

**FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT**



**U.S. Department of Energy
Energy Efficiency and Renewable Energy
Golden Field Office**

Plug and Play Photovoltaics

Funding Opportunity Announcement Number: DE-FOA-0000653

Announcement Type: Amendment Number 002

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Letter of Intent Due Date: 05/16/2012, 5:00 PM Eastern Time

Application Due Date: 06/18/2012, 5:00 PM Eastern Time



Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

DE-FOA-0000653
Amendment No. 002

DATE: June 15, 2012
FROM: Jeannette Singsen, Contracting Officer
TO: All Prospective Applicants

SUBJECT: Amendment No. 002 to Announcement DE-FOA-0000653,
"Plug and Play Photovoltaics"

- I. The purpose of this amendment is to add the following language to Section III.A, "Eligible Applicants":

DOE has determined that it is necessary to limit eligibility under this FOA to domestic entities in order to meet the objectives of DOE's Mission, the SunShot Mission and the particular needs and objectives of this FOA.

- II. The areas which have changed are highlighted within the Funding Opportunity Announcement in yellow.

- III. All other parts of the FOA remain unchanged.



Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

DE-FOA-0000653
Amendment No. 001

DATE: May 23, 2012
FROM: Jeannette Singsen, Contracting Officer
TO: All Prospective Applicants

SUBJECT: Amendment No. 001 to Announcement DE-FOA-0000653,
"Plug and Play Photovoltaics"

I. The purposes of this amendment are to:

A) Replace Section III.A, "Eligible Applicants" with the following language:

The following domestic entities are eligible to apply as prime recipients or sub-recipients for this announcement: (1) institutions of higher education; (2) nonprofit and for-profit entities; (3) State and local governments; (4) DOE/NNSA National Laboratory Contractors and non-DOE Federally Funded Research and Development Center (FFRDC) Contractors, and (5) consortia of entities (1) through (4). Foreign entities, Federal agencies, and 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 either as a prime or sub-recipient. The term "domestic entity" is defined as a legal entity established pursuant to the United States Federal or State laws.

B) Insert the following requirement as Item 11 of Section IV.C, "Content and Form of Applications":

Applicants must provide a Word or PDF document describing the extent of the prime recipient and any sub-recipient/project partner's current operations within the U.S. (e.g. number of locations, type of facilities, number of employees at each location, etc.), and how the project approach would benefit the U.S. solar energy industry. This document shall not exceed 2 pages when printed using standard 8.5" by 11" paper with 1 inch margins (top, bottom, left and right), single spaced. The font must not be smaller than 11 point. Do not include any Internet addresses (URLs) that provide information necessary to review the application.

C) Insert the following language in Section V.A.3, "Other Selection Factors":

Potential benefit to the U.S. solar energy industry (e.g. current and anticipated use or enhancement of U.S. domestic solar supply chain, current and anticipated use or

enhancement of U.S. domestic solar energy technologies, or commitments to base component production/supply facilities in the U.S.).

D) Insert the following definitions in Appendix A, “Definitions”:

- 1) “Domestic Entity” is defined as a legal entity established pursuant to the United States Federal or State Laws; and
- 2) “Foreign Entity” is defined as any entity that is not a domestic entity.

II. The areas which have changed are highlighted within the Funding Opportunity Announcement in yellow.

III. All other parts of the FOA remain unchanged.

REGISTRATION REQUIREMENTS

There are several one-time actions before submitting an Application in response to this Funding Opportunity Announcement (FOA), as follows:

- 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.
- The applicant will receive an Automatic response when the Application is received. This will serve as a confirmation of receipt. Please do not reply to the Automatic response. The applicant will have the opportunity to re-submit a revised Application for any reason as long as the relevant submission is submitted by the specified deadline. The Users' Guide for Applying to the Department of Energy EERE Funding Opportunity Announcements is found at <https://eere-exchange.energy.gov/Manuals.aspx>.
- The EERE Exchange registration does not have a delay; however, the remaining **registration requirements below could take several weeks to process and are necessary in order for a potential applicant to receive an award under this announcement**. Therefore, although not required in order to submit an Application through the EERE Exchange site, **all potential applicants lacking a DUNS number, or not yet registered with CCR or FedConnect should complete those registrations as soon as possible**.
- Questions related to the registration process and use of the EERE Exchange website should be submitted to: EERE-ExchangeSupport@hq.doe.gov.
- Obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number (including the plus 4 extension, if applicable) at <http://fedgov.dnb.com/webform>.
- Register with the Central Contractor Registry (CCR) at <https://www.ccr.gov/>. Designating an Electronic Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in CCR registration. Please update your CCR registration annually.
- Register in FedConnect at <https://www.fedconnect.net/>. To create an organization account, your organization's CCR MPIN is required. For more information about the CCR MPIN or other registration requirements, review the FedConnect Ready, Set, Go! Guide at https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf.
- Register in Grants.gov to receive automatic updates when Amendments to this FOA are posted. However, please note that applications will not be accepted through Grants.gov. <http://www.grants.gov/>.

Table of Contents

<u>Number</u>	<u>Subject</u>	<u>Page</u>
	SECTION I – FUNDING OPPORTUNITY DESCRIPTION	7
	SECTION II – AWARD INFORMATION	14
A.	Type of Award Instrument.....	14
B.	Estimated Funding	14
C.	Maximum and Minimum Award Size.....	14
D.	Expected Number of Awards	14
E.	Period of Performance.....	14
F.	Type of Application	14
	SECTION III - ELIGIBILITY INFORMATION	15
A.	Eligible Applicants	15
B.	Cost Sharing.....	15
C.	Other Eligibility Requirements.....	15
	SECTION IV – APPLICATION AND SUBMISSION INFORMATION.....	17
A.	Address to Request Application Forms.....	17
B.	Letters of Intent Requested	17
C.	Content and Form of Application	17
D.	Submissions from Successful Applicants.....	22
E.	Submission Dates and Times	23
F.	Intergovernmental Review	23
G.	Funding Restrictions	23
H.	Submission and Registration Requirements	23
	SECTION V - APPLICATION REVIEW INFORMATION	26
A.	Criteria.....	26
B.	Review and Selection Process.....	27
C.	Anticipated Notice of Selection and Award Dates.....	28
	SECTION VI - AWARD ADMINISTRATION INFORMATION	29
A.	Notice of Selection	29
B.	Administrative and National Policy Requirements.....	29
C.	Reporting	31
	SECTION VII - QUESTIONS	32
A.	Questions.....	32
	SECTION VIII - OTHER INFORMATION.....	33
A.	Amendments	33
B.	Government Right to Reject or Negotiate.....	33
C.	Commitment of Public Funds	33
D.	Proprietary Application Information.....	33
E.	Evaluation and Administration by Non-Federal Personnel	34
F.	Intellectual Property Developed under this Program	34
G.	Notice of Right to Request Patent Waiver	34
H.	Notice Regarding Eligible/Ineligible Activities.....	35
I.	Notice of Right to Conduct a Review of Financial Capability.....	35
J.	Notice of Potential Disclosure under Freedom of Information Act.....	35
	Appendix A – Definitions	36
	Appendix B – Personally Identifiable Information.....	39
	Appendix C – Cost Share Information	41
	Appendix D – Statement of Project Objectives Template.....	46

SECTION I – FUNDING OPPORTUNITY DESCRIPTION

A. Description

OBJECTIVE

The objective of this Department of Energy (DOE) Funding Opportunity Announcement (FOA) is to develop transformational solar technologies and systems utilizing a Plug and Play concept with a focus in the residential photovoltaic (PV) market. DOE is launching this FOA to challenge the broad Solar Research and Development (R&D) community to come up with radically new designs and frameworks for the next generation of solar panels and photon-to-electron conversion technologies. One scenario may be a university-led program [similar to the National Science Foundation's (NSF) Engineering Research Centers (ERC)] with strong participation from industry, utilities, local authorities having jurisdiction and national laboratories. Projects funded under this FOA will take a fresh look at the relationships, as a whole, between the electricity consumers, utilities, and distributed PV generation. These projects will explore new technology pathways that reduce the so-called soft costs of the Balance of System (including permitting, inspection, and grid interconnection), ease of installation, and enhancement to performance, reliability, flexibility, and safety of the PV system. In addition, projects funded under this FOA will test and validate the feasibility of these technologies in the field.

BACKGROUND

DOE's SunShot Initiative targets \$1.50/watt installed photovoltaic (PV) systems by 2020 for residential systems – equivalent to 6-8¢/kWh¹. At this price point, solar will compete with conventional electricity generation nearly everywhere in the U.S. without additional subsidies. Balance of System (BOS) costs, however, pose a significant obstacle to the attainment of SunShot targets. In the residential PV markets, BOS costs such as racking, permitting, inspection, interconnection, overhead, profit, and sales tax are more than 50% of installed system costs² (see Figure 1). These costs involve multiple stakeholders and vary substantially across project types and geographies. The SunRun report states that local permitting and inspection add, on average, \$0.50 per watt, or up to \$2,516 per residential install³.

¹ SunShot Vision Study, http://www1.eere.energy.gov/solar/sunshot/vision_study.html, February 2012

² SunShot Vision Study, costs excluding customer acquisition and financing.

