

## QUESTIONS AND ANSWERS

PLEASE REFER TO THE GENERAL FAQs SECTION OF ARPA-E'S WEBSITE ([HTTP://ARPA-E.ENERGY.GOV/?Q=FAQ/GENERAL-QUESTIONS](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. Who is on the Resource Team?

**ANSWER:** The Resource Team will consist of relevant technical experts, primarily from universities and DoE Laboratories. Steve Zinkle from the University of Tennessee, Knoxville, (UTK) is the Resource Team PI, and other current members are Jess Gehin (ORNL), Temitope Taiwo (ANL), Philip Fink (INL), Chris Stanek (LANL), and Kord Smith (MIT). Additional Resource Team members will be added after MEITNER FOA selections are made. PROSPECTIVE APPLICANTS ARE CAUTIONED THAT THEY MAY NOT CONTACT THE RESOURCE TEAM OR ITS MEMBERS TO DISCUSS THEIR SUBMISSIONS TO THE FOA. All questions shall be addressed to ARPA-E as set forth at FOA Section VII.A.

**UPDATE (7-Nov-2017):** Eric Ingersoll (Lucid Strategy) and Jason Quinn (Colorado State) have been added to the Resource Team. ARPA-E will update this FAQ response if members are added to the Resource Team prior to MEITNER FOA selections.

#### Q2. Can members of the Resource Team apply to the MEITNER program?

**ANSWER:** As set forth at FOA Section VIII.E, the Resource Team members listed above may not be part of any Applicant teams for the MEITNER program, **nor participate in preparation of any FOA submissions.**

**UPDATE (7-Nov-2017):** FOA Section VIII.K (not FOA Section VIII.E) is the correct reference for the aforementioned text.

#### Q3. What if I have questions about the Resource Team?

**ANSWER:** See the response to Q1.

#### Q4. As a summary, our proposal would look at how nuclear hybrid energy systems can provide economic and operational efficiencies. So one question is, does hybridization fit into the definition of an "enabling technology?" A second question is what are the expectations around collaboration?

**ANSWER:** Hybrid energy systems are not in the list of submissions specifically not of interest listed in Section III.C.3. It is expected that teams will find the personnel required and develop a plan for interaction to execute projects that are responsive to the FOA.

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**Q5. The MEITNER FOA discusses four key areas of interest in Sections 2.2.1 through 2.2.4, namely “system simplification”, “walkaway safe systems”, “materials and chemistry” and “modular and advanced manufacturing”. Is a proposal’s scoring contingent on including all four areas?**

**ANSWER:** The purpose of FOA Section I.B.2.2.1 through FOA Section I.B.2.2.4 is to illustrate some strategies that could be adopted and combined to work towards the FOA goals set forth in FOA Section I.D, Table 1. Criteria for assessing Concept Papers can be found at FOA Section V.A.1. Applicants are not required to address all four areas of interest in their concept paper.

**Q6. My colleagues and I are preparing a concept paper for submission to the MEITNER funding opportunity. We have some questions to ask about ... Please let us know a convenient time to have a conference call or google hangout.**

**ANSWER:** Per FOA Section VII (Agency Contacts), upon the issuance of a FOA only the Contracting Officer may communicate with prospective Applicants. Other ARPA-E personnel and our support contractors are prohibited from communicating (in writing or otherwise) with prospective Applicants regarding the FOA. This “quiet period” remains in effect until ARPA-E’s public announcement of its project selections.

During the “quiet period,” prospective Applicants are required to submit all questions regarding this FOA to [arpa-e-co@hq.doe.gov](mailto:arpa-e-co@hq.doe.gov). Questions and Answers (Q&As) about ARPA-E and the FOA are available at <http://arpa-e.energy.gov/faq>. For questions that have not already been answered, please send an email with the FOA name and number in the subject line to [ARPA-E-CO@hq.doe.gov](mailto:ARPA-E-CO@hq.doe.gov).

**Q7. Regarding Table 1 with the metrics listed: Metric #1 “Overnight Construction Cost” – Would cost reduction in advancements of the nuclear fuel fall into this metric or is that not considered overnight construction? In particular, additive manufacturing of the nuclear fuel for reduction in time and cost. If it doesn’t fall into this metric, do you think it would fall into another?**

**ANSWER:** The initial fuel loading should be included in overnight construction cost. Applicants are encouraged to explain how they are counting costs. If an applicant proposes to develop a new fuel technology, explain the cost impact on initial fuel loading and fuel costs over time.

