

**Frequently Asked Questions
DOE Office of Science. Fusion Energy Sciences
Milestone-Based Fusion Development Program
Version 1.4, December 5th, 2022**

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Modifications and Updates

The following changes were made between Version 1.3 and Version 1.4 of this FAQ:

1. Style and formatting: No changes.
2. These questions and/or answers were modified:
 - a. General: no modifications
 - b. Eligibility: no modifications
 - c. Budget: no modifications
 - d. Pre-application and Application: no modifications
 - e. Review, Selection and Award Management: no modifications
 - f. Portfolio Analysis and Management System (PAMS): 2
3. These new questions were added:
 - a. General: 22-28
 - b. Eligibility: no added questions
 - c. Budget: 9-12
 - d. Pre-application and Application: 14
 - e. Review, Selection and Award Management: 10-11
 - f. Portfolio Analysis and Management System (PAMS): no added questions

The following changes were made between Version 1.2 and Version 1.3 of this FAQ:

1. Style and formatting: No changes.
2. These questions and/or answers were modified:
 - a. General: 1, 3-6, 8, 13, 15
 - b. Eligibility: 1, 2, 5, 6
 - c. Budget: 2, 3, 5

- d. Pre-application and Application: 5
 - e. Review, Selection and Award Management: 5, 6, 8
 - f. Portfolio Analysis and Management System (PAMS): no modifications
3. These new questions were added:
- a. General: 18-21
 - b. Eligibility: 7
 - c. Budget: 6-8
 - d. Pre-application and Application: 13
 - e. Review, Selection and Award Management: no added questions
 - f. Portfolio Analysis and Management System (PAMS): no added questions

The following changes were made between Version 1.1 and Version 1.2 of this FAQ:

- 1. Style and formatting: No changes.
- 2. These questions and/or answers were modified:
 - a. General: 9
 - b. Eligibility: no modifications
 - c. Budget: no modifications
 - d. Pre-application and Application: no modifications
 - e. Review, Selection and Award Management: no modifications
 - f. Portfolio Analysis and Management System (PAMS): no modifications
- 3. These new questions were added:
 - a. General: 14-17
 - b. Eligibility: no added questions
 - c. Budget: no added questions
 - d. Pre-application and Application: 12
 - e. Review, Selection and Award Management: no added questions
 - f. Portfolio Analysis and Management System (PAMS): no added questions

The following changes were made between Version 1.0 and Version 1.1 of this FAQ

- 1. Style and formatting: questions and answers were indented, page numbers were added, and questions were numbered within each section.
- 2. These questions and/or answers were modified:
 - a. General: Minor: 2 and 6. Major: 7.
 - b. Eligibility: Minor: 2, 3, and 4.
 - c. Budget: Minor: 2
 - d. Pre-application and Application: 1, 2, 6, and 7.
 - e. Review, Selection and Award Management: Minor: 1,3-5,8 and 9.
 - f. Portfolio Analysis and Management System (PAMS): Minor: 2.
- 3. These new questions were added:
 - a. General: 9-13

- b. Eligibility: No additional questions.
- c. Budget: 3-5
- d. Pre-application and Application: 8-11
- e. Review, Selection and Award Management: No additional questions.
- f. Portfolio Analysis and Management System (PAMS): No additional questions.

General

1. Q: Where will the slides and the recorded webinar be posted?

A: On the Fusion Energy Sciences (FES) Funding Opportunities Page, just below the FOA:
<https://science.osti.gov/fes/Funding-Opportunities>

2. Q: May I come to the Department of Energy for a demonstration?

A: No, potential applicants may not visit the Department of Energy for a demonstration. DOE must treat all applicants the same, which precludes arranging for demonstrations from individual entities. Please note that finalists will have the opportunity to give an oral presentation.

3. Q: How many awards are expected?

A: As Section II.D of the FOA states, between 3-5 awards are expected, subject to availability of funds and the number of meritorious applications selected.

4. Q: The community benefits plan is a novel addition to the merit review process. Nonetheless, it is probably not the expertise of many of the organizations applying. Can FES recommend subject matter experts (perhaps as paid consultants) that can help the applicants come up with impactful plans? Can FES recommend particular model Diversity, Equity, Inclusion and Accessibility (DEIA) activities or approaches?

A: Teams are responsible for ensuring that their team has or has access to all the appropriate expertise to address all the milestones in their application. DOE cannot recommend teaming partners. The FOA provides information on DEIA activities or approaches.

5. Q: To what degree will DOE scrutinize or audit private sector accounts?

A: As stated in the FOA, applicants requesting a fixed-support TIA are not subject to all the Federal cost principles and audit requirements. However, milestone payments under Fixed-support TIAs should be associated with the well-defined, observable, and verifiable technical outcomes. Expenditure-based TIAs are subject to cost principles and accounting standards and require detailed budget information as part of the application (reference Section IV of the FOA). Negotiation and payment of estimated milestones under Expenditure-based TIAs may require more detailed reviews of budget information, incurred costs, audit reports, verification of non-federal contributions, etc. Additional information is found in Section VIII of the FOA.

