U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy


# Advanced Power Electronics Design for Solar Applications

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**FOA Webinar**

**DE-FOA-0001740**

**September 21, 2017**

# DE-FOA-000174
# Advanced Power Electronics Design for Solar Applications

## Anticipated Schedule:

| | |
|---|---|
| **FOA Issue Date:** | September 7, 2017 |
| **FOA Informational Webinar:** | September 21, 2017 |
| **Submission Deadline for Concept Papers:** | October 12, 2017 5:00pm ET |
| **Submission Deadline for Full Applications:** | December 15, 2017 5:00pm ET |
| **Submission Deadline for Replies to Reviewer Comments:** | January 26, 2018 5:00pm ET |
| **Expected Date for EERE Selection Notifications:** | March 2018 |
| **Expected Timeframe for Award Negotiations:** | 60-90 days |

# Notice

- All applicants are strongly encouraged to carefully read the Funding Opportunity Announcement **DE-FOA-0001740 ("FOA")** and adhere to the stated submission requirements.
- This presentation summarizes the contents of 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.
- If you believe there is an inconsistency, please contact PowerElectronics@ee.doe.gov.

# 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.

# Agenda

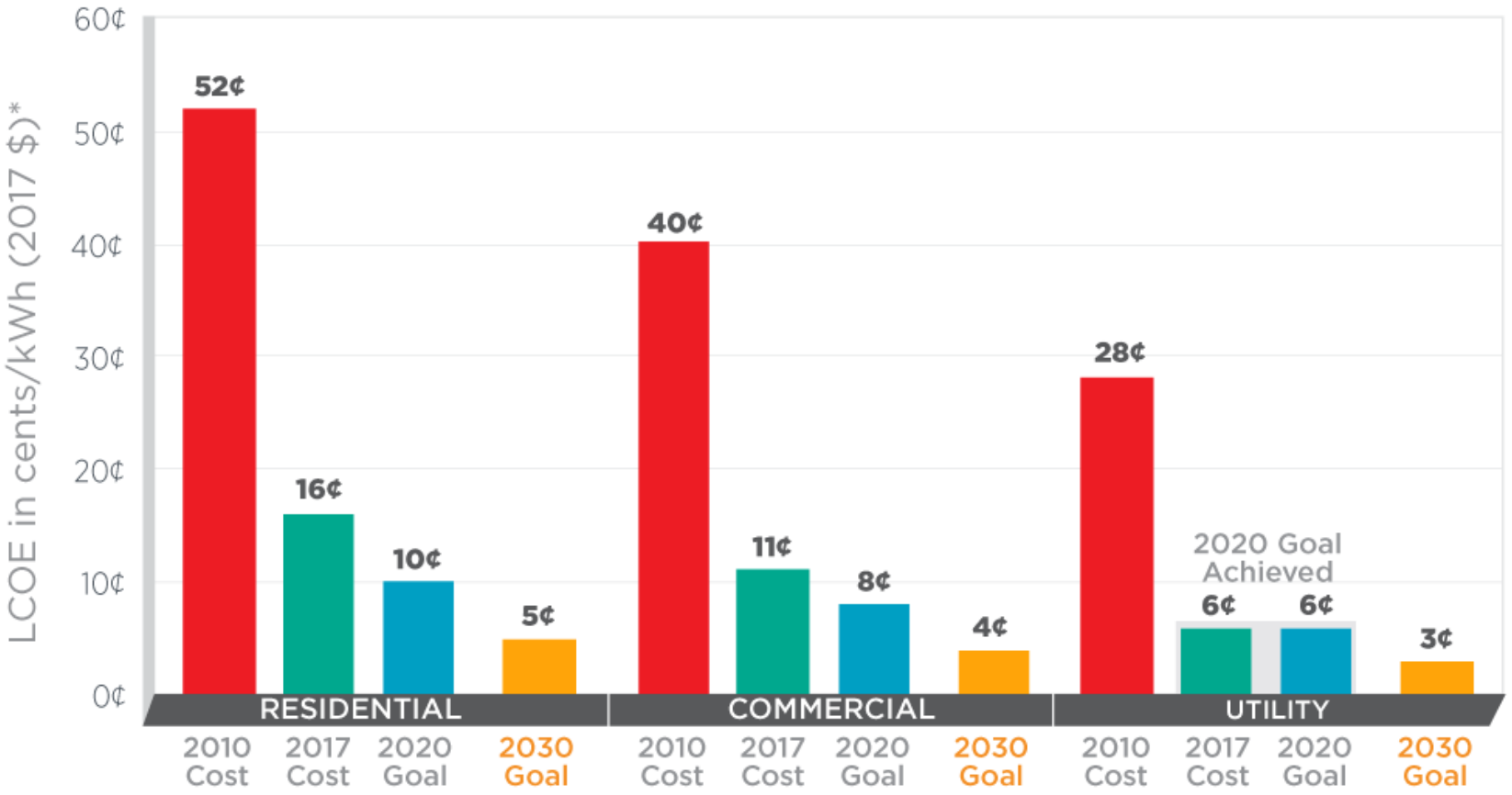
1) FOA Description
2) Topic Areas/Technical Areas of Interest
3) Award Information
4) Statement of Substantial Involvement
5) Cost Sharing
6) Concept Papers
7) Full Applications
8) Merit Review and Selection Process
9) Registration Requirements

