. The recipient will provide DOE with comprehensive reports which will be made available to the public for each of the fuel cell systems analyzed, and at a minimum will include the following:

1. Baseline assessments of the current on-road and advanced fuel cell system layout and technology for light, medium and heavy-duty vehicles. Validation of cost model based on data from current industry accepted representative fuel cell system designs.
2. System definition and bill of materials.
3. Manufacturing process definition and DFMA cost estimation.
4. Single variable sensitivity analyses (with tornado charts) and the associated range of uncertainties used as well as rationale for the selected ranges. Multi-variable Monte Carlo analysis to establish a cost range.
5. Annual updates of baseline on-road fuel cell systems and advanced fuel cell systems.
6. Cost assessment projections for varying volumes and advanced systems.
7. Mathematical functions for scaling component cost as a function of component design specifications (e.g. stack cost as a function of voltage and current density at rated power, or air blower cost as a function of pressure and flow rate). The arguments to these functions will be specified in consultation with the system performance modelers specified by DOE and will be used by them to optimize system designs for lowest lifecycle cost.
8. Documentation of the results, assumptions, and key input parameters and associated data.
9. Assist DOE in drafting annual cost record by June every year
(http://www.hydrogen.energy.gov/pdfs/14014_fuel_cell_system_cost_2014.pdf).

The recipient's project will be subject to evaluation by system developers, independent peer review, and the DOE Annual Peer Review and Merit Evaluation process. Results of the evaluation will be used to determine whether the project will continue through the following years.

AOI 4, Topic 2: Hydrogen Storage Analysis

To ensure economic success, a hydrogen storage system for fuel cell applications must be competitive with alternative technology options in terms of performance and cost. For a technology such as hydrogen storage that has not attained appreciable market share, a credible

and referenceable factory cost estimate is required to gauge the status and potential of the technology for a given application.

Applications are sought for techno-economic and life-cycle assessment analyses of advanced hydrogen storage technologies. The techno-economic analyses should include a “bottom-up” assessment of the projected future costs (2020 and beyond), at low through high-volume manufacturing of hydrogen storage systems with comparisons to DOE cost targets and identification of primary contributors in need of further development for cost reduction. Hydrogen storage systems to be considered include onboard transportation (e.g. light duty vehicles, medium duty vehicles and buses) and early market fuel cell applications such as portable, and material handling (e.g., forklifts). The analyses may need to include developing manufacturing costs for innovative system components, such as alternative fibers, advanced fiber composites, and novel hydrogen storage materials and systems. The hydrogen storage systems will be based primarily on system process designs and specifications from a third-party. The system specifications and designs will be based on referenceable system models. The cost analysis will also consider and include material disposal requirements, as well as validation of spent fuel regeneration and first fill fuel costs.

Generating a rigorous cost estimate requires a thorough understanding of current hydrogen storage technologies for on-board vehicular application (e.g., 350 bar, 700 bar, liquid hydrogen, cryo-compressed storage, adsorbent material, low-temperature metal hydride, complex metal hydride, and chemical hydrogen storage materials), early market fuel cell applications, balance-of-plant (BOP) component requirements and the associated manufacturing processes. These system cost analyses should be based on hydrogen storage system measurements that have been previously verified, and the impact of the variation of hydrogen storage performance on cost should be analyzed, quantified, and documented.

It is expected that the cost analyses will include, but not be limited to, literature and patent reviews, component design evaluation with relevant third-parties to ensure sufficient detail to allow accurate definition of bill of materials and the associated costing, detailed manufacturing/assembly process train definition, manufacturing equipment design and detailed Design-for-Manufacturing-and-Assembly (DFMA) cost analysis. The recipient will be expected to work with DOE FCTO’s Hydrogen Storage Program to obtain relevant technical information from the third-party technology developers. The recipient is also expected to work with equipment vendors to obtain necessary equipment manufacturing cost data to be used in the overall system cost analyses. The analyses will include review of the status of selected hydrogen storage technologies as directed by DOE’s Hydrogen Storage Program. The review will include the status of storage materials properties and characterization, system level designs, and safety analyses/testing, etc. of the hydrogen storage options and include schematics identifying the need for all subsystems and BOP requirements for practical operation. The DOE may request the analyses to include the development of baseline factory cost models of systems that are applicable to various hydrogen storage technologies including both physical and materials-based hydrogen storage technologies. As directed by the DOE Hydrogen Storage Program, these systems may include compressed gas (i.e., 350 bar and 700 bar), liquid hydrogen, cold/cryo-compressed gas, and materials-based (e.g., sorbents, conventional metal hydrides, complex hydrides and chemical hydrogen storage materials)

technologies. These models will be the basis for determining costs associated with materials, BOP and manufacturing processes. When necessary, evaluation of the end-of-life disposal/recycling process and associated costs, as well as validation of spent fuel regeneration and first fill fuel cost will also need to be included in the analyses.

