Slide 1: Introduction

Hello everyone and welcome to our webinar. Thank you for your interest in the U.S. Department of Energy's efforts on renewable energy and energy efficiency. You are joining us for the Informational Webinar for Applicants and other Interested parties for the **Advanced Manufacturing Projects for Emerging Research Exploration** Funding Opportunity Announcement, or FOA, which was issued on **December 22, 2016**. My name is **David Forrest** and I am a **Technology Manager in the Advanced Manufacturing Office** within the DOE's Office of Energy Efficiency and Renewable Energy. **I will be joined by Bill Prymak, also with the Advanced Manufacturing Office.** We hope to cover the basic aspects of the Funding Opportunity Announcement during this webinar.

Before we begin, I'd like to draw your attention to the email address on the left hand side of this cover page. This is the official mailbox to direct all of your questions during the entire FOA process. Please do not contact EERE individuals directly with questions, including myself. All questions received at this mailbox are posted publicly at the Q&A section of the FOA page on EERE Exchange in an anonymous way. The official answers to your questions will typically also be posted within 3 business days. Please be careful not to submit any language that might be business sensitive, proprietary or confidential.

Also, just to be clear, 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.

Let's get started!

Slide 2: Schedule

This slide shows the anticipated schedule for the FOA. The FOA has already been posted, and we are conducting the FOA Informational Webinar now. Please note that there are a few requirements that we will go over in the presentation that are different than in past FOAs, such as Replies to Reviewer Comments – we will cover all requirements for this FOA later in the presentation.

Slide 3: Notice

- All applicants are strongly encouraged to carefully read the Funding Opportunity Announcement DE-FOA-0001465 **("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 AMOEmergingResearch@ee.doe.gov and we will provide clarification.

Slide 4: Agenda

The agenda for this presentation is as follows:

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

We encourage you to have a copy of the FOA in front of you for reference as we go through the presentation.

Slide 5: FOA Description

The U.S. Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy (EERE) is an organization focused on achieving aggressive and well-defined mid-to-long term clean energy goals for the United States of America. In that context, EERE has established multi-year plans and roadmaps. EERE focuses the majority of its resources on a limited number of "highest probability of success" pathways/approaches to ensure that the program initiatives are supported at a critical mass (both in terms of dollars and time) for maximum impact.

Although this roadmap-based approach is one of EERE's greatest strengths, it can create challenges in recognizing and exploring unanticipated, game changing pathways and approaches which may ultimately be superior to those in our existing portfolio.

Slide 6: FOA Description Continued

To enhance the responsiveness of the roadmap approach, EERE is issuing Funding Opportunity Announcements (FOAs) within its existing Offices and programs to support innovative technologies and solutions that could help meet existing goals but are not represented in a significant way in the Offices' existing Multi-Year Program Plans (MYPPs) or current portfolios. These FOAs and resulting projects will allow EERE to assess new technologies for their potential to be "on ramped" to future MYPPs, and encourage contributions from new partners. Successful projects will reduce the risk associated with potential breakthrough approaches and technologies so that they can be viable candidates for inclusion in future program roadmaps.

Slide 7: FOA Description Continued

The Applicants' technologies may be at different levels of maturity; proposed funding levels and project durations should be commensurate with the workscope necessary to advance the technology to the proposed readiness level. Applications to this FOA will be accepted in the following categories:

- Tier 1 (Concept Definition, expected TRL 2-3): DOE Federal Share Range of $250,000 - $1,000,000. The project would conduct early stage research needed to explore and define technical concepts. Activities would focus on thoroughly understanding and describing the capabilities of the technology. Research may include laboratory scale experiments, exploration of fundamental scientific concepts associated with the technology, data generation and analysis, and other exploratory methods.

Slide 8: FOA Description Continued

- Tier 2 (Proof of Concept, expected TRL 3-5): DOE Federal Share Range of $750,000 - $2,500,000. The project would conduct research, development and testing of prototype technology or processes. Work may include analytical studies and laboratory studies to physically validate analytical predictions of separate elements of the technology, predictive modeling or simulation of performance, engineering studies to assess scale-up, and testing of concept feasibility at the prototype or bench scale.

