

QUESTIONS AND ANSWERS

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I. FREQUENTLY ASKED QUESTIONS:

Q1. If I have questions about this funding announcement, who do I contact?

ANSWER: Please see the FOA guidance on submitting FOA content questions and response publication. Applicants may submit questions regarding this ARPA-E's Funding Opportunity Announcement (FOA) to ARPA-E-CO@hq.doe.gov. All emails must include the FOA name and number in the subject line. The cover page and Executive Summary of the Funding Opportunity Announcement state the deadlines for submitting questions to ARPA-E-CO@hq.doe.gov.

Q2. How will I receive a response to questions submitted to arpa-e-co@hq.doe.gov about this FOA?

ANSWER: Responses are posted in the "Frequently Asked Questions" section of ARPA-E's website. There are general FAQs and a FAQ page for each FOA.

ARPA-E will post responses on a weekly basis to any questions that are received.

ARPA-E will cease to accept questions approximately 5 business days in advance of each submission deadline. Responses to questions received before the cutoff will be posted approximately one business day in advance of the submission deadline. ARPA-E may re-phrase questions or consolidate similar questions for administrative purposes.

Q3. Will ARPA-E post a response to every question submitted to arpa-e-co@hq.doe.gov?

ANSWER: No. ARPA-E will only post responses to questions that have not already been addressed by a published FAQ. Also, ARPA-E may consolidate similar questions for administrative purposes.

Q4. If I have questions about ARPA-E exchange, who do I contact?

ANSWER: Applicants may submit questions regarding ARPA-E's online application portal, ARPA-E eXCHANGE, to ExchangeHelp@hq.doe.gov. All emails must include the name and number of the Funding Opportunity Announcement in the subject line.

Q5. Can I speak or meet with the ARPA-E program director or other ARPA-E personnel about this funding opportunity announcement?

ANSWER: No. Upon the issuance of this Funding Opportunity Announcement (FOA), ARPA-E Programs and other ARPA-E personnel are prohibited from communicating (in writing or otherwise) with Applicants, or potential Applicants, regarding the FOA. This "quiet period" remains in effect until ARPA-E's public announcement of its project selections. During the "quiet period," Applicants may submit questions regarding the FOA to ARPA-E-CO@hq.doe.gov with the FOA name and number in the subject line. Applicants may also submit questions regarding ARPA-E's online application portal, ARPA-E eXCHANGE, to ExchangeHelp@hq.doe.gov with the FOA name and number in the subject line. ARPA-E will not accept or respond to communications received by other means (e.g., fax, telephone, mail, hand delivery). Emails sent to other email addresses will be disregarded.

Q6. Can a person be PI on one proposal and a CO-PI on a second separate proposal?

ANSWER: Yes, but the applications must be scientifically distinct from one another.

Q7. May applicants submit more than one concept paper to this funding opportunity?

ANSWER: Yes, but each Concept Paper submission must be scientifically distinct.

Q8. I have developed a technology that may be a good fit for this funding opportunity. Will ARPA-E please review the attached project information and let me know if I should make a submission to this funding opportunity.

ANSWER: No. Applicants must review the Technical Requirements of this funding opportunity to determine if their technology warrants a submission to ARPA-E.

II. Questions for week ending: JULY 19, 2013

Q9. The solar energy collector portion of the FOCUS teaming announcement is aimed at collecting waste heat in concentrated PV systems.

After the discussion on concentrated PV, there are a number of topics listed.

Are these all within the context of concentrated PV?

Inexpensive photonics and plasmonics. Are you looking for broader plasmonic applications?

Solar energy absorption materials and architectures. Are you looking for improved “black” surfaces for solar water heating or for enhancing light absorption in PV cells?

Electrolysis. You are looking for electrolysis, but say you are not interested in fuel application. Are you specifically looking for hydrogen production in conjunction with storage directly behind the array, or can this be a more general hydrolysis application?

ANSWER: Concepts for solar energy collectors that will be considered under Category 1a of the FOCUS FOA are **not** limited to systems in which waste heat is collected from concentrated photovoltaic systems. In Category 1, ARPA-E will consider all concepts that will enable development of advanced solar topping devices/cycles that go well beyond the current state-of-the-art to meet the technical targets established in Section I.F of the FOA, and do not fall under the “Categories specifically not of interest” in Section I.G.

Q10. Would an application comprising a solar thermal system linked to a [] engine for electricity production be allowable, provided it meets category 1A metrics?

