DE-FOA-0002459 – OPEN 2021

Questions can be sent to ARPA-E-CO@hq.doe.gov

FIRST DEADLINE FOR QUESTIONS: 5 PM ET, MARCH 26, 2021
SECOND DEADLINE FOR QUESTIONS: TBD

QUESTIONS AND ANSWERS

PLEASE REFER TO THE GENERAL FAQS SECTION OF ARPA-E'S WEBSITE (HTTP://ARPA-E.ENERGY.GOV/?Q=FAQ/GENERAL-QUESTIONS) FOR ANSWERS TO MANY GENERAL QUESTIONS ABOUT ARPA-E AND ARPA-E'S FUNDING OPPORTUNITY ANNOUNCEMENTS. ADDITIONAL QUESTIONS SPECIFIC TO THIS FOA ONLY ARE INCLUDED BELOW. PLEASE REVIEW ALL EXISTING GENERAL FAQS AND FOA-SPECIFIC QUESTIONS BEFORE SUBMITTING NEW QUESTIONS TO ARPA-E.

I. Concept Paper Phase Questions:

Q1. 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 Program Directors 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). E-mails sent to other e-mail addresses will be disregarded.

Q2. In the Concept Paper is the Lead Organization (City, State) the registration of the organization or were the PI is based? E.g. Our company is registered in Delaware but the PI is based in Los Angel[e]s, CA.

ANSWER: The address of the Lead Organization is not required to submit the Concept Paper record in the ARPA-E Funding Opportunity Exchange website.

Q3. I plan on submitting a Concept Paper for Category 7, subcategory A: Water Production/Reuse. Technologies that enable cost-effective and energy efficient ways of providing fresh water. I believe the proposal I have in mind will fit all criteria for transformative research. The method will … . Would this still be considered to fit under Category 7, subcategory A?

ANSWER: ARPA-E will not pre-assess an applicant's proposal. Prospective applicants must review the technical requirements of the FOA and independently determine whether their proposed concept warrants a submission.

Q4. I was pleased when I learned of the climate change related DE-FOA-0002459: OPEN 2021. I was discouraged when I learned of the terms, after applying years of effort to secure a sustainable life standard for myself and others through an equitable service. Limits to intellectual property rights seem unfair from a socially and economically disadvantaged as well as disenfranchised viewpoint. Is there a official I can discuss my position with regarding securing a sustainable economic purpose for submitting a proposal? …

ANSWER: The large majority of ARPA-E's award terms and conditions are governed by requirements in corresponding Federal law or regulation (e.g., U.S. Government March-in Rights have their genesis

in the Bayh-Dole Act (P.L. 96-517)), thereby limiting the discretion available to ARPA-E to negotiate these terms with prospective awardees.

Q5. … [does] the 2021 OPEN FOA Category 4-D of Nuclear Fission Power Generation and Materials include the topics on nuclear waste transmutation for reduction of disposal impact?

ANSWER: ARPA-E will not pre-assess an applicant's proposal. Prospective applicants must review the technical requirements of the FOA and independently determine whether their proposed concept warrants a submission.

Q6. We submitted an application … for DE-FOA-0001954, [Targeted Topic] T. Can you advise if any feedback will provided prior to the April 6, 2021 Concept Paper deadline for DE-FOA-0002459? …

ANSWER: Selection notifications for DE-FOA-0001954, Targeted Topic T, are scheduled for April 2021. As set forth in FOA Section VII.B, ARPA-E does not offer or provide debriefings on the merits of applications submitted for its consideration.

Q7. In the OPEN 2021 FOA, [Section I.D,] category 2, subcategory A, it is stated that only non-bio based fuels will be considered. Can you define what a bio-based fuel is? Obviously a fuel made from an agricultural crop is a bio-fuel, but is a fuel made from waste or landfill gas a bio-fuel? Please define what a bio-fuel is and what a non-bio alternative fuel is.

ANSWER: The OPEN 2021 FOA is truly open to any technologies that address one or more of ARPA-E's Mission Areas through the type of high-risk, transformational research described in Section I.A of the FOA. Applicants must choose the appropriate Category and Subcategory for their submission based on technical descriptions in the Categories and/or Subcategories provided in the FOA. The purpose of this choice is to help organize submissions for merit review.

Q8. [We are] a startup company that has raised private investor money (completed Series A in 2019). Would our high risk, high impact project still be considered for this FOA?

ANSWER: Eligibility requirements can be found at FOA Section III.A. Applicants submitting a Full Application must disclose all current and pending funding support for projects submitted for ARPA-E's consideration using the Business Assurances & Disclosures form, which will be made available in June 2021.

Q9. The Feb 11 OPEN FOA announcement [refer to https://www.youtube.com/channel/UCJD51wB5hWayKrKnfVe4Ajg] contained a series of webinars. One was on "end-of-life options for underground mines and wells." We plan to submit a concept paper in that area. Please confirm that area is one of the possible areas for OPEN [20]21.

ANSWER: As set forth at FOA Section I.D:

The list of Technical Subcategories is intended to encompass the majority of energy-related technologies. If the proposed technology does not fall within any of the Technical Subcategories …, the Applicant should select from Category 7, "Other Energy Technologies," Subcategory L, "Other Energy Technologies Not Listed Above.

Also refer to OPEN 2021 FAQ 7.

Q10.1 Regarding cost share, can we use PI service fee as the cost share[?] Lets say if PI's hourly rate is $125.00 and if PI provides 2,000 hours of service for this project then will $250,000 be considered as cost share if we do not charge PI time to the project.

ANSWER: Federal standards for valuing cost share may be found at 2 C.F.R. § 200.306. These include costs for personal compensation incurred for project work that is not reimbursed to the recipient by ARPA-E.

Q10.2 The license fees for the software which a third party may provide without cost for this project - Can it be considered as cost share?

ANSWER: These are addressed at 2 C.F.R. § 200.306(d).

Q10.3 Do all the project team members need to be US citizens?

ANSWER: This depends on the specific facts of the situation. Applicants are responsible for personnel staffing decisions concerning their proposal, including for foreign researchers and students working on ARPA-E awards, and should refer these matters to their counsel (e.g., the university's Office of General Counsel) for legal advice. This includes matters regarding applicable immigration law and regulations (e.g., an individual's visa type), export control, and compliance with terms in the ARPA-E agreement.

Q11. The FOA states that the funding restrictions section will be inserted by modification in June 2021, whereas the concept papers are due on April 6, 2021. We have a keen interest in submitting concept papers depending upon whether ARPA-E allows funding Independent Research and Development (IR&D) as part of an indirect cost rate. Could you please clarify whether IR&D costs will be allowable as indirect costs for the purpose of this FOA?

ANSWER: Refer to General FAQ 10.23.

Q12. I am very interested in preparing a proposal for the above-mentioned FOA DE-FOA-0002459, but I have to admit I am unsure as to whether I am eligible or not! I am a German national, on a tenure track position at … a domestic educational institution. I am not a permanent resident, but currently on a visa (H1B). Under eligibility, it says "U.S. citizens or permanent residents may apply for funding in their individual capacity as a Standalone Applicant, as the lead for a Project Team, or as a member of a Project Team. However, ARPA-E will only award funding to an entity formed by the Applicant" But two paragraphs later it says "Foreign entities, whether for-profit or otherwise, are eligible to apply for funding as Standalone Applicants, as the lead organization for a Project Team, or as a member of a Project Team." Could you explain to me whether I,

as a foreign national in the U.S. can apply or not? Or, if I could participate in some other way, i.e. as subcontractor to a National Lab or another applicant?

ANSWER: ARPA-E accepts applications from U.S. citizens or permanent residents in their individual capacity, but awards Federal financial assistance to domestic institutions, not individuals (refer to FOA Section III.A.1). This includes awards resulting from applications received from foreign entities (refer to FOA Section III.A.3). Whether an individual may participate under any agreement depends upon the facts of the situation. Refer to OPEN 2021 FAQ 10.3 for additional information.

Q13. We have questions regarding the DE-FOA-0002459. On Page 5, Category 2, Subcategory A, the descriptions are "Technologies that create fuels that are substitutes for gasoline/diesel, but are not bio based" Our questions are:

Q13.1 Does this description refer to transportation fuels other than gasoline and diesel? For example, will hydrogen produced from natural gas or waste plastics be considered as substitutes for gasoline/diesel?

ANSWER: The OPEN 2021 FOA is truly open to any technologies that address one or more of ARPA-E's Mission Areas through the type of high-risk, transformational research described in Section I.A of the FOA. Applicants must choose the appropriate Category and Subcategory for their submission based on technical descriptions the Categories and/or Subcategories provided in the FOA. The purpose of this choice is to help organize submissions for merit review. For additional information refer to OPEN 2021 FAQ 9.

Q13.2 Our technology can produces gasoline/diesel from non-petroleum feedstock such as natural gas or plastics, will it be consider[ed to] fit into this subcategory 2A?

ANSWER: Applicants must choose the appropriate Category and Subcategory for their submission based on technical descriptions the Categories and/or Subcategories provided in the FOA. For additional information refer to OPEN 2021 FAQ 9.

Q14. Is it okay to submit a concept paper to OPEN that has been previously rejected by ARPA-E in a targeted solicitation? The concept is not currently funded or under review by ARPA-E or any other agency.

ANSWER: Resubmission of previously unfunded concepts is permitted.

Q15. I am at a University and partnering with a startup that has applied for SEED funding through ARPA-E. If startup has applied / is accepted for SEED funding, are they also eligible to apply for OPEN? (either alone or in collaboration with a University).

ANSWER: Per FOA Section III.C.3:

> *ARPA-E is not limiting the number of submissions from Applicants. Applicants may submit more than one application to this FOA, provided that each application is scientifically distinct.*

Disclsure of current and pending financial support is required as described in OPEN 2021 FAQ 8. ARPA-E will not consider applications that are not scientifically distinct from proposals before other governmental or private sector entities for funding (refer to FOA Section III.C.2).

Q16. I have a question regarding the DE-FOA-0002459. On Page 9, Category 6, Subcategory C, the descriptions are "Technologies that do not utilize any biological agent in the conversion of organic feedstock to fuels, such as thermochemical and hybrid approaches or biomimetics." The question is: Is the thermochemical considering as biologic technology under this subcategory?

ANSWER: The examples given in the technical description for Category 6, Subcategory C, are examples of nonbiological methods. For additional information refer to OPEN 2021 FAQ 9.

Q17. We would like to submit the following question: Category 4, Subcategory D: Nuclear Power Generation and Materials – How broadly does the scope "Technologies that enhance fission, or materials specifically for safe nuclear fission power generation" extend in the nuclear generation space. Is the intent to focus on the nuclear generation machine (the reactor), or does the scope apply broadly to enhance fission (to the broader fuel cycle, for example)?

ANSWER: Refer to OPEN 2021 FAQ 9.

Q18. I am a PhD student … and have been independently working on a large scale grid electricity storage concept. Am I eligible to apply for his grant as an individual international student?

ANSWER: Refer to OPEN 2021 FAQ 12.

Q19. I am wondering if it is possible to submit multiple concept papers for significantly different use cases? I have looked at the FAQs and did not see this question answered there.

ANSWER: Refer to OPEN 2021 FAQ 15.

Q20. Our startup was created in 2019 to commercialize applications using a technology developed by … . We do have prospective clients in Europe waiting for our solutions, and a request for grant funding of a pilot project submitted to the EU. Knowing that we are already working with identified US manufacturers to supply some of the components we need, how can this Open [20]21 can help us to accelerate the production of our various processes?

ANSWER: ARPA-E will not pre-assess an applicant's proposal. Prospective applicants must review the technical requirements of the FOA and independently determine whether their proposed concept warrants a submission.