6. Q: What levels of risk / TRL are appropriate?

A: Risk is discussed in Section I, "FUNDING OPPORTUNITY DESCRIPTION" of the FOA. Applicants are encouraged to be thoughtful about identifying and addressing the most significant technical or physics risks of their approach within the timeframe discussed in the FOA. This FOA invites applications for "applied R&D to resolve scientific and technological issues toward the successful design of a fusion pilot plant (FPP)." Applicants should be mindful/aware of the five-year deliverables specified for both tiers, as these deliverables will inform risk and TRL levels.

7. Q: If performing/completing a related SBIR I, can these funds supplement the associated SBIR II? If so, would completion of those phases be considered appropriate milestones?

A: No, these funds cannot be used to supplement the associated SBIR Phase II awards. Duplication of effort under the Milestone-Based Fusion Development Program and the SBIR Program is not permitted.

8. Q: What can applicants assume about contributions from the publicly funded programs?

A: If work at a DOE/NNSA National Laboratory or university is included in an application, it should be viewed as part of it (i.e., as a sub-award). Applicants may also make assumptions that the public sector will develop certain capabilities as part of ongoing research and development programs. These assumptions should be clearly indicated within the proposal.

9. Q: What is the process for receiving a waiver to perform work (e.g., a demonstration) outside the United States?

A: In general, based on a rare and unique circumstance, agencies may approve a particular portion of the R/R&D work to be performed or obtained in a country outside of the United States, for example, if a supply or material or other item or project requirement is not available in the United States. Applicants may also request to perform work outside the US if their project would materially benefit from, or otherwise require, certain work to be performed overseas. A foreign work waiver may be provided on a case-by-case basis to allow performance of some work outside of the United States, whether the work is done by US or non-US entities. Applicants who anticipate a potential need for a foreign work waiver should indicate this in their application.

10. Q: Is a foreign work waiver needed for a team with foreign sub-awardees if all the work is performed in the United States?

A: A team with foreign sub-awardees does not necessarily require a foreign work waiver if no work is performed outside of the United States. Applicants should list their sub-awardees (noting any foreign sub-awardees) and the location of any proposed work in their application.

11. Q: Are letters of support permitted? Who should these letters of support be addressed to?

A: Letters of support related to Diversity, Equity, Inclusion, and Accessibility (DEIA) may be included. Please review section I (page 8) of the FOA which states: "Applicants may provide letters of support from representative organizations reflecting substantive engagement and feedback on applicant's approach to community benefits (including to the American workforce) and DEIA." Beyond DEIA considerations, letters of support are not allowed. Section IV D (page 17) of the FOA states that letters of support are not allowed--only letters confirming collaborations or access to capabilities can be submitted. Letters of collaboration should be addressed to the Principal Investigator (PI).

12. Q: May I have a call with you to discuss my application?

A: Calls are not permitted. DOE must treat all potential applicants equally, so DOE cannot offer individual guidance on phone calls.

13. Q: How will the IP and data provisions stated in the FOA (e.g., 20-year data protection and IP to partner) be reconciled with the standard CRADA terms that the Labs may be expecting (e.g. Five

(5) year protection on data, Labs have rights to joint inventions). Will there be a new or modified CRADA?

A: Lead organizations will need to work with the DOE/NNSA National Laboratory(s) to negotiate SPPs or CRADAs with terms to mutual satisfaction to fulfill the spirit of the FOA.

14. Q: Are specific fusion approaches (e.g., tokamaks vs. Z-pinch) slated for particular tiers?

A: There is no pre-determined correlation between tier and concept. However, applications must make a credible case that their approach can potentially meet the objectives and targets of the tier they apply to, as described in the FOA and with respect to the full merit-review criteria.

15. Q: What is the expected award date? The webinar noted that awards may be made by FY 2023, which would be 9/30/23 at the latest. Could awards be made earlier than September 2023?

A: It is the intent of DOE to make awards well before the end of Fiscal Year 2023, but award dates will depend on the complexity of negotiations and internal reviews required before awards can be finalized.

16. Q: is the program designed to support the construction and operation of intermediate facilities?

A: This is at the discretion of the applicant, which must make a technical case for the intermediate facility as being on the critical path.

17. Q: We are considering developing a Tier 2 application. We are questioning whether the following is in scope: a combined system that tests enabling technologies for a Fusion Pilot Plant (FPP) as an integrated system (fuel cycle, heat transfer, power generation, waste management etc.) to show it is possible to generate usable energy from a net power producing fusion plasma. This system would be coupled to one or more configurations of fusion plasma, and would prove new materials and technology to confirm that the plasma can be sustained and produce reliable fusion power output for an FPP.

