Department of Energy (DOE)
Office of Science (SC)
Small Business Innovation Research (SBIR)
Small Business Technology Transfer (STTR)

FY 2025 Phase II Release 1

Notice of Funding Opportunity (NOFO) Number:
DE-FOA-0003462

NOFO Type: Amendment 000001
CFDA Number: 81.049

Amendment 000001 is issued to remove language restricting the ability of a National Laboratory to be funded as a subaward, previously on Page 55.

NOFO Issue Date:	October 15, 2024
Submission Deadline for Letters of Intent:	November 6, 2024, at 5:00PM Eastern Time A Letter of Intent is required.
Submission Deadline for Applications:	December 3, 2024, at 11:59PM Eastern Time

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I. Basic Information

U.S. Department of Energy (DOE)
Office of Science (SC)
Small Business Innovation Research (SBIR) Small Business Technology Transfer (STTR)

Executive Summary
The DOE invites eligible Phase I and Phase II awardees to apply for Phase II awards (initial, second, and third) under this Notice of Funding Opportunity (NOFO). Topic descriptions for this NOFO can be found on the DOE SBIR/STTR web site at https://science.osti.gov/sbir/Funding-Opportunities.

Funding Details

Expected total available funding	$87,000,000
Expected number of awards	75
Expected dollar amount of individual awards	$1,100,000 to $1,600,000
Expected award project period	12 months to 24 months

DOE is under no obligation to pay for any costs associated with preparation or submission of applications. DOE reserves the right to fund, in whole or in part, any, all, or none of the applications submitted in response to this NOFO.

Key Facts

NOFO Title	FY2025 Phase II Release 1
NOFO Number	DE-FOA-0003462
Announcement Type	Initial
Assistance Listing	81.049
Statutory Authority	The programmatic authorizing statute is: Section 646 of Public Law 95-91, U.S. Department of Energy Organization Act Section 901, et seq. of Public Law 109-58, Energy Policy Act of 2005 Section 9 of the Small Business Act (15 U.S.C. § 638)
Governing Regulations	Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, codified at 2 CFR 200 U.S. Department of Energy Financial Assistance Rules, codified at 2 CFR 910 Size and Eligibility Requirements for the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs, codified at 13 CFR 121.701 et seq.

Key Dates

Key dates are printed on the cover of this NOFO.

Agency Contact Information

Grants.gov Customer Support	800-518-4726 (toll-free) support@Grants.gov

PAMS Customer Support	855-818-1846 (toll-free) 301-903-9610 sc.pams-helpdesk@science.doe.gov
Technical/Scientific Program Contact	Please refer to the appropriate DOE Program Manager listed after each subtopic in the accompanying DOE SBIR/STTR Topics document located on the DOE SBIR/STTR Programs website at https://science.osti.gov/sbir/Funding-Opportunities.
Administrative Contact (questions about budgets and eligibility)	Carl Hebron, (301) 903-5707, SBIR-STTR@science.doe.gov

Informational Webinar / Office Hours

SC plans to hold an informational webinar about this NOFO on Friday, October 18, 2024 at 2pm ET. Registration instructions and other details will be posted at https://science.osti.gov/sbir/Funding-Opportunities.

Recommendation

SC encourages you to register in all systems as soon as possible. You are also encouraged to submit letters of intent (LOIs) and applications well before the deadline.

II. Eligibility

A. Eligible Applicants

Only domestic small business concerns (SBCs) are eligible to submit applications and receive awards under this NOFO. Additional eligibility requirements apply to the different Phase II mechanisms as described below.

Letters of Intent (LOIs) are required for all potential applicants. Details of how and where to submit LOIs may be found in Section IV.A.1. below. Only those applicants that submit an LOI which is received by DOE by the due date listed on the cover page are eligible to submit an application under this NOFO.

All applicants must have an active System for Award Management (SAM) registration at the award start date to be eligible to receive a Phase II award. Good practice is to keep your SAM registration active in order to submit applications and receive awards from the Federal government.

1. Initial Phase II Applicants:

Only the following groups are eligible to apply for an Initial Phase II award under this NOFO:

1. Currently active DOE SBIR or STTR Phase I awardees with awards resulting from NOFO DE- FOA-0003110; or

2. Currently active non-DOE SBIR or STTR Phase I awardees that (a) received the Federal Phase I award in Federal FY 2024, (b) have received a written determination from the Director of the SBIR/STTR Programs Office that the topic under which they received funding is the same as the topic in NOFO DE-FOA-0003110, and (c) are not submitting a Phase II application based on the award described in (a) to another Federal agency.*

To be eligible for an initial Phase II award, applicants must have completed their Phase I period of performance prior to the start date listed in this NOFO. Phase I awardees are cautioned not to request no cost extensions to their Phase I awards beyond this date.

*NOTE: Applicants that received their FY 2024 Phase I award from another Federal agency must request a written determination from the Director of the SBIR/STTR Programs Office that the topic under which they received funding is the same as the topic in NOFO DE-FOA-0003110. Send requests to e-mail: sbir-sttr@science.doe.gov. Applicant must provide: 1) the Phase I award number and contact information for the Phase I Contracting Officer (or Grants/Agreements Officer); 2) the Phase I NOFO number and topic; and 3) the DOE Phase II topic number. Applicants must complete all close-out activities for Phase I prior to award of a Phase II from the DOE.

2. Phase IIA and IIB Applicants:

DOE SBIR/STTR initial Phase II awardees are eligible to receive a second Phase II award from DOE if they have not already received a second Phase II award from another agency. There are two types of second Phase II awards: Phase IIA and Phase IIB.

PHASE IIA

Only award recipients resulting from the following FY 2023 SBIR/STTR Phase II NOFOs AND from the following eligible topics may apply for Phase IIA awards:

Eligible Phase II NOFO	**Eligible Topics**	**DOE SBIR/STTR Funding Program**	**Anticipated Award Type**
DE-FOA-0002859 *(Phase I topics for C53 can be found at DE-FOA-0002554.)*	C53-01a, C53-02a, C53-02b, C53-05c, C53-06a	Advanced Scientific Computing Research	Grant
DE-FOA-0002859 *(Phase I topics for C53 can be found at DE-FOA-0002554.) (Phase I topics for C51 can be found at DE-FOA-0002554.)*	C53-07a, C53-07b, C53-11a, C53-12a, C53-13a, C53-14b, C53-15a, C53-16a, C53-17b, C53-18c, C53-20b, C53-21a, C53-21b, C53-21d, C53-21e, C53-21f, C53-22c, C53-24a, C51-27a	Basic Energy Sciences	Grant
DE-FOA-0002991 *(Phase I topics for C54 can be found at DE-FOA-0002359.)*	C54-24c, C54-27a, C54-27b, C54-28b, C54-28c	Fusion Energy Sciences	Grant
DE-FOA-0002991 *(Phase I topics for C54 can be found at DE-FOA-0002555.)*	C54-30b, C54-31b, C54-33b, C54-34e	High Energy Physics	Grant
DE-FOA-0002859 *(Phase I topics for C53 can be found at DE-FOA-0002554.)*	C53-33b, C53-33c, C53-34a, C53-34b, C53-34d	Nuclear Physics	Grant

Eligible Phase II awardees must successfully complete their Phase II awards (including no fund extensions) prior to the award start date in this NOFO to be eligible to receive a Phase IIA award.

PHASE IIB

Only award recipients of an initial Phase II award from the NOFOs listed below may apply for Phase IIB Awards.

- FY 2022 Phase II Release 1, DE-FOA-0002571
- FY 2023 Phase II Release 1, DE-FOA-0002859
- FY 2022 Phase II Release 2, DE-FOA-0002572 (Fusion Energy Sciences and High Energy Physics Only)

- FY 2023 Phase II Release 2, DE-FOA-0002991 (Fusion Energy Sciences and High Energy Physics Only)

Eligible Phase II awardees must successfully complete their Phase II awards (including no fund extensions) prior to the award start date in this NOFO to be eligible to receive a Phase IIB award.

3. Phase IIC Applicants

Some second Phase II awardees are eligible to receive a third SBIR Phase II award, referred to as Phase IIC, with this NOFO. Third Phase II awards are restricted only to SBIR; no third Phase II awards will be made under the STTR program. In order to be eligible for a third SBIR Phase II award, a small business must meet the following criteria:

1. Have received both an initial SBIR Phase II award and a second SBIR Phase II award from DOE.

a. Both awards must be SBIR and have the same award number; neither award can be STTR.

b. The second SBIR Phase II award must have been awarded from either the
   - FY 2023 Phase II Release 1 NOFO (DE-FOA-0002859) from the following program offices:
     - Advanced Scientific Computing Research
     - Basic Energy Sciences
     - Biological and Environmental Research
     - Nuclear Physics
   - FY 2023 Phase II Release 2 NOFO (DE-FOA-0002991) from the following program offices:
     - High Energy Physics
     - Nuclear Energy

2. Have secured an offer of matching funds from an eligible third-party investor prior to award as described below. The following information shall be provided to DOE prior to award. Evidence of receipt of the matching funds in the form of bank statements or wire transfer receipts must be provided to the DOE Contracting Officer within five (5) days of receipt, or prior to award, whichever is sooner. No award shall be made without proof of receipt of the matching funds.

   The source and amount of the matching funds are provided below:

Eligible Third-Party Investor	Amount of Matching Funds
{Fill-in}	*{Fill-in}*

   - The term 'eligible third-party investor' means a small business concern (500 or fewer employees) other than the small business applicant, a venture capital firm,

an individual investor, a non-SBIR Federal, State or local government of the United States, or any combination thereof. SBIR/STTR Phase I, II, or III funds from a Federal agency may not be used as matching funds.

- The matching amount (excluding any fees collected by the SBC) must be equal to the amount of the award.
- The matching funds cannot come from the following ineligible sources:
  - The applicant's internal research and development funds,
  - Funding in forms other than cash, such as in-kind or other intangible assets.
  - Funding from the owners of the eligible entity, or the family members or affiliates of such owners.
  - Funding attained through loans or other forms of debt obligations.
- Applicants that have secured matching funds at time of application must include a letter of commitment from each eligible third-party investor. Applicants that have not secured matching funds at time of application must submit a letter of commitment from each eligible third-party investor prior to 11:59 pm ET, December 27, 2024, to sbir-sttr@science.doe.gov. Applicants that fail to provide a letter of commitment from each eligible third-party investor by this deadline will be ineligible for award.
- A letter of commitment, signed by a person with authority, from each investor must include the following information:
  - A statement that the investment is contingent on the receipt of an award from DOE;
  - A statement that the investor was/is not a current owner of the small business prior to the investment, or a family member or affiliate of an owner;
  - A statement identifying the type of investor: a small business concern (500 or fewer employees) other than the small business applicant, a venture capital firm, an individual investor, a non-SBIR Federal, State or local government of the United States, or any combination thereof;
  - The amount of the investment;
  - A statement that the amount of the investment will be available to the small business concern during the entire period of the award from DOE; and
  - The expectations of the investor.
- Alternatively, if an investment has been executed, you may submit a copy of the agreement (e.g. term sheet) and supplement the copy of the agreement with a statement of information, if the copy of the agreement does not contain all of the information listed above. If for reasons of confidentiality you do not wish to submit the agreement, you may submit a letter of commitment from each investor.

PLEASE NOTE: Failure to expend all matching funds by the period of performance end date may result in the DOE reducing the Phase IIC award amount accordingly. Also, DOE will not grant no fund extensions for the sole purpose of exhausting any unspent matching funds.

To be eligible to receive a Phase IIC award, Phase IIA or IIB awardees must complete their awards (including no fund extensions) prior to the award start date in this NOFO.

In addition, SBCs applying under Phase IIC need to submit an updated Commercialization Plan per the legislative text for the commercialization assistance pilot program.

B. Small Business Concerns

Applicants must meet the SBIR/STTR program eligibility requirements in 13 CFR 121, Small Business Size Regulations. The eligibility requirements are in place to ensure that the funds go only to small, independent U.S. businesses. The regulations include restrictions about (1) the type of firm, (2) its ownership structure, and (3) the firm's size in terms of the number of employees. An SBC is one that, at the time of award for both Phase I and Phase II SBIR/STTR awards and continuation of the Phase II SBIR/STTR award, meets the requirements of all three restrictions.

SBCs must meet these criteria at both time of submission and time of award.

1. Type of Business

The purpose of the requirement regarding type of firm is to target the awards to firms with an economic interest in developing the idea or research into a commercial application. Joint ventures, as defined in "Appendices/Reference Material," may apply, provided the entity created also qualifies as a small business at the time of the award. An SBC is one that, at the time of award for both Phase I and Phase II SBIR/STTR awards and continuation of the Phase II SBIR/STTR award, is:

- Organized for profit, with a place of business located in the United States (U.S.), and which operates primarily within the U.S., or which makes a significant contribution to the U.S. economy through payment of taxes or use of American products, materials or labor.
- May be in the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust or cooperative, except that where the form is a joint venture, each entity to the joint venture must meet the requirements set forth in paragraphs 1-3 under 2. Ownership Structure below.

2. Ownership Structure

The purpose of the ownership requirement is to limit the program to independent firms controlled by U.S. citizens or permanent resident aliens as a way of maximizing the likelihood that the funding will stimulate innovative activity within the U.S. economy. A majority (more than 50%) of your firm's equity (e.g., stock) must be directly owned and controlled by one of the following:

1. One or more individuals who are citizens or permanent resident aliens of the U.S. Each individual you include as part of the eligible ownership majority of your company must be either a citizen or permanent resident alien of the U.S. The term "individual" refers only to actual people—it does not refer to companies or other legal entities of any sort. "Permanent resident alien" refers to an alien admitted to the U.S. as a lawful permanent resident by the U.S. Citizenship and Immigration Services. If a size determination is conducted of your firm, you may be asked to show proof of this ownership;
2. Other for-profit SBCs (each of which is more than 50% directly owned and controlled by individuals who are citizens or permanent resident aliens of the U.S.). If you include other for-profit SBCs as part of the eligible ownership majority of your firm, you must verify that each such concern is more than 50% owned and controlled by individuals who are U.S. citizens or permanent resident aliens of the U.S.;

3. A combination of (a) and (b) above. Additional ownership structures are identified in 13 CFR 121.702.

Ownership by venture capital operating companies, hedge funds, or private equity firms:

No single venture capital operating company, hedge fund, or private equity firm may own more than 50% of the concern unless that single venture capital operating company, hedge fund, or private equity firm qualifies as a small business concern that is more than 50% directly owned and controlled by individuals who are citizens or permanent resident aliens of the United States and meet the size and eligibility requirements in 13 CFR 121. 701, et seq., Size and Eligibility Requirements for the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs.

PLEASE NOTE:

SBIR ONLY: Applicants must meet size and eligibility requirements established in 13 CFR 121.701, et seq., Size and Eligibility Requirements for the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs. DOE has not elected to make a portion of its SBIR awards to SBCs that are majority-owned by multiple venture capital operation companies, hedge funds, or private equity firms under 15 U.S.C. 638(dd)(1) and 13 CFR 121.702(a)(1)(ii). SBCs majority-owned by multiple venture capital operation companies, hedge funds, or private equity firms are not eligible for awards contemplated by this Funding Opportunity Announcement.

Further information on eligibility for the SBIR/STTR programs is available from the Small Business Administration at 13 CFR 121.701, et seq., https://www.ecfr.gov/current/title-13/chapter-I/part-121/subpart-A/subject-group-ECFRb7921b3fcf04228.

3. Business Size

An SBC must meet the following size requirements:

- Has, including its affiliates, not more than 500 employees and meets the other regulatory requirements found in 13 CFR 121. Business concerns, other than investment companies licensed, or development companies qualifying under the Small Business Investment Act of 1958, 15 U.S.C. 661, et seq., are affiliates of one another when either directly or indirectly, (a) one concern controls or has the power to control the other; or (b) a third-party/parties controls or has the power to control both. Control can be exercised through common ownership, common management, and contractual relationships. The term "affiliates" is defined in greater detail in 13 CFR 121. The term "number of employees" is defined in 13 CFR 121.
- Further information may be obtained by contacting the Small Business Administration Size District Office at https://www.sba.gov/size.

C. Other Eligibility Requirements

All funded research or R&D must be performed in the U.S. for both Phases I and II, except under exceptional circumstances, for which an explanation must be submitted to DOE and an approval, if made, has been conveyed in writing by DOE. "U.S." means the 50 states, the territories, and possessions of the U.S., the Commonwealth of Puerto Rico, the Republic of the Marshall Islands, the Federated States of Micronesia, the Republic of Palau, and the

District of Columbia. Non-U.S. citizens are eligible to perform work on SBIR/STTR projects provided they are legally empowered to work in the U.S. at the time that an award is made and throughout the duration of the project. That is, a foreign national working on an SBIR/STTR project must NOT be an illegal alien and must be an immigrant alien or a foreign national visiting the U.S. on an approved visa.

In exceptional circumstances, where expertise or facilities do not exist in the U.S. to perform the R&D, applicants may propose to perform R&D outside the U.S. in their application. In these situations, the applicant must clearly justify the need for foreign R&D including details of domestic experts and facilities that were contacted to make this determination. No pre-approval of foreign R&D will be granted in advance of the application. DOE will make a determination on whether performance of R&D outside the U.S. is justified as part of the application review process. Insufficient justification may result in declination of the application.

None of the employees or owners of the applicant small business may be paid as consultants. None of the employees or owners of the applicant small business may be employees of a subcontractor, except when the subcontractor is a research institution. Consultants must not be employees of any proposed subcontractor. Please note, a person listed on the budget form (Section A - Key/Senior Person or Section B - Other Personnel) as an employee of the SBC is required to be either (a) an owner of the business, (b) paid using a W-2 form, or (c) possess an Internal Revenue Service Form SS-8 determination that the person is an employee. Persons receiving a 1099 (and not possessing an employee determination using Form SS-8) are to be treated as independent contractors and should be listed on the budget form in Section F - Other Direct Costs.

Increased minimum performance standards: Effective April 1, 2023, an SBC that received or receives more than 50 Phase II awards during the consecutive period of 10 fiscal years preceding the most recent 2 fiscal years ("covered period"), must have an average of $250,000 of aggregate sales and investments per Phase II award received during such covered period. An SBC that received or receives more than 100 Phase II awards during the consecutive period of 10 fiscal years preceding the most recent 2 fiscal years ("covered period") must have an average of $450,000 of aggregate sales and investments per Phase II award received during such covered period.

The SBA is charged with implementation of the increased minimum performance standards. Each SBC that is subject to an increased minimum performance standard must submit to the SBA supporting documentation evidencing that all covered sales of the SBC were properly used to meet the increased minimum performance standard. Covered sales are defined at 15 U.S.C. § 638(qq)(3)(B)(iii)(II).

There are consequences of failure to meet the increased minimum performance standards, including prohibition against receiving more than 20 total Phase I awards and Phase II awards from each agency during the 1-year period beginning on the date on which such determination is made.

1. Restrictions on Submitting Applications

Applications for Phase II, IIA or IIB may be submitted to either the SBIR or STTR program, or both, regardless of which program (SBIR or STTR) your Phase I award was granted.

However, the respective minimum level of effort requirements, i.e., small business participation, must be met. Please refer to "Restrictions on the Level of SBC participation" below. Please note that some topics only allow the submission of SBIR applications; awardees under those topics may only submit Phase II, IIA, or IIB SBIR applications.

2. Mandatory Application Documents

Applicants must include all mandatory documents described in Section IV.C.9. Failure to include mandatory documents is grounds for administrative declination of the application.

3. Classified Applications

Classified applications are not accepted under the DOE SBIR/STTR Programs and will be appropriately destroyed. Applications that have a probability of resulting in classified work will be administratively declined. Applicants are expected to comply with the following clause, which will be included in any award:

NATIONAL SECURITY: CLASSIFIABLE RESULTS ORIGINATING UNDER AN AWARD (DECEMBER 2014)

a. This award is intended for unclassified, publicly releasable research. You will not be granted access to classified information. DOE/NNSA does not expect that the results of the research project will involve classified information. Under certain circumstances, however, a classification review of information originated under the award may be required. The Department may review research work generated under this award at any time to determine if it requires classification.

b. Executive Order 13526 (75 Fed. Reg. 707 (January 5, 2010)) states that basic scientific research information not clearly related to the national security shall not be classified. Nevertheless, some information concerning (among other things) scientific, technological, or economic matters relating to national security or cryptology may require classification. If you originate information during the course of this award that you believe requires classification, you must promptly:
    1. Notify the DOE Project Manager and the DOE Award Administrator;
    2. Submit the information by registered mail directly to the Director, Office of Classification and Information Control, SO-10.2; U.S. Department of Energy; P.O. Box A; Germantown, MD 20875-0963, for classification review.
    3. Restrict access to the information to the maximum extent possible until you are informed that the information is not classified, but no longer than 30 days after receipt by the Director, Office of Classification and Information Control.

c. If you originate information concerning the production or utilization of special nuclear material (i.e., plutonium, uranium enriched in the isotope 233 or 235, and any other material so determined under section 51 of the Atomic Energy Act) or nuclear energy, you must:
    1. Notify the DOE Project Manager and the DOE Award Administrator;
    2. Submit the information by registered mail directly to the Director, Office of Classification and Information Control, SO-10.2; U.S. Department of Energy; P. O. Box A; Germantown, MD 20875-0963 for classification review within 180 days of the date the recipient first discovers or first has reason to believe that the information

is useful in such production or utilization; and

3. Restrict access to the information to the maximum extent possible until you are informed that the information is not classified, but no longer than 90 days after receipt by the Director, Office of Classification and Information Control.

d. If DOE determines any of the information requires classification, you agree that the Government may terminate the award with consent of the recipient in accordance with 2 CFR 200.339(c). All material deemed to be classified must be forwarded to the DOE, in a manner specified by DOE.

e. If DOE does not respond within the specified time periods, you are under no further obligation to restrict access to the information.

4. Export Control

The SBIR/STTR programs support research with commercial potential. As such, research in fields subject to export control regulation is not within the scope of this NOFO. Applications marked as containing material subject to export control regulation may be declined without merit review.

5. Restrictions on the Level of SBC Participation

SBC's submitting to both the SBIR and STTR programs must meet eligibility requirements of both SBIR and STTR applicants. If an application is submitted to both programs but fails to meet the eligibility requirements for one of the programs, it will only be considered for the one program for which it does meet the eligibility requirements.

- SBIR - At least 50 percent of the research or analytical effort must be performed by the SBC. Accordingly, at least 50 percent of the total funding requested on the budget form must be allocated to the SBC.
- STTR - Awards will be made to SBCs for cooperative R&D to be conducted jointly with a research institution. At least 40 percent of the work must be performed by the SBC, and at least 30 percent of the work must be performed by a single research institution. Accordingly, at least 40 percent of the total funding requested on the budget form must be allocated to the SBC, and at least 30 percent must be allocated to a single research institution.

  A Level-of-Effort and Max Funding worksheet in both PDF and Microsoft Excel versions is available to assist in calculating the analytical effort and checking that funding limits are not exceeded for the project at https://science.osti.gov/sbir/Applicant-Resources/Grant-Application.

6. Restrictions of the Principal Investigator (PI)

GENERAL PI REQUIREMENTS AND RESTRICTIONS

The PI is the individual designated by the applicant to direct the project. The PI must be knowledgeable in all technical aspects of the application and be capable of leading the research effort. Because DOE's evaluation of the application is critically dependent on the qualifications of the PI, changes in the PI that are made after award selection are strongly

discouraged. Requests for PI changes will be closely scrutinized and may cause delays in award execution.

In addition, the PI must devote a minimum of 520 hours to the project or at least five hours per week if the project is less than 24 months in duration. If the project is less than 24 months in duration, applicants must state in the Performance Schedule of the Project Narrative the duration of the project in weeks, in order to make clear that this requirement is fully met. If the application is selected for funding, the PI may be required to sign a statement certifying adherence to all PI requirements.

In order to ensure appropriate technical guidance for the project, only one PI will be accepted per project. Processing of applications that include co-PIs may be delayed while the error is corrected by the applicant. Non-U.S. citizens are eligible to perform work on SBIR/STTR projects provided he/she is legally empowered to work in the U.S. at the time that an award is made.

ADDITIONAL PI RESTRICTIONS WHEN SUBMITTING TO SBIR ONLY

To receive an SBIR award, the applicant must meet the general requirements and the PI's primary employment must be with the SBC at the time of award and during the conduct of the proposed research. Primary employment means that no less than 20 hours per week is spent in the employment of the SBC during the conduct of the project and no more than 19 hours per week spent in the employment of another organization.

ADDITIONAL PI RESTRICTIONS WHEN SUBMITTING TO STTR ONLY

To receive an STTR award, the applicant must meet the general requirements and the PI's primary employment may be with the SBC or the research institution. However, the SBC must still provide technical control and oversight of the project. If the PI is employed by the research institution, his/her primary employment must be with the research institution in order to qualify under STTR. If the PI is employed by the SBC, his/her primary employment must be with the SBC. The PI must be listed and funds must be requested on the budget submitted from the entity that is the primary employer of the PI.

7. Restrictions on the Management of SBIR/STTR Projects

All SBIR and STTR funding agreements are made with the SBC regardless of the proportion of the work or funding of each of the performers (SBC, research institution, subcontractor, etc.) under the award. As the primary awardee, the SBC has the overall responsibility of the project, including financial management and the direction and control of the performance. For STTR projects, even if the PI is from the research institution, the SBC must provide overall direction and supervision of the project while the PI will manage the research portion of the project.

It is recommended that all agreements between the SBC and any subcontractor (including the research institution collaborating in a STTR project) reflect the controlling management position of the SBC during the performance of Phase I and/or Phase II. This includes, but is not limited to, any business plan concerning agreements and responsibilities between the parties or for the commercialization of the resulting technology.

8. Restrictions on the Subcontracting and Consultants

None of the employees or owners of the applicant SBC may be consultants. None of the employees or owners of the applicant SBC may be employees of a Subcontractor except when the Subcontractor is a Research Institution. Consultants must not be employees of any proposed Subcontractor. SBC personnel cannot be reimbursed with DOE funding as a consultant under the project. SBC personnel cannot be reimbursed with DOE funding as an employee of a Subcontractor except when the Subcontractor is a Research Institution under the project. Non-U.S. citizens are eligible to perform work on SBIR/STTR projects provided they are legally empowered to work in the U.S. at the time the award is made.

9. Technology Transfer Opportunity Requirements

Each Phase II Technology Transfer Opportunity (TTO) application requires a written statement certifying that the small business and Research Institution have executed at least an option to license any patents owned by the Research Institution related to the TTO topic and that option can be extended to cover the Phase II/IIA/IIB/IIC award period. The written statement must affirm that the Research Institution provided the awardee, prior to the start of its Phase I award, with a no-cost, six-month option to license the technology. However, it is the responsibility of the small business to demonstrate adequate progress towards commercialization and to negotiate an extension to the option or convert the option to a license with the Research Institution. A small business' failure to maintain suitable commercialization rights (at least an option to a license) makes the small business ineligible to apply for a Phase II/IIA/IIB/IIC award. The small business should also ensure that it has secured any other intellectual property rights necessary to successfully commercialize the technology.

