Informational Webinar:

DOE Manufacturing Innovation Institute for Composite Materials and Structures FOA
(Text Version)
Thursday, March 6, 2014

[Slide 1]

Good afternoon, everyone, and welcome to our webinar. Thank you for your interest in the 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 Composite Materials and Structures, Funding Opportunity Announcement (or FOA), which was issued on February 25, 2014. The FOA number is DE-FOA-0000977. My name is Kelly Visconti 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 Bill Prymak, a senior project manager in the Advanced Manufacturing Office. Together, we will cover the basic aspects of this FOA during the webinar. We anticipate this webinar to last about an hour to an hour and fifteen minutes. Before we begin, I'd like to draw your attention to the email address on the left hand side of this slide. This is the official mailbox to direct all of your questions during the entire FOA process, including any questions that arise from today's webinar. 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 three business days. Please be careful not to submit any language that might be business sensitive, proprietary, or confidential.

We will not be accepting questions via the webinar; please do *not* use the chatbox to send questions. Please do record your questions as they arise and send them by email to the mailbox, FRC Manufacturing at GO dot DOE dot GOV (FRCManufacturing@go.doe.gov).

Also, just to be clear, there are no particular advantages or disadvantages to the application evaluation process with respect to participating in 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.
Next slide please.

[Slide 3]

This is a notice that:

- All applicants are strongly encouraged to carefully read the Funding Opportunity Announcement DE-FOA-0000977 ("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 made 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 FRCManufacturing@go.doe.gov.
- Again there will not be a question and answer time during this presentation. All questions about the FOA are to be submitted to the FOA email box. FRCManufacturing@go.doe.gov

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The agenda for this presentation is as follows:

1) Point number one, FOA Description
2) Point number two, the Technical Topic Area and FOA Goals
3) Point number three, the Award Information
4) Number four, Statement of Substantial Involvement
5) Number five, Cost Sharing
6) Number six, Concept Papers
7) Seven, Full Applications
8) Eight, Merit Review and Selection Process
9) Number Nine, Pre-Selection Interviews
10) And last, Registration Requirements

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

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[Slide 5]

This is the first slide on the FOA Description.
Information provided in these slides is an overview of the FOA, it does not contain all information that is provided in the FOA – please be sure to read the entire FOA for all relevant information.

- EERE, through the Advanced Manufacturing Office, seeks to establish a Clean Energy Manufacturing Innovation Institute for Composite Materials and Structures, to support U.S. prosperity and security; to further the mission of R&D in energy efficient and renewable technologies; and contribute to the creation of a national network of manufacturing institutes.
- The vision for these Institutes is to help revitalize American manufacturing and support domestic manufacturing competitiveness.

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[Slide 6]

- The focus of the Institute resulting from this Funding Opportunity Announcement (FOA) will be low-cost, energy efficient manufacturing and recycling of fiber reinforced polymer composites.
- The Institute will target continuous or discontinuous, primarily carbon and glass fiber composite, with thermoset or thermoplastic resin materials due to their superior strength and stiffness to weight ratios relative to other materials, and subsequent applicability to clean energy and industrial applications with potential impact to national energy goals.

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- Continuing the FOA Description, Section Roman numeral “I”B. provides the following Background Information:
  - Energy, Manufacturing and Innovation
  - National Network for Manufacturing Innovation
  - Institute Overview
  - Shared RD&D Infrastructure

Note: Additional details on the Background information can be found in Section Roman numeral I.B of the FOA document.

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[Slide 8]

We are now moving into Section Roman Number "I" C of the FOA which contains the Technical Topic Area and FOA Goals

- The focus of this FOA is Fiber Reinforced Polymer Composites due to their superior strength and stiffness to weight ratios relative to other materials, as shown in Figure 2, and subsequent applicability to clean energy and industrial applications with energy impact.

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A concentrated focus on innovative composite manufacturing approaches to meet cost and production targets that lower the energy consumption, greenhouse gas emissions and address end-of-life issues will accelerate the realization of life cycle energy efficiency.

- The three targeted fiber reinforced polymer composite applications for this FOA are highlighted here.

Target Applications are:
Vehicles
- Where lightweighting is an important end-use energy efficiency strategy in transportation, and
- Composites can offer a range of mass reductions over steel ranging from 25–30% (glass fiber systems) up to 60–70% (carbon fiber systems).