An initial cost model validation by the recipient may be required. The validation will be done by defining a baseline cost based largely on data from a current industry accepted hydrogen storage system which will be selected and approved by DOE's Hydrogen Storage Program. At the conclusion of this task, a report must be generated documenting the results of the analyses including sensitivity analyses along with standard tornado charts to demonstrate critical correlation cost drivers.

The deliverables will include manufacturing cost estimates and analysis for complete hydrogen storage systems. The recipient will provide the DOE with comprehensive reports which will be made available to the public for each of the hydrogen storage systems analyzed, and at a minimum will include the following:

1. Cost estimates, assumptions, key input parameters and associated data, the sensitivity/uncertainty analyses and the associated range of uncertainties used as well as rationale for the selected ranges, and updates of hydrogen storage systems as directed by DOE (with power point slides and written reports when requested) for varying volumes and out years.
2. Validation of cost model based on data from current industry accepted hydrogen storage system.
3. Final report documenting the results, assumptions, and key input parameters and associated data of the analyses including sensitivity analyses along with standard tornado charts to demonstrate critical correlation cost drivers.

The recipient's project will be subject to evaluation by system developers, independent peer review, and the DOE Annual Peer Review and Merit Evaluation process. Results of the evaluation will be used to determine whether the project will continue through the following years.

AOI 4, Topic 3: Hydrogen Production and Delivery Analysis

System-level analyses of hydrogen production and delivery technologies are needed to support selection of portfolio priorities through evaluations of technical progress and hydrogen cost status, as well as projections of technology timelines and benefits, and evaluation of the potential of production and delivery pathways to meet the FCTO goal of < \$4/kg H₂ produced, delivered and dispensed by 2020. This effort will include annual cost analyses of key remaining challenges for technology pathways within the Hydrogen Production and Delivery (P&D) Program portfolio.

Analysis efforts related to hydrogen production pathways will primarily use the most recent version of Hydrogen Analysis (currently version 3.1) (H2A Production v3.1) model¹ to evaluate technology-specific hydrogen production cost status as a function of production volume, including uncertainty analyses illustrated with error bars; and to identify potential cost reductions based on sensitivity analyses, specifically to quantify the improvements possible through technology advancements. Under the direction of FCTO, hydrogen production pathway analysis and case studies will be developed and published for technology-specific distributed and central pathways that include, but are not limited to: thermal and/or fermentative reforming of biomass-derived renewable feedstocks; advanced electrochemical water splitting; and solar thermo-chemical and photoelectrochemical water splitting. Updates to previously-published H2A case studies, which are publicly available², may also be needed, as per FCTO directive. Current cost status and targets for several distributed and central production pathways are provided below in Table 1 of Award Information section.

Analysis efforts related to hydrogen delivery will primarily use the most recent version of H2A Current Delivery Scenario Analysis Model (HDSAM) (currently Version 3.0)³ to evaluate different delivery scenarios using an engineering economics approach to cost estimation. Delivery scenarios of interest include but are not limited to pipe line delivery and pathways that utilize tube trailer terminals. Deep dive analyses in these less researched hydrogen delivery scenarios are required to provide a better understanding and optimization of these scenarios to determine the potential to meet the delivery cost goal of < \$2/kg H₂. Delivery scenarios encompass transport, storage, and conditioning (e.g., compression, liquefaction, or for hydrogen carriers, hydrogenation/reprocessing of spent material) from the outlet of a centralized hydrogen-production facility to and including a refueling station that compresses, stores, and dispenses the hydrogen. Hydrogen delivery could also include compression, storage, and dispensing of hydrogen produced on-site at a forecourt (e.g., distributed production). An understanding of these technologies should be demonstrated by the applicant as they will need to be considered and evaluated in the analyses.

An initial cost model validation by the recipient will be required. The validation will be done by defining a baseline cost based largely on data from a current industry accepted hydrogen production pathway which will be selected and approved by DOE.

For all FCTO-directed hydrogen production and delivery analytical work, the recipient will be responsible for vetting all user-input values used in the analyses for clearly and precisely presenting the results and sensitivity analyses of the technologies/pathways/scenarios analyzed. The recipient's project will be subject to evaluation by system developers,

¹ H2A is a discounted cash-flow model providing transparent reporting of process design assumptions and a consistent cost analysis methodology for hydrogen production at central and forecourt facilities. H2A addresses cost scenarios where sufficiently high annual and cumulative volumes have been reached so that economies of scale for capital and unit costs have been achieved. Additional information can be found at: <http://www.hydrogen.energy.gov/h2a.html>.