**Q8. You state that you will “not support development of fundamentally new reactor core concepts nor the design of entire reactor plants.” However, you will support “enabling technologies for existing advanced reactor designs.” Can these “enabling technologies” include innovative software, numerical methods, or modeling tools?**

**ANSWER:** Applicants are encouraged to review the list of submissions specifically not of interest in Section III.C.3. Work that focuses solely on innovative software, numerical methods, or modeling tools would be considered to be “major software developments only,” and so this work would not be of interest.

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**Q9. I was wondering if I could get a pdf of the slides presented on the YouTube video for this opportunity?**

**ANSWER:** ARPA-E has provided the MEITNER FOA Presentation material (video and brief) for prospective applicants on the ARPA-E website <http://ARPA-E.energy.gov> “Engage” page in the “Webinars & Publications” section. ARPA-E also updated the webinar link in the “Description” section of the funding opportunity announcement on the ARPA-E Funding Opportunity Exchange website <http://ARPA-E-FOA.energy.gov> to link to the “ARPA-E MEITNER FOA Overview Webinar” on the ARPA-E website.

**Q10a. The webinar and the FOA state that new nuclear reactor core designs are not being considered and that only advanced reactor core designs that have been considered before are allowed. I was wondering what classifies as a design that has been considered before.**

**ANSWER:** Refer to FOA Footnote 4 (p.4) for a list of the general categories of technologies that have been considered before. Nonetheless, if a technology has been investigated in a substantial way, including having been built, that is a design that has been considered before.

**Q10b. The FOA emphasizes new energy generation and power conversion techniques. I am working on a new energy conversion technique that is actually in the core of the reactor. Would this concept still be considered even though it deals directly with the reactor core?**

**ANSWER:** Yes.

**Q11. Reference Article VIII, Section F, Title to Subject Inventions (3rd bullet). If a class patent waiver does not apply, when may a party request a waiver in accordance with 10 C.F.R. §784?**

**ANSWER:** For awardees that do not qualify for ARPA-E’s class waiver of title to subject inventions arising from ARPA-E projects, the procedures for requesting waiver of title, including the timing for submission of such requests, are addressed at 10 C.F.R. § 784.8. The bases for

requesting such waivers are discussed at 10 C.F.R. § 784.11. **Q12. For Funding Opportunity No. DE-FOA-0001798 (MEITNER) under section 3, Submissions Specifically not of interest:**

**a. Exploratory work in new nuclear core concepts.**

***I need further clarification. The call asks for revolutionary concepts and a proposal of a new technology is exploratory in nature, but section 3 it mentions this is not of interest to the call.***

**ANSWER:** Exploratory work of enabling technologies for advanced nuclear reactors is called for; exploratory work on new nuclear reactor cores is not of interest.

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### b. Full reactor plant designs

*Also, the call asks for wide range of design parameters or in another words full reactor plant designs, but under section 3 it is mentioned that this is not of interest.*

**ANSWER:** The FOA asks the enabling technology being developed to be placed in the context of the full reactor plant. Many design choices can have impacts throughout a system, so an integrated approach should be specifically addressed.

### c. Nuclear reactors that are based on fuels that are not expected to be available for large-scale commercial deployment in the foreseeable future (i.e., 15-20 years).

*I note that even minor changes to Zircaloy cladding takes on average ~25 years to commercially deploy (just based on the physics of irradiation time and PIE). I'm not sure what is exactly meant by the 15-20 years time frame constraint.*

**ANSWER:** Note that regulatory constraints are not to be considered. Use the guidance in Footnote 4 on page 4.

**Q13.** Table 1 of the reference FOA identifies a dose for the Emergency Planning Zone of 0.25 mSv over a period of a month. Per the EPA's Protective Action Guides ( EPA-400/R-17/001 | January 2017 [www.epa.gov/radiation/protective-action-guides-pags](http://www.epa.gov/radiation/protective-action-guides-pags)) the accident evacuation guidelines are 10 to 50 mSv over a period of 4 days. Public relocation recommendations are 20 mSv over the 1st year (1.7 mSv/month). Shouldn't the table be consistent with the EPA Guidelines?