# FOA Description

The Department of Energy (DOE) SunShot Initiative is a collaborative national effort launched in 2011 that makes smart research and development (R&D) investments to provide a technology pipeline that can lower costs so that solar electricity is fully market-competitive without subsidies. In addition to cost reduction, the SunShot Initiative supports R&D efforts that address the challenges to integrate solar deployment on the nation's electric grid with greater reliability, resilience, and security.

# FOA Description

## SunShot Progress and Goals




*Levelized cost of electricity (LCOE) progress and targets are calculated based on average U.S. climate and without the ITC or state/local incentives. The residential and commercial goals have been adjusted for inflation from 2010–17.

# FOA Description

Our extensive, reliable power grid has fueled the nation's growth and has long been a model for other countries. The structure of the 20th century grid, however, cannot meet all the demands of the 21st century. The traditional architecture was based on large-scale centralized generation remotely located from consumers, hierarchical control structures with minimal feedback, limited renewable generation such as wind and solar, limited energy storage, and passive loads. A modern grid must be more reliable, resilient, and secure. It must have the ability to dynamically optimize grid operations and resources, rapidly detect and mitigate disturbances, engage millions if not billions more intelligent devices, integrate diverse generation sources (including both conventional and renewable types), integrate demand response and energy-efficiency resources, enable consumers to manage their electricity use and participate in markets, and provide strong protection against physical and cyber risks.

# FOA Description

Progress on power electronics is considered crucial for effective grid integration of solar energy and modernizing the grid. Specifically, timely and cost-effective interconnections, optimal system planning, real-time monitoring and control, and maintaining grid reliability are all dependent on engineering innovations and technology breakthroughs in power electronics.

# Topic Areas/Technical Areas of Interest

This Funding Opportunity Announcement (FOA) will fund research that can enable significant reductions in the lifetime costs of power electronics (PE) for solar photovoltaic (PV) energy that align with meeting the SunShot 2030 goals, and likewise enable versatile control functionalities to support grid integration of solar PV for enhanced grid services. Power electronics technology is fundamental for renewable energy systems, and especially for solar PV as the critical link between solar PV arrays and the electric grid. Solar PEs regulate voltage, frequency, and power output of PV installations; can help respond to grid disturbances and recover from grid outages; and are important to ensure safe, reliable, and secure integration of solar generation with the electric grid. As higher penetrations of solar energy are interconnected to the grid, the lowered lifetime cost and improved functionality of PE becomes ever more important to safely and reliably operate the grid. Consistent with the SunShot levelized cost of electricity (LCOE) definition, and for the purposes of this FOA, lifetime cost reductions are those attributable to holistic solar PE design(s) that reduce the LCOE costs of the PV plant.