D. Cost Sharing

For this NOFO, cost sharing is defined as contributions made by the applicant to the proposed research and development project described in the technical narrative. Cost sharing is not required. However, any commercial contributions will be considered as part of the evaluation. See Section IV.C.2., Phase II Funding Commitment (Commercial Contribution) [OPTIONAL for Phase II, Phase IIA, or Phase IIB; MANDATORY for Phase IIC] and Phase III Follow-On Funding Commitment [OPTIONAL] and the review criteria in Section VI.A., Criteria.

III. Program Description

A. Purpose

The DOE SC program in Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) invites eligible Phase I and Phase II awardees to apply for Phase II awards (initial, second, and third) under this NOFO. Topic descriptions for this NOFO can be found on the DOE SBIR/STTR web site at https://science.osti.gov/sbir/Funding-Opportunities.

B. Initial Phase II Awards

The purpose of an Initial Phase II award is to perform the research and development (R&D) required to meet the DOE objectives stated in the topic and subtopic of the Phase I NOFO. In addition, it is intended that the small business awardee would be in a position to pursue commercial applications of the R&D at the end of Phase II. In many cases, Phase II results in a prototype, product, or a working process that can be demonstrated to a potential investor or customer (either in the private sector or in the Federal government, including the DOE).

This NOFO is supplemental to the FY 2024 SBIR/STTR Phase I Release 1 NOFO (DE-FOA-0003110); therefore, general information already provided in the Phase I NOFO also applies to this Phase II process.

If a conflict arises between the Phase I NOFO and this Phase II NOFO, the Phase II NOFO will govern.

C. Second Phase II Awards

There are two types of DOE Second Phase II awards:

1. Phase IIA: A Phase II awardee may request additional financial support for new R&D tasks and activities that are aligned with the original scope of work for the Phase II award. The purpose of the Phase IIA award is to allow the awardee to complete the R&D associated with initial prototype, product, or process development. The review criteria (see Section VI.A.) for Phase IIA applications will be the same as for Initial Phase II awards submitted to this NOFO.

Only award recipients resulting from eligible topics detailed in Section III.A. of this NOFO may apply for Phase IIA awards.

In addition, Phase IIA applications will only be accepted from Phase II awardees that have an active Phase II award at time of application. Applicants will not be able to resubmit at a later date, if a Phase IIA application is declined for award.

2. Phase IIB: A Phase II awardee may request additional financial support for new R&D tasks and activities that extend beyond the scope of the original Phase II award.

The purpose of the Phase IIB award is to assist the awardee in transitioning the innovation towards commercialization. The review criteria for Phase IIB awards (see Section VI.A) will be different from both Initial Phase II and Phase IIA applications submitted to this NOFO.

The review of Phase IIB applications will place greater emphasis on impact and applicants are expected to demonstrate a well-planned path to commercialization as evidenced in commercialization activities conducted in parallel with or after Phase IIB R&D.
Only award recipients resulting from eligible topics detailed in Section III.A. of this NOFO may apply for Phase IIB awards.

A Phase II awardee may submit only one second Phase II application per eligible award as noted above to either Phase IIA or Phase IIB in response to this NOFO. Phase IIA or Phase IIB awards may extend the Phase II award for up to two years and the combined Phase II and second Phase II should not exceed four years unless an unforeseen delay is encountered. Phase II awardees whose Phase II projects were terminated prior to completion of the full period of performance are not eligible to apply for or receive a second Phase II award. Such applications will be declined without review.

D. Third Phase II Awards (SBIR only)

Third SBIR Phase II awards (Phase IIC) continue research and development from a second SBIR Phase II award towards commercialization and require matching funds from a third-party investor. These matching funds can be used for either (1) research and development costs NOT requested in your budget or (2) other costs associated with commercialization of the proposed innovation.

In addition, Phase IIC applications will only be accepted from Phase IIA or IIB awardees that have an active Phase IIA or IIB award at time of application. Applicants will not be able to resubmit at a later date, if a Phase IIC application is declined for award. Phase IIA or Phase IIB awardees whose Phase IIA or Phase IIB projects were terminated prior to completion of the full period of performance are not eligible to apply for or receive a Phase IIC awards. Such applications will be declined without review.

E. Diversity, Equity, Inclusion, and Accessibility

The Federal SBIR/STTR Programs statutory purposes include fostering and encouraging participation in innovation and entrepreneurship by women and socially or economically disadvantaged persons. Diversity, Equity, Inclusion, and Accessibility (DEIA) is a cornerstone to effectively advancing the U.S. research and scientific innovation enterprise. Effective stewardship and promotion of diverse and inclusive research environments and workplaces that value and celebrate a diversity of people, ideas, cultures, and educational backgrounds is foundational to delivering on the DOE SBIR/STTR mission.

The Department of Energy's SBIR/STTR Programs collaborates with the Department of Energy Office of Science's Office of Scientific Diversity, Equity, and Inclusion to advance organizational best practices for promoting DEIA in our business practices for awarding and managing competitive research. For more information on our work to advance DEIA, visit https://science.osti.gov/sbir/About/Diversity-Equity-and-Inclusion.

F. Program Goals, Objectives, and Priorities

The Small Business Innovation Research (SBIR) Program was established by Congress in 1982 [Public Law 97-219]. Its major goals are to:

- Stimulate technological innovation

- Use small business to meet Federal R/R&D needs
- Foster and encourage participation by the socially and economically disadvantaged small businesses, and those that are 51 percent owned and controlled by women, in technological innovation
- Increase private sector commercialization of innovations derived from Federal R/R&D, thereby increasing competition, productivity, and economic growth

The Small Business Technology Transfer (STTR) Program was established by Congress in 1992 [Public Law 102-564]. Its major goals are to:

- Stimulate and foster scientific and technological innovation through cooperative research and development carried out between small business concerns and research institutions
- Foster technology transfer between small business concerns and research institutions

Through subsequent reauthorization for both programs [Public Laws 106-554, 107-50, 112-81], Congress has continued to expand and evolve the programs. Examples include the requirement for proposal evaluation to consider commercial potential of the proposed R&D, periodic evaluations of the SBIR/STTR programs by the National Academies and the Government Accountability Office, and the establishment of pilot programs to evaluate potential program improvements.

The Federal SBIR STTR Programs were reauthorized on September 30, 2022, when the SBIR/STTR Extension Act of 2022 became law. This Act extends the SBIR STTR Programs through to September 30, 2025.

G. Award Contribution to Goals and Objectives

Awards resulting from this NOFO are intended to increase our understanding of scientific phenomena.

H. Performance Goals

You will be expected to demonstrate progress toward increasing knowledge in periodic progress reports.

I. Program Unallowable Costs

You must apply the cost principles of 2 CFR 200, as supplemented by 2 CFR 910 to your application and any resulting award.

J. Citations to Statute and Regulations

STATUTORY AUTHORITY

Section 646 of Public Law 95-91, U.S. Department of Energy Organization Act
Section 901, et seq. of Public Law 109-58, Energy Policy Act of 2005
Section 9 of the Small Business Act (15 U.S.C. § 638);

APPLICABLE REGULATIONS

Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, codified at 2 CFR 200 U.S. Department of Energy Financial Assistance Rules, codified at 2 CFR 910 Size and Eligibility Requirements for the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs, codified at 13 CFR 121.701 et seq.

K. SBIR/STTR Programs Outcomes

You can learn more about SBIR/STTR Programs Outcomes at, https://science.osti.gov/sbir/Success-Story-Listing-Page.

L. Other Information

ANTICIPATED AWARD SIZE

The anticipated median award will be approximately $1,100,000.

Ceiling (i.e., the maximum amount for an individual award made under this NOFO):

INITIAL PHASE II

FY 2024 Phase I Release 1 awardees: See the maximum Phase II award amount listed for each topic in the topics document associated with the FY 2024 Phase I Release 1 NOFO (DE-FOA-0003110 - https://science.osti.gov/sbir/Funding-Opportunities/FY-2024). The maximum allowable Phase II award will be either $1,100,000 or $1,600,000, depending on the topic. If Technical and Business Assistance (TABA) funding is requested, the maximum allowable Phase II award will be either $1,150,000 or $1,650,000, depending on the topic.

SECOND & THIRD PHASE II

Phase IIA: $1,100,000 Phase IIB: $1,100,000 Phase IIC: $1,100,000

If TABA funding is requested, the maximum allowable Phase IIA, IIB, or IIC award will be $1,150,000.

Floor (i.e. the minimum amount for an individual award made under this NOFO): $1.

Applications in which the total Federal funds requested (SF-424, 15a) or the total project cost (budget, Section K) exceeds the maximum award size (or the maximum award plus $50,000 for those requesting Technical and Business Assistance (TABA) funds) will be administratively declined.

EXPECTED NUMBER OF AWARDS

DOE anticipates making approximately 75 awards under this NOFO depending on the size of the awards. All Phase II awards (Phase II, IIA, IIB, and IIC) will compete for funding. The majority of funding is anticipated to be used for initial Phase II awards.

PERIOD OF PERFORMANCE

DOE anticipates making awards that will run for up to 24 months over two budget periods.

For initial Phase II awards, the first budget period, which will cover 12 months, is anticipated to begin April 14, 2025.

Funding for the second budget period will be contingent on the demonstration of adequate progress, evaluation of programmatic priorities, availability of funds, and compliance with the terms and conditions of the award.

M. Justice40 Initiative

The Justice40 initiative, established by E.O. 14008 "Tackling the Climate Crisis at Home and Abroad", January 27, 2021, sets a goal that 40% of the overall benefits of certain federal investments flow to disadvantaged communities. Pursuant to E.O. 14008 and the Office of Management and Budget's Interim Justice40 Implementation Guidance M-21-28 and M-23-09, DOE recognizes disadvantaged communities as defined and identified by the White House Council on Environmental Quality's Climate and Economic Justice Screening Tool (CEJST), located at https://screeningtool.geoplatform.gov/. DOE's Justice40 Implementation Guidance is located at https://www.energy.gov/sites/default/files/2022-07/Final%20DOE%20Justice40%20General%20Guidance%20072522.pdf.

IV. Application Contents and Format

A. Preliminary Submissions

1. Letter of Intent (LOI)

LOI DUE DATE

The LOI due date is printed on the cover of this NOFO. Only those applicants that submit an LOI which is received by DOE by the due date are eligible to submit an application under this NOFO.

LOI SUBMISSION

LOIs are created in the software system of your choice and must be submitted electronically through the DOE SC Portfolio Analysis and Management System (PAMS) website https://pamspublic.science.energy.gov/. You cannot draft or edit an LOI in PAMS. Do not submit an LOI through FedConnect or Grants.gov.

It is important that the LOI be a single file with extension .pdf, .docx, or .doc. LOIs may be submitted by a PI or by other users at the SBC with the "Submit to DOE" privilege in PAMS. Anyone submitting an LOI must register for an account in PAMS before it will be possible to submit the LOI. Anyone submitting an LOI is encouraged to establish a PAMS account as soon as possible to avoid submission delays.

The LOI must contain the following information:

- Business Official name and contact information (telephone number and email address)
- Name(s) of any proposed subcontractor(s) or consultant(s)
- DOE Award Number DE-SC000XXXX
- Type of Phase II submission: Phase IIA, IIB or IIC
- Project Title (The project title should be the same as the award title.)
- Phase I topic and subtopic number (same as your Phase I and initial Phase II)
- Technical abstract that sufficiently describes your technology and application. The abstract should not exceed 500 words and two pages and it must provide sufficient technical depth to allow DOE to assign technical reviewers for your application. Please note that your abstract should not contain any proprietary information. The abstract file, itself, must contain the award number and the award title.

There is no requirement to seek approval if teaming arrangements, proposed personnel, topics, or the anticipated title change between submitting the LOI and when an application is submitted.

Detailed instructions about how to submit an LOI are in Section IX of this NOFO.

LOI REVIEW

The LOI will not be technically evaluated. The LOI will be used to identify potential reviewers for the full applications.

2. Pre-application

Not applicable.

B. Application

Applications in response to this NOFO must be submitted through Grants.gov. Detailed instructions for registering in and using Grants.gov are in Section IX of this NOFO.

C. Component Pieces of the Application

1. SF-424 (R&R)

Complete this form first to populate data in other forms. Complete all the required fields in accordance with the pop-up instructions on the form. The list of certifications and assurances referenced in Field 17 is available on the DOE Financial Assistance Forms Page at https://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms under Certifications and Assurances[1]. Applicants are bound by their representations and certifications in SAM.gov.

TYPE OF SUBMISSION (FIELD 1)

Select the checkbox for "Application" for an initial submission. Select the checkbox for "Changed/Corrected Application" if submitting an updated version of an application. Do not submit pre-applications via Grants.gov: Do not select the checkbox for "Pre-application."

IDENTIFYING NUMBERS (FIELD 4)

Enter the DOE award number in Field 4a. Do not enter any other number in Field 4a. Do not enter anything in Field 4b. If submitting an updated version of an application, you may enter the previous Grants.gov Tracking ID in Field 4c, though this is not required.

UEI AND EIN NUMBERS (FIELDS 5 AND 6)

The Uniform Entity Identifier (UEI) and Employer Identification Number (EIN) fields on the SF-424 (R&R) form are used in PAMS to confirm the identity of the individual or organization submitting an application.

- Enter the UEI as a 12-digit alpha-numerical sequence.
- Enter the EIN as a nine-digit number.
- Do not use hyphens or dashes.
- SC does not use the 12-digit EIN format required by some other agencies.
- Applications will not be rejected if an applicant's system-to-system service uses a 12-digit EIN format or inserts hyphens or dashes in an EIN.

TYPE OF APPLICATION (FIELD 8)

A **new** application is one in which DOE support for the proposed research is being requested

1 No separate form or submission is required for the Certifications and Assurances.

for the first time. A **renewal** application requests additional funding for a period of time following a current award. If the application requests a significant change in the scope of work, please consult with the Program contact identified in this NOFO to determine if the application should be considered new or a renewal.

SC does not make use of the Resubmission or Continuation options.

Please answer "yes" to the question "Is this application being submitted to other agencies?" if substantially similar, identical, or closely related research objectives are being submitted to another Federal agency. Indicate the agency or agencies to which the similar objectives have been submitted.

DESCRIPTIVE TITLE OF APPLICANT'S PROJECT (FIELD 11)

The title listed in this field must match the project title listed on uploaded documents.

PROPOSED PROJECT (FIELD 12)

Initial Phase II – 4/14/2025

Second or third Phase II awards whose period of performance (without additional extensions) extends beyond April 14, 2025, will have project start dates commensurate with the end of their budget period but no later than September 15, 2025.

- For second Phase II awardees, a second Phase II award may not overlap (without additional extensions) with an initial Phase II award and must start by September 15, 2025.
- For third Phase II awardees, a third Phase II award may not overlap (without additional extensions) with a second Phase II award and must start by September 15, 2025.

TOTAL FEDERAL FUNDS REQUESTED (FIELD 15A)

Funding listed in this field must match the total amount in the Research and Related Budget form.

Do not attach pre-applications to Field 20 of the SF-424(R&R) form or letters of intent to Field 21 of the SF-424(R&R) form.

DOE will accept renewal applications under this NOFO.

NOTICE: By signing the SF-424, you are certifying that the statements contained in the SF-424 and all other documents submitted as part of your application are true, complete, and accurate to the best of your knowledge. DOE relies on your certification and all documents submitted as part of your application which includes all mandatory, required, and optional information identified in this NOFO. Further, DOE relies on all information that you voluntarily provide which was not requested in this NOFO. All information and documents provided by you materially affect the decision to make an award even if the information is not listed as a review criterion in Section VI.A of this NOFO.

2. Research and Related Other Project Information

Complete questions in fields 1 through 6 of the SF-424 Research and Related Other Project Information form.

Note regarding question 1:

Applicants that plan to include human subjects as part of their research, should be aware that there are requirements that must be met for this type of research to be federally funded. Please refer to the following webpage to learn about these requirements: https://science.osti.gov/ber/human-subjects.

Note regarding question 3:

If the answer to question 3 is "Yes", you must identify proprietary information with a legend on the first page of your project narrative and on each page that contains proprietary information in accordance with instructions provided in Section IX.C.29. Proprietary Application Information. Failure to comply may result in DOE's inability to treat such information as proprietary and may delay the award process.

Note regarding question 4.a. and 4.b.:

If any environmental impact, positive or negative, is anticipated, indicate "yes" in response to question 4.a., "potential impact – positive or negative - on the environment." Disclosure of the impact should be provided in response to question 4.b. First indicate whether the impact is positive or negative and then identify the area of concern (e.g., air, water, exposure to radiation, impacts to endangered species or historic properties, etc.). Should the applicant have any uncertainty, they should check "yes."

DOE understands the phrase in field 4.a., "potential impact … negative" to apply if the work described in the application could potentially have any of the impacts listed in (1) through (5) of 10 CFR 1021, Appendix B, Conditions that Are Integral Elements of the Classes of Action in Appendix B. (https://www.ecfr.gov/current/title-10/chapter-X/part-1021)

Additionally, for actions which could have any other adverse impacts to the environment or have any possibility for adverse impacts to human health (e.g., use of human subjects, Biosafety Level 3-4 laboratory construction/operation, manufacture or use of certain nanoscale materials which are known to impact human health, or any activities involving transuranic or high level radioactive waste, or use of or exposure to any radioactive materials beyond de minimis levels), applicants should indicate a "negative" impact on the environment.

Lastly, 1) if there would be extraordinary circumstances (i.e., factor or circumstance that could increase the level of significance of environmental effects normally associated with the proposed action) (10 CFR 1021.410 (b)(2)), 2) if the work is connected to other actions with potentially significant impacts (10 CFR 1021.410 (b)(3), or 3) if the work is related to other nearby

actions with the potential for cumulatively significant impacts (10 CFR 1021.410 (b)(3)), applicants should indicate a "negative" impact on the environment.

The bulk of your application will consist of files attached to the Research and Related Other Project Information form. The files must comply with the following instructions:

PROJECT SUMMARY/ABSTRACT (FIELD 7 ON THE FORM)

The Project Summary/Abstract must contain a summary of the proposed activity suitable for dissemination to the public. This document must not include any proprietary or sensitive business information as DOE may make it available to the public. The Project Title, Abstract and Summary must not exceed 500 words of text. Save this information in a file named "Summary.pdf," and click on "Add Attachment" to attach it.

The purpose of the Project Summary/Abstract is to communicate the overall sense of the project, not every step of the work plan or every accomplishment in Phase I. Statements of future applications or benefits belong in the section on Commercial Applications and Other Benefits. Do not use acronyms, abbreviations, first-person references, or any proper names (including the name of the SBC, any subcontractors or institutions, or any trade/product name) in the body of the summary.

The header must include:
- Company name
- Project Title
- Principal Investigator
- Topic number/subtopic letter

The body must include:
- Statement of the problem or situation that is being addressed. Describe the problem or situation being addressed – be sure that the DOE interest in the problem is clear, but not in such a way that implies that any service or products are being provided for the direct benefit of DOE rather than for the advancement of a public purpose. (Typically one to three sentences).
- General statement of how this problem is being addressed. This is the overall objective of the combined Phase I and Phase II projects. How is this problem being addressed? What is the overall approach of the combined Phase I/Phase II project? (Typically one to two sentences).
- What was done in Phase I (and, if applicable, Phase II awards)? (Typically two to six sentences).
- What is planned for the Phase II project? (Typically two to three sentences).
- Commercial Applications and Other Benefits (limited to the space provided). Summarize the future applications or public benefits if the project is carried over into Phase III and beyond. Do not repeat information already provided above.
- Key Words - Provide listing of key words that describe this effort.
- Summary for Members of Congress: (layman's terms, two sentences with a maximum of 50 words). The DOE notifies members of Congress of awards; therefore, please provide, in clear and concise layperson's terms, a very brief summary of the project, suitable for a possible press release from a Congressional office.

Suggested Format: To ensure that the research need is clearly identified, please state the problem to be addressed in the first sentence. In the second sentence, state what is being done to address the problem.

PROJECT NARRATIVE (FIELD 8 ON THE FORM)

The project narrative **must not exceed a page limit of 20 pages** of technical information, including charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard letter-size (8.5-inch x 11-inch) paper with 1-inch margins (top, bottom, left, and right). The body text font of all main text must not be smaller than 11 point. Merit reviewers will only consider the number of pages specified in the first sentence of this paragraph. This page limit does not apply to the Title Page, table of contents, publications and references, and appendices.

Do not include any websites (URLs) that provide supplementary or additional information that constitutes a part of the application. Merit reviewers are not required to access websites; however, Internet publications in a list of references will be treated identically to print publications. See Section IX of this NOFO for instructions on how to mark proprietary application information. To attach a Project Narrative, click "Add Attachment."

Phase II applications must propose R&D required to meet the DOE objectives stated in the technical topic of the Phase I NOFO and provide sufficient information to convince DOE and members of the research community who review the application that it is worthy of support under the stated evaluation criteria in Section VI.A. The work proposed in Phase II, assuming that it proceeds successfully, should be suitable in nature for subsequent progression into Phase III.

The Project Narrative must include ALL of the following using this outline:

- Title page - Provide company-specific and project information including company name and address, principal investigator, project title, topic number, subtopic letter, and award number.
- Table of Contents
- Significance, Background Information, and Technical Approach
  - Identification and Significance of the Problem or Opportunity, and Technical Approach - Define the specific technical problem or opportunity addressed by your application. Provide enough background information, so that the importance of the problem/opportunity is clear. Indicate the overall technical approach to the problem/opportunity and the part that the proposed research plays in providing needed results.
  - Anticipated Public Benefits - Discuss the technical, economic, social, and other benefits to the public as a whole, if the project is successful and is carried over into Phase III. Identify specific groups in the commercial sector as well as the Federal government that would benefit from the projected results. Describe the resultant product or process, the likelihood that it could lead to a marketable product, and the significance of the market.
  - Degree to which Technical Feasibility has been Demonstrated - For Initial Phase II applications, discuss the purpose of your Phase I research, the research carried out, the

research findings or results, and your estimate of technical feasibility. In particular, address the degree to which the Phase I objectives have been met. The Initial Phase II application should include all relevant information concerning the research carried out in Phase I. Technical reviewers are not always the same as used in Phase I, therefore, may not be familiar with the Phase I application.

  - For Technology Transfer Opportunities, you must include an update on the status of the option agreement with the Research Institution.
  - Phase IIA: Please discuss the R&D that was originally proposed for Phase II and the R&D that was or will be completed by the end of Phase II. The scope of work proposed for Phase IIA is limited to completing that originally proposed for Phase II.
  - Phase IIB: Please discuss how the originally proposed work for Phase II has or will be successfully completed during the Phase II project period. Also discuss how the proposed Phase IIB R&D builds upon the successful Phase II work to enhance the opportunity for commercialization. If you have completed your Phase II Final Technical Report, you may cite it here and attach it to Field 12 of the RESEARCH AND RELATED Other Project Information form.
  - Phase IIC: Please discuss your plans to continue the research conducted in either Phase IIA or IIB and how this will enable you to transition your innovation to commercialization. Also discuss the following information regarding matching funds: (1) the third party providing the matching funds and the amount of funds provided (The matching amount (excluding any fees collected by the SBC) must be equal to the amount of the award); (2) the expectations of the third party for the use of the funds and the expected outcomes; and (3) your plan for expending the funds during the period of performance of the award.
- The Phase II Project
  - Technical Objectives - State the specific technical objectives of the Phase II research and development. If submitting a Phase IIA or IIB application, please clearly indicate the need for additional funding beyond that provided in the initial Phase II award. If submitting a Phase IIC application, please clearly indicate the need for additional funding beyond the first and second Phase II awards.
  - Work Plan - This section should be a substantial part of the technical application. Provide an explicit, detailed description of the Phase II research approach and work to be performed. Indicate what will be done, by whom (SBC, subcontractors, or consultants) where it will be done, and how the work will be carried out, both programmatically and in regard to protection of human health and the environment.
  - Link the work plan to the objectives of the proposed project. Discuss methods planned to achieve each objective or task explicitly and in detail. Be sure to address how the research or research and development effort could lead to a product, process, or service in Phase III. Show how the management direction and control of the project will be assured. Regardless of the proportion of the work or funding of each of the performers under the award, the SBC is to be the primary awardee with overall responsibility for its performance.
  - Performance Schedule - Phase II projects are typically for 24 months. Please note that the performance period should cover two budget periods of up to 12 months each; however, the first budget period should be 12 months. Funding for the 2nd budget period will be contingent on the demonstration of adequate progress, evaluation of programmatic priorities, availability of funds, and compliance with the terms and conditions of the award. Please state in this section if the project will be completed in less than 24 months and identify the proposed project length in weeks. Briefly describe the important milestones and the estimated amount of time for completing

each task described in the work plan.
  - Facilities/Equipment - Describe available equipment and physical facilities necessary to carry out the Phase II effort. Equipment is defined in 2 CFR 200.33 as "tangible personal property (including information technology systems) having a useful life of more than one year and a per-unit acquisition cost which equals or exceeds the lesser of the capitalization level established by the non-Federal entity for financial statement purposes, or $5,000." Items of equipment to be leased or purchased must be described and justified in this section. If the equipment, instrumentation, and facilities are not the property of the applicant and are not to be purchased or leased, the source must be identified and their availability and expected costs specifically confirmed in this section. A principal of the organization that owns or operates the facilities/equipment must provide written verification regarding the availability and cost of facilities/equipment and any associated technician cost. SBCs may get credit for obtaining this equipment as an in-kind Phase II commercial contribution as described in section 6 below.
  - To the extent possible in keeping with the overall purposes of the program, only American- made equipment and products should be purchased with the funds provided by the Phase II awards.
- Consultants and Subcontractors (including Research Institutions for STTR)
  - Research Institution - If the application contains substantial collaboration with a research institution (required for STTR, optional for SBIR), (1) identify the name and address of the institution, the name, phone number, and email address of the certifying official from the research institution, and the total dollar amount of the subcontract; (2) describe in detail the work to be done by this institution in the Work Plan section; (3) provide a budget and budget justification; (4) and provide a specific statement certifying that they have agreed to serve in the manner and to the extent described in the Work Plan section of the application.
  - The research institution will be considered a subcontractor to the SBC applicant. The research institution must provide a letter of commitment on official letterhead from an authorized representative of the institution which commits the institution to participate in the project as described in the application. The letter should be attached as an "Other Attachment" in field 12, on the Research & Related Other Project Information form. If selected for award, participation of the research institution will be verified by the Contracting Office.
  - Consultants and Other Subcontractors - Involvement of consultants or subcontractors in the planning and research stages of the project is permitted provided the work is performed in the United States. If consultants and/or subcontractors are to be used, this section of the application must identify them by name, identify whether the party is being proposed as a consultant versus as a subcontractor, and should provide "Letters of Commitment" from an authorized representative of the consultants and/or subcontractors. The letters must provide a detailed cost estimate including costs for labor, equipment, and materials, if any for the consultant or subcontractor, as well as a specific statement certifying that they have agreed to serve in the manner and to the extent described in the Work Plan section of the application. Each letter must be on official letterhead with an authorizing representative's contact information provided and submitted as an "Other Attachment" to the application. If selected for award, the Contracting Office will verify the participation of any subcontractors and/or consultants and will require budget and budget justifications for subcontractors and verification of the rates for consultants.
  - Note: None of the employees or owners of the applicant SBC may be consultants.

