

## 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:

#### **Q1.1 Will DOE entertain next generation ceramics including SiC – SiC, Si3N4, or HfB4? ...**

**ANSWER:** ARPA-E cannot comment on the suitability of the proposed material systems prior to receiving the formal application. Prospective applicants are encouraged to review FOA Section III.F.3 (Submissions Specifically Not of Interest) of the DE-FOA-0002338 document, which includes 'Submissions seeking to improve currently known structural ceramics and ceramic matrix composites (CMC)'. In addition, please note that the proposed material system should meet all other technical metrics mentioned in Section I.C.7 of the DE-FOA-0002338 document including ductility and fracture toughness.

#### **Q1.2 Is DOE interested in next generation of consolidation technologies for ceramics? E.g. plasma sintering.**

**ANSWER:** ARPA-E cannot comment on the suitability of the proposed manufacturing method prior to receiving the formal application. Prospective applicants are encouraged to review section I.C.5, Topic 3 (manufacturing process development) of the DE-FOA-0002338 document. The proposed manufacturing method should meet technical and cost metric referenced in the FOA.

#### **Q1.3 Is DOE interested in next generation consolidation technology for refractory metals? E.g. plasma sintering.**

**ANSWER:** Refer to ULTIMATE SBIR/STTR FAQ Q1.2.

#### **Q1.4 It appears that ULTIMATE is focusing on conventional geometries of blades with cooling passages. Is DOE interested in bulk materials sans cooling passages with bare surfaces or coated surfaces?**

**ANSWER:** Demonstration of manufacturing feasibility through production of a generic turbine blade is required during Phase 2 of the program. During Phase 2 the geometry of the turbine blade should mimic an operational unit.

#### **Q1.5 It appears that a workshop was hosted by DOE last fall in Seattle on this topic, but no outcomes of the workshop were posted. When will DOE share the workshop agenda, participants list, and summary reports?**

**ANSWER:** Publicly available information related to the workshop held in Seattle can be found on the ARPA-E website at <https://arpa-e.energy.gov/?q=events/ultra-high-temperature-materials-power-generation-applications-workshop>.

## QUESTIONS AND ANSWERS

**Q2. Are the following available from the workshop hosted by the Department of Energy for the public to attend in Seattle last fall. <https://arpa-e.energy.gov/?q=events/ultra-high-temperature-materials-power-generation-applications-workshop>?**

**ANSWER:** Publicly available information related to the workshop held in Seattle is posted in the ARPA-E website <https://arpa-e.energy.gov/?q=events/ultra-high-temperature-materials-power-generation-applications-workshop>.

**Q3. Could you please advice what is the difference between DE-FOA-0002337 and DE-FOA-0002338 – they both seem to have exactly the same description and requirements. They also appear to be for the same DOE program - ULTIMATE**

**ANSWER:** Prospective applicants are encouraged to read the funding opportunity announcements and independently assess if a submission is warranted under DE-FOA-0002237 or DE-FOA-0002238. DE-FOA-0002238 is targeted at small business concerns under the Small Business Innovative Research (SBIR) and Small Business Technology Transfer (STTR) programs, and reflects the unique rules and regulations applicable to those programs. Entities that qualify as “Small Business Concerns” are strongly encouraged to apply under DE-FOA-0002238. To determine eligibility as a “Small Business Concern” under DE-FOA-0002238, review the eligibility requirements in Sections III.A-III.D of the FOA.

**Q4.1 What are the maximum budget and duration for Phase I SBIR?**

**ANSWER:** As set forth in FOA Section II.A, the maximum amount of a Phase I award is \$256,580. SBA’s SBIR/STTR Policy Directive states that the SBIR Phase I period of performance should not exceed six months, but provides the agency with discretion to adjust this period. ARPA-E is not dictating a specific length to each SBIR Phase, but rather leaves it to each applicant to propose a period of performance for each SBIR Phase that will fit within the 42 month maximum term for a combined Phase I/II/IIS award.

