

## EERE 205: FOA Applicant Webinar Presentation

U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy



Lighting Alternatives Maximizing  
Performance  
& Suitability (LAMPS)  
[DE-FOA-0001558@netl.doe.gov](mailto:DE-FOA-0001558@netl.doe.gov)

FOA Webinar  
DE-FOA-0001558  
April 28, 2016

# DE-FOA-0001558: Lighting Alternatives Maximizing Performance & Suitability (LAMPS)

## Anticipated Schedule

<b>FOA Issue Date</b>	4/21/2016
<b>Submission Deadline for Letter of Intent (optional but preferred)</b>	5/6/2016
<b>FOA Informational Webinar</b>	4/28/2016
<b>Submission Deadline for Full Applications</b>	5/23/2016
<b>Anticipated Release of Reviewer Comments to Applicants</b>	6/16/2016
<b>Expected Submission Deadline for Replies to Reviewer Comments</b>	6/21/2016
<b>Expected Date for EERE Selection Notifications</b>	August 2016
<b>Expected Timeframe for Award Negotiations</b>	September 2016

# Notice

---

- All applicants are strongly encouraged to carefully read the Funding Opportunity Announcement DE-FOA-0001558 (“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.
- If you believe there is an inconsistency, please contact:

[DE-FOA-0001558@netl.doe.gov](mailto:DE-FOA-0001558@netl.doe.gov)

# 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) Full Applications
- 8) Merit Review and Selection Process
- 9) Registration Requirements

# FOA Description — Objectives

---

- Accelerate development of replacement lamps that meet or exceed the 45 lm/W backstop requirement and maintain the needed performance attributes of the incandescent lamps they replace while eliminating or minimizing any performance compromises;
- Overcome technical challenges that inhibit widespread market acceptance and impede the design, development and future sale of suitable and compliant lighting products for the identified general service lamp categories; and
- Offer consumer choice.

Any lighting technology/ies that meet the requirements of the FOA will be considered, i.e., responses are NOT limited to LED or organic light-emitting diode (OLED) technologies.

# FOA Description

---

## 2007 Energy Independence and Security Act (EISA)

- Includes a 45 lumens per Watt (lm/W) “backstop requirement” that takes effect January 1, 2020.
- The backstop provision requires that all general service lamps sold meet a 45 lm/W minimum efficacy standard.
- Incandescent lamps are unlikely to meet the legislation’s 45 lm/W backstop requirement, effectively eliminating incandescent general service lamps from the market.
- However, there are other lighting technologies that may provide replacement options for these incandescent applications at efficacy levels exceeding 45 lm/W.

# FOA Topic Areas

---

All FOA topic areas focus on R&D for product development, to develop a specific commercially viable lighting product or product family for those products that would be phased out under the EISA 2007 backstop efficacy requirement and for which there are no suitable replacements on the market today. The goal is to develop the desired lighting technology/ies that reproduces the necessary attributes of the lamp being replaced and meets or exceeds the 45 lm/W EISA backstop efficacy level and to quickly move these products from the laboratory to the marketplace. For this reason, inclusion of a lamp manufacturer on the project team is strongly encouraged.

- Topic Area 1: MR16 Replacement Lamp Product Development
- Topic Area 2: Candelabra (E12) Base Replacement Lamp Product Development
- Topic Area 3: OPEN Replacement Lamp Product Development
- ❖ If the lamp development being proposed includes any design or performance tradeoffs, applications should point out where the tradeoff is and why it is an appropriate one to make.
- ❖ Any additional benefits or innovations of the proposed technology, such as improved thermal management, advances in drivers and optical design, the ability to tune CCT over a broad range, and/or how such innovations can be applied beyond the specific replacement lamp should also be described.
- ❖ Applications that propose a replacement lamp that meet or exceed ENERGY STAR Version 2.0 specification are greatly preferred. Applications must also include an estimated purchase cost (i.e., price per kilolumen (\$/klm)) for the proposed replacement lamp along with a justification for that estimated price and show a path to commercial viability by the year 2020.

## Topic Area 1: MR16 Replacement Lamp Product Development

The objective of this topic is to develop an MR16 replacement lamp that meets or exceeds the targets in Table 2.