³ SunRun report, [“The impact of local permitting on the cost of solar power”](#), January 2011

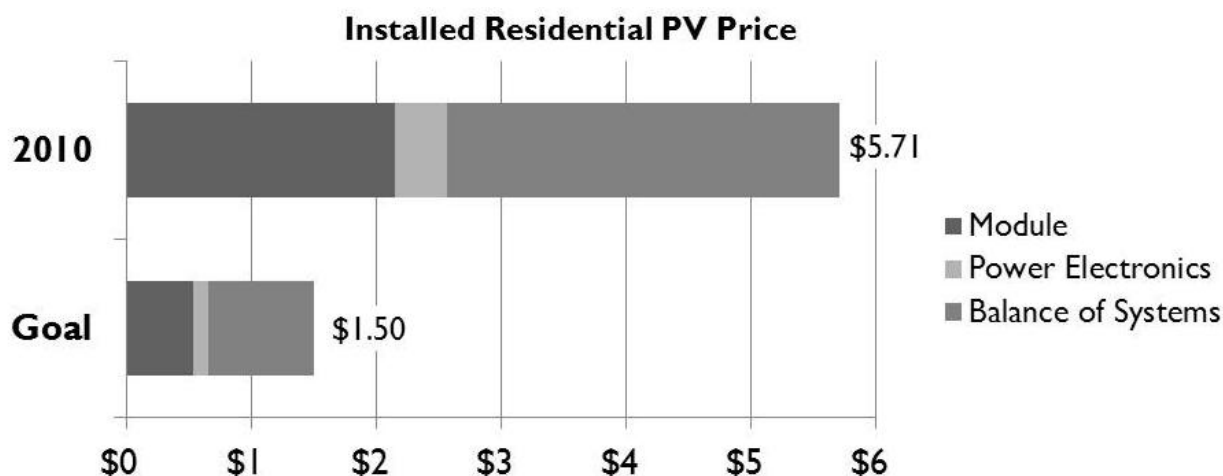


Figure 1

While non-hardware regulatory and process costs for PV installations are being addressed in the near-term through the joint efforts of DOE and the solar industry, opportunities exist in the long-term to eliminate the requirements and costs associated with permitting, inspection, and interconnection. DOE is looking to address the residential PV system cost and installation issues from a completely different angle by taking a fresh look at the grid and distributed PV systems, as a whole, and exploring new technology pathways to rearrange the PV system components, functional requirements, and interfaces. At the heart of this new approach is the Plug and Play concept, which has been utilized very successfully in the computer and automotive industries. DOE believes that Plug and Play technologies can be applied to the PV industry to reduce costs and simplify installations.

APPROACH

The Vision for Plug and Play

Using the Plug and Play concept, the DOE SunShot Initiative seeks to transform the evolution of residential solar energy technology hardware design and architecture, the interface to the electricity distribution grid, and the interface to utility and municipal planning. Paramount to the success of Plug and Play is the *smart* home PV system that is enabled through elegant system design, which eliminates expensive and redundant business processes. In this broader context, *smart* means that the hardware and infrastructure automatically communicate and react. The Plug and Play vision is to leapfrog over today's non-hardware and hardware obstacles with an intelligent systems approach.

A Plug and Play PV system is a commercial, off-the-shelf system that is fully inclusive with little need for individual customization. Any homeowner/consumer can buy and install (or have a contractor install) the system without the need for special training or specialized tools. The homeowner plugs the system into a "PV-ready" circuit and an automatic PV discovery process initiates communication between the system and the utility. The system and the interface to the grid are automatically configured for optimal operation. This scenario is depicted in Figure 2, in which a bi-directional flow of information between the home and utility via a *smart* grid is illustrated.

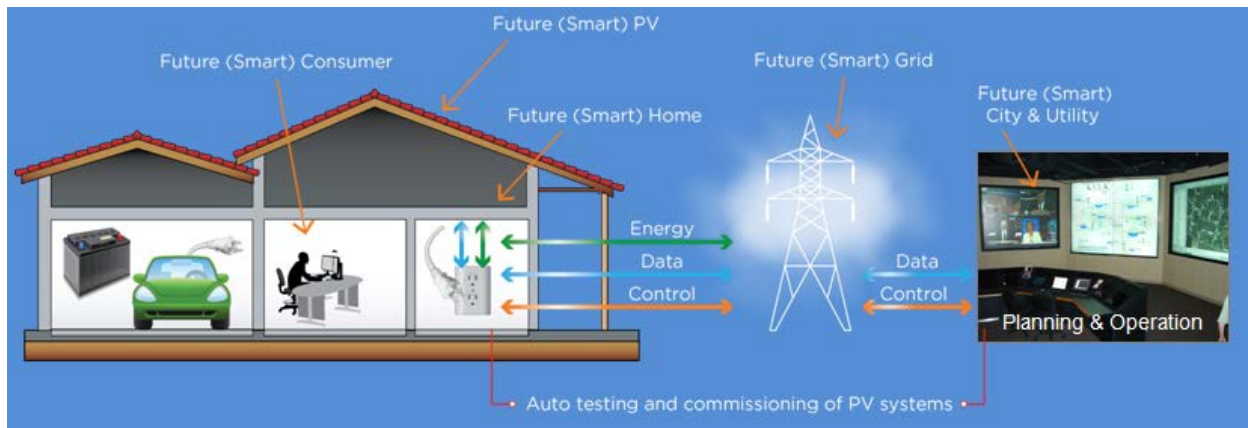


Figure 2

Current Barriers to Plug and Play

Complex Installation: Currently PV systems are custom designed and installed due to their complexity. There are few standardized, complete PV systems available to the installers and end consumers.

Electrical Permitting and Inspection Requirement: Based on provisions in the National Electrical Code (NEC), authorities having jurisdiction (AHJ's) generally require electrical permit and inspection for PV systems in order to safeguard persons and properties from fire and shock hazards arising from the use of electricity. However, partly because of the complexity of the PV system design, the local jurisdictions require costly and time-consuming permitting and inspection processes. These barriers need to be removed in order to deploy residential PV at larger scale.

Structural Permitting and Inspection Requirement: Based on documents such as the International Building Code (IBC) and International Residential Code (IRC), AHJ's generally require building permit and inspection for PV systems in order to ensure the safety, health, and welfare of the public as affected by building construction, as well as the life and property of occupants. Requirements such as wind loading and roof penetrations necessitate visual inspections of PV systems. Again, these permitting and inspection processes take a long time and at significant cost.

Utility Interconnection Requirement: Utilities generally require an interconnection agreement before a PV system can be connected to the grid. Mainly because PV systems inject power back to the grid and their outputs are variable and uncertain, the utilities need to review and study the system impacts to safeguard the grid reliability - particularly in high PV penetration scenarios. In some cases, these reviews and studies can take months, which become a significant barrier for high penetration of PV systems.

Codes and Standards: The existing electrical and building codes do not have specific standards for the construction of a PV system. Adding to the complexity, the processes and requirements of applying for electrical permits, building permits, and interconnection agreements vary significantly by jurisdiction and by utility.

Characteristics of a Plug and Play System

A complete Plug and Play PV system will have the following characteristics to enable easy installation and same day commissioning of the entire system:

1. ***Simple Installation:*** The PV system must be simple enough to install safely in ten man-hours of labor or less, with no special expertise or training, requiring few or no special tools.
2. ***Automatic Electrical Permitting and Inspection:*** To replace the need for electrical permits and inspections, one listing of the entire Plug and Play PV system must be developed along with a standard PV plug at the utility meter (or elsewhere) as well as smart PV-ready circuit breakers. The PV system must have inherent electrical safety guarantees so that the electrical installation is analogous to plugging a television set into a wall outlet without having to acquire an electrical permit. Also, upon connection, the PV system should be capable of performing self-diagnostics. The PV system should be able to automatically communicate all pertinent information (including potentially self-diagnostic results) to the electrical code officials, in lieu of inspection, to ensure that the required electrical codes and standards⁴ are met.
3. ***Automatic Structural Permitting and Inspection:*** Similarly, to replace the need for structural permits and inspections, one listing of the entire Plug and Play PV system must be developed along with the use of lightweight PV materials and innovative mounting mechanisms. Collaboration between the roofing and solar industries are critical in this effort. The structural technologies should have modularity and flexibility to enable various design options. The PV system structure should comply with all the building codes and be able to automatically communicate all the pertinent information (including potentially self-diagnostic results) to building code officials, in lieu of inspection, to ensure that the required building codes and standards⁵ are met.
4. ***Automatic Grid Interconnection:*** To replace the need for grid interconnection agreement, a Plug and Play PV system will most likely need to, upon connection with the grid, automatically communicate to the utility all the pertinent information required to ensure that it does not interfere with the normal operation of the grid. The PV system will also need smart grid capabilities (such as reactive power and voltage regulation) to ensure normal grid operation.
5. ***Costs:*** The Plug and Play PV system must meet the SunShot goal of \$1.5/W installed cost for the residential market.
6. ***System Design:*** To ensure broad market acceptance by homeowners, the Plug and Play PV system must be designed with customer needs in mind.

As stated in Section R101 of the IRC⁶, "The purpose of this code is to establish minimum requirements to safeguard the public safety, health, and general welfare through affordability, structural strength, means of egress facilities, stability, sanitation, light and ventilation, energy conservation and safety to life and property from fire and other hazards in the built environment and to provide safety to fire fighters and emergency responders during emergency operations." The Plug and Play PV system will adhere to these

⁴For example, NFPA 70: National Electric Code.

⁵ For example, International Building Code (IBC) and International Residential Code (IRC)

⁶ International Residential Code (IRC) 2009

general principles. It is expected that the IRC will continuously evolve to address new PV technologies and construction practices that were once uncommon, but become common as time evolves.