None of the employees or owners of the applicant SBC may be employees of a Subcontractor except when the Subcontractor is a Research Institution. Consultants must not be employees of any proposed Subcontractor. SBC personnel cannot be reimbursed with DOE funding as a consultant under the project. SBC personnel cannot be reimbursed with DOE funding as an employee of a Subcontractor except when the Subcontractor is a Research Institution under the project. Non-U.S. citizens are eligible to perform work on SBIR/STTR projects provided they are legally empowered to work in the U.S. at the time the award is made.

- Phase II Funding Commitment (Commercial Contribution) [OPTIONAL for Phase II, Phase IIA, or Phase IIB; MANDATORY FOR Phase IIC]
  - While not a requirement to obtain Phase II, IIA, or IIB funding, applicants are encouraged to submit a Phase II commitment from the private sector or non-SBIR/STTR funding sources.
  - Phase IIC: This section should state the source and amount of the matching funds and the planned use of the matching funds. You must ensure that the matching amount (excluding any fees collected by the SBC) must be equal to the amount of the award. Although Phase II award funds (with the exception of commercialization assistance and patent costs) are to be used solely for research and development, matching funds can be used for research and development or other purposes associated with commercialization of technology developed under the award. Note: do not include matching funds in your budget, budget justification, or SF-424 form. Those forms are only for the research and development funds you are requesting from DOE.
  - Phase III Follow-On Funding Commitment [OPTIONAL] - Applicants are encouraged to submit a Phase III follow-on funding commitment. The commitment must indicate when the funds will be made available, and contain specific technical objectives which, if achieved in Phase II, will make the commitment exercisable by the applicant. If the commitment is firm regardless of technical objectives achieved, it should state so. The commitment may include: (1) third party financing; (2) self-financing (in which case the proposing SBC must demonstrate the ability to provide the Phase III funding); (3) state or local government financing; or (4) Federal funding. In-kind contributions are allowed; however, the applicant or donor must estimate the dollar value of any in-kind contributions. The Phase III commitment must be submitted with the Phase II application as a separate attachment. Add as an attachment in field 12, "Other Attachments," on this form. You should also reference it in the technical proposal in the "Work Plan" section.
- Bibliography & References Cited (Field 9 on the form). [DO NOT USE THIS FIELD] - Include this information, if any, in the project narrative. Do not attach a file in this field.
- Facilities & Other Resources (Field 10 on the form) [DO NOT USE THIS FIELD] - Include this information, if any, in the project narrative. Do not attach a file in this field.
- Equipment (Field 11 on the form) [DO NOT USE THIS FIELD] - Include this information, if any, in the project narrative. Do not attach a file in this field.

- Appendix: Promoting Inclusive and Equitable Research (PIER) Plan (DOES NOT COUNT TOWARD THE PROJECT NARRATIVE PAGE LIMIT OR WORD COUNT)

  In compliance with the Office of Science's (SCs) Promoting Inclusive and Equitable Research (PIER) Plan requirement, DOE SBIR/STTR has added the PIER Plan requirement to all funding opportunities, beginning in FY 2024.

All applications must provide a Promoting Inclusive and Equitable Research (PIER) Plan as an appendix to the research project narrative. The PIER plan should describe the strategies and activities of the applicant to promote diversity, equity, inclusion and/or accessibility as an integrated element of the research and development project within the proposing small business concern. Plans may include, but are not limited to: plans of your small business concern and collaborating institutions (if applicable) to recruit and retain individuals from diverse backgrounds and/or groups historically underrepresented in the research community; plans to contribute to a research and development environment that fosters a safe, positive, accessible and inclusive workplace and/or a sense of belonging among all personnel; and/or training, mentoring and partnering with underrepresented communities. Plans may leverage existing diversity, equity, inclusion and accessibility efforts of the applicant small business concern but should not be a statement of broad principles.

Provided as an appendix to the Project Narrative, the PIER Plan should describe the activities and strategies to promote diversity, equity, inclusion, and accessibility in the proposed research project:

- The PIER Plan should be between 1 and 3 pages in length.
- The complexity of a PIER Plan is expected to increase with the size of the small business, duration of the project and the number of personnel to be supported. Thus, a PIER Plan for a Phase I project is expected to be focused and relatively limited.
- PIER Plans are to be evaluated as part of the merit review criterion: Quality and Efficacy of the Plan for Promoting Inclusive and Equitable Research.
- The scope should be integral to and tailored to the research project.
- Applicants are encouraged to focus on areas, including but not limited to:
    - The composition of the project team and partnering institutions.
    - The research environment - cultivating respectful, professional and accessible environments.
    - Equitable and inclusive implementation of the research project.
- Funds may be requested for execution of the PIER Plan, within the allowed cost guidelines and maximum funding limit.

Additional resources to support PIER Plan development can be found at: HTTPS://SCIENCE.OSTI.GOV/SBIR/APPLICANT-RESOURCES/PIER-PLANREMINDERS REGARDING ALL APPENDICES

- **Follow the above instructions to include the information as appendices to the project narrative file.**
- **These appendices will not count toward the project narrative's page limitation.**
- **Do not attach anything to fields 9, 10, or 11.**

OTHER ATTACHMENTS (FIELD 12)

Note: Field 12 will hold more than one attachment. If you need to elaborate on your responses to questions 1-6 on the "Other Project Information" document, provide the information in a single file named "projinfo.pdf." Click on "Add Attachments" in Field 12 to attach file. See the instructions in the subsections below.

DIGITAL DATA MANAGEMENT PLAN [REQUIRED]

All SBIR and STTR applicants must select one of the following options for their Data Management Plan (DMP):

Option 1)
The Option 1 DMP is: "It is anticipated that all generated digital data will be protected as SBIR/STTR data and therefore will not be publicly shared during the applicable SBIR/STTR data protection period. If any data generated under this award are published, an effort will be made to also release any related digital data that is not protected SBIR/STTR data."

Please note that if you do not include a DMP with your application, Option 1 for the DMP will be assumed for your application. However, if you plan to publicly disclose generated digital data, you must provide a DMP under Option 2.

Option 2)
If you plan to publicly disclose technical data during the data protection period or, for data not expected to be asserted as protected SBIR/STTR rights data, please submit a DMP using the standards in Section IX.B.11of this NOFO.

CYBERSECURITY SELF-ASSESSMENT [REQUIRED]

All Phase II applicants (Phase II, Phase IIA, Phase IIB, and Phase IIC) must submit a Cybersecurity Self-Assessment with their application. The purpose of the Cybersecurity Self-assessment is to evaluate whether the cybersecurity practices of the SBC are sufficient to protect the work being done under the SBIR/STTR award from disclosure. DOE will be using the cybersecurity performance goals (CPGs) issued by Cybersecurity and Infrastructure Security Agency (CISA) as the basis for the cybersecurity self-assessment. Applicants are encouraged to utilize the cybersecurity resources available from CISA (https://www.cisa.gov/cyber-guidance-small-businesses) to improve their cybersecurity posture.

Applicants will use the CISA CPG Checklist (https://www.cisa.gov/resources-tools/resources/cisa-cpg-checklist) to submit their Cybersecurity Self-Assessment. There are 39 CPGs included in the checklist. For the purpose of the DOE Cybersecurity Self-Assessment, Phase II applicants are required to complete the checklist for the following CPGs: 1A, 1B, 1E, 2A, 2B, 2C, 2D, 2E, 2F, 2G, 2H, 2I, 2K, 2L, 2M, 2R, 2S, 2T, 2W, 4A, and 4C. Applicants may complete the checklist for other CPGs that are not specifically required above.

DOE will use this information as part of its assessment of risk when determining which applicants will be selected for award. At the time of the Phase II application submission, it is expected that all CPGs will have been implemented. Based on the evaluation of the Cybersecurity Self-assessment, only those of Low or Moderate risk will be selected for award. Those selected for award may be required to take actions to improve their cybersecurity posture during the first period of performance of their Phase II award.

DISCLOSURE OF FOREIGN RELATIONSHIPS [REQUIRED]

All SBIR and STTR applicants must disclose their foreign relationships as required by the SBIR and STTR Extension Act of 2022. The required form that must be used to disclose these relationships is available here:

https://science.osti.gov/sbir/Applicant-Resources/Grant-Application.
Instructions are included on the form. Please note that even if you do not have any foreign relationships, you must complete this form to certify that such relationships do not exist. Failure to include this form may result in declination of your application without review at DOE's discretion.

All SBIR and STTR applicants must disclose their foreign relationships as required by the SBIR and STTR Extension Act of 2022. The required form that must be used to disclose these relationships is available here: https://science.osti.gov/sbir/Applicant-Resources/Grant-Application. Instructions are included on the form. Please note that even if you do not have any foreign relationships, you must complete this form to certify that such relationships do not exist. Failure to include this form may result in declination of your application without review at DOE's discretion.

ADDITIONAL ATTACHMENTS (FIELD 12) [MANDATORY]

Also, attach the following files. Do not attach these to the SF-424 but attach these files to Field 12 of the "Other Project Information" form.

- Phase I Final Technical Report [mandatory for Initial Phase II applications]. If your Phase I project period ends less than 14 days before the Phase II application due date or after the Phase II application due date, you must attach in Field 12 an interim Final Technical Report [mandatory] on your progress to date. Please note that your Phase I Final Technical Report may contain SBIR/STTR data per your Phase I award terms and conditions. However, no company proprietary information should be included in the report.
- Latest Phase II progress report or final technical report [mandatory for Phase IIA, IIB or IIC applications].
- Signed Letter of Phase II Funding Commitment, if applicable.
- Phase III Follow-On Funding Commitment, if applicable
- Signed Letter of Commitment from any subcontractors (including Research Institutions).
- Letters of Commitment from consultants, subcontractors, or other third parties.
- Level-of-Effort Worksheet (discussed in 5. Restrictions on the Level of SBC Participation.) located at https://science.osti.gov/sbir/Applicant-Resources/Grant-Application. If the Microsoft Excel version is used, it must be converted to PDF before attaching it to the application.
- A copy of the SBIR.gov SBC Registration PDF file received from the Small Business Administration (when a Control ID was provided), after the completion of the SBA Company Registration at https://app.www.sbir.gov/company-registration/overview.
- For STTR-only applications, Company Commercialization Report from SBIR.gov, if the applicant SBC has received SBIR/STTR Phase II awards from any Federal agency.

3. Research and Related Senior/Key Person Profile (Expanded)

Complete the Research and Related Senior/Key Person Profile (Expanded) form in accordance with the instructions on the form and the following instructions. Complete this form before the Budget form to populate data on the Budget form.

You must submit this information for the PI and all senior/key personnel who will be identified by name in Section A of the application's budget. List all other personnel who

contribute in a substantive, meaningful way to the scientific development or execution of the project, whether or not salaries are requested. Consultants should be included in this "Senior/Key Person Profile (Expanded)" Form if they meet this definition. List individuals that meet the definition of senior/key regardless of what organization they work for. Senior/key personnel must be aware that they are included in the application and must agree to perform the work if awarded. The form will pre-populate with the PI identified on the SF-424(R&R) form. For each senior/key person:

- Complete the required sections in their profile.
- In the "credential" field, enter the person's PAMS username, if known.
- Attach the person's biographical sketch, following the instructions in Section IX of this NOFO for crafting a biographical sketch.
- Attach the person's current and pending support, following the instructions in Section IX of this NOFO for crafting current and pending support.

The Senior/Key Person Profile (Expanded) form will support the PI and up to 99 additional senior/key personnel. On the addition of the 99th senior/key person, you will be presented with an option to upload an additional file with the required information for all other senior/key personnel.

4. Research And Related Budget

Complete the Research and Related Budget form in accordance with the instructions on the form (Activate Help Mode to see instructions) and the following instructions. You must complete a separate budget for each year of support requested. The form will generate a cumulative budget for the total project period. You must complete all the mandatory information on the form before the NEXT PERIOD button is activated. All fields with a red border are required, but you may enter a zero "0" in any field in which funds are not being requested. You may request funds under any of the categories listed as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this NOFO.

Additional information is found in Section IX of this NOFO.

BUDGET JUSTIFICATION (FIELD L ON THE FORM)

Provide a justification that explains all costs proposed in the budget. The following items of advice are offered to assist you in developing a justification.

- Organize the justification by listing items in the same order as presented on the budget.
- Ensure that the narrative matches the budget in dollar amounts and language.
- Explain the line items. If costs are estimated, provide a basis for the estimate. Explain if costs are based on prior experience of similar activities. If a cost is based on the product of two numbers (such as a number of items at a per-item price), ensure that your math is correct.
- If including an inflationary factor for future budget periods, explain the basis for the inflationary factor.

Provide any other information you wish to submit to justify your budget request. Including items in the budget justification is not considered a form of cost-sharing: Provide the details

of all personnel (key or other) who will be working on the award, regardless of their source(s) of compensation. Explain their source(s) of compensation if it is not from this award. Include the indirect cost rate agreement as a part of the budget justification.

Attach a single budget justification file for the entire project period in field L. The file automatically carries over to each budget year.

Additional information is found in Section IX of this NOFO.

5. R&R Subaward Budget Attachment(s) Form

Budgets for Subawards: You must provide a separate R&R budget and budget justification for each subrecipient. Download the R&R Budget Attachment from the R&R SUBAWARD BUDGET ATTACHMENT(S) FORM and either email it to each subrecipient that is required to submit a separate budget or use the collaborative features of Workspace. After the subrecipient has either emailed its completed budget back to you or completed it within Workspace, attach it to one of the blocks provided on the form. All fields with a red border are required, but you may enter a zero "0" in any field in which funds are not being requested. Use up to 10 letters of the subrecipient's name (plus.pdf) as the file name (e.g., ucla.pdf or energyres.pdf). Filenames must not exceed 50 characters.

If the project involves more subrecipients than there are places in the SUBAWARD BUDGET ATTACHMENT(S) FORM, the additional subaward budgets may be saved as PDF files and appended to the Budget Justification attached to Field L.

Applicants should consult their local information technology ("IT") support resources for any necessary assistance in converting the forms downloaded from Grants.gov into plain PDF files that can be combined into one non-Portfolio PDF file (the Budget Justification).

Ensure that any files received from subrecipients are the PDF files extracted from the SUBAWARD BUDGET ATTACHMENT(S) FORM. Errors will be created if a subrecipient sends a prime applicant a budget form that was not extracted from the application package.

6. Project/Performance Site Location(s)

Indicate the primary site where the work will be performed. If a portion of the project will be performed at any other site(s), identify the site location(s) in the blocks provided.

Note that the Project/Performance Site Congressional District is entered in the format of the 2 digit state code followed by a dash and a 3 digit Congressional district code, for example VA-001. Hover over this field for additional instructions.

Use the Next Site button to expand the form to add additional Project/Performance Site Locations.

7. SBIR/STTR INFORMATION FORM

Complete all the required forms in accordance with the pop-up instructions on the form. Applications that lack the required documents will be administratively declined. The commercialization plan (Question 8) must be prepared in accordance with the instructions in

Section IV.C.7 of this NOFO.

COMMERCIALIZATION HISTORY (FIELD 9, IF APPLICABLE)

Applicants must utilize the Company Commercialization Report (CCR) from SBIR.gov to provide their company commercialization history of past SBIR/STTR awards, if applicable. The CCR allows companies to report funding outcomes resulting from prior SBIR and STTR awards. SBIR and STTR awardees are required by the SBA Policy Directive to update and maintain their organization's CCR on SBIR.gov. Companies may complete this report by logging into the company's account on SBIR.gov and starting a new Company Commercialization Report.

If you are an SBIR or Both SBIR/STTR applicant, attach your Company Commercialization Report (CCR) from SBIR.gov to Field 9. For STTR-only applications, attach your CCR to Field 12 of the R&R Other Project Information. Please name your CCR document "Commercialization History.pdf"

To complete and include a CCR within your application you should:
1. Log into the company account at https://www.sbir.gov/.
2. Navigate to My Dashboard > My Documents to view or print the information currently contained in the Company Registry Commercialization Report.
3. Create or update the commercialization record, from the company dashboard, by scrolling to the "My Commercialization" section, and clicking the create/update Commercialization tab under "Current Report Version". Please refer to the "Instructions" and "Guide" documents contained in this section of the Dashboard for more detail on completing and updating the CCR. Ensure the report is certified and submitted.
4. Click the "Company Commercialization Report" pdf under the My Documents section of the dashboard to download a pdf of the CCR.

8. Disclosure of Lobbying Activities (SF-LLL)

If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying." Applicants that have never paid any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress do not need to submit this form.

9. Summary of Required Forms/Files

Your application must include the following items:

NAME OF DOCUMENT	FORMAT	ATTACH TO
Application for Federal Assistance, SF 424(R&R) Form	FORM	
SF-LLL, Disclosure of Lobbying Activities, if applicable	PDF	Field 18
Research and Related: Budget Form	FORM	

Additional Senior Key Persons, if applicable	PDF	Field A.9
Additional Equipment, if applicable	PDF	Field C.11
Budget Justification	PDF	Field K
Research and Related: Senior/Key Person Profile Form	FORM	
Biographical Sketch for each person	PDF	Appropriate Block
Current & Pending Support for each person, if applicable	PDF	Appropriate Block
Research and Related: Other Project Information Form	FORM	
Project Title, Abstract and Summary	PDF	Field 7
Project Narrative – Promoting Inclusive and Equitable Research (PIER) Plan	PDF	Field 8 PIER Plan is included as an appendix to Project Narrative
Bibliography and References Cited, if applicable	PDF	NO ATTACHMENT (Include in Project Narrative)
Facilities and Other Resources, if applicable	PDF	NO ATTACHMENT (Include in Project Narrative)
Equipment, if applicable	PDF	NO ATTACHMENT (Include in Project Narrative)
Other - Data Management Plan	PDF	Field 12
Other - Disclosure of Foreign Relationships	PDF	Field 12
Other - Level of Effort and Max Funding Worksheet	PDF	Field 12
Other - Cybersecurity Self -assessment	PDF	Field 12
Other - Letter of Commitment for consultant, sub-award, or research institution, as applicable	PDF	Field 12
Other - SBA Company Registration	PDF	Field 12
Other - Company Commercialization Report from SBIR.gov for STTR-only applications, if applicable	PDF	Field 12
Other - Interim or Final Phase I Technical Report (For initial Phase II applicants)	PDF	Field 12
Other - Latest Phase II progress report or final technical report [mandatory for Phase IIA, IIB or IIC applications].	PDF	Field 12
Other – Reporting if required by the COI Policy	PDF	Field 12
Authorization for non-DOE/NNSA FFRDCs, if applicable	PDF	Field 12
Authorization for DOE/NNSA FFRDC, if applicable and if available	PDF	Field 12
Research and Related: Sub-award Budget Form, if applicable	FORM	
Budget Justification for each Sub-award	PDF	Appropriate

		Block
Project/Performance Site Location(s) Form	FORM	
SBIR/STTR Information Form	FORM	
Phase II Commercialization Plan (include LOS and pro forma financial worksheet – upload as a single PDF)	PDF	Field 8
Company Commercialization Report from SBIR.gov for SBIR or Both SBIR/STTR applications, if applicable	PDF	Field 9

D. Information that Must be Submitted After Application but Before Award

If selected for award, DOE reserves the right to request additional or clarifying information for any reason deemed necessary, including, but not limited to:

- Indirect cost information
- Other budget information
- Name and phone number of the Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 CFR 1040.5)
- Representation of Limited Rights Data and Restricted Software, if applicable
- Commitment Letter from Third Parties Contributing to Cost Sharing, if applicable
- Environmental Information
- Information required to resolve concerns about conflicts of interest, conflicts of commitment, potential duplication of support

Indirect cost information – If you are proposing indirect costs and do not already have a Negotiated Indirect Cost Rate Agreement (NICRA) or documentation of indirect rates accepted for estimating purposes by DOE or another Federal agency, it is recommended that you begin preparing an Indirect Rate Model (IRM) to be submitted, upon request. For your convenience, IRM templates are available at https://science.osti.gov/sbir/Applicant-Resources/Grant-Application.

CERTIFICATIONS AND ASSURANCE

By submitting an application in response to this NOFO the applicant certifies that:

- It is not a corporation that has been convicted (or had an officer or agent of such corporation acting on behalf of the corporation convicted) of a felony criminal violation under any Federal law within the preceding 24 months;
- It is not a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

For purposes of these representations the following definitions apply:

- A Corporation includes any entity that has filed articles of incorporation in any of the 50 states, the District of Columbia, or the various territories of the United States Corporation. It includes both for-profit and non-profit organizations.

If selected for award, applicants will be required to sign and submit one or more of the certifications available at https://science.osti.gov/sbir/Awardee-Resources/Awardee-Documents. Any forms required will be provided by the DOE Contract/Grants Management

Specialist during award negotiation.

V. Submission Requirements and Deadlines

A. Address to Request Application Package

Application forms and instructions are available at Grants.gov. To access these materials, go to https://www.Grants.gov, select "Search Grants", and then enter the Catalog of Federal Domestic Assistance (CFDA)[2] number (8.049) and/or the NOFO number shown on the cover of this NOFO. Select the "Apply" button to access the application package.

Applications submitted through www.FedConnect.net will not be accepted. Applications may not be submitted through PAMS at https://pamspublic.science.energy.gov.

Detailed instructions for registering in and using Grants.gov are in Section IX of this NOFO.

B. Unique Entity Identifier (UEI) and System for Award Management (SAM.gov)

Applicants must complete a series of registrations and enrollments to submit applications in response to this NOFO. Applicants not currently registered with SAM and Grants.gov should allow **at least four weeks** to complete these requirements. Applicants refers to the legal entity submitting an application: This is usually a corporate entity, not an individual investigator.

You should start the process as soon as possible.

You may not be able to use your preferred Internet browser: Each system has its own requirements.

Applicants must register with SAM at https://www.sam.gov/ and obtain a Unique Entity Identifier (UEI). Assistance is available at https://sam.gov/content/help.

Applicants must provide a Taxpayer Identification Number (TIN) to complete their registration in www.SAM.gov. An applicant's TIN is an EIN assigned by the Internal Revenue Service (IRS). In limited circumstances, a Social Security Number (SSN) assigned by the Social Security Administration (SSA) may be used as a TIN. You may obtain an EIN from the IRS at https://www.irs.gov/businesses/small-businesses-self-employed/apply-for-an-employer-identification-number-ein-online.

If entities have technical difficulties with the UEI validation or SAM registration process, they should utilize the HELP feature on SAM.gov. SAM.gov will work entity service tickets in the order in which they are received and asks that entities not create multiple service tickets for the same request or technical issue.

Do not use a SSN as a TIN.
Obtain a TIN from the IRS using the website listed above.

2 The Catalog of Federal Domestic Assistance has been replaced by the Assistance Listings in the System for Award Management at https://www.SAM.gov. They are still listed as CFDA in Grants.gov at https://www.grants.gov.

1. Requirement for System for Award Management

Unless exempt from this requirement under 2 CFR 25.110, the recipient must maintain a current and active registration in SAM.gov. The recipient's registration must always be current and active until the recipient submits all final reports required under this Federal award or receives the final payment, whichever is later. The recipient must review and update its information in SAM.gov at least annually from the date of its initial registration or any subsequent updates to ensure it is current, accurate, and complete. If applicable, this includes identifying the recipient's immediate and highest-level owner and subsidiaries and providing information about the recipient's predecessors that have received a Federal award or contract within the last three years.

2. Requirement for Unique Entity Identifier (UEI)

If the recipient is authorized to make subawards under this Federal award, the recipient:

- Must notify potential subrecipients that no entity may receive a subaward until the entity has provided its UEI to the recipient.
- Must not make a subaward to an entity unless the entity has provided its UEI to the recipient. Subrecipients are not required to complete full registration in SAM.gov to obtain a UEI.

C. Submission Instructions

Letters of Intent (LOIs) and pre-applications, if permitted under this NOFO, must be submitted in PAMS at https://pamspublic.science.energy.gov. Detailed instructions for LOIs are in Section IX of this NOFO. Detailed instructions for pre-applications are in Section IX of this NOFO.

Applications must be submitted in Grants.gov at https://www.grants.gov. Detailed instructions are in Section IX of this NOFO.

D. Submission Dates and Times

1. Letter of Intent Due Date

The LOI due date is printed on the cover of this NOFO.

You are encouraged to submit your LOI well before the deadline. LOIs may be submitted at any time between the publication of this NOFO and the stated deadline.

2. Pre-application Due Date

Not Applicable.

3. Application Due Date

The application due date is printed on the cover of this NOFO.

You are encouraged to submit your application well before the deadline. Applications may be

submitted at any time between the publication of this NOFO and the stated deadline.

4. Late Submissions

Delays in submitting letters of intent and applications may be unavoidable. DOE has accepted late submissions when applicants have been unable to make timely submissions because of widespread technological disruptions or significant natural disasters. DOE has made accommodations for incapacitating or life-threatening illnesses and for deaths of immediate family members. Other circumstances may or may not justify late submissions. Unacceptable justifications include the following:

- Failure to begin submission process early enough.
- Failure to provide sufficient time to complete the process.
- Failure to understand the submission process.
- Failure to understand the deadlines for submissions.
- Failure to satisfy prerequisite registrations.
- Unavailability of administrative personnel.

You are responsible for beginning the submission process in sufficient time to accommodate reasonably foreseeable incidents, contingencies, and disruptions.

Applicants must email the Agency Contact listed in Section I . of this NOFO (sbir-sttr@science.doe.gov) no later than 24 hours after the submission deadline to request a late submission. Applicants may be requested to submit a copy of the current draft of their application including attachments in response to a late submission request.

DOE notes that not all requests for late submission will be approved.

Late applications will only be accepted from applicants that have received permission, and only one such request will be permitted.

VI. Application Review Information

A. Criteria

1. Initial Review Criteria

The SBIR/STTR Office will perform an initial review to ensure that the applications meet minimum requirements and include all required forms and documentation as sought in the NOFO. If it is determined that the minimum requirements for any application have not been met, the application will be administratively declined and will not undergo merit review.

All applications to the NOFO must comply with the relevant objectives of Phase II, Phase IIA, Phase IIB, or Phase IIC applications. These awards should continue the research and development completed under the Phase I award and remain consistent with the original topic under which it was funded. Applications proposing research and development that is determined by DOE not to be a continuation of the Phase I research and development or to be outside the score of the original topic may be administratively declined.

2. Merit Review Criteria: Initial Phase II Applications

The Phase II application must contain enough information on progress accomplished under Phase I to enable an evaluation of the project's promise.

DOE plans to make selections for Phase II awards from those applications judged to have the highest overall merit within their technical program area. The first three review criteria are equally weighted and of greater weight than the fourth criterion.

STRENGTH OF THE SCIENTIFIC/TECHNICAL APPROACH
As evidenced by: (1) the innovativeness of the overall idea and approach for the combined Phase I/Phase II project, (2) the significance of the scientific or technical challenge, and (3) the thoroughness of the presentation.