**Q4.2 In [FOA Section] III.A.I, "If applying as the lead organization, the Small Business Concern must perform at least 66.7% of the work in Phase I and at least 50% of the work in Phase II and Phase IIS, as measured by the Total Project Cost. If multiple small business organizations and universities team up, and one of the small business is the lead organization [does t]he "66.7%" refer[] to the lead small business, or the sum of all the small business organizations?**

**ANSWER:** It refers to the amount of work, as measured by proportion of total project cost, that must be performed by the Prime Recipient as that term is defined in FOA Section IX.

**Q4.3 "Table I: Basic threshold of mechanical properties for base alloys and coatings, and manufacturability criteria" (refer to FOA Section I.C.7, p.13), and "Table II: Comprehensive benchmark metrics of ultrahigh temperature alloys, coatings, and manufacturability criteria" (refer to FOA Section I.C.7, p.15). Do the proposed base alloys and coatings need to meet all of the metrics in the Tables? Our proposed**

## QUESTIONS AND ANSWERS

**material systems will have extraordinary properties in some categories, but not all of them. Is our proposal responsive to the FOA?**

**ANSWER:** Proposals may be deemed responsive even though not all properties mentioned in the technical metric section of the FOA as long as the approach may result in significant performance advantage. Referring to Section I.C.7, Subsection 7.1.2:

*Specific alloy compositions may satisfy most of the metrics in Table II while not meeting one or two of them. In such circumstance performers are required to submit written requests for deviation from the technical metrics listed in Table II. The justifications for deviations shall include specific potential applications and/or how such alloys can be incorporated in a turbine system.*

**Q5. Can our small business submit an STTR concept paper as the lead organization and be a member of a team submitting a concept paper to the FOA (DE-FOA-0002337)?**

**ANSWER:** Yes.

**Q6. [A]pproximately what fraction of the total funds available will go to the ULTIMATE SBIR/STTR FOA (DE-FOA-0002338) compared to the ULTIMATE FOA (DE-FOA-0002337)?**

**ANSWER:** No allocation of funds between the two FOAs has been established.

**Q7.1 The FOA states “Density of < 9.0 g/cc is preferred in a new alloy to be compatible with current gas turbine designs. However, density values higher than 9 are possible and allowable during the course of the alloy development.” This density preference of < 9 g/cc seems to imply that the alloys preferably need to be Niobium based – as Tungsten alloys, and likely Molybdenum alloys will be too heavy. Is that correct?**

**ANSWER:** As mentioned in the FOA, alloy density is preferred below 9.0 g/cc but heavier alloys may be considered if it is supported by significant performance improvements.

**Q7.2 There appears to be a conflict between the concept paper template and the FOA regarding page length. ... FOA [Section IV.C] states - "The Concept Paper must not exceed 7 pages in length (inclusive of the Operational Plan and System Cost Section, which is not to exceed two pages) including graphics, figures, and/or tables. This would imply that the rest of the concept paper could be 5 pages long. But the template indicates there is a 4 page limit. Can you clarify?**

**ANSWER:** Applicants may disregard the instruction set forth in the template concerning Concept Paper page limitations. The instructions at FOA Section IV.C control the content and form of Concept Papers.

**CORRECTION (3-Jun-2020):** ARPA-E has modified FOA Section IV.C to correct an error in the page length and content of Concept Papers. Per the DE-FOA-0002338, Concept Papers are limited to four pages, and all references to the *Operational Plan* and *System Cost Sections* have been deleted.