SCOPE OF ANNOUNCEMENT

DOE anticipates that the Plug and Play PV technologies developed under this FOA will enable the wide adoption of distributed PV systems particularly in the residential PV market. Projects will focus on both R&D and field testing and validation.

Team Structure

One possible scenario is that project teams to be led by universities with strong participation from industry, utilities, and local governments with support from other research organizations. Specifically, each team will require a utility partner and code officials to take an active role in the development of the Plug and Play concept and fully participate throughout the project.

For the utility partner this includes:

- Participation in the design of the system,
- The development of a communication protocol between the Plug and Play device and the utility, and
- Testing and validation that an automatic utility interconnection process can be achieved with the Plug and Play system.

For the code officials this includes:

- Participation in the design of the system,
- The development of a communication protocol between the Plug and Play device and AHJ's, and
- Testing and validation that an automatic permitting and inspection process can be achieved with the Plug and Play system.

In addition, each project team shall address the needs from the following communities:

- Consumers (through innovative architecture and/or system design),
- Roofing manufacturers and professionals,
- PV module manufacturers,
- Power electronic vendors,
- Balance of system hardware vendors
- Smart grid companies,
- PV sale channels, and
- System designers (developing products requiring no special expertise).

Each team will work with the DOE to develop a roadmap to achieve the Plug and Play vision, conduct focused R&D on Plug and Play technologies, products, and systems, and engage stakeholders to promote adoption of Plug and Play systems and improve on codes and standards.

Areas of Focus

At a minimum, each award is expected to perform research and development work in the following areas: a) PV-ready electrical circuits, b) structural Plug and Play design, c) power electronics, d) smart grid and system planning and operation, e) system design and aesthetics, and f) codes and standards.

Within the required areas of focus, development of successful Plug and Play PV systems may include, but is not limited to, the following suggested activities and metrics:

- ***PV-ready electrical circuits***
 - Develop the electric components and interfaces that enable one listing of the entire PV system. These may include:
 - Develop smart circuit breakers and breaker panels with dedicated circuits for PV systems.
 - Develop electrical safety technologies (e.g. fault detection and isolation) to be embedded in circuit breakers, and breaker panels.
- ***Structural Plug and Play design***
 - Develop a PV system for existing residential homes that is lightweight, requires no roof penetrations, and requires few tools to install.
 - Develop methodologies that significantly reduce the time and complexity of the PV installation process.
 - Suggested metrics:
 - A weight of 25lbs/kW or less,
 - Class A fire protection rating,
 - Meet a minimum of 90 mph wind resistance, and
 - Damage to roof: must not interfere with roof warranty.
- ***Power electronics***
 - Develop self-diagnostic technologies for PV system(s) that automatically perform safety checks and system commissioning. At a minimum, this must include the automatic detection of:
 - The system components, and
 - The utility and their communication protocol.
- ***Smart grid and system planning and operation***
 - Develop methodologies and systems to enable utilities to manage PV information from smart homes.
 - Develop an automatic process that replaces the existing interconnection agreement.
 - Develop an automatic process that replaces the existing permitting and inspection process.
- ***System design and aesthetics***
 - Develop a process that ensures that product design, from acquisition to installation, has a significant market acceptance. Through collaborations with designers, develop a system that is aesthetically appealing to customer preferences as well as simple to acquire, install, and manage. Activities may include:
 - Firsthand account of how potential consumers have reacted to their concepts,
 - Developing a strategy that incorporates both early adopters and mainstream consumers, and
 - Validating designs by creating real-world scenarios.

- **Codes and standards**
 - Develop model national standards on Plug and Play PV products.
 - Evolve existing electric and building codes and standards to enable the market adoption of Plug and Play PV products.

Expected Outcomes

In five years (i.e., at project end), each team's efforts under the FOA must result in achieving the Plug and Play vision by

- Developing core technologies in each research area,
- Producing prototype products and subsystems,
- Presenting a cost analysis demonstrating a viable pathway to reach the SunShot goals, and
- Testing and validation of a complete Plug and Play PV prototype system that will include the participation of one utility and one AHJ. The system requires
 - a. Simple installation requiring fewer than ten man-hours of labor,
 - b. Automatic electrical permitting and inspection,
 - c. Automatic structural permitting and inspection,
 - d. Automatic utility interconnection agreement, and
 - e. Capability of being delivered, installed, and commissioned on the same day.

After five years, it is expected that the Plug and Play PV technologies will continue to evolve and mature without government funding. Activities by the industry will include cost reduction, standardization, volume production, testing and certification, innovative design, and wider-scale field demonstration.

In ten years, it is expected that the Plug and Play vision will be achieved nationwide. This will be exemplified by the many Plug and Play PV systems that:

- are readily available at consumer stores,
- are accepted by AHJs nationwide with automatic permit and inspection,
- are accepted by utilities nationwide with automatic interconnection agreement, and
- meet the SunShot cost target of \$1.5/W for residential market.

SECTION II – AWARD INFORMATION

A. Type of Award Instrument

DOE anticipates awarding cooperative agreements under this program announcement (See Part VI.B.4 Statement of Substantial Involvement).

B. Estimated Funding

Approximately \$25M of DOE funding over five years is expected to be available for new awards under this announcement, subject to annual appropriations.

C. Maximum and Minimum Award Size

The anticipated maximum award size is \$12.5M over five years or \$2.5M per year. The minimum award size is \$7.5M over five years or \$1.5M per year.

D. Expected Number of Awards

The DOE anticipates making two awards.

E. Period of Performance

DOE anticipates making awards that will run up to five (5) years subject to the availability of appropriations. Each project will be divided into multiple budget periods (BPs) of approximately one year duration, with go/no-go decision points between budget periods. At the end of the third budget period, a more extensive go/no-go review will take place, involving a peer review committee in addition to the typical DOE reviewers. At each go/no-go decision point, DOE will evaluate project performance, project schedule adherence, meeting milestone objectives, and compliance with reporting requirements. As a result of these evaluations, DOE will make a determination to continue the project, re-direct the project, or discontinue funding the project. Only those projects demonstrating satisfactory progress towards the goals of the Plug and Play concept and a high probability of successfully meeting the SunShot Initiative targets will be continued.

F. Type of Application

DOE will accept only new applications under this announcement. Applications for renewals of existing DOE funded projects will not be considered.

SECTION III - ELIGIBILITY INFORMATION

A. Eligible Applicants

All Domestic Entities

DOE has determined that it is necessary to limit eligibility under this FOA to domestic entities in order to meet the objectives of DOE's Mission, the SunShot Mission and the particular needs and objectives of this FOA. The following domestic entities are eligible to apply as prime recipients or sub-recipients for this announcement: (1) institutions of higher education; (2) nonprofit and for-profit entities; (3) State and local governments; (4) DOE/NNSA National Laboratory Contractors and non-DOE Federally Funded Research and Development Center (FFRDC) Contractors, and (5) consortia of entities (1) through (4). Foreign entities, Federal agencies, and 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 either as a prime or sub-recipient. The term "domestic entity" is defined as a legal entity established pursuant to the United States Federal or State laws.

B. Cost Sharing

The cost share must be at least 20% of the total allowable costs. The cost share must come from non-Federal sources. The sum of the Government share, including FFRDC contractor costs if applicable, and the recipient share of allowable costs equals the total allowable cost of the project. (See Appendix C and 10 CFR Part 600 for the applicable cost sharing requirements.)

For example:

DOE Share:	\$800,000
Recipient Share:	<u>\$200,000</u>
Total Project Costs:	\$1,000,000

C. Other Eligibility Requirements

A DOE FFRDC is eligible to apply for funding under this announcement if its cognizant Contracting Officer provides written authorization and this authorization is submitted with the application. If a DOE FFRDC is selected for award, 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, will not adversely impact execution of the DOE assigned programs at the laboratory."

FFRDC contractors may be proposed as team members on another entity's application, subject to the following guidelines:

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

Authorization for DOE FFRDCs. The cognizant Contracting Officer for the FFRDC must authorize in writing the use of a DOE FFRDC contractor 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, will not adversely impact execution of the DOE assigned programs at the laboratory, and will not place the laboratory in direct competition with the domestic private sector.”

Value/Funding. The value of, and funding for, the FFRDC contractor portion of the work will not normally be included in the award to a successful applicant. Usually, DOE will fund a DOE FFRDC contractor through the DOE field work proposal system and other FFRDC contractors through an interagency agreement with the sponsoring agency.

Cost Share. The applicant’s cost share requirement will be based on the total cost of the project, including the applicant’s and the FFRDC contractor’s portions of the effort.

Responsibility. The applicant, if successful, 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 applicant and the FFRDC contractor.

SECTION IV – APPLICATION AND SUBMISSION INFORMATION

A. Address to Request 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.

B. Letters of Intent Requested

Applicants are requested to submit a Letter of Intent by 5/16/2012, no later than 5:00PM Eastern Time. This letter should include the name of the applicant, the title of the project, the name of the Project Director/Principal Investigator(s), the amount of funds requested, and a one-page abstract. Letters of Intent and accompanying abstracts will be used by DOE to organize and expedite the merit review process. They should not contain any proprietary or sensitive business information. Failure to submit such letters will not negatively affect a responsive application submitted in a timely fashion. The Letter of Intent should be sent by E-mail to PlugandPlay@go.doe.gov.