² The H2A Production Case Studies can be found at: http://www.hydrogen.energy.gov/h2a_production

³ The HDSAM analysis tool can be found at: http://www.hydrogen.energy.gov/h2a_delivery.html

independent peer review, and the DOE Annual Peer Review and Merit Evaluation process. Results of the peer review/ merit evaluation will be factored into the determination of project continuation through following years. The recipient will also be required to present results as needed to DOE and USDRIVE⁴ technology teams e.g., the Hydrogen Production Technology Team (HPTT) or the Hydrogen Delivery Tech Team (HDTT). Project deliverables will include:

1. Cost estimates and analyses, and their updates of hydrogen technology pathways as directed by DOE (with power point slides and written reports when requested including Quarterly Research Performance Project Reports and other deliverables that will be defined upon award in the Federal Assistance Reporting Checklist) for distributed and central hydrogen production and delivery technologies/pathways.
2. Validation of cost model based on data from current industry accepted hydrogen production and delivery technologies and processes.
3. Final report documenting the results of the analyses including sensitivity analyses along with standard tornado charts to demonstrate critical correlation cost drivers.

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 EPACT 2005, Title VIII – Hydrogen, Public Law 109-58 (Aug. 8, 2005).

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

⁴ Information on USDRIVE can be found at <http://www.uscar.org/guest/partnership/1/us-drive>

II. AWARD INFORMATION

A. AWARD OVERVIEW

1. ESTIMATED FUNDING

EERE expects to make approximately \$4.5 million of Federal funding available for new awards under AOI 4, subject to the availability of appropriated funds. EERE anticipates making approximately 3 awards under this AOI. EERE may issue one, multiple, or no awards.

Individual awards may vary between \$1 and \$1.5 million.

EERE may issue awards in one, multiple, or none of the topic areas addressed in Table 1 below:

Table 1: Anticipated Funding and Award Details

| Topic Area | Anticipate d Number of Awards | Max. Federal Funding per Award | Maximum Project Duration (years) | Minimum Required non- Federal Cost Share % |
|---|-------------------------------------|--|---|---|
| Topic 1: Fuel Cell Systems Analysis | 1 | \$1,500,000 | 5 | 0% |
| Topic 2: Hydrogen Storage Analysis | 1 | \$1,500,000 | 5 | 0% |
| Topic 3: Hydrogen Production and Delivery Analysis | 1 | \$1,500,000 | 5 | 0% |

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.

2. PERIOD OF PERFORMANCE

EERE anticipates making awards that will run up to 60 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. Only those projects demonstrating a high probability of successfully meeting the project goals and objectives will be continued.

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) are eligible to apply for funding as a Prime Recipient or Subrecipient.

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. However, see section IV. C. parts 12 and 13 on performance of work in the United States and Manufacturing Plans.

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

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

Note: Cost sharing is not required under AOI 4 of this FOA.

C. COMPLIANCE CRITERIA

Full Applications must meet all Compliance criteria listed below or they will be considered noncompliant. EERE will not review or consider noncompliant submissions, including 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. Full Applications

Full Applications are deemed compliant if:

- 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.

ii. 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 FEDERALLY FUNDED RESEARCH AND DEVELOPMENT CENTERS (FFRDC) LISTED AS THE APPLICANT

A DOE/NNSA FFRDC is eligible to apply for funding under this FOA if its cognizant Contracting Officer provides written authorization and this authorization is submitted with the application. If a DOE/NNSA FFRDC is selected for award negotiation, the proposed work will be authorized under the DOE work authorization process and performed under the laboratory's Management and Operating (M&O) contract.

The following wording is acceptable for the 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.

2. 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

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 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.
- 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 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 Full Application or Reply to Reviewer Comments. Once the 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 Full Application or Reply to Reviewer Comments before the applicable deadline.

EERE urges applicants to carefully review their 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). 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 their application by the deadline, the applicant should contact the Exchange helpdesk for assistance (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 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.

All Full Application documents must be marked with the Control Number issued to the applicant.

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 |
|--|--|--|
| Full Application (PDF, unless stated otherwise) | Technical Volume (See Chart in Section IV.D.2) | ControlNumber_LeadOrganization_TechnicalVolume |
| | Statement of Project Objectives (Microsoft Word format) (5 page limit) | ControlNumber_LeadOrganization_SOPO |
| | 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_Subawardee_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 |

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.