ABILITY TO COMPETENTLY CARRY OUT THE PROJECT
As evidenced by: (1) the qualifications of the PI, other key staff, consultants and subcontractors, if any, and the level of adequacy of equipment and facilities; (2) the soundness and level of adequacy of the work plan to meet the problem or opportunity; (3) with regard to the Phase I objectives, the degree to which Phase I has proven feasibility of the concepts; and (4) the degree to which the DOE investment in the project would be justified by the level of proposed research effort.

IMPACT
As evidenced by: (1) the significance of the technical and/or economic benefits of the proposed work, if successful, (2) the likelihood that the proposed work could lead to a marketable product or process, (3) the likelihood that the project could attract further development funding after the SBIR or STTR project ends and (4) the appropriateness of the data management plan for the proposed work. Phase II applications will be evaluated for commercial potential using the Commercialization Plan criteria (see Section IX How to Prepare a Commercialization Plan for details): (1) Market Opportunity, (2) Company/Team, (3) Competition/Intellectual Property, and (4) Finance and Revenue Model. Each section should be developed with careful analysis of your company's position within the industry and

the market opportunity that is enabled by the proposed innovation.

Applications that receive poor commercialization potential reviews may not be eligible for funding. The key points required for each section are further described below in Section VI.

PIER PLAN

Quality and Efficacy of Promoting Inclusive and Equitable Research (PIER) Plan as evidenced by: (1) The suitability of the proposed PIER Plan for the size of the small business concern, proposed project and whether it is integrated into the proposed project, (2) Whether the PIER plan is likely to lead to participation and mentoring of individuals from diverse backgrounds in the proposed project, including individuals historically underrepresented in the research community, (3) Whether the PIER plan includes substantial partnering with, or benefits to, a disadvantaged and/or underrepresented community, and/or (4) Whether the PIER Plan is likely to support a sense of belonging among project personnel. Please refer to Section IX of this NOFO for guidance on what to include in your Commercialization Plan.

3. Merit Review Criteria: Phase IIA Applications

The Phase IIA application must contain information on progress accomplished under Phase II to enable an evaluation of the project's promise.

DOE plans to make selections for Phase IIA awards from those applications judged to have the highest overall merit within their technical program area. The first three review criteria are equally weighted and of greater weight than the fourth criterion.

STRENGTH OF THE SCIENTIFIC/TECHNICAL APPROACH
As evidenced by: (1) the innovativeness of the overall idea and approach for the combined Phase I/Phase II/Phase IIA project, (2) the significance of the scientific or technical challenge, and (3) the thoroughness of the presentation.

ABILITY TO COMPETENTLY CARRY OUT THE PROJECT
As evidenced by: (1) the qualifications of the PI, other key staff, consultants and subcontractors, if any, and the level of adequacy of equipment and facilities; (2) the soundness and level of adequacy of the work plan to meet the problem or opportunity; (3) with regard to the Phase II objectives, the degree to which Phase II has proven the soundness of the technical approach; and (4) the degree to which the DOE investment in the project would be justified by the level of proposed research effort.

IMPACT
As evidenced by: (1) the significance of the technical and/or economic benefits of the proposed work, if successful, (2) the likelihood that the proposed work could lead to a marketable product or process, and (3) the likelihood that the project could attract further development funding after the SBIR or STTR project ends, and (4) the appropriateness of the data management plan for the proposed work. Phase IIA applications will be evaluated for commercial potential using the Commercialization Plan criteria (see Section IX for details): (1) Market Opportunity, (2) Company/Team, (3) Competition/Intellectual Property, and (4) Finance and Revenue Model. Each section should be developed with careful analysis of your company's position within the industry and the market opportunity that is enabled by the proposed innovation. Applications that receive poor commercialization potential reviews will

not be eligible for funding. The key points required for each section are further described below in Section VI.

PIER PLAN
Quality and Efficacy of Promoting Inclusive and Equitable Research (PIER) Plan as evidenced by: (1) The suitability of the proposed PIER Plan for the size of the small business concern, proposed project and whether it is integrated into the proposed project, (2) Whether the PIER plan is likely to lead to fairly compensated participation and mentoring of individuals from diverse backgrounds in the proposed project, including individuals historically underrepresented in the research community in such a way that leads to direct career pathways, (3) Whether the PIER plan includes substantial partnering with, or benefits to, a disadvantaged and/or underrepresented community, and/or (4) Whether the PIER Plan is likely to support a sense of belonging among project personnel. Please refer to Section IX of this NOFO for guidance on what to include in your Commercialization Plan and Commercialization History.

4. Merit Review Criteria: Phase IIB Applications

The Phase IIB application must contain information on progress accomplished under Phase II to enable an evaluation of the project's promise.

DOE plans to make selections for Phase IIB awards from those applications judged to have the highest overall merit within their technical program area. The first criteria (Impact) has the greatest weighting, the second two (Strength and Ability) are equally weighted and are of greater weight than the fourth (PIER) criterion.

IMPACT
As evidenced by: (1) the significance of the technical and/or economic benefits of the proposed work, if successful, (2) the likelihood that the proposed work could lead to a marketable product or process, and (3) the likelihood that the project could attract further development funding after the SBIR or STTR project ends, and (4) the appropriateness of the data management plan for the proposed work. Phase IIB applications will place significant emphasis on the existence of Phase II funding commitments and Phase III follow-on funding commitments. Applicants who lack these commitments are not encouraged to apply. Phase IIB applications will be evaluated for commercial potential using the Commercialization Plan (see Section IX for details): (1) Market Opportunity, (2) Company/Team, (3) Competition/Intellectual Property, and (4) Finance and Revenue Model. Each section should be developed with careful analysis of your company's position within the industry and the market opportunity that is enabled by the proposed innovation. Applications that receive poor commercialization potential reviews will not be eligible for funding. The key points required for each section are further described below in Section VI.

STRENGTH OF THE SCIENTIFIC/TECHNICAL APPROACH
As evidenced by: (1) the innovativeness of the overall idea and approach for the combined Phase I/Phase II/Phase IIB project, (2) the significance of the scientific or technical challenge, and (3) the thoroughness of the presentation.

ABILITY TO COMPETENTLY CARRY OUT THE PROJECT
As evidenced by: (1) the qualifications of the PI, other key staff, consultants and subcontractors, if any, and the level of adequacy of equipment and facilities; (2) the

soundness and level of adequacy of the work plan to meet the problem or opportunity; (3) with regard to the Phase II objectives, the degree to which Phase II has proven soundness of the technical approach; and (4) the degree to which the DOE investment in the project would be justified by the level of proposed research effort.

PIER PLAN
Quality and Efficacy of Promoting Inclusive and Equitable Research (PIER) Plan as evidenced by: (1) The suitability of the proposed PIER Plan for the size of the small business concern, proposed project and whether it is integrated into the proposed project, (2) Whether the PIER plan is likely to lead to participation and mentoring of individuals from diverse backgrounds in the proposed project, including individuals historically underrepresented in the research community, (3) Whether the PIER plan includes substantial partnering with, or benefits to, a disadvantaged and/or underrepresented community, and/or (4) Whether the PIER Plan is likely to support a sense of belonging among project personnel. Please refer to Section IX of this NOFO for guidance on what to include in your Commercialization Plan and Commercialization History.

5. Merit Review Criteria: Phase IIC Applications

The Phase IIC application must contain information on progress accomplished through Phase IIA or IIB to enable an evaluation of the project's promise.

DOE plans to make selections for Phase IIC awards from those applications judged to have the highest overall merit within their technical program area. The first criteria (Impact) has the greatest weighting, the second two (Strength and Ability) are equally weighted and are of greater weight than the fourth (PIER) criterion.

Phase IIC applicants that do not submit an updated Commercialization Plan are ineligible for award.

IMPACT
As evidenced by: (1) the significance of the technical, economic and/or societal benefits of the proposed work, if successful, (2) the likelihood that the proposed work, and the work accomplished with matching funds, could lead to a marketable product or process, and (3) the likelihood that the project could attract further development funding after the SBIR project ends, (4) the expectations of the third party investor providing the matching funds, and (5) the appropriateness of the data management plan for the proposed work. Phase IIC applications require the existence of Phase II matching fund commitment; applicants who lack a Phase II matching funds commitment are ineligible to received Phase IIC awards. Phase III follow-on funding commitments are also strongly encouraged. Phase IIC applications will be evaluated for commercial potential using the Commercialization Plan (see Section IX for details): (1) Market Opportunity, (2) Company/Team, (3) Competition/Intellectual Property, and (4) Finance and Revenue Model. Each section should be developed with careful analysis of your company's position within the industry and the market opportunity that is enabled by the proposed innovation. Applications that receive poor commercialization potential reviews will not be eligible for funding. The key points required for each section are further described below in Section VI.

STRENGTH OF THE SCIENTIFIC/TECHNICAL APPROACH
As evidenced by: (1) the innovativeness of the overall idea and approach for the combined

Phase I/Phase II/Phase IIA or IIB/Phase IIC project, (2) the significance of the scientific or technical challenge, and (3) the thoroughness of the presentation.

ABILITY TO COMPETENTLY CARRY OUT THE PROJECT
As evidenced by: (1) the qualifications of the PI, other key staff, consultants and subcontractors, if any, and the level of adequacy of equipment and facilities; (2) the soundness and level of adequacy of the work plan to meet the problem or opportunity; (3) with regard to the Phase II objectives, the degree to which Phase II has proven soundness of the technical approach; and (4) the degree to which the DOE investment in the project would be justified by the level of proposed research effort.

PIER PLAN
Quality and Efficacy of Promoting Inclusive and Equitable Research (PIER) Plan as evidenced by: (1) The suitability of the proposed PIER Plan for the size of the small business concern, proposed project and whether it is integrated into the proposed project, (2) Whether the PIER plan is likely to lead to participation and mentoring of individuals from diverse backgrounds in the proposed project, including individuals historically underrepresented in the research community, (3) Whether the PIER plan includes substantial partnering with, or benefits to, a disadvantaged and/or underrepresented community, and/or (4) Whether the PIER Plan is likely to support a sense of belonging among project personnel. Please refer to Section IX of this NOFO for guidance on what to include in your Commercialization Plan and Commercialization History.

B. Review and Selection Process

1. Merit Review

Applications that pass the initial review will be subjected to a formal merit review in accordance with the guidance provided in the "Office of Science Merit Review System for Financial Assistance," which is available at: https://science.osti.gov/grants/policy-and-guidance/merit-review-system/.

Phase II applications will be subject to a detailed technical evaluation by experts, both inside and outside the Government. DOE will not fund any application for which there are significant weaknesses identified with respect to any of the three evaluation criteria, as determined by the review process. In addition, because DOE supports only high quality research and development, applications will be considered candidates for funding only if they receive the highest rating with respect to at least two of the three criteria. In addition, Phase IIB applications will be considered candidates for funding only if they receive the highest rating for the impact criterion.

2. Program Policy Factors

The Selection Official will consider the findings of the merit review and may consider any of the Program Policy Factors listed below and/or the review of risk described below.

- Ensuring an appropriate balance of activities
- Funds distribution
- Needs of the technical programs

- The applicant's performance under prior DOE SBIR/STTR awards including timely submittal of all reports
- Availability of funds
- Promoting the diversity of institutions receiving awards
- Promoting institutions not previously funded by a DOE SBIR/STTR award

3. Selection

Each technical program area participating in the SBIR/STTR programs is provided a predetermined target number of applications that they may select for funding. The applications that are considered candidates for funding are ranked in order of the highest quality and strongest program relevance based on the results of the evaluation. Selections are made from this ranked list until the program's SBIR/STTR Phase II budget is exhausted. The Selection Official may also consider the Program Policy Factors listed above and/or the risk review described below.

4. Discussions and Award

The Government may enter into discussions with a selected applicant for any reason deemed necessary, including but not limited to the following: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the application is selected for award; (3) the Government needs additional information to determine that the recipient is capable of complying with the requirements in 2 CFR 200 as modified by 2 CFR 910 (DOE Financial Assistance Regulation); and/or (4) special terms and conditions are required. Failure to resolve satisfactorily the issues identified by the Government will preclude award to the applicant.

5. Risk Review

Pursuant to 2 CFR 200.206, DOE will conduct a review of any potential risks posed by the applicant. Such review of risk will include:
- Quality of the application,
- Reports and findings from audits performed under 2 CFR 200 and/or 2 CFR 910, and
- Systems maintained under 2 CFR 180

DOE may make use of other publicly available information and the history of an applicant's performance under DOE or other Federal agency awards.

Applicants with no prior performance of DOE awards may be asked to provide information about their financial stability and or their ability to comply with the management standards of 2 CFR 200.

DOE may incorporate specific award conditions of a programmatic and/or administrative nature if an applicant exhibits one or more high-risk factors under 2 CFR 200.208.

The result(s) of any pre-award review of risk may supersede the results of merit review under 2 CFR 200.205, preventing DOE from selecting an application for award, reversing a selection for award, or requiring the disengagement of specific personnel. The results of any post-award review of risk may result in requiring the disengagement of specific personnel,

the imposition of other requirements, or the termination of an award that "no longer effectuates the program goals or agency priorities" under 2 CFR 200.340(a)(2). 2 CFR 200.206(c). **DOE will not share the result(s) of any pre- and post-award review of risk with the applicant/recipient; DOE will share its deciding action in response to any result(s) of the review of risk with the applicant/recipient.**

Pursuant to 2 CFR 910.128, the results of any pre-award review of risk are not appealable. Any pre- award decision to not select an application for award, reverse a selection for award, or require the disengagement of specific personnel will be made by the Selection Official or SC Program Official. Pursuant to 2 CFR 910.128, the results of any post-award review of risk may be appealable. Any post- award decision to require the disengagement of specific personnel, the imposition of other requirements, or the termination of an award will be made by the Contracting Officer.

DOE may conduct a review, through Government resources, of the applicant and project personnel with a connection to a foreign country. This includes, but is not limited to, (1) performance of work in, (2) travel to, and (3) awardee personnel's higher education in a foreign Country, as well as (4) partnerships with international collaborators. As part of the research, technology, and economic security risk review, DOE may contact the applicant and/or proposed project team members for additional information to inform the review.

Pursuant to the SBIR and STTR Extension Act of 2022, DOE will not make an award under the SBIR or STTR program to a small business concern if DOE has determined that:

- the small business concern submitting the proposal or application
  - has an owner or covered individual that is party to a malign foreign talent recruitment program;
  - has a business entity, parent company, or subsidiary located in the People's Republic of China or another foreign country of concern; or
  - has an owner or covered individual that has a foreign affiliation with a research institution located in the People's Republic of China or another foreign country of concern; and
- the relationships and commitments described above
  - interfere with the capacity for activities supported by DOE to be carried out;
  - create duplication with activities supported by DOE;
  - present concerns about conflicts of interest;
  - were not appropriately disclosed to DOE;
  - violate Federal law or terms and conditions of DOE; or
  - pose a risk to national security.

"Foreign countries of concern" means the People's Republic of China, the Democratic People's Republic of Korea, the Russian Federation, the Islamic Republic of Iran, Burma, Eritrea, Pakistan, Saudi Arabia, Tajikistan, and Turkmenistan.

"Covered individual" means an individual who contributes in a substantive, meaningful way to the scientific development or execution of a research and development (R&D) project proposed to be carried out with a R&D award from DOE, i.e. senior/key personnel. DOE may further designate covered individuals during award negotiations or the award period of performance.

“Foreign affiliation” means a funded or unfunded academic, professional, or institutional appointment or position with a foreign government or government-owned entity, whether full-time, part-time, or voluntary (including adjunct, visiting, or honorary).

“Malign foreign talent recruitment program” has the meaning given such term in section 10638 of the Research and Development, Competition, and Innovation Act (division B of Public Law 117–167)

Further, as DOE invests in critical infrastructure and funds critical and emerging technology areas, DOE also considers possible threats to United States research, technology, and economic security from undue foreign government influence when evaluating risk. If high risks are identified and cannot be sufficiently mitigated, DOE may elect to not fund the applicant. As part of the research, technology, and economic security risk review, DOE may contact the applicant and/or proposed project team members for additional information to inform the review.

C. Anticipated Notice of Selection and Award Dates

DOE anticipates sending a notice of selection for award negotiations on March 3, 2025, and the anticipated award start date is April 14, 2025 for initial Phase II awards. Applicants for second or third Phase II awards whose period of performance (without additional extensions) extends beyond April 14, 2025, will have award start dates commensurate with the end of their budget period but no later than September 15, 2025.

VII. Award Notices

A. Type of Award Instrument

DOE anticipates awarding grants under this NOFO.

This NOFO is intended for informational purposes and reflects current planning. If there is any inconsistency between the information contained herein and the terms of any resulting SBIR or STTR award, the terms of the award shall control.

B. Anticipated Timeline for Notice of Selection for Award Negotiation

It is anticipated that the award selection will be completed by March 3, 2025. It is expected that awards will be made in Fiscal Year 2025.

DOE is interested in seeing projects supported under this NOFO begin work by April 14, 2025.

DOE does not anticipate any awards resulting from this NOFO being made before April 14, 2025.

1. Notice of Selection for Award Negotiation

The SBIR/STTR Programs Office will notify all applicants of the outcomes of award selections via email.

2. Notice of Award

An Assistance Agreement issued by the Contracting Officer is the authorizing award document. The initial funding Assistance Agreement normally includes, either as an attachment or by reference: 1. Special Terms and Conditions; 2. General Terms and Conditions for DOE SBIR and STTR awards; 3. Application as approved by DOE; 4. National Policy Assurances to be incorporated as award terms; 5. Budget; 6. Federal Assistance Reporting Checklist and Instructions; and 7. Regulations at 2 CFR 200 as amended by 2 CFR 910.

TERMS AND CONDITIONS

The DOE Special Terms and Conditions for Use in Most Grants are located at https://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms under Award Terms.

The standard DOE financial assistance intellectual property provisions applicable to various types of recipients are located at: https://energy.gov/gc/standard-intellectual-property-ip-provisions-financial-assistance-awards

NATIONAL POLICY ASSURANCES

The National Policy Assurances To Be Incorporated As Award Terms are located at https://energy.gov/management/office-management/operational-management/financial-

assistance/financial-assistance-forms under Award Terms.

VIII. Post-Award Requirements and Administration

A. Administrative and National Policy Requirements

Additional policy provisions applicable to this NOFO are included in the list below. Awards made under this NOFO are subject to the respective Administrative and National Policy Requirements. The full text of each provision is in Section IX of this NOFO and may be accessed by navigating to the hyperlinks below:

1. Administrative Requirements
2. Availability of Funds
3 Audit Requirements
4. Buy America Requirement for Infrastructure Projects
5. Conference Spending (February 2015)
6. Commitment of Public Funds
7. Corporate Felony Conviction and Federal Tax Liability Representations (March 2014)
8. Cost Sharing
9. Digital Persistent Identifier (PID)
10. Environmental, Safety and Health (ES&H) Performance of Work at DOE Facilities
11. Evaluation and Administration by Non-Federal Personnel
12. Federal, State, and Local Requirements
13. Funding Restrictions
14. Government Right to Reject or Negotiate
15. Intellectual Property Development Under This Program
16. Intergovernmental Review
17. Living Wages
18. Logos and Wordmarks
19. Matching Funds
20. Modifications
21. National Environmental Policy Act (NEPA) Compliance
22. Nondisclosure and Confidentiality Agreements Representations (June 2015)
23. Notice Regarding Eligible/Ineligible Activities
24. Portable Document Format (PDF) Generation
25. Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment
26. Prohibition on Discrimination and Harassment
27. Prohibition on Lobbying Activity
28. Prohibition Related to Foreign Government-Sponsored Talent Recruitment Programs
29. Proprietary Application Information
30. Publications
31. Registration Requirements
32. Research Misconduct
33. Research Security Training Requirement
34. Rights in Technical Data
35. SC Statement of Commitment
36. Statement of Federal Stewardship
37. Subaward and Executive Reporting
38. Title to Subject Inventions
39. Trafficking in Persons
40. U.S. Competitiveness

41. Updating Your Portfolio Analysis and Management System (PAMS) Profile

B. Reporting

Reporting requirements are identified on the Federal Assistance Reporting Checklist and Instructions DOE F 4600.2, attached to the SBIR or STTR award agreement. The current version of the checklist will be available at: https://science.osti.gov/sbir/Awardee-Resources/Awardee-Documents. Please review the checklist carefully as requirements have recently changed.

Final technical reports are required for each SBIR or STTR award. DOE will protect final technical reports containing marked SBIR/STTR data from disclosure during the data protection period in accordance with the award terms. The data protection period extends from the date the SBIR/STTR award is issued for a period of 20 years. At the end of the data protection period, final technical reports will be released to the public to comply with DOE statutory data dissemination requirements [e.g. Atomic Energy Act of 1954, Public Law 83-703; Energy Reorganization Act of 1974, Public Law 93- 438; Department of Energy Organization Act of 1977, Public Law 95-91].

C. Reporting of Matters Related to Recipient Integrity and Performance (December 2015)

DOE, prior to making a Federal award with a total amount of Federal share greater than the simplified acquisition threshold, is required to review and consider any information about the applicant that is in the designated integrity and performance system accessible through SAM(see 41 USC 2313).

The applicant, at its option, may review information in the designated integrity and performance systems accessible through SAM and comment on any information about itself that a Federal awarding agency previously entered and is currently in the designated integrity and performance system accessible through SAM.

DOE will consider any written comments by the applicant, in addition to the other information in the designated integrity and performance system, in making a judgment about the applicant's integrity, business ethics, and record of performance under Federal awards when completing the review of risk posed by applicants as described in 2 CFR 200.206 Federal awarding agency review of risk posed by applicants.

D. Interim Conflict of Interest Policy for Financial Assistance

1. Policy

The DOE interim Conflict of Interest Policy for Financial Assistance (COI Policy) can be found at https://www.energy.gov/management/department-energy-interim-conflict-interest-policy-requirements-financial-assistance. This policy is applicable to all non-Federal entities applying for, or that receive, DOE funding by means of a financial assistance award (e.g., a grant, cooperative agreement, or technology investment agreement) and, through the implementation of this policy by the entity, to each Investigator who is planning to participate in, or is participating in, the project funded wholly or in part under the DOE financial assistance award. DOE's interim COI Policy establishes standards that provide a reasonable

expectation that the design, conduct, and reporting of projects funded wholly or in part under DOE financial assistance awards will be free from bias resulting from financial conflicts of interest or organizational conflicts of interest. The applicant is subject to the requirements of the interim COI Policy and within each application for financial assistance, the applicant must certify that it is, or will be by the time of receiving any financial assistance award, compliant with all requirements in the interim COI Policy. The applicant must flow down the requirements of the interim COI Policy to any subrecipient non-Federal entities.

Note: An applicant must be aware of a potential conflict of interest in the event its SBIR or STTR application includes a subcontract to a research institution (e.g., National Laboratory, University, etc.) and the applicant's employee(s)/owner(s) is (are) also an employee(s) of the research institution. A potential conflict of interest can also arise when an applicant obtains a license or option license for a TTO from a National Laboratory Contractor (Contractor) and the applicant subcontracts to the same Contractor for work to be performed in commercializing the TTO. (The subcontracted work might either be though a Strategic Partnership Project (formerly called Work for Others) or a CRADA.) Such a conflict of interest shall be addressed prior to award by providing to the DOE Grants/Agreements Officer a statement from the DOE Contracting Officer at the Laboratory Site Office, that he/she confirmed that the Contractor is aware of the potential conflict of interest (e.g., ownership or dual employment) and that the Contractor has conducted a conflict review in accordance with its approved conflict procedures. A similar statement should be obtained from the Sponsored Program Office or similar business office in the event the subcontract is with a university or other research institution, explaining that said office has conducted a conflict review in accordance with its approved conflict procedures.

Further, the applicant's application shall include an explanation detailing how it will exercise both financial and managerial control over the project and how the recipient will isolate the Research Institution employee(s) from influencing control of the project.

2. SC Implementation

Besides the potential conflict of interest noted directly above, SC only requires that unmanaged or unmanageable financial conflicts of interest be included in the financial conflict of interest (FCOI) report.

E. Research Misconduct

Research misconduct associated with DOE SBIR/STTR applications or awards may result in criminal, civil, and/or administrative sanctions, including but not limited to: (1) fines, restitution and/or imprisonment under 18 U.S.C. § 1001; (2) treble damages and civil penalties under the False Claims Act (31 U.S.C. § 3729 et seq.); (3) double damages and civil penalties under the Program Fraud Civil Remedies Act (31 U.S.C. § 3801 et seq.); (4) civil recovery of award funds; (5) suspension and/or debarment from all Federal procurement and non-procurement transactions (FAR subpart 9.4 or 2 CFR part 180); and (6) other administrative penalties including termination of SBIR/STTR awards.

IX. Other Information

A. Checklist for Avoiding Common Errors

Note that not all items in this checklist will apply to every submission under every NOFO.

Item	Issue
Applications	Submitted in Grants.gov. Do not submit applications in PAMS or FedConnect.
Grants.gov Submission	Ensure that applications are submitted under the correct Opportunity Number. Standard Form (SF)-424 Research and Related (R&R): - Attach nothing to field 20 - Attach nothing to field 21 SF-424 Research and Related Other Project Information form: - Attach the abstract to field 7 - Attach the project narrative, with all appendices, to field 8 - Attach nothing to field 9 - Attach nothing to field 10 - Attach nothing to field 11 - Attach the following documents to field 12 o Data Management Plan o Disclosure of Foreign Relationships o Level of Effort and Max Funding Worksheet o Cybersecurity Self-Assessment o Letter of Commitment for consultant, subaward, or research institution, as applicable o SBA Company Registration o Company Commercialization Report from SBIR.gov (STTR-only applications), if applicable o Interim or Final Phase I Technical Report (For initial Phase II applicants.) o Latest Phase II progress report or Final Technical Report (For Phase IIA, IIB, or IIC applicants.) o Reporting if required by the COI Policy o Authorization for non-DOE/NNSA FFRDCs, if applicable

Item	Issue
	○ Authorization for DOE/NNSA FFRDCs, if applicable
Letters of Intent (LOIs)	- Submit your LOI in PAMS. - Do not submit your LOI in Grants.gov. - Do not attach your LOI to the SF-424 Research and Related (R&R) form. - Follow the instructions in Section IV for the preparation of an LOI.
Page Limits	Strictly followed throughout application, including particular attention to: - Project narrative and appendices - Commercialization Plan
Personally Identifiable Information	None present in the application
Project Narrative	Composed of one PDF file including all appendices (PIER)
Project Summary / Abstract	Name of PI, PI's institutional affiliation(s)
Budget	Use current negotiated indirect cost and fringe benefit rates
Budget Justification (attached to budget)	Justify all requested costs
Biographical Sketches	Attach the biographical sketch to the Senior/Key Person Profile (Expanded) Form.
Current and Pending Support	Ensure complete listing of all activities, regardless of source of funding. Attach the current and pending support to the Senior/Key Person Profile (Expanded) Form.
Data Management Plans (DMP)	- If referring to an experiment's DMP, describe the relationship to the proposed research. - Include a DMP even if no experimental data is expected.
Promoting Inclusive and Equitable Research (PIER) Plan	PIER Plans are required for new and renewal applications.