Slide 9: Topic Areas/Technical Areas of Interest

This funding opportunity addresses three topic areas. Each topic area consists of multiple subtopics. DOE intends to fund the applications with the greatest chance of helping achieve the

goals and mission of EERE. EERE may award an entire application or any part of an application at a funding level that will be negotiated with the applicant.

For all topic areas, Tier 1 or Tier 2 applications may be submitted. Proposed approaches are not required to reach the award ceiling; rather the proposed estimate of project costs should be commensurate with the work plan and proposed outcomes. Award durations will be for 1-2 years for Tier 1 projects and 2-3 years for Tier 2 projects, with a Go/No-Go decision point after each year. Applications with a strong linkage to relevant Chapter 6 QTR Technology Assessment topics are highly encouraged.

Slide 10: Topic Area 1, Advanced Materials

The Advanced Materials Topic Area focuses on advances in innovative materials and the devices and systems that incorporate them for energy-saving opportunities and improved functionality. This topic area contains the following subtopics:

1.1: Innovative Advanced Materials Manufacturing for Clean Energy

1.2: Novel Materials for Use in Harsh Service Conditions

1.3: Novel Materials for Direct Thermal Energy Conversion

1.4: Novel Materials for New Highly-Effective Chemical Catalysts

1.5: Atomically Precise Manufacturing

See the following slides and the FOA for more information about each subtopic:

Slide 11: Topic Area 1, Subtopic 1.1

Subtopic 1.1: Innovative Advanced Materials Manufacturing for Clean Energy

- This subtopic will accelerate the development of new, high performance materials systems for clean energy applications. For example, in steelmaking, recent advances in novel steel compositions, heat treatment processes, casting techniques, and refining methods have shown that significant innovations are still possible in steelmaking despite the high maturity level of this metallurgical system. Of particular interest, applications are sought to develop and demonstrate new advances in both clean energy manufacturing processes and product development for energy efficiency in steel and iron alloys.
- Also of particular interest, in high performance thermal and electrical conductors, novel methods are sought to inexpensively increase the electrical and thermal conductivity of metals to provide a new source of clean energy, thereby improving efficiencies over broad application spaces.

Slide 12: Topic Area 1, Subtopic 1.2

Subtopic 1.2: Novel Materials for Use in Harsh Service Conditions

- The physical limitations of materials in demanding environments have long constrained engineers in the design of innovative new products and technologies. Aggressive service environments can involve high temperatures and thermal cycling, high pressures, corrosive chemicals, liquid melts, dust and particulates, mechanical wear, neutron irradiation, and hydrogen attack. These aggressive environments—and the associated materials durability challenges—are common across multiple applications and sectors. New materials and new materials processing solutions are needed to meet stringent application demands for future products that will provide energy savings, emissions reductions, and other benefits. The following areas of particular interest:
  - Phase-stable materials
  - Functional surfaces
  - Embrittlement-resistant materials

Slide 13: Topic Area 1, Subtopic 1.3

Subtopic 1.3: Novel Materials for Direct Thermal Energy Conversion

- This subtopic seeks novel approaches to direct thermal energy conversion for low temperature industrial waste heat streams that will significantly improve the energy efficiency of the industrial sector. For example, advances in nanomaterials and nanofabrication could enable new direct conversion technologies that have the potential to surpass the performance of existing low-efficiency, high cost heat recovery systems. Some examples would include plasmonics, thermionic emission, and vibration energy harvesting. This subtopic is not limited to these examples. Desired performance targets include a conversion efficiency >30% with a manufacturing cost <$1/W.

Slide 14: Topic Area 1, Subtopic 1.4

Subtopic 1.4: Novel Materials for New Highly-Effective Chemical Catalysts

- This subtopic focuses on early-stage research capable of producing significant technical advances in the science of catalysis and providing energy efficiency benefits for specific applications. Applications that further the development of and leverage DOE Office of

Basic Energy Sciences Energy Frontier Research Center efforts in catalysis are encouraged. Particular areas of interest are:

- Advanced models for metal-oxide catalyst systems
- Innovations in new catalyst materials to replace noble metal catalysts
- Innovations in new molecules and synthesis techniques to produce biomimetic and atomically precise active sites
- New computational tools for biocatalysis analysis and development