## QUESTIONS AND ANSWERS

### **Q8. Can we propose to undertake work on Topics 1 and 3 under the comprehensive topic area (Topic 4)? Maybe another way to ask the question: Does comprehensive Topic 4 mandate work for all of Topics 1-3?**

**ANSWER:** Proposals that are focused on solving topic 4 should address all comprehensive concerns listed in the FOA document in a single proposal. Refer to FOA Section I.B.5, Topic 4. As set forth therein:

*Comprehensive solutions are technology packages that address the challenge by integrating the capability of the base alloy, coatings, and manufacturing techniques to meet the requirements of the overall system design. Project efforts that aim to provide comprehensive solutions consist of efforts in alloy design and development, coatings, and compatible manufacturing process, all of which are driven by component and system designs. Comprehensive solutions also address supply chain technologies and testing and validation of the technologies developed. It is expected that such project efforts will involve multiple partners with complementary expertise, skills, and processing capabilities.*

### **Q9. My company ... is looking at this SBIR for a possible submission. ... We're looking at this project trying to understand the scope to prepare a paper. For this project are materials like Tungsten or Tantalum MMC's of interest or is the density to high? Is there a preferred series of materials you may already have interest in like Niobium or TiAl alloys? ...**

**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. Material system of density greater than 9.0 g/cc may be considered responsive as long as it is backed up by significant performance improvement. As set forth FOA Section I.B.3: *The proposed program aims to develop refractory metal alloys (such as Mo, Nb etc.) for high temperature components in gas turbines.* Submissions falling outside the technical parameters specified in the FOA may be deemed nonresponsive and may not be reviewed or considered (refer to FOA Section III.C.2). Also note that the proposed material system must meet technical and cost metric indicated in the FOA

### **Q10. Can an applicant address both topic 1 (novel alloys) and topic 2 (coating) in one full proposal or do they require two separate proposals?**

**ANSWER:** Refer to FOA Section IV.C.1.b (bullet point 2). As set forth therein:

*Clearly identify which particular topic (from the available list of topics 1-5 in section I.D of the FOA) is solved with the proposed technology concept.*

A single proposal is not expected to solve topic 1 and topic 2. Applicants are encouraged to submit proposals under topic 4 (comprehensive solutions) if they choose to do so.

## QUESTIONS AND ANSWERS

**Q11. My company... is (to our knowledge) the only company in the World that has [description omitted]. The reason for this email is the closing date of the above opportunity number expires on 06-05-2020 and I am wondering if (1) there is an interest in our capabilities, and (2) whether it is too late to apply for a grant?**

**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. The deadline for the concept paper submission is June 5, 2020 at 9:30 am Eastern time.

**UPDATE (3-Jun-2020):** Per DE-FOA-0002338.M01, the date and time for submission of Concept Papers has been changed to Tuesday, June 9, 2020 at 9:30 am Eastern time.

**Q12.1 [FOA Section IV.C] Page 32 ... says:**

*The Concept Paper must not exceed 7 pages in length (inclusive of the Operational Plan and System Cost Section, which is not to exceed two pages) including graphics, figures, and/or tables*

However, the template shown ... says the Concept Papers shall not exceed four (4) pages in length including graphics, figures, and/or tables. PI[ease] clarify if the STTR concept paper page limit is 7 pages or 4 pages

**ANSWER:** Refer to ULTIMATE SBIR/STTR FAQ 7.2.

**Q12.2 We wish to subcontract part of this STTR work to a University. The Faculty from the University for this sub-contract is submitting 2 more concept papers as PI addressing DE-FOA-0002337. I wish to know if he can be a subcontractor for the STTR from our small business concern ... . (The scope of the concept papers being submitted ... are different).**

**ANSWER:** There is no limit on the number of applications in which an eligible entity may participate, provided that each application is scientifically distinct.