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[Slide 10]

Continuing our review of the three target application areas for this FOA

Wind Turbines
- In wind energy, high strength and stiffness, fatigue-resistant lightweight materials like carbon fiber composites can support development of lighter, longer blades and increased power generation.
- In addition, "using lighter blades reduces the load-carrying requirements for the entire supporting structure and saves total costs far beyond the material savings of the blades alone."

Compressed Gas Storage
- High pressure storage tanks are typically made with high strength (>700ksi tensile strength) carbon fiber filament in a polymer matrix wound over a metallic or polymeric liner. Carbon fiber composites can account for over 60% of the cost of these systems.
- Please read Section I.C for further detail on these target application areas.

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[Slide 11]

Here we highlight language from the FOA regarding other application areas beyond the three we just reviewed.
- Other Applications, such as heat exchangers, structural materials for buildings, fly-wheels for electricity grid stability, hydrokinetic power generation, among other systems can also benefit from lower cost, high strength and stiffness, corrosion resistant, and lightweight composite materials.
- Applicants may propose additional target application areas and economic and technical targets provided they can clearly demonstrate how effort in those areas will support the overall Institute objectives.

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[Slide 12]

This chart provides a notional representation of the drive for the Institute work as described in the FOA as it relates to advanced composites for clean energy systems and the need to move from low production volume, high performance applications where composites are primarily used today, toward to high volume, more cost sensitive applications.

Data shown on this chart is representative and notional, to illustrate a trend rather than provide exact targets. Detailed technical objectives are provided in the FOA in Section I.C., again this information is for illustration only.

Next slide please.

[Slide 13]

Turning now to the discussion in the FOA around the Institute Technical Focus Areas

- AMO has identified three main technical focus areas for RD&D within the Institute, summarized as Manufacturing Speed, Energy and Recycling.
- Additional enabling technologies and approaches to support improvements to composite manufacturing are discussed in the FOA and summarized in this presentation.

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[Slide 14]

The First Technical Focus Area identified in the FOA is manufacturing speed.

- Manufacturing composites at high speed is limited.
- Improvements to existing processes and new innovative processes with faster lay-up times and cure cycles to meet manufacturing rates and quality requirements are needed and will be an important RD&D focus area of the Institute.
- Innovative curing technologies and integrated manufacturing approaches are also potential areas of RD&D for the Institute.

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The second Technical Focus Area identified in the FOA is Energy.

- It is necessary to reduce the amount of energy it takes to make carbon fiber composites.
- One approach the Institute might use could be to reduce the energy used in the composite manufacturing process directly.
- A second approach could be through the use of alternative raw materials that require less energy to produce.

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[Slide 16]

The third Technical Focus Area identified in the FOA is Recycling.

- The ability to reuse fibers and a strong recycling and reuse market can have a significant positive impact on the life-cycle energy and greenhouse gas footprint for composites, as well as cost.
- Innovative technologies and improvements to recycling technologies are needed to continue to improve the recyclability of composites at a cost and performance competitive with virgin material with energy-efficient processes.

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In addition to the three focus areas for composite manufacturing, the FOA discusses enabling technologies and approaches that may be incorporated into the Institute activities to support the main manufacturing focus.

- Four potential enabling technologies and approaches identified in the FOA are:
  - *Innovative Design Concepts*
  - *Modeling and Simulation Tools*
  - *Effective Joining*
  - *Defect Detection*

The Institute Technical Focus Areas including the Enabling Technologies and Approaches are discussed in more detail in Section I.C. of the FOA, please be sure to read the entire FOA.

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[Slide 18]
We are now on Slide 18.

We will now review the FOA goals. At the highest level…

- The goal of this FOA is to establish a Clean Energy Manufacturing Innovation Institute for Composite Materials and Structures that will support U.S. prosperity and security; and contribute to the creation of the National Network for Manufacturing Innovation.
- The vision for the Institute is to help revitalize American manufacturing and support domestic manufacturing competitiveness.
- The technical topic area for this Institute is low-cost, high-speed, energy efficient manufacturing and recycling of fiber reinforced polymer composites.
- The Institute will target continuous or discontinuous, primarily carbon fiber or glass systems, with thermoset or thermoplastic resin materials.