The Technical Volume to the Full Application may not be more than 10 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 |
|--|---|
| Cover Page | The cover page should include the project title, the specific FOA AOI and Topic Area being addressed (if applicable), both the technical and business points of contact, names of all team member organizations, and any statements regarding confidentiality. |
| Project Overview (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"> • Background: 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. • Project Goal: The applicant should explicitly identify the targeted improvements to the baseline technology and the critical success factors in achieving that goal. • DOE Impact: The applicant should discuss the impact that DOE funding would have on the proposed project. Applicants should specifically explain how DOE funding, relative to prior, current, or anticipated funding from other public and private sources, is necessary to achieve the project objectives. |

| | |
|--|---|
| <p>Technical Description, Innovation, and Impact (This section should constitute approximately 40% of the Technical Volume)</p> | <p>The Technical Description should contain the following information:</p> <ul style="list-style-type: none"> • Relevance and Outcomes: 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. • Feasibility: 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. • Innovation and Impacts: 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. |
| <p>Workplan (This section should constitute approximately 35% 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"> • Project Objectives: The applicant should provide a clear and concise (high-level) statement of the goals and objectives of the project as well as the expected outcomes. • Technical Scope Summary: 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. • Work Breakdown Structure (WBS) and Task Description Summary: The Workplan should describe the work to be accomplished and how the applicant will achieve the milestones, will accomplish the final project goal(s), and will produce all deliverables. The Workplan is to be structured with a hierarchy of performance period (approximately annual), task and subtasks, which is typical of a standard 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. |

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| | <ul style="list-style-type: none"> • Milestone Summary: 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 Specific, Measurable, Achievable, Relevant, and Timely. 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. • Go/No-Go Decision Points: 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 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. • Project Schedule (Gantt Chart or similar): The applicant should provide a schedule for the entire project, including task and subtask durations, milestones, and go/no-go decision points. • Project Management: The applicant should discuss the team's proposed management plan, including the following: <ul style="list-style-type: none"> ○ The overall approach to and organization for managing the work ○ The roles of each Project Team member ○ Any critical handoffs/interdependencies among Project Team members ○ The technical and management aspects of the management plan, including systems and practices, such as financial and project management practices ○ The approach to project risk management ○ A description of how project changes will be handled ○ If applicable, the approach to Quality Assurance/Control ○ How communications will be maintained among Project Team members |
| Technical Qualifications and Resources (Approximately 15% of the Technical Volume) | <p>The Technical Qualifications and Resources should contain the following information:</p> <ul style="list-style-type: none"> • Describe the Project Team's unique qualifications and expertise, including those of key Subrecipients. |

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| | <ul style="list-style-type: none"> • 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. • This section should also include relevant, previous work efforts, demonstrated innovations, and how these enable the applicant to achieve the project objectives. • Describe the time commitment of the key team members to support the project. • 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. • Describe the technical services to be provided by DOE/NNSA FFRDCs, if applicable. • 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. • 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. • For multi-organizational or multi-investigator projects, describe succinctly: <ul style="list-style-type: none"> ○ The roles and the work to be performed by each PI and Key Participant; ○ Business agreements between the applicant and each PI and Key Participant; ○ How the various efforts will be integrated and managed; ○ Process for making decisions on scientific/technical direction; ○ Publication arrangements; ○ Intellectual Property issues; and ○ Communication plans |
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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 5 pages when printed using standard 8.5 x 11 paper with 1” margins (top, bottom, left, and right) with font not smaller than 12 point. 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 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:

Questions about this FOA? Email fy16fctoofficewidefoa@EE.Doe.Gov.
Problems with EERE Exchange? Email EERE- EERE-ExchangeSupport@hq.doe.gov Include FOA name and number in subject line.

- 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

EERE requires subject inventions (i.e., inventions conceived or first actually reduced to practice under EERE awards) to be substantially manufactured in the United States by Project Teams and their licensees, as described below. The applicant may request a modification or waiver of the U.S. Manufacturing Requirement.

i. Domestic Small Businesses, Educational Institutions and Nonprofits

Domestic Small businesses (including Small Business concerns), domestic educational institutions, and nonprofits that are Recipients or Subrecipients under EERE funding agreements must require their exclusive licensees to substantially manufacture the following products in the United States for any use or sale in the United States: (1) articles embodying

subject inventions, and (2) articles produced through the use of subject inventions. This requirement does not apply to articles that are manufactured for use or sale overseas.