A: Applicants are encouraged to review the descriptions of the Tiers in Section 1 of the proposal. The Tier 2 description states: "Applications shall articulate a plausible path and proposed milestones leading to a significant improvement, as defined quantitatively by the applicant, in the fusion performance (including the physics basis and required enabling materials/technologies) of their proposed FPP concept by the mid/late 2020s." With this description in mind, Tier 2 applications must be coupled to a particular FPP concept to be in-scope for this solicitation.

18. Q: How many pre-applications were submitted? How many Tier-1 and Tier-2 pre-applications were encouraged to submit a full application?

A: DOE cannot share the number of pre-applications submitted or encouraged. This information is source-selection sensitive.

19. Q: Is there guidance on the relative sizes of average Tier 1 and Tier 2 award amounts?

A: No. Applicants may wish to keep in mind that the requested award sizes should be commensurate with the milestones.

20. Q: Is it required to have achieved $Q_p > 1$ in the next five years for an applicant to be considered a Tier 1 application? How will the probability of achieving this milestone be assessed by the review process?

A: Achieving $Q_p > 1$ (i.e., scientific breakeven) in the next five years is not required for an application to be considered Tier 1. However, demonstration of $Q_p > 1$ *equivalent* before the fusion pilot plant preliminary design review (FPP PDR) is strongly encouraged for Tier-1 applications. By “equivalent” we mean, for example, DD experiments reaching the required Lawson parameters for $Q_p > 1$ (of the commercial fuel). A goal of this solicitation is to accelerate the timeline in the National Academies of Sciences, Engineering, and Medicine report, *Bringing Fusion to the U.S. Grid*. Table 5.1 of the report has “demonstrate equivalent $Q_p > 1$ ” taking place prior to the preliminary design review and improving projections for $Q_p > 1$ and $Q_e > 1$ (i.e., net electricity) taking place during final design and construction. Expert reviewers from both inside and outside DOE will assist with proposal review.

21. Q: The FOA states on page 39 that applicants with national labs on their teams must include written authorization from the Laboratory [DOE Site Office] Contracting Officer (CO) stating that the lab may participate in the project. Who should this letter be addressed to?

A: “To Whom It May Concern” would suffice from FES’ perspective. Applicants may wish to consult with the DOE/NNSA Site Office Contracting Officer to ask what they would prefer. As the FOA states in Section VIII.A, “DOE/NNSA National Laboratories, if eligible either as a prime applicant or a proposed team member on another entity’s application, should ensure that their cognizant DOE/NNSA Contracting Officer provides written authorization. This authorization should be submitted with the application as part of the Budget Justification for DOE/NNSA National Laboratory Contractor File.”

22. Q: In first 18, second 18 or 24 month period, if a foreign entities is needed for TRL or physics testing, is anything else besides a waiver needed? Only place able to do the work.

A: Please see the answer to question 9 under General.

23. Q: Is code development within scope for the milestone-based fusion development program?

A: For the Milestone program, code development could be part of a larger scope of work that a team proposes in full application. Applicants may wish to ensure that any code development is clearly linked to the milestones within the timeframe of the Milestone program.

24. Q: Some in the fusion industry have predicted that only a single Tier-1 awardee will be named. My impression is that up to two awardees will be named if both applications meet the criteria described in the FOA, especially if both applications are judged to be likely to succeed in the FOA's aspirational 5-year proof-of-principle mission. Is a single awardee outcome or a two-awardee outcome more likely, presuming that multiple applications satisfy the Tier-1 criteria?

A: Section II.B of the FOA states “DOE reserves the right to fund, in whole or in part, any, all, or none of the applications submitted in response to this FOA.” Section II.D of the FOA states that “DOE anticipates awarding between three and five (3–5) awards; the exact number of awards depend on the number of meritorious applications selected and the availability of appropriated funds.” We cannot predict how many Tier-1 and Tier-2 teams will be selected for award negotiations. If multiple teams put in exceptionally strong Tier-1 applications, multiple applications could be recommended

for award negotiations. In general, teams should put forth their best proposal with 5-year deliverables that strike a balance of ambition and credibility relative to Table 5.1 of the NASEM report. Please note that teams that have been encouraged to submit a full application may submit a proposal to each Tier if desired. However, to be considered for either Tier-1 or Tier-2 a proposal must be submitted to that Tier.