ANSWER: ARPA-E will consider all concepts that propose to meet or exceed the technical targets set forth in Section I.F of the FOCUS FOA and do not fall under the “Categories specifically not of interest” in Section I.G. As described in Section I.A, ARPA-E seeks to fund transformational research and does not fund incremental improvements to the state-of-the-art.

Q11. I wanted to get some clarification on what types of storage units this FOA is suitable for / seeking?

Also wanted to get more information on an electric input into a storage system? Would a thermal energy storage technology using sensible heat storage be applicable?

ANSWER: ARPA-E will consider all storage concepts that propose to meet or exceed the technical targets for Category 2 awards set forth in Section I.F of the FOA and do not fall under the “Categories specifically not of interest” in Section I.G. Electricity input into the storage system is required by the Category 2 technical target 2.2.

Q12. Is it possible to apply to more than one project? In particular our project is well suited for both RFI-0000005 and DE-FOA-0000949: Full-spectrum Optimized Conversion and Utilization of Sunlight (FOCUS).

ANSWER: RFI-0000005 is not a FOA that solicits proposals. RFI-0000005 is a voluntary teaming list announcement aimed at facilitating formation of teams that can propose to the FOCUS FOA (DE-FOA-0000949). ARPA-E will accept proposals to more than one Funding Opportunity Announcement (FOA) so long as each project is scientifically distinct.

III. Questions for week ending: JULY 26, 2013

Q13. Is a given professor/investigator allowed to be on multiple Concept Paper submissions? If so, is there a restriction (e.g. you may lead one team proposal and be a team member on multiple other team proposals, but you cannot lead two team proposals)?

ANSWER: Yes, a professor/investigator may be on more than one Concept Paper submission – either as a lead or member of a Project Team – so long as each Concept Paper submission is scientifically distinct.

Q14. Section G of the FOA calls out specific technical areas not of interest. Bullet 5 and others limit the technology of interest to certain operating conditions. Should these limits be assumed to apply to seedling projects as well or will there be more flexibility for high-impact ideas that are in line with the overall full spectrum and dispatchability approach of the FOA but do not meet all the specific limits in Section G due to their unique nature.

ANSWER: Seedling proposals are subject to all the technology limits listed in Section G of the FOA, including Bullet 5 (temperature limits). As long as the proposal clearly describes how the thermal fluid temperature of a full-scale hybrid collector system would fall within the specified

technology limits, an early-stage proof-of-concept may involve demonstrations at conditions outside these limits.

Q15. I work for a U.S. subsidiary of a Chinese company. We have significant experience in systems combining broadband electrical and thermal generation and we'd like to submit a proposal for the FOCUS program. Are there limitations to the types of organizations that can propose for ARPA-E funding? Would we be better off teaming with a U.S. company? Or is it sufficient that we are a U.S. subsidiary?

ANSWER: For eligibility criteria, please see Section III.A (“Eligible Applicants”) of the FOA, including Section III.A.3 (“Foreign Entities”).

IV. Questions for week ending: AUGUST 2, 2013

Q16. Is there any chance that ARPA-E would accept a concept paper less than 4 total pages but with a technology description section longer than 2 pages?

ANSWER: No. Per Section IV.C of the FOA, the Technology Description section can be no longer than 2 pages.

Q17. I do not have the 20% cost sharing capability. Is there a service that ARPA-E offers that can connect me to an organization willing to supply the required 20% cost sharing?

ANSWER: ARPA-E has set up a Teaming Partner List for the FOCUS FOA to help facilitate the formation of new project teams. The Teaming Partner List is available on ARPA-E eXCHANGE (<http://arpa-e-foa.energy.gov>), ARPA-E’s online application portal, and will be updated periodically, until the close of the Full Application period, to reflect new Teaming Partners who have provided their information. Any organization that would like to be included on the list should read the full details of the FOCUS Teaming List Announcement (RFI-0000005) and submit their information using the link provided in the Announcement.

Q18. A non-U.S.-based company appears on the FOCUS Teaming List. Does this mean that this company is eligible to participate in this program? If not, what procedure (foreign entity waiver?) must be followed to determine if this company is eligible to participate?

ANSWER: For the eligibility criteria for Foreign Entities, please see Section III.A.3 of the FOA.

Q19. For Categories of Interest 1 and 2, is there any limit to the fraction of energy input into the system that is provided by non-solar sources, such as fossil fuel or biomass?

