

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. Questions for week ending: MARCH 4, 2016

Q1. I have a question regarding this FOA. I know it mainly focuses on solid ionic conductors, but will any research on composite membrane structures (to work with liquid electrolytes) that enable Li electrode cycling considered by this FOA?

ANSWER:

ARPA-E will not pre-assess the eligibility of an applicant's anticipated submission. Applicants are encouraged to review Section I (Funding Opportunity Description) of the Integration and Optimization of Novel ION Conducting Solids (IONICS) Funding Opportunity Announcement (FOA) and make their own determination to submit a Concept Paper or not to submit a Concept Paper.

Also, see ARPA-E's FAQ page at <http://arpa-e.energy.gov/faq>. In particular, FAQ # 7 under the Subheading "General Questions on Funding Opportunities" provides as follows: "I have developed a technology that may be a good fit for an ARPA-E FOA. Will ARPA-E review my idea and let me know if it is responsive to the FOA? ARPA-E will review compliant and responsive concept paper submissions and provide feedback either encouraging or discouraging submission of a Full Application. See the 'Application Process Overview' section of the FOA for Concept Paper review process. Concept Paper submissions are compliant if they meet the 'Compliant Criteria' of the FOA, and are responsive if they meet or exceed the 'Technical Performance Targets' provided in the FOA and do not fall under the 'Applications Specifically Not of Interest' section of the FOA."

Q2. Our intention is to use XYZ in our submission under the IONICS FOA. Here are some technical details supporting our concept. . . . My question is whether our proposed approach is responsive to this solicitation.

ANSWER: ARPA-E will not pre-assess the eligibility of an applicant's anticipated submission. Applicants are encouraged to review Section I (Funding Opportunity Description) of the Integration and Optimization of Novel ION Conducting Solids (IONICS) Funding Opportunity Announcement (FOA) and make their own determination to submit a Concept Paper or not to submit a Concept Paper.

Also, see ARPA-E's FAQ page at <http://arpa-e.energy.gov/faq>. In particular, FAQ # 7 under the Subheading "General Questions on Funding Opportunities" provides as follows: "I have developed a technology that may be a good fit for an ARPA-E FOA. Will ARPA-E review my idea and let me know if it is responsive to the FOA? ARPA-E will review compliant and responsive concept paper submissions and provide feedback either encouraging or discouraging submission of a Full Application. See the 'Application Process Overview' section of the FOA for Concept Paper review process. Concept Paper submissions are compliant if they meet the 'Compliant Criteria' of the

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Q3. If the proposal is submitted by an academic institution, is an industry partner essential for the ARPA-E DE-FOA-0001478? If the academic institution can demonstrate the technology proposed at the university lab with a larger cell, is it fine to propose without an industry partner?

ANSWER: There is no requirement for academic institutions to team with an industry partner. Applicants should consider that, as stated in Section I.B.1 (Summary) of the FOA, it is desirable for teams to have the competence to guide technical developments in a manner "to address large-area fabrication and low-cost processing." Potential applicants are encouraged to review Section III (Eligibility Information) and Section IV.C.1.d (Team Capabilities) of the FOA for additional information.

Q4. We are interested in submitting a proposal in response to the Category 3 (Alkaline conductors with high chemical stability and conductivity) of this FOA.

Who should we talk to about our concept paper ideas? Could you please notify us about the Program Director's information for this specific category?

In addition, we can't find the Concept Paper Template on your website. Could you please send us the link to that document?

ANSWER: Upon the issuance of a FOA, only the ARPA-E Contracting Officer may communicate with Applicants. ARPA-E Program Directors, other ARPA-E personnel and support contractors are all prohibited from communicating (in writing or otherwise) with 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 are required to submit all questions regarding this FOA to ARPA-E-CO@hq.doe.gov. Please see Section VII.A Communications with ARPA-E for further guidance on how to communicate with ARPA-E about this funding opportunity. Applicants can access the Concept paper template in the "Required Application Documents" section of the DE-FOA-0001478 IONICS FOA on the ARPA-E Funding Opportunity Exchange website (<http://ARPA-E-FOA.energy.gov>).