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[Slide 19]

The overall objectives of the Institute over a ten year time frame are to:

i. double the energy productivity of fiber reinforced polymer composite manufacturing;
ii. reduce life cycle energy use and associated greenhouse gas emissions for targeted application areas;
iii. increase domestic production capacity;
iv. increase jobs for American workers; and
v. support regional economic development.

- The Applicant must identify clear milestones and how the Institute will demonstrate progress towards the defined targets for the award period and show a path to achieve the long term goals identified post award period.

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[Slide 20]

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

i. Reduce production cost of finished carbon fiber composites for targeted applications (vehicles, wind, high-pressure gas storage at a minimum) by greater than 25% in five years, on a pathway to a reduction of cost greater than 50% over ten years;
ii. Demonstrate production of fiber reinforced polymer composites with cost and embodied energy parity to today's glass fiber technology, and performance of today's carbon fiber composites for target application areas and relevant production speed in five years;
iii. Demonstrate technologies, at sufficient scale, that reduce the embodied energy (and associated greenhouse gas emissions) of carbon fiber composites by 50% compared to today's technology, on a pathway to 75% reduction in ten years; and

iv. Demonstrate technologies, at sufficient scale, for >80% recyclability or reuse of fiber reinforced polymer composites in five years into useful components with projected cost and quality at commercial scale, competitive with virgin materials, on a pathway to >95% recyclability or reuse starting in ten years.

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[Slide 21]

Slide 21 provides a high level summary of the Institute objectives over a 10 year time frame in a single chart. The exact detailed objectives and technical objectives are provided in the FOA Section Roman Number "I" C which we also just reviewed in this presentation.

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[Slide 22]

Additional points in this Section of the FOA to note.

- At a minimum, the Applicant is expected to propose work to address the primary focus of the Institute within the three target application areas identified in the FOA.
- Applicants may propose to address additional applications and other fiber reinforcements but must justify the benefit of this additional work along a pathway towards achieving the goals of the FOA.
- For any and all proposed application areas, it is strongly encouraged to have end users/OEMs from the relevant industries included in the Institute.

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[Slide 23]

Table 2 in the FOA shows Institute cost targets for carbon fiber composites (CFC) for key application areas at relevant production targets and representative strength and stiffness values for 0-degree unidirectional laminates.

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[Slide 24]

For brevity I will summarize each of the following bullets, please read the entire FOA for all information. Consistent with the technical topic area, the Institute created through this FOA will:

a) become a financially self-sustaining, world-leading innovation hub, preferably managed by an independent, not-for profit entity
b) establish an Institute leadership team with the demonstrated experience and capability to execute and manage diverse technical and manufacturing RD&D teams,
c) support a core set of shared RD&D infrastructure that provides a clear center of gravity for the Institute and enables affordable access to physical and virtual tools, as well as expertise

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[Slide 25]

d) establish, execute and report a process for convening stakeholders and developing a multi-year industry roadmap for the manufacturing technology or make substantial contributions to an existing roadmap effort
e) establish, execute and assess an annually reviewed manufacturing RD&D technical strategic plan for the institute, reflective of addressing an industry roadmap, that enables applied projects (TRL/MRL 4-7)
f) define clear and transparent Institute by-laws, policies and strategies for participation of a wide range of stakeholders in the Institute, in particular, to engage Small and Medium Enterprises (SMEs)

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[Slide 26]

g) provide capabilities for and collaboration on open, pre-competitive work, among multiple parties in an Intellectual Property (IP) protected environment,
h) establish a technical education and workforce development plan to support technical and career education that will leverage relevant existing resources
i) leverage relevant existing private and public sector resources and facilities such as National Science Foundation Advanced Technology Education Centers, NIST Manufacturing Extension Partnerships, national laboratories, university centers and other government investments.

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[Slide 27]

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

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EERE now defines applications that are specifically not of interest in FOAs. This is for the benefit of the applicants, as we are aware that submitting applications is time-consuming. This list is not intended to be exhaustive. EERE will not consider Full Applications that propose projects listed under the section "Non Responsive Applications" Section III.D of the FOA or propose a project that is otherwise not responsive to the objectives to the FOA, please read this section thoroughly.

I will now turn the presentation over to Bill Prymak who will cover some of the non-technical content aspects of the FOA.

Thank you Kelly – [Bill Prymak speaking]
Next slide please.

