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U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Inflation Reduction Act Funding for Advanced Biofuels

IRAAdvancedBiofuelsFOA@ee.doe.gov

FOA Webinar

DE-FOA-0003178

03/04/2024

Notice

- NO NEW INFORMATION OTHER THAN THAT PROVIDED IN THE FOA WILL BE DISCUSSED IN THE WEBINAR.

- 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.

Notice

- All applicants are strongly encouraged to carefully read the Funding Opportunity Announcement DE-FOA-0003178 **("FOA")** and adhere to the stated submission requirements.
- This presentation summarizes the contents of FOA. If there are any inconsistencies between the FOA and this presentation or statements from DOE personnel, the FOA is the controlling document and applicants should rely on the FOA language and seek clarification by submitting a question to IRAAdvancedBiofuelsFOA@ee.doe.gov.

Anticipated Schedule:

FOA Issue Date:	02/22/2024
Submission Deadline for Concept Papers:	03/22/2024 5:00 p.m. ET
Submission Deadline for Full Applications:	05/24/2024 5:00 p.m. ET
Submission Deadline for Replies to Reviewer Comments:	06/24/2024 5:00 p.m. ET
Expected Date for EERE Selection Notifications:	07/25/2024
Expected Timeframe for Award Negotiations:	July-Aug 2024

Agenda

1) FOA Description (FOA section I.A)
2) Topic Areas/Technical Areas of Interest (FOA section I.B)
3) Award Information (FOA section II)
4) Statement of Substantial Involvement (FOA section VI.B.ix)
5) Cost Sharing (FOA section III.B)
6) FOA Timeline (FOA Cover Page)
7) Concept Papers (FOA section V.A.i)
8) Full Applications (FOA section V.A.ii)
9) Merit Review and Selection Process (FOA section V)
10) Registration Requirements (FOA section VI.B.i)

FOA Description

- The Bioenergy Technologies Office (BETO) is issuing this Funding Opportunity Announcement (FOA). Awards made under this FOA will be funded, in whole, with funds appropriated by the Inflation Reduction Act (IRA) of 2022.
- The U.S. Environmental Protection Agency (EPA) has provided funding to BETO to implement the advanced biofuels investments under IRA Section 60108(b). Potential applicants are advised to read the FOA carefully. This FOA is intended to support EPA's Renewable Fuel Standard (RFS) program and is different in allowable feedstocks and allowable fuels, among other things, compared to other recent BETO FOAs. All full applications must use the Block Flow Diagram and Supplemental Data document to show the potential lifecycle greenhouse gas (GHG) emission to demonstrate the application is supporting advanced biofuels.

FOA Description

- The Topic Areas in this FOA seek to address the following R&D needs:
  - Topic Area 1: Pre-Pilot Scale-Up of Integrated Biorefinery Technologies (see Section I.B.ii).
  - Topic Area 2: Biointermediate Processing Toolbox (see Section I.B.iii).

FOA Description

Both Topic Areas under this FOA will fund projects currently at Technology Readiness Level (TRL) 3 to 4 (see Appendix E). BETO will identify, evaluate, and select applications proposing the scale-up of key process steps from laboratory scale unit operations to industrially relevant piece(s) of equipment at the pilot scale (TRL 5). The meaning of industrially relevant can vary based on the technology. Indicators that equipment is industrially relevant would be that (Slide 1 of 3):

- The equipment is capable of receiving feedstock of the physical and chemical variability as would be seen in the commercial-scale unit;
- The equipment is capable of receiving feedstock continuously if that would be the vision of a commercial-scale unit;
- The equipment can continuously evacuate any solid, liquid, and gaseous products if that would be the vision of a commercial-scale unit;

FOA Description

- (cont., Slide 2 of 3) The equipment can operate at durations long enough to test durability of any catalyst/microorganism/solvent involved;
- The equipment is manufactured of materials that would be used in the commercial-scale unit;
- The equipment can run at the optimal conditions where throughput of unit biomass per unit time, conversion efficiency, and other size-independent metrics are optimized and similar to the values needed for the commercial-scale unit;
- The equipment is using catalyst, as applicable, manufactured in methods that would be done for the commercial-scale unit;

FOA Description

- (cont., Slide 3 of 3) The equipment is designed close enough to the vision of a demonstration- or commercial-scale such that if a sufficiency quantity of operational testing is conducted using the equipment, then a final investment decision could be made on investing on the next higher scale of technology development; and/or
- Any internal mass/heat transfer needed is performed in a way that would be used in the commercial-scale unit.

The steps are not required to comprise a fully integrated pilot scale unit by the end of the project, but rather can be utilized to support future integration of the entire process at pilot or demonstration scale.