**Table 2: MR16 Replacement Lamp Technical Targets for Topic Area 1**

ID	Metric	Target
1.1	Lamp Efficacy (lm/W)	$\geq 45$
1.2	Light Output (lm)	$\geq 700$
1.3	Beam Angle (°)	$< 15$
1.4	Center Beam Candle Power (CBCP)	$\geq 8000$
1.5	Form Factor	ANSI Standard Dimensions
1.6	Color Rendering Index (CRI) & R9 Score	CRI $\geq 90$ and R9 $\geq 50$
1.7	Correlated Color Temperature (CCT)	3000K $\pm$ 300K
1.8	Rated Life (min) (hrs)	$\geq 25,000$
1.9	Dimmable (min)	10%
1.10	Flicker	Minimal flicker (low flicker index)
1.11	Power Factor (min)	0.7

## Topic Area 2: Candelabra (E12) Base Replacement Lamp Product Development

The objective of this topic is to develop a Candelabra (E12) base omnidirectional replacement lamp that meets or exceeds the targets in Table 3. Proposed lamps need to look similar to the incandescent lamps they replace. For LEDs, designs typically attempt to minimize the size of the opaque lamp base that houses the driver, and hide LED packages from direct view. Such designs might compromise power level, efficacy, flicker, dimmability and/or radiation profile. Any performance compromises should be discussed in the application.

**Table 3: Candelabra (E12) Replacement Lamp Technical Targets for Topic Area 2**

ID	Metric	Target
2.1	Lamp Efficacy (lm/W)	$\geq 45$
2.2	Light Output (lm)	$\geq 600$
2.3	Form Factor	ANSI Standard Dimensions
2.4	Color Rendering Index (CRI) & R9 Score	CRI $\geq 90$ and R9 $\geq 50$
2.5	Correlated Color Temperature (CCT)	2700K $\pm$ 300K
2.6	Rated Life (min) (hrs)	$\geq 10,000$
2.7	Dimmable (min)	10%
2.8	Flicker	Minimal flicker (low flicker index)
2.9	Luminous intensity distribution	Omnidirectional
2.10	Power Factor (min)	0.7

## Topic Area 3: OPEN Replacement Lamp Product Development

The objective of this topic is to develop a replacement lamp for general illumination applications that meets or exceeds the targets in Table 4, and that is not addressed by Topics Areas 1 and 2. Eligible lamps are those listed in Table 1, such as medium screw base (E26) non-reflector lamps with B10, B11, and CA10 shapes, tubular pin-base halogen lamps, as well as other incandescent general service lamps that do not currently have suitable replacements that meet or exceed the 45 lm/W legislated backstop requirement.

**Table 4: OPEN Replacement Lamp Technical Targets for Topic Area 3**

ID	Metric	Target
3.1	Lamp Efficacy (lm/W)	≥ 45
3.2	Light Output (lm)	Depending on specific lamp chosen
3.3	Form Factor	ANSI Standard Dimensions
3.4	Color Rendering Index (CRI) & R9 Score	CRI ≥ 90 and R9 ≥ 50
3.5	Correlated Color Temperature (CCT)	3000K ± 300K
3.6	Rated Life (min) (hrs)	≥ 10,000
3.7	Dimmable (min)	10%
3.8	Flicker	Minimal flicker (low flicker index)
3.9	Power Factor (min)	0.7

# 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 (e.g., violates the laws of thermodynamics).
  - Applications focusing on deployment of commercialized products.
  - Applications that propose medium screw base (E26) A19 and tubular fluorescent replacements lamps such as T5, T8 and T12 style lamps.

# Award Information

---

<b>Total Amount to be Awarded</b>	<b>\$3,000,000*</b>
<b>Average Award Amount</b>	EERE anticipates making awards up to \$1,500,000 in federal funding.
<b>Types of Funding Agreements</b>	Cooperative Agreements
<b>Period of Performance</b>	up to 24 months
<b>Cost Share Requirement</b>	25% 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 that the Go/No-Go decision point.
- EERE participates in major project decision-making processes.

# Cost Sharing Requirements

---

Applicants must contribute a minimum of **25%** of the total project costs for development projects.