Q21. Can you help me. There are two webinars issued in December that very much align with the development work being undertaken in my start-up. I would like to submit concept papers for these.

However its not clear which category in the OPEN21 FOA to use.

Do concept papers responding to the following webinars fall under "category 7 subcategory L" or somethings else?

- **Reduction of the energy consumption of comminution or increasing surface area https://www.youtube.com/watch?v=6EVwNm22Pc0&feature=youtu.be**
- **CO2 mineralization for extraction of minerals including nickel and cobalt https://www.youtube.com/watch?v=1BIhmCaDHPU&feature=youtu.be**

ANSWER: The purpose of this choice is to help ARPA-E organize submissions. Please choose a category that you deem appropriate. Please also refer to OPEN 2021 FAQs 7 and 9.

Q22. I have developed, tested and patents have been granted for technology that will meet the Open 2021 requirements and goals. I am an individual and do not have a business, organization, team or money. I have been trying to partner with an existing business that meets the Open 2021 eligibility requirements without success. I have two questions.

Can I submit a concept paper in my situation and if the ARPA encourages a full application, can I use their comments to try to get an existing organization to partner with me? In other words will ARPA accept a concept paper from someone not already eligible for a grant?

A great deal of time and money has already been spent. For matching funds will ARPA consider the money already used to get the new technology to the stage it is at currently?

ANSWER: Yes, ARPA-E accepts applications from U.S. citizens or permanent residents in their individual capacity.

ARPA-E will not presasses an applicants proposal.

ARPA-E may not provide pre-submission assessments on a project team's specific cost sharing requirement. Applicants should carefully review the cost sharing requirements for the specific FOA to which they intend to submit a Concept Paper or Full Application.General Questions regarding cost share may also be found under Frequently Asked Questions at: https://arpa-e.energy.gov/faqs/general-questions.

Q23. I just scanned through the latest announcement from the U.S. Department of Energy about the $100m funding opportunity for transformative clean energy solutions. My understanding is that soil carbon sequestration projects are not eligible for funding under this initiative. Can you confirm this, and do you expect further announcements of this nature in the upcoming months?

ANSWER: Refer to OPEN 2021 FAQs 7 and 9.

Q24. If a company receives funding under the ARPA-E OPEN 2021 program, are rights to its issued U.S. or international patents compromised or altered in any way?

ANSWER: Please review section VIII. Other Information A. Title to Subject Inventions of the FOA regarding patents.

Q25. We have two questions about teaming and cost share for the OPEN 2021 FOA:

1. **We understand that no work may be performed by a foreign team member outside of the US without a waiver. Does the same distinction apply to purchasing a part or piece of equipment manufactured outside of the US or a service (i.e. a standard measurement) performed outside of the US from a non-team vendor?**
2. **How are state and local government team members treated in terms of cost share? Are teams with such entities still required to provide the 20% base cost share, or are they eligible for a reduced cost share?**

ANSWER: Please refer to the Business Assurances & Disclosures Form referenced in the FOA.

State, local, and tribal government entities are eligible to apply for funding as a member of a Project Team, but not as a Standalone Applicant or as the lead organization for a Project Team. They must provide at least the 20% base.

Q26. I have two question regarding the teaming requirements and cost shares.

1. **If a team is comprised of two or more FFRDCs, for instance a DOE and non-DOE FFRDC, no other entity types such as business or university, is that allowable and is the cost share arrangement 5%.**
2. **In the attached table, I have attempted to summarize the cost share requirements based on team participation, lead/prime and contract arrangement. Is it possible to get concurrence that everything was captured correctly?**

ANSWER: ARPA-E will not pre-assess an applicant's cost share arrangements. Prospective applicants must review the cost share requirements of the FOA and independently determine whether their proposed Cost Share is compliant.

Q27. ARPA-E has a video on YouTube for OPEN 2021 discussion end-of-life options for mines and wells (OPEN 2021: ARPA-E's Dr. Jack Lewnard Discusses End-of-Life Options for Underground Mines & Wells https://www.youtube.com/watch?v=aoUeh01x5BY) but that topic is not included in the "Categories of Interest" list. Was this an oversight or was "End-of-Life Options for Underground Mines & Well" left off the list intentionally after the video was posted?

ANSWER: Refer to OPEN 2021 FAQs 7 and 9.

Q28. Can we use unpaid time contributed by an industrial advisory board that is not part of the proposal team as cost share if it is properly documented? If the members of that board are not part of the proposal team, does their participation in this role affect the percentage of cost share that is required (for instance, if the team is made up of only FFRDCs and academic institutions)?

ANSWER: ARPA-E will not pre-assess an applicant's cost share arrangements. Prospective applicants must review the cost share requirements of the FOA and independently determine whether their proposed Cost Share is compliant.

Q29. Can you please describe foreign national eligibility and disqualifying criteria. Would a U.S. permanent resident working in a U.S. research institute but citizen of Iran be allowed to be PI of this funding opportunity and working on this project upon award winning?

ANSWER: Eligibility of foreign entities to participate in this FOA as prospective prime or sub-recipients is discussed at Section III.A.3. ARPA-E accepts applications from U.S. citizens or permanent residents in their individual capacity, but awards Federal financial assistance to domestic institutions, not individuals (refer to FOA Section III.A.1). This includes awards resulting from applications received from foreign entities (refer to FOA Section III.A.3). Whether an individual may participate under any agreement depends upon the facts of the situation. Refer to OPEN 2021 FAQ 10.3 for additional information.

Q30. I have following questions with respect to submission of concept paper

1. **Should each team member be a Co-PI? Can we include collaborators?**
2. **Is tecnoeconomic analysis required for concept paper?**
3. **Should a detailed budget be included?**

ANSWER: Please see FOA Section IV.C.1. Concept Paper, d. TEAM ORGANIZATION AND CAPABILITIES.

Please refer to FOA Sections IV.C.1 and V.A.1

Yes, Please see section IV.B. Application Forms.

Q31. I had some questions about the program. I am focused on the Category 6 (Bioenergy) subcategory B (Biofuel production – biological methods).

1) **What TRL level do you expect proposals to focus on? Will submissions that propose nascent technologies (TRL1-2) be competitive? Or is there a preference for TAL 4-5+? Alternatively, would you encourage more ambitious projects that span multiple TRLs (e.g. 1-5)?**
2) **What does ARPA-E consider the greatest technological challenge that must be overcome for 6B (biological method for biofuels production)?**
3) **Does biomass pre-treatment need to be a component of the work or can the work focus on pre-treated biomass components (e.g. monosaccharides)?**
4) **Is there preference for certain types of biofuels over others? For example, is ethanol as a final product non-competitive and focusing on longer chain esters/alcohols/alkanes preferable?**

ANSWER: ARPA-E will not pre-assess an applicant's proposal. Prospective applicants must review the technical requirements of the FOA and independently determine whether their proposed concept warrants a submission. Please also refer to OPEN 2021 FAQs 7 and 9.

Q32. Your program seems to overlap substantially with my interests and I was wondering about some aspects of the current OPEN 2021 FOA.

1) **The first questions, is not technical, but proves to be very important for my case. Perhaps I missed it, but I did not see anywhere in the FOA that specified the eligibility requirements for PIs, such as tenure-tenure-track faculty. Are there any eligibility restrictions for PIs?**
2) **My understanding of apra-e is that the translational component is very important, would a proposal without an industrial partner be competitive?**
3) **Is there any interest in fission product sequestration (i.e., Cs and Sr) or is the main focus on the recovery of U and the TRUs?**

ANSWER: The Applicant must meet the eligibility requirements in Section III.A of the FOA.

ARPA-E will not pre-assess an applicant's proposal. Prospective applicants must review the technical requirements of the FOA and independently determine whether their proposed concept warrants a submission.

Q33. We are a small business and are interested in the ARPA-E OPEN 2021 opportunity. Can we as a small business participate in multiple concept papers (i.e. lead as the prime in one concept paper and join other concept papers as sub recipients)? Your clarifications will be greatly appreciated.

ANSWER: Applicants may submit one Full Application for each compliant and responsive Concept Paper that was either encouraged or discouraged by ARPA-E.

Q34. Your form for submitting a Concept Paper for FOA #DE-FOA-0002459 OPEN 2021 contains a checkbox and the following statement on the Submit section:

By checking this box, I certify as follows: (1) I have reviewed and agree to the terms and conditions in the FOA; (2) this application has not been and will not be submitted by the Principal Investigator (PI) or any Co-PIs to pending ARPA-E Funding Opportunity Announcement(s); and (3) this application is scientifically distinct from other applications that the PI or any Co-PIs have submitted or will submit to pending ARPA-E Funding Opportunity Announcement(s).

I attempted to submit my Concept Paper without that box checked, and it was rejected, so you have made that a hard requirement at this stage.

In contrast, in Section IV.B (page 25) of OPEN_2021_FOA_Concept_Paper.pdf, you identify forms required for Full Application, including Business Assurances & Disclosures Form. This form requires declaration of a yet broader set of Pending and Current Sources of Funding, so such pending applications will apparently be acceptable.

I have submitted an application under DE-FOA-0001954 (Topic T) which is under review, and may still be by the April 6th closing date for the current FOA-0002459 Concept Paper, so I have a schedule conflict. FOA-0002459 may have more funds available or a different set of competitors for it, possibly putting me in a better position for funding, so I want to apply for it.

Please consider removing the requirement for the checkbox identified above, which would make it consistent with your Full Application process and with the process used in DE-FOA-0001954. Alternatively, I seem to have the option of bypassing the Concept Paper step (and thus the checkbox), but I'm guessing that is not your intent.

ANSWER: The requirement for the checkbox identified above will not be removed. Furthermore, there is no option of bypassing the Concept Paper step.

Q35. Do the Project Team, including potential teaming partners, need to be confirmed prior to submission of the concept paper?

ANSWER: The Project Team needs to be identified as outlined in Section III.A. Eligible Applicants.

Q36. Our group is deciding which category to submit a concept paper under. We are wondering if technology for dealing with nuclear waste would fall under category 4 subcategory D: Nuclear Fission Power Generation and Materials. We believe we could create technology that would enhance nuclear fission power generation by dealing with the resulting waste issues. Otherwise we are considering submitting under the "other" category.

ANSWER: Applicants must choose the appropriate Category and Subcategory for their submission based on technical descriptions the Categories and/or Subcategories provided in the FOA. For additional information refer to OPEN 2021 FAQ 9

Q37. In its Subcategory D (hydro energy) of Category 5 (renewable power generation), it lists some conventional hydro sources such ocean, osmotic, tidal as examples. But I'm writing to ask if new hydro sources such as ambient humidity/moisture would also qualify? For example, lately we discovered electricity generation from ambient humidity (https://www.nature.com/articles/s41586-020-2010-9), which can be a huge clean energy source—this seems to align well with OPEN 2021 that encourages disruptive/novel energy concept/technology.

ANSWER: Refer to OPEN 2021 FAQs 7 and 9.

Q38. Section 4 of the Concept Paper's template "Team Organization and Capabilities" asks for details on the team. Does this have to be in place already in the Concept Paper stage?

ANSWER: Yes, in order to be considered a full application. However, the ARPA-E eXCHANGE system will allow applicants to expand or otherwise modify the Project Team for their Full Applications.

Q39. Working through the concept paper template I found these bullet points that reference Section I.A and I.D.

- **Describe how the concept will have a positive impact on at least one of the ARPA-E mission areas in Section I.A of the FOA.**
- **To the extent possible, provide quantitative metrics in a table that compares the proposed technology concept to current and emerging technologies and to the appropriate Technology Category in Section I.D of the FOA.**

Yet, despite checking many links on the site I haven't been able to find these sections. Would you mind to reply with the proper link so I can review? Many thanks in advance and apologies for not having found the section.