Slide 15: Topic Area 1, Subtopic 1.5

Subtopic 1.5: Atomically Precise Manufacturing

- Atomically precise manufacturing is the production of materials, structures, devices, and finished goods in a manner such that every atom is at its specified location relative to the other atoms, and in which there are no defects, missing atoms, extra atoms, or incorrect (impurity) atoms. In current practice, atomically precise molecular sheets are possible using macromolecular chemistry with densely-packed designs for near zero defects, and full cross-linking for near theoretical strength and chemical stability. Spiroligomers, Metal Organic Frameworks, engineered proteins, enzymes, ribozymes, peptoids, and engineered DNA and RNA are examples of atomically precise building blocks that can be crafted for macromolecular assemblies, or which can be designed as atomically precise receptor sites to catalyze chemical reactions.

Slide 16: Topic Area 1, Subtopic 1.5, Continued

Subtopic 1.5: Atomically Precise Manufacturing (cont'd)

- In future practice, more complex atomically precise structures and devices could be fabricated using positional assembly with advanced scanning probe systems, or with integrated nanosystems for molecular additive manufacturing. Advances in these current or future practice techniques will be considered for funding for high energy impact applications such as (but not limited to) atomically precise membranes, atomically precise catalysts, molecular electronic computer circuits, and high sensitivity molecular sensors.

Slide 17: Topic Area 2, Advanced Processes

The Advanced Processes Topic Area focuses on advancing transformational next-generation processes and technologies not bound by limitations of current processes. This topic area contains the following subtopics:

2.1: Approaches to Cost-Effective Hydrogen Use in Manufacturing Processes

2.2: Innovative and Intensified Process Heating Methods to Minimize Emissions

2.3: Novel Approaches to Low Cost Waste Heat Recovery

2.4: High Value Roll-to-Roll Processes in Manufacturing

See the following slides and the FOA for more information about each subtopic:

Slide 18: Topic Area 2, Subtopic 2.1

Subtopic 2.1 – Approaches to Cost-Effective Hydrogen Use in Manufacturing Processes

- The focus of this topic is not necessarily to reduce the cost of hydrogen generation, but rather to explore options for the potential use of hydrogen feedstock. Applications in this subtopic area for the following are encouraged to advance promising approaches for the cost-effective use of hydrogen:
  - New process chemistries with hydrogen as the reductant;
  - Hydrogen/hydrogen-rich combustion;
  - Process heat integration with intermittent hydrogen generation;
  - Ammonia production alternatives to the Haber Bosch process; and
  - Other opportunities for hydrogen to cost-effectively replace fossil fuel use in manufacturing.

Slide 19: Topic Area 2, Subtopic 2.2

Subtopic 2.2 – Innovative and Intensified Process Heating Methods to Minimize Emissions

- One potential approach for reductions in process heating energy requirements is through low thermal budget processing. For low thermal budget processing, advanced processes could potentially provide the same or greater level of performance as current processes but at much lower temperatures and with potentially large energy savings. Examples of excitation sources that could potentially be used to achieve high throughput at significantly lower overall energy inputs include, but are not limited to, ultrasonic, infrared, microwave, plasma, and hybrid excitations.

- Applications are sought focusing on approaches that shorten manufacturing cycles through transient processing, and developing new manufacturing processes using alternate fuels and energy types. Other relevant approaches could include microbial and biomolecular-activated processes.

Slide 20: Topic Area 2, Subtopic 2.3

Subtopic 2.3 – Novel Approaches to Low Cost Waste Heat Recovery

- Applications in this subtopic area for the following are encouraged to advance promising approaches that could significantly lower the cost for recovering waste heat:
  - Innovative heat transfer methods and heat exchanger geometries to reduce equipment size;
  - High-efficiency, liquid-gas heat exchangers for low-temperature flue gases or exhaust air from dryers;
  - Advanced heat pumps (e.g., adsorption/desorption and chemical looping reactions);
  - Anti-fouling technologies to remove contaminants from waste heat streams or mitigate build-up of debris on heat exchanger surfaces; and
  - New designs and concepts to clean (remove) particulates from high-temperature gases.
- This subtopic is not limited to these examples. The proposed technology must have adequate robustness for utilization in challenging industrial operations. A credible path from early stage development to ultimate commercialization will need to be shown.

