

## Slide 1

Good afternoon, 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 Clean Energy Manufacturing Innovation Institute for Reducing EMbodied-energy And Decreasing Emissions (REMADE) in Materials Manufacturing Funding Opportunity Announcement, or FOA, which was issued on June 20, 2016. My name is Mike McKittrick and I am a Technology Manager in the Advanced Manufacturing Office within the DOE's Office of Energy Efficiency and Renewable Energy. I am joined by my colleagues, Debbie Schultheis and John Harrington. 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. There will be no Q&A during this webinar and 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

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

All applicants are strongly encouraged to carefully read the Funding Opportunity Announcement DE-FOA-0001594 ("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 email [CEMII-REMADE@ee.doe.gov](mailto:CEMII-REMADE@ee.doe.gov)

and please note, we will not be holding a live Q&A during this webinar.

## Slide 4

The agenda for this presentation is the eleven items listed on the slide:

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

## **Slide 5**

Information provided in these slides is an overview of the FOA, it does not contain all information that is provided in the FOA – please read the entire FOA for all relevant information.

EERE's AMO establishes Manufacturing Innovation Institutes in the President's National Network for Manufacturing Innovation (NNMI) as shared research, development, and demonstration facilities to overcome cross-cutting challenges related to the manufacturing of clean energy and energy efficiency products, in addition to challenges associated with improving the energy efficiency of the manufacturing sector across the board.

This FOA supports the establishment of a Clean Energy Manufacturing Innovation Institute on Reducing Embodied-energy And Decreasing Emissions (REMADE) in Materials Manufacturing.

## **Slide 6**

Section I.B. provides the following Background Information: An overview of the Manufacturing Innovation Institutes including purpose, TRL/MRL focus, etc; an overview of REMADE including a description, background and benefits; as well as a teaming partner list.

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EERE's AMO establishes Manufacturing Innovation Institutes that will participate in the Administration's National Network for Manufacturing Innovation (NNMI) as shared research, development, and demonstration facilities.

DOE has established two Manufacturing Innovation Institutes. The first Institute, PowerAmerica, is focused on wide bandgap semiconductor technologies for next generation power electronics. The second Institute, the Institute for Advanced Composites Manufacturing Innovation, is focused on composite manufacturing technologies for vehicles, wind turbine blades, and compressed gas storage tanks. Recently, it was announced the Smart Manufacturing Leadership Coalition has been selected for negotiation to lead the third DOE Institute - focused on Smart Manufacturing. A funding opportunity announcement for a fourth institute focused on Modular Chemical Processing Intensification for Clean Energy was released in May 2016. This FOA is for DOE's fifth Manufacturing Innovation Institute.

The Department of Defense has established six Institutes, with two new competitions recently announced.

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Through shared research, development, and demonstration (RD&D) infrastructure and capabilities, an Institute enables development, refinement, demonstration, and early industry adoption of advanced manufacturing technologies at a scale significant enough to establish feasibility while significantly reducing both the cost and uncertainty of commercializing the technologies.

Institutes are designed to bring together industry, universities and community colleges, federal agencies, states, and localities to accelerate manufacturing innovation and scale-up by investing in industry-relevant, cross-cutting product and process technologies.

In addition .Manufacturing Innovation Institutes provide education and training opportunities to build and enhance the skills of the American manufacturing workforce. Each Manufacturing Innovation Institute is expected to be fully independent of federal funds approximately 5 years after launch (also referred to as “self-sustaining”).

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As the consumption of materials grows, the embodied energy and greenhouse gas emissions footprint associated with the production of these materials is becoming increasingly important. Technologies to enable the recycling, reuse and remanufacturing of materials would recover the embodied energy of end-of-life (EOL) and waste materials and reduce greenhouse gas emissions.

Opportunities exist for significant energy, cost and material resource savings through driving improvements in the efficiency of material re-use throughout the manufacturing process. Materials-efficient processes and secondary/recycled feedstocks must be cost-competitive with current manufacturing approaches to enable private sector adoption– and should be targeted at multiple stages within the lifecycle of materials.

