



# Welcome

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**Please mute your phones and we'll begin momentarily**



Office of ENERGY EFFICIENCY  
& RENEWABLE ENERGY

SOLAR ENERGY TECHNOLOGIES OFFICE



# Solar Energy Technologies Office Fiscal Year 2019 Funding Program

## Topic Area 1 Photovoltaics Research and Development

Questions? Email  
[SETO.FOA@ee.doe.gov](mailto:SETO.FOA@ee.doe.gov)  
[energy.gov/solar-office](http://energy.gov/solar-office)

PV FOA Webinar – April 3, 2019  
[DE-FOA-0002064](https://www.doe.gov/foa/0002064)



# Notice

- NO NEW INFORMATION OTHER THAN THAT PROVIDED IN THE FOA WILL BE DISCUSSED IN THE WEBINAR.
- There are no particular advantages or disadvantages to the application evaluation process with respect to participating on the webinar today.
- Your participation is completely voluntary.



# Notice

- All applicants are strongly encouraged to carefully read the Funding Opportunity Announcement **DE-FOA-0002064** (“FOA”) and adhere to the stated submission requirements.
- This presentation summarizes the contents of the FOA. If there are any inconsistencies between the FOA and this presentation or statements from DOE personnel, the FOA is the controlling document and applicants should rely on the FOA language and seek clarification from EERE at [SETO.FOA@ee.doe.gov](mailto:SETO.FOA@ee.doe.gov)



# DE-FOA-0002064: Solar Energy Technologies Office FY2019 FOA

<b>FOA Issue Date:</b>	March 26, 2019
<b>Submission Deadline for Letter of Intent (MANDATORY):</b>	May 7, 2019, 5:00pm ET
<b>FOA Informational Webinar for PV:</b>	April 3, 2019 3:00pm ET
<b>Submission Deadline for Concept Papers:</b> <ul style="list-style-type: none"><li>Applicants must submit a Concept Paper by 3:00pm ET on the due date listed above to be eligible to submit a Full Application. Topic Areas 2.1 and 3.1 SIPS applications must resubmit their LOI again as a concept paper by the concept paper deadline above to clear an administrative software restriction of EERE Exchange.</li></ul>	May 14, 2019, 5:00pm ET
<b>Submission Deadline for Full Applications and SIPS Applications:</b>	July 25, 2019, 5:00pm ET
<b>Expected Submission Deadline for Replies to Reviewer Comments:</b>	September 6, 2019, 5:00pm ET
<b>Expected Timeframe for EERE Selection Notifications:</b>	November 2019
<b>Expected Timeframe for Award Negotiations:</b>	November 2019 - February 2020



# Agenda

- 1) FOA Description
- 2) Topic Areas/Technical Areas of Interest
- 3) Award Information
- 4) Statement of Substantial Involvement
- 5) Cost Sharing
- 6) Letters of Intent
- 7) Concept Papers
- 8) Full Applications
- 9) Merit Review and Selection Process
- 10) Registration Requirements

The header features a gradient background from teal on the left to orange on the right. On the left, there are several white line-art icons: a battery, solar panels, a recycling symbol, a circular flow diagram, a laptop with a lightning bolt, and a power plug. On the right, there are more icons: a lightning bolt, a padlock, a Wi-Fi symbol, a piggy bank, and a power transmission tower.

# What's next *for* SOLAR?

Achieving SETO's priorities across the solar energy technology landscape requires sustained, multifaceted innovation. For our FY19 Funding Program, the office intends to support high-impact, early-stage research in the following areas:

- **Topic 1: Photovoltaics Research and Development**
- **Topic 2: Concentrating Solar-Thermal Power Research and Development**
- **Topic 3: Balance of Systems Soft Costs Reduction**
- **Topic 4: Innovations in Manufacturing: Hardware Incubator**
- **Topic 5: Advanced Solar Systems Integration Technologies**