Slide 21: Topic Area 2, Subtopic 2.4

Subtopic 2.4 – High Value Roll-to-Roll Processes in Manufacturing

- While many R2R research needs are specific to a particular material set or market, several needs are cross-cutting, such as the need for precision registration of multiple coatings, aqueous ink development, and further development of multilayer coating techniques.
- Applications in this subtopic are sought to investigate novel process methods in the following: tools to feed precursor solutions and slurries at sufficient rates while controlling the rheology of these materials; development of substrates (tensile strengths, surface finish and release, materials, zero defect, etc.); design tools; feedback control; materials drying, curing, and heat treating accessories; incorporation of

concurrent/simultaneous process using additive and subtractive techniques; atmospheric and vacuum process improvements, precision alignment and registration; and lithographic imaging and etch/deposition. Approaches with broad applicability are preferred.

Slide 22: Topic Area 3, Modeling and Analysis Tools for Materials and Manufacturing

The Modeling and Analysis Tools for Materials and Manufacturing Topic Area focuses on optimization of energy and materials usage across the lifecycle of manufactured products through the use of information technology. This topic area contains the following subtopics:

3.1: Machine Learning and Algorithms for Efficiency in Manufacturing

3.2: Open Source Tools for Energy Efficiency in Manufacturing

See the following slides and the FOA for more information about each subtopic:

Slide 23: Topic Area 3, Subtopic 3.1

Subtopic 3.1 – Machine Learning and Algorithms for Efficiency in Manufacturing

- Applying machine learning techniques to the factory floor can enable increased accuracy in decision-making and improvement in performance.
- Applications in this subtopic are encouraged to focus on efficiency improvements for major energy consuming applications, or that enable a game-changing technology or production advancement. A strong justification is required to provide evidence that the technique will impact manufacturing efficiency, and a credible path from early stage development to ultimate commercialization will need to be shown, including a plausible pathway for integrating the technology into commercial manufacturing operations.

Slide 24: Topic Area 3, Subtopic 3.2

Subtopic 3.2 – Open Source Tools for Energy Efficiency in Manufacturing

- Applications in this subtopic are encouraged to focus on efficiency improvements for major energy consuming applications, or that enable a game-changing technology or production advancement. A strong justification is required to provide evidence that the technique will impact manufacturing energy efficiency, and a credible path from early stage development to ultimate commercialization will need to be shown, including a

plausible pathway for integrating the technology into commercial manufacturing operations. Applicants for this subtopic should closely review the requirements noted in Appendix E.

Slide 25: 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 law of thermodynamics).

Now that I've discussed the technical subtopics, Bill Prymak will describe additional details about the FOA and the mechanics of the proposal review and award process.

Slide 26: Award Information

EERE expects to make approximately $35,000,000 of Federal funding available for new awards under this FOA subject to the availability of appropriated funds. The average award amount is anticipated to range from $250,000 to $1,000,000 for Tier 1 projects and between $750,000 to $2,500,000 for Tier 2 projects.

EERE intends to fund mostly cooperative agreements under this FOA, but may also fund Grants, TIAs, Work Authorizations, and Interagency Agreements. Cooperative Agreements include Substantial Involvement, which we will discuss next.

Slide 27: Statement of Substantial Involvement

Under cooperative agreements, there will be what is known as "substantial involvement" between EERE and the Recipient during the performance of the project.

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.

Slide 28: Cost Sharing Requirements

- Applicants must contribute a minimum of 20% of the total project costs for R&D projects.
- 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

Applicants who believe their project qualifies for the reduced recipient cost share must be able to provide verification that the above requirements are satisfied

Slide 29: Allowable Cost Share

Cost Share must be allowable and must be verifiable upon submission of the Full Application. Please refer to this chart for your entity's applicable cost principles. It is imperative that you follow the applicable cost principles when creating your budget for the full application.

Slide 30: Allowable Cost Share Continued

Cost share can provided in cash and/or in-kind. It can be provided by the Prime Recipient, subs, or a third party.

The basic definition of in-kind cost share is the donation of personnel time, equipment, facilities, or other items that an organization will contribute to the project. It can take many forms, each of which must be assigned a dollar value to be included in the budget. Some examples of in-kind cost share are the donation of work hours, facility use, equipment use.

