

Renewable Carbon Fibers FOA Informational Webinar (Text Version)

Thursday, February 13, 2014

Video Segment 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 Renewable Carbon Fibers Funding Opportunity Announcement (or FOA), which was issued on February 3rd. The FOA number is DE-FOA-0000996. My name is Joyce Yang, and I am a technology manager in the Bioenergy Technologies Office within DOE's Office of Energy Efficiency and Renewable Energy. We hope to cover the basic aspects of this funding opportunity announcement during this webinar.

Before we begin, I'd like to draw your attention to the lime green 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.

Due to the adverse weather conditions, our offices in Washington, D.C. are closed, and because of that, I am afraid we will not be able to address your questions live. Please do *not* use the chatbox to send questions. *Do* please record your questions as they arise and send them by email to the mailbox, Renewable Carbon Fiber at GO dot DOE dot GOV (RenewableCarbonFiber@go.doe.gov).

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!

Next slide please.

So on this slide, it 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.

This is a notice that

- All applicants are strongly encouraged to carefully read the Funding Opportunity Announcement DE-FOA-0000996 ("**Renewable Carbon Fibers FOA**") and adhere to the stated submission requirements.

- This presentation summarizes the contents of the FOA. If there are any inconsistencies between the FOA and this presentation or statements from DOE personnel, the FOA is the controlling document, and applicants should rely on the FOA language and seek clarification from EERE.
- If you believe there is an inconsistency, please contact RenewableCarbonFiber@go.doe.gov.

Next slide please.

The agenda for this presentation is as follows:

- 1) Point number one, FOA Description
- 2) Point number two, the Topic Area
- 3) Point number three, the Award Information
- 4) Point number four, Statement of Substantial Involvement
- 5) Point number five, Cost Sharing
- 6) Point number six, Concept Papers
- 7) Seven, Full Applications
- 8) Eight, Merit Review and Selection Process
- 9) 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.

Next slide please.

This is the slide on the **FOA background**.

The Department of Energy's (DOE's) Office of Energy Efficiency and Renewable Energy (EERE), seeks to enable a wide range of renewable energy and energy efficiency technologies and advancements to ensure a clean and secure domestic energy future.

- The EERE Clean Energy Manufacturing Initiative (or CEMI), launched in 2013, has the goal of enhancing United States competitiveness in clean energy technologies.
- The mission of the Bioenergy Technologies Office (BETO) within EERE is to develop and transform biomass resources into commercially viable, high performance biofuels, bioproducts, and biopower through targeted research, development, demonstration, and deployment supported through public and private partnerships.

This FOA seeks to address both the EERE CEMI aims and to fulfill EERE BETO's mission by demonstrating a new technology pathway to produce high-performance and low-cost renewable carbon fibers.

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This slide describes the high-level description, objectives, and goal of the FOA.

Carbon fiber composites are lightweight, yet strong and stiff materials that can greatly improve vehicle fuel efficiency when incorporated into structural and non-structural components. The volatility of the

raw material costs and the energy-intensive processes used in the manufacturing contribute to high cost of carbon fibers (>\$10/lb), which deter widespread use by the automotive industry.

The **Objectives of the Renewable Carbon Fibers FOA** are to

1. One, identify and develop a cost-competitive technology pathway to high-performance carbon fibers using biomass as a starting raw feedstock and bio-acrylonitrile (or bio-ACN) as a target product, and
2. Two, engage with industrial manufacturers of polyacrylonitrile that will benchmark and validate the bio-ACN with respect to the key technical performance attributes important for manufacturing lightweight automotive structural components.

The goal of this FOA is to enable technologies that can produce bio-ACN at a modeled cost of \$1.00/pound or less, to enable the overall manufacturing of carbon fiber at less than or equal to \$5.00/lb by 2020 that are suitable for vehicle structural components.

Next slide please.

There is only one topic area for this FOA, which reads as follows:

Topic Area 1: Converting raw biomass sugars, algal oils, or lignin, to high-quality acrylonitrile.

- The first phase of the projects will be focused on establishing the critical functions of the prototype system at bench scale.
- The second phase of the project will be focused on validating the prototype performance at a larger scale.

Next slide please.

[Slide 8] Here are all of the Phase I objectives, which I will not read out loud to you right now due to time constraints. You can find this text verbatim on pages 5 and 6 of the FOA in Section Roman Numeral “1”.B.

Next slide please.

[Presentation audio and video stall at approximately 8 minutes, 20 seconds, due to technical difficulties.]

[Slides 9–12:]

[The following content, as prepared in the slide notes, was presented but not captured in the webinar:]

Slide 9: Here are all of the Phase II objectives, which I will also not read out loud to you right now due to time constraints. You can find this text verbatim on page 6 of the FOA in Section Roman Numeral “1”.B.