Through shared RD&D infrastructure, an institute enables early industry adoption of technologies at a scale significant enough to establish feasibility while significantly reducing both the cost and uncertainty of commercializing the technologies. Institutes are expected to focus primarily on TRL/MRL 4-7 activities

## **Slide 10**

The U.S. energy usage is approximately 95 quadrillion BTUs/year (or quads). The manufacturing sector uses 24.4 quads annually. Within that approximate 24 quads, four of the six most energy intensive industries uses 7.1 quads in processing feedstock materials for metals, polymers, fibers and other components that would comprise electronic waste (or e-waste).

Not included in the manufacturing sector energy demand is the mining/extraction of raw materials for these feedstocks – which requires an additional 1.6 quads. This mining and extraction energy is included within the embodied-energy of the materials.

Not only are the sectors that process the primary feedstocks for these materials energy intensive, reported greenhouse gas (GHG) emissions for the sectors were approximately 19% of all GHG emissions reported in 2014.

For select materials – the energy required to process secondary feedstocks can be significantly lower than the energy to process primary feedstocks. As an example, secondary aluminum requires 95% less energy to process than primary. Secondary steel requires approximately 75% less energy to process. In an internal analysis of similar materials – it was estimated that by increasing the use of secondary feedstocks by 30% and decreasing the energy intensity of secondary processing by 30% - more than 1.5 quads of annual energy savings are potentially possible.

However, with the disaggregation of vertically integrated manufacturers into supply chains – few individual firms have either the reach or the motivation to research and develop new technologies which would enable significant advances in the sustainable use of material (and reduction of embedded energy) across product lifecycles. A REMADE Institute would ensure a critical mass of researchers are focusing on addressing these technical problems.

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The Three Application Focus Areas for REMADE are:

- 1) Reduce energy and emissions through reduction of primary material use in energy intensive Industries
- 2) Achieve secondary feedstock “better than cost and energy parity” for key materials, and
- 3) Widespread application of new enabling platform technologies across multiple industries.

DOE expects a REMADE Institute will have a balanced portfolio of technologies and workforce development, resulting in positive and direct benefit in all three of these impact areas. Applicants must address how they will engage with and have impact in all of these areas, as well as any other proposed and well justified areas of application

## **Slide 12**

Technical Focus Areas:

The challenges to be addressed by an Institute are:

- a) identifying and developing shared technology capabilities both within and across four of the most energy intensive materials classes (polymers, metals, fibers and e-waste)
- b) demonstrating and deploying these technologies at different stages during the manufacturing process lifecycle.

Applicants are expected to develop their plan of work to address the progress they can make in these technical focus areas as a portfolio of activities within the Institute. Other well justified technical focus areas may be proposed, provided they are justified as being relevant to enabling REMADE in Materials Manufacturing.

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The REMADE Institute is expected to develop the key enabling platform technologies and foundational scientific knowledge as the basis for the sustainable use of materials in manufacturing with the potential to have widespread positive impact on U.S. manufacturing competitiveness.

Applied research, development and demonstration of methods, tools, technical know-how, and equipment for REMADE processes with core capabilities to create a self-sufficient Institute may include, but are not limited to:

- 1.) Information Collection, Standardization, and Design Tools for Material Utilization  
Improved tools in this area are needed so that manufacturers have a better awareness of material streams throughout manufacturing and product life-cycles. This would improve analysis of materials flows through supply chains; modeling and prediction of the impact of secondary or alternative feedstocks; and minimizing the amount of primary feedstock used and waste generated.
- 2.) Rapid Gathering, Identification, and Sorting are needed that can identify various material types in real-time. These technologies should also be material agnostic and apply across materials classes.
- 3.) Separating Mixed Materials:

The ability to cost-effectively and energy-efficiently separate mixed materials is essential to the widespread use of high-value secondary feedstocks.

#### 4.) Removal of Trace Contaminants

The accumulation of trace components or contaminants is a barrier to improved material reprocessing – in particular, the inability to remove trace metallic contaminants and organic residues from bulk materials efficiently and cost-effectively.

5.) Robust and Cost-Effective Reprocessing and Disposal Methods are needed to transform EOL and waste material into cost-competitive alternatives to primary feedstocks. In particular, flexible and energy-efficient processing technologies need to be developed to achieve cost-parity for secondary feedstocks.