C. Content and Form of Application

Applicants must complete the required application forms found on the EERE Exchange website at <https://eere-exchange.energy.gov/>, in accordance with the instructions. **Applicants will receive a Control Number once they click “Apply to this FOA” on the EERE Exchange website and should include the Control Number in the file name.**

1. **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 year, first phase or other subset of the project period. Save the information in a single file titled “Control#_Institution_App424.pdf”.

2. **Project Summary/Abstract File**

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 (i.e., benefits, outcomes), and major participants (for collaborative projects). This document must not include any proprietary or sensitive business information, as the Department may make it available to the public if an award is made. The project summary must not exceed 1 page when printed using standard 8.5” by 11” paper with 1” margins (top, bottom, left and right), single spaced, with font not smaller than 11 point. Save the information in a single file titled “Control#_Institution_Summary.pdf”.

3. **Project Narrative File**

The project narrative must not exceed *twenty (20)* pages, including cover page, table of contents, charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5” by 11” paper with 1 inch margins (top, bottom, left, and right), single spaced.

EVALUATORS WILL REVIEW ONLY THE NUMBER OF PAGES SPECIFIED IN THE PRECEDING SENTENCE. The font must not be smaller than 11 point. Do not include any

Internet addresses (URLs) that provide information necessary to review the application. See Section VIII.D for instructions on how to mark proprietary application information. Save the information in a single file titled “Control#_Institution_Project.pdf”.

The project narrative must include:

- Project Objectives.
This section should provide a clear, concise statement of the specific objectives/aims of the proposed project.
- Merit Review Criterion Discussion.
This section should be formatted to address each merit review criterion and sub-criterion listed in Part V.A. below. Provide sufficient information so that reviewers will be able to evaluate the application in accordance with these merit review criteria. DOE WILL EVALUATE AND CONSIDER ONLY THOSE APPLICATIONS THAT SEPARATELY ADDRESS EACH MERIT REVIEW CRITERION AND SUB-CRITERION.
- Project Timetable:
This section should outline as a function of time, year by year, all the important activities or phases of the project, including any activities planned beyond the project period. Successful applicants must use this project timetable to report progress.
- Relevance and Outcomes/Impacts:
This section should explain the relevance of the effort to the objectives in the program announcement and the expected outcomes and/or impacts. The justification for the proposed project should include a clear statement of the importance of the project in terms of the utility of the outcomes and the target community of beneficiaries.
- Roles of Participants:
For multi-organizational or multi-investigator projects, describe the roles and the work to be performed by each participant/investigator, business agreements between the applicant and participants, and how the various efforts will be integrated and managed.
- Facilities and Other Resources:
Identify the facilities (e.g., office, laboratory, computer, etc.) to be used at each performance site listed, and, if appropriate, indicate their capacities, pertinent capabilities, relative proximity, and extent of availability to the project. Describe only those resources that are directly applicable to the proposed work. Provide any information describing the other resources available to the project, such as machine and electronics shops.
- Equipment:
List important items of equipment already available for this project, and if appropriate, note the location and pertinent capabilities of each. If you are proposing to acquire equipment, describe comparable equipment, if any, already at your organization and explain why it cannot be used.
- Bibliography and References, if applicable:
Provide a bibliography for any references cited in the Project Narrative section. This section must include only bibliographic citations. This is not included as part of the page limit.
- Letters of Commitment, if applicable:

Applicants must have a letter from each third party contributing cost share (i.e., a party other than the organization submitting the application) stating that the third party is committed to providing a specific minimum dollar amount of cost share. **All Letters of Commitment must be attached as an Appendix to the Project Narrative File.** Identify the following information for each third party contributing cost share: (1) the name of the organization; (2) the proposed dollar amount to be provided; (3) the amount as a percentage of the total project cost; and (4) the proposed type of cost share – cash, services, or property. Letters of Commitment from parties participating in the project, exclusive of vendors, who will not be contributing cost share, but will be integral to the success of the project must be included as part of this Appendix to the Narrative. Letters of Commitment will not count towards the Project Narrative page limit.

- Letters of Support:
Applicants must have a letter from each participating utility and authority having jurisdiction (AHJ)/code official indicating that the entity is supportive of the applicant's proposal and will engage in activities as appropriate to help the applicant achieve the proposed objectives (see specific requirements for utilities and AHJ/code officials on page 11). All Letters of Support must be attached as an Appendix to the Project Narrative File. Letters of Support will not count towards the Project Narrative page limit.
- Statement of Project Objectives (SOPO):
The Statement of Project Objectives should be provided in a similar format as the SOPO template shown in Appendix D. The SOPO must address how the project objectives will be met. It must contain a clear, concise description of all activities to be completed during the project performance and follow the requirements in the template. The SOPO may be released to the public by DOE, in whole or in part, at any time. Therefore, it is required that it shall not contain proprietary or confidential business information. This is not included as part of the page limit.
- Resume File:
Provide a resume for each key person proposed, including subawardees and consultants if they meet the definition of a key person. A key person is any individual who contributes in a substantive, measurable way to the execution of the project. The biographical information for each resume must not exceed 2 pages when printed on 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right), single spaced, with font not smaller than 11 point and should include the information below, if applicable.

Education and Training. Undergraduate, graduate and postdoctoral training; provide institution, major/area, degree and year.

Professional Experience: Beginning with the current position list, in chronological order, professional/academic positions with a brief description.

Publications. Provide a list of up to 10 publications most closely related to the proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address, if available electronically.

Patents, copyrights and software systems developed may be provided in addition to, or substituted for, publications.

Synergistic Activities. List no more than 5 professional and scholarly activities related to the effort proposed.

- Of the key personnel identified in this file, indicate the Principal Investigator(s) (PI(s)).
- For Multiple Principal Investigators:

The applicant, whether a single organization or team/partnership/consortium, must indicate if the project will include multiple PIs. The decision to use multiple PIs for a project is the sole responsibility of the applicant. If multiple PIs will be designated, the application must identify the Contact PI/Project Coordinator and provide a “Coordination and Management Plan” that describes the organization structure of the project as it pertains to the designation of multiple PIs. This plan should, at a minimum, include:

- Process for making decisions on scientific/technical direction;
- Publications;
- Intellectual property issues;
- Communication plans;
- Procedures for resolving conflicts; and
- PIs’ roles and administrative, technical, and scientific responsibilities for the project.

The resume file is not included as part of the page limit.

4. SF 424 A, Budget Information – Non-Construction Programs

Applicants must provide a separate budget for each year of support requested and a cumulative budget for the total project period. Use the SF 424 A, “Budget Information – Non Construction Programs” form, which can be found under the “View Required Application Documents” link on the EERE Exchange website at www.eere-exchange.energy.gov after locating this FOA. The SF424A provides columns for each individual budget-year as well as the cumulative project-budget.

Applicants may request funds under any of the Object Class Categories as long as the item and amount is necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and is not prohibited by the funding restrictions in this announcement (see Section IV.G). Save the information in a single file titled “Control#_Institution_SF424A.xls”.

5. PMC 123.1, Budget Justification File

Applicants must justify the costs proposed in each Object Class Category/Cost Classification category (e.g., identify key persons and personnel categories and the estimated costs for each person or category; provide a list of equipment and cost of each item; identify proposed subaward / consultant work and cost of each subaward/consultant; describe purpose of proposed travel, number of travelers and number of travel days; list general categories of supplies and amount for each category; and provide any other information you wish to support your budget). Provide the name of your cognizant/oversight agency, (if known) and the name and phone number of the individual responsible for negotiating your indirect rates. If cost share is required, you must have a letter from each third party contributing cost share (i.e., a party other than the organization submitting the application) stating that the third party is committed to providing a specific minimum dollar amount of cost share. In the budget justification, identify the following information for each third party contributing cost share: (1) the name of the organization; (2) the proposed dollar amount to be provided; (3) the amount as a percentage of the total project cost;

and (4) the proposed type of cost share – cash, services, or property. Save the budget justification information in a single file titled “Control#_Institution_Budget.pdf”.

6. Subaward Budget File(s)

Applicants must provide a separate budget (i.e., budget for each budget year and a cumulative budget) for each subawardee that is expected to perform work estimated to be more than \$100,000 or 50 percent of the total work effort (whichever is less). Use the SF 424A for Non Construction Programs. These forms are found on under the “View Required Application Documents” link on the EERE Exchange website at www.eere-exchange.energy.gov after locating this FOA. Save each subaward budget in a single file titled “Control#_Subawardee_SF424A.xls”.

A budget justification for the subaward budget is also required. Use the PMC 123.1 and include the same justification information described in Paragraph 5 above. Save each subaward budget justification in a single file titled “Control#_Subawardee_Budget.pdf”.

7. Budget for DOE Federally Funded Research and Development Center (FFRDC) Contractor File, if applicable

If a DOE FFRDC contractor is to perform a portion of the work, you must provide a DOE Field Work Proposal (FWP) in accordance with the requirements in DOE Order 412.1 Work Authorization System. The DOE Order 412.1, Work Authorization System and the DOE O 412.1, Field Work Proposal form are available at the following link, under “DOE Budget Forms”: <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms>. Save the Field Work Proposal in a single file titled “Control#_FFRDC_FWP.pdf”.

8. Authorization for non-DOE or DOE FFRDCs

Save the Authorization for non-DOE or DOE FFRDCs, as specified in Section III.C., “Other Eligibility Requirements”, in a single file titled “Control#_FFRDC_Auth.pdf”.