**ANSWER:** Prospective applicants must use the information in Table 1 as presented.

**Q14.** Below are questions for the subject FOA.

- a. Page 29 (III-C-3): among the "submissions specifically not of interest", the solicitation mentions: "Nuclear reactors that are based on fuels that are not expected to be available for large-scale commercial deployment in the foreseeable future (i.e., 15-20 years)". Can this be clarified? Or is the answer provided in Amendment 1, i.e. "ceramic oxides, nitride, metal, triso clad, SiC clad, metal clad, liquid eutectic"?

**ANSWER:** Please see question 12c above.

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- b. Page 29 (III-C-3): among the “submissions specifically not of interest”, the solicitation mentions: “nuclear batteries w/o practical refueling options”. Can you please clarify what “practical” means? Is a long-life core considered “practical”?

**ANSWER:** Nuclear batteries, where all power is derived from decay of radioisotopes, are distinct from reactor cores where power is derived from fission reactions. Therefore, a long-life core would be outside of this scope. Moreover, new core designs are specifically not of interest to this FOA.

In terms of battery refueling, practical has less to do with timeframe and more to do with engineering challenge, materials availability, economics, etc. – i.e., could a business case be made to refuel the battery?

- c. Page 32 (IV-C): the 1st paragraph of the concept must contain the “Technical Category”? Can you explain what does this mean?

**ANSWER:** Provide a general category of the technology being proposed, e.g., sensors, analytics, power conversion, etc.

- d. Page 33 (IV-C): the text states: “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”. Please clarify how “concept” and “technology” differ. In other words, if two or more innovative technologies (e.g. an I&C device and an innovative heat exchanger) enable an advanced reactor concept to achieve the goals sought (low construction cost, walk-away safe etc..), can they be both part of the Concept Paper?

**ANSWER:** A collection of technologies working together can be considered a single concept.

- Q15. I just listened to the MEITNER webinar and I understand that core analysis is not called for. But I'm curious what the M&S "separately-funded resource team" mentioned in slide #9 will provide? If by this you mean that M&S of the subject Advanced Reactor in a given proposal will be done outside of ARPA-E \$, will this be via labs only or potentially univ tools & personnel too?

**ANSWER:** ARPA-E is funding a Resource Team that can conduct simulations or provide assistance conducting simulations. A variety of software will be available. ARPA-E anticipates that most of the software will be from DOE national laboratories, but this is not required. Other software, including software from universities, can be used. The Resource Team members will be from national laboratories, universities, and the private sector. See FOA Section I.E, "Technical Supplement: Additional Information on the Capabilities of the Resource Team", for more details.

Also, clarifying the first sentence of this question, depending on the details of the enabling technology, it's possible that some core analysis will be needed.

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**Q16. For the concept paper, it is asked to “Identify techno-economic challenges to be overcome for the proposed technology to be commercially relevant”. In case the proposed enabling technologies are, for example, innovative I&C or innovative manufacturing methods, and they are presented (as requested) in the context of an advanced reactor technology, should the requested “challenges” be referred to the “enabling technologies” or to the advanced reactor technology for which the applicant seeks commercialization? The reason for this question is that the reactor technology as a whole may have additional techno-economic challenges that are not part of the proposed enabling technologies.**

**ANSWER:** Specifically address the techno-economic challenges of the enabling technologies since those are the challenges that can be addressed in the MEITNER program.

However, if the advanced reactor for which the enabling technology is intended is not commercially viable, it is unlikely that the enabling technology will have a market. Therefore, it is worth pointing out any major techno-economic hurdles the advanced reactor has and how this enabling technology could have an impact on those techno-economic challenges.

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**Q17. I have four questions.**

**a) The footnote in page 4 of the FOE appears to indicate that water cooled SMRs are NOT being considered as "advanced reactor designs". Is this in fact a correct reading of the FOA?**

**b) Page 13 of the FOA states that applicants "must include quantitative analysis, with supporting calculations and references, that demonstrate how the envisioned technology will improve nuclear plant performance in these target areas". It may not be easy to meet this requirement when the total length of the concept paper is 6 pages. Would it be possible to get clarification on the level of detail expected to meet this requirement?**

**c) Page 13 of the FOA states that applicants "are required to quantify and justify how and how much they anticipate their technologies would improve during this Program. This discussion should include an explicit assessment of technical gaps and critical areas that are to be de-risked and a plan to reduce uncertainties in safety and cost." Once again, it may not be easy to meet this requirement when the total length of the concept paper is 6 pages. Would it be possible to get clarification on the level of detail expected to meet this requirement?**