Domestic small businesses, domestic educational institutions and nonprofits must require their assignees to apply the same U.S. Manufacturing requirements to their exclusive licensees.

These U.S. Manufacturing requirements do not apply to nonexclusive licensees.

ii. Large Businesses, Foreign Entities, and State and Local Government Entities

Large businesses and foreign entities that are Recipients or Subrecipients under EERE funding agreements that take title to subject inventions through a patent waiver are required to substantially manufacture the following products in the United States: (1) products embodying subject inventions, and (2) products produced through the use of subject invention(s). This requirement applies to products that are manufactured for use or sale in the United States or overseas.

Large businesses and foreign entities must apply the same U.S. Manufacturing requirements to their assignees, licensees, and entities acquiring a controlling interest in the large business or foreign entity. Large businesses and foreign entities must require their assignees and entities acquiring a controlling interest in the large business or foreign entity to apply the same U.S. Manufacturing requirements to their licensees.

iii. FFRDCs

DOE FFRDCs are subject to the U.S. Manufacturing requirements set forth in their Management and Operating Contracts. All other FFRDCs are subject to the U.S. Manufacturing requirements as set forth above, based on their size and for-profit status.

D. 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 |
|-------------|-------------|---|
| Text | 3 pages max | Applicants may respond to one or more reviewer comments or supplement their Full Application. |

E. 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

F. 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 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.

G. SUBMISSION DATES AND TIMES

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.

H. INTERGOVERNMENTAL REVIEW

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

I. 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 A 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

If international travel is proposed for your project, please note that your organization must comply with the International Air Transportation Fair Competitive Practices Act of 1974 (49 USC 40118), commonly referred to as the "Fly America Act," and implementing regulations at 41 CFR 301-10.131 through 301-10.143. The law and regulations require air transport of people or property to, from, between, or within a country other than the United States, the cost of which is supported under this award, to be performed by or under a cost-sharing arrangement with a U.S. flag carrier, if service is available.

6. EQUIPMENT AND SUPPLIES

To the greatest extent practicable, all equipment and supplies 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. FULL APPLICATIONS

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

Criterion 1: Technical Merit, Innovation, and Impact (50%)

Technical Merit and Innovation

- The relevance of the proposed concept to the technical objectives of the FOA;
- The technical soundness of the proposed analysis plan, including evidence of recent detailed written results and/or experience with performing cost analyses;
- The applicant should show a clear understanding of the principles of the technologies to be analyzed;

- The potential of the proposed cost analyses to provide valuable feedback that guides the R&D efforts of the relevant FCTO Program it will be supporting, as well as a measurement of overall technical progress of the Program; and
- The adequacy of quality control and validation methods to track and ensure that assumptions are well-founded, and to ensure all scenarios are addressed with sufficient effort.

Criterion 2: Project Research and Work Plan (35%)

Research Approach, Workplan and SOPO

- 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 and SOPO 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 the quality of the mitigation strategies to address them.

Criterion 3: Team and Resources (15%)

- The capability of the Principal Investigator(s) and the proposed team to address all aspects of the proposed work with a high probability of success. The qualifications, relevant expertise, and time commitment of the individuals on the team;
- The sufficiency of the facilities to support the work;
- The adequacy of the proposed project organizations to facilitate project success, including the approach for managing the team and ensuring communication among team members;
- The adequacy and appropriateness of the roles and responsibilities of the team members; The level of participation by project participants as evidenced by letter(s) of commitment and how well they are integrated into the Workplan; and
- The reasonableness of the budget and spend plan for the proposed project and objectives.

2. 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; 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 Champions⁵ 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

⁵ 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>

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.

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 May 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. 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.

3. 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.

4. 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.

5. 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 https://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 Full Applications will not be accepted through Grants.gov.

vi. Electronic Authorization of Applications and Award Documents

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

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.

10. 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.

11. 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>.

12. 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.

13. 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.

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.

14. 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: fy16fctoofficewidefoa@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.

VIII. OTHER INFORMATION

A. FOA MODIFICATIONS

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

B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE

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.

C. COMMITMENT OF PUBLIC FUNDS

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

D. TREATMENT OF APPLICATION INFORMATION

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.

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.

E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL

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.

F. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES

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

G. NOTICE OF RIGHT TO CONDUCT A REVIEW OF FINANCIAL CAPABILITY

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).

H. 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.

I. 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.

J. RETENTION OF SUBMISSIONS

EERE expects to retain copies of all 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.

K. 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.

L. 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.

M. RIGHTS IN TECHNICAL DATA

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

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

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

N. 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.

O. 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)

P. 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 – 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

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.