9. SF-LLL Disclosure of Lobbying Activities

If applicable, complete the SF- LLL. Applicability: If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant/cooperative agreement, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying." If applicable, save the SF-LLL in a single file titled “Control#_SF-LLL.pdf

10. Summary Slide (Mandatory)

A Project Summary in Power Point format should be provided using the template provided. All information must fit on a single slide. The Summary Slide may be released to the public by DOE, in whole or in part, at any time. Therefore, it is required that it shall not contain proprietary or confidential business information. Save the Summary Slide as Control#_Institution_Summary.ppt. The PowerPoint slide template can be found under the “View Required Application Documents” link on the EERE Exchange website at www.eere-exchange.energy.gov after locating this FOA.

11. Description of U.S. Operations and Benefits

Applicants must provide a Word or PDF document describing the extent of the prime recipient and any sub-recipient/project partner’s current operations within the U.S. (e.g. number of locations, type of facilities, number of employees at each location, etc.), and how the project

approach would benefit the U.S. solar energy industry. This document shall not exceed 2 pages when printed using standard 8.5" by 11" paper with 1 inch margins (top, bottom, left and right), single spaced. The font must not be smaller than 11 point. Do not include any Internet addresses (URLs) that provide information necessary to review the application.

Summary of Required Forms/Files

Your application must include the following documents:

Name of Document	Format	File Name
SF 424 Application for Federal Assistance	PDF	Control#_Institution_App424.pdf.
Project Summary/Abstract File	PDF	Control#_Institution_Summary.pdf
Project Narrative File, including required appendices (Letters of Commitment, SOPO, Resume File, etc.)	PDF	Control#_Institution_Project.pdf
SF 424A – Budget Information for Non-Construction Programs File	Excel	Control#_Institution_SF424A.xls
PMC 123.1 Budget Justification File	Excel	Control#_Institution_Budget.xls
Subaward Budget File(s), if applicable; Subaward Budget Justification(s), if applicable	Excel	See Instructions
Budget for Federally Funded Research and Development Center (FFRDC) Contractor File, if applicable.	PDF	See instructions
Authorization from cognizant Contracting Officer for FFRDC, if applicable.	PDF	Control#_Institution _FFRDC_Auth.pdf
SF-LLL Disclosure of Lobbying Activities	PDF	Control#_Institution _SF-LLL.pdf
Summary Slide (PPT)	PowerPoint	Control#_Institution_Summary.ppt
Description of U.S. Operations and Benefits	Word or PDF	Control#_Institution _Description_of_US_Operations_and_Benefits.pdf

D. Submissions from Successful Applicants

If selected for award, DOE 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 Letter 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 information in support of a National Environmental Policy Act (NEPA) determination

E. Submission Dates and Times

1. Letter of Intent Due Date

Letters of intent are requested and must be received by **May 16, 2012**, not later than **5:00 PM Eastern Time**. You are encouraged to transmit the Letter of Intent well before the deadline. **LETTERS OF INTENT MUST BE SUBMITTED VIA EMAIL AT PlugandPlayFOA@go.doe.gov**. Failure to submit a letter of intent will not affect the submission and review of an Application.

2. Application Due Date

Applications must be received by **June 18, 2012**, not later than **5:00 PM Eastern Time**. You are encouraged to transmit your application well before the deadline. **APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE REVIEWED OR CONSIDERED FOR AWARD.**

F. Intergovernmental Review

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

G. Funding Restrictions

Cost Principles. Costs must be allowable in accordance with the applicable Federal cost principles referenced in: 2 CFR 220 for Educational Institutions; 2 CFR 225 for State, Local, and Indian Tribal Governments; 2 CFR 230 for Non-Profit Organizations and FAR Part 31 for commercial organizations.

Pre-award Costs. Recipients may charge to an award resulting from this announcement pre-award costs that were incurred within the ninety (90) calendar day period immediately preceding the effective date of the award and no earlier than the selection date, if the costs are allowable in accordance with the applicable Federal cost principles referenced in 10 CFR part 600. Recipients must obtain the prior approval of the Contracting Officer for any pre-award costs that are for periods greater than this 90 day calendar period.

Pre-award costs are incurred at the applicant's risk. DOE is under no obligation to reimburse such costs if for any reason the applicant does not receive an award or if the award is made for a lesser amount than the applicant expected.

If recipients are State or Local Governments, they may not incur pre-award costs prior to award, without prior approval of the DOE Contracting Officer.

H. Submission and Registration Requirements

1. Where to Submit

APPLICATIONS MUST BE SUBMITTED UNDER THIS ANNOUNCEMENT THROUGH EERE EXCHANGE at <https://eere-exchange.energy.gov/> TO BE CONSIDERED FOR AWARD. You cannot submit application through EERE Exchange unless you are registered. Please read the registration requirements below carefully and start the process immediately. Applications submitted by any other means will not be accepted.

If you have problems completing the registration process or submitting your application, send an email to the EERE Exchange helpdesk at EERE-ExchangeSupport@hq.doe.gov. It is the responsibility of the applicant to verify successful transmission, prior to the Application due date and time.

2. Registration Process Requirements

There are several one-time actions that must be completed before submitting an application in response to this Funding Opportunity Announcement (FOA), as follows:

- 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 FOA's that are currently in 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 appropriate contact point for each submission.
- The applicant will receive an Automatic response when the application is received. This will serve as a confirmation of receipt. Please do not reply to the Automatic response. The applicant will have the opportunity to re-submit a revised application for any reason as long as the relevant submission is submitted by the specified deadline. The Users' Guide for Applying to the Department of Energy EERE Funding Opportunity Announcements is found at <https://eere-exchange.energy.gov/Manuals.aspx>.
- The EERE Exchange registration does not have a delay; however, the remaining **registration requirements below could take several weeks to process and are necessary in order for a potential applicant to receive an award under this announcement**. Therefore, although not required in order to submit an application through the EERE Exchange site, **all potential applicants lacking a DUNS number, or not yet registered with CCR or FedConnect should complete those registrations as soon as possible**. Failure to complete these registration requirements will seriously delay the ability of the recipient to receive an award. The DOE may withdraw from negotiations if these registration requirements are not met.
- Questions related to the registration process and use of the EERE Exchange website should be submitted to: EERE-ExchangeSupport@hq.doe.gov.
- Obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number (including plus 4 extension, if applicable) at <http://fedgov.dnb.com/webform>.
- Register with the Central Contractor Registry (CCR) at: <https://www.bpn.gov/ccr/default.aspx>. Designating an Electronic Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in CCR registration. Please update your CCR registration annually.
- Register in FedConnect at <https://www.fedconnect.net/>. To create an organization account, your organization's CCR MPIN is required. For more information about the CCR MPIN or other registration requirements, review the FedConnect Ready, Set, Go! Guide at https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf.
- Register in Grants.gov to receive automatic updates when Amendments to this FOA are posted. However, please note that applications will not be accepted through Grants.gov (<http://www.grants.gov/>).

3. Electronic Authorization of Applications and Award Documents

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

Submission of award documents, including modifications, through electronic systems used by the Department of Energy, including FedConnect, constitutes the authorized representative's approval and acceptance of the terms and conditions of the award. Award acknowledgement via FedConnect constitutes the authorized representative's electronic signature.

SECTION V - APPLICATION REVIEW INFORMATION

A. Criteria

1. Initial Review Criteria

Prior to a comprehensive merit evaluation, DOE will perform an initial review of Applications to determine that (1) the applicant is eligible for an award; (2) the information required by the announcement has been submitted; (3) the minimum required cost share has been proposed; (4) all mandatory requirements are satisfied; and (5) the proposed project is responsive to the objectives of the funding opportunity announcement. If an application fails to meet these requirements, it may be deemed non-responsive and eliminated from further review.

2. Merit Review Criteria

The following merit review evaluation criteria will be used in the comprehensive evaluation of applications. For each application criterion for final applicants, the weighting (out of a total of 100%) is indicated to show the relative importance.

Criterion 1: Technical Objectives and Approach

Weight: [50%]

- Extent to which the proposed technical innovation enables the Plug and Play PV concept.
- Overall potential of the proposed technology to enable revolutionary advances in design, installation, integration, control, reliability, safety, or overall cost of residential PV systems.
- Likelihood that the proposed technology will replace the need for an interconnection agreement
- Likelihood that the proposed technology will replace the need for electrical and structural permitting and/or inspection.
- Degree to which the development and commercialization of the technology supports reaching the \$1.5/W goals for residential PV systems.
- Likelihood that the team will develop a working prototype within the next five years.
- Extent to which new PV module form factors will integrate with existing rooftops.

Criterion 2: Project Management

Weight: [10%]

- Extent to which the proposed tasks, deliverables, and milestones, successfully address all elements of the technical plan.
- Adequacy of the description of the critical success factors, risks, barriers and plans for mitigation.
- Adequacy of considerations and plans to develop a technology that appeals to the consumer.
- Adequacy of plans to integrate utilities and code officials into project planning and execution.

Criterion 3: Qualifications and Resources

Weight: [15%]

- Capabilities, experience, qualifications, and credentials of team members.
- Degree to which the infrastructure and resources proposed support achievement of proposed project objectives.
- Demonstration of full participation of utility and AHJ members (as shown by the letters of support)

Criterion 4: Testing and Validation Plan

Weight: [25%]

- Plan for testing and validation of the technology in real world conditions.
- Plan and commitment to commercialize the research in the U.S.
- Likelihood the proposed technology will be widely adopted by consumers.