25. Q: Can you recommend resources on drafting an appropriate Community Benefits Plan (CBP)?

A: Please review the guidance in the FOA in section I (pages 6-8), which suggests which information could be included in the CBP, and notes that the CBP may be up to 5 pages in length. Section V.A of the FOA also describes the Merit Review Criteria that will be applied to the CPB. Beyond the information in the FOA, applicants may find the following resources relevant:

- In October 2022 the DOE Regional Clean Hydrogen Hubs program released detailed supplemental information to assist applicants in developing CBPs: <https://oced-exchange.energy.gov/FileContent.aspx?FileID=9c024599-7d5c-4e84-9029-d307d7621ab7>. Please note that the CPBs for the Regional Clean Hydrogen Hubs are significantly more detailed and involved than what is currently requested for this FOA, but applicants may find that some themes and examples for the Hydrogen Hub CBPs may be relevant to fusion.
- The DOE Community Benefits Agreement Toolkit may also be of interest to applicants. <https://www.energy.gov/diversity/community-benefit-agreement-cba-toolkit>
- Finally, the Office of Science has also released information on Promoting Inclusive and Equitable Research (PIER) Plans: <https://science.osti.gov/grants/Applicant-and-Awardee-Resources/PIER-Plans/Information-about-PIER-Plans>. Applicants may wish to review this information since PIER plans have some commonalities with the Community Benefits Plan requested in this FOA.
- These resources are provided for informational purposes and may be used at the applicant's own discretion.

26. I have a question about the FOA, specifically about the following sentences: "For proposed investigations requiring access to experimental user facilities maintained by institutions other than the applicant, please provide a document from the facility manager confirming that the researchers will have access to the facility. Such documents, if they do not become letters of support or recommendation, may be printed on any letterhead." What is meant by "applicant"? Is that just our company, or is it our company and the partner institution we are applying with? If a government lab is a partner, and they are considered an applicant, then they can self-determine when and how we have access to their equipment and facilities. Is this the correct reading of the instructions, or do we need to explain how we will access each facility from the perspective of the company alone?

A. Section I of the FOA says: "It is expected that all applications will be led by the private sector with key partners that could include DOE national laboratories, academic institutions, non-profits, and other organizations/entities." Applicants should state their plan to access relevant facilities or resources, whether via a competitive application process, at the discretion of the facility director, or through other means.

27. Q: The FOA states that “applicants must submit affirmative statements from any third parties identified as sources of cash contribution (10 CFR 603.525).” I presume this third party affirmation can be in the form of a letter attached to the application. How is the term “source” being defined? Does the party need to have provided the capital already to the applicant (e.g. an investor), or is intent sufficient (to provide the capital in the event the applicant is admitted into the program)?

A: Letter(s) from a credible third party that intends to provide non-federal share would be an acceptable affirmative statement. Capital does not need to have been provided already at the time of submission.

28. Q: The NASA COTS program admitted unfunded milestone participants. These are companies that did not receive any federal award, but whose milestones the government agreed to validate, to help those companies raise private money. Would DOE be in favor of doing the same with fusion milestone?

A: Yes. We plan to update the FOA with the following paragraph (Section I, Technical Description):

“If an applicant is interested in participating in this program even if not selected for Federal funding, in order to benefit from DOE validation of milestones and milestone completion, please indicate your interest in this prominently in your application. If this is the only way an applicant wishes to participate in the program, please indicate \$0 for all federal amounts in the milestone table below. If applicants are not requesting Federal funds, budget information/documents are not required. DOE reserves the right to negotiate milestones and require appropriate agreements with any, all, or none of the applicants that request to participate in this program without federal funding.”

Eligibility

- 1. Q: May a private company have a PI or other team members who are also employed by a national laboratory? (e.g., 50% time at the private company, 50% at a national laboratory)**

A: This arrangement should be worked out between the company and the DOE/NNSA National Laboratory, including adherence to all applicable conflict-of-interest policies of each entity.

- 2. Q: Are entities without a subsidiary or affiliate in the US eligible to apply?**

A: Please review Section III A "ELIGIBILITY INFORMATION", of the FOA for eligibility details. Applications may only be submitted by for-profit domestic entities or the subsidiaries/affiliates of for-profit foreign entities that are incorporated in the United States (U.S.), including U.S. territories.

- 3. Q: Is it required or optional for the lead private applicant to have one or more public partners?**

A: Public partners are not required. However, the FOA states that "applicant teams should have a demonstrable range of technical and non-technical expertise needed for fusion energy Research and Development and eventual demonstration and commercialization. In addition, one of the program policy factors that will be considered in making selections is "synergy and teaming between private and public partners."

- 4. Q: Our company is incorporated outside the United States, and now preparing to establish a subsidiary in the United States. Is it preferable to partner with any companies originally based in US instead of applying alone? If so, what kind of partners should we find? other fusion companies? Energy company? Research institution? or other?**

A: Please review the FOA merit review criteria in Section V, A. "CRITERIA" and the eligibility requirements in section III.A of the FOA. The Department of Energy cannot comment on specific team composition.