Topic Area 1 Overview

Pre-pilot Scale-Up of Integrated Biorefinery Technologies

Topic Area 1 will provide funding for recipients to scale up key process steps that are ready to move out of the laboratory scale (TRL 3 or 4) and into industrially relevant piece(s) of equipment (TRL 5). The proposed unit operation(s) within an application are not required to comprise a fully integrated pilot-scale unit (TRL 6) by the end of the project, but rather can be utilized to support future integration of the entire process at pilot- or demonstration-scale.

Topic Area 1 – Pre-pilot Requirements

Table 2: Topic Area 1 – Pre-pilot Requirements (Slide 1 of 3)

Metric:	Minimum:
Allowable Feedstocks	Planted crops except for the conditions on Non-Allowable Feedstocks; agricultural residues; lignocellulosic feedstocks; woody biomass and forestry residues except for the conditions on Non-Allowable Feedstocks; algae grown photosynthetically; separated yard waste;[8a] separated food waste[8b] including recycled cooking and trap grease; animal waste material and animal byproducts; organic waste that is available on a renewable or recurring basis except for the conditions on Non-Allowable Feedstocks; biogenic waste carbon dioxide.
Non-Allowable Feedstocks	Corn starch if the corn starch is used for ethanol as the Allowable Fuel Type; non-biogenic carbon dioxide; construction and demolition waste; organic waste if it is not available on a renewable or recurring basis or if the Block Flow Diagram and Supplemental Data document does not demonstrate the fuel would have lifecycle GHG emission of no greater than 46 g CO2e/MJ combusted, lower heating value.
Allowable Fuel Types	Transportation fuel[8c] including fuel for use in motor vehicles and nonroad vehicles, except for the conditions on Non-Allowable Fuel Type; heating oil;[8d] sustainable aviation fuel.[8e] A Program Policy Factor is included for the Selection Official's consideration under this FOA, which may permit technologies producing sustainable aviation fuel to be prioritized (see Section V.C.i.).
Non-Allowable Fuel Types	Fuel for ocean-going vessels; ethanol if the feedstock is corn starch.

8: See Appendix H (Glossary) for definition

Topic Area 1 – Pre-pilot Requirements

Table 2: Topic Area 1 – Pre-pilot Requirements (Slide 2 of 3)

Metric:	Minimum:
GHG Emissions[9, 10, 11]	Maximum 46 g CO2e/MJ combusted, lower heating value. A Program Policy Factor is included for the Selection Official's consideration under this FOA, which may permit technologies proposing maximum GHG emission of 27 g CO2e/MJ combusted, lower heating value, to be prioritized (see Section V.C.i.). See Section IV.D.xix. for instructions on the Block Flow Diagram and Supplemental Data document.
Fuel Selling Price	Cost competitive after projected RFS credits with petroleum-based fuels (model TEA for envisioned mature commercial facility (n^{th} plant))
Cumulative Time on Stream by End of Project	500 hours
Minimum Throughput by End of Project	0.5 DTPD (dry ton per day) biomass; or 8 MMBTU/day of biogas equivalent; or 35 gallons/day of final fuel equivalent for processes that utilize CO_2 as a feedstock

9: Applicants may use any standardized approach to calculating life cycle GHG emissions e.g. Argonne National Laboratory GREET (Greenhouse Gases, Regulated Emissions, and Energy Use in Technologies) model[9] or provide schemes developed through the CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation) methodology[10] for calculating life cycle emissions

10: https://greet.es.anl.gov/

11: https://www.icao.int/environmental-protection/CORSIA/Pages/CORSIA-Eligible-Fuels.aspx

The selection of an application from this FOA has no bearing whatsoever on the determination of the GHG emissions of the pathway for the RFS program.

Topic Area 1 – Pre-pilot Requirements

Table 2: Topic Area 1 – Pre-pilot Requirements (Slide 3 of 3)

Metric:	Minimum:
Continuous Reaction Time on Stream, at the Minimum Throughput by End of Project Metric	100 hours minimum
R&D Community Benefits Plan	Required
Bioproducts	Bioproducts must be less than 50% by carbon of the sum of carbon of all biofuels and bioproducts. Non-Allowable Fuel Types are not considered Bioproducts. A Program Policy Factor is included for the Selection Official's consideration under this FOA, which may permit applications proposing higher percentages of biofuels to be prioritized (see Section V.C.i.).

Topic Area 1 – Pre-pilot Requirements

- Projects must meet or exceed all minimum metrics listed above in Table 2 of the FOA ((see Section I.B.ii.)).
- Applications must contain techno-economic and life cycle analyses (TEA and LCA) that relate the key technical parameters of the proposed technology described in the proposal application to achieving cost competitive MFSP and GHG reduction targets. Previously achieved values, scales, and durations should be delineated from the values necessary to meet the targeted MFSP to assure the level of technology advancement needed is clear.
- Projects selected for negotiation of award will be subject to verification immediately after award approval, within Budget Period 1.
- A Block Flow Diagram and Supplemental Data are required as part of the application. See Section IV.D.xix.
- Biofuels must demonstrate a reasonable chance of receiving ASTM International (ASTM) or other regulatory approvals, as evidenced by substantial discussion in the narrative and inclusion of necessary tasks in the Statement of Project Objectives (SOPO).
- Applications cannot include greater than 10% of the total project budget for earlier stage research and development (R&D) (<TRL 4), including expenses for equipment, salaries, and supplies.