# Topic Areas/Technical Areas of Interest

LCOE ($/kWh) is the sum of the upfront installation price and the present value of the lifetime operational expenses ($), divided by the present value of the energy produced over the life of the system (kilowatt hours or kWh). The value of a PE improvement is the resulting reduction in the cost of energy delivered, plus the value of the ancillary services it provides, as pertinent to enhanced PE applications.

Innovative solar PE designs therefore show significant PV plant reductions in LCOE relative to the base PV plant LCOE with today's state of the art PE.

# Topic Areas/Technical Areas of Interest

Therefore, in comparison to the state of the art, the SunShot Initiative seeks to fund early-stage solar PE research projects to enable the following objectives:

1) Lower the lifetime cost of residential, commercial, and utility-scale solar PV inverter/converter solutions;

2) Develop innovative modular, multi-purpose solar PV power electronics designs that offer enhanced services for improved lifetime value and lower grid integration costs.

# Topic Areas/Technical Areas of Interest

This FOA will have two topic areas. Applicants to the FOA may submit applications in response to one or both topic areas below. Applicants may only submit one Full Application for each topic area of this FOA. If an applicant submits more than one Full Application to the same topic area, EERE will only consider the last timely submission for evaluation. However, separate concept papers and separate applications needs to be submitted for each topic area. See Section III.F for more details.

# Topic Areas/Technical Areas of Interest

Topic Area 1 (TA-1): Holistic solar PV inverter/converter designs that significantly reduce lifetime costs