- 5. Q: Given the high probability that foreign entities will be involved in this program, I am concerned about the depth of the guidance addressing FFRDC's and foreign entities working together. Difficulties in navigating foreign involvement is an issue we've run into in the past and this is far more involved.**

A: DOE/NNSA's National Laboratories have established processes for working with international partners, and nothing in this FOA supersedes the requirements under the laboratories' contracts with DOE. FFRDCs sponsored by other agencies must comply with the terms of their contracts with their agencies.

- 6. Q: Does the applying US entity have to be fully incorporated when applying or when the award is granted?**

A: The U.S. entity must be fully incorporated when the application is submitted. Section III of the FOA entitled '*Eligibility Information, Eligibility*', states that "Applications may only be submitted by for-profit domestic entities or the subsidiaries/affiliates of for-profit foreign entities that are incorporated in the United States."

7. Q: My preapplication was discouraged. May I still submit a full application?

A: The FOA states “applications that have not been encouraged by DOE may be declined without merit review.”

Budget

1. Q: Can the non-federal contribution be something besides cash?

A: Yes, non-federal funding can be cash and/or in-kind contributions. Section III.B of the FOA provides more detail on the non-federal contribution.

2. Q: While the funds are not yet appropriated, do you have a ballpark goal for the remainder of the 60 months program (e.g., beyond the first 18 months?) For example, \$500M split over the 3-5 awards?

A: Applicants are encouraged to include an estimate for the funds required for your team to achieve your five (5)-year performance goals, consistent with the targets in the FOA. DOE cannot speculate about or comment on future appropriations.

3. Q: Given that FFRDC's may need up-front payment to perform any work - how will their up-front payment schedules be reconciled with the retroactive milestone-based payment schedule of the overall program?

A: Section II.A. of the FOA notes that "If a DOE/NNSA FFRDC contractor is a part of a teaming arrangement, it is expected that the DOE/NNSA FFRDC contractor will perform work under the laboratory's Management and Operating (M&O) contract through a Strategic Partnership Project (SPP) agreement, Agreement for Commercializing Technology (ACT), or Cooperative Research and Development Agreement (CRADA) as negotiated with the lead entity. Funding for another Federal agency or its FFRDC may also be received through a CRADA or other agreement as negotiated by the lead organization." Section VIII.A.2 includes information on how federally affiliated organizations may participate and be funded. In general, the lead entity is responsible for ensuring their team members have the resources needed. For fixed-support TIAs this may require that the lead entity provide resources to members of their team (e.g., FFRDCs, universities) before payments have been received from DOE.

4. Q: If milestones are fulfilled before the award date would those milestones be funded immediately? For instance, if a milestone is fulfilled 7/1/23 but the award is not made until 9/30/23, could the team be paid immediately upon award?

A: If an applicant achieves a milestone prior to award, and that milestone has been verified, a payment may be made at the time of award or soon after. Please note that applicants are encouraged to include substantial, meaningful milestones, which means their milestones are not likely to be achievable prior to the project start date, barring substantial delays in award.

5. Q: We understand that sub-awardees like National Labs will need to submit a budget justification. What are the documentation requirements for vendors providing goods and services towards a milestone?

A: Section IV.D.4, "Research and Related Budget", provides additional information on the level of detail required for budget justifications for both fixed-support and expenditure-based TIAs. In general, applicants should include enough detail for the DOE Contracting Officer and DOE Program Manager to judge reasonableness.

- 6. Q: Does each milestone need to have >50% non-federal share independently? Or if, instead, it's possible for some milestones to have <50% non-federal share, that is then made up for elsewhere, so that the total program non-federal share satisfies the >50% requirement.**

A: The >50% non-federal share requirement applies to the total project cost share rather than to individual milestones. Applicants may wish to include brief explanations (technical, business, engineering, or otherwise) for variations in the non-federal share requested throughout their project. Please note that Section V.B. of the FOA lists program policy factors, one of which is "High leveraging of Federal funds (i.e., higher fraction of non-Federal contributions relative to the total project cost)."

- 7. Q: Do applicants seeking a fixed-support TIA need to provide detailed sub-awardee budget information or the subaward budget justification**

A: No. Section V.D of the FOA discusses the requested budget information for applicants. On page 25 the FOA states "R&R Subaward Budget Attachment(s) Form: This section does not apply for applications selecting fixed-support TIAs as the award instrument. For applicants selecting fixed-support TIAs, simply indicate the total anticipated subawards/Consortium/Contractual Costs in field F of the Research and Related Budget form."