B. How-To Guides

1. How to Distinguish Between a New and Renewal Application

New Application: An application must be submitted as "new" in the following circumstances:

- When applying for funding to create a new research award that has not previously received DOE funding, including any funding for the current year,
- When applying for funding to support continued research from the same applicant institution as the current grant but with a significant change in fundamental nature of the research, or
- When applying for funding to support continued research supported by an existing DOE award but at a new applicant institution.

Renewal Application: A renewal application is appropriate when funds are requested for an award from the same recipient/applicant institution that has no significant changes in the following items:

- The award's senior leadership, and
- The fundamental nature of the award.

A change in an award's PI does not necessarily require submission as a new application: The change in personnel must be considered in light of other changes.

Renewal applications compete for funds with all other peer-reviewed applications and must be developed as fully as though the applicant were applying for the first time. Renewal applications must be submitted by the same sponsoring institution as that holding the current award for which renewal funding is requested, and the proposed research topic must be logical scientific extensions of the research that has been performed in the current award.

2. How Federally Affiliated Organizations May Apply

DOE/NNSA NATIONAL LABORATORIES

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. [This is not required for the National Energy Technology Laboratory because it is a Government Owned/Government Operated (GOGO) Laboratory.] **Please note that failure to provide this authorization may result in rejection of an application prior to merit review.** If a DOE/NNSA National Laboratory Contractor is selected for award, or proposed as a team member, the proposed work will be authorized under the DOE field work authorization system or other appropriate process and performed under the laboratory Contractor's M&O contract, as applicable. The authorization may be addressed "To Whom It May Concern:". The following wording is acceptable for the authorization:

> "Authorization is granted for the _____ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complementary to the missions of the laboratory and will not adversely impact execution of the DOE/NNSA assigned programs at the laboratory."

(End of acceptable authorization)

If a DOE/NNSA FFRDC is selected for award negotiation, the proposed work will be authorized under the DOE work authorization process and performed under the laboratory's Management and Operating (M&O) contract.

NON-DOE/NNSA FFRDCS

Non-DOE/NNSA FFRDCs, if eligible either as a prime applicant or a proposed team member on another entity's application, should follow the following guidelines:

The prime applicant must obtain written authorization for non-DOE/NNSA FFRDC participation. The cognizant Contracting Officer for the Federal agency sponsoring the FFRDC contractor must authorize in writing the participation of the FFRDC contractor on the proposed project and this authorization should be submitted with the application. The written authorization must also contain a determination that the use of a FFRDC contractor is consistent with the contractor's authority under its award and does not place the FFRDC contractor in direct competition with the private sector, in accordance with FAR Part 17.5. **Please note that failure to provide this authorization may result in rejection of an application prior to merit review.** The authorization may be addressed "To Whom It May Concern:". The following wording is acceptable for the authorization:

> "Authorization is granted for the _____ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complementary to the missions of the laboratory and will not adversely impact execution of the (insert agency) assigned programs at the laboratory. This laboratory is authorized to perform the work proposed in the application submitted under DOE Funding Opportunity Announcement <<Include the NOFO number on the cover page>> by the following statutory authority (insert statute name, citation, and section)."

(End of acceptable authorization)

OTHER FEDERAL AGENCIES

Other Federal Agencies, if eligible either as a prime applicant or a proposed team member on another entity's application, must include in their budget justifications any specific statutory authorization (other than the Economy Act) that permits their receipt of an interagency agreement or that authorizes the payment of certain costs.

3. How Consortia May be Used

INCORPORATED CONSORTIA

Incorporated consortia are eligible to apply for funding as a prime recipient (lead organization) or subrecipient (team member).

Each incorporated consortium must have an internal governance structure and a written set of internal rules. Upon request, the consortium must provide a written description of its internal governance structure and its internal rules to the DOE Contracting Officer. There is no requirement that subawards be formalized into incorporated consortia.

UNINCORPORATED CONSORTIA

Unincorporated consortia (team arrangements) must designate one member of the consortium to serve as the prime recipient/consortium representative (lead organization). There is no requirement that subawards be formalized into unincorporated consortia.

Upon request, unincorporated consortia must provide the DOE Contracting Officer with a collaboration agreement, commonly referred to as the articles of collaboration, which sets out the rights and responsibilities of each consortium member. This agreement binds the

individual consortium members together and should discuss, among other things, the consortium's:

- Management structure;
- Method of making payments to consortium members;
- Means of ensuring and overseeing members' efforts on the project;
- Provisions for members' cost sharing contributions (though neither required nor considered); and
- Provisions for ownership and rights in intellectual property developed previously or under the agreement.

Note that a consortium is applied for in one application and results in one award with subawards to consortia members. Multi-institutional teams may, if permitted under this NOFO, submit collaborative applications with each institution submitting its own application with an identical project narrative, resulting in multiple awards to the collaborating institutions.

4. How to Submit Letters of Intent

Do not submit an LOI unless a NOFO requires or allows their submission.

It is important that the LOI be a single file with extension .pdf, .docx, or .doc. The filename must not exceed 50 characters. The PI and anyone submitting on behalf of the PI must register for an account in PAMS before it will be possible to submit a LOI. **All PIs and those submitting LOIs on behalf of PIs are encouraged to establish PAMS accounts as soon as possible to avoid submission delays.**

Submit Your Letter of Intent:

- Create your LOI outside the system and save it as a file with extension .docx, .doc, or .pdf. Make a note of the location of the file on your computer so you can browse for it later from within PAMS.
- Log into PAMS and click the Proposals tab. Click the "View / Respond to Funding Opportunity Announcements" link and find the current announcement in the list. Click the "Actions/Views" link in the Options column next to this announcement to obtain a dropdown menu. Select "Submit Letter of Intent" from the dropdown.
- On the Submit Letter of Intent page, select the institution from which you are submitting this LOI from the Institution dropdown. If you are associated with only one institution in the system, there will only be one institution in the dropdown.
- Note that you must select one and only one PI per LOI; to do so, click the "Select PI" button on the far-right side of the screen. Find the appropriate PI from the list of all registered users from your institution returned by PAMS. (Hint: You may have to sort, filter, or search through the list if it has multiple pages.) Click the "Actions" link in the Options column next to the appropriate PI to obtain a dropdown menu. From the dropdown, choose "Select PI."
- If the PI for whom you are submitting does not appear on the list, it means he or she has not yet registered in PAMS. For your convenience, you may have PAMS send an email invitation to the PI to register in PAMS. To do so, click the "Invite PI" link at the top left of the "Select PI" screen. You can enter an optional personal message to the PI in the "Comments" box, and it will be included in the email sent by PAMS to the PI. You must wait until the PI registers before you can submit the LOI. Save the LOI for later work by

clicking the "Save" button at the bottom of the screen. It will be stored in "My Letters of Intent" for later editing.

- Enter a project specific title for your LOI.
- Enter the award number.
- To upload the LOI file into PAMS, click the "Attach File" button at the far-right side of the screen. Click the "Browse" (or "Choose File" depending on your browser) button to search for your file. You may enter an optional description of the file you are attaching. Click the "Upload" button to upload the file.
- At the bottom of the screen, click the "Submit to DOE" button to save and submit the LOI to DOE.
- Upon submission, the PI will receive an email from the PAMS system <PAMS.Autoreply@science.doe.gov> acknowledging receipt of the LOI.
- If this NOFO requires that LOIs be submitted only by an authorized institutional official, the PI (or the PI's delegate) will only be able to send the LOI to a user at the PI's institution with the institutional "submit to DOE" privilege. That user will then apply an institutional countersignature to the LOI when it is sent to DOE.

You are encouraged to register for an account in PAMS at least a week in advance of the LOI submission deadline so that there will be no delays with your submission.

> **WARNING**: The PAMS website at https://pamspublic.science.energy.gov/ will permit you to revise a previously submitted LOI in the time between your submission and the deadline. Doing so will remove your previously submitted version from consideration. If you have not submitted the revision at the time of the deadline, you will not have a valid submission. Please pay attention to the deadline.

Do not attach pre-applications to Field 20 of the SF-424(R&R) form or letters of intent to Field 21 of the SF-424(R&R) form. Doing so will render your application unreadable.

5. How to Register and Submit an Application in Grants.gov

This section provides the application submission and receipt instructions for applications to SC. Please read the following instructions carefully and completely.

ELECTRONIC DELIVERY

SC is participating in the Grants.gov initiative to provide the grant community with a single site to find and apply for grant funding opportunities. SC requires applicants to submit their applications online through Grants.gov.

HOW TO REGISTER TO APPLY THROUGH GRANTS.GOV

a. Instructions: Read the instructions below about registering to apply for SC funds. Applicants should read the registration instructions carefully and prepare the information requested before beginning the registration process. Reviewing and assembling the required information before beginning the registration process will alleviate last-minute searches for required information.

   Organizations must have an active System for Award Management (SAM) registration

which provides a Unique Entity Identifier (UEI), and Grants.gov account to apply for grants. If individual applicants (those submitting on their own behalf) are eligible to apply for this funding opportunity, they need only refer to steps 2 and 3 below.

Creating a Grants.gov account can be completed online in minutes, but SAM registration may take several weeks. Therefore, an organization's registration should be done in sufficient time to ensure it does not impact the entity's ability to meet required application submission deadlines.

1) *Register with SAM*: All organizations applying online through Grants.gov must register with SAM at https://www.sam.gov. Failure to register with SAM will prevent your organization from applying through Grants.gov. SAM registration must be renewed annually. For more detailed instructions for registering with SAM, refer to: https://www.grants.gov/applicants/applicant-registration/

2) *Create a Grants.gov Account*: The next step is to register an account with Grants.gov. Follow the on-screen instructions provided on the registration page.

3) *Add a Profile to a Grants.gov Account*: A profile in Grants.gov corresponds to a single applicant organization the user represents (i.e., an applicant) or an individual applicant. If you work for or consult with multiple organizations and have a profile for each, you may log in to one Grants.gov account to access all of your grant applications. To add an organizational profile to your Grants.gov account, enter the UEI (Unique Entity Identifier) for the organization in the UEI field. If you are an individual applicant submitting on your own behalf, you do not need a UEI to add the profile. For more detailed instructions about creating a profile on Grants.gov, refer to: https://www.grants.gov/applicants/applicant-registration/add-profile

4) *EBiz POC Authorized Profile Roles*: After you register with Grants.gov and create an Organization Applicant Profile, the organization applicant's request for Grants.gov roles and access is sent to the Electronic Business Point of Contact (EBiz POC)[3]. The EBiz POC will then log in to Grants.gov and authorize the appropriate roles, which may include the Authorized Organization Representative (AOR) role, thereby giving you permission to complete and submit applications on behalf of the organization. You will be able to submit your application online any time after you have been assigned the AOR role. For more detailed instructions about creating a profile on Grants.gov, refer to: https://www.grants.gov/applicants/applicant-registration/ebiz-poc-authorizes-profile-roles

5) *Track Role Status*: To track your role request, refer to: https://www.grants.gov/applicants/applicant-registration/track-profile-role-status

b. Electronic Signature: When applications are submitted through Grants.gov, the name of the organization applicant with the AOR role that submitted the application is inserted into the

3 Individuals with the EBiz POC role are commonly found in an Office of Sponsored Research or similar institutional business office. Other than small businesses, a PI would usually not have the EBiz POC role.

signature line of the application, serving as the electronic signature. The EBiz POC **must** authorize people who are able to make legally binding commitments on behalf of the organization as a user with the AOR role; **this step is often missed and it is crucial for valid and timely submissions.**

HOW TO APPLY TO SC VIA GRANTS.GOV

Grants.gov applicants can apply online using Workspace. Workspace is a shared, online environment where members of a grant team may simultaneously access and edit different webforms within an application. For each NOFO, you can create individual instances of a workspace.

For an overview of applying on Grants.gov using Workspaces, refer to: https://www.grants.gov/applicants/workspace-overview/

1) Create a Workspace: Creating a workspace allows you to complete it online and route it through your organization for review before submitting.

2) Complete a Workspace: Add participants to the workspace to work on the application together, complete all the required forms online or by downloading PDF versions, and check for errors before submission. The Workspace progress bar will display the state of your application process as you apply. As you apply using Workspace, you may click the blue question mark icon near the upper-right corner of each page to access context-sensitive help.

    a. Adobe Reader: If you decide not to apply by filling out webforms you can download individual PDF forms in Workspace so that they will appear similar to other Standard forms. The individual PDF forms can be downloaded and saved to your local device storage, network drive(s), or external drives, then accessed through Adobe Reader.

    NOTE: Visit the Adobe Software Compatibility page on Grants.gov to download the appropriate version of the software at: https://www.grants.gov/applicants/adobe-software-compatibility

    b. Mandatory Fields in Forms: In the forms, you will note fields marked with an asterisk and a different background color. These fields are mandatory fields that must be completed to successfully submit your application.

    c. Complete SF-424 Fields First: These forms are designed to fill in common required fields across other forms, such as the applicant's name, address, and SAM UEI. Once it is completed, the information will transfer to the other forms.

3) Submit a Workspace: An application may be submitted through workspace by clicking the Sign and Submit button on the Manage Workspace page, under the Forms tab. Grants.gov recommends submitting your application package *at least 24-48 hours prior to the close date* to provide you with time to correct any potential technical issues that may disrupt the application submission.

4) Track a Workspace: After successfully submitting a workspace package, a Grants.gov

Tracking Number (GRANTXXXXXXXX) is automatically assigned to the package. The number will be listed on the Confirmation page that is generated after submission.

For additional training resources, including video tutorials, refer to: https://www.grants.gov/applicants/applicant-training

Applicant Support: Grants.gov provides applicants 24/7 support via the toll-free number 1-800-518-4726 and email at support@Grants.gov. For questions related to the specific grant opportunity, contact the number listed in the application package of the grant you are applying for funding.

If you are experiencing difficulties with your submission, it is best to call the Grants.gov Support Center and get a ticket number. The Support Center ticket number will assist SC with tracking your issue and understanding background information on the issue.

TIMELY RECEIPT REQUIREMENTS AND PROOF OF TIMELY SUBMISSION

Proof of timely submission is automatically recorded by Grants.gov. An electronic date/time stamp is generated within the system when the application is successfully received by Grants.gov. The applicant AOR will receive an acknowledgement of receipt and a tracking number (GRANTXXXXXXXX) from Grants.gov with the successful transmission of their application. Applicant AORs will also receive the official date/time stamp and Grants.gov Tracking number in an email serving as proof of their timely submission.

When SC successfully retrieves the application from Grants.gov, and acknowledges the download of submissions, Grants.gov will provide an electronic acknowledgment of receipt of the application to the email address of the applicant with the AOR role. Again, proof of timely submission shall be the official date and time that Grants.gov receives your application. Applications received by Grants.gov after the established due date for the program will be considered late and may not be considered for funding by SC.

Applicants using unreliable internet connections should be aware that the process of completing the Workspace can take some time. Therefore, applicants should allow enough time to prepare and submit the application before the package closing date.

Grants.gov will provide either an error or a successfully received submission message in the form of an email sent to the applicant with the AOR role attempting to submit the application.

If you do not promptly receive an email from Grants.gov with an agency tracking number, indicating receipt of the application by SC, please contact the Grants.gov Helpdesk at 800-518-4726 (toll-free) or support@Grants.gov immediately. SC will have no records of your attempted submission without the second email from Grants.gov.

6. How to Prepare an Application

APPLICATION PREPARATION

You must submit the application through Grants.gov at https://www.Grants.gov/, using either the online webforms or downloaded forms. (Additional instructions are provided above.)

You are required to use the compatible version of Adobe Reader software to complete a Grants.gov Adobe application package. To ensure you have the Grants.gov compatible version of Adobe Reader, visit the software compatibility page at https://www.Grants.gov/web/grants/applicants/adobe-software-compatibility.html.

You must complete the mandatory forms and any applicable optional forms (e.g., Disclosure of Lobbying Activities (SF-LLL)) in accordance with the instructions on the forms and the additional instructions below.

Files that are attached to the forms must be PDF files unless otherwise specified in this NOFO. Attached PDF files must be plain files consisting of text, numbers, and images without editable fields, signatures, passwords, redactions, or other advanced features available in some PDF-compatible software. Do not use PDF portfolios or binders.

Please note the following restrictions that apply to the names of all files attached to your application:

- Please limit file names to 50 or fewer characters
- Do not attach any documents with the same name. All attachments must have a unique name.
- Please use only the following characters when naming your attachments: A-Z, a-z, 0-9, underscore, hyphen, space, period, parenthesis, curly braces, square brackets, ampersand, tilde, exclamation point, comma, semi colon, apostrophe, at sign, number sign, dollar sign, percent sign, plus sign, and equal sign. Attachments that do not follow this rule may cause the entire application to be rejected or cause issues during processing.

Resubmission of Applications

Applications submitted under this NOFO may be withdrawn from consideration by using the PAMS website at https://pamspublic.science.energy.gov. Applications may be withdrawn at any time between when the applicant submits the application and when DOE makes the application available to merit reviewers. Such withdrawals take effect immediately and cannot be reversed. Please exercise due caution. After the application is made available to merit reviewers, the applicant may contact the DOE program office identified in this NOFO to request that it be withdrawn.

After an application is withdrawn, it may be resubmitted, if this NOFO is still open for the submission of applications. Such resubmissions will only count as one submission if this NOFO restricts the number of applications from an applicant.

Note that there may be a delay between the application's submission in Grants.gov and when it is available to be withdrawn in PAMS. SC will usually consider the last submission, according to its Grants.gov timestamp, to be the intended version. Please consult with your program manager to resolve any confusion about which version of an application should be considered.

Improper Contents of Applications

Applications submitted under this NOFO will be stored in controlled-access systems, but they may be made publicly available if an award is made. As such, it is critical that applicants

follow these guidelines:

- Do not include information that a non-Federal entity may not openly distribute, whether classified, export control, or unclassified controlled nuclear information. Non-Federal entities are not subject to any restrictions on distributing controlled unclassified information (CUI).
- Do not include sensitive and protected personally identifiable information, including social security numbers, birthdates, citizenship, marital status, or home addresses. Pay particular attention to the content of biographical sketches and curriculum vitae.
- Do not include letters of support from Federal officials.
- Do not include letters of support on Federal letterhead. Letters that are not letters of support (such as letters confirming access to sites, facilities, equipment, or data; or letters from cognizant Contracting Officers) may be on Federal letterhead.
- Clearly mark all proprietary or trade-secret information.
- Applicants should not include the DOE logo or seal in their applications. Use of the DOE logo and seal require permission of DOE as discussed on the DOE website: https://energy.gov/management/office-management/employee-services/graphics/doe-logo-seal-and-word-mark

7. How to Prepare a Biographical Sketch

A biographical sketch is to provide information that can be used by reviewers to evaluate the PI's potential for leadership within the scientific community. Examples of information of interest are invited and/or public lectures, awards received, scientific program committees, conference or workshop organization, professional society activities, special international or industrial partnerships, reviewing or editorship activities, or other scientific leadership experiences.

SC requires the use of the format approved by the National Science Foundation (NSF), which may be generated by the Science Experts Network Curriculum Vitae (SciENcv), a cooperative venture maintained at https://www.ncbi.nlm.nih.gov/sciencv/. The fillable PDFs provided by the National Science Foundation are no longer available. SciENcv has been updated to meet the interagency common format biographical sketches.

The biographical information (curriculum vitae) must include the following items within its page limit:

- **Education and Training**: Undergraduate, graduate and postdoctoral training, provide institution, major/area, degree and year.
- **Research and Professional Experience**: Beginning with the current position, list professional/academic positions in chronological order with a brief description. List all current academic, professional or institutional appointments, foreign or domestic, at the applicant institution or elsewhere, whether remuneration is received, and, whether full-time, part-time, or voluntary.
- **Publications**: Provide a list of up to 10 publications most closely related to the proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address if available electronically. Patents, copyrights and software systems developed may be provided in addition to or substituted for publications. An abbreviated style such as the Physical Review Letters (PRL) convention for citations (list only the first author)

may be used for publications with more than 10 authors.

Requested information may be appended to a biographical sketch, whether produced from a fillable PDF or in SciENcv.

Do not attach a listing of individuals who should not be used as merit reviewers: This information is no longer collected as part of a biographical sketch.

SC strongly recommends the use of SciENcv to reduce administrative burden by allowing the use of digital persistent identifiers, including the Open Researcher and Contributor ID (ORCiD). If not using SciENcv, append the following signed and dated certification to a biographical sketch:

> I, [Full Name and Title], certify to the best of my knowledge and belief that the information contained in this Current and Pending Support Disclosure Statement is true, complete, and accurate. I understand that any false, fictitious, or fraudulent information, misrepresentations, half-truths, or omissions of any material fact, may subject me to criminal, civil or administrative penalties for fraud, false statements, false claims or otherwise. (18 U.S.C. §§ 1001 and 287, and 31 U.S.C. 3729-3733 and 3801-3812). I further understand and agree that (1) the statements and representations made herein are material to DOE's funding decision, and (2) I have a responsibility to update the disclosures during the period of performance of the award should circumstances change which impact the responses provided above.

Biographical sketches must be attached to the Research and Related Senior/Key Person Profile (Expanded) form in an application.

Personally Identifiable Information: Do not include sensitive and protected personally identifiable information including social security numbers, birthdates, citizenship, marital status, or home addresses. Do not include information that a merit reviewer should not make use of.

8. How to Prepare Current and Pending Support

> **WARNING**: These instructions have been significantly revised to require disclosure of a variety of potential conflicts of interest or commitment, including participation in foreign government-sponsored talent recruitment programs.

Current and Pending support is intended to allow the identification of potential duplication, overcommitment, potential conflicts of interest or commitment, and all other sources of support. The PI and each senior/key person at the prime applicant and any proposed subaward must provide a list of all sponsored activities, awards, and appointments, whether paid or unpaid; provided as a gift with terms or conditions or provided as a gift without terms or conditions; full-time, part-time, or voluntary; faculty, visiting, adjunct, or honorary; cash or in-kind; foreign or domestic; governmental or private-sector; directly supporting the individual's research or indirectly supporting the individual by supporting students, research staff, space, equipment, or other research expenses. Include the current application and any application submitted to any source of funding in a list of current and pending support. All

sources of support must be disclosed, but for work that is subject to government classification or enforceable non-disclosure agreements, the general area of the research should be described without disclosing sensitive details and the sponsor should be listed as "Government Agency" or "private sponsor." All foreign government-sponsored talent recruitment programs must be identified in current and pending support.

SC requires the use of the format approved by the National Science Foundation (NSF), which may be generated by the Science Experts Network Curriculum Vitae (SciENcv), a cooperative venture maintained at https://www.ncbi.nlm.nih.gov/sciencv/. The fillable PDFs provided by the National Science Foundation are no longer available. SciENcv has been updated to meet the interagency common format for current and pending support.

For every activity, list the following items:

- The sponsor of the activity or the source of funding.
- The award or other identifying number.
- The title of the award or activity. If the title of the award or activity is not descriptive, add a brief description of the research being performed that would identify any overlaps or synergies with the proposed research.
- The total cost or value of the award or activity, including direct and indirect costs. For pending proposals, provide the total amount of requested funding.
- The award period (start date – end date).
- The person-months of effort per year being dedicated to the award or activity.

If required to identify overlap, duplication of effort, or synergistic efforts, append a description of the other award or activity to the current and pending support.

SC strongly recommends the use of SciENcv to reduce administrative burden by allowing the use of digital persistent identifiers, including the Open Researcher and Contributor ID (ORCiD). If not using SciENcv, append the following signed and dated certification to current and pending support:

> I, [Full Name and Title], certify to the best of my knowledge and belief that the information contained in this Current and Pending Support Disclosure Statement is true, complete, and accurate. I understand that any false, fictitious, or fraudulent information, misrepresentations, half-truths, or omissions of any material fact, may subject me to criminal, civil or administrative penalties for fraud, false statements, false claims or otherwise. (18 U.S.C. §§ 1001 and 287, and 31 U.S.C. 3729-3733 and 3801-3812). I further understand and agree that (1) the statements and representations made herein are material to DOE's funding decision, and (2) I have a responsibility to update the disclosures during the period of performance of the award should circumstances change which impact the responses provided above.

Current and pending support must be attached to the Research and Related Senior/Key Person Profile (Expanded) form in an application.

Details of any obligations, contractual or otherwise, to any program, entity, or organization sponsored by a foreign government must be provided on request to either the applicant institution or DOE.

9. How to Prepare an Option 2 Data Management Plan

In general, a DMP should address the following requirements:

1. DMPs should describe whether and how data generated in the course of the proposed research will be shared and preserved. If the plan is not to share and/or preserve certain data, then the plan must explain the basis of the decision (for example, cost/benefit considerations, other parameters of feasibility, scientific appropriateness, or limitations discussed in #4 below). At a minimum, DMPs must describe how data sharing and preservation will enable validation of results, or how results could be validated if data are not shared or preserved.

2. DMPs should provide a plan for making all research data displayed in publications resulting from the proposed research digitally open, machine-readable and digitally accessible to the public at the time of publication. This includes data that are displayed in charts, figures, images, etc. In addition, the underlying digital research data used to generate the displayed data should be made as accessible as possible to the public in accordance with the principles stated in the SC Statement on Digital Data Management (https://science.osti.gov/sbir/Applicant-Resources). This requirement could be met by including the data as supplementary information to the published article, or through other means. The published article should indicate how these data can be accessed.

3. DMPs should consult and reference available information about data management resources to be used in the course of the proposed research. In particular, DMPs that explicitly or implicitly commit data management resources at a facility beyond what is conventionally made available to approved users should be accompanied by written approval from that facility. In determining the resources available for data management at SC User Facilities, researchers should consult the published description of data management resources and practices at that facility and reference it in the DMP.

4. DMPs must protect confidentiality, personal privacy, sensitive and protected personally identifiable information, and U.S. national, homeland, and economic security; recognize proprietary interests, business confidential information, and intellectual property rights; avoid significant negative impact on innovation, and U.S. competitiveness; and otherwise be consistent with all applicable laws and regulations. There is no requirement to share proprietary data.

Additional DMP Guidance

- In determining which data should be shared and preserved, researchers must consider the data needed to validate research findings as described in the Requirements noted above, and are encouraged to consider the potential benefits of their data to their own fields of research, fields other than their own, and society at large.
- DMPs should reflect relevant standards and community best practices for data and metadata, and make use of community accepted repositories whenever practicable.
- Costs associated with the scope of work and resources articulated in a DMP may be included in the proposed research budget as permitted by the applicable cost principles.
- To improve the discoverability of and attribution for datasets created and used in the course of research, the applicant is encouraged to cite publicly available datasets within the reference section of publications, and the identification of datasets with persistent

identifiers such as Digital Object Identifiers (DOIs). In most cases, the SC can provide DOIs free of charge for data resulting from DOE-funded research through its Office of Science and Technical Information (OSTI) Data ID Service.