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Award Information:

- EERE expects to make approximately $70million of Federal funding available for one new award under this FOA subject to the availability of appropriated funds. The award amount is anticipated to range from $35,000,000 to $70,000,000. The period of performance will be up to 60 months, divided into budget periods.
- EERE intends to fund a cooperative agreement under this FOA, but may also fund TIAs, Work Authorizations, and Interagency Agreements. Cooperative Agreements include Substantial Involvement, which we will discuss next.

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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.
I will read a few of these as examples, please read the FOA in its entirety, Substantial Involvement information can be found in Section Roman Numeral "VI"C.

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 participates in major project decision-making processes.

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This slide covers the cost-sharing requirements of the FOA.

- Applicants must contribute a minimum of 50% of the total project costs for demonstration 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

The total budget presented in the application must include both Federal (DOE), and Non-Federal (cost share) portions, thereby reflecting TOTAL PROJECT COSTS proposed. All costs must be verifiable from the Recipient's records and be necessary and reasonable for the accomplishment of the project.

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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 or in-kind. It can be provided by the prime recipient, the sub recipient, 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.

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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, such as royalties that are expected from the prospective operation of an activity beyond the project period, or cash that originated from DOE or another federal agency.

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Cost share must be provided on an invoice basis, unless a waiver is requested and approved by the DOE contracting officer. For more information, please see Section Roman Numeral "3" B.7 of the FOA.

Next slide please.

[Slide 36]

We are now on slide 36.

EERE's Evaluation and Selection Process is shown in the blue here. EERE will review concept papers, replies to reviewer comments (which we will cover later in this presentation), and full applications. The gray boxes represent the actions that apply to applicants throughout the FOA process. The dates that are specific to this FOA have been populated for each action.

Applicants will have approximately 3 business days to response to reviewer comments.

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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 April 22, 2014, at 5PM Eastern Time, 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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[Slide 38]

This slide summarizes the three Concept Review Criteria.

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

Criterion 1: Impact of the Proposed Institute (35%)
This criterion involves consideration of the following factors:

- Method used to identify current state of the art technology; and
- If technical success is achieved, the proposed Institute would significantly improve technical, non-technical and economic performance relative to the state of the art and support U.S. manufacturing competitiveness.

Criterion 2: Overall Scientific and Technical Merit (35%)
This criterion involves consideration of the following factors:

- The proposed Institute plan and facilities will support innovation
- The proposed Institute plans show potential to address technical challenges achieving to institute goals; and
- The proposed approach is without major technical flaws.

Criterion 3: Overall Management Approach (30%)
This criterion involves consideration of the following factors:

- The proposed Institute operations and management approach is without major flaws
- The proposed Institute management team and resources are adequate

EERE will provide applicants with either an "encouraged" or "discouraged" notification and the reviewer's comments. Please note that regardless of the date the applicant receives the "encourage"/"discourage" notifications, the submission deadline for the full application remains the date stated on the FOA cover page.

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Moving onto the Full Application. The full application includes the following key documents:

Technical Volume: The key technical submission. This is the document within which the applicants will submit information pertaining to the technical content, the work plan, and the project team members, etc.

SF-424 Application for Federal Assistance: The formal application signed by the authorized representative of the applicant. This document includes cost-share amounts and federal certifications and assurances.

SF-424A the Budget & Budget Justification (EERE 159): These documents are the main budget documents that applicants provide that summarizes the major expected costs associated with the project and spend plan.

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

Summary Slide: This is a document generated in PowerPoint that provides quick facts about the technology. The slide content requirements are provided in the FOA under Section Roman Numeral "4" D.6.

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

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The full application's technical volume contents are listed here. 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 Institute is, how the Institute tasks will be accomplished, and the timetable.
The Technical Volume is comprised of:

- a cover page – one page,
- the Institute overview – approximately 5% of the technical volume
- the technical description, innovation and impact - approximately 15%,
- workplan – approximately 40%,
- technical qualifications and resources – 15%;
- operations and management plan 15%,
- summary of Intellectual Property Management Plan 5%,
- and the transition plan, the approach to achieve a financially viable organization – 5%.
- Please note that the percentages listed here are just suggested and are not mandatory.
- Please read the FOA section roman numeral "IV" D for the details of each section of the Technical Volume.