- 8. Q: On page 24 the FOA says "For fixed-support TIAs, it is understood that the lead entity will subcontract (subaward) directly with any senior/key personnel who are at other institutions. Include their salaries in "Subawards/Consortium/Contractual Costs" in field F of the Research and Related Budget form." What does the word "salary" refer to here? Is it total salary or the salary related to the subcontracted work?**

A: Salary does not refer to the total salary for subrecipient senior/key personnel, only the estimated salary related to the subcontracted work.

- 9. Q: What are the current thoughts on authorizations moving through to appropriations? Will funds be requested for fusion pilot plant & first-of-a-kind construction, as recommended by the Fusion Energy Sciences Advisory Committee (FESAC)?**

A: Please see the answer to question 2 under Budget. We cannot comment on future appropriations.

- 10. Q: For fixed-support TIAs, it is understood that the lead entity will subcontract (subaward) directly with any senior/key personnel who are at other institutions, and we should include their salaries in "Subawards/Consortium/Contractual Costs" in field F of the Research and Related Budget form. We understand we don't need to break down salaries by individual people, but do we just need to include a salary line-item for all subawardees, or does it need to be broken down by each disparate institution?**

A: Applicants should break down salary information by each subrecipient institution, along with a general description of the work to be performed and the associated level of effort.

- 11. Q: is room for direct DOE funding of plant, equipment, and real estate, without DOE ownership, and without standard DOE disposition rules? Does § 603.680 "Purchase of real property and equipment by for-profit firms" apply to fixed support TIAs? If the DOE contracting office needs to**

approve the acquisition first, would for profit entities be able to negotiate unconditional title in such property within the final Assistance Agreement between the recipient and DOE?

A: As Section III.B of the FOA states, “Cost sharing for research of an applied nature under fixed-support TIAs has been eliminated from the requirements of Section 988 of the Energy Policy Act of 2005 (this FOA anticipates research of an applied nature). However, applicants selecting a fixed-support TIA as the award instrument are expected to provide non-Federal resources exceeding half the total project cost regardless of Tier.” In general, under a fixed-support TIA, if applicants do not wish to deal with DOE disposition rules and DOE ownership, applicants have the option of purchasing equipment with non-Federal resources.

12. Q: This is speculative, but if selections are made relatively early in 2023, is it realistic to assume a June 2023 project start for preconceptual design/roadmaps? If so, and the private partners starts early, would it possible to credit that activity under the DOE award? A significant delay will move milestones from one BP to another. What is the DOE strategy on this?

A: See the answers to question 15 under General and question 4 under Budget. Pre-award costs are unallowable for fixed-support TIAs. Section VIII.C.8 of the FOA notes that in general, for fixed-support TIAs, “milestone payments should be associated with the well-defined, observable, and verifiable technical outcomes.” Section VIII.C.8 also notes that “For expenditure-based TIA, pre-award costs, as long as they are otherwise allowable costs of the project, may be charged to an expenditure-based TIA only with the specific approval of the CO. 10 CFR § 603.830 Pre-award costs. Pre-award costs may only be incurred within 90 days of project start and only with Contracting Officer (CO) approval. Pre-award costs are incurred at the applicant’s risk. DOE is under no obligation to reimburse such costs if for any reason the applicant does not receive an award or if the award is made for a lesser amount than the applicant expected.”

Pre-application and Application

1. Q: Are the merit review criteria applicable to the pre-application or only the full application?

A: The merit review criteria are applicable to the full application. The pre-application is relatively short, and it will be reviewed internally. DOE will review the responsiveness to the objectives of this program. The full application will be reviewed by subject-matter experts.

2. Q: The FOA indicates that a table of numbered milestones are required including the Milestone title, Completion criteria, estimated total cost, requested federal share, and quarter due (from award date). For each item in the table, please indicate which elements are negotiable during the time between the proposal submission and the award.

A: The milestones are negotiable and will depend on the funding level. However, DOE has some milestones that must be included and are clearly labeled in the FOA. For example, a FPP preconceptual design milestone must be included no later than Quarter 6. For more detail, see Section I of the FOA.

3. Q: Can you go more into Tier 2 awards and what's in scope? For example, can we focus on a specific fusion-relevant technology that can substantially improve overall FPP performance if enhanced? Are broad technology solutions that could be applied to multiple fusion reactor concepts of interest? Or should teams aim to address the fusion device more broadly in the application?

A: For Tier 2 applications, significant performance improvements may be defined by the applicant. Applicants should articulate how their proposed performance improvements can lead to a credible preliminary design of a fusion pilot plant (FPP) by the early 2030s. It is expected that a credible case for a full FPP would require advancing both the physics basis and multiple technologies in parallel, not just one technology. Applicants may wish to think of Tier 2 as being about five years behind Tier 1 in schedule. Please note that this FOA is not designed to advance components that will be of use to multiple concepts. This solicitation is focused on the fusion pilot plant, and therefore funding for a single component like a tritium loop or a neutral beam is out-of-scope for this FOA.