Slide 31: Unallowable Cost Share

Be aware that there are items that are considered unallowable cost share. If a cost is considered unallowable, it cannot be counted as cost share. This slide provides some examples of cost share that is unallowable.

Slide 32: Cost Share Payment

Cost Share must be provided on an invoice basis, unless a waiver is requested and approved by the DOE Contracting Officer.

Slide 33: FOA Timeline

EERE's Evaluation and Selection Process is shown in blue here. EERE will review Concept Papers, Replies to Reviewer Comments (which we will cover later in the presentation), and Full Applications. The gray boxes represent the actions that apply to applicants throughout the FOA process.

Slide 34: Pre-Selection Interviews

As part of the merit review process, EERE may invite certain applicants to participate in Pre-Selection Interviews.

The invited applicants will meet with EERE l to allow the Merit Review Panel to seek clarification on the contents of the Full Applications and otherwise ask questions regarding the proposed project. The information provided by applicants to EERE through Pre-Selection Interviews contributes to EERE's selection decisions.

As part of the evaluation and selection process, EERE may invite one or more applicants to participate in Pre-Selection Interviews. Pre-Selection Interviews are distinct from and more formal than pre-selection clarifications (See Section V.D.3 of the FOA). The invited applicant(s) will meet with EERE representatives to provide clarification on the contents of the Full Applications and to provide EERE an opportunity to ask questions regarding the proposed project. The information provided by applicants to EERE through Pre-Selection Interviews contributes to EERE's selection decisions.

EERE will arrange to meet with the invited applicants in person at EERE's offices or a mutually agreed upon location. EERE may also arrange site visits at certain Applicants' facilities. In the alternative, EERE may invite certain applicants to participate in a one-on-one conference with EERE via webinar, videoconference, or conference call.

EERE will not reimburse applicants for travel and other expenses relating to the Pre-Selection Interviews, nor will these costs be eligible for reimbursement as pre-award costs.

EERE may obtain additional information through Pre-Selection Interviews that will be used to make a final selection determination. EERE may select applications for funding and make awards without Pre-Selection Interviews. Participation in Pre-Selection Interviews with EERE does not signify that applicants have been selected for award negotiations.

Slide 35: Concept Papers

Concept Papers are required for this FOA. Concept Papers are brief descriptions of the proposed project. It allows applicants to submit their ideas with minimal time and expense. EERE will provide feedback on the proposed project so the Applicant can make an informed decision whether to expend additional resources to prepare a full application.

If an applicant fails to submit an eligible Concept Paper, the applicant is not eligible to submit a Full Application.

Concept Papers must be submitted by 1/31/2017, 5:00pm ET, through EERE Exchange.

EERE will provide applicants with either an encouraged or discouraged notification. A "discouraged" notification conveys EERE's lack of programmatic interest in the proposed project. An applicant who receives a "discouraged" notification may still submit a Full Application.

Slide 36 Concept Paper Review

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

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

Quality, innovativeness, soundness, adequacy and completeness of the proposed project and the likelihood that the applicant will effectively and efficiently accomplish the work and meet the objectives.

This criterion involves consideration of the following factors:

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.

EERE will provide applicants with (1) either an "encouraged" or "discouraged" notification, and (2) the reviewer comments.

Please note that regardless of the date applicants receive the Encourage/Discourage notifications, the submission deadline for the Full Application remains the date stated on the FOA cover page

Slide 37: Full Applications

The Full Application includes:

Technical Volume: The key technical submission. Applicants submit info pertaining 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. Includes cost share amounts and Federal certifications and assurances.

SF-424A Budget & Budget Justification: Budget documents that asks applicants to submit a detailed budget and spend plan for the project.

Summary for Public Release: Applicants must provide a 1 page summary of their technology appropriate for public release.

Summary Slide: Powerpoint slide that provides quick facts about the technology. Slide content requirements are provided in the FOA.

Administrative Documents: E.g., U.S. Manufacturing Plan, FFRDC Authorization (if applicable), Disclosure of Lobbying Activities, etc.

Slide 38: Full Applications, Technical Volume Content

The key technical component of the full application is the Technical Volume, which helps applicants frame the technical information that the application will be evaluated on. The Technical Volume provides information regarding what the project is, how the project tasks will be accomplished, and the project timetable.

