

IARPA RESILIENCE Program Proposers' Day, Answers to Questions

Number	Question	Response
1	If my company wants to bid to both tracks, should these be submitted as separate proposals, or a single proposal with two options	
2	Does a proposer have to address both tracks?	We encourage you to read the BAA thoroughly for instructions on how to submit a proposal. Offerors may propose to one thrust, the other thrust area, or both. A single proposal can be used to cover both thrusts, provided the proposal is clear about what is being proposed for each thrust. Page limits are stipulated in the BAA. Our BAAs typically allow for IARPA to find a proposal to be “selectable with modifications”, which means in principle, IARPA could find only the work proposed for one track to be selectable and consequently select the proposal for funding with modifications that would remove the non-selectable track.
3	If a proposal covers both tracks, is it possible IARPA will choose to fund only one track. If so, does the team and proposed SOW have to be structured such that the two tracks are clearly defined and separable?	
4	Would you be interested in some disruptive ideas that satisfy the BAA requirements? How do we make sure we are aligned with the upcoming BAA?	Please refer to the BAA when it is posted for information about what IARPA is looking for in proposals. The draft BAA has been posted and provides preliminary information as an aid to preparation. Be sure to consult the final BAA when it is posted. The final BAA supersedes the draft BAA and anything said at Proposers' Day.
5	What is the budget for the RESILIENCE program?	
6	Do you have any expectation on level of funding? Either per submission or total program funding?	
7	Is there an estimated level of total funding for this BAA, and any guidelines for minimum or maximum federal funding per award?	
8	Typically, what would be the budget level for IARPA projects?	IARPA does not set budgets for research programs before proposal review and recommendations for selection have been made. When preparing your proposal, include all the costs to develop your solution to the challenge posed in the BAA.
9	How many awards you are planning to make? Any indication of the funding amount?	Multiple awards are expected for each track.
10	What is the anticipated budget ceiling and floor for proposals in each phase?	
11	Are single or multiple awards expected in each track?	
12	What is the budget for projects of each phase of Track 1?	
13	I didn't see any cost volume guidance. Is there any information on funding amount for the three phases?	