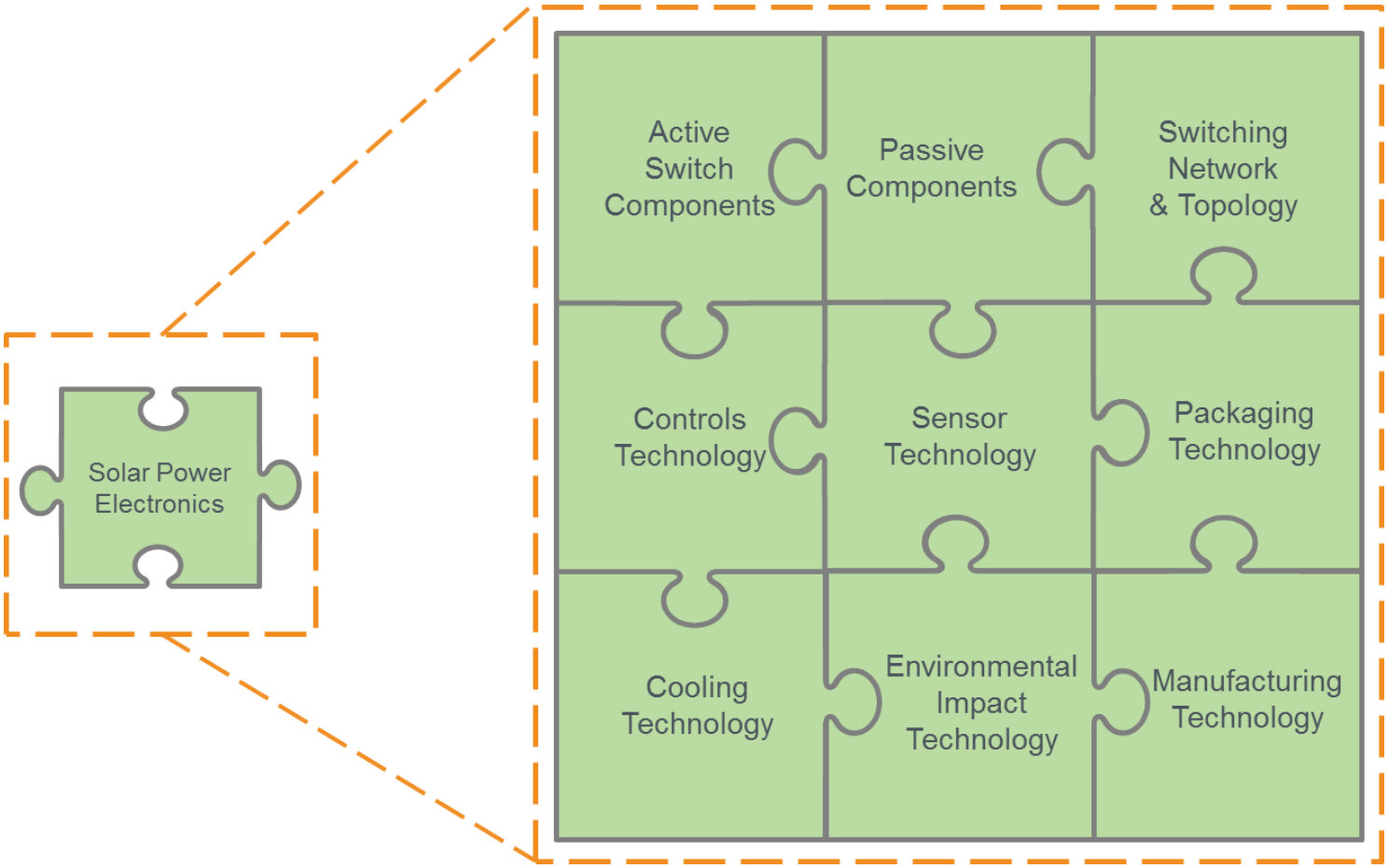


*Table 1: Topic Area-1 Technical Performance Metrics for Effective Reductions in PE Lifetime Costs*

| Solar Power Electronics Target Metrics (to be defined by applicant based on application) | | | Proposed Design Concepts (to be defined by applicant based on application) | |
|---|---|---|---|---|
| Primary Technical Requirement: Reduced Lifetime Costs ($/kWh) | System Requirements | Target Metric | Design Specification/Technology | |
| | System Cost | (Specify state of the art and proposed improvement; e.g. < $0.03/W utility scale, < $0.06/W commercial scale, < $0.07/W residential scale) | (Specify market segment and system cost target; specify power & voltage level) | |
| | Service Life & Equipment Reliability | (Specify state of the art and proposed improvement; e.g. > 25 years, < O&M costs) | (Specify O&M costs, service life and reliability relative to market segment; Specify MTTF (h) and failure mode – constituent or whole PE device as per market segment requirements; Design for maintenance / serviceability; Performance under partial- / over-load) | |
| | Optimized Constituent Technologies Design | Optimization of efficiency, power density, mass density, component topology & switching, magnetics/passives, environmental impact, thermal systems, and manufacturing.<br><br>Key design tradeoffs need to be defined and optimized for lowest lifetime costs. | Power module level | (Specify: Total harmonic distortion; Efficiency at rated power; $P_{out}/P_{loss}$; Power density (kW/L); Specific power (kW/kg); Cooling methodology; Number of discrete power modules) |
| | | | Circuit level | (Specify: Topology/architecture; Switching methodology & frequency (kHz); Number of discrete drivers; EMI filter volume) |
| | | | Component level | (Specify: Transistor type(s) and count; Transistor specifications; Diode type(s) and count; Diode specifications; Total semiconductor area ($mm^2$); Module packaging; Inductor type(s) and count; Total inductor volume ($mm^3$); Capacitor type(s) and count; Total capacitor volume ($mm^3$)) |
| | Grid-Support Controls | Compliance with ANSI, IEEE, and NERC standards. | (Specify test plan towards compliance certification as needed) | |
| | Interoperable and Cyber Secure | Compliance with open interoperability standards and cybersecurity protocols. | (Specify test plan towards Utility compliance as needed) | |
| | Secondary System Performance Metrics | (Applicant specified metric(s), as applicable) | (Specify state of the art and elaborate on proposed design improvements to meet performance metric(s)) | |