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Q5. I have a quick question in regards to the topical areas in the ARPA-E IONICS FOA. Category 2 specifically mentions the development of selective and low-cost separators for batteries with liquid reactants. Do semisolid (slurry)-based electrolytes fall under this category as well, in addition to the more traditional soluble redox-active species such as vanadium? Or would a proposed semi-solid flow battery be submitted under category 4 (other approaches)?

ANSWER: ARPA-E will not pre-assess the eligibility of an applicant's anticipated submission. Applicants are encouraged to review Section I (Funding Opportunity Description) of the Integration and Optimization of Novel ION Conducting Solids (IONICS) FOA and make their own determination to submit a Concept Paper or not to submit a Concept Paper.

Also, see ARPA-E's FAQ page at <http://arpa-e.energy.gov/faq>. In particular, FAQ # 8 under the Subheading "General Questions on Funding Opportunities" provides as follows: "Can ARPA-E advise applicants as to which Category and/or Subcategory is appropriate for specific technology concepts? Applicants must choose the appropriate Category and Subcategory for their submission based on technical descriptions the Categories and/or Subcategories provided in the FOA."

II. Questions for week ending: MARCH 21, 2016

Q6. A company has offered to contribute cash cost share to a team of non-profits responding to IONICS. The company will not perform work on the project or receive any tangible goods or services in return, but it may request a role as a member of an unpaid panel of industry advisors. Is the team of nonprofits still eligible to participate with just 5% cost share? 100% of the work will be performed by non-profits.

ANSWER: Please see the following question and response from the ARPA-E website (<http://arpa-e.energy.gov> FAQ page - General Questions section:

Can ARPA-E tell me whether my project team qualifies for reduced cost share?

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.

Please refer to the ARPA-E' website FAQ page General Questions section for answers to many general questions about ARPPA-E and ARPA-E's funding opportunity announcements.

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Q7. We are planning to submit a concept paper for DE-FOA-0001478 (cat #1) in collaboration with a small business and a U.S. Government research center. We want to know if the U.S. Government research center is required to share the cost for their budget or do we have to bear the cost share.

ANSWER: See Section III.B (Cost Sharing) of the FOA. See also ARPA-E's FAQ page at <http://arpa-e.energy.gov/faq>. In particular, see the following questions and corresponding answers under the Cost Sharing Subheading:

- How is the cost sharing requirement calculated?
- Can Federally Funded Research and Development Centers (FFRDCs) and Government-Owned Government-Operated Laboratories (GOCOs) contribute cost share?
- Our project team includes several members. Does each team member need to contribute cost share equally?

Q8. Does the Concept Paper 4-page limit include or exclude the Cover Sheet?

Background:

- *In the Concept Paper template, the instructions read, "In addition, the cover sheet of the Concept Paper must also include the disclaimer provided in Section VIII.E of the FOA, and every line and paragraph containing proprietary, privileged, or trade secret information must be clearly marked with double brackets or highlighting."*
In the Frequently asked Questions regarding the Cover Sheet for Concept Papers, the answer is "A cover sheet is not typically required for Concept Papers; therefore, ARPA-E does not provide a separate template for a cover sheet."

ANSWER: A cover sheet does not count against the 4-page limit as long as the cover sheet only includes the disclaimer provided in Section VIII.E of the FOA.

Q9. As for Category 1 deliverable, does the program require device development with >1000Wh/L and >400Wh/kg energy densities as addressed in metric 1.14, or simply development of the solid electrolyte separator (component development only) with testing of the solid electrolyte in Li half cell, and full cell formats with a conventional Li-ion cathode? Which is more preferable? If former is true, does it accept Li-sulfur cell development to demonstrate with >1000Wh/L and >400Wh/kg capability?

ANSWER: Per Section I.E (Technical Performance Targets) of the IONICS FOA: both symmetric cell (Li metal vs. Li metal) testing and full cell (Li metal vs. a cathode) testing are required. Full cell testing may be done with a conventional Li-ion cathode and liquid electrolyte to reduce complexity. The solid Li⁺ conducting separator must be suitable for integration into a cell that achieves metric 1.14.

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III. Full Application Phase Questions:

Q10. I have a question regarding the start date for this project. On page 28, it says January 2017, but on pages 53 & 55, it says November 2016. Which date should be use for our proposal submission?

ANSWER: Disregard the dates set forth on pp. 53 and 55. The anticipated effective date for awards resulting from this FOA is January 2017 or as negotiated with ARPA-E.