# Topic 1.1: Photovoltaics Research Collaborations

- Brings together teams of researchers from multiple institutions and/or companies to address vital problems that limit the performance, cost, and reliability of current PV technologies
- Provide a detailed work plan for the first three years of effort plus five-year targets that could be pursued during the fourth and fifth years.
- Areas of interest
  - **Materials, Interfaces, and High-Efficiency Cell Development**
  - **Advanced Photovoltaic Manufacturing Science and Technology**
  - **System Optimization for Increased Energy Yield and Lower Operations and Maintenance Costs**
  - **Perovskite Module Manufacturing and Long-Term Durability**
  - **Low-Cost Substrates for Single-Crystal High-Efficiency Cells**
  - **PV System Recycling and End-of-Life Management**

FOA Description  
**Section I.B: Topic 1.1**





## Topic 1.2: Small, Innovative Projects in Solar (SIPS)

- Focused projects in novel or emerging areas of photovoltaics research that involve significant technical risk but potential to reach SunShot 2030 goal of \$0.03 cents/kWh.
- SIPS projects will be high-risk or innovative work where physical proof of concept, modeling, or theoretical studies are needed to provide evidence for funding a future, potentially scaled-up applied-research project.
- Abbreviated application process:
  - **Letter of Intent Phase:** submit Letter
  - **Concept Paper Phase:** resubmit Letter of Intent
  - **Full Application Phase:** submit SIPS Application (FOA Section IV.E)

FOA Description  
**Section I.B: Topic 1.2**

# Estimated Award Funding Information

Topic	1.1: PV Research Collaborations	1.2: SIPS
Total Amount to be Awarded	\$24 M	\$2M*
Anticipated Maximum Award Amount	\$5 M	\$200K/award
Period of Performance	Up to 3 years with an option to apply for an additional 2 years	1 year
Types of Funding Agreements	Cooperative Agreements, Grants, Technology Investment Agreements, Work Authorizations, Interagency Agreements. Although all of the above funding types are available, EERE generally will fund cooperative agreements	
Cost Share Requirement (of Total Project Costs)	R&D activities are 20% Demonstration activities are 50%	

\*Subject to the availability of appropriated funds



# Teaming Partner List

- To facilitate the formation of new project teams for this FOA, a Teaming Partner List is available at [EERE Exchange](#).
- Any organization that would like to be included on this list should submit the following information to [SETO.FOA@ee.doe.gov](mailto:SETO.FOA@ee.doe.gov)
  - Organization name, contact name, contact address, contact email, and contact phone number
  - Organization type, area of technical expertise, topic area, and a brief description of capabilities
- By submitting this information, you consent to the publication of the above-referenced information.
- By facilitating this Teaming Partner List, EERE does not endorse or otherwise evaluate the qualifications of the entities that self-identify themselves for placement on the Teaming Partner List.



# Who's Eligible to Apply?

Eligible applicants for this FOA include:

1. Individuals
2. Domestic Entities
3. Foreign Entities
4. Incorporated Consortia
5. Unincorporated Consortia

For more detail about each eligible applicant, please see Section III.A of the FOA for eligibility requirements

Note: DOE/NNSA Federally Funded Research and Development Centers (FFRDCs) and Non-DOE/NNSA FFRDCs are eligible to apply for funding as a Subrecipient (receiving up to 49.9% of the award funding) but are not eligible to apply as a Prime Recipient.

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



# Non-Responsive Applications

The following types of applications will be deemed nonresponsive and will not be reviewed or considered for an award:

- Applications that fall outside the technical parameters specified in Section I.B of the FOA, including but not limited to:
  - Applications for proposed technologies that are not based on sound scientific principles, such as anything that violates the laws of thermodynamics



# Statement of Substantial Involvement

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

- EERE shares responsibility with the Recipient for the management, control, direction, and performance of the Project.
- EERE may intervene in the conduct or performance of work under this Award for programmatic reasons. Intervention includes the interruption or modification of the conduct or performance of project activities.
- EERE may redirect or discontinue funding the Project based on the outcome of EERE's evaluation of the Project at that the Go/No Go decision point.
- EERE participates in major project decision-making processes.