**Q13. The FOA suggests that the maximum proposed cost for a Phase I STTR is ~\$256K. A colleague of mine suggested that the limit is \$375K. A search of the FOA, other documents and the ARPA-E website does not provide any further info. Can you please confirm the maximum proposed cost for a Phase I STTR for ULTIMATE?**

**ANSWER:** Refer to ULTIMATE SBIR/STTR FAQ 4.1.

**Q14. We are a small business. Can we both lead an STTR proposal AND be part of a team for a ... Non-SBIR/STTR proposal?**

**ANSWER:** Refer to ULTIMATE SBIR/STTR FAQ 12.2.



## DE-FOA-0002338 – ULTIMATE SBIR/STTR

Questions can be sent to [ARPA-E-CO@hq.doe.gov](mailto:ARPA-E-CO@hq.doe.gov)

FIRST DEADLINE FOR QUESTIONS TO ARPA-E-CO@HQ.DOE.GOV:

5 PM ET, MAY 26, 2020

SECOND DEADLINE FOR QUESTIONS TO ARPA-E-CO@HQ.DOE.GOV:

5 PM ET, AUGUST 21, 2020

### QUESTIONS AND ANSWERS

**Q15. For the ARPA-E ULTIMATE SBIR/STTR FOA (DE-FOA-0002338) are there any restrictions on the small business prime working with a subcontractor that is a federally funded R&D center?**

**ANSWER:** Refer to FOA Section III.B.1. FFRDCs are eligible sub-recipients, subject to the prime recipient work requirements set forth at FOA Section III.A.

**Q16. Thank you very much! Our team reviewed the answers, the agenda from the meeting in November and the charts from the meeting in November. From that review we noted there was no documentation on the “report outs” from the working groups that assembled at the meeting in November in Seattle. Recognizing that effort was put into those working groups with resulting great value, we assume the findings were documented. What were those findings? ...**

**ANSWER:** Publicly available information related to the workshop held in Seattle is posted in the ARPA-E website <https://arpa-e.energy.gov/?q=events/ultra-high-temperature-materials-power-generation-applications-workshop>.

**Q17.1 I am working on a concept paper in response to this FOA. I am confused by guidance about content. In most places, the paper is shown to be four pages long, with four sections. These are Concept summary, Innovation and impact, Proposed work, and Team organization and capabilities. The guidance is very clear than anything beyond 4 pages will not be considered. However, in section IV.C on page 32 of the FOA it says:**

*The concept paper must not exceed 7 pages in length (inclusive of the Operational Plan and System Cost Section, which is not to exceed two pages) including graphics, figures, and/or tables.*

**I do not see any further information about the Operational Plan and System Cost Sections. Can you help with that?**

**ANSWER:** ARPA-E has modified FOA Section IV.C to correct an error in the page length and content of Concept Papers. Per the DE-FOA-0002338, Concept Papers are limited to four pages, and all references to the *Operational Plan* and *System Cost Sections* have been deleted.

**Q17.2 The same section of the FOA states that the first paragraph must include the Technical Category. Is it the same thing as Technical Topic of Interest?**

**ANSWER:** Yes.

## QUESTIONS AND ANSWERS

**Q18. We are interested to respond to ULTIMATE FOA (SBIR). We have a few questions on this call. ... We have provided additive manufacturing service to the aerospace industry using tantalum alloys and tungsten alloys. ... I supervised funding support to ... on MoSiB alloy development. All these alloys are good candidates to Topic 1.**

**Q18.1 If these three types of alloys after alloy composition modification fall into requirement of Table 1, are they OK to be baseline candidates for Topic 1?**

**ANSWER:** ARPA-E will not pre-assess an applicant's proposal. Refractory alloys are of interest for this program but they must meet technical and cost metric indicated in the FOA. As set forth FOA Section I.B.3: *The proposed program aims to develop refractory metal alloys (such as Mo, Nb etc.) for high temperature components in gas turbines.*

**Q18.2 We plan to use [descriptions omitted]. If we develop innovative alloy as required in Topic 1 while making coupons and parts using additive manufacturing as required in Topic 3, will that benefit us in proposal selection?**

**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.

**Q18.3 Our third question is from economic concern: tantalum alloys are much more expensive than MoSiB or tungsten alloys. Will this influence the selection of tantalum alloys for Topic 1 or Topic 3?**

**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.

**Q19. We are interested in submitting a white paper on this topic but due to the Coronavirus lockdown situation we are unable to complete it by the submission deadline of 6/5/2020. We would like to request 30 days extension for the white paper submission.**

**ANSWER:** Per DE-FOA-0002338.M01, the date and time for submission of Concept Papers has been changed to Tuesday, June 9, 2020 at 9:30 am Eastern time.