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[Slide 41]

As previously pointed out, applicants must submit full applications by 5 p.m. Eastern on June 19, 2014. EERE will conduct an eligibility review, and full applications will be deemed eligible if

- The applicant is an eligible entity (Section Roman numeral III.A of FOA);
- The applicant submitted an eligible concept paper;
- The cost-share requirement is satisfied (Section Roman numeral III.B of FOA);
- The full application is compliant (Section Roman numeral III.C of the FOA); and
- The proposed project is responsive to the FOA (Section Roman numeral III.D of FOA), and last,
- The full application meets any other eligibility requirements listed in Section III of the FOA.

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Who is 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 Roman numeral III.A of the FOA for eligibility requirements.

- Please note that nonprofit organizations described in Section 501(c)(3) 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 WITH THE EXCEPTION OF INDIVIDUALS, 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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This is the guidance on multiple applications. Applicants may only submit one Concept Paper and one Full Application for consideration under this FOA

If an applicant submits more than one Concept Paper or Full Application, EERE will only consider the last timely submission for evaluation.

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The merit review and selection process for full applications consists of multiple phases that each includes 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.

I will give the presentation back over to Kelly to review the Merit Review Criteria. – [Bill Prymak speaking]

Thank you Bill – [Kelly speaking]

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So beginning on Slide 45 we will review the Technical Merit Review Criteria. Applications will be evaluated against the following merit review criteria.

Criterion 1: Technical Merit, Innovation, and Impact; (25%)

(Under) Technical Merit and Innovation

- Quality of the overall approach for the proposed Institute to the develop and deploy innovative next generation manufacturing technologies that meet national needs and the goals of this FOA;
- Extent to which the proposed technology developments are innovative and have the potential to advance the state of the art;
- Degree to which the current state of the technology and the proposed advancement are clearly described;
- Extent to which the application specifically and convincingly explains how the applicant will move the state of the art to the proposed advancements demonstrating a deep technical understanding and industry needs by the Applicant;
- Degree to which the applicant adequately addressed the three focus areas identified in Section I of this FOA and adequately justifies additional focus areas to achieve the goals of the FOA;
- Quality of the technical education and workforce development plan to support technical education and career training and level of integration into the Institute technical activities;

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Continuing the technical merit and innovation sub criteria

- Extent to which the Institute will leverage existing educational resources and support dissemination of curriculum materials; and
- The sufficiency of technical detail in the application to assess whether the proposed work is scientifically meritorious and revolutionary, including relevant data, calculations and discussion of prior work in the literature with analyses that support the viability of the proposed work.

Under the Impact of the Institute

- How the Institute supports the FOA goals, topic area objectives and target specifications and metrics;
- The potential impact of the Institute on advancing the state of the art;
- Extent to which the applicant demonstrates the potential impact of the Institute for aggregate cumulative energy savings in trillion Btu's (TBTU) and reduction in GHG (tons of CO2 equivalent) on a life-cycle basis over ten years relative to existing available technologies;
- Degree of commitment to support U.S. manufacturing as demonstrated in the U.S. Manufacturing Plan;

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Continuing on the Impact of the Institute,

- Extent to which the applicant demonstrates the potential impact of the Institute to support U.S manufacturing competitiveness, in particular to increase energy productivity, domestic production capacity, impact domestic job creation, trade balance and/or GDP, as well as regional economic development as a result of successful technology deployment and commercialization from Institute related activities over ten years;
- If the application includes participation of foreign-based entities, the adequacy of the justification for their participation and the estimated domestic production benefits; and
- The adequacy and reasonableness of assumption in estimating the potential impact of the Institute.

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Under Criterion 2: Institute Workplan and Commercialization Plan (25%)

Approach and Workplan

- Degree to which the approach and critical paths have been clearly described and thoughtfully considered;
- Degree to which the Applicant has identified and clearly described the goals for the overall Institute and major Institute elements, at a minimum, operations and management; shared RD&D facilities; R&D projects; stakeholder engagement and road-mapping; technical education and workforce development; and commercialization; and
- Degree to which the task descriptions are clear, detailed, timely, and reasonable, resulting in a high likelihood that the proposed Workplan will succeed in meeting the Institute goals.

Identification of Risks

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

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Slide 49, continuing the review of Criterion 2:

For Baseline, Metrics, and Deliverables

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

(Under the) Market Transformation Plan

- For initial proposed project and technical work, the identification of target markets, competitors, and distribution channels for proposed technology developments along with known or perceived barriers to market penetration, including mitigation plan; and
- For initial proposed project and technical work, comprehensiveness of commercialization plan including but not limited to product development and/or service plan, commercialization timeline, financing, product marketing, legal/regulatory considerations including intellectual property, infrastructure requirements, data dissemination, U.S. manufacturing plan etc., and product distribution.