The Technical Volume is comprised of a cover page, project overview, technical description, innovation, and impact, workplan, technical qualifications and resources. Please note that the percentages listed here are suggested and are not mandatory.

- The Cover Page will be a one page document and provides basic information on their project, such as title, topic area, points of contact, etc.
- The Project Overview constitutes approximately 10% of the Technical Volume and provides information on project background, goals, impact of EERE funding
- Innovation, and Impact section is approximately 15% of the Technical Volume and provides information on the current state of the art in the applicable field, specific innovation of the proposed technology, the advantages of the proposed technology over current and emerging technologies, and the overall impact on advancing the state of the art/technical baseline if the project is successful.
- The Technical Description, is approximately 25% of the Technical Volume. It provides information on project relevance and outcomes, feasibility, and for Tier 2 Applications, a Market Transformation Plan. This ultimately provides the justification as to why EERE should fund the project.
- The Workplan is the key element to the Technical Volume, and constitutes approximately 30% of the Technical Volume. It details the proposed milestones and project schedule. If selected for award negotiations, the Workplan serves as the starting point when negotiating the Statement of Project Objectives.
- The Technical Qualifications and Resources section is approximately 20% of the Technical Volume. It provides applicants and opportunity to provide information about the proposed project team and demonstrate how the applicant will facilitate the successful completion of the proposed project.

Slide 39: Full Application Eligibility Requirements

As we previously pointed out, applicants must submit full applications by March 30, 2017. EERE will conduct an eligibility review, and full application will be deemed eligible 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.

Slide 40: 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

Please note that 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.

Also, note that all Prime Recipients receiving funding under this FOA must be incorporated (or otherwise formed) under the laws of a State or territory of the United States. If a foreign entity applies for funding as a Prime Recipient, it must designate in the Full Application a subsidiary or affiliate incorporated (or otherwise formed) under the laws of a State or territory of the United States to be the Prime Recipient. The Full Application must state the nature of the corporate relationship between the foreign entity and domestic subsidiary or affiliate.

Slide 41: Multiple Applications

An entity may only submit one Concept Paper and one Full Application for each of the three Topic Areas identified in Section I.B for consideration under this FOA. For example, EERE will only consider one Concept Paper and one Full Application per university for each of the three Topic Areas identified for this FOA (not one submission per each college or school within the university). This limitation does not prohibit an Applicant from collaborating on other applications (e.g., as a potential Subrecipient or partner) so long as the entity is only listed as the Prime Applicant on one Concept Paper and Full Application submitted per Topic Area under this FOA.

Slide 42: 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

Slide 43: Technical Merit Review Criteria, Criterion 1

Applications will be evaluated against the following merit review criteria:

Criterion 1: Impact on Office Mission, National Energy Goals, and U.S. Competitiveness (34%)

- Degree that the technology will impact AMO mission, national energy goals, and U.S. competitiveness.
- Degree that proposed project is innovative and unique.
- The extent to which the proposed approach or technology, if successful, represents a measureable and significant advancement over current state-of-the art.
- The degree to which the application demonstrates a profound understanding of the current approach and/or state-of-the-art.
- The clarity of the application's demonstration of an awareness of competing approaches or technologies and identification of how the proposed project has advantages over these competing approaches.
- Validity and likelihood of success of the proposed manufacturing and/or commercialization strategy.

Slide 44: Technical Merit Review Criteria Continued, Criterion 1

Criterion 1: Impact on Office Mission, National Energy Goals, and U.S. Competitiveness (34%) (Continued)

- For Tier 2 Applications only: Quality of the Market Transformation Plan to include:
    - Completeness of identification of target market, competitors, and distribution channels for proposed technology along with known or perceived barriers to market penetration, including a mitigation plan.

- Quality of the identification of a product development and/or service plan, commercialization timeline, financing, product marketing, legal/regulatory considerations including intellectual property, infrastructure requirements, data dissemination, U.S. manufacturing plan, and product distribution.