4. Q: Will milestones be adjusted during project execution?

A: This is possible, but please note the target quarters for specific goals (e.g., a FPP technology roadmap no later than Q6) should be adhered to as much as possible.

5. Q: Should applicants specify what region/city of the US the work will be performed in? Would it be beneficial to the application to describe how to engage with the community?

A: Yes. Please review Section IV of the FOA for the application requirements, including the location of the work to be performed. Section I includes a description of the Community Benefits Plan, which describes how projects are expected to “(1) support meaningful community and labor engagement; (2) invest in America’s workforce; and (3) advance DEIA.”

6. Q: Do you anticipate a difference in selection rate or award size for Tier 1 vs Tier 2?

A: DOE cannot speculate on selection rates since they will depend on available funds and the merit of the applications received.

- 7. Q: In addition to the two requested milestones (preconceptual design and technology roadmap) we are planning to include several design milestones that are in our plan over the first 18-months, plus some initial hardware milestones. Is that appropriate? I.e., additional milestones in the first 18-month period can be related to anything in our plan – they are not just activities related to developing the two request milestones?**

A: In addition to the required 18-month milestones of a pre-conceptual design and technology roadmap, other milestones as proposed by the applicant are allowable as long as they are in support of the program objectives, as well as the 18-month and/or five (5)-year deliverables.

- 8. Q: Is the milestone table required for the pre-application?**

A: The table is required for the full application. Section IV B of the FOA includes instructions for the pre-application. The bulleted list on page 16 notes that a “Sparse outline/schedule of major milestones to be proposed...” is requested, not the full table.

- 9. Q: Can we switch partners and collaborators after submitting the pre-application and before the final application is due?**

A: Yes, applicants may switch partners and collaborators after submitting the preapplication and before the submission of the final proposal. Please notify us of such changes since DOE often use the information in the preapplication to select potential reviewers without conflict of interest.

- 10. Q: How do I submit an application?**

A: Applications must be submitted through <https://www.Grants.gov>. Do not submit an application via email, through <https://www.FedConnect.net>, or through <https://pamspublic.science.energy.gov>.

- 11. Q: How do I submit a pre-application?**

A: Pre-applications must be submitted through <https://pamspublic.science.energy.gov>. Do not submit a pre-application via email, through <https://www.FedConnect.net>, or through <https://www.Grants.gov>.

- 12. Q: Section I states that we are encouraged to provide milestones which "address" five bulleted requirements. Does this mean there should be a milestone to achieve these requirements, or to justify why we believe these milestones will be achieved before Fusion Pilot Plant (FPP) operation?**

A: Substantive and critical-path milestones are to be proposed by the applicant. A Tier 1 application should address the five bullets within the five-year period of performance if it is to meet the milestone of a successful Preliminary Design Review (PDR) for an FPP. If an applicant believes one of the key requirements in the bulleted list is not applicable to their approach or will be met by other entities and therefore not require effort from the applicant, the applicant should clearly state their assumptions and rationale for omitting any key requirements from their project plan.

- 13. Q: Can you please help me apply through Grants.gov?**

A: We cannot answer questions related to Grants.gov. Please direct requests for assistance or questions about Grants.gov to Support@Grants.gov.

14. Q: My organization is trying to apply in Grants.gov, but I cannot create an organizational Workspace profile without a valid UEI. How may I apply?

A: The application package was recently updated to permit individual Workspace profiles, which bypasses the UEI requirement.

Review, Selection and Award Management

- 1. Q: Will merit review be difficult or "more novel" because of the very real and much more dynamic possible conflicts of interest both financially, competitively, and/or internationally?**

A: The DOE has a robust merit review process, which will be followed to ensure a fair and comprehensive review of all compliant and responsive proposals received.

- 2. Q: How much preference would be given to Tier I proposals and proposals with a higher amount of cost share compared to Tier II with lower cost share?**

A: All compliant and responsive proposals will be evaluated in accordance with the merit review criteria. Factors beyond technical merit--such as high leveraging of federal funds through a substantive non-federal contribution--will be taken into account through Program Policy Factors.

- 3. Q: What are Program Policy Factors and how will they be applied to this FOA?**

A: Program Policy Factors for this FOA are listed in section in Section V.B.2 of this FOA and are further defined in the DOE guide to financial assistance; (<https://www.energy.gov/sites/prod/files/GuidetoFinancialAssistance.pdf>). Program policy factors help the agency consider factors beyond technical merit, such as geographic distribution, EJ/DEIA, high leveraging of federal funds, and whether an entity is majority US-owned (among several other factors) in thinking about the selections. DOE cannot predict exactly how program policy factors will be applied to this or any solicitation.