Biointermediate Processing Toolbox

Topic Area 2 seeks solutions for helping solve the most difficult remaining technical challenges preventing co-processing or processing of biointermediates (such as biocrude) to produce SAF and other advanced biofuels. Applicants to Topic Area 2 will be required, by end of project, to demonstrate proof of technology success at an industrially relevant scale of at least TRL 5 and provide a market justification for further system scaling. For purposes of Topic Area 2, industrially relevant means processing or co-processing real biointermediate at long operation times close to the time needed for a refinery to consider making an investment decision at the end of this project. The actual times needed for a refinery to make a final investment decision may, or may not, be larger than the stretch goals in Table 3, but the available funds for this FOA limit the required times and stretch targets in Table 3. Stretch targets are included because an application may find it reasonable to pursue such targets given the state-of-technology at the start of application, the cost to perform experiments, and the availability of funds for the project.

Topic Area 2 Overview

Table 3: Topic Area 2 – Biointermediate Processing Toolbox Requirements (Slide 1 of 3)

Metric:	Minimum:
Allowable Feedstocks	Biocrude;[8f] biodiesel distillate bottoms;[8g] biomass-based sugars;[8h] digestate;[8i] free fatty acid (FFA) feedstock;[8j] glycerin;[8k] soapstock;[8l] undenatured ethanol;[8m] biogas[8n] used to make a renewable fuel other than renewable compressed natural gas[8o] or renewable liquified natural gas.[8p]
Non-Allowable Feedstocks	Lipids/triglycerides or any other feedstock intended to be an FFA feedstock with less than 50% FFA; biogas used to make renewable compressed natural gas or renewable liquified natural gas; biocrude converted from the non-cellulosic components of separated food waste such as recycled cooking and trap grease; biointermediates converted from construction and demolition waste; biointermediates converted from organic waste that is not available on a renewable or recurring basis or if the Block Flow Diagram and Supplemental Data document does not demonstrate the fuel would have lifecycle GHG emission of no greater than 46 g CO2e/MJ combusted, lower heating value.
Allowable Fuel Types	Transportation fuel[8q] including fuel for use in motor vehicles and nonroad vehicles, except for the conditions on Non-Allowable Fuel Type; heating oil;[8r] sustainable aviation fuel.[8s] A Program Policy Factor is included for the Selection Official's consideration under this FOA, which may permit technologies producing sustainable aviation fuel to be prioritized (see Section V.C.i.).

8: See Appendix H (Glossary) for definition

Topic Area 2 Overview

Table 3: Topic Area 2 – Biointermediate Processing Toolbox Requirements (Slide 2 of 3)

Metric:	Minimum:
Non-Allowable Fuel Type	Fuel for ocean-going vessels.
Fuel Selling Price	Cost competitive after projected RFS credits with petroleum-based fuels (model TEA for envisioned mature commercial facility (n^{th} plant))
Cumulative Time on Stream by End of Project	1,000 hours minimum; stretch target of 4,000 hours
Continuous Time on Stream	500 hours minimum; stretch target of 2,000 hours. If co-processing with petroleum, the test must include near-real-time measurement of biogenic carbon in the co-processed fuel.
Minimum Throughput by End of Project	0.02 Tons Per Day biointermediate at the throat of processing reactor (0.2 barrels per day biointermediate at the throat of processing reactor)

9: Applicants may use any standardized approach to calculating life cycle GHG emissions e.g. Argonne National Laboratory GREET (Greenhouse Gases, Regulated Emissions, and Energy Use in Technologies) model[9] or provide schemes developed through the CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation) methodology[10] for calculating life cycle emissions

10: https://greet.es.anl.gov/

11: https://www.icao.int/environmental-protection/CORSIA/Pages/CORSIA-Eligible-Fuels.aspx

The selection of an application from this FOA has no bearing whatsoever on the determination of the GHG emissions of the pathway for the RFS program.