# 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.

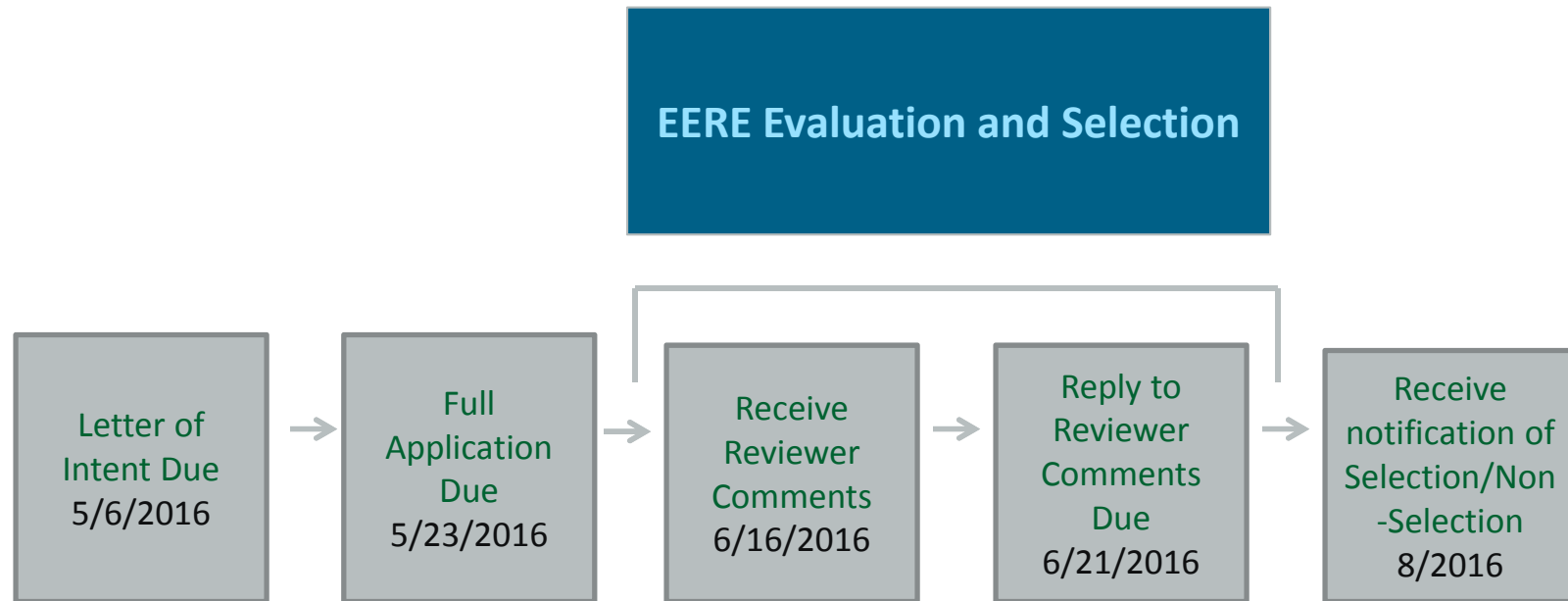
# Cost Share Payment

---

- 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.7 of the FOA.

# FOA Timeline

---



EERE anticipates making awards by 9/30/2016

# Letters of Intent

---

- Letters of Intent (“LOIs”) are OPTIONAL but encouraged.
- To be considered:
  - The LOI must comply with the content and form requirements of Section IV.B.1 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.

# Full Applications

---

- The Full Application includes:
  - **Technical Volume** – The key technical submission – info relating to the technical content, project team members, etc.
  - **Statement of Project Objectives (SOPO)** – The detailed plan for tasks, milestones and deliverables for the project.
  - **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	30%
Workplan and Market Transformation Plan	40%
Technical Qualifications and Resources	20%

# Full Application Eligibility Requirements

---

- Applicants must submit a Full Application by  
**5/23/2016 by 5:00 PM ET**
- Full Applications are eligible for review if:
  - The Applicant is an eligible entity Section III.A of FOA;
  - 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.

# 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.

# Performance of Work in the United States

---

- All work performed under EERE Awards must be performed in the United States. It does not apply to the purchase of supplies and equipment. The applicant should make every effort to purchase supplies and equipment within the United States.
  - Must flow down requirement to Subrecipients.
- Failure to comply may result in denied reimbursement and/or unrecognized cost share.
- In limited circumstances, a waiver may be granted.

# Multiple Applications

---

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

# 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 address performance, efficiency, and other criteria described for the particular topic area in the FOA;
- 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

- Likelihood that the proposed lamp will replace an existing product to be phased out;
- 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 and Mitigation 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 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;
- 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; and
- Ability to commercialize the resulting energy-efficient lighting technology and make it available for sale to the general public by January 1, 2020.

# 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 **6/21/2016 5:00 PM 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 leverages current or past EERE Solid State Lighting research.

# 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	<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>
Grants.gov	<a href="http://www.grants.gov">http://www.grants.gov</a>

# Means of Submission

---

- Letters of Intent, 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: [DE-FOA-0001558@netl.doe.gov](mailto:DE-FOA-0001558@netl.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](mailto: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.

---

# Questions?