ANSWER: Category of Interest 1 requires systems with all inputs from solar energy, and the Targets in Table 1 and 2 of the FOA must be met assuming only solar inputs to the hybrid converter unit. Non-solar energy inputs, including fossil fuels or biomass derived sources of energy, cannot be used as energy inputs to the converter unit. Although, non-solar sources of energy are not the primary target of Category 1A or 1B, if such additional sources will further improve system performance or economics beyond the technical performance targets, this may be described in the proposal. This description should include an estimate of carbon emissions reductions compared to using the fossil fuels in state-of-the art electricity production, in parallel with the solar system. See Section I.F.1 and I.F.2 (Category of Interest 1A and Category of Interest 1B).

Category of Interest 2 requires hybrid storage system concepts that accept both heat and electricity as inputs and output electricity, to meet the technical targets set forth in Table 3. The source of that heat and electricity is not relevant to the performance of the storage device. If the hybrid storage device utilizes additional fossil fuel or biofuels inputs in a form other than heat or electricity, the Applicant must include the exergy of this fuel as input when calculating Performance Targets 2.2 and 2.3. See Section I.F.3 (Category of Interest 2).

V. CONCEPT PAPER PHASE QUESTIONS PART 1: AUGUST 15, 2013

Q20. Can a person be a Co-PI on multiple Concept Papers if each proposal is scientifically distinct?

ANSWER: Yes. A person may be a Co-PI for multiple Concept Papers, so long as each Concept Paper is scientifically distinct. Please see Section III.C.3 (Limitation on Number of Applications).

Q21. I find the first efficiency goal (ID 1A.1) oddly structured in Table 1: Performance Targets for Technical Category 1A (page 22). The efficiency standard goes up as the temperature goes up (where of course we'd expect losses to grow). Can you please confirm whether this is an error and/or explain this standard?

ANSWER: Table 1 and Performance Target 1A.1 are correct as written in Section I.F.1 (Category of Interest 1A) of the FOA. As stated in the table, the target is for *exergy* efficiency, not *energy* efficiency. Please see Sections I.D.3 (Exergy and Hybrid Solar Converters) and I.D.4 (Example: PV Topping Devices and System Efficiency) of the FOA for background information.

Q22. Is it necessary to generate and store heat as part of this proposal?

ANSWER: No technical Category of Interest of this FOA requires both generation and storage of heat. However, each Category of Interest has different technical requirements and performance targets. Please see Sections I.E (Technical Categories of Interest) and I.F (Technical Performance Targets) of the FOA which describe the specific technical targets that proposed technologies must meet for both Categories of Interest. Applicants must review the Technical Requirements of this funding opportunity to determine if their technology warrants a submission to ARPA-E.

Q23. We are a FFRDC looking to team with a yet-to-be-determined partner. As a FFRDC, we cannot put up a monetary cost share. Can we place a cost value on our equipment (e.g. Optics laboratory) and experience/knowledge to use towards the FOA cost share requirement?

ANSWER: FFRDCs may contribute cost share only if the contributions are paid directly from the contractor's Management Fee or a non-Federal source. Therefore, a Prime Recipient may not use Federal funding or property (e.g., equipment owned by the Federal Government) as a source to meet its cost share obligations. See Section III.B.6 (Cost Share Types and Allowability) and Section III.B.7 (Cost Share Contributions by FFRDCs and GOGOs) of the FOA.

Project Teams may provide cost share in the form of cash or in-kind contributions, however, every cost share contribution must be allowable under the applicable Federal cost principles. See Section III.B.6 (Cost Share Types and Allowability) of the FOA.

Q24. I would like to know what information should be covered in eXCHANGE. Will this be reviewed by the same person as the concept paper and application? We are unsure if it is to be a stand-alone brief or a supplement to the other required documents.

ANSWER: Please provide a brief description (not to exceed 4000 characters [spaces included]) in the ARPA-E Exchange Concept Paper Details form on the General tab. This information provides the funding opportunity manager and each reviewer a brief overview of the proposed project.

Q25.A. What is the cost share requirement for a seedling project team collaborating with a domestic university that is doing at least 80% of the work effort?

ANSWER: Please see Section III.B.3 (Reduced Cost Share Requirement) of the FOA.

Q25.B. Is there a cost-sharing burden on the university, or can the private company partner shoulder the full cost-share?