**Q20.1a What is the period of performance for SBIR/STTR ULTIMATE Phase I and ULTIMATE Phase II?**

**ANSWER:** As set forth in FOA Section I.C.6, ULTIMATE Phase I period of performance is a maximum of 18 months. ULTIMATE Phase II may not exceed 24 months.

## QUESTIONS AND ANSWERS

**Q20.1b** In Section I.C.6 of DE-FOA-0002338, it says “ULTIMATE Phase 1 (SBIR/STTR Phase I and portion of SBIR/STTR Phase II) can be proposed for a maximum of 18 months.” Does this mean that the SBIR Phase I can be 6 months long and part of the SBIR Phase II can be 12 months long? Is it completely up to the Applicant’s assessment to decide how long each phase is as long as it is within 18 months?

**ANSWER:** SBA’s SBIR/STTR Policy Directive states that the SBIR Phase I period of performance should not exceed six months and STTR Phase I awards should not exceed twelve months, but provides the agency with discretion to adjust this period. ARPA-E is not dictating a specific length to each SBIR/STTR Phase, but rather leaves it to each applicant to propose a period of performance for each Phase that will fit within the 42 month maximum term for a combined Phase I/II/IIS award.

**Q20.2** What is the US dollar amount for SBIR/STTR ULTIMATE Phase I and ULTIMATE Phase II? ...

**ANSWER:** The maximum award amount is \$3,677,642.

**Q20.3** How does a company indicate that they qualify for joint SBIR/STTR funding?

**ANSWER:** That information is not needed for submission of a Concept Paper.

**Q20.4** Should the Operational Plan and System Cost Section be included in the Concept Paper PDF? ...

**ANSWER:** ARPA-E has modified FOA Section IV.C to correct an error in the page length and content of Concept Papers. Per the DE-FOA-0002338, Concept Papers are limited to four pages, and all references to the *Operational Plan* and *System Cost Sections* have been deleted.

**Q21.1** ... The CONCEPT PAPER and PROPOSAL must include all Three phases: I/II/IIS. Guidance in FOA states that Concept paper can be 7 pages that includes 2 pages for Operational Plan and Cost Section. The DOE Guidance on Concept Papers states that is limited to 4 pages. I assume the text for this FOA can be 5 pages with 2 for plan and cost sections, Is that correct?

**ANSWER:** ARPA-E has modified FOA Section IV.C to correct an error in the page length and content of Concept Papers. Per the DE-FOA-0002338, Concept Papers are limited to four pages, and all references to the *Operational Plan* and *System Cost Sections* have been deleted.

**Q21.2** There seems to be some confusion on the costing between Page 13 and Page 19. The Proposal for achievement of Phase 1 metrics includes Phase1 (9 Months) and additional 9 months of Phase II. Should the Proposal be costed for a 9 months Phase 1 in addition to 9 Months to complete Phase 1 metrics or as a single cost as well as additional 9 months to compete Phase II and then a separate Phase IIS to complete the 42 months effort.

**ANSWER:** Prospective Applicants must be careful to distinguish between ULTIMATE Phase 1 and ULTIMATE Phase 2, which have maximum terms of 18 and 24 months respectively, and SBIR/STTR Phase I/II/IIS which have a maximum term of 42 months combined.

## QUESTIONS AND ANSWERS

No cost maximums have been established for ULTIMATE Phase 1 and ULTIMATE Phase 2. These are driven by technical considerations and estimated costs for each phase may be proposed by the Applicant.

