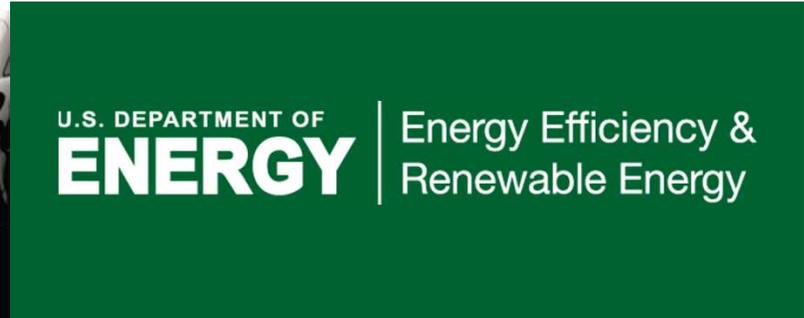


Welcome

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- If you do not wish to have your voice recorded please do not speak during the call
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Clean Energy Manufacturing Innovation Institute for Industrial Decarbonization through Electrification of Process Heating

AMOIstitute@ee.doe.gov

FOA Webinar
DE-FOA-0002737
7/14/2022

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-0002737](#) (“FOA”) and adhere to the stated submission requirements.
- 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 AMOInstitute@ee.doe.gov.

Anticipated Schedule*:

FOA Issue Date:	06/23/2022
Submission Deadline for Concept Papers:	08/09/2022
Submission Deadline for Full Applications:	10/25/2022
Submission Deadline for Replies to Reviewer Comments:	12/01/2022
Expected Date for EERE Selection Notifications:	March 2023
Expected Timeframe for Award Negotiations:	120 Days

*Please check Exchange for the latest schedule information

Agenda

- 1) FOA Description
- 2) Diversity, Equity and Inclusion (DEI)
- 3) Topic Areas/Technical Areas of Interest
- 4) Teaming Partner List
- 5) Award Information
- 6) Statement of Substantial Involvement
- 7) Cost Sharing
- 8) FOA Timeline
- 9) Concept Papers
- 10) Full Applications
- 11) Merit Review and Selection Process
- 12) Pre-Selection Interviews
- 13) Registration Requirements

FOA Description

This FOA will advance decarbonization of the industrial sector by establishing a new Clean Energy Manufacturing Innovation Institute dedicated to reducing the overall emissions of domestic manufacturing through thermal process intensification, via electrification of process heating. **The proposed Institute will pursue targeted research, development, and demonstration (RD&D) that will focus on developing and scaling electrified processes that can economically reduce emissions, improve flexibility, and enhance energy efficiency of industrial process heating.**

FOA Description

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

Institutes also provide education and training opportunities to build and enhance the skills of the American manufacturing workforce.

Institutes are expected to focus primarily on Technology Readiness Levels (TRL)/Manufacturing Readiness Levels (MRL) 4-7 activities, advancing technologies to the pilot scale to attract additional funding from industry, venture capital, and/or other federal investments.

FOA Description

This FOA aims to create a new Clean Energy Manufacturing Innovation Institute that will **accelerate the development, scale-up, and demonstration of technologies that enable electrified processes to be one of the economically viable pathways for industrial decarbonization.** Through the development of electrified heating processes and modeling, simulation, and evaluation tools, this Institute will contribute substantially to an efficient, productive, and decarbonized industrial sector. Technical advancements are needed, in particular, to develop electrified processes used to achieve mid- and high-temperatures for various industrial operations including melting, drying, pre-heating, annealing, distillation, pasteurization, hydrocarbon cracking, and others. **Electrification of industrial process heating presents a large opportunity to decarbonize the industrial sector,** but there are several key challenges that have stalled deployment.

Diversity, Equity and Inclusion (DEI)

To achieve the greatest impact for all Americans with the Institute on Electrification of Industrial Heating Processes, it is critical that the Institute not only contribute to the country's energy technology and climate goals, but also advances DOE's diversity, equity, and inclusion priorities.

