

QUESTIONS AND ANSWERS

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Q11. Section I.B (Program Overview) of the FOA says, “This program seeks to fund the development of large-scale, realistic, validated, and open-access electric power system network models (transmission and distribution) that have the detail required for the successful development and testing of transformational power system optimization and control algorithms. In conjunction, the program will also fund the creation of an open-access, self-sustaining repository for the storage, annotation, and curation of these power systems models, as well as others generated by the community.”4

In this context, what does ‘open access’ imply with regard to an individual’s interaction with the models in the Repository? That people must be able to anonymously access the models? That people can be required to have a user account to access the models? That people can be required to provide contact information in order to access the models? That people can be required to pay a nominal fee to access the models?4

Q12. Is the 5% Technology Transfer and Outreach calculated from the total costs (direct costs plus indirect costs, not including cost-share) or is it 5% of the direct costs only?5

Also, does the indirect costs incurred in TTO expenses contribute to the 5% commitment?5

For example, the total cost for one year is \$180,000 which includes \$116,129 direct costs and \$63,870 in indirect costs.**Error! Bookmark not defined.**

Should the TTO commitment be \$9,000 in TTO direct costs or \$5,806 direct costs?..... **Error! Bookmark not defined.**

Q13. We have a quick question about business assurance and disclosure form for FOA 0001357. On page 5, the PI needs to list current and pending for the last 5 years but only two entries are allowed. How can we add more? Do we add as a separate document?5

Q14. A FFRDC Field Work Proposal is required to be appended to the Business Assurances & Disclosures Form. Should the FWP be signed by the laboratory's official who is authorized to commit the FFRDC?5

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: JUNE 19, 2015

Q1. Would generation of scenarios and/or the related synthetic data be considered as a part of "repository generation" or "model generation"?

ANSWER: The generation of scenarios is considered to be part of model generation. See Section I.D.2 (Power System Scenario Creation) of the FOA for information on scenarios generation requirements in relation to model generation.

Q2. Can one concept paper be on parts of either "model generation" or "scenario generation"? Or should a concept paper include all aspects of one of the two?

ANSWER: Per Section I.D.2 (Power System Scenario Creation) of the FOA, Category 1 "applicants **must** also plan to deliver a large number of scenarios or specific operating points for each infrastructure model." (emphasis added). ARPA-E will not consider selecting projects for award that do not clearly demonstrate realistic, well-justified potential to meet or exceed the required technical targets provided in the FOA for each category. See Section I.E (Power System Model & Repository Technical Requirements) of the FOA for the technical targets for Category 1 (Power System Network Model and Scenario Creation).

II. Questions for week ending: JULY 3, 2015

Q3. Is unit commitment a minimum requirement for the model/scenarios or optional in this FOA?

ANSWER: No. Including all of the information required for unit commitment in models and scenarios is not a minimum requirement.

Q4. The Concept Paper outline beginning on page 42 of the FOA differs significantly with the outline in the Concept Paper template provided at [ARPA-E-FOA.energy.gov \(https://arpa-e-foa.energy.gov/filecontent.aspx?fileid=5761b957-1a3e-4e34-8353-991f5df5310d\)](https://arpa-e-foa.energy.gov/filecontent.aspx?fileid=5761b957-1a3e-4e34-8353-991f5df5310d). While we presume the outline in the FOA supersedes the one provided in the Concept Paper outline, does DOE prefer to have project duration and preliminary cost information included in the Concept Paper as is indicated by the Concept Paper template?

ANSWER: The concept paper template found at [ARPA-E-FOA.energy.gov](https://arpa-e-foa.energy.gov) is provided for the applicants' convenience. It use is not mandatory but the template does set forth topics of general interest to ARPA-E. Minimum concept paper form and content is set forth in the FOA at Section IV.C. Applicants shall include the funding amount requested and project duration in their concept papers.

Q5. On page 21 of the FOA, table 1, line item 1.1, the last sentence is "applicants must clearly describe the extent to which improved OPF algorithms for the selected OPF problem would address ARPA-E's mission areas". Can you please provide us some additional context or references related to "the selected OPF problem"?