Topic Area 2 Overview

Table 3: Topic Area 2 – Biointermediate Processing Toolbox Requirements

Metric:	Minimum:
GHG Reductions[9, 10, 11]	Maximum 46 g CO2e/MJ combusted, lower heating value. A Program Policy Factor is included for the Selection Official's consideration under this FOA, which may permit technologies proposing maximum GHG emission of 27 g CO2e/MJ combusted, lower heating value, to be prioritized (see Section V.C.i.). See Section IV.D.xix. for instructions on the Block Flow Diagram and Supplemental Data document.
R&D Community Benefits Plan	Required, with meaningful actions that demonstrate how a biofuel facility or other commercial facility processing or co-processing biointermediates would engage with local communities and enable biorefinery planning to respond to environmental justice laws.
Bioproducts	Bioproducts must be less than 50% by carbon of the sum of carbon of all biofuels and bioproducts. Non-Allowable Fuel Types are not considered Bioproducts. A Program Policy Factor is included for the Selection Official's consideration under this FOA, which may permit applications proposing higher percentages of biofuels to be prioritized (see Section V.C.i.).

9: Applicants may use any standardized approach to calculating life cycle GHG emissions e.g. Argonne National Laboratory GREET (Greenhouse Gases, Regulated Emissions, and Energy Use in Technologies) model[9] or provide schemes developed through the CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation) methodology[10] for calculating life cycle emissions

10: https://greet.es.anl.gov/

11: https://www.icao.int/environmental-protection/CORSIA/Pages/CORSIA-Eligible-Fuels.aspx

The selection of an application from this FOA has no bearing whatsoever on the determination of the GHG emissions of the pathway for the RFS program.

Topic Area 2 Specific Requirements (Slide 1 of 2)

- Projects must meet or exceed all minimum metrics listed above in Table 3: Topic Area 2 – Biointermediate Processing Toolbox Requirements.
- Applications must contain techno-economic and life cycle analyses (TEA and LCA) that relate the key technical parameters of the proposed technology described in the proposal application to achieving cost competitive MFSP and GHG reduction targets. Previously achieved values, scales, and durations should be delineated from the values necessary to meet the targeted MFSP so that the level of technology advancement needed is clear. The boundaries of the analysis in the TEA and LCA should start from the feedstock.
- A Block Flow Diagram and Supplemental Data template are required as part of the application. See Section IV.D.xix. The boundaries of the analysis in the Block Flow Diagram and Supplemental Data should start from the feedstock.
- The application must include a design basis discussion showing the vision for the commercial unit, including identification of feedstock, methods for feedstock pre-processing, and description of commercial-scale reactors for conversion of biomass feedstock to biointermediate. If co-processing, this discussion should also discuss the expected level of co-processing and target metrics for fraction of biogenic carbon incorporation into the co-processed fuels; if processing neat, this discussion should also discuss the throughput capacity of the expected commercial-scale legacy refinery unit.

Topic Area 2 Specific Requirements (Slide 2 of 2)

- The Statement of Project Objectives (SOPO) must include an engineering deliverable, by the end of project, to demonstrate their technologies under industrially relevant conditions such as an industrial pilot or a refinery demonstration. If the technology is co-processing, the technology demonstration must include co-processing the biointermediate and identifying the biogenic content in the co-processed fuel.
- Biofuels must demonstrate a reasonable chance of receiving ASTM International (ASTM) or other regulatory approvals, as evidenced by substantial discussion in the narrative and inclusion of necessary tasks in the Statement of Project Objectives (SOPO).
- Applications cannot include greater than 10% of the total project budget for earlier stage research and development (R&D) (<TRL 4), including expenses for equipment, salaries, and supplies.

Non-Responsive Applications (Slide 1 of 2)

- Applications that fall outside the technical parameters specified in Sections I.A. and I.B. of the FOA.
- Applications without a for-profit entity or entities providing technical capability, as the prime recipient or subrecipients, with aggregate effort equivalent to at least 20% of the total cost of the project.
- Applications proposing co-processing of lipids/triglycerides (vegetable oils and/or biogenic oils/fats/greases) with petroleum.
- Applications proposing the primary fuel type to be fuel for ocean-going vessels, or commonly known as sustainable marine fuel; or applications proposing the primary fuel type to be ethanol and the feedstock to be corn starch.
- Applications that do not have a Block Flow Diagram and Supplemental Data document demonstrating that the proposed technology would have a lifecycle GHG emission of no greater than 46 g CO2e/MJ combusted, lower heating value.
- Technologies proposing that 50% or more, of the sum of all carbon for biofuels and bioproducts, is used for bioproducts.
- Applications for proposed technologies that are not based on sound scientific principles (e.g., violates the laws of thermodynamics).

Non-Responsive Applications (Slide 2 of 2)

- **For Topic Area 1 only:** applications proposing to use any Non-Allowable Feedstocks identified in Table 2 or applications proposing to use a feedstock not listed in the Allowable Feedstocks row of Table 2.
- **For Topic Area 2 only:** applications proposing to use Non-Allowable Feedstocks or applications proposing to use a feedstock not listed in the Allowable Feedstocks row of Table 3.
- **For Topic Area 2 only**: applications proposing to blend a biointermediate only at the beginning of the refining process with crude oil (i.e., pre-vacuum distillation or pre-atmospheric distillation) or only at the end of the refining process as finished fuels (i.e., blending).