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An Institute will be expected to apply these enabling technologies as appropriate at four distinct stages of the material lifecycle:

Efficient material use during manufacturing processes;

New technologies and processes are needed to improve material efficiency within a manufacturing facility – reducing in-process losses and efficiently re-using scrap materials.

End-of-Life material reuse;

Significant opportunities exist for industry to make efficient and economic reuse of EOL materials as secondary feedstocks. Example technology needs include disassembly and sorting, separations, and remanufacturing techniques.

Separation and reutilization of waste streams

Innovation is needed to develop practical, integrated, and economically viable technologies and processes to cost-effectively separate and reuse waste products. This includes technologies in identification of material components, separation, and treatment/reprocessing.

Design for reuse/disassembly

A major barrier in this area are that existing design tools often do not address end-of-life product attributes, such as reusability, re-manufacturability, or recyclability. Another existing limitation is the lack of validated and verified data on material flows.

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#### FOA Goals

##### NNMI program objectives for each Institute:

- to research, develop and demonstrate high-impact new advanced manufacturing technologies that are adopted into the market at scale for energy efficient manufacturing and clean energy and energy efficient product manufacturing;
- to be financially self-sustaining after 5 years;
- to train an advanced manufacturing workforce;
- to enrich the innovation ecosystem;
- strengthen US manufacturing competitiveness; and
- to establish an industrial consortium as a public-private partnership (including small and medium sized manufacturers).

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## FOA Goals (Specific to this FOA):

- Lead a national effort to research, develop, test, and demonstrate innovative material reuse, recycling, remanufacturing and reprocessing technologies and solutions that reduce the embodied-energy and greenhouse gas emissions of materials manufacturing
- Develop technologies that enable at a minimum cost parity of key secondary feedstocks with existing primary feedstocks;
- Lead RD&D efforts that significantly improve the efficiency of material use and reduce material waste in major manufacturing processes

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#### Technical Performance Metrics

Specific quantitative technical objectives of the R&D work of the Institute are to:

- 1) Demonstrate through innovative material reuse, recycling, remanufacturing and reprocessing technologies , a 25 percent (25%) improvement in embodied-energy efficiency within 5 years, supporting a goal of at least 50% improvement in embodied-energy efficiency within ten years
- 2) Develop tools and technologies to increase energy productivity by reducing the cost of key secondary feedstocks to at or below cost parity of primary feedstocks (relative to the existing state-of-the-art within five years.

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#### Technical Performance Metrics continued

- 3) Demonstrate Material Recycling/Reuse Improvement: Research, develop and demonstrate improved recycling and reuse in materials manufacturing to enable a 30% absolute increase in recycling rates of specific energy-intensive materials as a prioritized portfolio of technologies.
- 4) Demonstrate Improved Material Efficiency and Decreased GHG Emissions: Research, develop and demonstrate at representative pilot scale, at least one cost effective energy intensive / dependent process that achieves a 10x reduction in primary material feedstock (kg/kg product), with improved energy efficiency (% relative to baseline), and 20% lower GHG emissions (ton CO<sub>2</sub> eq./kg) relative to commercial state-of-the art at the relevant production rate (kg per day).

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#### Technical Performance Metrics continued

- 5) Demonstrate Approaches to Cost-Effective Cross-Industry Use of Secondary Feedstocks: Develop and demonstrate at minimum pilot scale at least one process with relevant and quantified operating times that enables reuse of recycled and recovered materials to serve as cost effective material feedstocks for one or more different industries.
- 6) Demonstrate Reduced Energy Demands for Secondary Feedstocks: Develop tools and technologies to reduce the total energy required to process secondary materials by thirty

percent (30%) relative to the existing state-of-the-art within five years, and be on a pathway to achieve at 50% reduction for the secondary materials processing at full scale within 10 years.

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### Organization and Ecosystem Metrics

7. Establish an industrial consortium as a public-private partnership with an applied research and development program for enabling technologies with the potential to reach at minimum cost-parity (including material, processing and energy costs) in recycled, recovered, remanufactured or re-used materials relative to existing feedstock with quantitative goals.
  - 7.1 Establish an Industrial Roadmap
  - 7.2 Establish an Annual Planning Process
  - 7.3 Build Pathway to Self-Sustainment: Establish a portfolio of external support generating activities for technology RD&D and workforce development that directly replaces the initial Federal funding (i.e., \$14 million per year, starting in the sixth year of operation).