ANSWER: Applicants are free to select one or more specific OPF problems to focus on. ARPA-E is not requiring that all models/scenarios be constructed for the same OPF problem variant. As indicated in the FOA, different OPF problems may have different objective functions and constraints. However, some OPF specific OPF problems may be more relevant to ARPA-E's mission areas than others.

Q6. Near the top of p.42 of the FOA it says: "each Concept Paper should be limited to a single concept or technology. Unrelated concepts and technologies should not be consolidated into a single Concept Paper". Would this mean that one should address the two categories in separate Concept Papers, not combining ideas into a single Concept Paper even if the ideas are related to make a complete solution? The two categories are defined in the FOA as: "Category I: power system network model and scenario creation" and "Category II: repository creation".

ANSWER: A single concept paper may address both FOA categories. However, multiple concepts for Category I or multiple concepts for Category II should not be consolidated into a single Concept Paper.

Q7. Do all individuals on a project team who are also employed by a university/applicant have to be U.S. Citizens?

ANSWER: Section III.A.1 (Eligibility Criteria - Individuals) of the GRID DATA FOA contains the eligibility criteria for individuals for this FOA and provides that "U.S. citizens or permanent residents may apply as a Standalone Applicant, the lead for a Project Team, and members of a Project

Team.” Footnote 68 of the FOA defines the term “Project Team” and provides that this term “...is used to mean any entity with multiple players working collaboratively and could encompass anything from an existing organization to an ad hoc teaming arrangement. A Project Team consists of the Prime Recipient, Sub-recipients, and others performing or otherwise supporting work under an ARPA-E funding agreement.”

Please refer to Section III.A (Eligibility Criteria) of the FOA for further information on eligibility of individuals and other entities under this FOA.

III. Concept Paper Questions deadline: JULY 13, 2015

Q8. I am working with a team of faculty preparing a response to the grid data FOA. We feel that the data model should be built using an existing realistic power system model, which has been studied in both steady-state and dynamic analyses. If realistic model data are used, then we anticipate issues with public open-access due to FERC's critical energy infrastructure information policy.

A. Can ARPA-E please address issues related to open-access?

B. Can any domestic or international party gain free access to the large-scale model (even with careful anonymization) without signing a non-disclosure agreement?

ANSWER: A. Technical Specification No. 1.7 (Documentation and Public Access Requirement) requires applicants that propose using real world network model data provided by a grid operator or utility to include a Data Management Plan (DMP) as part of the application. The DMP should include “risk mitigation plans for likely, possible, and unforeseen barriers....” regarding removal of “all protected, proprietary, and/or security sensitive details [from the power system network model] prior to release.” For additional information on the public access requirement for proposed power system models, please see Technical Specification No. 1.7 in Table 1 of Section I.E.1 (Category I: Power System Network Model and Scenario Creation) of the FOA.

B. The GRID DATA FOA seeks “to fund the development of large-scale, realistic, validated, and open-access electric power system network models... the program will also fund the creation of an open-access, self-sustaining repository for the storage, annotation, and curation of these power systems models...” (emphasis added). See Section I.B (Program Overview) of the FOA. Technical Specification 3.1 (Open Access) in Table 3 of Section I.E.2 of the FOA requires the repository and portal to be “completely open (including international access)” Thus, ARPA-E expects that the power system models developed under the GRID DATA Program will be uploaded to the online public repository and made available there, without NDAs or other restrictions on access or use, including to international parties.

ARPA-E realizes this requirement will substantially increase the difficulty of the research to be undertaken in the GRID DATA program and may require the involvement of additional partners. Indeed, as described in Section I.D.3 (Possible Approaches to Model and Scenario Creation) of the FOA, the creation and validation of synthetic power system models that are reasonably representative of one or more real-world systems while not containing any critical energy infrastructure information or business sensitive information is expected to be one of the central R&D challenges in this program.

I. Questions for week ending: OCTOBER 2, 2015

Q9. Tab a- Personnel of the Budget Justification Workbook is set up for 8 tasks. We have 17 tasks each of which involves us as prime. I can't seem to adjust the form to handle 17 tasks. Can we submit two forms, with 8 tasks on one and 7 on the other?