ANSWER: On the second page of the FOA under the Table of Contents, there are links to both sections I.A and I.D under Funding Opportunity Description.

Q40. I have a quick question regarding the eligibility of applicant. Apparently I will be applying the grant with a company incorporated in the US. Since my nationality is China and I will own a big portion of the company, will that affect the eligibility of my company applying for the grant?

ANSWER: Please see section III Eligiibility Information of the FOA.

Q41. We have an innovative technology that we are progressing and the next major milestone toward commercialization is additional engineering work to provide more definition to the project. Will this FOA support engineering development for innovative technologies?

ANSWER: ARPA-E will not pre-assess an applicant's proposal. Prospective applicants must review the technical requirements of the FOA and independently determine whether their proposed concept warrants a submission.

Q42. I have technology that meets Open 2021 objectives. However I am an individual without a business, organization, team or money.
Can I submit a "concept paper" without the above and if ARPA-E has a positive response then try to make a consortium of existing companies for the final proposal?

ANSWER: Yes, the ARPA-E eXCHANGE system will allow applicants to expand or otherwise modify the Project Team for their Full Applications.

Q43. One more question after reviewing the FQA, in one question regarding cost share:

Q10.1 Regarding cost share, can we use PI service fee as the cost share[?] Lets say if PI's hourly rate is $125.00 and if PI provides 2,000 hours of service for this project then will $250,000 be considered as cost share if we do not charge PI time to the project.

ANSWER: Federal standards for valuing cost share may be found at 2 C.F.R. § 200.306. These include costs for personal compensation incurred for project work that is not reimbursed to the recipient by ARPA-E.

Does this answer indicate that we actually can claim our regular monthly salary as a cost share to the project as long as the salary is not paid by the recipient of ARPA-E?

ANSWER: If it meets the criteria set forth in § 200.306 Cost sharing or matching (b).

Q44. Can you please describe foreign national eligibility and disqualifying criteria. Would a U.S. permanent resident working in a U.S. research institute but citizen of IRAN be allowed to be PI of this funding opportunity and working on this project upon award winning?

ANSWER: Eligibility of foreign entities to participate in this FOA as prospective prime or sub-recipients is discussed at Section III.A.3. ARPA-E accepts applications from U.S. citizens or permanent residents in their individual capacity, but awards Federal financial assistance to domestic institutions, not individuals (refer to FOA Section III.A.1). This includes awards resulting from applications received from foreign entities (refer to FOA Section III.A.3). Whether an individual may participate under any agreement depends upon the facts of the situation. Refer to OPEN 2021 FAQ 10.3 for additional information.

Q45. Are United States Navy civilian personnel allowed to be part of an ARPA-E OPEN 2021 team proposal that is led by a United States C corporation? Are OPEN 2021 funds allowed to be used to pay for testing services at facilities owned by the United States Navy?

ANSWER: If they meet the eligibility requirements outlined in the FOA.

Non-DOE GOGOs and Federal agencies may be proposed to provide support to the Project Team members on an applicant's project, through a Cooperative Research and Development Agreement (CRADA) or similar agreement.

Q46. We have been approached by a potential bidder to the OPEN FOA to provide engineering support for development of their technology concept under an ARPA-E award. I've been looking through the FOA site and the ARPA-E general site, and I'm unable to find a document that describes the applicable rules for subcontracting on contracts and cooperative agreements, e.g. DoD SBIR's limit contractor participation to under 50% in Phase II efforts. Could you please direct me to any resources that define any restrictions on partnering/subcontracting, allowability of fee for small business subcontractors performing a commercial service, etc. relevant to anticipated awards under the OPEN FOA?

ANSWER: Please see 2 CFR § 200.331 - Subrecipient and contractor determinations.

Q47. Please see attached questions:

1) **Our company is a private company in development of a transformative combined engine/generator. Our project plan is to utilize a private Engineering firm for all R&D and engineering design activities. Do we have to have a National Lab and/or a University as a partner or is the use of our Engineering partner sufficient?**
2) **We are a small business in development with no revenue. For section III.B Cost Sharing, we are planning on utilizing subsection 3. Reduced Cost Share Requirement, third sub bullet for the "Cost Share Grace Period". By utilizing the reduced cost share requirement of 10%, does our project lose any competitiveness or lose points during the merit review? (i.e., will other projects get ranked higher that provide the full 20% cost share?)**
3) **Also for section III.B Cost Sharing, we are planning on having one of our project partners provide the cost sharing as opposed to the Russell Energy Corporation, is this permissible?**
4) **Our transformative combined engine/generator has multiple uses within multiple market segments. Therefore, our single research and development project plan would qualify for multiple categories and multiple subcategories as identified in section I.D Technical Categories of Interest. Our product would be transformative in Category 1.F; Category 2.B, 2.H & 2.I; Category 3.A; Category 4.A & 4.B; Category 5.H; Category 7.E, 7.F, 7.G, 7.H and 7.K. Can we submit one Concept Paper that covers our transformative R&D technology development needs that is usable and benefits all of the market sectors that are identified by the Categories and Subcategories mentioned here in question 4?**

5) For section VIII. A Title to Subject Inventions, the … owns the inventions and commensurate patents awarded, both U.S. and international. … plans to retain title to our subject inventions. Do you see that as an issue during the merit review and award process? For section VIII.B Government Rights in Subject Inventions, REC plans to fully commercialize the product(s) after successful project completion either directly or through partnerships and sales of licenses. Can you give examples of the following: 1-Government Use License: when or how would the government do this if REC is already doing it; can you give examples? 2 – March-In-Rights: we don't expect to not grant licenses, so can you give examples of when the government would exercise "March-In-Rights?" 3-Rights in Technical Data: our project plan for our R&D would include generating all the technical data and science and conducting the detailed engineering design for all componentry of our product; will this be protected from public disclosure?

6) Sample funding agreements – please confirm that for a small business that will not utilize FFRDCs/DOE Labs, GOGOs and Federal Instrumentalities, the Cooperative Agreements are those listed here: https://arpa-e.energy.gov/technologies/project-guidance/pre-award-guidance/funding-agreements.

7) When we successfully complete our lab protype engine development and testing project in this OPEN 2021 funding opportunity, will additional funds be available for the design and development of the integrated electric generator, power conditioning equipment and prototype field test units? If funds are available, we would need an approximately 24 additional months, is it possible for a project extension?

ANSWER: 1) No

2) No

3) Yes

4) Applicants may select a single Technical Subcategory or multiple Technical Subcategories for their proposed technology, as appropriate. The Applicant may select multiple Technical Subcategories from the same Technical Category or different Technical Categories.

5) Please review section VIII. Other Information A. Title to Subject Inventions of the FOA regarding patents.

6) Yes

7) Additional funds and extensions are possible, but not guaranteed at this time.

Q48. Are the foreign university eligible to be on the proposal as a subcontractor for the OPEN and if yes, how much of the work and budget can be assigned to the foreign entity?

ANSWER: Please see section III. Eligibility Information 3. Foreign Entities of the FOA.

Q49. Is nuclear going to have a role here?

ANSWER: Refer to OPEN 2021 FAQ 7.

Q50. Dear Sir or Madame,

- **What are the restrictions for just established subsidiaries if there are any?**
- **Are there any advantages for applying through a subsidiary compared to separate legal entity?**
- **When will the applicants receive the encouragement or discouragement for their concept paper?**

ANSWER: They must meet the criteria and eligibility concerns outlined in the FOA.

No

Once ARPA-E completes their review of the paper.

Q51. In Dec 2020, ARPA-E's congressionally authorized mission space was changed to include:

" Enhance the economic and energy security of the United States through the development of energy technologies that:
i) reduce imports of energy from foreign sources;
ii) reduce energy-related emissions, including greenhouse gases;
iii) improve the energy efficiency of all economic sectors;
iv) provide transformative solutions to improve the management, clean-up, and disposal of radioactive waste and spent nuclear fuel; and
v) improve the resilience, reliability and security of infrastructure to produce, deliver and store energy …. "

This change in public law does not appear to be reflected in section 1A of the FOA, nor in the Topic/Sub-Topic categories provided.

Is ARPA-E open to concept papers that reflect their revised authorities in the OPEN 21 solicitation?

What Topics / Sub-Topics would be most appropriate for a submission under category vi or v of these authorities?

My recommendation would be under "Topic 7 (l) Other Energy Technologies - Not Listed Above", and highlighting either (iv) EM or (v) Security.

Please Advise.

ANSWER: OPEN 2021 is open to any technologies that address one or more of ARPA-E's Mission Areas, including any new Mission Areas added by Congress. Regarding specific sub-topics, please refer to OPEN 2021 FAQ 7

Q52. Thank you for providing instructions on the OPEN 2021 Concept paper. On page 22 of the FOA 3. Limitations on Number of Submissions, it states:

ARPA-E is not limiting the number of submissions from Applicants. Applicants may submit more than one application to this FOA, provided that each application is scientifically distinct.

May we clarify whether or not a firm could submit more than one proposal under separate topic areas and also receive multiple awards provided that the application is scientifically distinct?

ANSWER: Yes, that is correct.

Q53. I've looked at some awards from prior ARPA-E Open FOAs, and I noticed that some of them were BEEST and ARPA-E. How does the BEEST program fit into the ARPA-E Funding Opportunity?

ANSWER: BEEST was a focused program, whereas OPEN 2021 is an open program. BEEST was released by ARPA-E in 2010 and is no longer active.

Q54. For the OPEN 2021 concept paper, I am working on a variation of pumped heat energy storage. Is it appropriate to assume some level of basic understanding of pumped heat energy storage on behalf of the reviewer, or should I use space in the concept summary to describe both the fundamental concepts of PHES as well as the proposed variations?

ANSWER: Refer to FOA Section V.B.2 for information about ARPA-E reviewers.

Q55. We would like to ask the following question regarding the ARPA-e OPEN FOA: Will ARPA-e definitively issue a class patent waiver for this call? We have a partner who would not be able to participate in the absence of one.

ANSWER: ARPA-E typically issues class patent waivers, but not definitively.

Q56. Can a non-government, for profit small business apply for this FOA?
Can a non-government, for profit small business partner with a university for this FOA?
Section IIIA of the FOA doesn't call this out.

ANSWER: Yes, if they meet the eligitbility requirements stated in the section.

Q57. This is a follow up to question Q6 and Q14. An application was submitted for DE-FOA-0001954-Targeted Topic T. We will likely not know if that is rejected or accepted until after this FOA Concept Paper deadline of April 6, 2021. Are we permitted to submit a concept paper for this FOA that pertains to the same application that is under review for FOA-0001954?

ANSWER: Yes.

Q58. Regarding ARPA-E's current https://arpa-e.energy.gov/open-2021/webinars discussing the Feb 11, 2021 $100M FOAs, various parties interested in participating are trying to ascertain (if there are) appropriate levels of their 'ask'. For example are twenty proposals sought that would be about $5M each? Or is that question not answerable?

1. **ANSWER**: These details can be found at FOA Section II.A. In pertinent part it states:

   ARPA-E expects to make approximately $100 million available for new awards under this FOA, subject to the availability of appropriated funds. ARPA-E anticipates making approximately 30-50 awards under this FOA. ARPA-E may, at its discretion, issue one, multiple, or no awards.

   Individual awards may vary between $250,000 and $10 million in Federal share.

Q59. The ARPA-E Teaming Partner list, https://arpa-e-foa.energy.gov/TeamingPartners.aspx?foaid=f54168df-1e2a-4578-b0d5-84ad79b20d56, offered by Dr. Gerbi is appreciated. Reviewing the helpful Webinars, including https://arpa-e.energy.gov/open-2021, I cannot yet identify if a . gov, a .edu, or a .com is preferred as a lead.