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### Organization and Ecosystem Metrics - cont.

8. Build Industrial Partnerships and Ecosystem: Demonstrate potential for significant industry adoption of REMADE technology, growth of the domestic supply chain and increased diversity of firms and individuals in the ecosystem.
  - 8.1. Support an Emerging Supply Chain: Document the existence and growth of a domestic supply chain that is the focus of secondary materials manufacturing, document the Institute capabilities supporting the elements of the domestic supply chain, and assess the health of the domestic supply chain annually.
  - 8.2. Support Increased Diversity of Firms and Individuals in the Ecosystem: Demonstrate the participation of underrepresented groups including but not limited to small and medium enterprises, minority-owned businesses, and women-owned businesses in technology development, workforce development, and Institute governance.

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### Workforce Development Metrics

9. Establish a technical education and workforce development program.
  - 9.1 Train the Trainers: Train at least fifty education/training professionals per year in REMADE technologies by year three.
  - 9.2. Educate Students: Train at least 500 students per year in REMADE technologies, including recycling, reuse and remanufacturing processes by year three.

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### Institute Best Practices

DOE has identified several best practices for management and operations that the proposed Institute applicants are expected to align with and plans to address these points are to be included in the project narrative. Deviations from these best practices shall be adequately justified by the applicant with a strong alternative plan.

- Institute Management time commitment expectation
- Institute organizational structure
- DOE participation in decision making
- Intellectual Property guidance and work for others or fee for service arrangements
- Publication of results and data sharing

See Section I.C. for more information on these best practices.

And now I will turn the presentation over to my colleague Debbie Schultheis who will cover administrative information relevant to the FOA.

## **Slide 24**

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

1. Applications that fall outside the technical parameters specified in Section I.C of the FOA, including but not limited to technology development and demonstration that is primarily not focused on energy efficient or lifecycle energy manufacturing or is solely focused on technology development with no relevant application to energy intensive or energy related industries or clean energy/energy efficient product manufacturing.
2. Applications that focus primarily on demonstrations at industrial facilities without the research, development and demonstration of technology or sharing of pre-competitive knowledge as a resource in a public-private partnership.
3. Applications for proposed technologies that are not based on sound scientific principles (e.g., violates the laws of thermodynamics).
4. Applications that do not propose the establishment of a pre-competitive public-private consortium with partners from industry (including small and medium-sized firms).

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To facilitate the formation of new project teams for this FOA, a Teaming Partner List is available at <https://eere-Exchange.energy.gov> under FOA, DE-FOA-0001594.

Any organization that would like to be included on this list should submit the following information to [CEMII-REMADE@ee.doe.gov](mailto:CEMII-REMADE@ee.doe.gov):

Organization Name, Contact Name, Contact Address, Contact Email, Contact Phone, Organization Type, Area of Technical Expertise, and Brief Description of Capabilities  
By submitting this information, you consent to the publication of the above-referenced information

By facilitating this Teaming Partner List, EERE does not endorse or otherwise evaluate the qualifications of the entities that self-identify themselves for placement on the Teaming Partner List

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EERE anticipates making one award ranging from \$35,000,000 to \$70,000,000 in Federal Share under this FOA subject to the availability of appropriated funds.

EERE intends to fund a Cooperative Agreement under this FOA, but may also fund Work Authorizations if a National Laboratory is the prime applicant. Cooperative Agreements include Substantial Involvement which will be discussed on the next slide.

The Period of Performance is expected to be up to 60 months divided into budget periods with the initial budget period being 6 months in length to provide resources for the startup phase which consists of formalization of industrial partnerships as well as finalizing technical development plans. Subsequent budget periods will be approximately 12 months each with the final budget period 18 months.