Moreover, ARPA-E is not dictating a specific length for each SBIR/STTR Phase. The Applicant can propose a period of performance for each SBIR/STTR Phase that is consistent with the aforementioned ULTIMATE Phase 1 and ULTIMATE Phase 2 maximum terms, and will fit within the 42 month maximum award term. Estimated costs for an SBIR/STTR Phase (most likely Phase II) may be distributed between ULTIMATE Phase I and ULTIMATE Phase 2.

The maximum amounts for SBIR/STTR Phase I/II/IS are \$256,580 for Phase I, and \$1,710,531 each for Phase II and Phase IS. The maximum award amount is \$3,677,642.

**Q22. The FOA appears to focus on material research and secondary that there needs to be a way for the material to be manufactured. There are many current Ceramic materials that can be useful in different turbine applications but there are few if any cost effective manufacturing systems. We ... have developed a cost effective system including a custom machine, tooling and control system that can grind existing material many multiples times faster thus making it cost effective. We need funding to test our system on different types of materials and tooling for turbine applications. Can we compete for this grant?**

**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. Per FOA Section III.F3, submissions specifically not of interest include those seeking incremental improvements to additive manufacturing techniques independent of refractory metal alloys development.

**Q23. Page 13 of ... DE-FOA-0002338 [Section I.C.5] states:**

*ARPA-E recognizes that some awardees may not have access to these capabilities, which are required for this Program. ARPA-E will provide funding to Resource Support/Topic 5 Project Teams (under DE-FOA-0002337) with capabilities and expertise on high-temperature testing of materials. SBIR/STTR awardees are encouraged to utilize those resources to support testing requirements of their projects. Data generated by these Topic 5 Project Team(s) about individual Topics 1-4 awardees' technology will only be provided to the specific Topics 1-4 awardees whose technology is being evaluated, and to ARPA-E.*

**Can you please provide further information on what services are available and how applicants can include the same in the proposals.**

## QUESTIONS AND ANSWERS

**ANSWER:** Applicants are responsible for the content of their applications. As stated at FOA Section I.C.5, under Topic 4: *ARPA-E will provide funding to Resource Support/Topic 5 Project Teams (under DE-FOA-0002337) with capabilities and expertise on high-temperature testing of materials.* Per DE-FOA-0002337, Section I.B.7: *[d]uring the period of performance, ARPA-E will – as needed - facilitate collaborations between Topics 1-4 awardees and Topic 5 awardee(s).*

**Q24. We have been invited to submit a full application to ULTIMATE SBIR/STTR (DE-FOA-0002338), and we are seeking some clarifications on a couple of programmatic questions:**

**Q24.1 Can you please clarify the exact durations for SBIR Phase I, II, and IIS, respectively, within the ULTIMATE program? The Budget Justification Workbook template indicates 12 months for Phase I, 24 months for Phase II and 12 months for Phase IIs, but the total program duration would be 48 months, which is 6 months longer than the 42-month period of performance specified in the FOA. ...**

**ANSWER:** Forty-two months is the maximum term of any agreement resulting from this FOA (refer to FOA Section II.A). Applicants may propose SBIR/STTR program phases (i.e., Phases I/II/IIS) that meet the needs of their scheduled research program, provided that the maximum ULTIMATE program terms (i.e., 18 months for ULTIMATE Phase 1 and 24 months for ULTIMATE Phase 2) are adhered to (refer to FOA Section I.C.6). Reasonableness of the proposed project schedule is assessed as an element of the Merit Review (refer to FOA Section V.A.2). Also refer to ULTIMATE SBIR/STTR FAQ 21.2.