- The following list of elements for a DMP provides suggestions regarding the data management planning process and the structure of the DMP:
  - Data Types and Sources. A brief, high-level description of the data to be generated or used through the course of the proposed research and which of these are considered digital research data necessary to validate the research findings.
  - Content and Format. A statement of plans for data and metadata content and format including, where applicable, a description of documentation plans, annotation of relevant software, and the rationale for the selection of appropriate standards. (Existing, accepted community standards should be used where possible. Where community standards are missing or inadequate, the DMP could propose alternate strategies that facilitate sharing, and should advise the sponsoring program of any need to develop or generalize standards.)
  - Sharing and Preservation. A description of the plans for data sharing and preservation. This should include, when appropriate:
    - the anticipated means for sharing and the rationale for any restrictions on who may access the data and under what conditions;
    - a timeline for sharing and preservation that addresses both the minimum length of time the data will be available and any anticipated delay to data access after research findings are published;
    - any special requirements for data sharing, for example, proprietary software needed to access or interpret data, applicable policies, provisions, and licenses for re-use and re-distribution, and for the production of derivatives, including guidance for how data and data products should be cited;
    - any resources and capabilities (equipment, connections, systems, software, expertise, etc.) requested in the research proposal that are needed to meet the stated goals for sharing and preservation. (This could reference the relevant section of the associated research proposal and budget request);
    - cost/benefit considerations to support whether/where the data will be preserved after direct project funding ends and any plans for the transfer of responsibilities for sharing and preservation;
    - whether, when, or under what conditions the management responsibility for the research data will be transferred to a third party (e.g. institutional, or community repository);
    - any other future decision points regarding the management of the research data including plans to reevaluate the costs and benefits of data sharing and preservation.
  - Protection. A statement of plans, where appropriate and necessary, to protect confidentiality, personal privacy, sensitive and protected personally identifiable information, and U.S. national, homeland, and economic security; recognize proprietary interests, business confidential information, and intellectual property rights; and avoid significant negative impact on innovation, and U.S. competitiveness.
  - Rationale. A discussion of the rationale or justification for the proposed data management plan including, for example, the potential impact of the data within the immediate field and in other fields, and any broader societal impact.

10. How to Prepare a Research and Related Budget and Justification

The following advice will improve the accuracy of your budget request:

- Funds requested for personnel (senior, key, and other) must be justified as the product of their effort on the project and their institutional base salary.
- Funds requested for fringe benefits must be calculated as the product of the requested salary and, if present, the negotiated fringe benefit rate contained in an institution's negotiated indirect cost rate agreement.
- Funds requested for indirect costs must be calculated using the correct indirect cost base and the negotiated indirect cost rate.
- You are encouraged to include the rate agreement used in preparing a budget as a part of the budget justification.
- Do not prepare a budget justification using the expired DOE form F4260.1.

If you are proposing indirect costs and do not already have an Indirect Cost Rate Agreement with your Cognizant Federal Agency or documentation of rates accepted for estimating purposes by DOE or another Federal agency, it is recommended that you begin preparing an Indirect Cost Rate Proposal to be submitted, upon request, to the DOE contract specialist/grants management specialist who will evaluate your application if you are selected for award.

For your convenience in preparing an Indirect Cost Rate proposal, a link to applicant resources, including indirect rate model templates, has been provided below: https://science.osti.gov/sbir/applicant-resources/grant-application/.

Initial Phase II applicants may request funding of up to $1,100,000 (or up to $1,600,000 if designated in the Phase I topic header) for up to 24 months over two budget periods. Phase IIA, IIB, or IIC applicants may request up to $1,100,000. The first budget period should cover a period of 12 months. Funding for the second budget period will be contingent on the demonstration of adequate progress, evaluation of programmatic priorities, availability of funds and compliance with the terms and conditions of the award. The amount budgeted for the first 12 month budget period should not exceed 50% of the total budget. If an applicant requires more than 50% of the total budget during the first 12 month budget period, a thorough explanation is required in the budget justification, and is subject to DOE approval.

Cost sharing or matching funds are not to be included in the Research and Related Budget form. The amount and planned use of these funds can be described in the technical narrative.

Complete the Research and Related Budget form in accordance with the instructions on the form and the following instructions. You must complete a separate budget for each year of support requested. The form will generate a cumulative budget for the total project period. You must complete all the mandatory information on the form before the NEXT PERIOD button is activated. You may request funds under any of the categories listed as long as the item and amount are necessary to perform the proposed work, meet all the criteria as allowable under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this NOFO (See Section II.C. Maximum and Minimum Award Size). Note, however, that foreign travel and participant/trainee costs are typically considered unallowable costs unless approved by the DOE Contracting Officer.

Round all funds to the nearest dollar across all budget documents including the budget justification. The dollar amounts in the budget justification must match the amounts found on

the Research and Related Budget form. The Research and Related Budget form is only to be used for funding requested from DOE.

TECHNICAL AND BUSINESS ASSISTANCE (FORMERLY COMMERCIALIZATION ASSISTANCE) (SECTION F, FIELD 3, CONSULTANT SERVICES) [OPTIONAL]

In accordance with Sec. 854 of the John S. McCain National Defense Authorization Act for 2019, P.L. 115-232, DOE is able to fund discretionary TABA to all DOE SBIR and STTR Phase II awardees. TABA funds can be used only to support the commercialization of the technology that is the subject of the award. Recipients must identify their own third-party TABA providers in their application in order to receive TABA funds. Unlike Phase I, there are no services provided by a DOE TABA vendor. Third-party TABA providers can be found on the SBIR Partnering Platform.

To wish to use TABA services, you are required to include this as one or more subcontracts or consultants in your budget and to provide a detailed budget justification. You may include up to $50,000 per project. The total amount of Phase II assistance that a company may receive during a fiscal year is subject to Small Business Administration policy per the statute. Please note that TABA does not count toward the maximum award size listed in Section II.C.; e.g., seeking TABA from your provider could result in a maximum award in the amount of $1,150,000 for topics that specify a maximum award amount of $1,100,000. You may propose services in the following areas:

- product sales
- intellectual property protections
- Patent prosecution costs related to obtaining United States patent protection for subject inventions of this award may be budgeted under TABA. All subject inventions must be properly reported through the iEdison system at https://www.nist.gov/iedison as described in the award terms. For assistance with iEdison, please contact iedison@nist.gov. If you have any questions regarding the patent and data provisions of your agreement, please contact (630) 283-7117 or Chicago-IP@science.doe.gov. Patent prosecution costs include attorney fees and United States Patent and Trademark Office (USPTO) fees. United States patent protection includes filings with the USPTO related to provisional, Patent Cooperation Treaty (PCT), non-provisional, continuation, and continuation-in-part patent applications. Patent prosecution costs related to foreign patent protection (e.g. foreign attorney, foreign patent office or translation fees) are unallowable.
- market research
- market validation
- development of certifications and regulatory plans
- development of manufacturing plans
- access to technical and business literature available through on-line databases.

Services are defined as acts of assistance in which no goods are exchanged. In some situations, incidental goods, such a report on the services provided, are exchanged. The following examples are provided for clarification:

- market research: Conducting market research in the planned area of commercialization is a service, and a report describing the finding is typically provided.
- advertising: Developing an advertising strategy or designing advertising campaign materials are services. Paying to place ads or print brochures would not be considered a service.

- website development: Developing website content is a service.

Third party vendors or a federal entity issuing patents, certifications or regulatory approvals, must be used when spending TABA funds. Vendor(s) may not be the SBIR/STTR applicant or awardee or its research partner or a research institution performing part of the research and development portion of the award.

In the event some or the entire amount listed is not expended on a TABA services, the remaining funds cannot be re-budgeted to other project costs. Re-budgeting of these funds to other project costs is not allowable.

Budget Fields

Section A Senior/Key Person	For each Senior/Key Person, enter the requested information. List personnel, base salary, the number of months that person will be allocated to the project, requested salary, fringe benefits, and the total funds requested for each person. The requested salary must be the product of the base salary and the effort. Include a written narrative in the budget justification that justifies the need for requested personnel. Within the justification, explain the fringe benefit rate used if it is not the standard faculty rate.
Section B Other Personnel	List personnel, the number of months that person will be allocated to the project, requested salary fringe benefits, and the total funds requested for each person. Include a written narrative in the budget justification that fully justifies the need for requested personnel. Within the justification, provide the number of positions being filled in each category of other personnel.
Section C Equipment	For the purpose of this budget, equipment is designated as an item of property that has an acquisition cost of $5,000 or more and an expected service life of more than one year, unless a different threshold is specified in a negotiated Facilities and Administrative Cost Rate. (Note that this designation applies for proposal budgeting only and differs from the DOE definition of capital equipment.) List **each** item of equipment separately and justify each in the budget justification section. Do not aggregate items of equipment. Allowable items ordinarily will be limited to research equipment and apparatus not already available for the conduct of the work. General-purpose office equipment is not eligible for support unless primarily or exclusively used in the actual conduct of scientific research.
Section D Travel	For purposes of this section only, travel to Canada or to Mexico is considered domestic travel. In the budget justification, list each trip's destination, dates, estimated costs including transportation and subsistence, number of staff traveling, the purpose of the travel, and how it relates to the project. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis). To qualify for support, attendance at meetings or conferences must enhance the investigator's capability to perform

	the research, plan extensions of it, or disseminate its results. Domestic travel is to be justified separately from foreign travel. Within the budget justification, detail the number of personnel planning to travel and the estimated per-traveler cost for each trip.
Section E Participant/Trainee Support Costs	If applicable, submit training support costs. Educational projects that intend to support trainees (precollege, college, graduate and postgraduate) must list each trainee cost that includes stipend levels and amounts, cost of tuition for each trainee, cost of any travel (provide the same information as needed under the regular travel category), and costs for any related training expenses. Participant costs are those costs associated with conferences, workshops, symposia or institutes and breakout items should indicate the number of participants, cost for each participant, purpose of the conference, dates and places of meetings and any related administrative expenses. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis).
Section F Other Direct Costs	• **Materials and Supplies:** Enter total funds requested for materials and supplies in the appropriate fields. In the budget justification, indicate general categories such as glassware, and chemicals, including an amount for each category (items not identified under "Equipment"). Categories less than $1,000 are not required to be itemized. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis). • **Publication Costs:** Enter the total publication funds requested. The proposal budget may request funds for the costs of documenting, preparing, publishing or otherwise making available to others the findings and products of the work conducted under the award. In the budget justification, include supporting information. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis). • **Consultant Services:** Enter total funds requested for all consultant services. In the budget justification, identify each consultant, the services he/she will perform, total number of days, travel costs, and total estimated costs. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis). • **ADP/Computer Services:** Enter total funds requested for ADP/Computer Services. Cloud computing costs must be included under this item. The cost of computer services, including computer-based retrieval of scientific, technical and education information may be requested. In the budget justification, include the established computer service rates at the proposing organization if applicable. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis). • **Subawards/Consortium/Contractual Costs:** Enter total

	costs for all subawards/consortium organizations and other contractual costs proposed for the project. In the budget justification, justify the details. • **Equipment or Facility Rental/User Fees:** Enter total funds requested for Equipment or Facility Rental/User Fees. In the budget justification, identify each rental/user fee and justify. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis). • **Alterations and Renovations:** Enter total funds requested for Alterations and Renovations. In the budget justification, itemize by category and justify the costs of alterations and renovations, including repairs, painting, removal or installation of partitions, shielding, or air conditioning. Where applicable, provide the square footage and costs. • **Other:** Add text to describe any other Direct Costs not requested above. Enter costs associated with "Other" item(s). Use the budget justification to further itemize and justify.
Section G Direct Costs	This represents Total Direct Costs (Sections A through F).
Section H Other Indirect Costs	Enter the Indirect Cost information, including the rates and bases being used, for each field. Only four general categories of indirect costs are allowed/requested on this form, so please consolidate if needed. Include the cognizant Federal agency and contact information if using a negotiated rate agreement. Within the budget justification, explain the use of multiple rates, if multiple rates are used.
Section I Total Direct and Indirect Costs	This is the total of Sections G and H.

GUIDANCE FOR APPLICATION BUDGETS AND COSTS

Provide supporting information for all proposed costs. Personnel justification must include a brief justification explaining the need for individual personnel and also the total hours and hourly rates for each individual. Attach a single budget justification file for the entire project period in Field K. A budget justification template may be found here: https://science.osti.gov/sbir/Applicant-Resources/Grant-Application. The file automatically carries over to each budget year. Provide any other information you wish to submit to justify your budget request including, but not limited to, any recent audits, clearly defined indirect cost rate bases, and voluntary reductions of indirect rates. If your organization has an Indirect Cost Rate Agreement in effect with your Cognizant Federal Agency [Defense Contract Audit Agency (DCAA), Department of Health and Human Services (DHHS), etc.] supporting the indirect rate(s) proposed and dated within one year of your anticipated award start date, then please provide this information with your application. Although there is no absolute cap on indirect costs, applications will be evaluated for overall economy and value to DOE.

If you are selected for an award, additional budget explanation will most likely be required.

All proposed purchases of equipment will be carefully reviewed relative to need and appropriateness for the research or R&D proposed.

Travel funds must be justified and related to the needs of the project, as in travel to DOE Headquarters to meet with DOE program managers. Travel expenses for technical conferences are not permitted unless the purpose of attending the conference directly relates to the project (e.g., to present results of the project). Foreign travel is not normally an appropriate expense. Funds to cover travel expenses outside of the United States are considered an unallowable direct cost unless concurrence has been obtained by the DOE Program Manager and unless written approval has been obtained from the DOE Contracting Officer.

Tuition expenses are allowable only if requested from a subcontractor that is a university and the amount requested for tuition is reasonable and comparable to what a student would be paid for performing research during the award performance period.

Awards may include a profit or fee for the applicant. Fees are subject to negotiation and shall not exceed 7% of the total award amount. Profit or fee is not "program income" and shall not be included in field 15.d. of the SF 424 (R&R) application. The fee applies solely to the small business concern receiving the award and for-profit R&D subcontractors participating in the project. In addition, the awardee may pay a profit/fee to a contractor providing routine goods or non-R&D services in accordance with normal commercial practice.

Any commercial and/or in-kind contribution to the project should be reflected in the project narrative and not included on the budget pages.

Round all funds to the nearest dollar across all budget documents including the budget justification. The dollar amounts in the budget justification must match the amounts found on the Research and Related Budget form. Cost sharing or matching funds provided by the small business or third parties shall not be included on the Research and Related Budget Form—this form should only include funds being requested from DOE. Cost sharing or matching funds can be included in the budget justification and must be clearly marked as cost sharing or matching funds.

Complete the Level-of-Effort worksheet located at https://science.osti.gov/sbir/Applicant-Resources/Grant-Application.

If the Microsoft Excel version is used, it must be converted to PDF before it is attached to the application in Field 12 – Research & Related Other Project Information.

11. How to Prepare a Commercialization Plan

Your Commercialization Plan narrative **must not exceed a page limit of 15 pages** of information, including charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard letter-size (8.5-inch x 11-inch) paper with 1-inch margins (top, bottom, left, and right). The body text font of all main text must not be smaller than 11 point. Reviewers will only consider the number of pages specified in the first sentence of this paragraph. This page limit does not include the pro forma financial worksheet or Letters of Support (5 maximum), which must be appended to the commercialization plan narrative. Your Commercialization Plan must be uploaded to field 8 as a single document. This

information will be evaluated and considered part of the score for the "Impact" criterion discussed in Section VI.A.

DOE recognizes that each innovation requires a varied strategy to generate commercial outcomes from grant funding and that no two businesses are exactly alike. Therefore, DOE supports a broad array of commercialization strategies. Each strategy requires varied emphasis on the parts of the plan depending on your innovation and the market landscape. For instance, the strategy and mechanisms for leveraging and protecting intellectual property (IP) vary according to industry and innovation.

The Commercialization Plan is your roadmap for the future and should convey how you plan to generate profits from your innovation. It should represent a compelling vision that describes a unique business opportunity that could be addressed with continued support from Phase II funding. The depth and quality of the analysis within your Commercialization Plan is a critical element of the DOE SBIR/STTR application review.

Please Note: All assumptions and estimates provided should be clearly stated as such and evidence of validation should be provided in footnotes. Where you provide numerical data (e.g. market size, price, etc.) or data about customer needs, market forces, barriers to entry and the like, you should indicate the source of the data using footnotes. First-hand customer discovery interviews, market research reports, articles by experts in trade publications or professional journals, interviews, focus groups, surveys, are commonly used sources of data.

The following four sections must be addressed in your Commercialization Plan using a narrative format. The bulleted items below should be considered prompts for a narrative prose commercialization plan. **Do not submit your Commercialization Plan in a question-and-answer format.** If you find gaps in your knowledge while addressing these items, indicate how you will address during Phase II keeping in mind that TABA funds can be used for many areas including additional customer discovery (primary market research), secondary market research, competitive analysis, patents and IP landscape assessments, development of marketing material in preparation for market entry, licensee/partner assessments, manufacturing assessments, etc. Third-party TABA providers can be found on the SBIR Partnering Platform.

1. Market Opportunity
   a) <u>Value Proposition</u>: set the stage for your business case by identifying MARKET PULL (the need) for your product/service.
      - Using specific demographics and/or characteristics for companies included in your initial/beachhead market, define your target customer(s). Provide generally known examples of companies in this initial/beachhead market.
      - Describe the critical needs that your product/service will fulfill for them. Include a discussion on how they currently meet these needs and what they pay to meet them.
      - Describe succinctly what product or service you are planning to deliver based on your innovation and how it will provide the solution to the critical needs of your target customer(s) defined above.
      - Describe the features, advantages and benefits of your product/service. If possible, provide an indication of how your solution is better than status quo and how much better you solution needs to be than status quo for your client to change

and adopt your solution. Describe the customer discovery that has been done to date to validate, referencing specific conversations and customer interactions and/or including letters of support, as appropriate.

- Indicate what your customer(s) is/are willing to pay for your product/service and how you validated this assumption.
- State the validated value proposition for your product or service.

b) Describe your target market(s).
   - Estimate the market sizes of your initial and long term markets in terms of number of customers and revenues. Are these markets domestic, international, or both? Provide your time-phased plan to address long term markets.
   - Provide anticipated market growth in terms of CAGR%.
   - Describe market barriers and/or drivers that may inhibit or enhance your market entry and describe how you plan to overcome/leverage them.

c) Define your business model.
   - Define your business model: integrated manufacture and sell, technology licensing, joint venture, strategic partnership, or other.
   - Explain why this model makes sense for the market opportunity described.
   - Describe your go to market approach to reach the targeted customers - (development of) direct marketing and sales and fulfillment channels, strategic partnerships, distributor relationships, or other.

d) Describe any additional potential societal, educational, or scientific benefits beyond commercial considerations that will generate goodwill for your company or the product or service, they should be included here and explained in sufficient detail to convey the significance of the effort.

2. Company/Team

a) Describe your company.
   - Provide a short description of the origins (university spin-out, start-up, other) and history (year founded, significant milestones to date, etc.) of the company.
   - Confirm your corporate structure (LLC, S-Corp, C-Corp, or other) and state of incorporation.
   - Confirm your current employee headcount and provide a table showing headcount projections for the next 5 years. Include the role/responsibility in the table.
   - Tabularize your company's revenue over each of the past three years broken out by product sales, consulting/services, license revenues, research and development grants/contracts, and other. This table should speak to your company as a whole.
   - Provide an estimate of your company's short term assets (e.g., cash, receivables, etc.) and long term assets (e.g., plant, machinery, etc.) and discuss their sufficiency for funding the execution of your commercialization plan.

b) Introduce your team.
   - Describe the commercialization experience of the key personnel responsible for commercializing your innovation and establish how that experience supports the execution of the commercialization plan.
   - Describe management team gaps and how those gaps will be addressed during the Phase II effort and beyond (e.g., addition of executive employees, board of advisors, board of directors, retained counsel, consultants, or other). Provide details on names, affiliations, and expertise of these resources.
   - Describe the major non-technical risks the team faces relative to successful execution of the commercialization plan and how the team plans to mitigate those risks.

3. Competition/Intellectual Property
   a) Identify your competition.
      - Based on the customers' critical needs described in Section 1, elaborate on the various ways customers are getting those needs met today (technology-driven or otherwise, or unfulfilled).
      - Identify the companies delivering those solutions and indicate where those solutions are backed by competing IP rights.
      - Provide a competitive comparison of your product/service versus these substitutes. Summarize those findings in a competitive analysis table.
      - Describe the competitive advantage of your product/service versus these substitutes in terms of the needs customers are seeking to meet (e.g., clarify how you will compete) providing quantitative estimates of customer benefits (e.g., additional revenue generation, cost savings, other efficiencies or benefits).
   b) Describe your intellectual property.
      - Describe IP rights you have secured for your technology to date and if any procedures are underway to expand or enhance the protection provided by those rights.
      - Describe other IP that you will need to secure rights to in order to make, use, or sell a product to address the market opportunity described in Section 1.
      - Whether implemented commercially or not, describe the competitive IP that is closest to yours and most threatening to your "freedom to operate". Explain how you believe you are different enough to be able to secure your "freedom to operate".
4. Finance and Revenue Model
   a) Milestone-driven Roadmap: the roadmap should outline the timing, level of funding required and the potential source for the funding for each milestone.
      - Using a table or graphic, describe a milestone-driven plan to address the market opportunity described in Section 1 from proof of concept through market launch (e.g., proof of concept, prototype, minimally viable product, first product sale, version 1.0 market launch, growth/scale, or other significant technical or commercial milestones.).
      - In the narrative, describe the major cost drivers to complete each major technical milestone - personnel, lab space, machinery, computer HW, SW, etc.
      - In the narrative, describe the major costs to implement your go to market strategy and technical milestones. Provide any assumptions made and/or validation.
      - Relative to your company assets described in Section 2, describe how you will address funding shortfalls (other product/service/license revenue, grants, additional founder capital, profits from other product lines, venture funding, or other). Provide any assumptions made and/or validation.
      - These discussions should align with the estimates and timing included in the cash flow pro forma financial worksheet described below to maintain positive cash flow.
   b) Letters of Support
      - Use letters of support to provide validation for the funding sources identified above providing evidence of commitment and/or future commitment from strategic partners/licensees, potential customers and/or investors, as appropriate.
      - Letters of support are not included in the page limit and should be provided as an appendix to the 15-page commercialization plan. **You may submit no more than five (5) letters of support**. If you feel you have additional letters of support that

are critical in making the case for continued investment of DOE funds, provide a description of the letters in the narrative making them available upon request.

c) Cash Flow Pro forma
   - Treating the product/service resulting from this DOE-funded technology as a strategic business unit, provide a five-year cash flow pro forma financial worksheet - the first two years should be the Phase II grant period adding three years post award.
   - Highlight when you expect first revenues from the subject R&D efforts and total revenues for the five-year period.
   - Templates are provided at the DOE SBIR/STTR Programs Office web site at http://science.energy.gov/sbir/applicant-and-awardee-resources/. The cash flow pro forma financial worksheet is not included in the page limit and should be provided as an appendix to the 15-page commercialization plan.

12. How to Register in PAMS

After you submit your application through Grants.gov, the application will automatically transfer into the Portfolio Analysis and Management System (PAMS) for processing by the DOE SC. Many functions for grants and cooperative agreements can be done in PAMS, which is available at https://pamspublic.science.energy.gov.

You will want to "register to" your application: a process of linking yourself to the application after it has been submitted through Grants.gov and processed by DOE.

You must register in PAMS to submit a pre-application or a LOI.

Notifications sent from the PAMS system will come from the PAMS email address PAMS.Autoreply@science.doe.gov. Please make sure your email server/software allows delivery of emails from the PAMS email address to yours.

Registering to PAMS is a two-step process; once you create an individual account, you must associate yourself with ("register to") your institution. Detailed steps are listed below.

CREATE PAMS ACCOUNT:

To register, click the "Create New PAMS Account" link on the website https://pamspublic.science.energy.gov.

- Click the "No, I have never had an account" link and then the "Create Account" button.
- You will be prompted to enter your name and email address, create a username and password, and select a security question and answer. Once you have done this, click the "Save and Continue" button.
- On the next page, enter the required information (at least one phone number and your mailing address) and any optional information you wish to provide (e.g., FAX number, website, mailstop code, additional email addresses or phone numbers, Division/Department). Click the "Create Account" button.
- Read the user agreement and click the "Accept" button to indicate that you understand your responsibilities and agree to comply with the rules of behavior for PAMS.
- PAMS will take you to the "Having Trouble Logging In?" page. (If you have been an SC merit reviewer or if you have previously submitted an application, you may already be

linked to an institution in PAMS. If this happens, you will be taken to the PAMS home page.)

REGISTER TO YOUR INSTITUTION:

- Click the link labeled "Option 2: I know my institution and I am here to register to the institution." (Note: If you previously created a PAMS account but did not register to an institution at that time, you must click the Institutions tab and click the "Register to Institution" link.)
- PAMS will take you to the "Register to Institution" page.
- Type a word or phrase from your institution name in the field labeled, "Institution Name like," choose the radio button next to the item that best describes your role in the system and click the "Search" button. A "like" search in PAMS returns results that contain the word or phrase you enter; you do not need to enter the exact name of the institution, but you should enter a word or phrase contained within the institution name. (If your institution has a frequently used acronym, such as ANL for Argonne National Laboratory or UCLA for the Regents of the University of California, Los Angeles, you may find it easiest to search for the acronym under "Institution Name like." Many institutions with acronyms are listed in PAMS with their acronyms in parentheses after their names.)
- Find your institution in the list that is returned by the search and click the "Actions" link in the Options column next to the institution name to obtain a dropdown list. Select "Add me to this institution" from the dropdown. PAMS will take you to the "Institutions – List" page.
- If you do not see your institution in the initial search results, you can search again by clicking the "Cancel" button, clicking the Option 2 link, and repeating the search.
- If, after searching, you think your institution is not currently in the database, click the "Cannot Find My Institution" button and enter the requested institution information into PAMS. Click the "Create Institution" button. PAMS will add the institution to the system, associate your profile with the new institution, and return you to the "Institutions – List" page when you are finished.

For help with PAMS, click the "PAMS Help" link on the PAMS website, https://pamspublic.science.energy.gov/. You may also contact the PAMS Help Desk, which can be reached Monday through Friday, 9AM – 5:30 PM Eastern Time. Telephone: (855) 818-1846 (toll free) or (301) 903-9610, email: sc.pams-helpdesk@science.doe.gov. All submission and inquiries about this NOFO should reference the NOFO number printed on the cover page.

13. How to View Applications in PAMS

Each Grants.gov application submitted to the DOE SC automatically transfers into PAMS and is subsequently assigned to a program manager. At the time of program manager assignment, the three people listed on the SF-424 (R&R) cover page will receive an email with the subject line, "Receipt of Proposal 0000xxxxxx by the DOE Office of Science." These three people are the PI (Block 14), Authorized Representative (Block 19), and Point of Contact (Block 5). In PAMS notation, applications are known as proposals, the PI is known as the PI, the Authorized Representative is known as the Sponsored Research Officer/Business Officer/Administrative Officer (SRO/BO/AO), and the Point of Contact is known as the POC.