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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 as a result of 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:

1. EERE shares responsibility with the Recipient for the management, control, direction, and performance of the Project.
2. 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.
3. EERE may redirect or discontinue funding the Project based on the outcome of EERE’s evaluation of the Project at a Go/No-Go decision point.
4. EERE may redirect or discontinue funding for individual Institute Activities based on the outcome of EERE’s evaluation of those activities at the Go/No-Go decision points.
5. EERE participates in major project decision-making processes.
6. EERE participates in any governance or management boards that may be established and may invite other U.S. Government officials for participation in advisory capacity.
7. To adequately monitor project progress and provide direction to the Institute, the Prime Recipient must provide EERE with an adequate level of insight into various Institute activities. The Prime Recipient must notify EERE of meetings, reviews, and tests in sufficient time to permit EERE participation and provide all appropriate documentation for EERE review. (More details in the FOA)
8. EERE may choose to engage a private, independent engineering (IE) firm to assist in assessing the progress of the project and provide timely and accurate reports to EERE. (More details in the FOA)

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Applicants must contribute a minimum of **50%** of the total project costs for the Institute.

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

The total budget presented in the application must include both Federal (DOE), and Non-Federal (cost share) portions, thereby reflecting TOTAL PROJECT COSTS proposed.

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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.

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Cost share can be 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, whereas DOE regards these costs – if paid by the cost share provider – as 'cash' cost share. 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.

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

- 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

### **Slide 33**

Further, Applicants are encouraged to review the regulations regarding Program Income (such as fees charged for R&D projects not included in the Full Application) and be aware of the ways in which Program Income can be treated during the award. For awards made under this FOA, the default use of program income is Addition (see 2 CFR 200.307(e)(2)).

Any other treatment of Program Income must be negotiated and approved by the Contracting Officer. Program Income should not be included as cost share in the Applicant's budget.

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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.

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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 **July 28, 2016, 5PM 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.

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EERE evaluates the Concept Papers based on the following technical review criteria:

### **Criterion 1: Technical Description, Innovation and Impact (40%)**

This criterion involves consideration of the following factors:

- Quality of the proposed REMADE technical approach;
- The proposed technical focus areas that are well-defined with aggressive, quantitative technical objectives;
- The Applicant’s understanding of the current state-of-the-art in the field, including key opportunities and challenges;
- Extent to which the Applicant has described how the proposed technical work will overcome the challenges identified;
- The estimated energy and competitiveness impact that the proposed Institute would have on clean energy and energy efficient manufacturing;
- Quality of the approach presented in the technical education and workforce development plan summary;
- Quality of the approach to strengthen U.S. manufacturing competitiveness while engaging a broad range of stakeholders with both horizontal and vertical reach across and within supply chains.

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### **Criterion 2: Team and Resources (30%)**

This criterion involves consideration of the following factors:

- Extent to which the roles and responsibilities of the leadership team are well-defined;
- Whether the Principal Investigator (Institute Director/Executive) and Project Team have the skill, expertise and prior experience needed to successfully execute the Institute;
- Whether the Applicant has adequate access to equipment and facilities necessary to accomplish the effort and/or clearly explains how the proposed Institute intends to obtain access to the necessary equipment and facilities.

### **Criterion 3: Operations and Management Approach Description (30%)**

This criterion involves consideration of the following factors:

- The proposed management and operations structure and approach, including the role of the U.S. government in the management of the proposed Institute.

And now I will turn it over to John Harrington, who will wrap up the presentation.

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The Full Application includes:

**Technical Volume:** The key technical submission. Applicants submit info pertaining to the technical content, project team members, etc.

**Statement of Project Objectives**

**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 (ies)/approach(es) proposed for the Institute. Slide content requirements are provided in the FOA.

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

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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 consists of no more than 50 pages and is comprised of a cover page, project overview, technical description, innovation, and impact, qualifications and resources, and operations and management plan. 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 no more than 2 pages of the Technical Volume and provides information on project background, goals, impact of EERE funding
- The Technical Description, Innovation, and Impact section is approximately 50% of the Technical Volume. It provides information on project relevance and outcomes, feasibility, and innovation/impacts. This ultimately provides the justification as to why EERE should fund the project.
- The 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.
- The Operations and Management Plan section is approximately 30% of the Technical Volume. It provides information on the overall management approach, including organizational, governance and participation structures, road-mapping and strategic

planning processes, Project Management, IP Management and the plan to become financially sustainable.