3. Other Selection Factors

The selection official may consider the following program policy factors in the selection process:

- Diversity and complimentary nature of technologies, approaches, and methods (Contribution to portfolio diversity)
- Diversity and geographic distribution of institutions and organizations
- Level of cost-share above the minimum required
- Leveraging of resources, including, but not limited to other federally funded efforts
- Impact of DOE funds on the project measured by project's increased likelihood of achieving programmatic objectives
- Potential benefit to the U.S. solar energy industry (e.g. current and anticipated use or enhancement of U.S. domestic solar supply chain, current and anticipated use or enhancement of U.S. domestic solar energy technologies, or commitments to base component production/supply facilities in the U.S.)

B. Review and Selection Process

1. Merit Review

Applications Subject to Merit Review

Applications that pass the initial review will be subjected to a merit review in accordance with the guidance provided in the “Department of Energy Merit Review Guide for Financial Assistance”. This guide is available at: <http://energy.gov/sites/prod/files/meritrev.pdf>.

It is very important that the documents used during the Merit Review Process do not contain any Personally Identifiable Information as described in Appendix B.

2. Selection

Selection Official Consideration

The Selection Official may consider the merit review recommendation, program policy factors, and the amount of funds available.

3. Pre-Selection Clarification

Based upon the results of the merit review of written applications, DOE may determine that pre-selection clarifications are necessary from certain Applicants. These pre-selection clarifications will be for the purposes of clarifying the application and may take the form of one or more of the following procedures: written responses to DOE’s written clarification questions, video or

conference calls with DOE representatives, in person-meetings or presentations at DOE or applicant site). DOE, based upon the results of the merit review of written applications and in its sole discretion, may decide not to hold any pre-selection clarifications. The information provided by Applicants to DOE through pre-selection clarifications is incorporated in their application and contributes to, merit review evaluation and selection decision. Selection for participation in pre-selection clarifications does not signify that Applicants have been selected for negotiation of award. Applicant costs incurred to participate in pre-selection clarifications (such as travel or other presentation costs) are application costs and are allowable as indirect expenses to Federally sponsored projects to the extent that those costs are allocable and reasonable.

C. Anticipated Notice of Selection and Award Dates

Selection and Award Date

DOE anticipates notifying applicants selected for award by the end of July 2012 and making awards by the end of September 2012.

SECTION VI - AWARD ADMINISTRATION INFORMATION

A. Notice of Selection

1. Notice of Selection

Selected Applicants Notification

DOE will notify applicants selected for award. This notice of selection is not an authorization to begin performance. (See Section IV.G with respect to the allowability of pre-award costs.)

Non-selected Notification

Organizations whose applications have not been selected will be advised as promptly as possible. This notice will explain why the application was not selected.

2. Notice of Award

A Financial Assistance Award or Assistance Agreement issued by the Contracting Officer is the authorizing award document. It normally includes, either as an attachment or by reference: (1) Special Terms and Conditions; (2) Applicable program regulations, if any; (3) Application as approved by DOE; (4) DOE assistance regulations at 10 CFR part 600; (5) National Policy Assurances To Be Incorporated As Award Terms; (6) Budget Summary; and (7) Federal Assistance Reporting Checklist, which identifies the reporting requirements.

For grants and cooperative agreements made to universities, non-profits and other entities subject to 2 CFR 220, the Award also includes the Research Terms and Conditions and the DOE Agency Specific Requirements located at: <http://www.nsf.gov/bfa/dias/policy rtc/index.jsp>.

B. Administrative and National Policy Requirements

1. Administrative Requirements

The administrative requirements for DOE grants and cooperative agreements are contained in Title 2 CFR (See: <http://ecfr.gpoaccess.gov>). Grants and cooperative agreements made to universities, non-profits and other entities subject to Title 2 CFR are subject to the Research Terms and Conditions located on the National Science Foundation web site at: <http://www.nsf.gov/bfa/dias/policy rtc/index.jsp>.

DUNS and CCR Requirements

Additional administrative requirements for DOE grants and cooperative agreements are contained in 2 CFR, Part 25 (See: <http://ecfr.gpoaccess.gov>). Prime awardees must keep their data in CCR current. Subawardees at all tiers must obtain DUNS numbers and provide the DUNS to the prime awardee before the subaward can be issued.

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. (See: <http://ecfr.gpoaccess.gov>). Prime awardees must register with the new FSRS database and report the required data on their first tier subawardees. Prime awardees must report the executive compensation for their own executives as part of their registration profile in the CCR.

2. Special Terms and Conditions, National Policy Requirements and Applicant Certifications

The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at: <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms>.

The National Policy Assurances To Be Incorporated as Award Terms are located at: <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms>.

Applicant Certifications

By submitting an application in response to this FOA the Applicant certifies that:

- (1) It is **not** a corporation that has been convicted (or had an officer or agent of such corporation acting on behalf of the corporation convicted) of a felony criminal violation under any Federal law within the preceding 24 months,
- (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,
- (3) If the Applicant's financial assistance application is chosen for award and the award is in excess of \$1,000,000, the applicant will, by the end of the fiscal year, upgrade the efficiency of their facilities by replacing any lighting that does not meet or exceed the energy efficiency standard for incandescent light bulbs set forth in Section 325 of the Energy Policy and Conservation Act (42 U.S.C. 6295).

3. 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>.

4. Statement of Substantial Involvement

The DOE will be substantially involved in directing the work performed under the resulting award, to ensure that projects in each topic area are the most beneficial to achieving the goals of the SunShot Initiative. These substantial involvements include:

- DOE reserves the right to direct which resources it will provide to conduct the independent validation and testing of project results and deliverables.
- DOE will utilize the independent validation and testing to assist in funding decisions and go/no-go decisions.
- DOE has the right to intervene in the conduct or performance of project activities for programmatic reasons. Intervention includes the interruption or modification of the conduct or performance of project activities.
- DOE also will coordinate the support from state and local governments to pilot the Plug and Play PV systems.

C. Reporting

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. The DOE F 4600.2 is available at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms> .

SECTION VII - QUESTIONS

A. Questions

Questions regarding the content of this announcement must be submitted to: PlugandPlayFOA@go.doe.gov not later than 3 business days prior to the application due date. 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.**

DOE 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 submitted less than 3 business days before the close of the FOA may not be answered.

Questions related to the registration process or technical issues regarding the use of the EERE Exchange website should be submitted to: EERE-ExchangeSupport@hq.doe.gov.

SECTION VIII - OTHER INFORMATION

A. Amendments

Amendments to this announcement will be posted on the EERE Exchange web site and the Grants.gov system. However, you will only receive an email when an amendment or an announcement is posted on these sites if you register for email notifications for this FOA in Grants.gov. DOE 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 announcements.

B. Government Right to Reject or Negotiate

DOE reserves the right, without qualification, to reject any or all applications received in response to this announcement 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 explicit or implied, is invalid.

D. Proprietary Application Information

DOE will use data and other information contained in applications strictly for evaluation purposes. Applicants should not include confidential, proprietary, or privileged information in their applications unless such information is necessary to convey an understanding of the proposed project.

Applications containing confidential, proprietary, or privileged information must be marked as described below. Failure to comply with these marking requirements may result in the disclosure of the unmarked information under the Freedom of Information Act or otherwise. The U.S. Government is not liable for the disclosure or use of unmarked information, and may use or disclose such information for any purpose.

The cover sheet of the application must be marked as follows and identify the specific pages containing confidential, proprietary, or privileged information:

Notice of Restriction on Disclosure and Use of Data:

Pages [] of this document may contain confidential, proprietary, or privileged information that is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes or in accordance with a financial assistance 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.

The header and footer of every page that contains confidential, proprietary, or privileged information must be marked as follows: "Contains Confidential, Proprietary, or Privileged Information Exempt from Public Disclosure."

In addition, every line and paragraph containing proprietary, privileged, or trade secret information must be clearly marked with double brackets or highlighting.

E. Evaluation and Administration by Non-Federal Personnel

In conducting the merit review evaluation, 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. Intellectual Property Developed under this Program

Patent Rights. The government will have certain statutory rights in an invention that is conceived or first actually reduced to practice under a DOE award. 42 U.S.C. 5908 provides that title to such inventions vests in the United States, except where 35 U.S.C. 202 provides otherwise for nonprofit organizations or small business firms. However, the Secretary of Energy may waive all or any part of the rights of the United States subject to certain conditions. (See “Notice of Right to Request Patent Waiver” in paragraph G below.)

Rights in Technical Data. Normally, the government has unlimited rights in technical data created under a DOE agreement. Delivery or third party licensing of proprietary software or data developed solely at private expense will not normally be required except as specifically negotiated in a particular agreement to satisfy DOE’s own needs or to insure the commercialization of technology developed under a DOE agreement.

Special Protected Data Statutes. This program is covered by a special protected data statute. The provisions of the statute provide for the protection from public disclosure, for a period of up to 5 years from the date of its development, or first-produced data that would be trade secret, or commercial or financial information that is privileged or confidential, if the information had been obtained from a non-Federal party. Generally, the provision entitled, Rights in Data – Programs Covered Under Special Protected Data Statutes, (10 CFR 600 Appendix A to Subpart D), will apply to an award made under this announcement. This provision will identify data or categories of data first produced in the performance of the award that will be made available to the public, notwithstanding the statutory authority to withhold data from public dissemination, and may also identify data that will be recognized by the parties as protected data. For National Laboratories and FFRDCs, the data rights clause in Applicant’s Management and Operating (M&O) Contract will apply.