# Topic Areas/Technical Areas of Interest

Topic Area 2 (TA-2): Modular, multi-purpose power electronics that enable value-added grid and/or customer-owned solar energy services

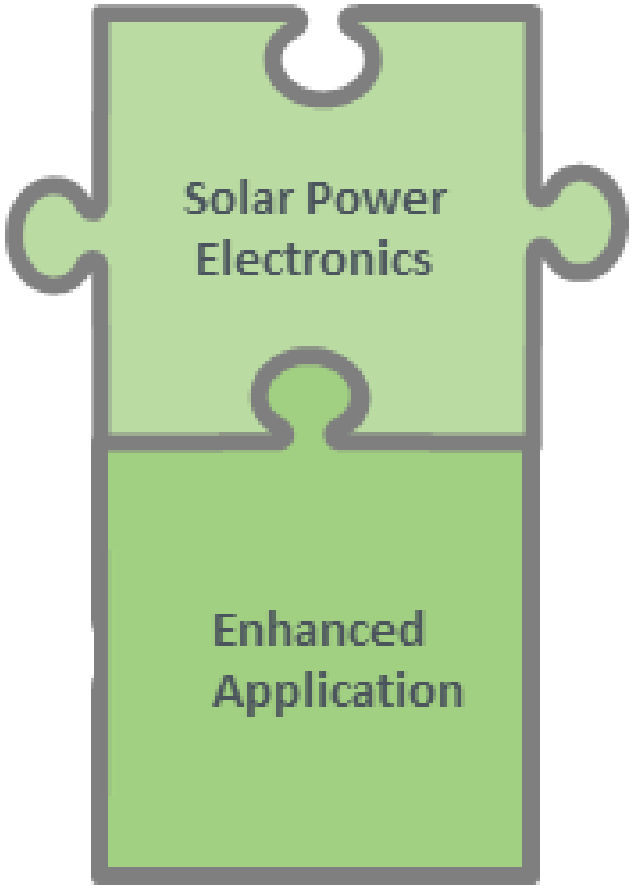


*Table 2: Topic Area-2 Technical Performance Metrics for Improved Lifetime Value from Modular, Enhanced Applications Services*

| Solar Power Electronics Target Metrics (to be defined by applicant based on application) | | | Proposed Design Concepts (to be defined by applicants based on application) |
|---|---|---|---|
| Primary Technical Requirement: Improved Lifetime Value ($/kWh) | System Requirements | Target Metric | Design Specification/Technology |
| | System Cost; Enhanced Application | (Specify state of the art and proposed improvement) | (Specify market segment; specify system configuration and system cost target; specify power & voltage level); (Specify applicant defined enhanced value application of one or both of: (a) behind the meter load / storage / generation services, and/or (b) in front of the meter grid services; Specify enhanced application revenue and/or reduced grid integration costs) |
| | Service Life & Equipment Reliability | (Specify state of the art and proposed improvement) | (Specify O&M costs, and service life and reliability relative to market segment; Specify MTTF (h) and failure mode – constituent or whole PE device as per market segment requirements; Design for maintenance / serviceability; Performance under partial- / over-load) |
| | Optimized Constituent Technologies Design | (Specify proposed functionalities as a modular extension to the base PE design) | (Specify modular design components and technologies to support applicant defined enhanced PE application) |
| | Grid-Support Controls | (Specify advancements beyond likely or future changes to grid reliability codes, such as and at least: ANSI, IEEE, and NERC standards) | (Specify test plan as needed to verify proposed technology; such as integration with storage and other DERs utilizing shared constituent PE technology; PV operation in microgrid during islanded mode; autonomous or utility directed power flow control; black start; etc.) |
| | Interoperable and Cyber Secure | Compliance with open interoperability standards and cybersecurity protocols. | (Specify test plan as needed to verify proposed technology; such as intrusion detection techniques; hardening measures for PE device and communication interface; enhanced system response and recovery from attack; etc.) |
| | Secondary System Performance Metrics | (Applicant specified metric(s), as applicable) | (Specify state of the art and elaborate on proposed design improvements to meet performance metric(s)) |