Teaming Partner List

- To facilitate the formation of new project teams for this FOA, a Teaming Partner List is available. Information on Teaming List can be found here:

  https://eere-exchange.energy.gov/Default.aspx#FoaId786ac4d9-fac6-4124-9af4-7bb53519bab9

- Any organization that would like to be included on this list should submit the following information the Teaming Partner List on EERE Exchange
  - 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

Award Information

Total Amount to be Awarded	Approximately $9,400,000
Type of Funding Agreement	Cooperative Agreements
Period of Performance	24 to 36 months
Cost Share Requirement	20% of Total Project Costs

Topic Area Number	Topic Area Title	Anticipated Number of Awards	Anticipated Minimum Award Size for Any One Individual Award (Fed Share)	Anticipated Maximum Award Size for Any One Individual Award (Fed Share)	Approximate Total Federal Funding Available for All Awards	Anticipated Period of Performance (months)
1	Pre-Pilot Scale-Up of Integrated Biorefinery Technologies	0 to 5	$0	$2,000,000	$9,400,000	24 to 36
2	Biointermediate Processing Toolbox	0 to 4	$0	$9,400,000	$9,400,000	24 to 36

Statement of Substantial Involvement

BETO has substantial involvement in work performed under awards made following this FOA. BETO does not limit its involvement to the administrative requirements of the award. Instead, BETO 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:

- BETO shares responsibility with the Recipient for the management, control, direction, and performance of the Project.
- BETO 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.
- BETO may redirect or discontinue funding the Project based on the outcome of BETO's evaluation of the Project at that the Go/No Go decision point.
- BETO participates in major project decision-making processes.
- Because these funds were appropriated to EPA, EPA will, in collaboration with BETO, maintain substantial involvement with awards during the performance of the project. BETO will forward quarterly progress reports, invoices, and quarterly financial reports to BETO. BETO will invite EPA to progress update meetings.

Cost Sharing Requirements

- Applicants are bound by the cost share proposed in their Full Applications if selected for award negotiations. **The cost share must be at least 20% of the total project costs**[1] for research and development projects.[2] The cost share must come from non-federal sources unless otherwise allowed by law.
- To assist applicants in calculating proper cost share amounts, EERE has included a cost share information sheet and sample cost share calculation as Appendices A and B to this FOA.

[1] Total project costs is the sum of the government share, including FFRDC costs if applicable, and the recipient share of project costs.

[2] Energy Policy Act of 2005, Pub.L. 109-58, sec. 988. Also see 2 CFR 200.306 and 2 CFR 910.130 for additional cost sharing requirements.

Cost Share Contributions

- Contributions must be:
  - Specified in the project budget
  - Verifiable from the Prime Recipient's records
  - Necessary and reasonable for proper and efficient accomplishment of the project
- If you are selected for award negotiations, 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.
- Please note, vendors/contractors may NOT provide cost share. Any partial donation of goods or services is considered a discount and is not allowable.

Allowable Cost Share

- Cost Share must be allowable and must be verifiable upon submission of the Full Application
- Refer to the following applicable Federal cost principles:

Entity	Cost Principles
For-profit entities	FAR Part 31 *http://farsite.hill.af.mil/reghtml/regs/far2afmcfars/fardfars/far/31.htm*
All other non-federal entities	2 CFR Part 200 Subpart E - Cost Principles *https://www.ecfr.gov/cgi-bin/text-idx?node=2:1.1.2.2.1.5&rgn=div6*

Allowable Cost Share

- Project teams may provide cost share in the form of cash or in-kind contributions.
- Cost share may be provided by the prime recipient, subrecipients, or third parties (entities that do not have a role in performing the scope of work).
- Cash contributions include, but are not limited to: personnel costs, fringe costs, supply and equipment costs, indirect costs and other direct costs.
- Allowable in-kind contributions include, but are not limited to: the donation of volunteer time or the donation of space or use of equipment.