There will be a period of time between the application's receipt at Grants.gov and its assignment to a DOE SC program manager. Program managers are typically assigned two weeks after applications are due at Grants.gov: please refrain from attempting to view the proposal in PAMS until you receive an email providing the assignment of a program manager.

Once the email is sent, the PI, SRO/BO/PO, and POC will each be able to view the submitted proposal in PAMS. Viewing the proposal is optional.

Following are two sets of instructions for viewing the submitted proposal, one for individuals who already have PAMS accounts and one for those who do not.

If you already have a PAMS account, follow these instructions:

1. Log in to PAMS at https://pamspublic.science.energy.gov/.
2. Click the "Proposals" tab and click "Access Previously Submitted Grants.gov Proposal."
3. Enter the following information:
   - Proposal ID: Enter the ten-digit PAMS proposal ID, including the leading zeros (e.g., 00002xxxxx). Do not use the Grants.gov proposal number. Use the PAMS number previously sent to you in the email with subject line, "Receipt of Proposal …".
   - Email (as entered in Grants.gov application): Enter your email address as it appears on the SF424(R&R) Cover Page.
   - Choose Role: Select the radio button in front of the role corresponding to the SF-424 (R&R) cover page. If your name appears in block 19 of the SF-424 (R&R) cover page as the authorizing representative, select "SRO/BO/AO (Sponsored Research Officer/Business Officer/Administrative Officer)." If your name appears in block 14 of the SF424 R&R cover page as the PI, select "Principal Investigator (PI)." If your name appears in block 5 of the SF424 R&R as the point of contact, select "Other (POC)."
4. Click the "Save and Continue" button. You will be taken to your "My Proposals" page. The Grants.gov proposal will now appear in your list of proposals. Click the "Actions/Views" link in the options column next to this proposal to obtain a dropdown list. Select "Proposal" from the dropdown to see the proposal. Note that the steps above will work only for proposals submitted to the DOE SC since May 2012.

If you do not already have a PAMS account, follow these instructions:

1. To register, click the "Create New PAMS Account" link on the website https://pamspublic.science.energy.gov/.
2. Click the "No, I have never had an account" link and then the "Create Account" button.
3. You will be prompted to enter your name and email address, create a username and password, and select a security question and answer. Once you have done this, click the "Save and Continue" button.
4. On the next page, enter the required information (at least one phone number and your mailing address) and any optional information you wish to provide (e.g., FAX number, website, mailstop code, additional email addresses or phone numbers, Division/Department). Click the "Create Account" button.
5. Read the user agreement and click the "Accept" button to indicate that you understand your responsibilities and agree to comply with the rules of behavior for PAMS.
6. You will be taken to the Register to Institution page. Select the link labeled, "Option 1:

My institution has submitted a proposal in Grants.gov. I am here to register as an SRO, PI, or POC (Sponsored Research Officer, Principal Investigator, or Point of Contact)."

7. Enter the following information:
   - Proposal ID: Enter the ten-digit PAMS proposal ID, including the leading zeros (e.g., 00002xxxxx). Do not use the Grants.gov proposal number. Use the PAMS number previously sent to you in the email with subject line, "Receipt of Proposal …".
   - Email (as entered in Grants.gov proposal): Enter your email address as it appears on the SF424(R&R) Cover Page.
   - Choose Role: Select the radio button in front of the role corresponding to the SF-424 (R&R) cover page. If your name appears in block 19 of the SF-424 (R&R) cover page as the authorizing representative, select "SRO/BO/AO (Sponsored Research Officer/Business Officer/Administrative Officer)." If your name appears in block 14 of the SF424 R&R cover page as the PI, select "Principal Investigator (PI)." If your name appears in block 5 of the SF424 R&R as the point of contact, select "Other (POC)."
8. Click the "Save and Continue" button. You will be taken to your "My Proposals" page. The Grants.gov proposal will now appear in your list of proposals. Click the "Actions/Views" link in the options column next to this proposal to obtain a dropdown list. Select "Proposal" from the dropdown to see the proposal.

If you were listed as the PI on a prior submission but you have not previously created an account, you may already be listed in PAMS. If this is the case, you will be taken to the PAMS home page after agreeing to the Rules of Behavior. If that happens, follow the instructions listed above under "If you already have a PAMS account…" to access your Grants.gov proposal.

14. How to Register in Other Systems Before Submitting an Application

Systems to Register In

Applicants must complete a series of registrations and enrollments to submit applications in response to this NOFO. Applicants not currently registered with SAM and Grants.gov should allow **at least four weeks** to complete these requirements. Applicants refers to the legal entity submitting an application: This is usually a corporate entity, not an individual investigator.

You should start the process as soon as possible.

You may not be able to use your preferred Internet browser: Each system has its own requirements.

Applicants must register with SAM at https://www.sam.gov/ and obtain a Unique Entity Identifier (UEI). Assistance is available at https://sam.gov/content/help.

Applicants must provide a Taxpayer Identification Number (TIN) to complete their registration in www.SAM.gov. An applicant's TIN is an EIN assigned by the Internal Revenue Service (IRS). In limited circumstances, a Social Security Number (SSN) assigned by the Social Security Administration (SSA) may be used as a TIN. You may obtain an EIN from the IRS at https://www.irs.gov/businesses/small-businesses-self-employed/apply-for-an-

employer-identification-number-ein-online.

If entities have technical difficulties with the UEI validation or SAM registration process, they should utilize the HELP feature on SAM.gov. SAM.gov will work entity service tickets in the order in which they are received and asks that entities not create multiple service tickets for the same request or technical issue.

Do not use a SSN as a TIN.
Obtain a TIN from the IRS using the website listed above.

Applicants must register with FedConnect at www.FedConnect.net. The full, binding version of assistance agreements will be posted to FedConnect. To create an organization account, your organization's SAM MPIN is required. For more information about the SAM MPIN or other registration requirements, review the FedConnect Ready, Set, Go! Guide at https://www.fedconnect.net/FedConnect/
Recipients must register with the Federal Funding Accountability and Transparency Act Subaward Reporting System at https://www.fsrs.gov. This registration must be completed before an award may be made: you are advised to register while preparing your application.

REGISTERING IN GRANTS.GOV

Applicants must register with Grants.gov, following the instructions at https://grants.gov/applicants/applicant-registration and described above.

WHERE TO SUBMIT AN APPLICATION

You must submit the application through Grants.gov at www.Grants.gov, using either the online webforms or downloaded forms, or a system-to-system service.

Submit electronic applications through the "Apply for Grants" function at www.Grants.gov. If you have problems completing the registration process or submitting your application, call Grants.gov at 1-800-518-4726 or send an email to support@Grants.gov.

Please ensure that you have read the applicable instructions, guides, help notices, frequently asked questions, and other forms of technical support on Grants.gov.

DOE SC PORTFOLIO ANALYSIS AND MANAGEMENT SYSTEM (PAMS)

Applicants must register in the Portfolio Analysis and Management System (PAMS) to submit letters of intent and pre-applications, to view merit reviewer comments, or to take a number of post-award actions.

15. How to Request a Workforce Development Supplement

Only DOE SBIR and STTR awardees that received a Phase II award under this NOFO are eligible to apply for a Workforce Development Supplement to be effective in the summer months of their Phase II second year project period as outlined below.

PURPOSE

The purpose of a Phase II supplement is to improve the diversity of the research workforce by recruiting and supporting undergraduate and graduate students from groups that have been shown to be underrepresented in federal SBIR/STTR research programs.

One of the Congressional findings and purposes of Section 9 of the Small Business Act is to foster and encourage participation by minority and disadvantaged persons in technological innovation, and this Congressional finding and purpose is identified by the U.S. Small Business Administration (SBA) as a specific program purpose of SBIR/STTR, to foster and encourage participation by socially and economically disadvantaged SBCs (SDBs), and by women-owned SBCs (WOSBs), in technological innovation. Fostering diversity by encouraging the participation of individuals from nationally underrepresented groups in the scientific research workforce is also a key component of the DOE SBIR/STTR outreach strategy to identify, develop, support, and maintain the quality of its scientific workforce. Scientists, engineers, and entrepreneurs from underrepresented backgrounds and life experiences bring different perspectives, creativity, and individual enterprise to address complex scientific problems.
This Workforce Development Supplement is designed to provide support for research and entrepreneurial experiences for individuals from the identified groups throughout the continuum from undergraduate to the graduate level. Continuation of this program in the future will depend on evaluation of the career outcomes of the supported individuals as well as continuing assessments of the diversity of the small business programs by the SBA and the National Academies.

In all cases, the proposed research experience must be an integral part of the approved ongoing research of the eligible DOE Phase II award and must have the potential to contribute to the research and entrepreneurial career development of the candidates.

CANDIDATES

SBCs are encouraged to identify women, individuals from nationally underrepresented groups, individuals with a commitment to diversifying the science and engineering workforce, and/or individuals meeting the SBA definition of socially and economically disadvantaged at 13 CFR §124.103 and 13 CFR § 124.104. Only one Workforce Development Supplement application may be submitted for each Phase II award.

Members of designated underrepresented groups include:

- Black Americans;
- Hispanic Americans;
- Native Americans (Alaska Natives, Native Hawaiians, or enrolled members of a Federally or State recognized Indian Tribe);
- Asian Pacific Americans (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China (including Hong Kong), Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Fiji, Tonga,
- (Kiribati, Tuvalu, or Nauru); and
- Subcontinent Asian Americans (persons with origins from India, Pakistan, Bangladesh,

Sri Lanka, Bhutan, the Maldives Islands or Nepal)

An economically disadvantaged individual candidate for a workforce development supplement must have:

- a net worth less than $850,000 (not including his or her primary residence and the value of the individual's ownership interest in a socially and economically disadvantaged SBC, if any),
- an average adjusted gross income of $400,000 or less for the preceding three years, and
- the fair market value of all his or her assets (including his or her primary residence and the value of the individual's ownership interest in a socially and economically disadvantaged SBC, if any) does not exceed $6,500,000.

Please review 13 CFR 124.103 and 13 CFR 124.104 for more information and for exclusions from the threshold amounts. For purposes of the workforce development supplement, the definitions above apply to the individual candidates not the SBC Phase II awardee applying for the supplement.

Undergraduate Students: As part of this supplement program, undergraduate students who are enrolled in a science, technology, engineering, or math (STEM) undergraduate degree program may participate in a Phase II research project during the summer months. This experience is separate from any requirement of the regular academic program. Any eligible undergraduate student interested in STEM research and entrepreneurship is encouraged to participate in this program.

Baccalaureate and Master's Degree Holders: This supplement will provide opportunities for baccalaureate or master's STEM degree holders. Students who plan to attend engineering and professional schools are encouraged to use this program to gain research and entrepreneurial experience.

Graduate Students: The objective of this program is to support graduate students in STEM fields who wish to develop their research and entrepreneurial capabilities.

The duration of the program is normally 10 weeks.

This supplement program is limited to citizens or non-citizen nationals of the United States or individuals who have been lawfully admitted for permanent residence in the United States.

Content and Form of Application Submission

It is critical that applicants follow the instructions for their workforce development supplement request. Conformance to documented requirements is required and strictly enforced. Applications that are out of compliance with these instructions may be delayed or not accepted for review. Please visit the DOE Office of SBIR/STTR Programs website for the required budget forms documentation, under "Awardee Resources" at https://science.osti.gov/sbir/Awardee-Resources.

Salary, Budget, Terms and Conditions

All DOE workforce development supplements are subject to the terms and conditions, cost

principles, and other considerations described in the DOE SBIR/STTR Specific Terms and Conditions that accompany every Phase II award. Application budgets are limited to no more than $20,000 and must reflect the actual needs of the proposed project. DOE will consider whether the budget and the requested period of support are fully justified and reasonable in relation to the proposed Phase II research. The request of up to $20,000 for a ten-week internship will supplement and may exceed the maximum Phase II topic award amount. This program does not require cost sharing.

Undergraduate Students: The salary for an undergraduate student should be consistent with SBC salary policies. Rates for undergraduate salary that exceed $20 per hour must be justified. An additional amount of $3,000 per year for supplies and travel may also be requested. (PLEASE NOTE: The aforementioned $3,000 additional amount is part of the $20,000 maximum workforce development supplement amount, and is not beyond the $20,000 amount.) Students are expected to devote the equivalent of at least 10 weeks of full-time effort to the research project and related activities in a one-year period. Exceptions to these requirements will be considered, depending on the circumstances of the specific request.
Baccalaureate and Master's Degree Holders: The salary for baccalaureate and master's degree holders should be reasonable and consistent with the SBC salary policies and cannot exceed the compensation allowed for graduate students. Additional funds up to $3,000 per year may be requested for supplies and travel.

Graduate (Predoctoral) Students: The DOE will provide salary support in addition to other necessary expenses, such as supplies and travel, to enable the individual to participate as a graduate research assistant in a funded research project. DOE will provide compensation that (1) conforms to the established, consistently applied salary and wage policies of the SBC and (2) reflects the percentage of time devoted to the DOE-funded project. Additional funds up to $3,000 per year may be requested for supplies and travel.

A limited number of mentoring hours by a key member of the SBC's technical staff is permitted in the budget with justification.

Review and Selection Process

The workforce development supplements are not peer reviewed. All workforce development supplement requests will undergo an administrative evaluation and approval process by a DOE program manager.

DOE program managers will review requests for supplements to determine merit with respect to overall impact on diversity and entrepreneurship. Following program manager review and selection of Phase II diversity applications, you will be notified that your workforce development supplement application was selected for negotiation and award. The DOE Contracting Officer will subsequently approve the funding of the workforce development supplement through the issuance of a modification to the Phase II award, as appropriate. Please note, when submitting a request for a workforce development supplement, you must submit a candidate, by name, as well. The DOE will not accept "To-Be-Determined" applications or those without a named candidate.

Only the administrative review criteria described below will be considered in the supplemental review process:

- The strength of the description of how this particular appointment will promote diversity in small business, particularly with regards to entrepreneurship.
- Evidence that the candidate will receive research and entrepreneurial career mentoring.
- Evidence that the proposed experience will expand and foster the research and entrepreneurial capabilities, knowledge, and/or skills of the candidate.
- The qualifications of the candidate including career goals, prior research training, research potential, and any relevant experience.
- Evidence that the activities of the candidate will be an integral part of the project.
- The plan and timeline for the proposed research and career development experiences in the supplemental request and its relationship to the Phase II award.

How to Request a Workforce Development Supplement

The request for an administrative workforce development supplement must be submitted by the Phase II awardee in an email to the DOE Office of SBIR/STTR Programs email address at sbir-sttr@science.doe.gov no later than December 5, 2025. You will be notified of final DOE selections by mid-January 2026.

In the event that the selected candidate declines the appointment after the workforce development supplement application is either submitted or approved, a replacement candidate may be proposed. The small business should submit a revised workforce development supplement application to the Program Manager for approval and cc sbir-sttr@science.doe.gov.

The Phase II Business Official and Principal Investigator from the award must be included on the email and the email must follow the following requirements and documentation. Please visit the DOE Office of SBIR/STTR Programs website at https://science.osti.gov/sbir/Awardee-Resources for document templates.

- Subject Line: Workforce Development Supplement Request for DOE Award # [Award Number]
- Pdf Attachment: (Please refer to the DOE Office of SBIR/STTR Programs website at https://science.osti.gov/sbir/Awardee-Resources for the acceptable template to be saved as one .pdf attachment). The attachment will constitute the Workforce Development Supplement application and include:
  - A header with Award Number, Company Name, Business Official Name, and PI Name.
  - Candidate's full name
  - Address of Primary Site where the proposed supplement activities will be performed. The supplemental activities must principally take place at the small business. Applications that request supplemental funding for activities that occur principally at a subrecipient location will be declined. If a portion of the proposed supplement activities will be performed at any other sites, identify all locations.
  - Diversity Justification: Address the six (6) review criteria listed above in two (2) pages or fewer and provide evidence to support a focus on the enhancement of the research and entrepreneurial capability of the underrepresented intern and how that experience is intended to provide opportunities for development as a productive researcher or future small business leader.
  - Research Plan: In one (1) page, please include a research and mentoring plan for the candidate intern to interact with other individuals on the Phase II award, to contribute intellectually to the research, and to enhance his/her research skills and knowledge

regarding the selected area of R&D along with business and entrepreneurship.
- Using the budget forms provided on the website (https://science.osti.gov/sbir/Awardee-Resources), please provide a budget and a separate abbreviated budget justification showing the amount requested and how the funds will be used.
- Intern Biographical Sketch and/or resume (should not exceed 1 page) that includes:
  - Evidence of STEM achievement and entrepreneurial interest
  - Any source(s) of current funding
- A statement from the candidate outlining his/her research objectives and career goals

REPORTING

Reporting requirements will be specified in the terms and conditions of award as applicable to the supplemental activities.

C. Administrative and National Policy Requirements

1. Administrative Requirements

The administrative requirements for DOE grants and cooperative agreements are contained in 2 CFR 200 as modified by 2 CFR 910 (DOE Financial Assistance Regulations).

2. Availability of Funds

Funds are not presently available for this award. The Government's obligation under this award is contingent upon the availability of appropriated funds from which payment for award purposes can be made. No legal liability on the part of the Government for any payment may arise until funds are made available to the DOE Contracting Officer for this award and until the recipient receives notice of such availability, to be confirmed in writing by the DOE Contracting Officer.

3. Audit Requirements

Under 2 CFR 910.501, a for-profit recipient that expends $750,000 or more in a year (including any pre- award costs) under DOE Financial Assistance awards must have an audit made for that year by an independent auditor (regardless of when the expenditures are presented to DOE for reimbursement). In determining whether the $750,000 threshold is met, recipients should assess the amount of DOE funds expended under the award and shall not include any cost-sharing amounts.

4. Buy America Requirement for Infrastructure Projects

Required use of Iron, Steel, Manufacture Products, and Construction Materials Produced in the United States

A. DEFINITIONS

For purposes of the Buy America Requirement, the following definitions apply:

Components are defined as the articles, materials, or supplies incorporated directly into the

end manufactured product(s).

Construction Materials are an article, material, or supply—other than an item primarily of iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives—that is used in an infrastructure project and is or consists primarily of non-ferrous metals, plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables), glass (including optic glass), lumber, drywall, coatings (paints and stains), optical fiber, clay brick; composite building materials; or engineered wood products.

Domestic Content Procurement Preference Requirement – means a requirement that no amounts made available through a program for federal financial assistance may be obligated for an infrastructure project unless—
(A) all iron and steel used in the project are produced in the United States;
(B) the manufactured products used in the project are produced in the United States; or
(C) the construction materials used in the project are produced in the United States.
Also referred to as the **Buy America Requirement**.

Infrastructure includes, at a minimum, the structures, facilities, and equipment located in the United States, for: roads, highways, and bridges; public transportation; dams, ports, harbors, and other maritime facilities; intercity passenger and freight railroads; freight and intermodal facilities; airports; water systems, including drinking water and wastewater systems; electrical transmission facilities and systems; utilities; broadband infrastructure; and buildings and real property; and generation, transportation, and distribution of energy—including electric vehicle (EV) charging.

The term "infrastructure" should be interpreted broadly, and the definition provided above should be considered as illustrative and not exhaustive.

Manufactured Products are items used for an infrastructure project made up of components that are not primarily of iron or steel; construction materials; cement and cementitious materials' aggregates such as stone, sand, or gravel; or aggregate binding agents or additives.

Primarily of iron or steel means greater than 50% iron or steel, measured by cost.

Project – means the construction, alteration, maintenance, or repair of infrastructure in the United States.

Public – The Buy America Requirement does not apply to non-public infrastructure projects. For
purposes of this guidance, infrastructure should be considered "public" if it is: (1) publicly owned or (2) privately owned but utilized primarily for a public purpose. Infrastructure should
be considered to be "utilized primarily for a public purpose" if it is privately operated on behalf of the public or is a place of public accommodation.

B. BUY AMERICA REQUIREMENT FOR INFRASTRUCTURE PROJECTS (BUY AMERICA REQUIREMENT)

None of the award funds (includes federal share and Recipient cost share) may be used for a

public infrastructure project unless:

> (1) all iron and steel used in the project is produced in the United States—this means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States;
> (2) all manufactured products used in the project are produced in the United States—this means the manufactured product was manufactured in the United States; and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation; and
> (3) all construction materials[4] are manufactured in the United States—this means that all manufacturing processes for the construction material occurred in the United States.

The Buy America Requirement only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project. Nor does the Buy America Requirement apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project but are not an integral part of the structure or permanently affixed to the infrastructure project.

The Buy America Requirement does not statutorily apply to Prime Recipients that are For-Profit Entities. However, the Buy America Requirement is applicable to a For-Profit Entity if: (1) it is a sub-recipient or sub-awardee under an award that contains the Buy America Requirement term and condition, or (2) it is the Prime Recipient that voluntarily chooses to use domestically sourced iron, steel, manufactured products, and constructions materials by stating so in its proposed application containing an infrastructure project. If the For-Profit Entity specifically states that it will comply with the Buy America Requirements in its application and it is selected for an award, its award will contain a Buy America Requirement for Infrastructure Projects term and condition.

The Prime Recipient is responsible for flowing the Buy America Requirement down to all sub-awards, all contracts, subcontracts, and purchase orders for work performed under the proposed infrastructure project, including to For-Profit Entities when the For-Profit Entity is a sub-recipient or sub-awardee.

Recipients must certify or provide equivalent documentation for proof of compliance that a good faith effort was made to solicit bids for domestic products used in the infrastructure project under this award.

Recipients must also maintain certifications or equivalent documentation for proof of compliance that those articles, materials, and supplies that are consumed in, incorporated

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4 Excludes cement and cementitious materials, aggregates such as stone, sand, or gravel, or aggregate binding agents or additives.

into, affixed to, or otherwise used in the infrastructure project, not covered by a waiver or exemption, are produced in the United States. The certification or proof of compliance must be provided by the suppliers or manufacturers of the iron, steel, manufactured products and construction materials and flow up from all subrecipients, contractors and vendors to the recipient. Recipients must keep these certifications with the award/project files and be able to produce them upon request from DOE, auditors or Office of Inspector General.

C. DOE Submission Requirements for Full Application

Within the first two pages of the workplan or project description, applicants must provide a short statement on whether the project will involve the construction, alteration, maintenance and/or repair of infrastructure in the United States. The ultimate determination about whether a project includes infrastructure remains with DOE, but the applicant's statement will assist project planning and integration of the Buy America Requirement, which may impact the project's proposed budget and/or schedule.

D. Waivers

In limited circumstances, DOE may waive the application of the Buy America Requirement in an award where DOE determines that:

> (1) applying the Buy America requirements would be inconsistent with the public interest (Public Interest);
> (2) the types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality (Non-Availability); or
> (3) the inclusion of iron, steel, manufactured products, or construction materials produced in the United States will increase the cost of the overall project by more than 25 percent (Unreasonable Cost).

DOE will only process waiver requests after an award has been made and for which the requests have been submitted in accordance with the terms and conditions of the award. Waiver requests must be reviewed by DOE and the Office of Management and Budget's Made in America Office and are subject to a public comment period of no less than 15 calendar days.

DOE or OMB may request additional information for consideration of the wavier. DOE may reject or grant waivers in whole or in part depending on its review, analysis, and/or feedback from OMB or the public. DOEs final determination regarding approval or rejection of the waiver request may not be appealed by a Recipient.

Requests to waive the Buy America Requirement must include the following:

- Waiver type (Public Interest, Non-Availability, or Unreasonable Cost);
- Recipient name and Unique Entity Identifier (UEI);
- Award information (Federal Award Identification Number, Assistance Listing number);
- A brief description of the project, its location, and the specific infrastructure involved;
- Total estimated project cost, with estimated federal share and recipient cost share breakdowns;

- Total estimated infrastructure costs, with estimated federal share and recipient cost share breakdowns;
- List and description of iron or steel item(s), manufactured goods, and/or construction material(s) the recipient seeks to waive from the Buy America Requirement, including name, cost, quantity(ies), country(ies) of origin, and relevant Product Service Codes (PSC) and North American Industry Classification System (NAICS) codes for each;
- A detailed justification as to how the non-domestic item(s) is/are essential the project;
- A certification that the recipient made a good faith effort to solicit bids for domestic products supported by terms included in requests for proposals, contracts, and non-proprietary communications with potential suppliers;
- A justification statement—based on one of the applicable justifications outlined above—as to why the listed items cannot be procured domestically, including the due diligence performed (e.g., market research, industry outreach, cost analysis, cost-benefit analysis) by the recipient to attempt to avoid the need for a waiver. This justification may cite, if applicable, the absence of any Buy America-compliant bids received for domestic products in response to a solicitation; and
- Anticipated impact to the project if no waiver is issued.

The following principles should be incorporated as minimum requirements in waiver request:

- Time-limited: Consider a waiver constrained principally by a length of time, rather than by the specific project/award to which it applies. Waivers of this type may be appropriate, for example, when an item that is "non-available" is widely used in the project. When requesting such a waiver, the recipient should identify a reasonable, definite time frame (e.g., no more than one to two years) designed so that the waiver is reviewed to ensure the condition for the waiver ("non-availability") has not changed (e.g., domestic supplies have become more available).
- Targeted: Waiver requests should apply only to the item(s), product(s), or material(s) or category(ies) of item(s), product(s), or material(s) as necessary and justified. Waivers should not be overly broad as this will undermine domestic preference policies.
- Conditional: The recipient may request a waiver with specific conditions that support the policies of IIJA/BABA and Executive Order 14017.

5. Conference Spending (February 2015)

The recipient shall not expend any funds on a conference not directly and programmatically related to the purpose for which the grant was awarded that would defray the cost to the United States Government of a conference held by any Executive branch department, agency, board, commission, or office for which the cost to the United States Government would otherwise exceed $20,000, thereby circumventing the required notification by the head of any such Executive Branch department, agency, board, commission, or office to the Inspector General (or senior ethics official for any entity without an Inspector General), of the date, location, and number of employees attending such conference.

6. Commitment of Public Funds

(a) A DOE financial assistance award is valid only if it is in writing and is signed, either in writing or electronically, by a DOE Contracting Officer.

(b) Recipients are free to accept or reject the award. A request to draw down DOE funds constitutes the Recipient's acceptance of the terms and conditions of this Award.

7. Corporate Felony Conviction and Federal Tax Liability Representations (March 2014)

In submitting an application in response to this NOFO the Applicant represents that:

- It is **not** a corporation that has been convicted of a felony criminal violation under any Federal law within the preceding 24 months,
- It is **not** a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

For purposes of these representations the following definitions apply:

- A Corporation includes any entity that has filed articles of incorporation in any of the 50 states, the District of Columbia, or the various territories of the United States [but not foreign corporations]. It includes both for-profit and non-profit organizations.

8. Digital Persistent Identifier (PID)

Covered individuals[5] listed on applications must provide a digital persistent identifier (PID) in the common Biographical Sketch and Current and Pending (Other) Support forms as part of the application. Included PIDs must meet the common/core standards specified in the NSPM-33 Implementation Guidance or successor guidance (e.g., an ORCID iD). The inclusion of an individual's PID will be optional until May 1, 2025, and mandatory thereafter.