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Applicants must submit full applications by **September 28, 2016**. EERE will conduct an eligibility review, and full application will be deemed eligible if:

- The Applicant is an eligible entity, see Section III.A of FOA;
- The Applicant submitted an eligible Concept Paper;
- The Cost Share requirement is satisfied, see Section III.B of FOA;
- The Full Application is compliant with Section III.C of FOA; and
- The proposed project is responsive to Section III.D of the FOA
- The Applicant submitted only one Full Application for consideration
- The Full Application meets any other eligibility requirements listed in Section III of the FOA.

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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.

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.

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An entity may only submit one Concept Paper and one Full Application for consideration under this FOA. For example, EERE will only consider one Concept Paper and one Full Application per university for this FOA (not one submission per each college or school under 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 under this FOA.

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- 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

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For the purposes of this webinar, the merit review criteria may be summarized, please refer to the FOA for more information. Applications will be evaluated against all criteria noted in Section V.A.II of the FOA:

#### **Criterion 1: Technical Merit, Innovation, and Impact (40%)**

##### Technical Merit and Innovation

- Quality of the integrated technical approach for the proposed Institute and core competencies identified
- Degree to which the Applicant built upon and adequately addressed the Technical Topic Areas identified in Section I.C. of this FOA including clearly defined goals and aggressive technical targets.
- Extent to which the Applicant demonstrates a strong understanding of the state of the art, and whether the proposed technical work is scientifically meritorious and innovative
- Quality of the technical education and workforce development plan and leverage existing resources;

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#### **Criterion 1 - Continued**

##### Impact

Extent to which the Applicant demonstrates a high and credible impact of the Institute for aggregate cumulative energy savings and reduction in greenhouse gases

- Extent to which the Applicant demonstrates the likelihood of successful technology adoption by industry and supports precompetitive technology development and the quality of the Market Transformation plan for the proposed projects and technical work;
- Potential impact of the Institute to support U.S manufacturing competitiveness for clean energy and energy efficient manufacturing and supply chains
- Degree of commitment to support U.S. manufacturing as demonstrated in the U.S. Manufacturing Plan; and
- Degree to which the Applicant illustrates how DOE funding will enable acceleration of RD&D

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#### **Criterion 2: Qualifications and Resources (30%)**

- Quality of the Institute key technical personnel and their level of technical capabilities and relevance to achieving the goals and objectives of the Institute and the FOA;
- Qualifications, relevant expertise, experience of the proposed Institute Director/Executive and key management staff
- The sufficiency of the existing and proposed equipment, facilities and capabilities to support the work;

- Adequacy of budget and spend plan for the proposed project to achieve the defined objectives;

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### Criterion 2 - Continued

- Quality and clarity of the cost share contributions (cash, in-kind) including the source of cost share, as well as how Program Income, if applicable, is expected to be generated and utilized; and
- Adequacy of funding availability to encourage openness and new participants as the Institute goes forward, and to accommodate changes in strategic direction.
- Degree to which the Applicant illustrates how DOE funding will enable acceleration of RD&D, and how the Institute will appropriately leverage existing resources including but not limited to National Institute of Standards and Technology's Manufacturing Extension Partnership (MEP) Centers, National Science Foundation's Advanced Technological Education (ATE) Centers, national laboratories, and other government investments.

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### Criterion 3: Operations and Management (30%)

#### Management and Governance Approach

- Effectiveness of management approach and governance structure to enable strategic and technical decision-making;
- Degree to which the Institute can operate as an independent, neutral, non-biased coordinating and convening body for a diverse set of stakeholders;
- Adequacy of the inclusion of Federal government (DOE and other Federal government participants identified by DOE) on decision making bodies (boards/committees) at both a strategic and technical level within the Institute;
- The adequacy and quality of the proposed participation structure

#### Operations

- The adequacy and quality of the annual planning process, including the strategic planning and industry roadmap activities, periodic update of the industry roadmap (annual or bi-annual) and incorporation of the industry roadmap to Institute strategic planning;