# Cost Sharing Requirements

Topics 1.1 and 1.2

Applicants must contribute a minimum of 20% of the total project costs for R&D projects and 50% for demonstration activities



# Cost Share Contributions

- Contributions must be:
  - Specified in the project budget
  - Verifiable from the Prime Recipient's records
  - Necessary and reasonable for proper and efficient accomplishment of the project
- If you are selected for award negotiations, every cost share contribution must be reviewed and approved in advance by the Contracting Officer and incorporated into the project budget before the expenditures are incurred
- Please note, vendors/contractors may NOT provide cost share. Any partial donation of goods or services is considered a discount and is not allowable.





# Allowable Cost Share

- Cost Share must be allowable and must be verifiable upon submission of the Full Application
- Refer to the following applicable Federal cost principles:

Entity	Cost Principles
For-profit entities	FAR Part 31 <a href="http://farsite.hill.af.mil/reghtml/regs/far2afmcfars/fardfars/far/31.htm">http://farsite.hill.af.mil/reghtml/regs/far2afmcfars/fardfars/far/31.htm</a>
All other non-federal entities	2 CFR Part 200 Subpart E - Cost Principles <a href="https://www.ecfr.gov/cgi-bin/text-idx?node=2:1.1.2.2.1.5&amp;rgn=div6">https://www.ecfr.gov/cgi-bin/text-idx?node=2:1.1.2.2.1.5&amp;rgn=div6</a>



# Allowable Cost Share

- Cash Contributions
  - May be provided by the Prime Recipient, Subrecipients, or a Third Party (may not be provided by vendors/contractors)
- In-Kind Contributions
  - Can include, but are not limited to: the donation of volunteer time\* or the donation of space or use of equipment.

\*Per regulation, only third-parties may volunteer time. However, the office policy is that vendors/contractors can't contribute cost share, so any volunteer time is unallowable.

*For more information, see the Cost Share Appendix in the FOA*



# Unallowable Cost Share

The Prime Recipient may **NOT** use the following sources to meet its cost share obligations including, but not limited to:

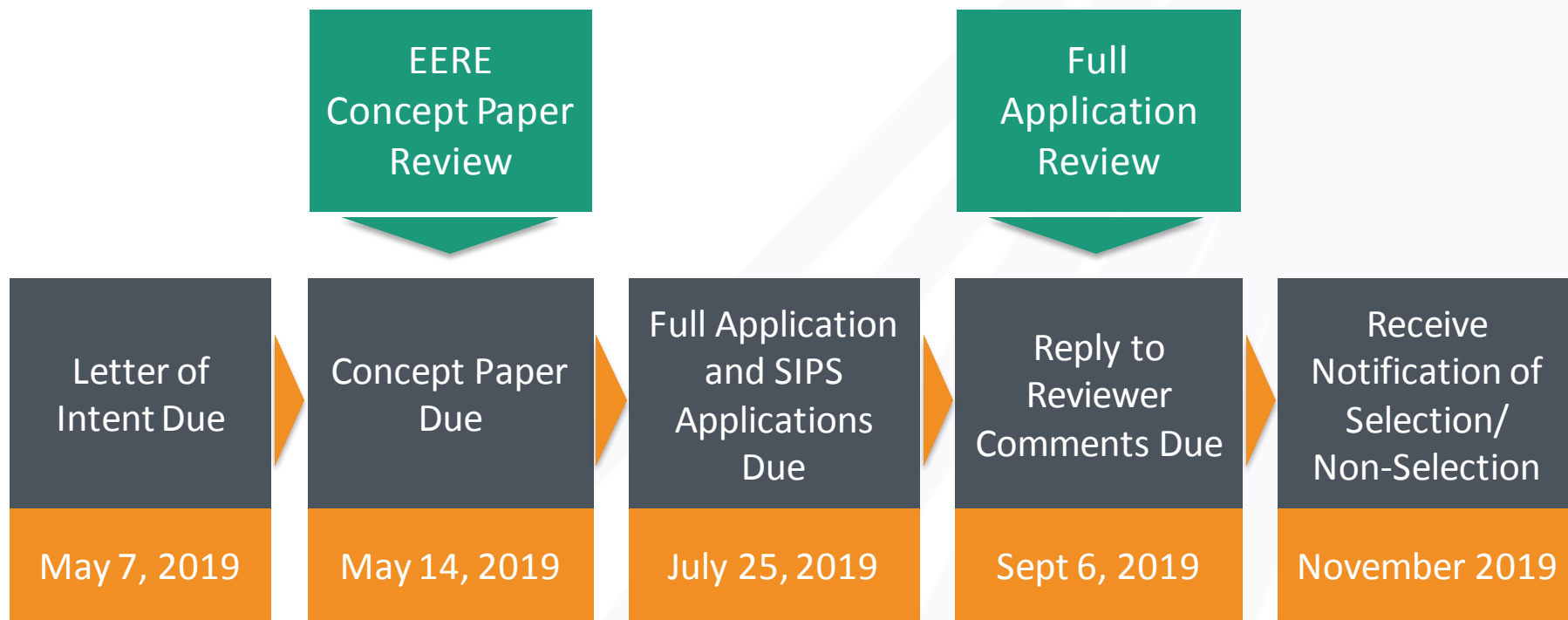
- Revenues or royalties from the prospective operation of an activity beyond the project period
- Proceeds from the prospective sale of an asset of an activity
- Federal funding or property
- Expenditures reimbursed under a separate Federal Technology Office
- The same cash or in-kind contributions for more than one project or program
- Vendor/contractor contributions