As part of the application, applicants are required to describe how diversity, equity, and inclusion objectives will be incorporated in the project. Specifically, applicants are required to submit a Diversity, Equity, and Inclusion Plan that describes the actions the applicant will take to foster a welcoming and inclusive environment, support people from underrepresented groups in STEM, advance equity, and encourage the inclusion of individuals from these groups in the project; and the extent the project activities will be located in or benefit underserved communities (See Section IV.D.).

Diversity, Equity and Inclusion Plan (Section IV.D)

The [DEI] plan should include SMART milestones in each budget period supported by metrics to measure the success of the proposed actions. If an application is selected, EERE will incorporate the DEI Plan into the award as part of the project requirements and the recipient will be required to meet DEI plan. During the life of the DOE award, DOE will evaluate the recipient's progress, including as part of the Go/No-Go review process.

Given the broad scope and scale of Institute activities, it is anticipated that several SMART milestones related to DEI will be included each budget period. **The applicant is strongly encouraged to consider how diversity, equity and inclusion can be woven into all aspects of the Institute, from management and operations, to outreach, roadmapping, research and development, and education and workforce development activities, in order to promote meaningful change and lasting impacts.** While this plan should include all DEI-specific tasks, activities, milestones and metrics for the Institute, the applicant is also encouraged to include these elements throughout the Technical Volume, SOPO and other documents where relevant/appropriate.

Key Areas of Interest

To accelerate the deployment of electrified process heating technologies, the Institute will identify and address critical barriers to technology adoption. To do so, activities in three key areas will be needed:

Key Area 1: Collaborative Research, Development, and Demonstration of Electrified Heating Technologies

Key Area 2: Process Modeling and Optimization Tools

Key Area 3: Technology, Market, and Impact Analysis

The three key areas identified above, although distinct, should work together to broaden the impact of the Institute and increase the likelihood of successfully meeting Institute goals.

In addition to the areas identified above, the Institute is expected to identify education and workforce development (EWD) needs to prepare the workforce for future use of the technologies developed by the Institute.

Key Areas of Interest

- **Collaborative Research, Development, and Demonstration of Electrified Heating Technologies.** A successful Institute should work to accelerate deployment of electrified heating technologies by researching novel electrified heating technologies, developing hardware for complete modules and integration into a plant, convening the supply chain to facilitate manufacturing and scaling, and demonstrating the co-benefits to transitioning away from conventional heating processes.
- **Process Modeling and Optimization Tools.** Integrating electric heating equipment into specific manufacturing operations and applications will require advanced process design expertise and modeling software to de-risk deployment and optimize productivity. Additionally, the superior precision and controllability of electrotechnologies provide opportunities to develop advanced sensors and digital twin models that can monitor and control operations to minimize energy use.
- **Technology, Market, and Impact Analysis.** Technoeconomic evaluation tools reduce uncertainty and can identify the most promising applications for a given technology. Analysis tools and methodologies that allow for consistent evaluation across technologies on multiple dimensions (e.g., cost, reliability, lifecycle impacts, policy regimes) and use vetted data to ensure fidelity, can reduce investment risk and direct funds to the most promising technologies. Lifecycle impact assessments and place-based analyses can identify opportunities to reduce GHG emissions and local exposure to criteria air pollutants.

Teaming Partner List

An effective Institute will include a diverse set of multi-disciplinary experts from industry, academia, state and local governments, NGOs, non-profits, labor unions, national laboratories, and FFRDCs with expertise in the topic area and the facilities and capabilities to address the broad set of challenges. Teams that include representation from Minority Serving Institutions, Historically Black colleges or universities; Tribal colleges or universities; and Minority Business Enterprises; Minority-Owned Businesses; Woman-Owned Businesses, Veteran-Owned Businesses, Tribal Nations, and labor unions are encouraged.