Slide 10: 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 can be found

on pages 6 and 7 of the FOA in Section Roman Numeral “1”.C., and the list is not intended to be exhaustive.

EERE will not consider full applications that propose projects listed under the section “Applications Specifically Not of Interest” or propose projects that are otherwise not responsive to the objectives to the FOA.

Slide 11: EERE expects to make approximately \$12 million of federal funding available for new awards under this FOA subject to the availability of appropriated funds. The average award amount is anticipated to range from \$6 to \$12 million. We expect the period of performance to take 40 months. The cost-share requirement must be greater than or equal to 20% of the total project costs. It can be lower than that if both of the exceptions listed here are met.

EERE intends to fund mostly cooperative agreements under this FOA, but may also fund grants, technology investment agreements, work authorizations, and interagency agreements. Cooperative agreements include “substantial involvement,” which we will discuss next.

Slide 12 [partial]: Under cooperative agreements, there will be what is known as “substantial involvement” between EERE and the recipient during the performance of the project.

EERE has substantial involvement in work performed under awards made following this FOA. EERE does not limit its involvement to the administrative requirements of the award. Instead, EERE has substantial involvement in the direction and redirection of the technical aspects of the project as a whole. Substantial involvement includes, but is not limited to, the following:

1. EERE shares responsibility with the prime recipient for the management, control, direction, and performance of work under this award.
2. EERE reviews and approves in a timely manner project plans, including project management, testing and technology transfer plans, and recommending alternate approaches, if the plans do not address the critical programmatic issues.
3. EERE participates in project management planning activities, including risk analysis, to ensure EERE Technology Office requirements or limitations are considered in performance of the work elements.
4. 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.

Video Segment 2

[Presentation resumes at point 5 of Slide 12.]

[Silence (0:21–3:05)]

Ok. I've gotten confirmation that I am back online.

Joyce we can hear you; it's fine, so if you'd like to continue the webinar, you can go ahead.

Ok. I will do that.

I think I was in the middle of reading through the Statement of Substantial Involvement. I don't know at what time I got cut off, but I will probably start on point number five, if that's ok with folks.

Sounds good.

Ok. Great.

All right, point number five in the slide on the **Statement of Substantial Involvement**:

5. EERE promotes and facilitates technology transfer activities, including disseminating technology office results through presentations and publications.
6. EERE may redirect or discontinue funding projects that fail to fully and satisfactorily complete the work described in the Statement of Project Objectives as evaluated at the Go/No-Go decision points.
7. EERE participates in major project decision-making processes.

Next slide please.

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

- Applicants must contribute a minimum of 20% of the total project costs for R&D projects—unless the project qualifies for the cost-share reductions below.
- **Cost-Share Reduction:** EERE has reduced the recipient cost-share requirement to **10%** for R&D activities where
 - Bullet one: the Prime Recipient is a domestic institution of higher education; domestic nonprofit entity; FFRDC; or U.S. state, local, or tribal government entity; and

[Presentation momentarily halts.]

- Point number two: the prime recipient performs more than 50% of the project work, as measured by the Total Project Cost

So, both of these requirements must be satisfied to have the project qualify for reduced recipient cost share.

And the recipient must be able to provide verification that both of the above requirements are satisfied.

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The total budget presented in the application must include both federal (which will be DOE share), and non-federal (cost share) portions, thereby reflecting the 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.

Note that *every* cost share contribution must be reviewed and approved in advance by the contracting officer and incorporated into the project budget before expenditures are incurred.

Next slide please.

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.

Next slide please.

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.

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.

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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.

Next slide please.

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 refer to Section Roman Numeral "3" B.7 of the FOA.

Next slide please.

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.

Next slide please.

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 that 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 March 3rd at 5 p.m. Eastern, 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.

Next slide please.

This slide summarizes the two **Concept Review Criteria**.

EERE evaluates the concept papers based on the following technical review criteria:

- **Criterion 1: Impact of the Proposed Technology Relative to the State of the Art (50%)**—This criterion involves consideration of the following factors:
 - One, method used to identify current state of the art technology, and
 - Two, if technical success is achieved, the proposed idea would significantly improve technical and economic performance relative to the state of the art.
- **Criterion 2: Overall Scientific and Technical Merit (50%)**—This criterion involves consideration of the following factors:
 - One, the proposed technology is unique and innovative, and
 - Two, the proposed approach is without major technical flaws.

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.

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.

Next slide please.

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 project is, how the project tasks will be accomplished, what are the technical milestones, and the project timetable.