G. Notice of Right to Request Patent Waiver

Applicants may request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this announcement, in advance of or within 30 days after the effective date of the award. Even if such advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784.

A waiver shall only be granted if it is determined that the waiver would best serve the United States and the general public. This determination shall be made according to the considerations set forth at 10 CFR 784.4 including a commitment by the recipient to U.S. manufacturing or other activities that would benefit the U.S. economy.

Domestic small businesses and domestic nonprofit organizations will receive the patent rights clause at 37 CFR 401.14, i.e., the implementation of the Bayh-Dole Act. This clause permits domestic small business and domestic nonprofit organizations to retain title to subject inventions. Therefore, small businesses and nonprofit organizations do not need to request a waiver.

H. Notice Regarding Eligible/Ineligible Activities

Eligible activities under this program 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.

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

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

J. 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.

REFERENCE MATERIAL

Appendix A – Definitions

“Amendment” means a revision to a Funding Opportunity Announcement

"Applicant" means the legal entity or individual signing the Application. This entity or individual may be one organization or a single entity representing a group of organizations (such as a Consortium) that has chosen to submit a single Application in response to a Funding Opportunity Announcement.

"Application" means the documentation submitted in response to a Funding Opportunity Announcement.

“Authorized Organization Representative (AOR)” is the person with assigned privileges who is authorized to submit grant applications through Grants.gov on behalf of an organization. The privileges are assigned by the organization’s E-Business Point of Contact designated in the CCR.

"Award" means the written documentation executed by a DOE Contracting Officer, after an Applicant is selected, which contains the negotiated terms and conditions for providing Financial Assistance to the Applicant. A Financial Assistance Award may be either a Grant or a Cooperative Agreement.

"Budget" means the cost expenditure plan submitted in the Application, including both the DOE contribution and the Applicant Cost Share.

“Central Contractor Registration (CCR)” is the primary database which collects, validates, stores and disseminates data in support of agency missions.

"Consortium (plural consortia)" means the group of organizations or individuals that have chosen to submit a single Application in response to a Funding Opportunity Announcement.

"Contracting Officer" means the DOE official authorized to execute Awards on behalf of DOE and who is responsible for the business management and non-program aspects of the Financial Assistance process.

"Cooperative Agreement" means a Financial Assistance instrument used by DOE to transfer money or property when the principal purpose of the transaction is to accomplish a public purpose of support or stimulation authorized by Federal statute, and Substantial Involvement (see definition below) is anticipated between DOE and the Applicant during the performance of the contemplated activity.

"Cost Sharing" means the respective share of Total Project Costs to be contributed by the Applicant and by DOE. The percentage of Applicant Cost Share is to be applied to the Total Project Cost (i.e., the sum of Applicant plus DOE Cost Shares) rather than to the DOE contribution alone.

“Data Universal Numbering System (DUNS) Number” is a unique nine-character identification number issued by Dun and Bradstreet (D&B). Organizations must have a DUNS number prior to registering in the CCR. Call 1-866-705-5711 to receive one free of charge.

“Domestic Entity” is defined as a legal entity established pursuant to the United States Federal or State Laws.

“E-Business Point of Contact (POC)” is the individual who is designated as the Electronic Business Point of Contact in the CCR registration. This person is the sole authority of the organization with the capability of designating or revoking an individual’s ability to conduct CCR transactions.

“E-Find” is a Grants.gov webpage where you can search for Federal Funding Opportunities in FedGrants. <http://www.grants.gov/search/searchHome.do>

“EERE Exchange” is the Department of Energy, Energy Efficiency and Renewable Energy’s web system for posting Federal Funding Opportunity Announcements and receiving applications. <https://eere-exchange.energy.gov/FileContent.aspx?FileID=e10b8886-1826-447d-b1bf-8d9f0bf06f8e>

"Financial Assistance" means the transfer of money or property to an Applicant or Participant to accomplish a public purpose of support authorized by Federal statute through Grants or Cooperative Agreements and sub-awards. For DOE, it does not include direct loans, loan guarantees, price guarantees, purchase agreements, Cooperative Research and Development Agreements (CRADAs), or any other type of financial incentive instrument.

“FedConnect” is where federal agencies make awards via the web. <https://www.fedconnect.net/FedConnect/>

“Federally Funded Research and Development Center (FFRDC)” means a research laboratory as defined by Federal Acquisition Regulation 35.017.

“Foreign Entity” is defined as any entity that is not a domestic entity.

“Funding Opportunity Announcement (FOA)” is a publicly available document by which a Federal agency makes known its intentions to award discretionary grants or cooperative agreements, usually as a result of competition for funds. Funding opportunity announcements may be known as program announcements, notices of funding availability, solicitations, or other names depending on the agency and type of program.

"Grant" means a Financial Assistance instrument used by DOE to transfer money or property when the principal purpose of the transaction is to accomplish a public purpose of support or stimulation authorized by Federal statute, and no Substantial Involvement is anticipated between DOE and the Applicant during the performance of the contemplated activity.

“Grants.gov” is the “storefront” web portal which allows organizations to electronically find grant opportunities from all Federal grant-making agencies. Grants.gov is THE single access point for over 900 grant programs offered by the 26 Federal grant-making agencies. <http://www.grants.gov>

“Indian Tribe” means any Indian tribe, band, nation, or other organized group or community, including Alaska Native village or regional or village corporation, as defined in or established pursuant to the Alaska Native Claims Settlement Act (85 Stat. 688)[43 U.S.C. § 1601 et seq.], which are recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

"Key Personnel" mean the individuals who will have significant roles in planning and implementing the proposed Project on the part of the Applicant and Participants, including FFRDCs.

“Marketing Partner Identification Number (MPIN)” is a very important password designated by your organization when registering in CCR. The E-Business Point of Contact will need the MPIN to assign privileges to the individual(s) authorized to perform CCR transactions on behalf of your organization. The MPIN must have 9 digits containing at least one alpha character (must be in capital letters) and one number (no spaces or special characters permitted).

"Participant" for purposes of this Funding Opportunity Announcement only, means any entity, except the Applicant substantially involved in a Consortium, or other business arrangement (including all parties to the Application at any tier), responding to the Funding Opportunity Announcement.

"Principal Investigator" refers to the technical point of contact/Project Manager for a specific project award.

"Project" means the set of activities described in an Application, State plan, or other document that is approved by DOE for Financial Assistance (whether such Financial Assistance represents all or only a portion of the support necessary to carry out those activities).

"Recipient" means the organization, individual, or other entity that receives a Financial Assistance Award from DOE, is financially accountable for the use of any DOE funds or property provided for the performance of the Project, and is legally responsible for carrying out the terms and condition of the award.

"Selection" means the determination by the DOE Selection Official that negotiations take place for certain Projects with the intent of awarding a Financial Assistance instrument.

"Selection Official" means the DOE official designated to select Applications for negotiation toward Award under a subject Funding Opportunity Announcement.

"Substantial Involvement" means involvement on the part of the Government. DOE's involvement may include shared responsibility for the performance of the Project; providing technical assistance or guidance which the Applicant is to follow; and the right to intervene in the conduct or performance of the Project. Such involvement will be negotiated with each Applicant prior to signing any agreement.

"Total Project Cost" means all the funds to complete the effort proposed by the Applicant, including DOE funds (including direct funding of any FFRDC) plus all other funds that will be committed by the Applicant as Cost Sharing.

"Tribal Energy Resource Development Organization or Group" means an "organization" of two or more entities, at least one of which is an Indian Tribe (see "Indian Tribe" above) that has the written consent of the governing bodies of all Indian Tribes participating in the organization to apply for a grant or loan, or other assistance under 25 U.S.C. § 3503.

Appendix B – Personally Identifiable Information

In responding to this Announcement, applicants must ensure that Protected Personally Identifiable Information (PII) is not included in the following documents: Project Abstract, Project Narrative, Biographical Sketches, Budget or Budget Justification. 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 DOE 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.

- a. **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.
- b. **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.

- 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)

Listed below are examples of Public PII that applicants may include in the files listed above to be evaluated by the Merit Review Committee:

- Phone numbers (work, home, cell)
- Street addresses (work and personal)
- Email addresses (work and personal)
- Digital pictures
- Medical information included in a health or safety report
- Employment information that is not PII even when associated with a name
- Resumes, unless they include a Social Security Number
- Present and past position titles and occupational series
- Present and past grades
- Present and past annual salary rates (including performance awards or bonuses, incentive awards, merit pay amount, Meritorious or Distinguished Executive Ranks, and allowances and differentials)
- Present and past duty stations and organization of assignment (includes room and phone numbers, organization designations, work email address, or other identifying information regarding buildings, room numbers, or places of employment)
- Position descriptions, identification of job elements, and those performance standards (but not actual performance appraisals) that the release of which would not interfere with law enforcement programs or severely inhibit agency effectiveness
- Security clearances held
- Written biographies (e.g. to be used in a program describing a speaker)
- Academic credentials
- Schools attended
- Major or area of study
- Personal information stored by individuals about themselves on their assigned workstation or laptop unless it contains a Social Security Number

Appendix C – Cost Share Information

Cost Sharing or Cost Matching

The terms “cost sharing” and “cost matching” are often used synonymously. Even the DOE Financial Assistance Regulations, 10 CFR Part 600, use both of the terms in the titles specific to regulations applicable to cost sharing. DOE almost always uses the term “cost sharing,” as it conveys the concept that **non-federal share is calculated as a percentage of the Total Project Cost**. An exception is the State Energy Program Regulation, 10 CFR Part 420.12, State Matching Contribution. Here “cost matching” for the non-federal share is calculated as a percentage of the federal funds only, rather than the Total Project Cost.