# 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 :
  - Solutions which do not directly integrate with a solar photovoltaic (PV) plant;
  - Solutions which will develop power electronics for distribution and transmission equipment located on the utility side of the PCC (so called 'in front of the meter' solutions); Flexible alternating current transmission system (FACTS);
  - Solutions which will develop power electronics for entirely off-grid systems. It is expected that TA-1 and TA-2 PE design solutions will be grid connected.

# Non-Responsive Applications (continued)

- Solutions not addressing PE designs that will achieve significant lower solar PV plant lifetime cost or increased value for correlated market segments (residential, commercial, and utility-scale PV systems);
- Solutions not addressing reliability concerns;
- Solutions that focus on market transactions (e.g. lowering supply chain costs; e.g. creating a transactive market for real and/or reactive power; etc.) that are not coupled with significant PE design advances from today's state of the art inverters/converters;
- Significant development of component level devices, including power semiconductor devices, magnetics, and capacitors;
- New WBG device technology development: it is preferred that teams utilize fully commercial WBG devices or WBG devices that are available as functioning prototypes. Novel WBG device development will be supported only to the extent that the proposed system requires devices with atypical characteristics;

# Non-Responsive Applications (continued)

- Novel magnetic material and new capacitor development: limited support will be allowed only if absolutely necessary to the proposed system;
- Constituent technology package and module development that are not integrated into a holistic PE design;
- Inverter interconnection functionality requirements already required by existing accepted national standards, specifically IEEE 1547, IEEE 2030, UL 1741, and the National Electric Code (NEC);
- Submissions with limited path to manufacturability;
- EMI simulation program development;
- Thermal simulation program development.
- Applications for proposed technologies that are not based on sound scientific principles (e.g., violates the laws of thermodynamics).

# Award Information

| | |
|---|---|
| **Total Amount to be Awarded** | **$20,000,000*** |
| **Average Award Amount** | EERE anticipates making awards that range from $500,000 to $3,000,000. |
| **Types of Funding Agreements** | Cooperative Agreements, Grants, Technology Investment Agreements, Work Authorizations, and Interagency Agreements |
| **Period of Performance** | 12 to 36 months |
| **Cost Share Requirement** | 20% of Total Project Costs |

*Subject to the availability of appropriated funds

# 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 the Go/No Go decision point.

# Statement of Substantial Involvement - Continued

- EERE participates in major project decision-making processes.

- For complete details, see Section VI.B for administrative and national policy requirements.

# Cost Sharing Requirements

- Applicants must contribute a minimum of 20% of the total project costs for R&D projects.
- See Section III.B for the full details.

# 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
- 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

# 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 |
| All other non-federal entities | 2 CFR Part 200 Subpart E - Cost Principles |

# Allowable Cost Share

- Cash Contributions
  - May be provided by the Prime Recipient, Subrecipients, or a Third Party
- In-Kind Contributions
  - Can include, but are not limited to: personnel costs, indirect costs, facilities and administrative costs, rental value of buildings or equipment, and the value of a service, other resource, or third party in-kind contribution