ANSWER: 2. Pertinent eligibility information can be found at FOA Section III.A. ARPA-E has stated no preference for composition of project teams. Project team composition and qualifications are assessed as an element of the merit review. Refer to FOA Section V.A.1 for Concept Paper evaluation criteria, including FOA Section V.A.1(2). Evaluation criteria for Full Applications are expected to be published in June 2021 and generally include a similar criterion.

Q60. I had a question regarding the team information and funding for the concept paper. Are the $ values and team members locked in once the concept paper is submitted? If we are selected to submit a full proposal, and the team or funding amount changes in the course of detailing the work plan is that acceptable?

ANSWER: No, the ARPA-E eXCHANGE system will allow applicants to expand or otherwise modify the Project Team.

Q61. My company … is in the process of completing a concept paper for DE-FOA-0002459. To fund the required cost share of the FOA it is my intention to provide in-kind service to pay for a significant portion (perhaps all, TBD) of the cost share, however I need to understand the cooperative grant accounting rules to do this correctly. I am therefore seeking a confirmation that my intended method is acceptable to ARAP-E, and if not what I can do to set it right.

One significant concern is that I want to ensure that there is a reasonable way to provide the required 10% project cost share for a small business without having to front that cost share money from my small business accounts (initially), personal savings (initially), or going out to raise funds specifically for this project in the short-term.

Below is my assumed-to-be-correct method to fund an example project totaling $1.5M (federal plus cost share) over 36 months. What I need is confirmation that this approach is valid and acceptable for ARPA-E accounting.

In particular, if I am personally taxed 50% (combined federal, state, etc) and I request an ARPA-E project salary of $100k per year, then after all taxes are paid I would have $50k available to provide back into the ARPA-E project at the end of the first year. Assuming that I forgo the first year of cost share (Reduced cost share rule on page 17 of FOA) and put aside the $50k of fist year funds after taxes, then in a second and third year of the effort I can use this initial $50k as part of the contribution to the second and third year cost share. Thereby paying: 0% cost share for the first year, 50% of the cost share in the second year, and 50% of the cost share in the third year. This corresponds to $0 cost share payment in the first year, $50k + $25k = $75k paid in the second year, and $50k + $25k = $75k in the third year; for a total of $0 + $75k + $75k = $150k, which corresponds to a 10% cost share whereby the total project cost is 10 x $150k = $1.5M. Of this the government provides ($1.5M - $150k) = $1.35M. I assume that the government would then pay three lump payments of $1.35M/3 = $450k if all project requirements are meet. My company's cost share responsibility is for paying $75k in the second year and another $75k in the third year of the project. I assume that this cost share payment can be paid at the start of each three month period along with mandatory reports. Therefore, after the first year (starting on month 13 of the project) I would contribute $150k/8 = $18.75k to the company due to the eight remaining quarters until project end and then make $18.75k payment every three months thereafter.

Please confirm that my following assumptions are correct:

1. **As the project PI I am entitled to request a project salary consistent with reasonable level of compensation from Bureau of Labor Statistics;**
2. **The PI would take a salary from the received federal funds and get a W2 at the end of the year showing received project salary;**

3. **The PI of a small business can forgo contributions to the first year cost share;**
4. **The money put aside by the PI from first year salary can then be provided as a cost share contribution to the lead company in the second and third year;**
5. **Cost share can be paid every three months starting the second year; and**
6. **The federal government provides three lump payments at the beginning of each new 12 month period to fund the project.**

Additionally,

1. **What is the definition of capital equipment for this project (in dollars) and can capital equipment be purchased under this effort?**
2. **What funding conditions trigger a mandatory audit and can we budget for audits using project funds? Alternately, can mandatory audits costs go into G&A?**
3. **Is a small company without a G&A history able to select a "10% de minimus rate"? Specifically, 10% of what? The total project cost?**
4. **Is there anything else about the grant accounting that is critical to take note of?**

I sincerely appreciate your detailed comments as it will provide the information I need for forming a quality budget and proposal to ARPA-E. If it is easier I am open to scheduling a phone conversation.

ANSWER: ARPA-E will not pre-assess an applicant's cost share arrangements. Prospective applicants must review the cost share requirements of the FOA and independently determine whether their proposed Cost Share is compliant.

Equipment definitions can be found in the FOA section G. Funding Restrictions 7. Purchase of New Equipment.

See Section J. Compliance Audit Requirement of the FOA.

Please see section B. Cost Sharing 3. Reduced Cost Share Requirement of the FOA.

Federal standards for cost share may be found at 2 C.F.R. § 200.306.

Q62. We are a small business planning to apply for OPEN 2021. Our project team consists of another small business, a university lab, and a national lab. According to the guidelines, we are responsible for 10% cost share. We are wondering if indirect cost rate reduction is considered as cost share?

Our company normally applies a 32% indirect cost rate which was previously negotiated with the Department of Energy for other federal grants we received in the past. If we offer a rate lower than 32% to ARPA-E, can we use the remaining amount as cost share?

Let us give a quick example to make our question more clear: If we ask for a direct cost of 800k in total and apply a reduced indirect cost rate, for example 25%, 200k will be used for indirect costs. On the other hand, our regular 32% indirect cost rate requires us to ask for (800k x 0.32 =)256k for a total direct cost of 800k. Therefore, by reducing the indirect cost rate, we can indirectly match (256k - 200k =)56k through our company. Could this remaining amount (56k) be counted as cost share?

ANSWER: ARPA-E will not pre-assess an applicant's cost share arrangements. Prospective applicants must review the cost share requirements of the FOA and independently determine whether their proposed Cost Share is compliant.

Q63. Regarding the topic:

Engines – Transportation: "Technologies for improved internal combustion engines and other engine types (e.g., turbines) specifically for transportation applications."

Does developing learning-based control strategies to improve the efficiency of advanced engines fall into this category?

ANSWER: Refer to OPEN 2021 FAQ 5 and 7

Q64. We are writing to inquire as to our eligibility in the ARPA-E funding opportunity: Category 5C is valid. Currently, we are participating in the HeroX American-Made Challenge: Geothermal Manufacturing Prize. Below, is the link to the competition:

[Redacted]

In Q4 of 2020, we received a payment in response to our Ready! Phase submission package from the HeroX American-Made Challenge. We have submitted the documentation package for the Set! Phase package in Q1 2021. If our Set! proposal is selected for progression into the Make! phase, we will receive another payment in Q2 2021. Our Team page and project is listed below:

[Redacted]

We recognize that the ARPA-E funding opportunity cannot be coupled with other Federal reimbursement programs. However, we would like to clarify if we are still able to move forward with our application despite receiving money from the HeroX program.

Our ARPA-E application will be built on the R&D fundamentals as a result of our work in the HeroX competition; however we are interested in expanding the catalog of logging tools beyond pressure and temperature for the geothermal industry. Our goal for this ARPA-E competition is to further the work initiated in the HeroX competition through the development of a comprehensive suite of ultra-high temperature logging tools. This will allow for geothermal operators to operate at higher temperature with increased efficiency and less downtime thereby increasing the geothermal capacity of the United States.

ANSWER: OPEN 2021 cannot be coupled with other Federal reimbursement programs.

Q65. I have a questions for Topic 7a: Water Production/Reuse for ARPA-E Open Concept Papers. It says " Cost Effective and Energy Efficient Ways of Providing Fresh Water". Do you have a particular waste-stream in mind: municipal wastewater, industrial wastewater or seawater/brackish water? Or it can be any wastestream as long as the output water can be reused for potable or industrial applications.

ANSWER: Refer to OPEN 2021 FAQ 5 and 7

Q66. We are in the process of submitting the concept paper. We are estimating the project cost. Can you please guide us how we can estimate this? For example, one of our engineers will work in this project for next 3 years. It will be about 3000 hours of working. To support his resource, we need spend $150/hourly. Therefore, can we consider $450,00 for in-kind cost share? Or is this the total cost and we need to manage 20% of it?

Additionally, is there any limit of hourly rate for Government research project? This can help us to estimate the budget including cost for testing, prototype, etc

ANSWER: Please refer to questions 10.9 and 10.10 aove.

Q67. The ARPA-E exchange "requires applicants to contribute at least 20% of the total project cost.". If we are applying as solely academic institutions with no large business partners or that contribute more than 10% of the budget, can we apply with only 10% cost share?

ANSWER: Please see Section B. Cost Sharing 3. Reduced Cost Share Requirement in the FOA.

Q68. We are a small business in development with no revenue. For section III.B Cost Sharing, we are planning on utilizing subsection 3. Reduced Cost Share Requirement, third sub bullet for the "Cost Share Grace Period". If we elect to provide 0% cost share from the outset of the project through the first 12 months, are we required to identify the cost share partner up front or do we have anytime during the first 12 months to identify the cost share commitment?

ANSWER: The ARPA-E eXCHANGE system will allow applicants to expand or otherwise modify the Project Team.

Q69. I saw the DE-FOA-0002459 – OPEN 2021, and I may have missed it while reviewing the concept paper but what about the ownership of the IP generated from this funding opportunity?

If a company was to be awarded with funding, is the IP owned by this company or owned by ARPA-DOE?

How about confidentiality if awarded? Will ARPA-DOE disclose the research results from this company publicly?

ANSWER: ARPA-E requires every Project Team to negotiate and establish an Intellectual Property Management Plan for the management and disposition of intellectual property arising from the project. Please see section B. Administrative and National Policy Requirements 7. Intellectual Property and Data Management Plans of the FOA for the template. Please also reference General FAQ 2.20.

Q70. … is currently working on an application for DE-FOA-0002459 and we are considering two different subtopics to apply to. I understand from the FAQ that there is no program manager to speak with directly at this time, but is there some way to receive feedback about which subtopic is the best fit for our company? Thank you in advance for your time.

ANSWER: ARPA-E will not pre-assess an applicant's proposal. Prospective applicants must review the technical requirements of the FOA and independently determine whether their proposed concept warrants a submission and which subtopic to apply.

Q71. I work for a US subsidiary that is a US registered corporation, pays US taxes, employs US citizens, and its registered as a small business with the DOE SBA. The work we plan to propose for the ARPA-E FOA OPEN 2021 will be done here in the US. The subsidiary is fully owned by a foreign entity (UK company). Would our application be taken as a Foreign entity, or as a small business? Mainly looking at the eligibility of the cost share grace period (Section III.B.3), and the automatic right to elect to retain title to subject inventions (Section VIII.A).

ANSWER: That would depend on the application as submitted in regards to the Project Team.

Q72. The ARPA-E Open 2021 DE-FOA-0002459 Section "III. ELIGIBILITY INFORMATION" subpart "A. ELIGIBLE APPLICANTS" appears to exclude Small Businesses from this FOA, yet allows Non-Profits without any apparent size restrictions. Specifically in the "2. DOMESTIC ENTITIES" subsection, "For-profit entities[7]" are defined as:

"[7] For-Profit Organizations (Other than Small Businesses) (or large businesses): Means entities organized for-profit other than small businesses as defined elsewhere in the Glossary."

We have a consortium of small for-profit and non-profit entities together with two universities who wish to submit an application involving "disruptive technology" together with "disruptive tools and techniques" to, if successful, assure "disruptively rapid dissemination" throughout the society to meet specific urgent society goals. The technology set we are working will serve at least 9 of the identified Category/Subcategories listed in "I. FUNDING OPPORTUNITY DESCRIPTION" - "D. TECHNICAL CATEGORIES OF INTEREST" thus they seem worthy of this Open funding opportunity.

Please explain why Small Businesses are excluded from this FOA and how such a collective group should apply for this ARPA-E Open 2021.