- 14 One question we have is the cost. We participate DOE projects that are mostly cost driven. They have very clear cost targets. Would the cost be a focus for IARPA ? Cost is a target metric in RESILIENCE; the draft BAA contemplates a maximum \$20K cost/kWh stored for Track 1 and \$80K/kWh stored for Track 2. Check the BAA for final metrics. Proposals are expected to include budgets that represent the cost of developing the solution proposed.
- 15 Can foreign companies participate as either primes or subs?
- 16 If the prime has to be a US based organization, can the PI and key personnel be non-US citizens (i.e., green card holders)? IARPA BAAs typically include a provision that allows that "Foreign entities and/or individuals may participate but only as part of a U.S. based team. The prime contractor must be a U.S. company. Foreign entities and individuals may participate as subcontractors or employees of a U.S. company however, all foreign participation must comply with any necessary Non-Disclosure Agreements, Security Regulations, Export Control Laws and other governing statutes applicable under the circumstances. Offerors are expected to ensure that the efforts of foreign participants do not either directly or indirectly compromise the laws of the United States, nor its security interests." Check the final BAA for definitive guidance.
- 17 Is researchers / professors working here in US institutions but not US citizen allowed as PI or Co-PI or proposal team member?
- 18 Can subcomponents that have export or ITAR control restrictions be proposed as part of the research or system design? The BAA will contain instructions about export control and ITAR. Please read the BAA carefully. Typically, IARPA BAAs contain a provision similar to the following. "The Offeror shall comply with all U.S. export control laws and regulations, including the International Traffic in Arms Regulations (ITAR), 22 C.F.R. Parts 120 through 130, and the Export Administration Regulations (EAR), 15 C.F.R. Parts 730 through 799, in the performance of this contract. In the absence of available license exemptions/exceptions, the Offeror shall be responsible for obtaining the appropriate licenses or other approvals, if required, for exports of (including deemed exports) hardware, technical data, and software, or for the provision of technical assistance."
- 19 Any restriction in using foreign country developed technology (i.e. from a US allied nation(s))?
- 20 How necessary is teaming, and would the program consider a smaller award to a single integrated team?
- 21 Will reteaming (bringing on new subcontractors) be allowed for a given prime during a Phase, or between Phases. If over the course of the program a performer realizes a need to bring additional team members onboard, this may be requested through the contracting officer (CO). Typically, our contracts include a "Consent to Subcontract" Clause that covers this situation. Following the review of the request, IARPA will consent (or not) and any contractual modifications needed will be made.
- 22 Can a new team be formed at each phase? For example, can a university team apply standalone for Phase 1 and find a company partner for later phases? Or would you rather have teams form from the outset that can meet the requirements for all 3 phases?
- 23 If a company provides SETA support to ARPA-E or DARPA are they allowed to propose to this BAA? The company may submit a proposal, but it is possible there may be an organizational conflict of interest. According to FAR 2.101 "Organizational Conflict of Interest" (OCI) means that because of other activities or relationships with other persons, a person is unable or potentially unable to render impartial assistance or advice to the Government, or the person's objectivity in performing the contract work is or might be otherwise impaired, or a person has an unfair competitive advantage. In accordance with FAR 9.5, Offerors are required to identify and disclose all facts relevant to potential OCIs involving the Offeror's organization and any proposed team member (subawardee, consultant). The BAA describes the procedure for disclosing possible conflicts of interest. Please refer to the BAA. The Government will evaluate OCIs and potential OCIs to determine whether they can be avoided, neutralized or mitigated and/or whether it is in the Government's interest to grant a waiver.
- 24 We are working as a government (DoD) R&D contractor supporting the power and energy program. Would this put us in the ineligible list? The Government will not pay for the same work twice so if you are under contract to do work for another government agency already, that work will not be funded under RESILIENCE.

25	Can an organization propose to this BAA if a subcomponent or portion is already being funded by the US Government USG under a different effort? Not the whole effort but something complementary that would serve as a foundational piece to our proposal?	IARPA BAAs typically require disclosure if any part of the proposed work is being funded by another agency. The BAA will describe procedures for disclosure. An OCI determination will be made based on the information provided.
26	How different will the final BAA compared to the Draft version....?	We expect that the final BAA will be similar to the draft BAA. Differences, to a certain extent, depend on you. As mentioned in the introduction today, one of the purposes of Proposers' Day is to solicit your feedback. The questions you have asked today help us understand if we have been unclear and need to refine our draft BAA. Feedback you volunteer today or between now and the date of the final BAA posting will only improve our BAA.
27	Can you define "Unlimited" IP rights. Does that mean performer can still file patent application, but IARPA has royalty free use of the IP should patent be issued, or?	FAR 52.227-14 Rights in Data-General. Unlimited rights means the rights of the Government to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, in any manner and for any purpose, and to have or permit others to do so.
28	Can we request Government Furnished information or equipment from FFRDCs or UARCs as part of our proposal?	Proposers are encouraged to identify information and materials that will benefit their proposed solution and make whatever business arrangements are required to obtain appropriate access. FFRDCs and UARCs are excluded from being performers on IARPA programs.
29	Would IARPA facilitate any teaming possibilities with interested parties, such as sharing our contact information?	The registration process for this Proposers' Day included participants' indicating whether they wanted their contact information published on the RESILIENCE program web page for the purposes of teaming. IARPA will make public only the names and contact information of those who authorized us to do so. If you want to change your mind about whether to allow your name to be published, please email the program email address (dni-iarpa-baa-20-02@iarpa.gov) with the request. We will accommodate your request as soon as we can, but cannot guarantee that if you initially authorized publication, your information will not be on the site until such time as we can process your change request.
30	Will the slides be shared after meeting?	
31	Will this presentation be posted publicly after this meeting?	We intend to post a video transcript of today's event.
32	Will slides presented today also be available separately from the video?	
33	If two institutions or three are collaborating, do PI and co-PIs all have to set up accounts in IARPA and link them?	Only the individual that will be submitting the proposal on behalf of the entity will need an account. The IDEAS website is the proposal intake system.
34	Is cost/kWh a target metric in the program?	Cost is a target metric in RESILIENCE; the draft BAA contemplates a maximum \$20K cost/kWh stored for Track 1 and \$80K/kWh stored for Track 2. Check the BAA for final metrics.
35	Would development of a new cathode material alone be responsive?	As stated in the draft BAA, partial solutions are out of scope. A cathode material alone would be a partial solution. A new cathode material as part of an overall power solution that can be tested and demonstrated to meet program metrics would be in scope.
36	What about the associated power electronics and control systems to make efficient use of such batteries / fuel sources? Will you be interested in this aspect of the system?	To the extent control modules are required to run the power solution, they are included in the overall solution and the mass and volume will be included in the metrics measurements. We are seeking integrated power solutions so proposals that address individual components only would not be responsive unless coupled with the rest of the solution. Teaming is a way to represent your piece of the puzzle in an overall solution.