# Cost Share Payment

- Recipients must provide documentation of the cost share contribution, incrementally over the life of the award
- The cumulative cost share percentage provided on each invoice must reflect, at a minimum, the cost sharing percentage negotiated
- In limited circumstances, and where it is in the government's interest, the EERE Contracting Officer may approve a request by the Prime Recipient to meet its cost share requirements on a less frequent basis, such as monthly or quarterly. See Section III.B.vi of the FOA.

# FOA Timeline



Expected Timeframe for Award Negotiations: November 2019 - February 2020



# Required Letters of Intent

- Letters of Intent (“LOIs”) are REQUIRED in order to be eligible to submit a Concept Paper and Full Application
- To be considered:
  - The LOI must comply with the content and form requirements of Section IV.C of the FOA, and
  - The applicant must enter all required information and click the “Create Submission” button in EERE Exchange by the deadline stated in the FOA.
- The LOIs should not contain any proprietary or sensitive business information
- EERE will not provide notification of acceptance for Letters of Intent



# Concept Papers

- Applicants must submit a Concept Paper
  - Each Concept Paper must be limited to a single concept or technology
  - SIPS Applicants must submit an abbreviated Concept Paper submission
    - **Resubmit the Letter of Intent** as the concept paper in EERE Exchange
- The Concept Paper submission must include a technology description narrative and a cover page (See Section IV.D of the FOA)
  - The technology description is limited to 4 pages
  - The submission can include graphs, charts, or other data (as long as it fits within the formatting constraints)
- Concept Papers must be submitted by May 14th, 2019, 5:00pm ET through EERE Exchange, and must comply with the content and form requirements in Section IV.D of the FOA
- EERE provides applicants with: (1) an “encouraged” or “discouraged” notification, and (2) the reviewer comments

## Criterion: Overall FOA Responsiveness and Viability of the Project (Weight: 100%)

- This criterion involves consideration of the following subcriteria:
- The applicant clearly describes the proposed technology, describes how the technology is unique and innovative, and how the technology will advance the current state-of-the-art
- The applicant has identified risks and challenges, including possible mitigation strategies, and has shown the impact that EERE funding and the proposed project would have on the relevant field and application
- The applicant has the qualifications, experience, capabilities and other resources necessary to complete the proposed project
- The proposed work, if successfully accomplished, would clearly meet the objectives as stated in the FOA