ANSWER: Small businesses are not excluded from this FOA. Small businesses CAN apply.

Q73. We are planning to submit a proposal for ARPA-E FOA 2021. We know that each application will have a PI (Principal Investigator) and a team. Will the ARPA-E FOA 2021 allows the applications to have a Co-Principal Investigator (Co-PI) along with the PI and the team? If so, where, and how we can mention it on the concept paper application? For instance, the concept paper template provided by the ARPA-E tells where to type the PI name on the first page and on every page header. Can we type co-PI name after PI name separated by a comma?

ANSWER: Yes, you may have co-PI's.

Q74. Are prototype development and hardware costs allowable expenses under this FOA?

ANSWER: Yes

Q75. If a researcher from EPFL participates to a proposal, he/she needs to demonstrate that his/her contribution can not be found in the U.S.

ANSWER: Refer to OPEN 2021 FAQ 10.3

Q76. Hi, our research team intends to submit a proposal for the DE-FOA-0002459: OPEN 2021.

What aspect of aerospace is ARPA-E interested in?
Are there any prior research, or any reviews that you can point to which can help narrow down the technologies of interest?
e.g. are you interested in composite materials for lightweighting?
Replacement for jet fuels?
Anti-icing surface coating?

ANSWER: ARPA-E will not pre-assess an applicant's proposal. Prospective applicants must review the technical requirements of the FOA and independently determine whether their proposed concept warrants a submission.

Q77. I would like to know what would be the status of the IP ownership of the developed technologies under this funding!

ANSWER: The ARPA-E website http://ARPA-E.energy.gov FAQ page General Question 2.20 discusses IP ownership.

Q78. I have question for topic "CATEGORY 4: POWER GENERATION AND ENERGY PRODUCTION: FOSSIL/NUCLEAR" and "Subcategory F: Carbon Capture". This FOA calls out that Technologies for carbon capture, use, and storage, excluding biological/agricultural carbon management. However, do you think carbon capture from vehicles exhaust is included ?

ANSWER: Refer to OPEN 2021 FAQ 5 and 7

Q79. We are interested to pursue DE-FOA-0002459 with our [Redacted]. However, a question has arisen as to whether our international university partner would be eligible to participate?

ANSWER: "Refer to OPEN 2021 FAQ 10.3

Q80. Due to my papers were cited in one of the ARPA-E webinars, I have received invitations from multiple teams (4 teams) for this year's ARPA-E.

My question is: if I am allowed to participate in multiple teams as a Co-PI and I plan to lead one proposal myself as a PI, does this count as COI or unethical? What's the best practice for me to stay unbiased to these teams?

Currently I told the teams that what tasks I can support with my expertise and prior work, I have not tried to steer the direction or the main themes of their proposals.

ANSWER: Yes, you are allowed to participate in multiple teams.

Q81. Our Project Team is composed of a domestic public university … as the lead organization, and a federal national laboratory - … as a member.

Our 3 questions are:

1. **Are we allowed to include a budget for the select national laboratory - … as a member?**
2. **Would the selected national laboratory - … be restricted to only providing in-kind contributions if they are member?**
3. **Can the selected national laboratory - … contribute to the total cost share?**

ANSWER: FFRDCs/DOE Labs are eligible to apply for funding as the lead organization for a Project Team or as a member of a Project Team that includes institutions of higher education, companies, research foundations, or trade and industry research collaborations, but not as a Standalone Applicant.

Q82. We have seen some information about a 3-year research program focusing on the abatement of methane emissions call the REMEDY program. I see an RFI from late last year, and one announcement we received showed that ARPA-E planned to issue a Funding Opportunity Announcement around March 1st, 2021. However, I checked the website (https://arpa-e-foa.energy.gov/) and did not see a REMEDY program listed under opportunities. I wanted to check and make sure I was not overlooking something or looking in the wrong place. Could you advise if the REMEDY program has been formally posted somewhere?

ANSWER: ARPA-E anticipates publishing the REMEDY FOA sometime this spring. Scientific topics of interest could change prior to publication but are currently limited to:

- Methane slip from natural gas-fired lean-burn engines, nominally 2-5% of feed methane
- Flares used for safe operation in oil and gas upstream and midstream sectors, which have a nominal destruction efficiency of 98% but may be operating at lower efficiency

- Ventilation air methane, exhausted from operating underground coal mines with no methane abatement

In an OPEN 2021 webinar, there is discussion of other anthropogenic methane emission sources, including enteric fermentation, landfills, abandoned coal mines, and orphaned/abandoned oil and gas wells (refer to https://arpa-e.energy.gov/open-2021/webinars , also found on YouTube at https://www.youtube.com/watch?v=8RVfm_HWL0s). Interested parties are encouraged to view the webinar and consider submitting concept papers on these and other topics to OPEN 2021.

Q83. I have a few questions and I would appreciate if you can address them or help me to find answers to them:

1- **Do we need to have an industrial partner in the application to OPEN2021?**
2- **For any proposed ideas do we need to provide any preliminary data or results?**
3- **How many concept papers can we submit? Is there any limitation on the number of submissions?**
4- **Should we specify any program once we submit concept papers?**
5- **I have seen some program directors prepare video abstracts and talk about their general interests, what should we do if our idea overlaps with two of those programs or is a combination of two?**
6- **What will happen if the idea is not among those that are presented by PD in video abstracts? Can we still apply?**

ANSWER: 83.1.No

83.2. ARPA-E will not pre-assess an applicant's proposal. Prospective applicants must review the technical requirements of the FOA and independently determine whether their proposed concept warrants a submission.

83.3. Please refer to General Question 6.4

83.4. Per FOA Section III.C.3:

ARPA-E is not limiting the number of submissions from Applicants. Applicants may submit more than one application to this FOA, provided that each application is scientifically distinct.

83.5. Please refer to Q.9 above.

83.6. Please refer to Q.9 above.

Q84. I have a couple of questions for you about the on-going call for proposals for ARPA-E. I did watch your YouTube webinar, which was quite informative, but I would like to clarify a few things if you have a spare moment.
Here they are.

1) **Would recycling fit into Category 4, Subcategory D of the ARPA-E Call?**
2) **Is «potential clean Pu stream» a separate issue or a topic of this call? In other words, would a novel process that co-extracts U/Np/Pu in one stream fit the bill, or you are focusing on the U/Np/Pu/Am stream only? I think we all know how difficult the latter task is…**
3) **How mature or what is the readiness level of the technology expected to be at the end of the project? And what is a normal duration- 2-3 years?**

ANSWER: 84.1. Please refer to questions 3, 5, 7 and 9 above.

84.2 Please refer to questions 3, 5, 7 and 9 above.

84.3 Please refer to FOA Section II.A. The period of performance for funding agreements may not exceed 36 months

Q85. I would like to submit to the ARPA-E open proposal call. I work for the US Air Force Research Laboratory. Are there additional requirements, processes or exclusions associated with proposing from a DOD Lab? For example, is an MOU or MOA required? Does ARPA-E already have one?

ANSWER: Please refer to section II. Award Information C. ARPA-E Funding Agreements 2. FUNDING AGREEMENTS WITH FFRDCS/DOE LABS, GOGOS, AND FEDERAL INSTRUMENTALITIES

Q86. My name is …., and I am with … . Our company is interested in submitting an application for the OPEN 2021 Program. We have a question regarding the Principal Investigator. Are there any requirements that a PI must meet to be listed as a PI for a Project?

ANSWER: The PI must meet all eligibility requirements for applicants as stated in the FOA.

Q87. Are we allowed to bring on ARL (Army Research Labs) to an OPEN 2021 concept paper and proposal?
They are the only ones able to do a specific PZT process that is part of our work (we collaborate with them now) and they are also willing to commercialize, so there is a good match an justification for both technology and technology transition.

ANSWER: Please refer to section II. Award Information C. ARPA-E Funding Agreements 2. FUNDING AGREEMENTS WITH FFRDCS/DOE LABS, GOGOS, AND FEDERAL INSTRUMENTALITIES

Q88. I am assisting with a concept paper submission for DE-FOA-0002459 OPEN 2021 and had a question about the budget. Is the only budget information required for the concept paper the estimated totals under the funds and costs tab?

ANSWER: Applicants must complete all budget information in section D. Content and Form of Full Applications 3. THIRD COMPONENT: BUDGET JUSTIFICATION WORKBOOK/SF-424A of the FOA.

Q89. Is there an SBIR portion pertaining to the OPEN 2021 solicitation?

ANSWER: No. **Note: Small businesses may apply to the OPEN 2021 FOA.**

Q90. We are preparing for the concept paper for the ARPA-E OPEN 2021 project. I have several questions that I cannot find the answers in the FAQs on ARPA-E website. I am wondering whether you could give me some suggestions.

The first question is about the international collaborator. We plan to have a researcher from the University of Oxford in UK to be a team member because he has the unique expertise we need. I am aware that the "foreign work waiver" is required and it is rarely approved. But I am wondering if this collaborator does not need research fund but will only participate in co-supervising students in the proposed research and later in full proposal, will it work for ARPA-E? In this case, will we still need to first get this "foreign work waiver" before the submission of concept paper? I am concerned that the agency may return our concept without review if our statement is not clearly on this aspect. Is that OK to explicitly mention in the concept paper that this team member will not need any research fund but will co-supervise students? Please let me know if you have any other comments or template of statement on this aspect.

The second question is about the subcategory. We plan to submit the concept paper to the subcategory K (generation with fossil fuels-other) in category 4. But we found there are two subcategory J (FOA, page 7). Is that a typo? When we specify the suitable subcategory, should we use "subcategory K" or "subcategory L" for the subcategory "generation with fossil fuels-other"?

The third question is about the single concept or technology. We noticed in the FOA that "Each Concept Paper must be limited to a single concept or technology. Unrelated concepts and technologies must not be consolidated into a single Concept Paper.". We do propose only one concept but will use two approaches to achieve the research goal. We plan to develop the technologies for the two approaches. We believe that this is only one concept. But there might be a risk that the reviewers will not think so. Is it possible to have your suggestions on this aspect if we send you the draft of the concept paper before March 26?

ANSWER: 90.1 ARPA-E will not pre-assess or or provide teaming arrangement guidance to potential applicants. Prospective applicants must review the funding opportunity announcement requirements and independently determine their proposed teaming arrangements

90.2 This will be corrected in a modification, but make sure to identify the correct Subcategory title.

90.3 ARPA-E will not pre-assess an applicant's proposal. Prospective applicants must review the technical requirements of the FOA and independently determine whether their proposed concept warrants a submission.

Q91. A PI at our organization was wondering if their Israeli partner was to only provide cost share with NO funds going directly to them for the effort, would they still need to fill out a waiver for foreign work?

ANSWER: Yes.

Q92. Questions about the Concept Paper for DE-FOA-0002459 OPEN 2021 FOA:

1. **Can a compliant concept paper include hyperlinks embedded in the text of the .pdf file to provide references for cited data?**
2. **Are reviewers able and/or allowed to click on hyperlinks embedded in the text for expanded information?**

ANSWER: 92.1 Yes

92.2 Yes

Q93. Questions about the concept paper for FOA OPEN 2021, DE-FOA-0002459:

1. **The FOA clearly states that text within a concept paper must be black. Can a compliant concept paper include colors within photos, drawings, illustrations or figures?**
2. **If colors are used within a concept paper (except black text as in FOA) will reviewers be able to see the colors (for example if concept papers are only allowed to be reviewed and/or printed in black and white)?**

ANSWER: Applications must follow the standards prescribed in section IV. Application and Submission Information C. CONTENT AND FORM OF CONCEPT PAPERS of the FOA.

Q94. I am writing to enquire about an ARPA-E Open proposal that I intend to submit on behalf of a soon-to-be incorporated start-up company, …, and … .