- 37 This program seems to be focused on a potential end result of a battery "cell" that meets the proposed requirements. Is this a correct understanding? Or is this program interested in a potential end result of a battery "module" solution that potentially includes some of the following: multiple cells, bussing, thermal runaway containment, active or passive cooling, battery management systems, voltage and temperature sensing, etc?
- The BAA will define the target metrics. IARPA is interested in solutions that will meet these metrics. To the extent that energy density of the solution is a metric, all elements of the solution are subject to inclusion for the purposes of determination of energy density. The BAA will specify what is out-of-scope. Please refer to the BAA.
- 38 What kind of energy storage technologies are you most interested? Battery, reversible fuel cell or flow battery?
- 39 Are fuel-powered systems that leverage solid-state power converters of interest (e.g. thermophotovoltaics, thermionics, thermoelectrics)?
- 40 Can you also give some examples of devices or apparatus that the solicited energy storage technologies would be mostly be used for?
- We provided a few examples to illustrate the characteristics of interest. Examples were UAVs capable of VTOL, and portable electronics that must deliver power on demand, even when stored in harsh temperature conditions.
- 41 Much has been mentioned regarding UAVs. Would this BAA have an interest in other platforms, such as UUVs?
- 42 Are integrated power systems, such as a battery coupled with a supercapacitor, within the scope of the program?
- Integrated power systems are within the scope of the program, provided the target metrics of the program are achievable with the proposed integrated power system.
- 43 Is hybrid power (battery + capacitor) acceptable as solution for high energy and high power together?
- 44 Will performance testing include outdoor testing with environmental/weather effects or variable humidity/temperature?
- 45 Track 1 Example graph: Assuming that's in a lab environment with no wind or other weather disruptions in flight?
- Currently we plan that testing will be conducted entirely indoors in a laboratory at a laboratory facility with control over temperature and humidity. Because UAVs are not the only application envisioned, no simulations of wind or weather conditions that could be encountered in a flight test are planned.
- 46 Will the testing occur at a government lab or a T&E contractor site?