- 4. Q. Can you comment on how reviewers will be selected to assess the new requirements on, for example, commercialization and DEI? Will they be the same or different as those assessing the scientific merit?**

A: In accordance with the Energy Act of 2020 the peer review process will include reviewers with appropriate expertise from the private sector, the investment community, and experts in the science engineering of fusion and plasma physics. DOE's goal is to have a broad representation of expertise during the review process. If reviewers have expertise in multiple areas and can review multiple aspects of the proposals, DOE will welcome it.

- 5. Q: Does DOE need help finding peer reviewers to address these applications? How will the DOE go about finding reviewers?**

A: The DOE, Office of Science (SC) is always open to suggestions about individuals with appropriate backgrounds, expertise, and abilities to serve as reviewers. Please be aware that the DOE strictly enforces conflict of interest rules, including institutional affiliation. If a potential reviewer is an employee of an institution submitting an application, that reviewer is precluded from seeing or helping evaluate an application from that institution. The DOE, SC also holds itself to an academic conflict of interest standard in which an applicant may never be reviewed by graduate school advisor or advisee.

- 6. Q: The FOA indicates that key team members will be indicated in the pre-application as well as the application in the section related to subawards. During the period of performance, are additions, removals or modifications of subawards allowed? What is the process for entering into negotiations for modifications of subawards?**

A: Modifying, adding, or removing sub-awardees is possible. The process for modifying a subaward is to request the agency's approval, particularly if the change in subawards would change the scope of work or otherwise constitute a substantive change. The TIA may include a term and condition requiring DOE's approval of new subawards and modifications after execution of the TIA award.

- 7. Q: Do you have any guidance on the consequences of late or missed milestones?**

A: It is expected that these situations will be addressed on a case-by-case basis between the awardee and the DOE management team. The overarching desire from DOE's perspective is for projects to succeed within reasonable adherence to original federal budgets and project plans.

- 8. Q: The FOA suggests that the Fusion Pilot Plant (FPP) Preliminary Design Review (PDR) is the final milestone of the program. However, a team may plan to reach its PDR before the 5-year milestone program concludes. In this case, is a team free to reach the PDR milestone before program conclusion, and follow it on with further milestones towards the design and construction of the FPP (with associated business/commercial impact)?**

A: Awardees may complete deliverables ahead of schedule. However, the FOA scope does not include activities beyond Preliminary Design Review.

- 9. Q: The FOA is clear that we need to have yearly SMART objectives related to EJ/DEIA. However, while 60% of the merit review criteria are on commercial and business objectives, there is no corresponding requirement to have a certain number or frequency of commercial or business milestones. Should ~60% of our milestones relate directly to business or commercial accomplishments? How should the high business/commercial merit weighting be reflected in our milestones?**

A: There is no direct connection between the milestones and the merit review criteria. There is no requirement on a specific fraction of milestones in each area. Determining milestone type and frequency is the responsibility of the applicant, taking into consideration risk management, federal payment or reimbursement frequency, and credibility of the overall plan.

- 10. Q: How does FES view non-federal funding greater than requisite?**

A: Positively. Section V.B.2 describes the Program Policy Factors for this FOA, one of which is "High leveraging of Federal funds (i.e., higher fraction of non-Federal contributions relative to the total project cost)."

- 11. Q: At the time of full application submission on December 15th, is it a requirement (or just preferred) that the capital to meet the cost-share requirement for the first milestone be in possession by the applicant (i.e. in the bank)? And if so, do the funds need to be reserved (put aside) to execute on the project when it commences (assuming approval of the application)?**

A: Please review question 1 under Budget in the FAQ. In general, while applicants are not required to have the non-federal share "in the bank" for the first milestone(s) on December 15th, applicants

should make the most persuasive case they can that they will have the resources needed to execute their milestones. Section V of the FOA lists the Merit Review Criteria, one of which is “business and financial viability.”

Portfolio Analysis and Management System (PAMS)

1. Q: How do I register a new institution in PAMS?

A: Please contact the PAMS helpdesk at PAMS-Helpdesk@science.doe.gov for assistance.

2. Q: Given the short window between the FOA announcement and pre-application due-date and the backlog at sam.gov in assigning UEI numbers, will there be any exemption for entities that don't receive a UEI in time to submit? Is there a workaround in which the private company submission is sent by an existing registered entity?

A: The UEI does not need to be fully assigned in SAM.gov to be able to submit an application in Grants.gov. Applicants must be registered in the System for Award Management (SAM), which means starting the process not actual receipt of the UEI. The application forms in grants.gov will ask for an UEI, but they will not reject an application if it is left blank. Applicants in this situation may proceed with submitting an application as an individual, which bypasses the need for a UEI number. Our expectation is that by the time the merit review selection, and negotiation process is complete a UEI will be assigned, or suitable workarounds will have been identified.