

## QUESTIONS AND ANSWERS

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I. FREQUENTLY ASKED QUESTIONS:

**A. If I have questions about this funding announcement, who do I contact?**

**ANSWER:** Please see the FOA guidance on submitting FOA content questions and response publication. Applicants may submit questions regarding this ARPA-E's Funding Opportunity Announcement (FOA) to ARPA-E-CO@hq.doe.gov. All emails must include the FOA name and number in the subject line. The cover page and Executive Summary of the Funding Opportunity Announcement state the deadlines for submitting questions to ARPA-E-CO@hq.doe.gov.

**B. How will I receive a response to questions submitted to arpa-e-co@hq.doe.gov about this FOA?**

**ANSWER:** Responses are posted in the "Current Funding Opportunities FAQs" section of ARPA-E's website available at <http://arpa-e.energy.gov/?q=faq/current-funding-opportunities>. In addition, general questions about ARPA-E can be found at <http://arpa-e.energy.gov/?q=faq/general-questions>.

ARPA-E will post responses on a weekly basis to questions that are received. ARPA-E will cease to accept questions approximately 5 business days in advance of each submission deadline. Responses to questions received before the cutoff will be posted approximately one business day in advance of the submission deadline. ARPA-E may re-phrase questions or consolidate similar questions for administrative purposes.

**C. Will ARPA-E post a response to every question submitted to arpa-e-co@hq.doe.gov?**

**ANSWER:** No. ARPA-E will only post responses to questions that have not already been addressed by a published FAQ. Also, ARPA-E may consolidate similar questions for administrative purposes.

**D. If I have questions about ARPA-E exchange, who do I contact?**

**ANSWER:** Applicants may submit questions regarding ARPA-E's online application portal, ARPA-E eXCHANGE, to ExchangeHelp@hq.doe.gov. All emails must include the name and number of the Funding Opportunity Announcement in the subject line.

**E. Can I speak or meet with the ARPA-E program director or other ARPA-E personnel about this funding opportunity announcement?**

**ANSWER:** No. Upon the issuance of this Funding Opportunity Announcement (FOA), ARPA-E Program Directors and other ARPA-E personnel are prohibited from communicating (in writing or otherwise) with Applicants, or potential Applicants, regarding the FOA. This "quiet period" remains in effect until ARPA-E's public announcement of its project selections. During the "quiet period," Applicants may submit questions regarding the FOA to ARPA-E-CO@hq.doe.gov with the FOA name and number in the subject line. Applicants may also submit questions regarding ARPA-E's online application portal, ARPA-E eXCHANGE, to ExchangeHelp@hq.doe.gov with the FOA name and number in the subject line. ARPA-E will not accept or respond to communications received by other means (e.g., fax, telephone, mail, hand delivery). Emails sent to other email addresses will be disregarded.

**F. Can a person be PI on one proposal and a Co-PI on a second separate proposal?**

**ANSWER:** Yes, an individual may be on more than one submission – either as a lead or member of a Project Team.

**G. May applicants submit more than one concept paper to this funding opportunity?**

**ANSWER:** Yes, but each Concept Paper must be “scientifically distinct”. This term is used in Section III.C.3 (Limitation on Number of Applications) of the FOA. In this context, the term “scientifically distinct” is used to emphasize that, in the event an Applicant intends to submit multiple concept papers/application, the applicant should propose distinct technical approaches in each application. This prohibition on duplicative applications involves a fact-based determination by ARPA-E to ensure a focused review of each technical concept, and appropriate use of ARPA-E's limited time/resources.

**H. I have developed a technology that may be a good fit for this funding opportunity. Will ARPA-E please review my idea and let me know if it is responsive to this FOA?**

**ANSWER:** ARPA-E will review compliant and responsive concept paper submissions and provide feedback either encouraging or discouraging submission of a Full Application. See Section IV.A (Application Process Overview) of the FOA for Concept Paper review process. Concept Paper submissions are compliant if they meet the requirements of Section III.C.1 (Compliant Criteria) of the FOA, and are responsive if they meet the Program Objectives and other requirements set forth in Section I.C (Program Objectives and Structure) of the FOA and do not fall under Section I.E. (Applications Specifically Not of Interest) of the FOA. Applicants must review the technical requirements of the FOA and independently determine whether their proposed concept warrants a submission.