**Q24.2 We would also like to clarify on the exact time when we are required to deliver the technical performance targets (listed in Table I and Table II of the FOA). More specifically, do we need to deliver the targets in Table I by the end of ULTIMATE Phase 1 (which is the middle of the SBIR Phase II) or by the end of SBIR Phase II? ...**

**ANSWER:** As set forth in FOA Section I.C.7: *Alloy development teams must provide statically significant data as proof that ULTIMATE Phase 1 threshold metrics are clearly met before they are allowed to progress to ULTIMATE Phase 2.*

**Q25. We received the reviewer's comments on ARPA-E Control Number [redacted]. We were asked for more development beyond Phase I. ... To respond to the reviewers' concerns and comments, a larger budget and longer project duration will help. We proposed for only Phase I ... . Shall we expand it to a full proposal including Phase I and Phase II and extend the length of proposed project from 1 year to 3 years?**

**ANSWER:** ARPA-E will not pre-assess an Applicant's proposal. Applicants are responsible for the content of their applications.

## QUESTIONS AND ANSWERS

**Q26. [We have] been encouraged to submit a full proposal under the ULTIMATE SBIR/STTR FOA. We respectfully request clarification on two points in the FOA/proposal template materials regarding the program structure:**

**Q26.1 Can you please clarify the exact durations for SBIR Phase I, II, and IIS, respectively, within the ULTIMATE program? ...**

**ANSWER:** Refer to ULTIMATE SBIR/STTR FAQ 24.1.

**Q26.2 We would also like to clarify on the exact time when we are required to demonstrate Phase 1 technical performance targets (listed in Table I of the FOA). ...**

**ANSWER:** Refer to ULTIMATE SBIR/STTR FAQ 24.2.

**Q27. ... Appreciate it if you could clarify the following points:**

**Q27.1 Of the total 42 months, we propose to divide 3 phases as follows: Phase-I for 12 months, Phase-II for 24 months and Phase-IIS for 6 months. Hope that is agreeable.**

**ANSWER:** Refer to ULTIMATE SBIR/STTR FAQ 24.1.

**Q27.2 As part of ULTIMATE Phase 2 targets, (Table II: manufacturability criteria), it is mentioned that generic small turbine blades have to be fabricated as a demonstration. It also says Internal cooling channels are expected.**

**Q27.2a We propose to manufacture the small turbine blade ... in Phase-II ... . We also propose to manufacture the small turbine blade ..., in Phase-IIS ... . Is it acceptable?**

**ANSWER:** ARPA-E will not pre-assess an Applicant's proposal. Applicants are responsible for the content of their applications.

**Q27.2b In case, we are not able to meet the target of fabricating the turbine blade in Phase-II, is it acceptable, if we manufacture the ... turbine blade during Phase-IIS ... .**

**ANSWER:** ARPA-E will not pre-assess an Applicant's proposal. Applicants are responsible for the content of their applications.

**Q28. Is there anywhere to see the teams submitting full proposals under Topic 5? We are leading a team for Topic 4 and would like to identify any potential supporting services available under Topic 5 that may be useful to our proposed efforts. We would plan to reach out to relevant Topic 5 teams and offer a letter of support if we think we could use their services on our project.**

**ANSWER:** Refer to ULTIMATE SBIR/STTR FAQ 23.



## DE-FOA-0002338 – ULTIMATE SBIR/STTR

Questions can be sent to [ARPA-E-CO@hq.doe.gov](mailto:ARPA-E-CO@hq.doe.gov)

FIRST DEADLINE FOR QUESTIONS TO ARPA-E-CO@HQ.DOE.GOV:

5 PM ET, MAY 26, 2020

SECOND DEADLINE FOR QUESTIONS TO ARPA-E-CO@HQ.DOE.GOV:

5 PM ET, AUGUST 21, 2020

### QUESTIONS AND ANSWERS

**Q29.1** Should applicants responding to [DE-FOA-0002337, Topic] 5.1 assume that Topic 1-4 awardees will provide purchase orders and make direct payments to Topic 5.1 awardees for testing and evaluation services, or should applicants responding to [Topic] 5.1 assume that DOE will reimburse [Topic] 5.1 awardees (for these services) under the agreement between DOE and the [Topic] 5.1 awardee? ...