Slide 45: Technical Merit Review Criteria Continued, Criterion 2

Criterion 2: Quality and Technical Merit of Proposed Work Plan and Milestones (33%)

- Clearly defined project outcome and deliverables.
- Demonstration of a sound technical approach to accomplish the proposed objectives.
- Submission of a development plan, technical information, test results and data that demonstrates credible and well-justified technical potential to meet or exceed any defined targets or goals.

Slide 46: Technical Merit Review Criteria Continued, Criterion 3

Criterion 3: Capabilities and Resources of the Proposed Project Team (33%)

- Degree to which the roles and responsibilities of the project team members are clearly defined and demonstrate an effective plan to manage the resources.
- Demonstrated experience and commitment of the project team to manage and implement projects of similar risk and complexity (all project aspects, including scope, cost, and schedule) that have led to successful development and commercialization.
- Collaboration of teaming partners on past projects.
- Credentials, capabilities, and experience of proposed team members/key personnel.
- Access to the facilities and equipment necessary to accomplish the project or clearly define how the necessary equipment and facilities will be obtained.
- Adequacy of the project timetable/schedule and milestones to successfully accomplish project objectives on time and within the proposed budget.

Slide 47: Replies to Reviewer Comments

The Full Application are reviewed by experts in the FOA topic area(s). After those experts review the applications, EERE will provide applicants with reviewer comments. Applicants will have a brief opportunity to review the comments and prepare a short Reply to Reviewer Comments

responding to comments however they desire. The Reply to Reviewer Comments is due by the date and time provided on this slide. Applicants should anticipate receiving the independent reviewer comments approximately three business days before this due date. The Reply to Reviewer Comments is an optional submission; applicants are not required to submit a Reply to Reviewer Comments.

The Replies are considered by the reviewers and the selection official.

Replies to Reviewer Comments must conform to the content and form requirements listed here, including maximum page lengths. If a Reply to Reviewer Comments is more than three pages in length, EERE will review only the first three pages and disregard any additional pages.

Please see Sections IV.E. and V.A.iii for additional information regarding Replies to Reviewer Comments

Slide 48: Program Policy Factors

After the Merit Review process, the Selection Official may consider program policy factors to come to a final selection decision.

In addition to the Technical Merit Review criteria, the Selection Official may consider the following program policy factors in determining which Full Applications to select for award negotiations:

- Likelihood that the successful completion of the proposed project would result in a technology or solution that would receive follow-on funding from federal agencies and private investors;
- The degree to which the proposed project, including proposed cost shares, optimizes the use of available EERE funding to achieve programmatic objectives;
- The degree to which proposed technological approaches address priority technology topics identified in Chapter 6 (Innovating Clean Energy Technologies in Advanced Manufacturing) Technology Assessments in the Department of Energy 2015 Quadrennial Technology Review;

Slide 49: Program Policy Factors Continued

- Diversity of technological areas in project awards, including technology concepts that leverage or complement other high priority AMO investments (e.g., critical materials, wide bandgap semiconductors);

- Organizational diversity, particularly to encourage new research participants to AMO in general or for a specific high priority AMO investment area;
- The level of technical, market, organizational, and environmental risks associated with the project;
- The degree to which the proposed project will accelerate transformational technological advances in areas that industry by itself is not likely to undertake because of technical or financial uncertainty.

Slide 50: Registration Requirements

There are several one-time actions before submitting an application in response to this FOA, and it is vital that applicants address these items as soon as possible. Some may take several weeks, and failure to complete them could interfere with an applicant's ability to apply to this FOA, or to meet the negotiation deadlines and receive an award if the application is selected.

DUNS Number

Obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number.

System for Award Management

Register with the System for Award Management (SAM). Designating an Electronic Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in SAM registration. Please update your SAM registration annually.

Fedconnect

Register in FedConnect. To create an organization account, your organization's SAM MPIN is required. For more information about the SAM MPIN or other registration requirements, review the FedConnect Ready, Set, Go! Guide at the FedConnect site.

Grants.gov

Register in Grants.gov to receive automatic updates when Amendments to this FOA are posted. However, please note that Concept Papers, and Full Applications will not be accepted through Grants.gov.

Slide 51: Means of Submission

All required submissions must come through EERE Exchange. EERE will not review or consider applications submitted through any other means.

Slide 52: 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

Slide 53: 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

Slide 54: Questions

- Questions about this FOA? Email AMOEmergingResearch@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