The start-up company will be the lead entity for the submission, but the company has not yet been incorporated. I was wondering, does the start-up company need to be incorporated before the time of award, and if so, when would incorporation be required (e.g., concept paper, full proposal, etc.)?

As a follow-up question, assuming that incorporation is not required before the time of award, is there any preference given during review for entities that are already incorporated?

ANSWER: Applicants must meet the criteria in section III. Eligibility Information A. Eligible Applicants. No preference is given to incorporated applicants.

Q95. We'd like to submit the following question(s) for the ARPA-e OPEN FOA:

Can data (specifically hurricane tracking data) be provided by an industrial partner as in-kind cost share? If this is allowed, how is the value of such data sets quantified by ARPA-e?

ANSWER: Data may under certain circumstances be an allowable cost-share. See General FAQ 4.14

Q96. I found the following:

Q4.10 If a small business proposes a multi-year effort, but, for technical reasons identified within the first year, decides to terminate the effort in the first 12 months, will the 10% cost-share requirement for the multi-year effort be imposed or the 0% requirement for projects restricted to 12 months?
ANSWER: If a recipient qualifies for the cost share grace period, the 10% cost share requirement becomes effective only if the project is not terminated during the first year. If the project continues beyond that time, the recipient will owe 10% of the total project cost, including the costs incurred during the grace period. If the project does not continue beyond one year, the recipient will not be required to contribute cost share. Please review the above-referenced Reduced Cost Share section of the FOA closely for more information.

Does this mean that we are discouraged to submit multi-year project?
In other words, is only 12 month project allowed when we cannot pay the cost sharing?

ANSWER: You are not discouraged but if a recipient qualifies for the cost share grace period and the project continues past a year the recipient will owe 10% of the total project cost.

Q97. Question regarding the eligibility of teaming arrangements for OPEN 2021.

1. **Is it possible for a US based company (…) to partner with a non-US startup for an application? Does the percentage of work done by the US based company versus the non-US entity factor into the decision?**
2. **Could … apply as the main applicant with the non-US startup as a sub?**

ANSWER: ARPA-E will not pre-assess or provide teaming arrangement guidance to potential applicants. Prospective applicants must review the funding opportunity announcement requirements and independently determine their proposed teaming arrangements.

Q98. Are webinars, or other resources/materials, available for CATEGORY 2: Transportation, Subcategory F: Transportation Management, so we can tailor the concept paper to ARPA-E's specific needs?

ANSWER: Please refer to questions 3, 5, 7 and 9 above.

Q99. We would like to raise the below question with regards to the OPEN FOA. "Pursuant to Sec. 3 of the OPEN FOA, foreign entities are eligible to apply for funding, but must designate in the Full Application a subsidiary or affiliate incorporated (or otherwise formed or to be formed) in the US. We (a non-US entity) would like to clarify whether (i) we can submit the concept paper as a non-US entity and point out that "we will incorporate a US entity", and (ii) whether the subsidiary must already be fully incorporated upon submission of the Full Application or only upon issuance of the award?"

ANSWER: The ARPA-E eXCHANGE system will allow applicants to expand or otherwise modify the Project Team for their Full Applications, however they must be fully incorporated prior to award.

Q100. Can a proposal be considered for an ARPA-E grant if fund raising activities to cover a portion of the balance of the overall project are still underway and not completed at the time of the submission?

ANSWER: Yes, but a complete budget justification and SF-424A must be submitted with the full application.

Q101. I am the Chief Research and Development Officer of a start-up company (…), and a chemistry professor at … *Redacted*. I would like to submit a collaborative proposal to ARPAe, with … as the lead, and … as a co-applicant. Can I be the PI (for …) and the co-PI for … on this project.

ANSWER: Yes.

Q102. I reviewed the "Eligibility Information" and "Cost Sharing" Sections of the FOA and I have a few questions regarding these requirements. I would greatly appreciate your guidance.

1. **In Section III.B.3 of the FOA, it is stated that "Project Teams composed exclusively of domestic educational institutions, domestic nonprofits, and/or FFRDCs/DOE Labs/Federal agencies and instrumentalities (other than DOE) are required to provide at least 5% of the Total Project Cost as cost share."**
    i. **Can the domestic educational institutions be as the lead among the Project Team mentioned above?**
2. **While the definition of the "For-Profit Organizations" is provided in the FOA, I want to make sure our understanding about the "For-Profit Organizations" is aligned with the FOA. In other words, is any company and industrial partner who is not a non-profit considered a "For-Profit Organizations"?**
3. **In Section III.B.3 of the FOA, it is stated that "Project Teams where domestic educational institutions, domestic nonprofits, small businesses, and/or FFRDCs perform greater than or equal to 80% of the total work under the funding agreement (as measured by the Total Project Cost) are required to provide at least 10% of the Total Project Cost as cost share. However, any entity (such as a large business) receiving patent rights under a class waiver, or other patent waiver, that is part of a Project Team receiving this reduction must continue to meet the statutory minimum cost share requirement (20%) for its portion of the Total Project Cost."**
    i. **Based on this statement, if our project team of a domestic educational institution performing 80% of the total work and a large business performing 20% of the work, the entire project will only have a 10% cost share if neither is pursuing "patent rights under a class waiver, or other patent waiver". Is this correct?**

ANSWER: See Q 90.1" for question 102.1 "See footnote _ (Definition of "For Profit Organization")

Q103. My company is in the process of completing a concept paper for DE-FOA-0002459. However, a question has come into focus that I respectfully provide below after some background material.

A small and unfunded company (e.g. start-up) may not have the financial resources to begin to incur project costs (equipment costs, supplies, salaries, etc) on its own, let alone wait for two months for reimbursements after the ARPA-E OPEN project starts. This appears to give large organizations a significant built-in advantage over small companies. Petty cash-on-hand allows the large organization to apply for the cooperative grant and pay for upfront R&D costs while it waits for reimbursements. Alternatively, the lack of such cash-on-hand may force a small organization to not apply, not accept, or at the very least struggle to manage an award offered. Can you help level the playing field?

1. **A small company typically will not have the capital available for the first two months (maybe a bit more) of R&D after which the first reimbursement deposit from ARPA-E is scheduled for deposit. Thus, unless there is some kind of adjustment, ARPA-E policies appear to have a built-in bias for large organizations that are already well funded. Is there any way (e.g. a waiver) to have two months 2/12 = 16.7% of the total cost for the FIRST year provided upfront to a small company to provide a way to start R&D while it is waiting for its very first reimbursement deposit?**

ANSWER: ARPA-E's policy for reimbursement of expenses, is to treat all awardees equally.

Q104. I looked through the FOA and Q&A documents and have one question regarding individual international collaborators. I understand that the funding will go to institution, but I am wondering whether it is possible to have an international individual (not company) as a co-PI in this project. If so, should he/she be in-kind or can he/she be paid?

ANSWER: ARPA-E will not pre-assess or or provide teaming arrangement guidance to potential applicants. Prospective applicants must review the funding opportunity announcement requirements and independently determine their proposed teaming arrangements. However, personnel costs are an allowable in-kind contribution.

Q105. Does the Concept Paper file we upload to xCHANGE require a specific naming nomenclature?

ANSWER: The ARPA-E Funding Opportunity Exchange website automatically renames files on upload to the submission record.

Q106. Regarding the ARAP-E OPEN FOA:

1. Do lab facilities need to be in place (i.e. leased) by my start-up before, during or after award negotiations?

2. What legal representations need to be made by my company regarding my lab facilities during the award negations?

ANSWER:

106.1 Prior to award negotiations.

106.2 The applicant is responsible for determining their legal representations.

Q107. Regarding the cost-sharing requirements in the FOA, I am wondering if there is any limitation for the number of companies (small or large businesses) that can be a part of one concept paper as part of the Project Team.

ANSWER: No, but Project Teams must meet all compliant criteria.

Q108. I had a quick question regarding the concept paper submission requirements for the FOA.

I am part of a team from multiple universities, national lab, and industry partners. The lead PI's university will submit the concept paper. Is there any documentation that needs to be submitted from other team members' organizations for the concept paper?

ANSWER: Please refer to section IV.C. Content and Form of Concept Papers Section d. Team Organization and Capabilities of the FOA.

Q109. My question is regarding research done in collaboration with a University, such as funding for a graduate student to perform the research with the primary grant applicant as a small business laboratory. Our company, …, …, meets all the criteria of small business per the SBIR guidelines, does the graduate student need to be listed as a "Team Member" on the Concept Paper submittal? Or will the PI and Co-PI information be sufficient since this is Concept submission?

ANSWER: Please refer to section IV.C. Content and Form of Concept Papers Section d. Team Organization and Capabilities of the FOA.

Q110. I am in the middle of team building for the ARPA-E OPEN program and will not have a team fully formed by the time of the Concept Paper submission. Can I simply list my company as recipient of 100% of the project funds for now, i.e. as a place holder on the Exchange application form, and then list all team members and the percentage of funding accurately during the full proposal if we are given the okay to proceed? Can you suggest how to best handle this early teaming situation?

ANSWER: Yes, The ARPA-E eXCHANGE system will allow applicants to expand or otherwise modify the Project Team for their Full Applications.

Q111. I had a question on the 2021 Open. At a recent presentation, … mentioned that there was direction or at least interest from the Biden administration in forming a ARPA-C... c for climate. Are topics that address ARPA-C, such as clean air and water, applicable for the 2021 open? My impression of the discussion was that the idea for ARPA-C was to fold additional funding into ARPA-E for climate type topics.

… *Redacted* … . Is this outside the scope of the current open? Do you have a PM that may be interested in discussing the idea?

ANSWER: ARPA-E will not pre-assess an applicant's proposal. Prospective applicants must review the technical requirements of the FOA and independently determine whether their proposed concept warrants a submission

Q112. Greetings: 2 questions
#1) if my small business receives a grant from you to model and prototype a device it all ready has a patent for what would be the cost share? If the same small business has already spent $160,000 of it's own funds on r&d and and patenting costs can that sum be counted to cost share?

#2) if that same small business goes to a University and asks them to apply for a grant to model and prototype the device and they receive the grant funding what would be the cost share and whom would be responsible for that cost share? What if the small business retained it's exclusive patent rights but the University received the grant and did all of the work? If the small business is the party responsible in this scenario can they apply expenses incurred againts cost share as in #1?

ANSWER: Please review in the FOA section B. Cost Sharing 3. Reduced Cost Share requirement specifically the part about small business. See also, Q26.

Q113. On page 25 of the FOA:

C. CONTENT AND FORM OF CONCEPT PAPERS

"All pages must be formatted to fit on 8-1/2 by 11 inch paper with margins not less than one inch on every side. Single space all text and use Times New Roman typeface, a black font color, and a font size of 12 point or larger (except in figures and tables)".

Does this font size requirement also apply to the footnote section where PIs cite their references?

ANSWER: Yes.

Q114. Is the only budget information required for the concept paper the estimated totals under the funds and costs tab?

ANSWER: Please refer to question 88.

Q115. I am in the process of writing a concept paper for the OPEN 2021 call that is due April 6. I have begun the submission process but have found out that as part of an academic institution, I am required to provide 5% cost share. Unfortunately, this is not possible since neither I nor my team members have the resources at our institutions to provide the necessary funds for cost share. I have been told that there is a cost share waiver process and I wonder how to apply for this and whether this is even necessary to do at this point of the application.

Could you please advise me on how to proceed? Do I put money for cost share for now and then change it if I get a waiver? Or do I just leave the cost share portion as $0?

ANSWER: ARPA-E will not pre-assess an applicant's cost share arrangements. Prospective applicants must review the cost share requirements of the FOA and independently determine whether their proposed Cost Share is compliant.