For more information, see the Cost Share Appendix A in the FOA

Unallowable Cost Share

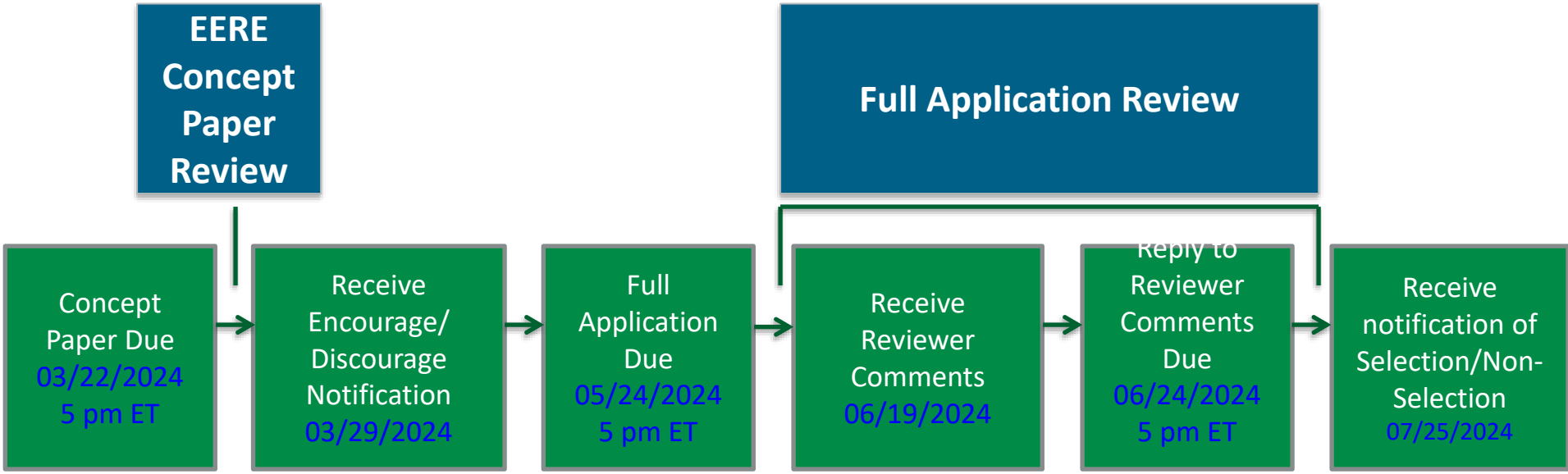
The Prime Recipient may **NOT** use the following sources to meet its cost share obligations including, but not limited to:

- Revenues or royalties from the prospective operation of an activity beyond the project period.
- Proceeds from the prospective sale of an asset of an activity.
- Federal funding or property (e.g. federal grants, equipment owned by the federal government).
- Expenditures that were reimbursed under a separate Federal Program.
- The same cash or in-kind contributions for more than one project or program
- Vendor/contractors may not provide cost share.

Cost Share Payment

- Recipients must provide documentation of the cost share contribution, incrementally over the life of the award
- The cumulative cost share percentage provided on each invoice must reflect, at a minimum, the cost sharing percentage negotiated
- In limited circumstances, and where it is in the government's interest, the EERE Contracting Officer may approve a request by the Prime Recipient to meet its cost share requirements on a less frequent basis, such as monthly or quarterly. See Section III.B.vi of the FOA.

FOA Timeline



EERE anticipates making awards by August 2024

Concept Papers

- Applicants must submit a Concept Paper
  - Each Concept Paper must be limited to a single concept or technology
- Section IV.C of the FOA states what information a Concept Paper should include and the page limits.
  - Failure to include the required content could result in the Concept Paper receiving a "discouraged" determination or the Concept Paper could be found to be ineligible
- Concept Papers must be submitted by 3/22/2024, 5 pm ET through EERE eXCHANGE
- EERE provides applicants with: (1) an "encouraged" or "discouraged" notification, and (2) the reviewer comments

Concept Paper Review

This involves consideration of the following factors:

- The applicant clearly describes the proposed technology, how the technology is unique and innovative, and how the technology will advance the current state-of-the-art;
- The applicant has identified risks and challenges of the technology, regulatory and financial aspects of the proposal including possible mitigation strategies, and has shown the impact that EERE funding and the proposed project would have on the relevant field and application;
- The applicant has the qualifications, experience, capabilities and other resources necessary to complete the proposed project; and
- The proposed work, if successfully accomplished, would clearly meet the objectives as stated in the FOA.

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

Full Applications Content Requirements

The Full Application includes:

- **Technical Volume**: The key technical submission - info relating to the technical content, project team members, etc.
- **Resumes**
- **Letters of Commitment**
- **Statement of Project Objectives (SOPO)**
- **SF-424 Application for Federal Assistance:** The formal application signed by the authorized representative of the applicant.
- **Budget Justification Workbook:** a detailed budget and spend plan for the project.
- **Summary/Abstract for Public Release**
- **Summary Slide**
- **Subrecipient Budget Justification**

Full Application Content Requirements

- DOE work proposal for FFRDC (if applicable) and authorization from Contracting Officer for FFRDC.
- SF-LLL Disclosure of Lobbying Activities
- Foreign Entity Waiver Requests and Foreign Work Waiver Requests (if applicable)
- R&D Community Benefits Plan
- Current and Pending Support
- Transparency of Foreign Connections.
- Potentially duplicative funding notice
- Block Flow Diagram and Supplemental Data

Full Applications: Technical Volume Content

Technical Volume: the key technical component of the Full Application

Content of Technical Volume	Suggested % of Technical Volume
Cover Page	
Project Overview	10%
Technical Description, Innovation and Impact	30%
Workplan	40%
Technical Qualifications and Resources	20%