**I. Are foreign entities eligible to apply to this FOA?**

**ANSWER:** Foreign entities are eligible to apply for funding. See Section III.A.3 (Eligibility Information- Foreign Entities) of the FOA. However, if the project is selected for award negotiations and an award is made, all work must be performed in the United States by subsidiaries or affiliates incorporated in the United States or U.S. territories, unless ARPA-E grants a foreign work waiver to allow performance of part of the work outside of the United States. ARPA-E's grant of a foreign work waiver is a fact dependent, case-by-case determination that is made only in exceptional circumstances and only for discrete parts of an award that necessitate foreign work. Applicants that anticipate the need for a foreign work waiver to perform some work outside of the U.S. should review Section 5 of the Business Assurances & Disclosures Form.

**J. Are individuals eligible to apply to this FOA?**

**ANSWER:** Yes. Individuals are eligible to apply for funding. See Section III.A. (Eligibility Information) of the FOA. However, any ARPA-E award funding would need to be made to a business entity formed by the Applicant, if selected for award negotiations.

**K. Are we required to register for the Teaming List for this FOA?**

**ANSWER:** No. ARPA-E set up the Teaming Partner List for this FOA to facilitate formation of new project teams. There is no requirement for applicants or any team member to sign up/register for the Teaming Partner List. In addition, ARPA-E does not endorse or otherwise evaluate the qualifications of the entities that self-identify themselves for placement on the Teaming Partner List.

**L. I missed the last Concept Paper deadline. Can I still submit a Full Application?**

**ANSWER:** No. Only applicants who have successfully submitted a Concept Paper in eXCHANGE by the published deadline are eligible to submit a Full Application to the FOA.

**M. Our project team includes several team members. Does each team member need to contribute cost share equally?**

**ANSWER:** Although the cost share requirement applies to the Project Team as a whole, the funding agreement makes the Prime Recipient legally responsible for paying the entire cost share. See Section III.B.4 for more information on cost sharing. Each Project Team is free to determine how much each team member will contribute towards the cost share requirement. The amount contributed by individual Project Team members may vary, so long as the cost share requirement for the project as a whole is met.

**N. Can you tell me whether my project team qualifies for reduced cost share?**

**ANSWER:** ARPA-E may not provide pre-submission assessments on a project team's specific cost sharing requirement.

**O. Will in-kind contributions count towards meeting our cost share requirements?**

**ANSWER:** Yes, if the in-kind contribution is determined to be allowable, allocable and reasonable by the ARPA-E Contracting Officer. Since this is necessarily fact determinative inquiry, these types of questions are answered based on a review of all relevant information by the Contracting Officer during award negotiations. For general guidance on acceptable cost share contributions and corresponding cost principles used by the ARPA-E Contracting Officer to make these determinations, see 10 C.F.R § 600.313 and § 600.317 (Cost Matching/Sharing and Cost Principles for For-Profit Organizations), 2 C.F.R. § 200.306 and 2 C.F.R. Part 200, Subpart E (Cost Matching/Sharing and Cost Principles for Institutes of Higher Education, Hospitals, Other Nonprofit Organizations, State and Local Governments).

**P. We have a question concerning the impact of a large business seeking patent rights under a class waiver if our team qualifies for reduced cost share of 10%. Does this mean the entire team project is subject to 20% cost share or only the large business' portion of the project will be subject to 20% cost share?**

**ANSWER:** Per Section II.B.3 (Reduced Cost Share Requirement) of the FOA, under this scenario, only the large business' portion of the work under this scenario is subject to the 20% minimum cost share requirement. Please see Section III.B.3 (Reduced Cost Share Requirement), Section III.B.4 (Legal Responsibility), and Section III.B.5 (Cost Share Allocation) of the FOA for more details on the cost sharing requirements. NOTE: If the large business' portion of Total Project Costs is greater than 20%, then the project team's total cost share minimum is 20% since the team as a whole would no longer qualify for the 80/20 labor distribution for reduced cost share, per Section III.B.3 of the FOA.

**Q. Can you tell us whether our project team qualifies for reduced cost share based on the following scenario: [ ]?**

**ANSWER:** ARPA-E may not provide pre-submission assessments on a project team's specific cost sharing requirement.

**R. How should we include references in our Full Application? Do they count towards the overall page limitation for the Technical Volume?**

**ANSWER:** Applicants may provide a list of references in a separate bibliography. Only bibliographic information may be contained in the references, and no additional text or commentary should be included. There is no page limit for the bibliographic references section of the Full Application.