**d) In page 5 of the "ARPA-E\_343\_Concept\_Paper\_Template\_MEITNER.doc" it states that "the concept papers shall not exceed 6 pages in length (5 pages with a schematic of up to 1 page)". Does this mean that the "text portion" of the concept paper cannot exceed 5 pages? or if someone does not have an schematic, or the schematic occupies less than 1 page, can the paper be 5.5 pages or even 6 pages (up to a total of 6 pages, clearly)?**

**ANSWER:** a As specified in the list of technologies specifically not of interest in Section III.C.3, light water technologies are not of interest to this FOA.

b) Provide the most relevant details in a way that makes sense for the enabling technology. If there is an area where the enabling technology will not have an impact because it is not related, state that this metric will have no change. E.g, a new robotics system for conducting maintenance may not change the reactor performance in terms of process heat or grid integration. In this case, simply state there is no change. The focus would be on how the new system impacts O&M, safety, construction time, etc

c) Include the information considered most relevant at a level of detail that makes it clear what can be accomplished during this program. We are interested in understanding the impact participating in MEITNER will have on Applicant's technology development. Thus, we are looking to understand, to the fullest degree possible, what would be accomplished with the provided resources.

d) As set forth at FOA Section IV.C.1.a, the schematic is a required element of any Concept Paper submitted for ARPA-E's consideration. The schematic must not exceed one page. The balance of the

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Concept Paper must not exceed five pages, including text, graphics, figures, and tables, but excluding the Bibliography.

**Q18. Table 1 in the FOA lists 7 target areas that the proposed work must address. However, making a credible assessment of a particular technology's impact even on a single metric would require an extremely thorough study, well beyond the scope of a 6 page white paper. Furthermore, it seems highly unrealistic that one project - other than a complete core or plant redesign (which is excluded by the FOA) - could meaningfully improve every single one of the listed metrics. Would ARPA-e be interested in technologies that focus on improving one metric specifically?**

**ANSWER:** ARPA-E may be interested in a technology that only improves one area if it has a very large impact in that one area. In general, we would prefer technologies that have large impacts in more than one area as ultimately all areas need to be addressed for new reactor construction. It is recommended Applicants make a strong case about why their technology will have a major impact on the ability to commercialize and build advanced reactors. Please also see the answer to Q17b and c.

**Q19. We are a US company, our CEO, a US citizen/resident, would serve as the Principal Investigator. We have a group of scientists in Europe working under its supervision who would perform some work in connection with the Meitner FOA.**

**We would like to confirm that under the FOA and ARPA-E rules that this would be a permissible working structure and would not require a waiver.**

**ANSWER:** ARPA-E will not pre-assess the eligibility of a proposed teaming structure. Refer to the DE-FOA-0001798 MEITNER funding opportunity announcement document for guidance on applicant eligibility. ARPA-E requires all work to be performed in the United States. Applicants may request a waiver of this requirement when submitting their Full Application if they wish to perform some work overseas by completing Item 5 of the Business Assurances and Disclosures Form; however, foreign work waivers are rarely granted. Applicants may also review the ARPA-E website <http://ARPA-E.energy.gov> FAQ page General Questions Sections 3, "Applicant Eligibility," and 13, "Business Assurances and Disclosures Form," for additional information.

**Q20. Is a development of new component within the scope of the FOA, such as a new heat exchanger or a pump, or does the proposal have to address the new/improved concept as a holistic system? Is one preferred?**

**Is holistic assessment of a new or improved system required for the FOA?**

**ANSWER:** Individual components, such as a new heat exchanger or pump, must be put into the context of an entire reactor system. That is, how does the heat exchanger change not only the reactor performance/efficiency, but also the construction time and cost, the O&M schedule, etc.

**Q21. Define "quick deployability". Should it be interpreted as a reasonably high Technology Readiness Level as to allow deployment in the near-term, or as rapid construction?**

**ANSWER:** "Quick deployability" means available for rapid construction.

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**Q22. a. Our first question involves the definition of the “large business” in the context of section III. B.2 on Cost Sharing. I think the IRS code defines the break between small and large businesses at 500 employees. What defines if a business is “large” for this FOA?**

**b. Our second question deals with the definition of the term “IR&D funds” or independent research and development funds. The following statement is found on page 25 of the FOA: “In addition, Project Teams may not use independent research and development (IR&D) funds (47) to meet their cost share obligations under cooperative agreements”.**

We attempted to find more information from Reference 47 as given on page 25 of the FOA (Federal Acquisition Regulation Subsection 31.205-18.). However, we are still confused as the term “IR&D” was used within definition of the term “IR&D” in Reference 47. The dictionary contains several definitions for the word “independent”, including unrelated, separate and unconnected. Can you please define the intended context for the term IR&D for this FOA?