Full Application Eligibility Requirements

- Applicants must submit a Full Application by 5/24/2024, 5 pm ET
- Full Applications are eligible for review if:
  - The Applicant is an eligible entity Section III.A of FOA;
  - The Applicant submitted an eligible Concept Paper;
  - The Cost Share requirement is satisfied Section III.B of FOA;
  - The Full Application is compliant Section III.C of FOA; and
  - The proposed project is responsive to the FOA Section III.D of FOA
  - Requirements for DOE/NNSA FFRDCs Listed as the Applicant Section III.E.i of FOA
  - Requirements for DOE/NNSA and Non-DOE/NNSA FFRDCs included as a Subrecipient Section III.E.i of FOA
  - The Full Application meets any other eligibility requirements listed in Section III of the FOA.

Who is Eligible to Apply? (Slide 1 of 2)

The proposed prime recipient and subrecipient(s) must be domestic entities. The following types of domestic entities are eligible to participate as a prime recipient or subrecipient of this FOA:

1. Institutions of higher education;
2. For-profit entities;
3. Non-profit entities; and
4. State and local governmental entities, and federally recognized American Indian Tribes and Alaska Native entities.

For more detail about eligible applicants, please see Section III.A of the FOA

- Non-profit 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.
- To qualify as a domestic entity, the entity must be organized, chartered or incorporated (or otherwise formed) under the laws of a particular state or territory of the United States; have majority domestic ownership and control; and have a physical place of business in the United States.
- Non-DOE/NNSA FFRDCs are eligible to participate as a subrecipient but are not eligible to apply as a prime recipient. For Topic Area 2, DOE/NNSA FFRDCs are eligible to apply for funding as a Prime Recipient or Subrecipient.
- In limited circumstances, DOE may approve a waiver to allow a foreign entity to participate as a prime recipient or subrecipient. A foreign entity may submit a Full Application to this FOA, but the Fully Application must be accompanied by an explicit written waiver request.

Who is Eligible to Apply? (Slide 1 of 2)

- In limited circumstances, DOE may approve a waiver to allow a foreign entity to participate as a prime recipient or subrecipient. A foreign entity may submit a Full Application to this FOA, but the Fully Application must be accompanied by an explicit written waiver request. Likewise, if the applicant seeks to include a foreign entity as a subrecipient, the applicant must submit a separate explicit written waiver request in the Full Application for each proposed foreign subrecipient. Appendix C lists the information that must be included in a foreign entity waiver request. The applicant does not have the right to appeal DOE's decision concerning a waiver request.
- For both Topic Areas 1 and 2, if the Prime Recipient is not a for-profit entity providing technical capability, then one or more for-profit entity partners providing technical capability must participate as Subrecipient(s) with aggregate effort equivalent to at least 20% of the total cost of the project.
- DOE/NNSA and non-DOE/NNSA FFRDCs are restricted from applying for funding as Prime Recipient for Topic Area 1, but are eligible to participate as a Subrecipient. For Topic Area 1, each FFRDC is permitted to participate as a Subrecipient with effort equivalent up to 50% of the total estimated cost of the project; however, in aggregate, total FFRDC effort shall not exceed 50% of the total estimated cost of the project.

Multiple Applications

An entity may submit more than one Concept Paper and Full Application to this FOA, provided that each application describes a unique, scientifically distinct project and provided that an eligible Concept Paper was submitted for each Full Application.

Merit Review and Selection Process (Full Applications)

- The Merit Review process consists of multiple phases that each include an eligibility review and a thorough technical review
- Rigorous technical reviews are conducted by reviewers that are experts in the subject matter of the FOA
- Ultimately, the Selection Official considers the recommendations of the reviewers, along with other considerations such as program policy factors, to make the selection decisions

Technical Merit Review Criteria

Applications will be evaluated against the technical review criteria shown below. All sub-criteria are of equal weight.

Criterion 1: Technical Merit, Innovation, and Impact (50%)

Criterion 2: Project Demonstration and Market Transformation Plan (20%)

Criterion 3: Team and Resources (10%)

Criterion 4: R&D Community Benefits Plan (20%)

See Section V.A.ii of the FOA.

Criteria for Replies to Reviewer Comments

- EERE provides applicants with reviewer comments
- DOE has not established separate criteria to evaluate Replies to Reviewer Comments. Instead, Replies to Reviewer Comments are attached to the original applications and evaluated as an extension of the Full Application.
- Applicants are not required to submit a Reply - it is optional
- To be considered by EERE, a Reply must be submitted by 6/24/2024 and submitted through EERE eXCHANGE

Pre-Selection Clarification

- DOE may determine that pre-selection clarifications are necessary from one or more applicants.
- Pre-selection clarifications are distinct from and less formal than pre-selection interviews. These pre-selection clarifications will solely be for the purposes of clarifying the application.
- If DOE contacts an applicant for pre-selection clarification purposes, it does not signify that the applicant has been selected for negotiation of award or that the applicant is among the top ranked applications.
- DOE will not reimburse applicants for expenses relating to the pre-selection clarifications, nor will these costs be eligible for reimbursement as pre-award costs.