# SIPS Applications

- SIPS Applicants must submit an abbreviated Concept Paper submission
  - **Resubmit the Letter of Intent** as the concept paper in EERE Exchange
  - No additional Concept Paper document is required for SIPS applicants
- The SIPS Application is due at the same time as all other Full Applications but has different content requirements (see Section V.E of the FOA for details)
  - **Cover Page** includes title, team, and high-level budget
  - **Project Description** includes technical content, resumes, and letters of support



# Full Applications

- The Full Application includes:
  - **Technical Volume:** The key technical submission - info relating to the technical content, project team members, etc.
  - **SF-424 Application for Federal Assistance:** The formal application signed by the authorized representative of the applicant.
  - **Summary Slide**
  - **Budget Justification, and subrecipient Budget Justification (if applicable)**
  - **Administrative Documents:**
    - Disclosure of Lobbying Activities
    - FFRDC Authorization (if applicable)
    - Waiver requests: Foreign Entities and Performance of Work in the United States (if applicable)



# Full Applications: Technical Volume Content

- **Technical Volume:** the key technical component of the Full Application
- **Contents:**
  - Cover Page
  - Project Overview
  - Project Description, Innovation, and Impact
  - Summary Statement of Project Objectives (SOPO)
  - Team Qualifications and Resources
  - Appendices
- **Note:** There are not strict page limits on sections to allow applicants the flexibility to structure the application in a way to best articulate the project and address the content requirements



# Full Application Eligibility Requirements

- Applicants must submit a Full Application by July 25, 2019, 5:00pm ET
- Full Applications are eligible for review if:
  - The Applicant is an eligible entity Section III.A of FOA;
  - The Applicant submitted an eligible Concept Paper;
  - The Cost Share requirement is satisfied Section III.B of FOA;
  - The Full Application is compliant Section III.C of FOA; and
  - The proposed project is responsive to the FOA Section III.D of FOA
  - The Full Application meets any other eligibility requirements listed in Section III of the FOA.



# Multiple Applications

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



## Merit Review and Selection Process (SIPS and Full Applications)

- The Merit Review process consists of multiple phases that each include an eligibility review and a thorough technical review
- Rigorous technical reviews are conducted by reviewers that are experts in the subject matter of the FOA
- Ultimately, the Selection Official considers the recommendations of the reviewers, along with other considerations such as program policy factors, to make the selection decisions



# Technical Merit Review Criteria for Full and SIPS Applications

## Criterion 1: Innovation and Impact (50%)

- The project is innovative and impactful, assuming the stated outcomes can be achieved as written. The project is differentiated with respect to existing commercial products, solutions, or technologies. If successful, the project is scalable to have a broader impact and maintained at a sufficiently large scale after project completion.



## Criterion 2: Quality and Likelihood of Completion of Stated Goals (30%)

- The application demonstrates an understanding and appreciation of project risks and challenges the proposed work will face and incorporates reasonable assumptions related to the execution of the project (i.e. market size, customer participation, costs, speed of proposed scale-up or adoption). The information included for the project is validated through customer trials, data from prior work, report references, technical baselines established, etc. The stated goals of the project are SMART (Specific, Measurable, Achievable, Relevant, and Timely) and likely to be accomplished within the scope of this project. The proposed budget is reasonable to achieve the objectives proposed.





## Criterion 3: Capability and Resources of the Applicant/Project Team (20%)

- The team is well qualified and has the capability and resources necessary to successfully complete the project. The team (including proposed subrecipients) have the training and experience to achieve the final results on time and to specification. The project team is fully assembled and committed to the project (verified through letters of support) and has a demonstrated record of successful past performance.



# Replies to Reviewer Comments

- EERE provides applicants with reviewer comments
- Applicants are not required to submit a Reply - it is optional
- To be considered by EERE, it is expected that a Reply must be submitted by September 6, 2019, 5:00pm ET through EERE Exchange
- Content and form requirements:

Section	Page Limit	Description
Text	3 pages max	Applicants may respond to reviewer comments or supplement their Full Application with graphs, charts, or other data.