**c. The third question is related to the M&S efforts, and the role of the M&S sub-team. The following statement appears on page 12 of the FOA: “ARPA-E anticipates that most work will be based in M&S, but welcomes targeted experiments that substantially contribute to technology development”.**

Our proposal deals with development of a larger size additive manufacturing machine that uses a laser and a powder bed. The aim is to develop a capability to produce reactor components more with greater affordability.

**1. Is this type of proposal appropriate for MEITNER? Our plans for modeling include: (i) modeling of the performance of a sub-scale prototype heat exchanger component (which will be connected to other components during mock testing); (ii) submission of irradiated AM samples to NEAMS; (iii) modeling of chamber airflow in the larger AM machine; and (iv) modeling of the AM machine design using a CAD package.**

**2. Is this level of M&S appropriate for MEITNER?**

**d. Can we confirm that the Prime Recipient entity must be identified at the time of submission of the concept paper?**

**ANSWER:** a. Organizations eligible for reduced cost share requirements are identified at FOA Section III.B.3. All other organizations must provide cost share as set forth at FOA Section III.B.1.

b. The definition of independent research and development (IR&D) set forth at FAR 31.205-18(a) is clear. Monies budgeted for and costs claimed as IR&D expenses submitted to the Federal government

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for reimbursement, either directly or indirectly, cannot be used as cost share under any resulting cooperative agreement.

c.1 ARPA-E funds innovative, transformative research, not solely scale-up of existing technologies or capabilities. Prospective Applicants may find it helpful to review the section of the FOA that lists the types of submissions that may be deemed nonresponsive. In particular, Section III.C.2 notes that “submissions for large-scale demonstration projects of existing technologies” may be deemed nonresponsive.

Further note that the technology must be placed in the context of a full reactor plant by discussing how it will impact performance, constructability, safety, etc. of the reactor.

c.2 There is no target amount of M&S for the MEITNER program. Section IV.C.1.b, Proposed Work in the Concept paper, outlines what needs to be included.

d. Yes, however, Applicants may change the teaming structure in the Full Application phase of the submission process.

**Q23. I am writing this note to enquire whether proposed research on protecting the control systems of a power plant from malware would be in scope for MEITNER?**

**I am doing research in this area, and am considering to submit a concept paper that explores advanced modeling and simulation for plant cybersecurity**

**ANSWER:** Please see the above answer to Q8. However, this kind of research as part of a larger context could be valid, e.g. an entire system for controls and monitoring could be of interest. Software development alone, however, is not.

**Q24. Can one PI submit multiple concept papers and applications?**

**ANSWER:** ARPA-E provides guidance on this question in the the FOA Section III.C.4, Limitation on Number of Submissions, and question 6.4 of the ARPA-E frequently asked questions web page (<http://ARPA-E.energy.gov/?q=faq>), General Questions section.

**Q25. Thank you in advance for answering these questions:**

**a. One of the plant’s performance metrics in Table 1 is “Onsite backup power”. Please clarify whether this refers to safety-significant backup power only**

**b. In regard to the budget-related information to include in the concept paper, page 32 says: “Proposed Funding (Federal and Cost Share) is optional”, whereas page 34 says: “Describe in 1-2 sentences a breakdown of the project budget by organizations if multiple organizations are involved with the Applicant team”. In consideration that including the proposed funding is optional, please clarify what type of breakdown needs to be included when multiple organizations are involved.**

**ANSWER:** a. Yes, this refers to backup power required for maintaining the plant in a safe condition.

b. The referenced text on p.32 is describing the content of the Concept Paper’s first paragraph. The referenced text on p.34 is describing the content of the Concept Paper’s Team Organization(s), Capabilities, and Budget Breakdown section.