How Cost Sharing Is Calculated

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

Formula: Federal share (\$) divided by Federal share (%) = Total Project Cost

Example: \$1,000,000 divided by 80% = \$1,250,000

Formula: Total Project Cost (\$) minus Federal share (\$) = Non-federal share (\$)

Example: \$1,250,000 minus \$1,000,000 = \$250,000

Formula: Non-federal share (\$) divided by Total Project Cost (\$) = Non-federal share (%)

Example: \$250,000 divided by \$1,250,000 = 20%

See the sample cost share calculation for a blended cost share percentage below. **Keep in mind that FFRDC funding is DOE funding.**

What Qualifies For Cost Sharing

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

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

- Institutions of Higher Education, Hospitals, and Other Nonprofit Organizations are found at 10 CFR600.123;
- State and Local Governments are found at 10 CFR600.224;
- For-profit Organizations are found at 10 CFR600.313.

In addition to the regulations referenced above, other factors may also come into play such as timing of

donations and length of the project period. For example, the value of ten years of donated maintenance on a project that has a project period of five years would not be fully allowable as cost share. Only the value for the five years of donated maintenance that corresponds to the project period is allowable and may be counted as cost share.

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

Following is a link to the DOE Financial Assistance Regulations. You can click on the specific section for each Code of Federal Regulations reference mentioned above.

DOE Financial Assistance Regulations:

<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=98a996164312e8dcf0df9c22912852b0&rgn=div5&view=text&node=10:4.0.1.3.9&idno=10>

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

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

- (1) They are verifiable from the recipient's records.
- (2) They are not included as contributions for any other federally-assisted project or program.
- (3) They are necessary and reasonable for proper and efficient accomplishment of project or program objectives.
- (4) They are allowable under the cost principles applicable to the type of entity incurring the cost as follows:

(a) *For-profit organizations.* Allowability of costs incurred by for-profit organizations and those nonprofit organizations listed in Attachment C to OMB Circular A-122 is determined in accordance with the for-profit costs principles in 48 CFR Part 31 in the Federal Acquisition Regulation, except that patent prosecution costs are not allowable unless specifically authorized in the award document.

(b) *Other types of organizations.* Allowability of costs incurred by other types of organizations that may be subrecipients under a prime award is determined as follows:

(i) *Institutions of higher education.* Allowability is determined in accordance with 2 CFR 220, Cost Principles for Educational Institutions

(ii) *Other nonprofit organizations.* Allowability is determined in accordance with 2 CFR 230, Cost Principles for Non-Profit Organizations

(iii) *Hospitals*. Allowability is determined in accordance with the provisions of 45 CFR Part 74, Appendix E, Principles for Determining Costs Applicable to Research and Development Under Grants and Contracts with Hospitals

(iv) *Governmental organizations*. Allowability for State, local, or federally recognized Indian tribal government is determined in accordance with 2 CFR 225, Cost Principles for State, Local, and Indian Tribal Governments

(5) They are not paid by the Federal Government under another award unless authorized by Federal statute to be used for cost sharing or matching.

(6) They are provided for in the approved budget.

(B) *Valuing and documenting contributions*

(1) *Valuing recipient's property or services of recipient's employees*. Values are established in accordance with the applicable cost principles, which mean that amounts chargeable to the project are determined on the basis of costs incurred. For real property or equipment used on the project, the cost principles authorize depreciation or use charges. The full value of the item may be applied when the item will be consumed in the performance of the award or fully depreciated by the end of the award. In cases where the full value of a donated capital asset is to be applied as cost sharing or matching, that full value must be the lesser or the following:

- (a) The certified value of the remaining life of the property recorded in the recipient's accounting records at the time of donation; or
- (b) The current fair market value. If there is sufficient justification, the Contracting Officer may approve the use of the current fair market value of the donated property, even if it exceeds the certified value at the time of donation to the project. The Contracting Officer may accept the use of any reasonable basis for determining the fair market value of the property.

(2) *Valuing services of others' employees*. If an employer other than the recipient furnishes the services of an employee, those services are valued at the employee's regular rate of pay, provided these services are for the same skill level for which the employee is normally paid.

(3) *Valuing volunteer services*. Volunteer services furnished by professional and technical personnel, consultants, and other skilled and unskilled labor may be counted as cost sharing or matching if the service is an integral and necessary part of an approved project or program. Rates for volunteer services must be consistent with those paid for similar work in the recipient's organization. In those markets in which the required skills are not found in the recipient organization, rates must be consistent with those paid for similar work in the labor market in which the recipient competes for the kind of services involved. In either case, paid fringe benefits that are reasonable, allowable, and allocable may be included in the valuation.

(4) *Valuing property donated by third parties*.

- (a) Donated supplies may include such items as office supplies or laboratory supplies. Value assessed to donated supplies included in the cost sharing or matching share must be reasonable and must not exceed the fair market value of the property at the time of the donation.

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

**SAMPLE COST SHARE CALCULATION
FOR BLENDED COST SHARE PERCENTAGE**

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

<u>Task</u>	<u>Proposed Federal Share</u>	<u>Required Federal Share %</u>	<u>Non-federal Cost Share %</u>
Task 1 (R&D)	\$1,000,000	80%	20%
Task 2 (R&D)	500,000	80%	20%
Task 3 (Demonstration)	400,000	50%	50%
Task 4 (Outreach)	<u>100,000</u>	100%	0%
	\$2,000,000		

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

Each task must be calculated individually as follows:

Task 1

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

Task 1 Cost minus federal share = Non-federal share

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

Task 2

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

Task 2 Cost minus federal share = Non-federal share

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

Task 3

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

Task 3 Cost minus federal share = Non-federal share

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

Task 4

Federal share = \$100,000

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

The calculation may then be completed as follows:

<u>Task</u>	<u>Proposed Federal Share</u>	<u>Federal Share %</u>	<u>Required Non-federal Cost Share \$</u>	<u>Required Non-federal Cost Share %</u>	<u>Total Project Cost</u>
Task 1	\$1,000,000	80%	\$250,000	20%	\$1,250,000
Task 2	500,000	80%	125,000	20%	625,000
Task 3	400,000	50%	400,000	50%	800,000
Task 4	<u>100,000</u>	100%	<u>0</u>	0%	<u>100,000</u>
	\$2,000,000		\$775,000		\$2,775,000

Blended Cost Share %

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

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

Appendix D – Statement of Project Objectives Template

Statement of Project Objectives

[Recipient Name]

[Project Title]

All of the information to be included in the SOPO should be consistent with the Application upon which the award is based. The SOPO should be written for public disclosure, and, generally, the total length should not exceed 4-5 pages.

The following items should not be included in the SOPO:

- *Dollar amounts.*
- *Specific dates.*
- *Subcontractors by name. The award is with the prime and, as such, the SOPO should not reference the subcontractors.*
- *Intellectual property information or data.*

A. PROJECT OBJECTIVES

[Enter a clear and concise statement of the goals and objectives of the project as well as the expected outcomes.]

B. PROJECT SCOPE

[Include a general overview description of the project. Refer to the DOE Program or Division (for example: Hydrogen, Fuel Cells, and Infrastructure Technologies Program; Buildings and Industrial Technologies Division; etc.) objectives that the project is addressing. This section should be only 1-2 paragraphs long.]

C. TASKS TO BE PERFORMED

[For each Task and Subtask, enter 1-2 paragraphs describing the purpose, approach, and expected outcomes. Include project milestones (do not include dates), where appropriate. If applicable, the Tasks should be organized by project phases/budget periods which correspond to major project milestones or go/no-go decision points.]

Below is an example of the type of Task structure desired:

Task 0 Project Management and Reporting

[Include this as the last Task and number it consecutively with the other Tasks. As part or all of the Task

Description, include language along the lines of: “Reports and other deliverables will be provided in accordance with the Federal Assistance Reporting Checklist following the instructions included therein.” Additional deliverables (for example, hardware delivered for testing or Peer Review Meetings / Project Review Meetings) not specified in the Reporting Checklist should be included in this Task Description.]

PHASE 1 (or BUDGET PERIOD 1) [TITLE OPTIONAL]

Task 1.0 [Insert Title]

[Insert Description]

Task 2.0 [Insert Title]

[Insert Description]

Subtask 2.1 [Insert Title]

[Insert Description]

Subtask 2.2 [Insert Title]

[Insert Description]

[Insert Phase 1 deliverables]

[Insert Phase 1 major milestones]

[Insert Phase 1 Go/No-Go decision point]

PHASE 2 (or BUDGET PERIOD 2) [TITLE OPTIONAL]

Task 3.0 [Insert Title]

[Insert Description]

[Insert Phase 2 deliverables]

[Insert Phase 2 major milestones]

[Insert Phase 2 Go/No-Go decision point]

PHASE 3 (or BUDGET PERIOD 3) [TITLE OPTIONAL]

Task X.0 [Insert Title]

[Insert Description]

[Insert Phase 3 deliverables]

[Insert Phase 3 major milestones]