See Section V.D.ii of the FOA.

Selection Factors

The Selection Official may consider the merit review recommendation, the Federal Consensus Board's recommendations, program policy factors, and the amount of funds available in arriving at selections for this FOA

Program Policy Factors (Slide 1 of 2)

The Selection Official may consider the following program policy factors in determining which Full Applications to select for award negotiations (see Section V.C.i):

- The degree to which the proposed project exhibits technological diversity when compared to the existing DOE project portfolio and other projects selected from the subject FOA;
- The degree to which the proposed project, including proposed cost share, optimizes the use of available EERE funding to achieve programmatic objectives;
- The level of industry involvement and demonstrated ability to accelerate commercialization and overcome key market barriers;
- 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;
- The degree to which the proposed project, or group of projects, represent a desired geographic distribution (considering past awards and current applications);
- The degree to which the proposed project incorporates applicant or team members from Minority Serving Institutions (e.g., Historically Black Colleges and Universities (HBCUs)/Other Minority Institutions (OMIs)); and partnerships with socially-disadvantaged businesses (e.g., veterans, new entrants)

Program Policy Factors (Slide 2 of 2)

- The degree to which the proposed project, when compared to the existing DOE project portfolio and other projects to be selected from the subject FOA, contributes to the total portfolio meeting the goals reflected in the R&D Community Benefits Plan criteria;
- The degree to which the proposed project will employ procurement of U.S. iron, steel, manufactured products, and construction materials;
- The degree to which the proposed project's primary biofuel stream(s) contains the proposed process(es)'s utilizable biogenic carbon;
- The degree to which the proposed project reduces Greenhouse Gas emissions when compared to the petroleum derived equivalent, including if the proposed project reduces Greenhouse Gas emissions by 70% or greater; and
- The degree to which the proposed project's biofuel stream(s) include sustainable aviation fuel.

Registration Requirements

- To apply to this FOA, Applicants must submit application materials through EERE eXCHANGE:
  - Beginning in July 2022*, eXCHANGE will be updated to integrate with Login.gov. As of Sept. 29, 2022*, applicants must have a Login.gov account to access EERE eXCHANGE. Please ensure that the email address associated with Login.gov matches the email address associated with your eXCHANGE account. For more information, refer to the eXCHANGE Multi-Factor Authentication (MFA) Quick Guide in the Manuals section in eXCHANGE.
- Obtain a "control number" at least 24 hours before the first submission deadline.
- Although not required to submit an Application, the following registrations must be complete to receive an award under this FOA:

Registration Requirement	Website
SAM	https://www.sam.gov
FedConnect	https://www.fedconnect.net
Grants.gov	http://www.grants.gov

*Date subject to change

Means of Submission

- Concept Papers, Full Applications, and Replies to Reviewer Comments must be submitted through EERE eXCHANGE at https://eere-eXCHANGE.energy.gov
  - EERE will not review or consider applications submitted through other means
- The Users' Guide for Applying to the Department of Energy EERE Funding Opportunity Announcements can be found at https://eere-eXCHANGE.energy.gov/Manuals.aspx

Key Submission Points

- Check entries in EERE eXCHANGE
  - Submissions could be deemed ineligible due to an incorrect entry
- EERE strongly encourages Applicants to submit 1-2 days prior to the deadline to allow for full upload of application documents and to avoid any potential technical glitches with EERE eXCHANGE
- Make sure you hit the submit button
  - Any changes made after you hit submit will un-submit your application and you will need to hit the submit button again
- For your records, print out the EERE eXCHANGE page at each step, which contains the application's Control Number

Applicant Points-of-Contact

- Applicants must designate primary and backup points-of-contact in EERE eXCHANGE with whom EERE will communicate to conduct award negotiations
- It is imperative that the Applicant/Selectee be responsive during award negotiations and meet negotiation deadlines
  - Failure to do so may result in cancellation of further award negotiations and rescission of the Selection

Questions

- Questions about this FOA? Email IRAAdvancedBiofuelsFOA@ee.doe.gov
  - All Q&As related to this FOA will be posted on EERE eXCHANGE
    - You must select this specific FOA Number in order to view the Q&As
  - EERE will attempt to respond to a question within 3 business days, unless a similar Q&A has already been posted on the website
- Problems logging into EERE eXCHANGE or uploading and submitting application documents with EERE eXCHANGE? Email EERE-eXCHANGESupport@hq.doe.gov
  - Include FOA name and number in subject line