## Slide 49

### Criterion 3: Operations and Management (30%) - Continued

#### Operations continued

- The adequacy and quality of the annual planning process, including the strategic planning and industry roadmap activities, periodic update of the industry roadmap (annual or bi-annual) and incorporation of the industry roadmap to Institute strategic planning;
- Strength of the technical management plan for selecting and prioritizing RD&D work, tracking performance, and planned periodic (annual) review of processes for Institute and project performance;
- Quality of the stakeholder engagement plan, and how it demonstrates openness to new participants, in particular with SMEs, minority-owned businesses, and women-owned businesses, and ability to engage stakeholders along the supply chain including end-users;

- Adequacy of the discussion of the economic and operational key risk areas involved with operations and management plan,
- The adequacy of Institute's strategy to manage export control compliance and meet the goal of strengthening U.S. manufacturing competitiveness while engaging a wide range of stakeholders that may include foreign participants;
- Adequacy of how metrics will be tracked to gauge success of the Institute and impact in the technology area;

## Slide 50

### Criterion 3 - Continued

#### Project Management

- Adequacy, reasonableness, and soundness of the proposed project management plan for accomplishment of the Institute objectives;
- Extent to which the Applicant demonstrates a strong level of integration across the Institute elements to provide value that is greater than the sum of the individual activities (i.e., how will the shared facilities support the technical education and workforce development plans and project activities);
- Quality of the IP Management plan and other IP agreements demonstrating that the IP issues inherent with collaborations and/or multi-user facilities are addressed

#### Statement of Project Objectives

- Adequacy, appropriateness, and reasonableness of the proposed work, schedule and allocation among the team members to accomplish the stated objectives;
- Relative to a clearly defined baseline, the strength of the quantifiable metrics, milestones, Go/No-Go decision points, and mid-point deliverables defined in the application;
- Quality of the SOPO for the first two budget periods (Budget Period 1 and Budget Period 2) that describes the initial startup phase for the Institute and the initial technology development activities, as well as the overall plan for the full award period;

## Slide 51

### Criterion 3 - Continued

#### Intellectual Property Management Plan

- Adequacy of the IP management plan for supporting the needs of the Institute and its participants, which addresses the precompetitive landscape and the broader U.S. manufacturing sector;
- Quality of the IP Management plan and other IP agreements demonstrating that the IP issues inherent with collaborations and/or multi-user facilities are addressed

#### Transition Plan

- Likelihood that the Institute can achieve financial self-sufficiency from dedicated Federal funding within five years; and
- Reasonableness of the extended profit and loss estimates for an additional three years beyond the award period.

## Slide 52

The Full Applications will be reviewed by experts in this FOA's topic areas. After those experts review the applications, EERE provides those reviewer comments to the applicants and provides the applicants with a brief opportunity to respond.

This process provides applicants with an opportunity to provide brief response to correct any perceived misunderstandings or misinterpretations and to provide clarification before a selection decision is made. Replies are considered by the reviewers and the selection official.

Comments will be provided to applicants in Exchange following the evaluation of eligible full applications. Applicants will then be able to respond to the comments through the Reply to Reviewer Comments process. Applicants will have at least 3 days to respond.

### **Slide 53**

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 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.

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.

### **Slide 54**

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

### **Slide 55**

Program policy factors include:

- The degree to which the proposed project optimizes the use of available EERE funding to achieve programmatic objectives;
- The level of industry involvement and demonstrated ability to accelerate commercialization and overcome key market barriers; and
- 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 and financial uncertainty.

Note: Cost sharing above the minimum required will not be considered in the evaluation.

### **Slide 56**

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.

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

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

**Register in FedConnect.** For more information, review the FedConnect Ready, Set, Go! Guide at the FedConnect site.

**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 57**

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

### **Slide 58**

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 59**

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 60**

Remember, all questions about this FOA should be sent via Email to: [CEMIL-REMADE@ee.doe.gov](mailto:CEMIL-REMADE@ee.doe.gov). All Questions & Answers will be posted on EERE Exchange as a spreadsheet uploaded on the FOA main page.

EERE will attempt to respond to a question within 3 business days, unless a similar Q&A has already been posted on the website. If you have problems logging into EERE Exchange or uploading and submitting application documents with EERE Exchange, Email EERE at: [ExchangeSupport@hq.doe.gov](mailto:ExchangeSupport@hq.doe.gov). Include FOA name and number in subject line

This concludes our Webinar for today. Thank you for attending.