**S. Our team originally submitted a Concept Paper that listed [organization name 1] as the Prime Recipient. For our Full Application, can we change the lead organization to \*\*\*\* [organization name 2] instead?**

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

**T. Can I include new Co-PIs and/or subrecipients in my Full Application?**

**ANSWER:** Yes. Applicants may expand or otherwise modify the Project Team for their Full Applications.

**U. My Concept Paper was encouraged. What are my chances of being selected for award negotiations by ARPA-E?**

**ANSWER:** ARPA-E does not provide pre-submission assessments of Applicants' likelihood to receive funding.

**V. Do subrecipients also need to fill out the Business Assurances & Disclosures Form or is this filled out only by the Prime Recipient?**

**ANSWER:** The Business Assurances & Disclosures Form requests information regarding the legal entity submitting the application as the Prime Recipient, the legal entities and/or individuals that are proposed to be Subrecipients, and the PI/Co-PIs in their individual capacity. The Prime Recipient may submit one Business Assurances & Disclosures Form covering all of the Project Team members if it has authorization and information to answer on their behalf. Alternatively, the Prime Recipient may request Subrecipients to complete and sign individual Business Assurances & Disclosures Forms that the Prime Recipient will append to its form.

**II. Questions for week ending: NOVEMBER 14, 2014**

**Q1. I am with a non-US company developing technology that falls in the scope of TRANSNET. Can a foreign company submit an application?**

**ANSWER:** Please see the response for FAQ I above.

### III. Questions for week ending: NOVEMBER 21, 2014

**Q2. The FOA indicates that a complete system model and control architecture are expected from each team in the Concept Paper. Will every team (including those with much lower budgets) be expected to develop both a complete urban transportation system model as well as a control architecture? Or can smaller teams apply that want to address a smaller part of this puzzle?**

**ANSWER:** Yes, both a system model and control architecture are required elements. See Section I.C of the FOA (Program Objectives and Structure) (“[t]he control architecture is a key deliverable. Developing a control architecture that interacts with the system model will allow ARPA-E to assess the usefulness of personalized control for energy savings in transportation.”). Concept Papers that are not responsive to the FOA requirements will not be reviewed or considered. See Section III.C.2 (Responsiveness Criteria) and Section I.E (Applications Specifically Not of Interest) of the FOA.

A Teaming Partner List for this FOA is available to provide a mechanism for applicants to identify complementary communities to facilitate interdisciplinary collaborations. At the Concept Paper stage, if specific collaborators have not been identified, placeholders can be used until the Full Application stage. (Please see the response to FAQ K above for more information about the Teaming Partner List).

### IV. Questions for week ending: NOVEMBER 28, 2014

**Q3. A characteristic of the system model described in Table 1 is region of interest and provides "US urban region of greater than 3 million inhabitants, based on the 2010 Census and metropolitan statistical areas defined the Office of Management and Budget using a region that has robust multimodal options." Is there any flexibility on this characteristic?**

**ANSWER:** As specified immediately above Table 1 of the FOA, applicants “should propose a model that addresses” the “Region of Interest” and other characteristics. (emphasis added). See Section I.C (Program Objectives and Structure of the FOA). The intention of TRANSNET is to evaluate and guide future deployment of a functional control architecture, ultimately (in principle) across the entire United States. System models that consider complex and congested urban areas greater than 3 million inhabitants are more likely to reveal features and flaws of such a control architecture. However, applicants are not prohibited from deviating from the “Region of Interest” characteristic.

**V. Questions for week ending: DECEMBER 5, 2014**

**Q4. Page 16 of the FOA sets the following “Quality of Service” characteristic for the control architecture as: "Based on travel time (with expected statistical uncertainty) for each traveler in the uncontrolled model, an increase in travel time upon control is never statistically significant ( $p < 0.05$ )"**

**However, the glossary in Section I.D of the FOA contains a more nuanced definition of Quality of Service that would allow tradeoffs between time and other metrics, such as cost (e.g., for parking at the destination). Are control architectures that send personalized signals that try to influence drivers to use other modes of transportation, such as car-pools or transit permitted if that mode change would prolong their trip, even if the change would have other benefits such as reduced cost or increased comfort?**

**ANSWER:** The intention of TRANSNET is to evaluate and guide future deployment of a functional control architecture for minimizing energy use that is aimed at individual travelers across all modes of transportation, including car pools and mass transit. Per Section I.C (Program Objectives and Structure) of the FOA, personalized signals “...must intentionally influence energy-related transportation choices (e.g., mode, departure time, etc.) by travelers.” Approaches that induce mode shifting are therefore in scope. However, traveler preferences are already an integral part of urban transportation systems, and the features and drawbacks of mode shifting, peak shifting, or car pooling are known to a significant segment of the traveling public a priori. Thus, any increase in travelers changing modes must be fully justified based on modern behavioral theories as well as demographic data in the region considered.