EERE is compiling a Teaming Partner List to facilitate the widest possible national participation in the formation of the Institute for this FOA. **All entities planning to apply as a prime applicant or entities interested in participating as part of an applicant team are strongly encouraged to provide their contact information for the Teaming Partner List.**

Teaming Partner List

- A Teaming Partner List was initiated under the Notice of Intent issued for this FOA; the list was transferred to the FOA record and will be updated at least weekly
- The Teaming Partner List will be available on EERE Exchange at <https://eere-exchange.energy.gov> under FOA DE-FOA-0002737
- Any organization that would like to be included on this list should submit the following information to AMOInstitute@ee.doe.gov, with the subject line “Teaming Partner Information”:
 - *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 list, EERE does not endorse or otherwise evaluate the qualifications of the entities that self-identify themselves for placement on the Teaming Partner List

Non-Responsive Applications (Section I.E)

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

- **Applications that fall outside the technical parameters specified in Section I.A. and I.B. of the FOA.**
- **Applications for proposed technologies that are not based on sound scientific principles** (e.g., violates the laws of thermodynamics).
- **Applications focused outside Technology Readiness Levels (TRL) 4 - 7.** See Appendix I for more information.
- **Applications that only propose a single R&D project.** For example, an application that only includes one R&D project to be conducted by a single Principal Investigator.
- **Applications that do not propose a feasible pathway to achieving FOA metrics.**
- **Applications focused on a single subsector.** For example, an application that only includes process heating technologies for the iron and steel industry.
- **Applications for the development of technologies related to heat pumps.**
- **Applications that address R&D of combustion-based process heating.** For example, an application that includes hydrogen-based technologies or hybrid electric/combustion technologies.
- **Applications that address R&D of technologies that can reduce energy use for process heating but are not themselves process heating technologies.** For example, an application that includes electrochemical processes (e.g., electrolysis) or electrified membrane separations.

Award Information

Total Amount to be Awarded	Approximately \$70,000,000*
Average Award Amount	EERE expects to make a total of approximately \$70,000,000 of federal funding available for one new award under this FOA
Types of Funding Agreements	<ul style="list-style-type: none">• Cooperative Agreements• Technology Investment Agreements
Period of Performance	60 months
Cost Share Requirement	50% of Total Project Costs

*Subject to the availability of appropriated funds

As noted in Section II.A., EERE may establish up to five budget periods for the award, however only funding for Budget Period 1 will be authorized initially. **The total number of budget periods and their duration is flexible: Applicants may propose what they believe will be most advantageous to the project.** EERE expects that Budget Period 1 will have a duration of 6-18 months; the overall project period for the award is expected to be 60 months.

Statement of Substantial Involvement (Section VI.B.ix)

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

- EERE shares responsibility with the Recipient for the management, control, direction, and performance of the Project.
- EERE may intervene in the conduct or performance of work under this award for programmatic reasons. Intervention includes the interruption or modification of the conduct or performance of project activities.
- EERE may redirect or discontinue funding the project based on the outcome of EERE's evaluation of the Project at that the Go/No Go decision point.
- EERE participates in major project decision-making processes.

Cost Sharing Requirements

The cost share must be at least 50% of the total allowable costs for the Institute (i.e., the sum of the government share, including FFRDC costs if applicable, and the recipient share of allowable costs equals the total allowable cost of the project) and must come from non-federal sources unless otherwise allowed by law. Per 15 U.S.C. 278s(e)(7), DOE may consider waiving cost share requirements for certain activities. However, for the purpose of the full application, cost share must be proposed to meet the 50% requirement.

Note: The applicant should only include cost share that it can commit to over the course of the award.