**ANSWER:** ARPA-E will provide monies and reimburse allowable recipient expenses, subject to the awards' limitation of funds, for testing services provided to ULTIMATE and ULTIMATE SBIR/STTR awardees under cooperative agreements (if any) resulting from DE-FOA-0002337.

**Q29.2** Is it DOE's intention that after the [DE-FOA-0002337, Topic] 5.1 awardee has, as required by the FOA, developed testing techniques and protocols, and established capacities for testing; that the [Topic] 5.1 awardee ... should work with Topic 1-4 awardees directly on a commercial basis?

**ANSWER:** As stated in ULTIMATE SBIR/STTR FAQ 29.1, ARPA-E will reimburse awardees for testing services provided under any cooperative agreements resulting from DE-FOA-0002337. Awardees should anticipate coordinating necessary testing protocols and other pertinent matters with Topic 1-4 awardees. As described in Section I.B.7.5.4 of DE-FOA-0002337, Topic 5 awardees will be required to protect certain information provided to them by Topic 1-4 awardees.

**Q30.** How does the small business input fee/profit in the [SF-]424 template provided?

...

**ANSWER:** Refer to FOA Section VIII.J.

**Q31.** I had a question regarding DE-FOA-0002338 & choice of a PI. We have a Ph.D. material scientist we'd like as the PI, but he is not a US Citizen. Would a non-citizen still be able to be the PI on this project, I cannot find a specific call out from ARPA-E on this subject.

**ANSWER:** Applicants are responsible for personnel staffing decisions concerning their proposal, including for foreign researchers working on ARPA-E awards. Principal Investigators and other researchers are not necessarily required to be U.S. citizens or permanent residents. Hiring/work assignment decisions for ARPA-E research should consider that ARPA-E awards often involve technology subject to U.S. export control regulations. Refer to Attachment 1, Clauses 4 and 12 for awardee export control obligations. Also: a) awardees' inventions resulting from ARPA-E research must be reported and protected and are subject to U.S. manufacturing requirements - see Attachment 2 of the ARPA-E Model Cooperative Agreement - and b) any request for project work to be conducted outside the US must be approved in advance in writing by the ARPA-E Contracting Officer.

**Q32.1** ...[W]e are running into a problem with the Cost Justification workbook template (ARPA-E\_115\_Budget\_Justification\_Workbook\_SBIR-STTR\_0.xlsx) provided. We are unable to edit the columns from the Phase I (12 month) / Phase II-Year 1 (12 month) / Phase II-Year 2 (12 month) / Phase IIS (12 month) structure. Can you please



## DE-FOA-0002338 – ULTIMATE SBIR/STTR

Questions can be sent to [ARPA-E-CO@hq.doe.gov](mailto:ARPA-E-CO@hq.doe.gov)

FIRST DEADLINE FOR QUESTIONS TO ARPA-E-CO@HQ.DOE.GOV:

5 PM ET, MAY 26, 2020

SECOND DEADLINE FOR QUESTIONS TO ARPA-E-CO@HQ.DOE.GOV:

5 PM ET, AUGUST 21, 2020

### QUESTIONS AND ANSWERS

**provide guidance as to how we should proceed in filling out the budget justification given the different breakdown of our proposed program? ...**

**ANSWER:** Applicants may use the space for additional explanations/comments to set forth the proposed performance period for each phase.

**Q32.2 Also, in anticipation of submission next week, is there a phone number or email address (i.e. helpdesk) that we can reach out to for questions regarding issues with the submission interface or other potential problems we encounter with the submission process?**

**ANSWER:** The ARPA-E eXCHANGE Help Desk e-mail is [ExchangeHelp@hq.doe.gov](mailto:ExchangeHelp@hq.doe.gov).