ANSWER: As stated in Section III.B.5 (Cost Share Allocation) of the FOA, each Project Team is free to determine how much each Project Team member will contribute towards the cost share requirement. The amount contributed by individual Project Team members may vary, as long as the cost share requirement for the project as a whole is met. Although the cost share requirement applies to the Project Team as a whole, the funding agreement makes the Prime Recipient legally responsible for the entire cost share. In addition, Section III.B.3 (Reduced Cost Share Request) of the FOA addresses the individual cost share obligations of large businesses that receive patent rights under a class waiver, or other patent waiver.

Q26. What is the assignment of rights in a domestic educational - private company partnership, in the situation of IP arising from a seedling research and development project under this funding opportunity? University policies require IP resulting even from collaborations to be owned by the university - can ARPA-E provide a boilerplate agreement clarifying IP assignment?

ANSWER: Within 6 weeks of award, ARPA-E requires each Project Team to negotiate and submit an Intellectual Property (IP) Management Plan for the management and disposition of intellectual property used in, or arising from the project. ARPA-E has developed a template for Intellectual Property Management Plans (<http://www.arpa-e.energy.gov/arpa-e-site-page/award-guidance>) that Recipients may choose to utilize as a starting point for their IP Management Plans. ARPA-E does not mandate the use of this template and cannot make modifications to this template for individual situations. ARPA-E and DOE do not make any warranty (express or implied) or assume any liability or responsibility for the accuracy, completeness, or usefulness of the template. ARPA-E and DOE strongly encourage Project Teams to consult independent legal counsel before using the template.

Q27. How will participating with a corporate partner change the cost share requirement if that corporation incurs no cost and does not require any DOE funding? Would the team be eligible for the 5% reduced cost share requirement?

ANSWER: In this context, “a corporate partner” is interpreted to be a member of the Project Team that is participating in the performance of the ARPA-E award. As a participant in the ARPA-E award, the corporation’s work or contribution, even if “donated” by the corporation to the project or not reimbursed by ARPA-E, would count toward the percentage of work calculation to determine the minimum cost share requirement for the project as a whole. Please see Section III.B.3 (Reduced Cost Share Requirement) of the FOA for more details.

Q28.A. We believe we have a superior concept for a technology and would appreciate your careful reading of the attached confidential plan that is sent as privileged information not to be shared with other engineers or scientists. Does the draft proposal fit the requirements for possible funding under the subject FOA?

ANSWER: ARPA-E will not provide a pre-submission assessment of an applicant’s technology or proposed project.

To apply to this FOA, Applicants must register with and submit application materials through ARPA-E eXCHANGE (<http://arpa-e-foa.energy.gov>). Please see Section IV.H.1 (Use of ARPA-E eXCHANGE) of the FOA for detailed guidance on using ARPA-E eXCHANGE.

Q28.B. Is there another FOA program manager we should consider corresponding with?

ANSWER: After issuance of a FOA, ARPA-E personnel may not communicate with Applicants regarding the FOA. This is called a “quiet period.” Currently, ARPA-E’s “quiet period” is in effect for this FOA; therefore, ARPA-E personnel cannot communicate with Applicants about their concepts for the FOCUS FOA. See Section VII.A (Communications with ARPA-E) of the FOA. You must submit your questions regarding this FOA to ARPA-E-CO@hq.doe.gov.

Q29.A. Will a high temperature fluid at any temperature greater than 150 C be a sufficient demonstration for a type 1A project?

ANSWER: As stated in Section I.E.2 (Details on Each Technical Category of Interest) of the FOA, Category 1A should demonstrate critical technology improvements in which the highest temperature of the thermal energy collection is *between* 150°C and 600°C.

Q29.B For Category 1A, Is electricity generation using the fluid also required as part of the demonstration?

ANSWER: Yes. Please see Section I.E.2 (Details on Each Technical Category of Interest) of the FOA for more information. In addition, proposed systems must be designed to demonstrate the

achievement of the Technical Performance Targets set forth in Section I.F.1 (Category of Interest 1A) of the FOA.

Q30. Can we make changes to our Project Team between the Concept Paper submission and Full Application submission?

ANSWER: Yes. Applicants may expand or otherwise modify the proposed Project Team for their Full Applications.

VI. CONCEPT PAPER PHASE QUESTIONS PART 2: AUGUST 15, 2013

If your question was not addressed in Part 1, it will be addressed in Part 2.