## Selection Factors

The Selection Official may consider the merit review recommendation, program policy factors, and the amount of funds available in arriving at selections for this FOA



# Program Policy Factors

- The Selection Official may consider the following program policy factors in making their selection decisions:
  - The degree to which the proposed project exhibits technological or programmatic diversity when compared to the existing DOE project portfolio and other projects selected from the subject FOA
  - The degree to which the proposed project, including proposed cost share, optimizes the use of available EERE funding to achieve programmatic objectives
  - The level of industry involvement and demonstrated ability to accelerate commercialization and overcome key market barriers
  - Based on the commitments made in the U.S. Manufacturing Plan, the degree to which the proposed project is likely to lead to increased employment and manufacturing in the United States or provide other economic benefit to U.S. taxpayers
  - The degree to which the proposed project will accelerate transformational technological, financial, or other advances in areas that industry by itself is not likely to undertake because of technical and financial uncertainty



## Program Policy Factors (continued)

- The Selection Official may consider the following program policy factors in making their selection decisions:
  - The degree to which the proposed project, or group of projects, represent a desired geographic distribution (considering past awards and current applications)
  - The degree to which the proposed project avoids duplication/overlap with other publicly or privately funded work
  - The degree to which the proposed project enables new and expanding market segments
  - The degree to which the project promotes increased coordination with nongovernmental entities for demonstration of technologies and research applications to facilitate technology transfer



# Registration Requirements

- To apply to this FOA, Applicants must register with and submit application materials through EERE Exchange: <https://eere-Exchange.energy.gov>
- Obtain a “control number” at least 24 hours before the first submission deadline at <https://eere-Exchange.energy.gov>
- Although not required to submit an Application, the following registrations must be complete to received an award under this FOA:

Registration Requirement	Website
DUNS Number	<a href="http://fedgov.dnb.com/webform">http://fedgov.dnb.com/webform</a>
SAM	<a href="https://www.sam.gov">https://www.sam.gov</a>
FedConnect	<a href="https://www.fedconnect.net">https://www.fedconnect.net</a>



## Means of Submission

- Letters of Intent, Concept Papers, SIPS Applications, Full Applications, and Replies to Reviewer Comments must be submitted through EERE Exchange  
<https://eere-Exchange.energy.gov>
  - EERE will not review or consider applications submitted through other means
- The Users' Guide for Applying to the Department of Energy EERE Funding Opportunity Announcements can be found at <https://eere-Exchange.energy.gov/Manuals.aspx>



## Key Submission Points

- Check entries in EERE Exchange
  - Submissions could be deemed ineligible due to an incorrect entry
- EERE strongly encourages Applicants to submit 1-2 days prior to the deadline to allow for full upload of application documents and to avoid any potential technical glitches with EERE Exchange
- Make sure you hit the submit button
  - Any changes made after you hit submit will un-submit your application and you will need to hit the submit button again
- For your records, print out the EERE Exchange Confirmation page at each step, which contains the application's Control Number





# Applicant Points-of-Contact

- Applicants must designate primary and backup points-of-contact in EERE Exchange with whom EERE will communicate to conduct award negotiations
- It is imperative that the Applicant/Selectee be responsive during award negotiations and meet negotiation deadlines
  - Failure to do so may result in cancellation of further award negotiations and rescission of the Selection



# Questions

- Questions about this FOA? Email [SETO.FOA@ee.doe.gov](mailto:SETO.FOA@ee.doe.gov)
  - All Q&As related to this FOA will be posted on EERE Exchange
  - You must select this specific FOA Number (**DE-FOA-0002064**) in order to view the Q&As
  - EERE will attempt to respond to a question within 3 business days, unless a similar Q&A has already been posted on the website
- Problems logging into EERE Exchange or uploading and submitting application documents with EERE Exchange? Email [EERE-ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov).
  - Include FOA name and number in subject line