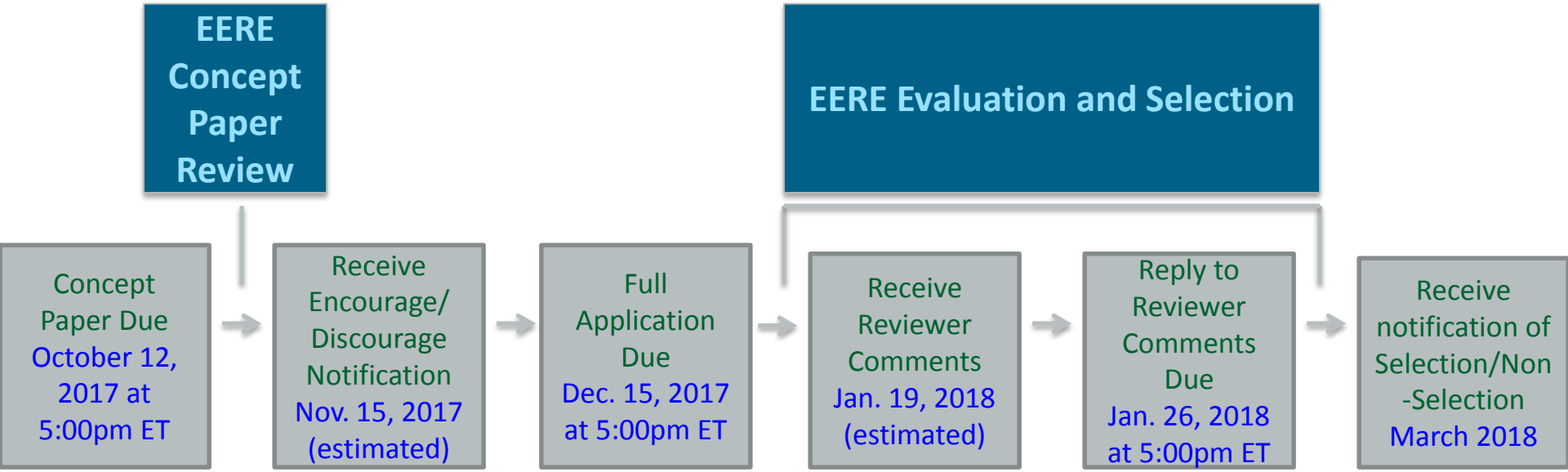
# Unallowable Cost Share

- 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
  - Independent research and development (IR&D) funds
  - The same cash or in-kind contributions for more than one project or program

# 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 of the FOA.

# FOA Timeline




EERE anticipates making awards by June 2018 (estimated)

# Pre-Selection Interviews

- EERE may invite one or more applicants to participate in Pre-Selection Interviews
- All interviews will be conducted in the same format
- EERE will not reimburse applicants for travel and other expenses relating to the Pre-Selection Interviews, nor will these costs be eligible for reimbursement as pre-award costs
- Participation in Pre-Selection Interviews with EERE does not signify that applicants have been selected for award negotiations

# Concept Papers

- Applicants must submit a Concept Paper
  - Each Concept Paper must be limited to a single concept or technology
- The Concept Paper must include a technology description (See Section IV.C of the FOA)
  - The technology description is limited to 4 pages
  - The Concept Paper can also include graphs, charts, or other data (limited to 1 pages)
- Concept Papers must be submitted by October 12, 2017, 5:00pm ET, through EERE Exchange, and must comply with the content and form requirements in Section IV.C of the FOA
- EERE provides applicants with: (1) an “encouraged” or “discouraged” notification, and (2) the reviewer comments

# Concept Paper Review

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

- **Criterion 1: Overall FOA Responsiveness and Viability of the Project (Weight: 100%)**
- 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; and
- The proposed work, if successfully accomplished, would clearly meet the objectives as stated in the FOA.

# 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.
  - **SF-424A Budget & Budget Justification:** a detailed budget and spend plan for the project.
  - **Summary for Public Release**
  - **Summary Slide**
  - **Administrative Documents:** E.g., U.S. Manufacturing Plan, FFRDC Authorization (if applicable), Disclosure of Lobbying Activities, etc.