Q116. We are assuming references are included in the 4 page concept paper limit. Can these by reduced to a 10 point font?

ANSWER: No.

Q117. Our project my last 24 months and cost $500,000.00. Over the two years, we assigned payment of $ 50,000 to PI. Since the project period is over 12 months, we have to pay the cost sharing $50,000.00. Is it allowed for the PI to pay the cost sharing with his salary?

ANSWER: Please refer to section B. Cost Sharing 6. COST SHARE TYPES AND ALLOWABILITY in the FOA.

Q118. I have a couple of questions regarding how ARPA-E determines whether an innovation is sufficiently disruptive and non-incremental. Are there benchmarks, definitions, or certain characteristics you look for to make that determination? If a type of innovation that might typically be considered incremental was mentioned specifically in the OPEN 2021 webinar series, is that an indication that it would qualify under ARPA-E's criteria?

ANSWER: ARPA-E will not pre-assess an applicant's proposal. Prospective applicants must review the technical requirements of the FOA and independently determine whether their proposed concept warrants a submission

Q119. …a list of questions relating to the ARPA-E OPEN FOA call.

1. **In this program, would the importation, purchase, or manufacture of specific products, technologies, components or materials from foreign countries (e.g. Japan) be accepted if they support the project carried out on U.S. soil? We understand that this is on a case-by-case basis, but can specific clauses be found in ARPA-E documents regarding this matter? And if there are, where can they be found?**
2. **Regarding the involvement of foreign (non-U.S. nationals or permanent residents), although it is clear that the PI must be a U.S. national or permanent resident, it is unclear whether project team members that are foreign nationals and/or based outside of the U.S. can be included as team members. As such, in this program, if a foreign entity is successfully awarded a grant (via its U.S. subsidiary), is either (or both) of the following scenarios possible:**
   a. **For employees of the foreign parent company of the U.S. subsidiary to be involved in the project? If so, does this require a waiver for any work not completed on U.S. soil?**
   b. **For employees of the U.S. subsidiary of the parent company, but who are based outside of the U.S., to be involved in the project? If so, does this require a waiver for any work not completed on U.S. soil?**
3. **In this program, when making an application for a patent using the grant, are the cases below valid or possible if the applications were made with the patent office in the United States (including U.S. territories)?**
   a. **A sole application by a team member who belongs to a domestic entity and is a U.S. citizen or permanent resident.**
   b. **A sole/ application by a team member who belongs to a domestic entity and is NOT a U.S. citizen nor permanent resident.**
   c. **A joint application by team members whereby all of them belong to a domestic entity and applicants consist of both U.S. citizens or permanent residents and non-U.S. citizens (nor permanent residents).**
   d. **A sole application by a domestic entity of the project team.**
   e. **A joint application by a domestic entity and a foreign entity, both of whom are members of the project team.**
   f. **A sole application by a foreign entity of the project team.**
4. **In this program, when making an application for a patent using the grant, does the Bayh-Dole Act apply? If so, how does the Bayh-Dole Act apply?**
5. **What indirect expenses are covered by the grant funding? Where can the list of possible allowance items (indirect expenses) and prohibited expenses be found?**

6. **It appears that, dependent upon the foreign country, there are regulations that need to be managed in great detail such as fixed asset management, retirement or sale of equipment bought with grant money or programs developed. Furthermore, it appears that the project team includes labor and travel expenses in the grant funding, but that the attendance hours and the purpose of the business trip are required to be provided in detail. Please advise on where we can find these regulations.**
7. **It is understood that the resultant products or technologies developed in this program are to be manufactured and commercialized in the United States. However, is it also possible to manufacture and commercialize the same technology outside of the United States? Is this possible/not possible both during and after the grant period?**
8. **During the period of financial assistance from ARPA-E, are project team member companies allowed to receive any commission on projects related to the particular product or technology that is supported by the grant? Similarly, are there any limitations or restrictions on other product lines (i.e. technologies or products not related to the grant) by team member companies?**
9. **Similar to question (8), is it possible, i.e. not prohibited by any law or regulation, to do business with the technology subsidized by the grant, within the subsidy period?**
10. **It appears that to use a separate subsidy for the exact same concept and the same technology is prohibited. However, if it is the same concept but not identical (e.g. using a different material or design) then is it possible to receive other funds or support?**
11. **Referring to the information in OPEN FOA, section VIII, subsection C, regarding any patent applied for that arises from this project, what will happen to the patent rights after the grant period?**
12. **Transfer of rights of a patent received or in pending: In this program, using the grant, when making an application for a patent by a domestic entity or a member of the domestic entity who is a U.S. citizen, is it possible to grant exclusive rights of use and licensing to companies outside the United States (including the parent company of the U.S. subsidiary)? If it is possible to grant rights exclusively, will that be after the grant term is over? Or is there any set period which is forbidden to grant patent rights?**
13. **If the IPR belongs to the U.S. corporation, if there is a cross-license agreement for IPR between a foreign corporation (Japan) and the U.S. corporation, can the Japanese corporation freely create IPR based on the technology developed by the grant?**

14. ARPA-E documentation states that any government laboratory involved in a project must have at least 20% of the project base. Whilst we understand any government laboratory cannot contribute to the cost share, it is unclear what this is 20% referring to. Is this 20% of the total project cost, or 20% of the grant. For example, in the case of a $1M grant being awarded, the total (minimum) project cost is $1.25M (noting 20% cost share). Does this mean the amount of the award going to the government laboratory must be minimum $200M (20% of grant) or $250M (20% of total project cost)?

15. Upon notice of having won an award, when can the grant money expect to be received?

16. Regarding the concept paper, to what extent is it possible to revise key information about the proposed project (e.g. proposed funds, cost share, PI etc.) in the full application?

ANSWERS: 1. There is a strong preference for US products, technologies, components or materials, but limited exceptions ("waivers") may be permitted. An applicant's request for any waiver would be submitted with its Business Assurances Form (during Full Applications Phase of the FOA. Such requests may be negotiated, on a case by case basis, with applicants selected for awards.

2. All project work must be conducted in the US unless a partial waiver is granted. Such waivers are requested in the applicant's Business Assurances Form (during Full Applications Phase of the FOA), and are negotiated with applicants selected for awards.

3. Subject Inventions – and related patents – arising from ARPA-E research projects must be manufactured/used for manufacture in the US **(including U.S. territories)** for sales anywhere in the world. Selected Applicants/Awardees may request "partial waivers" (modifications) of this requirement, and ARPA-E has granted limited waivers to allow some non-US manufacturing when justified for economic reasons, and with off-setting benefits to the US economy.

4. Yes for small businesses/universities/non-profits, with an exception for enhanced US manufacturing requirements. See FAQ 119.3

5. Allowable costs are under section G. Funding Restrictions 1. Allowable Costs of the FOA

6. 2 CFR Subpart C - Pre-Federal Award Requirements and Contents of Federal Awards

7. See answer 3 immediately above.

8. This question requires clarification.

9. This question requires clarification.

10. This question requires clarification. Please see answer to FAQ 52.

11. The obligations applicable to "subject inventions" – and related patents – arising during research continue after the project is completed. See FAQ 119.3.

12. See answers 3 and 11 immediately above. See FAQ 119.3

13. This question requires clarification. Please see answers 3 and 11 immediately above, and FOA Sec. VIII. "Other Information A. Title to Subject Inventions"

14. This question requires clarification. Please refer to Section III. Eligibility Information B. Cost Sharing of the FOA for cost sharing requirements

15. Generally, upon completion of award negotiations and execution of the final award.

16. The ARPA-E eXCHANGE system will allow applicants to expand or otherwise modify the Project Team for their Full Applications.

Q120. I submitted my input into the Teaming Partners list for Open 2021 today. My company is still trying to down select partners in … *Redacted* . I'd like to know if we have to finalize partners before the concept paper submission due date of 4/6.

ANSWER: The ARPA-E eXCHANGE system will allow applicants to expand or otherwise modify the Project Team for their Full Applications.

Q121. We recently viewed your webinar on Data Center cooling via the open FOA, DE FOA-0002459. We have also viewed a separate FOA document, DE-FOA-0002495, on Data Center Efficiency. We would like to submit a technical concept related to Data Center cooling, however our interpretation is that you can not submit to both FOA's, unless each submitted concept is scientifically unique. Would you be able to share with us any reason why responding to one of these FOAs is more advantageous to the other? We would be proposing with a single cooling system concept.

We also notice that DE FOA-0002459 discusses contract award funding and …2495 does not. Is DE-FOA-0002495 funded, even though it does not speak to it in the 5 page document? We currently work in cooling technology for high energy systems and we believe we have something to add to this effort. However, given the items I have noted, it has caused us to question which FOA is best to respond to; FOA, DE FOA-0002459, or DE-FOA-0002495. Can you please share your customer views of these different FOAs that have similar asks? Lastly, is there a significance in the FOA numbers being similar, but with a transposition of their last two digits.

Announcement Type: Initial Announcement
Funding Opportunity No. DE-FOA-0002459
CFDA Number 81.135
Response Due April 6, 2021

Request for Information (RFI)
DE-FOA-0002495
on Increasing Data Center Energy Efficiency
Response Due April 30, 2021

ANSWER: ARPA-E will not pre-assess an applicant's proposal. Prospective applicants must review the technical requirements of the FOA and independently determine whether their proposed concept warrants a submission

Q122. … *Redacted*.

… is planning to submit a Concept Paper for DE-FOA-0002459: OPEN 2021 with me as a PI, and we would really be grateful if you could answer some of our questions before the deadline.

1. **Although the FOA states that ARPA-E funding agreements may not exceed 36 months, the FOA also discusses the opportunity of receiving renewal awards. Are applications for renewal awards considered separately from normal applications? Our prior experience of NSF Phase I, Phase II and Phase IIB makes us ask is there a structural equivalence in ARPA-E grants?**
2. **Do partnerships between entities participating to the project (e.g. two companies collaborating) need to be formally defined by a written agreement before submitting the Concept Paper?**
3. **According to the FOA small businesses or consortia of small businesses are subject to reduced cost share requirements. The definition of small business can be found at https://www.sba.gov/document/support--table-size-standards. Is the definition of consortia of small business simply a group of small business which all independently comply with the size standards?**
4. **Is there an official table that sets or limits the rates for the funding of team member salaries/stipends? Silicon Valley being more expensive can the difference between the upper limit and the actual be considered as applicant's contribution to coast share?**
5. **Is the funding requested in the concept paper binding? In other words, can the requested funding be altered in the final application?**

ANSWER: 1. No

2. No

3. Please refer to Section III. Eligibility Information A. Eligible Applicants 4. Consortium Entities in the FOA.

4. Please refer to Section III. Eligibility Information B. Cost Sharing of the FOA for cost sharing requirements.

5. Yes, the funding requested may be altered prior to final application.

Q123. Could you please clarify the answer to Q47.2 indicating reduced cost share will not impact competitiveness of applications? This seems to contradict p. 17 of the FOA which states "ARPA-E may consider the amount of cost share proposed when selecting applications for award negotiations" and p. 31 stating one selection factor is "proposing cost share above the required minimum."

ANSWER: Cost share may be considered in final selections.

Q124. How does the OPEN 2021 FOA integrate with current ARPA-E programs? For example, would a successful proposal in category 7I (high-temperature materials), be associated with the existing ULTIMATE program?

ANSWER: ARPA-E will not pre-assess an applicant's proposal. Prospective applicants must review the technical requirements of the FOA and independently determine whether their proposed concept warrants a submission

Q125. I have the following questions on the ARPA-E OPEN-2021 FOA.