- 47 The BAA prohibits internal combustion solutions. We assume external combustion approaches, such as Stirling engines with coupled generators, are responsive approaches providing they are silent and meet other goals. Is this correct?
- 48 For Track 1, can the solution provide some of its output in mechanical form provided it also supplies electrical output? Or does all its output have to be electrical? For engine-generator combinations driving a UAV, supplying some portion of the output mechanically may be the most efficient (as opposed to converting mechanical to electrical, then back to mechanical again for VTOL liftoff).
- 49 The goal is to have a power source, but as it appears, its specific or constrained to only electrochemical source. Can you confirm or clarify on this?
- 50 Would you consider a multi-chemistry downselection in Phase1, or use of an evolution of chemistry for future phases?
- 51 What is your definition of an "internal combustion engine"?
- 52 Regarding slide #17. Can you share the vehicle size, payload weight, power profile (as you mentioned during take-off, landing), signature (sound, thermal, etc.) requirements?
- 53 Max temperature is 120 degree Celsius. Where is the temperature measured, inside or outside the test article?
- 54 Can you comment on the 120C temperature exposure? Is this expected for only small amounts of time, or perhaps for longer periods?
- 55 What are your limits on thermal signature? What is maximum tolerable temperature?
- 56 Have you considered the implication of 60'C storage on the self-discharge [SD] requirement?
- If a solution is not defined as being out of scope in the final BAA, it can be proposed. Proposals are expected to demonstrate that the proposed approaches can be expected to meet the program metrics. Performers are expected to develop the solutions that were selected for award further in each phase, not switch tacks and move to a new solution that was not selected in mid-performance. If a solution fails altogether in Phase I, a Proposer may not propose a different solution for Phase 2. This would be outside the scope of fair and open competition, and would fall outside the scope of the BAA.
- Thank you for this feedback on the need for a clear definition. We will include a definition of internal combustion engine in the final BAA.
- The salient figures are the metrics. Track 1 gives UAVs as an example of a power solution needed for high power density, high energy density power solutions that would be capable of power pulses. We've identified energy density and other metrics that will meet the UAV use case, among others. Keep in mind, our solicitation is a BAA for new research ideas for power solutions, not an RFI for a particular engineering solution for a particular vehicle.
- Temperature will be measured external of the device. Final procedure for measuring the temperature of each device will be presented at the kickoff meeting.
- Per the metrics in the draft BAA, the maximum operational temperature is 120 degrees Celsius.
- Metrics associated with self-discharge are identified within the draft and final BAA.

- 57 Is it reasonable to assume that the final deliverable at the end of phase III is a 4kWh unit (if the weight is 5kg, then energy density will be 800Wh/kg) Performers may submit energy solutions up to a maximum mass of 5kg, there is no minimum. The energy density metric at the end of Phase 3 is 750Wh/kg minimum. More is better.
- 58 What is acceptable rate of capacity degradation with each cycle up to 10 cycles? There are no metrics for capacity degradation across the 10 cycles tested.
- 59 For track 2, what is the desired capacity retention after 10 cycles? The published metrics for Track 2 concern the first tested cycle as described in the draft BAA. Refer to the final BAA for any changes.
- 60 Is the self-discharge requirement both SD and permanent capacity loss, or just pure self-discharge? As per the draft BAA, metrics align with the first tested cycle for track 2. Refer to the final BAA for any changes.
- 61 Do you expect the storage solution delivered in Phase 3 to include BMS/controls, or is it purely storage and packaging? All submitted test articles must meet the final metrics described in the BAA.
- 62 Can the solution contain stable, non-toxic arsenic-containing compounds? As per the out-of-scope section of the BAA, no arsenic containing compounds can be used.
- 63 Track 1 and 2 phase 3 prototype: Is there a specific voltage range or device in mind to build prototype for? That is, do you want a 5 kg battery with some serial/parallel config for 60V, BMS for track 1? Do you want the 50 g, 30 ml max for track 2? The mass and volume constraints in the BAA are maximum, anything smaller than these maximum values are equally acceptable. No voltage requirements are stipulated.
- 64 If same solution is proposed for both tracks, would we prepare 2 different form factors for
- 65 Alternatively, if our proposed solution is the same for both tracks, then would we prepare 2 different form factors for the prototype? If a performer proposes against both tracks, test articles for both tracks must be submitted.