# Full Applications: Technical Volume Content

- **Technical Volume: the key technical component of the Full Application**

| Content of Technical Volume | Suggested % of Technical Volume |
|---|---|
| Cover Page | |
| Project Overview | 10% |
| Technical Description, Innovation and Impact | 25% |
| Workplan | 25% |
| Technical Qualifications and Resources | 15% |
| FOA Specific Requirements | 25% |

# Full Application Eligibility Requirements

- Applicants must submit a Full Application by December 15, 2017, 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
  - Applicants may only submit one Full Application for each topic area of this FOA.
  - The Full Application meets any other eligibility requirements listed in Section III of the FOA.

# 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

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.

# Multiple Applications

Applicants may submit one application to each topic area of this FOA

# Merit Review and Selection Process (Full Applications)

- The Merit Review process consists of multiple phases that each include an initial 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

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

Technical Merit and Innovation

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

Impact of Technology Advancement

- How the project supports the topic area objectives and target specifications and metrics; and
- The potential impact of the project on advancing the state of the art.

# Technical Merit Review Criteria - Continued

**Criterion 2: Project Research and Commercialization Plan (30%)**

Research Approach and Workplan

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

Identification of Technical Risks

- Discussion and demonstrated understanding of the key technical risk areas involved in the proposed work, and the quality of the mitigation strategies to address them.

# Technical Merit Review Criteria - Continued

**Criterion 2, Continued**

Baseline, Metrics, and Deliverables

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

Market Transformation Plan

- Identification of target market, competitors, and distribution channels for proposed technology along with known or perceived barriers to market penetration, including mitigation plan; and
- Comprehensiveness of commercialization plan including but not limited to product development and/or service plan, commercialization timeline, financing, product marketing, legal/regulatory considerations including intellectual property, infrastructure requirements, Data Management Plan and Open Source Software Distribution Plan , U.S. manufacturing plan etc., and product distribution.

# Technical Merit Review Criteria - Continued

**Criterion 3: Team and Resources (20%)**

- The capability of the Principal Investigator(s) and the proposed team to address all aspects of the proposed work with a good chance of success. Qualifications, relevant expertise, and time commitment of the individuals on the team;
- The sufficiency of the facilities to support the work;
- Degree to which the proposed consortia/team demonstrates the ability to facilitate and expedite further development and commercial deployment of the proposed technologies;
- Level of participation by project participants as evidenced by letter(s) of commitment and how well they are integrated into the Workplan; and
- Reasonableness of budget and spend plan for proposed project and objectives.

# 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, a Reply must be submitted by January 26, 2018, 5:00pm ET and submitted through EERE Exchange
- Content and form requirements:

| Section | Page Limit | Description |
|---|---|---|
| Text | 2 pages max | Applicants may respond to one or more reviewer comments or supplement their Full Application. |
| Optional | 1 page max | Applicants may use this page however they wish; text, graphs, charts, or other data to respond to reviewer comments or supplement their Full Application are acceptable. |

# 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 his/her selection decisions:
  - The degree to which the proposed project, including proposed cost share, optimizes the use of available EERE funding to achieve programmatic objectives
  - The level of industry involvement and demonstrated ability to commercialize energy or related technologies
  - Technical, market, organizational, and environmental risks associated with the project
  - Whether the proposed project is likely to lead to increased employment and manufacturing in the United States
  - Whether the proposed project will accelerate transformational technological advances in areas that industry by itself is not likely to undertake because of technical and financial uncertainty
  - The degree to which the proposed project directly addresses EERE's statutory mission and strategic goals

# 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
- 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 | http://fedgov.dnb.com/webform |
| SAM | https://www.sam.gov |
| FedConnect | https://www.fedconnect.net |
| Grants.gov | http://www.grants.gov |

# Means of Submission

- Concept Papers, Full Applications, and Replies to Reviewer Comments must be submitted through EERE Exchange at 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 PowerElectronics@ee.doe.gov
  - All Q&As related to this FOA will be posted on EERE Exchange
    - You must select this specific FOA Number 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.
  - Include FOA name and number in subject line
- All questions asked during this presentation will be posted on EERE Exchange