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For Criterion 3: Team and Resources (20%). The proposal will be evaluated with respect to the

Institute Team and Participants

- The capability of the Institute Director(s), lead organization and the proposed team to address all aspects of the proposed work with a good chance of success;
- Qualifications, relevant expertise, experience of the proposed Institute Director/Executive and key management staff in successfully managing a collaborative and/or multi-user facility;
- Level of time commitment to Institute management by the proposed Institute Director/Executive (expected full time role) and other key management staff (>75% time commitment);
- Degree to which the proposed consortia/team demonstrates the ability to facilitate and expedite further development and commercial deployment of the proposed technologies;
- Quality of the Institute participants and their level of commitment to support U.S. manufacturing competitiveness as defined in the U.S. Manufacturing Plan; and
- Level of participation by project participants as evidenced by letter(s) of commitment and how well they are integrated into the Workplan.

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Continuing the review of Criterion 3 on slide 51

Under Facilities

- The sufficiency of the existing and proposed facilities and capabilities to support the work;
- Degree of clarity in the differentiation between existing and new facilities and resources;
- Adequacy of the plan to update facilities and incorporate R&D developments into the shared facilities; and
- Degree to which the Institute will appropriately leverage existing resources and facilities including but not limited to NIST MEP Centers, NSF ATE Centers, national laboratories, and other government investments.

Budget and Spend Plan

- Reasonableness of budget and spend plan for proposed project and objectives;
- Accuracy of the representation of the value of in-kind contributions; and
- Adequacy of funding availability to encourage openness and new participants as the Institute goes forward and to accommodate changes in strategic direction that may occur once the Institute is formalized and aligned with strategic roadmaps.

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For Criterion 4: Operations and Management Plan (15%)

Under Management and Governance Approach

- Reasonableness and effectiveness of management approach and structure to enable strategic decision-making;
- 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;
- Degree to which the Institute can operate as an independent, neutral, non-biased coordinating and convening body for a diverse set of stakeholders;
- Quality of the proposed organization structure to support the Institute objectives, incentivize private sector participation and encourage SMEs participation in the Institute; and
- The adequacy of the plan to communicate and coordinate with, share and establish best practices, and participate in meetings with other institutes for manufacturing innovation established by DOE and other Federal Agencies and support the creation of a national network for manufacturing innovation.

Next slide please.

[Slide 53]

Under Operations

- The adequacy and quality of the annual strategic planning process, including the plan for industry roadmap activities, periodic update of the industry roadmap (annual or bi-annual) and incorporation of the industry roadmap into Institute strategic planning;
- The adequacy and quality of the planned periodic (annual) review processes for Institute and project performance;
- Adequacy of the proposed Institute performance metrics and how metrics will be tracked to gauge success of the Institute and impact in the technology area;
- Strength of methodology for selecting and prioritizing R&D work, and tracking performance for work;
- Adequacy of the plan to handle participation of foreign-based entities and ensure domestic production benefits;
- Quality of the stakeholder engagement plan, in particular with SMEs and ability to engage stakeholders along the supply chain including end-users and degree to which the annual planning process encourages new ideas and participants;

Next slide

[Slide 54]

Continuing review of Criterion 4 on slide 54

- The degree to which the Institute elements will be integrated and will provide value that is more than the sum of the individual activities and achieve the objectives of the FOA, in particular how will improvements developed through R&D projects be incorporated into shared RD&D facilities over time;
- The degree to which the Institute will provide capabilities for and collaboration in open, pre-competitive work, among multiple parties in an Intellectual Property (IP) protected environment, as well as proprietary activities as appropriate to engage stakeholders as relevant to the Institute objectives and goals of the FOA; and
- The degree to which the management and operations plan will enable the Institute to adapt to changing industry conditions and needs that may arise due to road-mapping efforts, as well as enable partnerships with external entities, such as other Federal government agencies.

<u>Identification of Operational Risks</u>

- The adequacy of the discussion of the economic and operational key risk areas involved in the operations and management plan, and the quality of the mitigation strategies to address them, specifically with respect to Intellectual Property management and securing U.S. manufacturing competitiveness.