ANSWER: No, ARPA-E's Funding Opportunity eXCHANGE Portal only allows applicants to upload one Budget Justification Workbook. The SF-424A (Budget Justification Workbook) is a protected file that cannot be changed by applicants. ARPA-E encourages applicants to format their Budget Justification Workbook submission such that two or more of the tasks are identified as distinct subtasks under a single task heading – e.g., under Task 1 there might be Task 1.A and Task 1.B versus Task 1 and Task 2.

Q10. Our concept paper for Repository Creation for Grid Data is “encouraged” and we are preparing our full application. We have the following question:

Section II.A of the FOA states that “ARPA-E intends to also fund operations, maintenance, and updates to the repository for up to a total duration of 4 years through this FOA.” How can we submit a 4 year budget where the Budget Justification Workbook SF 424A is only set up for 3 years and we are not permitted to revise it in any form (e.g., add column for year 4 costs)?

ANSWER: ARPA-E uploaded an updated SF-424A (Budget Justification Workbook) on the ARPA-E's Funding Opportunity eXCHANGE Portal to address this issue. The updated SF-424A includes a new “Year 4” tab for repository submissions.

II. Questions for week ending: OCTOBER 9, 2015

Q11. Section I.B (Program Overview) of the FOA says, “This program seeks to fund the development of large-scale, realistic, validated, and open-access electric power system network models (transmission and distribution) that have the detail required for the successful development and testing of transformational power system optimization and control algorithms. In conjunction, the program will also fund the creation of an open-access, self-sustaining repository for the storage, annotation, and curation of these power systems models, as well as others generated by the community.”

In this context, what does ‘open access’ imply with regard to an individual’s interaction with the models in the Repository? That people must be able to anonymously access the models? That people can be required to have a user account to access the models? That people can be required to provide contact information in order to access the models? That people can be required to pay a nominal fee to access the models?

ANSWER: Technical Specification 3.1 for Repositories specifies that “Open Access” means that “The repository and portal must be completely open (including international access), giving

researchers the ability to upload modified versions of existing models and designate relationships between different models (i.e. version control) as well as provide annotation and/or comments on specific models (similar to, for example, GitHub).” See Section I.E.2 (Power System Model & Repository Technical Requirements – Repository Creation) of the FOA.

Thus, open access is intended to mean that models must be available and shareable in accordance with generally accepted standards within the research community to all members of the research community and that all details contained within the models must be publishable (for example in technical literature or at technical conferences) with no restrictions that are inconsistent with open access. This requirement does not mandate anonymous access to models nor does it preclude payment of a nominal fee to access models if necessary to ensure the long-term sustainability of the repository beyond the initial period of ARPA-E funding. Many of the desired repository features (including, for example, curation and version control) may require researchers to register for an account or may require that the repository implement other mechanisms to ensure the integrity of repository content.

Q12. Is the 5% Technology Transfer and Outreach calculated from the total costs (direct costs plus indirect costs, not including cost-share) or is it 5% of the direct costs only?

Also, does the indirect costs incurred in TTO expenses contribute to the 5% commitment?

ANSWER: Allowable indirect costs are included in the calculations of Total Project Cost and Technology Transfer and Outreach (TT&O) costs. Thus, allowable indirect costs incurred in connection with allowable TT&O expenses may be counted towards meeting the 5% TT&O requirement.

Q13. On page 5 of the Business Assurances & Disclosures Form, the PI needs to list current and pending for the last 5 years but only two entries are allowed. How can we add more? Do we add as a separate document?

ANSWER: As set forth on page 5 of the Business Assurances & Disclosures Form: *If additional tables are required, please include the tables as an addendum to this form (i.e., the Business Assurance and Disclosure Form).*

Q14. A FFRDC Field Work Proposal is required to be appended to the Business Assurances & Disclosures Form. Should the FWP be signed by the laboratory's official who is authorized to commit the FFRDC?

ANSWER: Field work proposals must be prepared and authorized as set forth in DOE Order No. 412.1A, which may be found at <https://www.directives.doe.gov/directives-documents/400-series/0412.1-BOrder-a-admchg1>.