1. **I am part of a research team from a domestic university. We want to add a for-profit vendor and a utility as project advisors. They will be consulted quarterly on the project direction for feedback and the utility might share some field data for validation, but they will not be performing any specific task for the project. The advisors will not be receiving any funds and they will likely not contribute to cost-share. In this case, are we eligible for reduced cost share of 5% ? If not, what would be cost share percent?**
2. **Can the team be changed after concept paper is submitted?**
3. **Can postdocs be a co-PI or PI in the proposal?**
4. **Can the PI and co-PI be interchanged after the concept paper is submitted?**
5. **Can national labs or other team members be added after the concept paper is submitted, provided the idea is the same as the concept paper?**
6. **Can the budget be modified after the concept paper is submitted? If yes, is there a maximum allowable modifications?**
7. **Can the title be modified after concept paper is submitted?**
8. **Can more than one concept paper from same team be submitted provided they are significantly different ?**
9. **Can more than one proposal be funded from the same team provided they are significantly different ?**

ANSWER: 1. Please refer to section III. Eligibility Information B. Cost Sharing 3. Reduced cost share requirement of the FOA.

2. Yes, applicants may modify the content of their submission in the Full Application Phase.

3. Yes

4. Yes, applicant's can modify the content of their submission in the Full Application Phase.
5. Yes, applicant's can modify the content of their submission in the Full Application Phase.
6. Yes, applicant's can modify the content of their submission in the Full Application Phase.
7. Yes, applicant's can modify the content of their submission in the Full Application Phase.
8. Yes, provided they are scientifically distinct.
9. Yes, provided they are scientifically distinct.

Q126. Our team has the following questions:

1. **We are focusing our effort on innovations related to power electronic materials advances that would allow for revolutionary increases to efficiency in the pulsed power EV battery charging, do you feel this is an appropriate topic for this category? Is it too narrow in scope? For example, are we encouraged to broaden our scope to include novel circuit topologies?**
2. **We have formed a team that includes a university (lead), nonprofit, and a small business, is this combination adequate or is it too small and would we be encouraged to join with a prime?**
3. **Should a well-defined commercialization strategy be included in any white paper or proposal? Is this seen as vital and is successful commercialization history equally valued?**
4. **Does the DOE place a high value on minority and gender PI diversity and HBCU participation?**
5. **Is identifiable job creation of value if it is clearly linked to the success of the program?**
6. **Can you comment on the structure of this program, if for example, is it a multphase, multiyear, program?**
7. **Is a manufacturing component required in the outyears?**

ANSWER: 1. Please refer to questions 3, 5, 7 and 9 above.

2. ARPA-E will not pre-assess or or provide teaming arrangement guidance to potential applicants. Prospective applicants must review the funding opportunity announcement requirements and independently determine their proposed teaming arrangements.

3. ARPA-E will not pre-assess an applicant's proposal. Prospective applicants must review the technical requirements of the FOA and independently determine whether their proposed concept warrants a submission

4. See Program Policy Factors, page 30, under "B. Review and Selection Process"

5. Prospective applicants must review the technical requirements of the FOA and independently determine whether their proposed concept warrants a submission

6. Please see section I. Funding Opportunity Description B. Program Overview

7. This question requires clarification. The US manufacturing requirement applies, without any time restriction, to all Subject Inventions arising from awards.

Q127. As citations/references are counted towards the concept paper maximum page limit, can we use the font size of 9 for the citation/references in the footnote?

ANSWER: Please refer to Q.116 above.

Q128. I currently have an application in review (control # 1954-1731). I understand that decisions are scheduled to be made in April. If my application is rejected, I would potentially be interested in resubmitting a concept paper for OPEN 21 (DE-FOA-0002459) covering the same technology after addressing, if possible, any shortcomings identified in the application review. I suspect there are a number of other FOA-0001954 applicants thinking the same thing. If I understand the FPA-0002459 concept paper application process correctly, I am not able to submit a paper covering a research topic under review for another FOA. Will any decisions regarding FOA-0001954 applications be made prior to April 6, which is the deadline for FOA-0002459 concept paper applications? Naturally, I would rather not have my application (1954-1731) be rejected but if so, it would be good to hear before April 6 to leave time to resubmit especially if the rational for the rejection is a technicality or something that can be remedied.

ANSWER: Notifications for Topic T of DE-FOA-0001954 were sent on March 29, 2021. Applicants to DE-FOA-0001954 that were not selected to negotiate an award may submit a Concept Paper to OPEN 2021 (DE-FOA-0002459) on similar technical concepts.

Q129. The Initial Announcement indicates that Full Applications will be due approximately 45 days from receipt of DOE's Encourage/Discourage notification. What is DOE's anticipated date for issuing its Concept Paper notifications?

ANSWER: See first page of the FOA.

Q130. I sent in question Q42 and the answer is yes. I used my name for both the team member organization and the lead organization. However the concept paper general form will not let me proceed without a unique lead organization. How should this problem be resolved when I do not have an organization yet.

ANSWER: The Lead Organization field in the ARPA-E Funding Opportunity Exchange Concept Paper form is a Text field. You may enter placeholder information to get past the data validation checks in the website.

Q131. Can you provide a status update on when a decision will be made regarding our OPEN FOA 2021 Concept Paper submission?

ANSWER: Thank you for your patience. The OPEN 2021 Concept Paper merit review is in process. ARPA-E will send out Concept Paper response notifications to applicants at the end of the Concept Paper merit review process. Additionally, Full Application details and submission deadlines will be published on the ARPA-E Funding Opportunity Exchange website at that time.

II. Full Appliction Phase Questions:

Q132. I recently received a notification of Concept Paper response to my DE-FOA-0002459 OPEN 2021 Concept Paper submission from ARPA-E. The notification letters stated that ARPA-E considered comments by subject matter reviewers in evaluating the Concept Papers. Are these comments available to view?

ANSWER: Due to the high volume of submissions, ARPA-E is unable to provide specific comments and feedback on individual Concept Papers. Also, per the DE-FOA-0002459 OPEN 2021 funding opportunity document Section VI.2 Concept Paper Notifications: "ARPA-E will not provide feedback in the notification letter." Additionally, please refer to General FAQ 6.7

Q133. Your help is needed to tell me how many total white papers were received for this Open Call DE-FOA-0002459 OPEN 2021 and how many total were encouraged to provide a full proposal. Also, if possible, we would like to know the comments that were offered concerning our white paper,

ANSWER: ARPA-E does not disclose either the number of submitted Concept Papers or the number of Concept Papers that were encouraged to submit Full Applications for pending FOAs. Typically, only one-third to one-half of applicants are encouraged to submit Full Applications.

Please refer to FAQ 132 above and General FAQ 6.7.

Q134. We are excited about this opportunity, and are in the process of compiling our full application package now. We do have a question regarding how to bid the 2 phase program. Do you wish for the proposal package to include technical and financial details for both Phase 1 and 2 of the program?

ANSWER: Yes. Please refer to the OPEN 2021 Technical Volume template, available at https://arpa-e-foa.energy.gov, and FOA Sec. IV.D.3, "Content and Form of Full Applications." Prime Recipients must complete each tab of the Budget Justification Workbook for the project as a whole, including all work to be performed by the Prime Recipient and its Subrecipients and Contractors.

Q135. In the OPEN 2021 FOA it states:

"ARPA-E generally does not fund projects that involve foreign travel. Recipients are required to obtain written authorization from the ARPA-E Program Director before incurring any foreign travel costs and provide trip reports with their reimbursement requests."

We are proposing to work with a company in Canada – does this still apply? If so should we just go ahead and include the travel in our budget then, if we get the award, obtain the required written authorization afterwards?

ANSWER: Yes this applies to Canada and yes you can include the travel in your proposed budget, although ARPA-E reserves the right to approve or deny the proposed travel.Additionally, please refer to General FAQ 10.3.

Q136. I've been encouraged to submit a full proposal for the OPEN funding call (I'm the PI), and I have a couple of questions:

1) **Is it okay to add co-PI's to my team that weren't listed on my concept paper?**
2) **Is it okay to increase my budget from the amount listed on my concept paper?**

ANSWER: 1. Yes. The ARPA-E eXCHANGE system will allow applicants to expand or otherwise modify the Project Team, including technical points of contact, for their Full Applications. Additionally, please refer to FOA Section III.A. Eligible Applicants

2. Yes, applicants may edit the budget proposal in the Full Application phase of the submission process.

Q137. The response to my concept paper was discouragement. However, I am planning to submit the Full Application. As I am working on the Full Application, I realize that I need to reduce the scope of my proposal. My questions are:

1. **Would you allow me to reduce the scope of my proposal?**
2. **Would you allow me to change the name of the project title?**
3. **Would you allow me to rewrite the Abstract?**
4. **Would you allow me to change the team member?**
5. **Would you allow me to change the lead organization percent effort?**

ANSWER: Yes, Applicants may edit the content of their submission in the Full Application phase of the submission process. Additionally, please refer to FOA Section III.A. Eligible Applicants

Q138. Are there templates for the following:

1. **Personal Qualification Summaries**
2. **Letters of Intent and/or Letters of Support from Team members**

And, where to upload them on the submission website?

ANSWER: Please refer to FOA Sec. IV. D. "Content and Form of Full Applications" Applicants may also want to refer to General FAQ 4.15 and FOA Sec. VI.B.3. "Proof of Cost Share Commitment and Allowability"

Additionally, Applicants may refer to the "Compliant Criteria", "Responsiveness Criteria", and "Applications Specifically Not of Interest" sections of the FOA.

Please refer to the eXCHANGE manual located here: https://arpa-e-foa.energy.gov/Manuals.aspx

Q139. Since applying for the OPEN grant, my company changed its legal name. Can I use the current legal name for my full application, or must I stick with the former name which I used for the concept paper?

ANSWER: Applicants may edit the Lead Organization name in the Full Application phase of the submission process. Additionally, please refer to General FAQ 7.11.

Q140. I have a PI that has been approved to submit under this opportunity. I do not see anything about Indirect Cost (IDC) rate limits. Is there IDC assessed on this funding and if so, is there a rate limit?

ANSWER: All indirect cost rate limits must be in accordance with 2 CFR Part 200.414. Additionally, please refer to General FAQs 7.25 and 10.23.

Q141. Regarding the ARPA-E OPEN 2021 funding opportunity:
Are letters of commitment from cost-share contributors/partners required in the full proposal package? Or are those letters to be provided only after an award has been made?
If the letters are required in the full proposal package, please advise where they should be attached/uploaded into ARPA-E Exchange.

ANSWER: Please refer to General FAQ 4.15

Q142. Where can applicants find the Department of Energy's Determination of Exceptional Circumstances (DEC) under the Bayh-Dole Act to Further Promote Domestic Manufacture of DOE Science and Energy Technologies?

ANSWER: The DEC can be found at the following link: https://www.energy.gov/gc/articles/department-energy-determination-exceptional-circumstances-under-bayh-dole-act-further

Q143. In the concept paper solicitation, the total budget was $100M which would be used to fund 30-50 projects; I just found that in the full proposal solicitation the total budget has been increased to $175M, but the number of projects was not increased. Does that mean we can budget more than that indicated in the encouraged concept paper to do more work?

ANSWER: The total budget was increased in Modification 1 of the FOA. Please refer to the language in Modification 1. Applicants may edit the content of their submission in the Full Application phase of the submission process. Additionally, please refer to FOA Sec. IV. D. "Content and Form of Full Applications"

Q144. We submitted a concept paper under the Open FOA (** Redacted ****). We have since been in discussion with the researchers on another concept paper (**** Redacted ****). We have identified potential synergies between our projects that would increase the impact of each proposal and would like to consider jointly applying should one or both concept papers be selected to submit a full proposal.**

ANSWER: Yes, that is allowable.