**VI. Questions received by CP phase question submission deadline : DECEMBER 15, 2014**

**Q5. What is meant with the "technical category" on first page of the Concept Paper?**

**ANSWER:** The Concept Paper template is used by ARPA-E for several ARPA-E FOAs, which may have multiple technical categories. Applicants may disregard this field for TRANSNET because the FOA does not establish multiple technical categories.

**VII. Questions for week ending: MARCH 6, 2015**

**Q6. Can one person or one organization join two or more proposals as subrecipients (not the prime)?**

**ANSWER:** Yes. Please see the response for FAQ T above.

**Q7. We are not sure how to interpret the open source constraint on the system model. Page 14 of the FOA states that a required characteristic of the system model is that it should be developed under an open software standard, and that it should be written in a widely-available computer-language.**

**Does this rule out the possibility of building our model on top of widely used commercial transportation software (assuming the company that created the commercial software agrees to make its software open source for the sake of this project)? Or, are we expected to develop our models from scratch using, e.g., C++ ?**

**ANSWER:** As specified immediately above Table 1 of the FOA, applicants “should propose a model that addresses” the “Model Performance” characteristic, which includes development under an open software standard (emphasis added). See Section I.C (Program Objectives and Structure of the FOA). It is the intention of TRANSNET, in part, to encourage the development of system models that may become useful tools either for transportation planners or for future transportation control simulations. Thus, system models that are modular and developed under public, open source software standards may facilitate wider use and adaptability in the future as a tool for traveler- and energy-based transportation modeling. If commercial software is used as a basis, any additional software (specifically, for the system model) that is developed under an ARPA-E award should be made available to the research community under an open software standard.

## VIII. Questions for week ending: MARCH 20, 2015

**Q8. Will letters of support be counted toward the maximum page limit of the Technical Volume? Our team expects a significant number of support letters from various partners and agencies. If they count toward the page limit, may we cite the reference letters, and state that they are on file and can be provided if later on requested by ARPA-E?**

**ANSWER:** Letters of support may be included in the Technical Volume or cited in the Technical Volume, but in both cases will count towards the 30 page limitation for the Technical Volume. Note: Per Section IV.D (Content and Form of Full Applications) of the FOA, if applicants exceed the maximum page limitation of 30 pages for the Technical Volume, ARPA-E will only review the authorized number of pages, starting with the first page and then each of the following 29 pages, and disregard any additional pages.

IX. Questions for week ending: MARCH 27, 2015

**Q9. Are administrative costs allowable on the ARPA-E project budget, i.e., costs to pay administrative staff for necessary project support? The overhead cost will be able to cover some of the administrative cost, but not all of it required for the proposed effort.**

**ANSWER:** Personnel costs for administrative staff should normally be treated as indirect costs. Direct charging of these costs may be appropriate if the administrative services are integral to the project, the individuals can be specifically identified with the project, the costs can be explicitly included in the budget, and the costs are not also charged as indirect costs.

**Q10. Will providing more cost share than required be considered by ARPA-E in a Full Application?**

**ANSWER:** Per Section V.B.1 (Program Policy Factors) of the FOA, in determining which Full Applications to select for award negotiations ARPA-E may consider whether a “Project leverages Federal funds to optimize advancement of programmatic goals by proposing cost share above the required minimum or otherwise accessing scarce or unique resources”.

**Q11. A full proposal template is already provided on the ARPA-E website. Can our team use our own proposal design template (with various design elements for a more professional appearance) as long as we ensure that all ARPA-E required elements are included?**

**ANSWER:** ARPA-E strongly encourages applicants to utilize the Technical Volume template provided on ARPA-E eXCHANGE. Applicants that deviate from this format must ensure that their submission conforms to the content and form requirements for the Technical Volume contained in Section IV.D.1 (First Component – Technical Volume) of the FOA.

**Q12. An FFRDC will be the prime on a submission. As we understand it, the FFRDC will receive only their funding through the DOE work authorization process. The other participants will be funded separately. Will the other project team members be funded individually or will there need to be a “lead” for them and the funding will be processed through that lead organization?**

**ANSWER:** Per Section II.A.2 (Funding Agreements with FFRDCs, GOGOs, and Federal Instrumentalities) of the FOA, when a FFRDC is the *lead organization* for a Project Team, ARPA-E executes a funding agreement directly with the FFRDC and a single, separate Cooperative Agreement with the rest of the Project Team. For the Cooperative Agreement, one subrecipient will be designated as a “lead” subrecipient for the project. The “lead” subrecipient will be reimbursed directly by ARPA-E, and any additional subrecipients on the project team would be reimbursed through the “lead” subrecipient. Notwithstanding the use of multiple agreements, the FFRDC is the lead organization for the entire project, including all work performed by the FFRDC and the rest of the Project Team.