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**Q26. To submit a compliant and responsive Concept Paper, I would like to make sure that I understand what a 1pg schematic in the FOA means. Is it referring to ONE figure/diagram? Can it be the combination of multiple figures with further description (sentences/paragraphs)?**

**ANSWER:** Refer to FOA Section IV.C.1.a for instructions on the form and content of the schematic.

**Q27. I have a couple of additional questions regarding the FOA:**

**a. While I understand ARPA-e is not interested in software development projects, would there be interest in benchmarks for software based models?**

**b. The FOA mentions that the white paper page limit is 5 pages plus one schematic - can you clarify? Does this mean all figures have to go into a separate page, or can the white paper include inline figures? If the latter, would this mean the limit is 6 pages including inline figures?**

**ANSWER:** a. Benchmark development is not an enabling technology of the type that is requested by the MEITNER program. "ARPA-E funds research on and the development of high-potential, high-impact energy technologies that are too early for private-sector investment."

**b.** Refer to FOA Section IV.C.1.a for instructions on the form and content of the schematic.

**Q28. The FOA states that "exploratory work in new nuclear core concepts" and "full reactor plant designs" are specifically not of interest (p. 28). Would a project that jointly addresses key enabling technologies within U.S. reactor design along with recent, innovative reactor core concepts be within the scope of this opportunity? Also, what constitutes a "full reactor plant design"?**

**ANSWER:** Please see the answers to questions 12a and 12b above and question 2.7 on the ARPA-E frequently asked questions web page (<http://ARPA-E.energy.gov/?q=faq>).

**Q29. Your Concept Paper template states a maximum length of 6 pages, but the FAQs continually mentions 4 pages maximum. Which is it?**

**ANSWER:** DE-FOA-0001798 and its corresponding Concept Paper template are correct as written. Concept Papers must not exceed six pages in length (five pages plus a schematic up to one page in length) as instructed at FOA Section IV.C.

### II. Full Application Phase Questions:

**Q30. The latest FOA mentions Technical Design Targets and Associated Indicators (Section I.D) but does not specify where this information should be provided. Could you please clarify if there is a strict associated deliverable?**

**ANSWER:** The technical design targets are in Table 1 in FAO Section I.D.1 and the associated indicators are given in Table 2 in FOA Section I.D.2. Please provide the data as instructed in those sections.

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**Q31. I am hoping you can answer a question in regards to the technoeconomic analysis for proposed innovations in the context of advanced reactor designs. In the TEA Workbook, there does not appear to be a way to account for additional co-produced sources of revenue in the LCOE. How should this be addressed in the application?**

**ANSWER:** As discussed in the TEA Workbook webinar, the workbook is not intended to account for co-product sources. We recognize that this is important for understanding the overall economic viability of the design. Please describe co-product generation strategy in the Full Application. Again, as mentioned in the TEA Workbook webinar, the workbook is only one component of application evaluation.

**Q32. “ Can you provide some clarification on the fraction of the work scope that can be experimental? Are there limits if the matching funds from industry is dedicated to experimental work while most of the federal funds can be geared primarily towards modeling and simulation? What fraction of the federal funds can be used for experimental work?”**

**ANSWER:** There are no firm limits, in part because different enabling technologies will need different types and scales of testing. It is appropriate to dedicate funds in whatever way is most impactful for the proposed project.

**Q33. Are we allowed to change some of the performance and cost targets in Table 1 from the Concept Paper to the Full Application?**

**ANSWER:** Yes.

**Q34. The technical volume template has the executive summary on the same page as the title block and proprietary information disclaimer and it is limited to one page. Can the executive summary be moved to page 2? This is so we can use the full page and have a “clean” cover page.**

**ANSWER:** As set forth at FOA Section IV.D.1, the Full Application Cover Page/Executive Summary may not exceed one page.

**Q35. For the TEA Workbook, “Is it compliant to add additional sheets to the TEA Workbook to substantiate assumptions on the ‘User Inputs and Cost Calcs’ tab?”**

**ANSWER:** No, do not add additional sheets. Explanations for assumptions can be given in the notes section in the User Inputs and Cost Calcs tab or in the Full Application itself. If specific citations are needed, they can be added at the bottom of the User Inputs and Cost Calcs and referenced in the notes section.

**Q36. Can you please provide guidance on the following? Business Assurances and Disclosure Form:**

**1. For National Laboratories (FFDRC), are they expected to fill out the current and pending support section in the Business Assurances and Disclosure form?**

**ANSWER:** Yes.

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### **2. If so, should programmatic funding from different DOE programs be included? Should GAIN Vouchers be included?**

**ANSWER:** Yes. For additional information refer to FOA Sections IV.D.6 and VIII.C, the Business Assurances and Disclosure Form, Item 3, and General FAQs 13.5 and 13.7.