Next Slide

[Slide 55]

This is the last slide on the Merit Review Criteria.

Criterion 5: Intellectual Property Management Plan (10%)

- Adequacy of the IP management plan for supporting the needs of the Institute, its participants, and the broader U.S. manufacturing sector;
- Extent to which the IP management plan will incentivize private sector involvement;
- Quality of the IP Management plan and any other IP agreements (attached as an Appendix of the Narrative) demonstrating that the IP issues inherent with collaborations and/or multi-user facilities are addressed; and
- Extent to which the applicant demonstrates an understanding of and adequate plan to address export control (ITAR and any other) regulations, address classified work as needed and conflicts of interest;

And finally for Criterion 6: Transition Plan, at 5%

- Likelihood that the Institute can achieve financial self-sufficiency from dedicated federal funding within five years;
- The adequacy of the description of the funding/revenue model which will support Institute operations beyond the award period;
- Adequacy the plan to keep the Institute resources and approach relevant during the award period and after the end of the award period; and
- Reasonableness of the extended profit and loss estimates for an additional three years beyond the award period.

I will now turn it over to Bill to finish with the rest of the non-technical application information. [Kelly speaking]

[Slide 56]

Slide 56 covers information on Replies to Reviewer Comments. [Bill Prymak speaking]

The Full Application are reviewed by experts in the FOA topic area(s). 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 a customer centric process that provides applicants with a unique opportunity to provide brief response to correct any perceived misunderstandings and misinterpretations and to provide additional data before a selection decision is made. The 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 3 days to respond.

Please see Sections Roman numeral IV.F. and V.A.3 of the FOA for additional information regarding replies to reviewer comments.

Next slide please.

[Slide 57, 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 to allow the Merit Review Panel to seek clarification on the contents of the Full Applications and otherwise ask questions regarding the proposed Institute. 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 Roman Numeral V.D.3 of the FOA).
- 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 calls 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.

Next slide please.

[Slide 58]

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

Next slide.

[Slide 59, Program Policy Factors]

After the merit review process, the selection official may consider program policy factors to come to a final selection decision. The list of the *only* program policy factors that may be considered by the selection official for this FOA is shown here. I will not read these out loud in the interest of time, but you may find this information in Section Roman numeral "5" C.1 of the FOA.

Next slide please.

[Slide 60, 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.

- To apply to this FOA, Applicants must register with and submit application materials through EERE Exchange: https://eere-Exchange.energy.gov
- Obtain a "control number" at least 24 hours before the first submission deadline

DUNS Number:
Obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number. The website URL is provided here and in the FOA.

SAM:
Applicants must register with the System for Award Management (SAM). Designating an Electronic Business Point of Contact (EBiz POC) and obtaining a special password called an MP-I-N (MPIN) are important steps in SAM registration. Please update your SAM registrations annually.

FedConnect:
Registering 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 URL listed right there on the slide. (https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf.)

And 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, and *only* through EERE Exchange.

Next slide please.

[Slide 61]

The Means of Submission:

- Concept papers, full applications, and replies to the reviewer comments must be submitted through EERE Exchange website, the URL is provided here https://eere-Exchange.energy.gov.
    - EERE will not review or consider applications submitted through other means.

The Users' Guide for Applying to the Department of Energy EERE Funding Opportunity Announcements can be found at that URL shown on slide: [https://eere-Exchange.energy.gov/Manuals.aspx].
All required submissions must come through EERE Exchange. EERE will not review or consider applications submitted through any other means.

Next slide.

[Slide 62]

These are the 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 all application documents.
- 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.

Next slide please.

[Slide 63]

- 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 cancelation of further award negotiations and rescission of the selection.

Next slide please.

[Slide 64]

And finally, this is the last slide of the webinar.

- If you have questions about this FOA, again, please email the official mailbox: FRCManufacturing@go.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 three business days, unless a similar Q&A has already been posted on the website.
- For problems logging into EERE Exchange or uploading and submitting application documents with EERE Exchange, please email EERE: ExchangeSupport@hq.doe.gov.
    - Include the FOA name and number in subject line.
- A digital copy of the slides will be posted on EERE Exchange following today's webinar, as well as the recording and the transcript of the webinar as soon as possible.

This concludes our webinar. We thank you very much for your attention and time and I hope you have a wonderful rest of the day. Take care.