**Q13. We have a question about the page limit requirement. The solicitation requires that Sections 1-5 have to be no more than 30 pages in total. The solicitation also provides the suggested # of pages for each section. Is this suggested # of pages mandatory or not?**

**ANSWER:** The Technical Volume template provides suggested page lengths to applicants for each section; however, applicants may independently decide how much space to allocate to each section of the Technical Volume. Note: Per Section IV.D (Content and Form of Full Applications) of the FOA, if applicants exceed the maximum page limitation of 30 pages for the Technical Volume, ARPA-E will only review the authorized number of pages, starting with the first page and then each of the following 29 pages, and disregard any additional pages.

**Q14. Is a non-U.S. citizen scientist, working for a U.S. incorporated university/entity, eligible to receive funding under TRANSNET, DE-FOA-0001199?**

**ANSWER:** ARPA-E may not provide pre-submission eligibility determinations. Per Section III.A.1 (Individuals) of the FOA, only U.S. citizens or permanent residents may apply to the FOA in their individual capacities. However, Principal Investigators and other team members representing eligible, qualified institutions need not be U.S. citizens or permanent residents. Please see Section III.A (Eligible Applicants) of the FOA for more information on what entities are eligible to apply, and the response to Frequently Asked Question M above for information on foreign entities.

**X. Questions for week ending: APRIL 3, 2015**

**Q15. We are considering a control architecture that incentivizes users to choose alternatives for travel (e.g. route, departure time, mode) by direct rewards that are proportional to actions based on their contribution towards the system optimum. The value will be based on the system's knowledge of the user's personal characteristics as determined via survey. Is this proposed control architecture consistent with the scope of the FOA?**

**ANSWER:** Page 19 of the FOA states that "The use of broad, non-personalized economic incentives as controls will not be considered adequate for this solicitation." and page 20 states that "The response to a signal must be relevant to energy use by the traveler, e.g., changes in route, departure time, and mode, etc. While specific, punitive financial controls such as congestion pricing are excluded (as being known strategies), specific non-punitive financial controls such as coupons, tax relief, etc., will all be considered, *provided they are personalized.*" (emphasis added). Surveys are, in general, non-personalized to the level of the individual and instead aggregate opinions of a group of participants. Rewards that are directly convertible to dollars are economic in all but name. It is up to the applicant to clearly delineate how their proposed approach differs from known strategies, e.g., congestion pricing. Broad surveys will likely provide statistical, but not personalized, information, so it is up to the applicant to relate survey results to individual characteristics.

**Q16. The Instructions and Summary sheet in the Budget Justification workbook states that “No individual may be paid more than \$200,000 per year under an ARPA-E funding agreement.” Does the \$200,000 figure include fringe benefits?**

**ANSWER:** This requirement means that no agreement can charge more than \$200,000 in direct costs per individual for employee salaries. This requirement does not apply to fringe benefits.

**Q17. Could you please clarify what we should assume to be the project start date? The SF-424 section on page 45 of the FOA mentions a start date of October 1, but the text under the Budget Justification Workbook/SF-424A section does not reference a start date. Please advise if we should assume an October 1 start date in our budget preparations.**

**ANSWER:** Applicants should assume a start date of October 2015 for the SF-424A.

**Q18. Page 16 of the FOA states, “The control architecture is a key deliverable.” Page 12 of the FOA specifies, “A control architecture is a detailed, comprehensive approach to network control and will be implemented within the system model in the same way it could be implemented in the real world, with the objective to reduce system level energy use by providing signals to individual travelers.” Would a report with a technical description of the control architecture be a sufficient deliverable? Or does ARPAe require that software or algorithms developed for the control architecture be deliverables?**

**ANSWER:** ARPA-E will consider compliant and responsive Full Applications that propose to meet or exceed the Program Objectives and Structure for the system model and control architecture set forth in Section I.C of the FOA. Per page 12 of Section I.C of the FOA, the control architecture is a key deliverable and Full Applications must support the two primary program objectives for the control architecture: “(1) to demonstrate that energy efficiency gains are possible through *implementable* control architectures, and (2) to identify key technology gaps that limit such implementation (emphasis added).” Please also see the supplementary information section beginning on Page 18 of the FOA for more information about what is expected from the Control Architecture.