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

- Cash Contributions
 - May be provided by the Prime Recipient, Subrecipients, or a Third Party (may not be provided by vendors/contractors)
- In-Kind Contributions
 - Can 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

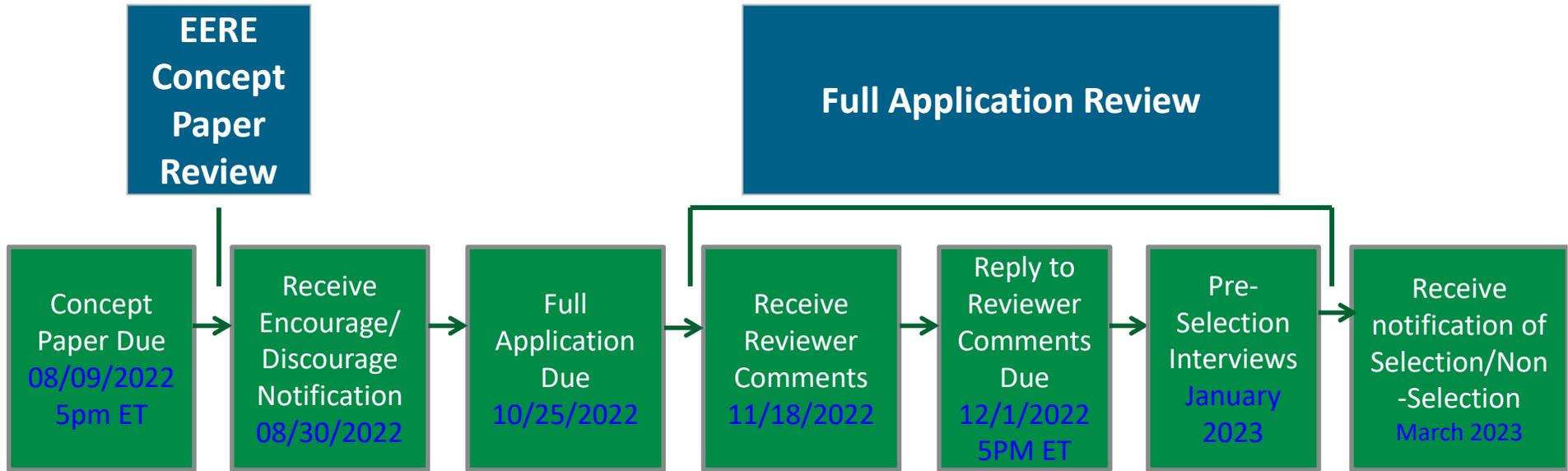
The Prime Recipient may **NOT** use the following sources to meet its cost share obligations including, but not limited to:

- 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
- Expenditures reimbursed under a separate Federal Technology Office
- The same cash or in-kind contributions for more than one project or program
- Vendor/contractor contributions

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 June 2023

Concept Papers

- Applicants must submit a Concept Paper
- 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 [August 9, 2022, 5 PM ET](#), through EERE Exchange
- EERE provides applicants with: (1) an “encouraged” or “discouraged” notification, and (2) the reviewer comments .

Concept Paper Review (Section V.A.i)

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

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

Criterion 2: Team and Resources (25%)

Criterion 3: Operations and Management Approach Description (25%)

Full Application: Content Requirements (Section IV.D.i)

The Full Application includes the following documents:

- **Technical Volume:** The key technical submission - info relating to the technical content, project team members, etc.
- **DEI Plan:** Describes how DEI objectives will be incorporated into the Institute.
- **SF-424 Application for Federal Assistance:** The formal application signed by the authorized representative of the applicant.
- **SF-424A Budget & Budget Justification:** a detailed budget and spend plan for the project.
- **Summary for Public Release**
- **Summary Slide**
- **Other Documents:** Resumes, Letters of Commitment, Statement of Project Objectives, DOE Work Proposal and Authorization for FFRDC, SF-LLL Disclosure of Lobbying Activities, Foreign Entity and Foreign Work Waivers, Current and Pending Support, Intellectual Property Management Plan, Draft Membership Agreement and Compliance Matrix

Full Application: Technical Volume (Section IV.D.i)

Technical Volume: the key technical component of the Full Application

Content of Technical Volume	Suggested % of Technical Volume
Cover Page	
Institute Overview	No more than 3 pages
Technical Description, Innovation and Impact	50%
Qualifications and Resources	20%
Operations and Management Approach	30%