The **technical volume** is comprised of a cover page, project overview, technical description, innovation, and impact, workplan, technical qualifications and resources, and the technology validation. 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 the project, such as a title, topic area, points of contact, etc.
- The **project overview** constitutes approximately 10% of the technical volume and provides information on project background, goals, and impact of EERE funding.
- The **technical description, innovation, and impact section** is approximately 25% of the technical volume. It provides information on project relevance and outcomes, feasibility, and innovation and impacts. This ultimately provides the justification as to why EERE should fund the project.
- The **workplan** is the key element to the technical volume and constitutes approximately 50% of the technical volume. It details the proposed milestones and project schedule. If selected for

award negotiations, the workplan serves as the starting point when negotiating the Statement of Project Objectives.

- The **technical qualifications and resources section** is approximately 15% of the technical volume. It provides applicants an opportunity to provide information about the proposed project team and demonstrate how the applicant will facilitate the successful completion of the proposed project.
- Last but not least, the **technology validation section** is approximately 5% of the technical volume. It provides applicants the opportunity to outline the four or more critical performance attributes and associated metrology to quantitatively assess the quality of the bio-acrylonitrile during the stage gate between Phases I and Phase II of the project.

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As previously pointed out, applicants must submit full applications by 5 p.m. Eastern on April 11, 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 FOA of 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 refer to 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 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.

Next slide please.

This is the **guidance on multiple applications**. Applicants may submit more than one application to this FOA, provided that each application describes a unique, scientifically distinct project.

Next slide.

The merit review and selection process for full applications 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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Applications will be evaluated against the three following merit review criteria:

Criterion 1: Technical Merit, Innovation, and Impact; weighing 50%

(Under) Technical Merit and Innovation

- Extent to which the proposed technology or process is innovative and has the potential to advance the state of the art;
- The extent to which sufficient technical details are provided (including but not limited to relevant data, calculations, discussion, and analysis of prior work in literature) to assess whether the proposed work is scientifically meritorious, revolutionary, and viable.

(Under the) Impact of Technology Advancement

- Extent to which the technologies described can be applied to a wide range of biomass feedstocks produced in or could be produced in the United States and yet still produce consistently high-quality acrylonitrile appropriate for carbon fiber manufacturing; and the
- Extent to which the identified four or more critical performance attributes and metrology as applied to bio-ACN are relevant and appropriate to provide assurances that the bio-ACN can be used in existing manufacturing process and can generate carbon fiber composites that meet the

key tensile strengths and Young's modulus material properties required for lightweight vehicle structural components.

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(Under) **Criterion 2: Project Research and Commercialization Plans, at a weight of 30%**

Research Approach and Workplan

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

(Under the) Identification of Technical Risks

- The degree to which the applicant demonstrates 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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Criterion 2 is continued with respect to

Baseline, Metrics, and Deliverables; the proposal will be evaluated on

- 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.

(With respect to the) Market Transformation Plan

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

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For Criterion 3: The Teaming and Resources, weighted at 20%. The proposal will be evaluated with respect to the

- Degree to which the principal investigator(s) and the proposed team members
 - commit an appropriate amount of staff time to provide oversight and to carry out the proposed tasks successfully;
 - exhibit complementary expertise and professional accomplishments that are relevant to all of the proposed tasks;
 - indicate willingness to openly and routinely communicate and share data within the consortium during the entire period of performance.
- The degree to which the combined facilities of the teaming organizations are appropriate, specific, and relevant to support the work;
- The degree to which the proposed consortium demonstrates the ability to facilitate and expedite further development and commercial deployment of the proposed technologies;
- And lastly, the reasonableness of the budget and spend plan for proposed project objectives.

Next slide.

The full applications 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 correct misunderstandings and misinterpretations and to provide additional data that might influence the selection process in their favor. 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 three days to respond.

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

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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.

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 printed on this slide. 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.

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

DUNS Number:

To obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number,

System for Award Management:

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**:

Registering 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.

The Means of Submission:

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

The Users' Guide for Applying to the Department of Energy EERE Funding Opportunity Announcements can be found at that URL [show on slide: <https://eere-Exchange.energy.gov/Manuals.aspx>].

All required submissions must come through EERE Exchange.

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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 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.

Next slide please.

- 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, expected to take place between June 14, 2014, through August 15, 2014.
 - Failure to do so may result in cancelation of further award negotiations and rescission of the selection.

Next slide please.

And finally, I believe we’ve come to the end of the information webinar.

- If you have questions about this FOA, again, please email the official mailbox: RenewableCarbonFiber@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.

I thank you so much for your attention and time. I apologize for the glitches we've had in the GoToWebinar, and I hope you have a wonderful rest of the day. Take care.