### **Q37. Do all entries in Table 1 (FOA page 15) need to be filled out for the reference advanced reactor, or only the entries that are relevant and impacted by the proposed technology?**

**ANSWER:** All entries need to be filled out. The applicant may indicate that the entered number is not affected by application of the applicant's technology.

### **Q38. If a proposed technology is generic - applicable to multiple reactor types, and does not impact categories like overnight construction cost, on-site construction time, or ramp rate without steam bypass, how should the corresponding entries in Table 1 (FOA page 15) be addressed in the proposal?**

**ANSWER:** The applicant may indicate that the entered number is the performance of whatever reactor the proposed technology is applied to.

### **Q39. For table 2 (page 16-17 of FOA), in order to address the impact of proposed technology on items listed, which reactor type should be considered a base case? Would it be a particular advanced reactor used as a reference case or a "current state-of-the-art" LWR?**

**ANSWER:** The "base case" is the reactor to which the proposed technology is being applied. If the technology applies to multiple reactors, you may indicate that it is the base performance for whatever reactor is selected. For purposes of the proposal, it may make sense to choose one reactor type for a case study. In the application, one could indicate that, while the technology applies to multiple reactors, this is a case study of one reactor type for illustrative purposes.

### **Q40. Is the applicant required to replicate the entire Table 2 (FOA pages 16-17) in the proposal as is with each item addressed either as "Improved," "Not Impacted," or "Not Related," or can the applicant choose to only address "Improved" and "not impacted" items and omit the "Not Related" items, which would save some space for other relevant proposal content?**

**ANSWER:** The applicant may omit "not related" items. Please indicate in writing that this was the approach taken to avoid confusion.

### **Q41. If a proposed technology does not affect overnight construction cost, does the applicant need to fill out the cost categories in the TEA workbook that pertain to construction cost (account 21)?**

**ANSWER:** Yes. You may use the reference values and indicate in the notes that the technology does not cause any changes.

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**Q42. If a proposed technology does not affect all areas of overnight construction (e.g., radiation monitoring system, which does not affect structures and improvements), does the applicant need to fill out all categories of the overnight construction cost listed in the TEA workbook or just the account that captures the radiation monitoring system?**

**ANSWER:** Include all areas listed in the workbook. See MEITNER FAQ No. 41.

**Q43. Is the 5% the total TTO spent/Total Cost to Government or Total TTO cost to Government/Total Cost to the Government?**

**Example: If we are seeking \$2.0M of federal government funds (with an additional 20% Cost Share), do we need to spend a total of \$100K on TTO or a Total of \$125K?**

**ANSWER:** Refer to FOA Section IV.G.8.

**Q44. Two questions:**

**Summary Slide:**

1. On the top right, "ARPA-E funds": is this total project cost, or only the share we're asking from ARPA-E (total minus cost share)?

**ANSWER:** The amount being sought from ARPA-E.

**Technical Volume:**

2. For the table on metric improvements, if the discussed technology has potential for BOTH 7a (ramp rate) and 7b (process heat temperature) improvements, can we list both?

**ANSWER:** Yes.

**Q45. Typically, national laboratory PIs are excluded from the requirement to complete a list of current and pending support (because all of their support is federal, the list would be extensive). Are national laboratory PIs exempt from this requirement in the MEITNER FOA as well?**

**ANSWER:** Refer to MEITNER FAQ No. 36.

**Q46. We are unsure about the cost share requirements on the MEITNER FOA. The FOA appears to say that a consortium composed entirely of US small business entities, FFRDCs, and US universities is only subject to 10% cost share, regardless of the distribution of effort within those three categories. We wish to confirm that a consortium in which the small business performs 50% of the work, an FFRDC performs 40% of the work, and a university performs 10% of the work, that the total cost share the prime recipient is responsible for is only 10% of the total project costs. Is this true?**

**ANSWER:** Refer to FOA Section III.B.3.

## QUESTIONS AND ANSWERS

**Q47. Who has access to the SF424 Worksheet after it is submitted to ARPA-E?**

**ANSWER:** Refer to FOA Sections V.B.2 and V.B.3.