Full Application Eligibility Requirements

- Applicants must submit a Full Application by 10/25/2022, 5 PM ET
- Full Applications are eligible for review if:
 - The Applicant is an eligible entity (Section III.A);
 - The Applicant submitted an eligible Concept Paper;
 - The Cost Share requirement is satisfied (Section III.B);
 - The Full Application is compliant (Section III.C);
 - The proposed project is responsive to the FOA (Section III.D)
 - The Full Application meets requirements for DOE/NNSA and non-DOE/NNSA Federally Funded Research and Development Centers Included as a Subrecipient (Section III.E)
 - The entity complies with the Limitation on Number of Concept Papers and Full Applications Eligible for Review (Section III.F)

Who is Eligible to Apply?

To be considered for substantive evaluation, an applicant's submission must meet the criteria set forth in Section III.A of the FOA. If the application does not meet these eligibility requirements, it will be considered ineligible and removed from further evaluation.

Please refer to the FOA, Section III.A, for complete information regarding eligibility.

Multiple Applications

Limitation on Number of Concept Papers and Full Applications Eligible for Review (Section III.F)

An entity may only submit one Concept Paper and one Full Application to this FOA. For example, EERE will only consider one Concept Paper and one Full Application per university for this FOA (not one submission per each college or school under the university). If an entity submits more than one Concept Paper and Full Application, EERE will request a determination from the applicant's authorizing representative as to which application should be reviewed. Any other submissions received listing the same entity as the applicant will not be eligible for further consideration. This limitation does not prohibit an applicant from collaborating on other applications (e.g., as a potential subrecipient or partner) so long as the entity is only listed as the applicant on one Concept Paper and one Full Application submitted under this FOA.

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

Full Application Review (Section V.A.ii)

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

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

Criterion 2: Qualifications and Resources (25%)

Criterion 3: Operations and Management (25%)

Criterion 4: Diversity, Equity, and Inclusion (10%)

Replies to Reviewer Comments (Sections IV.E. and V.A.iii)

- EERE provides applicants with reviewer comments
- Applicants are not required to submit a Reply - it is optional
- To be considered by EERE, a Reply must be submitted by [12/01/2022, 5:00 PM ET](#), and submitted through EERE Exchange
- Content and form requirements:

Section	Page Limit	Description
Text	9 pages max	Applicants may respond to one or more reviewer comments or supplement their Full Application.
Optional	1 page max	Applicants may use this page however they wish; text, graphs, charts, or other data to respond to reviewer comments or supplement their Full Application are acceptable.

Pre-Selection Interviews

- EERE may invite one or more applicants to participate in Pre-Selection Interviews
- All interviews will be conducted in the same format
- 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
- Participation in Pre-Selection Interviews with EERE does not signify that applicants have been selected for award negotiations

Selection Factors

The Selection Official may consider the merit review recommendation, program policy factors (see Section V.C.i), and the amount of funds available in arriving at a selection for this FOA.

Registration Requirements

- 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
- Although not required to submit an Application, the following registrations must be complete to received an award under this FOA:

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

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

Summary

- This new Institute will be dedicated to reducing the overall emissions of domestic manufacturing through thermal process intensification, via **electrification of process heating**.
- The Institute will identify and address critical barriers to technology adoption. To do so, activities in **three key areas** will be needed, along with education and workforce development activities.
- The applicant is strongly encouraged to **consider how diversity, equity and inclusion can be woven into all aspects of the Institute**.
- The **total number of budget periods and their duration is flexible**: Applicants may propose what they believe will be most advantageous to the project. EERE expects that Budget Period 1 will have a duration of 6-18 months; the overall project period for the award is expected to be 60 months.
- All entities planning to apply as a prime applicant or entities interested in participating as part of an applicant team are **strongly encouraged to provide their contact information for the Teaming Partner List**. We encourage you to review this list regularly as you build out your teams!

Questions

- Questions about this FOA? Email AMOInstitute@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
- All questions asked during this presentation (via the chat) will be responded to via the Q&A document posted on EERE Exchange

Thank you for joining us today!