9. Cost Sharing

For this NOFO, cost sharing is defined as contributions made by the applicant to the proposed research and development project described in the technical narrative. Cost sharing is not required. However, any commercial contributions will be considered as part of the evaluation. See Section II.D., Phase II Funding Commitment (Commercial Contribution) [OPTIONAL for Phase II, Phase IIA, or Phase IIB; MANDATORY for Phase IIC] and Phase III Follow-On Funding Commitment [OPTIONAL] and the review criteria in Section VI.A., Criteria.

10. Environmental, Safety and Health (ES&H) Performance of Work at DOE Facilities

With respect to the performance of any portion of the work under this award which is performed at a DOE-owned or controlled site, the recipient agrees to comply with all state and Federal ES&H regulations, and with all other ES&H requirements of the operator of such site.

Prior to the performance on any work at a DOE-owned or controlled site, the recipient shall

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5 Covered Individual has the same meaning as in the Research Security Training Requirement provision.

contact the site facility manager for information on DOE and site-specific ES&H requirements.

The recipient shall apply this provision to all subrecipients at any tier.

11. Evaluation and Administration by Non-Federal Personnel

In conducting the merit review evaluation, the Government may seek the advice of qualified non-Federal personnel as reviewers. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The applicant, by submitting its application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign a conflict-of-interest agreement and a certificate of confidentiality prior to reviewing an application. Non-Federal personnel conducting administrative activities must sign a non-disclosure agreement.

Data contained in successful and unsuccessful applications may be used by the Government for completing studies required by §9 of the Small Business Act, 15 U.S.C. §638, as amended. The results of these studies will be available to the public but will not include information that identifies individual small business applicants.

12. Federal, State, and Local Requirements

With respect to the performance of any portion of the work under this award, the recipient agrees to comply with all applicable local, state, and Federal ES&H regulations. The recipient shall apply this provision to all subrecipients at any tier.

13. Funding Restrictions

Funds will be allocated over the two budget periods. Funding for the 2nd budget period will be contingent on the demonstration of adequate progress, evaluation of programmatic priorities, availability of funds and compliance with the terms and conditions of the award.

Cost Principles: Costs must be allowable, allocable and reasonable in accordance with the applicable Federal cost principles referenced in 2 CFR 200 as modified by 2 CFR 910 (DOE Financial Assistance Regulation).

Pre-award Costs: Recipients may charge to an award resulting from this NOFO pre-award costs that were incurred within the ninety (90) calendar day period immediately preceding the effective date of the award, if the costs are allowable in accordance with the applicable Federal cost principles referenced in 2 CFR 200 as modified by 2 CFR 910 (DOE Financial Assistance Regulation). Recipients must obtain the prior approval of the contracting officer for any pre-award costs that are for periods greater than this 90 day calendar period.

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.

14. Government Right to Reject or Negotiate

DOE reserves the right, without qualification, to reject any or all applications received in

response to this NOFO and to select any application, in whole or in part, as a basis for negotiation and/or award.

15. Intellectual Property Development Under This Program

U.S. COMPETITIVENESS

A primary objective of DOE's multi-billion-dollar research, development and demonstration investments is to cultivate new research and development ecosystems, manufacturing capabilities, and supply chains for and by U.S. industry and labor. Therefore, in exchange for receiving taxpayer dollars to support an applicant's project, the applicant must agree to the following U.S. Competitiveness Provision as part of an award under this NOFO.

> U. S. COMPETITIVENESS
>
> The Recipient agrees that any products embodying any subject invention or produced through the use of any subject invention will be manufactured substantially in the United States unless the Contractor can show to the satisfaction of DOE that it is not commercially feasible. In the event DOE agrees to foreign manufacture, there will be a requirement that the Government's support of the technology be recognized in some appropriate manner, e.g., alternative binding commitments to provide an overall net benefit to the U.S. economy. The Contractor agrees that it will not license, assign or otherwise transfer any subject invention to any entity, at any tier, unless that entity agrees to these same requirements. Should the Contractor or other such entity receiving rights in the invention(s): (1) undergo a change in ownership amounting to a controlling interest, or (2) sell, assign, or otherwise transfer title or exclusive rights in the invention(s), then the assignment, license, or other transfer of rights in the subject invention(s) is/are suspended until approved in writing by DOE. The Contractor and any successor assignee will convey to DOE, upon written request from DOE, title to any subject invention, upon a breach of this paragraph. The Contractor will include this paragraph in all subawards/contracts, regardless of tier, for experimental, developmental or research work.

A subject invention is any invention conceived or first actually reduced in performance of work under an award. An invention is any invention or discovery which is or may be patentable. The contractor includes any awardee, recipient, sub-awardee, or sub-recipient.

As noted in the U.S. Competitiveness Provision, at any time in which an entity cannot meet the requirements of the U.S. Competitiveness Provision, the entity may request a modification or waiver of the U.S. Competitiveness Provision. For example, the entity may propose modifying the language of the U.S. Competitiveness Provision in order to change the scope of the requirements or to provide more specifics on the application of the requirements for a particular technology. As another example, the entity may request that the U.S. Competitiveness Provision be waived in lieu of a net benefits statement or U.S. manufacturing plan. The statement or plan would contain specific and enforceable commitments that would be beneficial to the U.S. economy and competitiveness. Examples of such commitments could include manufacturing specific products in the U.S., making a specific investment in a new or existing U.S. manufacturing facility, keeping certain activities

based in the U.S. or supporting a certain number of jobs in the U.S. related to the technology. If DOE, in its sole discretion, determines that the proposed modification or waiver promotes commercialization and provides substantial U.S. economic benefits, DOE may grant the request and, if granted, modify the award terms and conditions for the requesting entity accordingly. More information and guidance on the waiver and modification request process can be found in the DOE Financial Assistance Letter on this topic, available at https://www.energy.gov/management/pf-2022-09-fal-2022-01-implementation-doe-determination-exceptional-circumstances-under. Additional information on DOE's Commitment to Domestic Manufacturing for DOE-funded R&D is available at https://www.energy.gov/gc/us-manufacturing.

The U.S. Competitiveness Provision is implemented by DOE pursuant to a Determination of Exceptional Circumstances (DEC) under the Bayh-Dole Act and DOE Patent Waivers. See Section IX.C.15 of this NOFO for more information on the DEC and DOE Patent Waiver.

PROPERTY AND COMMERCIALIZATION RIGHTS AGREEMENTS

When using subcontractors, including research institutions, the applicant is responsible for protecting its own interests with regard to the retention of intellectual property and commercialization rights.

It is in the best interest of the applicant, when collaborating with a research institution or other subcontractors, to negotiate a written agreement for allocating, between the parties, intellectual property rights, and rights to carry out any follow-on research, development, or commercialization.

A model agreement, found on the SBIR/STTR Programs Office web site at https://science.osti.gov/sbir/Awardee-Resources/Awardee-Documents and may be used or revised through negotiation between the applicant and the research Institution.

The completed agreement should not be submitted with the application, but retained by the parties to the agreement. The Federal government will not be a party to any agreement between the SBC and any subcontractor, including the STTR research institution. However, applicants are reminded that nothing in such agreements should conflict with any provisions setting forth the respective rights of the U.S. and the SBC with respect to both intellectual property rights and any rights to carry out follow-on research.

INTELLECTUAL PROPERTY INCLUDING INNOVATIONS, INVENTIONS, AND PATENTS
PROPRIETARY INFORMATION

Information contained in unsuccessful applications will remain the property of the applicant. The Government will retain for at least three years one electronic file copy of each unsuccessful application. Public release of information in any application submitted will be subject to existing statutory and regulatory requirements, such as the Freedom of Information and Privacy Acts.

If proprietary information is provided in an application that constitutes proprietary technical data, confidential personnel information, or proprietary commercial or financial information, it will be treated in confidence, to the extent permitted by law, provided this information is clearly marked by the applicant in accordance with paragraph D, above, and provided

appropriate page numbers are inserted in the Proprietary Notice legend printed on the first page of the Project Narrative.

Applications will not automatically be withheld in their entirety unless justified by the applicant. The Government will limit dissemination of such information to official channels to the extent permitted by law. Any other legend may be unacceptable to the Government and may constitute grounds for removing the application from further consideration and without assuming any liability for inadvertent disclosure.

Protection of Application Information

DOE's policy is to use data included in applications for evaluation purposes only and to protect, to the extent allowed by law, such information from unauthorized use or disclosure.

In addition to Government personnel, scientists and engineers from outside the government may be used in the application evaluation process. The decision to obtain outside evaluation will take into consideration requirements for the avoidance of organizational conflicts of interest and the competitive relationship, if any, between the applicant and the prospective outside evaluator. The evaluation will be performed under an agreement with the evaluator that the information contained in the application will be used only for evaluation purposes and will not be further disclosed.

Rights in Data Developed Under SBIR/STTR Funding Agreements

Rights in technical data, including software developed under the terms of any funding agreement resulting from applications submitted in response to this NOFO, shall remain with the awardee, except that the Government shall have the limited right to use such data for Government purposes. DOE will protect properly marked SBIR/STTR data from disclosure from the date the SBIR/STTR award is issued for a period of 20 years in accordance with the award terms.

Copyrights

The awardee may copyright and publish (consistent with appropriate national security considerations, if any) material developed with DOE support. DOE receives a royalty-free license for the Federal Government and requires that each publication contain an appropriate acknowledgment and disclaimer statement.

Patents

SBCs (and any nonprofit organizations under a subaward) may retain the principal worldwide patent rights to any invention developed with Federal support. The government receives a royalty-free license for Federal use, reserves the right to require the patent holder to license others in certain circumstances, and requires that anyone exclusively licensed to sell must normally manufacture it domestically. Information regarding patent rights is available at: https://www.energy.gov/sites/default/files/2022-07/SBIR%20STTR-821-US.pdf.

On June 07, 2021, DOE approved a DETERMINATION OF EXCEPTIONAL CIRCUMSTANCES (DEC) UNDER THE BAYH-DOLE ACT TO FURTHER PROMOTE DOMESTIC MANUFACTURE OF DOE SCIENCE AND ENERGY TECHNOLOGIES. In

accordance with this DEC, all awards, including sub-awards, under this NOFO shall include the U.S. Competitiveness Provision in accordance with Section IX.C.15 of this NOFO. A copy of the DEC can be found at https://www.energy.gov/gc/determination-exceptional-circumstances-decs. Pursuant to 37 CFR § 401.4, any nonprofit organization or small business firm as defined by 35 U.S.C. 201 affected by this DEC has the right to appeal it by providing written notice to DOE within 30 working days from the time it receives a copy of the determination.

DOE may require additional submissions or requirements as authorized by any applicable DEC. Any nonprofit organization or small business firm as defined by 35 U.S.C. 201 affected by a DEC has the right to appeal it by providing written notice to DOE within 30 working days from the time it receives a copy of the determination.

On August 28, 2020, DOE approved a DETERMINATION OF EXCEPTIONAL CIRCUMSTANCES UNDER THE BAYH-DOLE ACT FOR QUANTUM INFORMATION SCIENCE TECHNOLOGIES. In accordance with this DEC, all awards, including sub-awards, under this NOFO shall include the U.S. Competitiveness Provision in accordance with Section IX.C.15 of this NOFO. A copy of the DEC can be found at https://www.energy.gov/gc/determination-exceptional-circumstances-decs. Pursuant to 37 CFR § 401.4, any nonprofit organization or small business firm as defined by 35 U.S.C. 201 affected by this DEC has the right to appeal it by providing written notice to DOE within 30 working days from the time it receives a copy of the determination.

With justification, TABA funds may be used to pay patent prosecution costs for inventions developed under the Phase I or Phase II projects.

Distribution of Intellectual Property and Commercialization Rights Between the SBC and Subcontractor

When using subcontractors, including research institutions, the SBC is responsible for providing that its subcontractors retain all rights provided for the SBC. Large business subcontractors will need to petition DOE to retain title to inventions.

Notice of Right to Request Patent Waiver

- DOE has issued Class Patent Waiver W(C) 2022-03 which allows domestic large businesses providing at least 20% cost share to elect to retain title to their subject inventions. Class Patent Waiver W(C) 2022-03 includes a U.S. Competitiveness provision requiring any products embodying or produced through the use of a subject invention first created or reduced to practice in the performance of work under this NOFO to be substantially manufactured in the United States. A domestic large business is any for-profit entity that does not qualify as a "small business" and is incorporated (or otherwise formed) under the laws of a particular state or territory of the United States and is not owned, controlled, or influenced by a foreign government, agency, firm, corporation, or person. Applicants may request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this NOFO, in advance of or within 30 days after the effective date of the award. Even if such advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver of the rights of the United States in identified inventions, i.e., individual

inventions conceived or first actually reduced to practice in performance of the award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784. For more information, see https://www.energy.gov/gc/office-assistant-general-counsel-technology-transfer-and-intellectual-property. Nonprofit organizations and small business firms do not need a patent waiver in order to retain title to their subject inventions (see above).

NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

16. Intergovernmental Review

This program is not subject to Executive Order 12372 Intergovernmental Review of Federal Programs.

17. Living Wages

SC is committed to ensuring that students, trainees, and postdoctoral fellows are paid a fair and equitable wage sufficient to allow a reasonable standard of living. Applicant institutions are strongly encouraged to examine their institutional pay scales to ensure that all personnel earn a living wage. The provision of fellowships, traineeships, stipends, honoraria, subsistence allowances, and other similar payments may be allowable expenses on SC financial assistance awards, per 2 CFR 200.430, § 200.431, and § 200.466. For graduate students, SC considers a reasonable living wage to be an annual income of $45,000, excluding benefits.

18. Logos and Wordmarks

DOE created a logo that recipients may use. The logos and best practices may be found at https://www.energy.gov/management/pf-2023-19-department-energy-awardee-usage-branding-and-logo-guide. Information about the DOE logo, seal, and wordmark may be found at https://www.energy.gov/management/doe-logo-seal-and-word-mark. Information about the SC logo may be found at https://science.osti.gov/About/Resources/Logos.

19. Matching Funds

For this NOFO, matching funds are defined as contributions made by the applicant either (1) for research and development costs NOT requested in your budget or (2) other costs associated with commercialization of the proposed innovation. Matching funds are required for Phase IIC applications and must be expended during the period of performance of the award. See Section IX.C.19. Phase II Funding Commitment (Commercial Contribution) [OPTIONAL for Phase II, Phase IIA, or Phase IIB; MANDATORY FOR Phase IIC].

20. Modifications

Notices of any modifications to this NOFO will be posted on Grants.gov and the FedConnect portal. You can receive an email when a modification or a NOFO message is posted by registering with FedConnect as an interested party for this NOFO. It is recommended that you register as soon after release of the NOFO as possible to ensure you receive timely notice of any modifications or other NOFOs. More information is available at www.FedConnect.net.

21. National Environmental Policy Act (NEPA) Compliance

If the question 4.a. on the "Research and Related Other Project Information" disclosure indicates "potential impact on the environment, negative", or if DOE's own review indicates it, DOE may ask the applicant to provide additional information on those impacts in order to prepare an environmental critique/synopsis per 10 CFR 1021.216. Note that this pre-award environmental critique/synopsis process would be separate from the preparation of a NEPA compliance document such as a categorical exclusion (CX), environmental impact statement (EIS),) or an environmental assessment (EA) prepared after selection.

This CX, EIS, or EA process would need to be completed prior to the applicant taking any action on the proposed project that could have adverse environmental effects or that could limit the choice of reasonable alternatives. The three processes would each begin with a request from DOE for an environmental disclosure. If DOE is able to make a CX determination base on that disclosure, that would end the NEPA process.). If DOE determines that an EIS or EA is necessary, it would need to be funded by the applicant and at DOE's discretion also their participation. Note that in most cases, even when "Potential Impact to the Environment" is checked "Yes" on the other Project Information Form, preparation of EISs and EAs is rarely necessary, but DOE has the expectation that the recipient will disclose the potential, which would serve to initiate dialog with DOE as necessary. The inability to satisfy the NEPA requirements after an award would result in cancellation of the award.

22. Nondisclosure and Confidentiality Agreements Representations (June 2015)

By submitting an application in response to this NOFO, the Applicant represents that:

(1) It **does not and will not** require its employees or contractors to sign internal nondisclosure or confidentiality agreements or statements prohibiting or otherwise restricting its employees or contactors from lawfully reporting waste, fraud, or abuse to a designated investigative or law enforcement representative of a Federal department or agency authorized to receive such information.

(2) It **does not and will not** use any Federal funds to implement or enforce any nondisclosure and/or confidentiality policy, form, or agreement it uses unless it contains the following provisions:

   a. *''These provisions are consistent with and do not supersede, conflict with, or otherwise alter the employee obligations, rights, or liabilities created by existing statute or Executive order relating to (1) classified information, (2) communications to Congress, (3) the reporting to an Inspector General of a violation of any law, rule, or regulation, or mismanagement, a gross waste of funds, an abuse of authority, or a substantial and specific danger to public health or safety, or (4) any other whistleblower protection. The definitions, requirements, obligations, rights, sanctions, and liabilities created by controlling Executive orders and statutory provisions are incorporated into this agreement and are*

controlling.''

b. The limitation above shall not contravene requirements applicable to Standard Form 312, Form 4414, or any other form issued by a Federal department or agency governing the nondisclosure of classified information.

c. Notwithstanding provision listed in paragraph (a), a nondisclosure or confidentiality policy form or agreement that is to be executed by a person connected with the conduct of an intelligence or intelligence-related activity, other than an employee or officer of the United States Government, may contain provisions appropriate to the particular activity for which such document is to be used. Such form or agreement shall, at a minimum, require that the person will not disclose any classified information received in the course of such activity unless specifically authorized to do so by the United States Government. Such nondisclosure or confidentiality forms shall also make it clear that they do not bar disclosures to Congress, or to an authorized official of an executive agency or the Department of Justice, that are essential to reporting a substantial violation of law.

23. Notice Regarding Eligible/Ineligible Activities

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

24. Portable Document Format (PDF) Generation

The project narrative in an application must be one single PDF file that contains the DOE Title Page, project narrative, all required appendices, and other attachments. This single PDF file may not be scanned from a printed document and must be attached in Field 8 on the Grants.gov form. This must be a plain PDF file consisting of text, numbers, and images. The project narrative will be read by SC staff using the full version of Adobe Acrobat: Please ensure that the narrative is readable in Acrobat.

Do not submit files with editable fields, password-protection, encryption, redactions, comments, or any other advanced features in some PDF-compatible software. If a file cannot be opened and searched, an application may be declined.

If combining multiple files into one research narrative, ensure that a PDF portfolio or binder is not created.

If creating PDF files using any software other than Adobe Acrobat, please use a "Print to PDF" or equivalent process to ensure that all content is visible in the project narrative.

Once a project narrative has been assembled, please submit the combined project narrative file through a "Print to PDF" or equivalent process to ensure that all content is visible in one PDF file that can be viewed in Adobe Acrobat.

Review your submission to ensure that blank pages are not present.

25. Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment

As set forth in 2 CFR 200.216, recipients and subrecipients are prohibited from obligating or expending project funds (federal funds and recipient cost share) to procure or obtain; extend or renew a contract to procure or obtain; or enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Section 889 of Public Law 115-232, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

See Public Law 115-232, Section 889, 2 CFR 200.216, and 2 CFR 200.471 for additional information.

26. Prohibition on Discrimination and Harassment

All people conducting, supporting, or participating in scientific research under this award must be able to do so on the basis of their abilities and without any unnecessary barriers. Recipients of awards resulting from this NOFO are prohibited from engaging in discrimination on any basis prohibited by law, including harassment (sexual or non-sexual) as contained in 10 CFR 1040, 1041, and 1042.

Recipients may contact the DOE's Office of Civil Rights for technical assistance in meeting their institutional requirements under these regulations, including assistance in addressing complaints of discrimination or harassment (https://www.energy.gov/diversity/title-ix). The United States Equal Employment Opportunity Commission also makes a number of resources available at https://www.eeoc.gov/eeoc/publications/index.cfm to ensure that employees may perform their work without hindrance. Graduate students and post-doctoral researchers are understood to have a dual role as both trainees and employees, in accordance with 2 CFR 200.400 (f).

27. Prohibition on Lobbying Activity

By accepting funds under this award, you agree that none of the funds obligated on the award shall be expended, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 USC 1913. This restriction is in addition to those prescribed elsewhere in statute and regulation.

28. Prohibition Related to Foreign Government-Sponsored Talent Recruitment Programs

a. Prohibition
Persons participating in a Foreign Government-Sponsored Talent Recruitment Program of a Foreign Country of Risk are prohibited from participating in projects selected for federal funding under this NOFO. Should an award result from this NOFO, the recipient must exercise ongoing due diligence to reasonably ensure that no individuals participating on the DOE-funded project are participating in a Foreign Government-Sponsored Talent Recruitment Program of a Foreign Country of Risk. Consequences for violations of this prohibition will be determined according to applicable law, regulations, and policy. Further,

the recipient must notify DOE within five (5) business days upon learning that an individual on the project team is or is believed to be participating in a foreign government talent recruitment program of a foreign country of risk. DOE may modify and add requirements related to this prohibition to the extent required by law.

b. Definitions

1. Foreign Government-Sponsored Talent Recruitment Program. An effort directly or indirectly organized, managed, or funded by a foreign government, or a foreign government instrumentality or entity, to recruit science and technology professionals or students (regardless of citizenship or national origin, or whether having a full-time or part-time position). Some foreign government-sponsored talent recruitment programs operate with the intent to import or otherwise acquire from abroad, sometimes through illicit means, proprietary technology or software, unpublished data and methods, and intellectual property to further the military modernization goals and/or economic goals of a foreign government. Many, but not all, programs aim to incentivize the targeted individual to relocate physically to the foreign state for the above purpose. Some programs allow for or encourage continued employment at United States research facilities or receipt of federal research funds while concurrently working at and/or receiving compensation from a foreign institution, and some direct participants not to disclose their participation to U.S. entities. Compensation could take many forms including cash, research funding, complimentary foreign travel, honorific titles, career advancement opportunities, promised future compensation, or other types of remuneration or consideration, including in-kind compensation.

2. Foreign Country of Risk. DOE has designated the following countries as foreign countries of risk: Iran, North Korea, Russia, and China. This list is subject to change.

29. Proprietary Application Information

Department of Energy (DOE) takes very seriously the confidentiality of all applicants and will treat information submitted in applications, as well as the identity of applicants, as confidential to the fullest extent permissible under Federal law. In order for DOE to protect confidential information, the applicant must also treat the information as confidential and properly mark it as described below. DOE will not be able to protect information that the applicant has released publicly or is in the public domain. For additional information on DOE's Freedom of Information Act (FOIA) regulations, see 10 CFR 1004.

An application may include technical data and other data, including trade secrets and commercial or financial information that are privileged or confidential, which the applicant does not want disclosed to the public or used by the Government for any purpose other than application evaluation. Only the following documents may contain proprietary information: (1) the commercialization plan, (2) the project narrative, (3) the budget justification, (4) letters of support, (5) SBA commercialization history and (6) foreign relationships disclosure form.

Note that the SBA Commercialization History and the Foreign Relations Disclosure form documents are permitted to contain proprietary information and do not require applicant markings as they are pre-populated with data protection legends.

To protect such data, the following guidelines must be followed:

1. The following legend must appear on the title page of the document:

This proposal contains information that shall not be disclosed outside the Federal Government and shall not be duplicated, used, or disclosed in whole or in part for any purpose other than evaluation of this proposal, unless authorized by law. The Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract if award is made as a result of the submission of this proposal. The information subject to these restrictions are contained on all pages of the proposal except for pages [insert page numbers or other identification of pages that contain no restricted information.]
and

2. The following legend must appear on each page of the proposal that contains information the Applicant wishes to protect:

Use or disclosure of information contained on this sheet is subject to the restriction on the title page of this proposal.

To see an example of proper IP markings, please visit the SBIR/STTR Programs web site at https://science.osti.gov/sbir/Applicant-Resources/Protecting-your-Trade-Secrets.

Please ensure this information is consistent with question number three (3) of the Research and Related Other Project Information form.

IMPORTANT GUIDANCE FOR COMPANY SUBMITTERS:

As per DOE's FOIA regulations and Department of Justice FOIA guidance, if DOE receives a FOIA request the following general steps will be taken:

1. DOE will review the request to determine whether your company's information is subject to the request. Only federal records are subject to FOIA requests. Depending on the circumstances, information submitted by an outside entity may be considered "federal records" for purposes of FOIA.
2. If your company information is determined to be a federal record and responsive to a FOIA request, DOE will review what was submitted in order to determine if DOE can make a determination whether the information is legally exempt.
    a. If DOE determines your information is fully exempt under an exemption and that it will not be released, DOE may not contact you.
    b. If DOE is unable to determine whether the information is exempt under an exemption or is planning on releasing some or all of your information, DOE will first contact you in order for you to have an opportunity to respond and provide additional justification as to why it may be exempt. DOE will do all that it can to work with company submitters to be in compliance with the law and maintain positive relations with company submitters.
    c. It is critical if DOE or DOE's contractors who are processing your FOIA contact you that you respond in a timely manner. DOE is under strict deadlines when processing a FOIA request.

30. Publications

The recipient is expected to publish or otherwise make publicly available the results of the work conducted under any award resulting from this NOFO. Publications and other methods of public communication describing any work based on or developed under an award resulting from this NOFO must contain an acknowledgment of SC support. The format for such acknowledgments is provided at https://science.osti.gov/funding-opportunities/acknowledgements/. The author's copy of any peer- reviewed manuscript accepted for funding must be announced to DOE's Office of Scientific and Technical Information (OSTI) and made publicly available in accordance with the instructions contained in the Reporting Requirements Checklist incorporated in all Assistance Agreements.

31. Registration Requirements

Additional administrative requirements for DOE grants are contained in 2 CFR 25 (See: www.eCFR.gov). Prime recipients must keep their data in SAM current at www.SAM.gov. Subrecipients at all tiers must obtain UEI numbers and provide the UEI to the prime recipient before the subaward can be issued.

32. Research Misconduct

Scientific discoveries can only take place when scientific research is conducted in a fair, transparent, and honestly reported manner. Any form of dishonesty—whether plagiarism, falsifying results, or misrepresenting conditions—makes it impossible to advance our understanding of the physical universe.

Recipients are "responsible for maintaining the integrity of research of any kind under an award from DOE including the prevention, detection, and remediation of research misconduct, and the conduct of inquiries, investigations, and adjudication of allegations of research misconduct," and conducting appropriate administrative processes in response to allegations of research misconduct in accordance with 2 CFR 910.132. Allegations of any misconduct under an award resulting from this NOFO must be reported to the appropriate institutional officials in accordance with institutional policies against misconduct. Additional information on DOE research misconduct policies can be found at: https://science.osti.gov/grants/Policy-and-Guidance/Research-Misconduct.

33. Research Security Training Requirement

Covered individuals listed on the application are required to certify that they have taken research security trainings consistent with Section 10634 of the CHIPS and Science Act of 2022. In addition, Applicants must maintain sufficient records (records must be made available to DOE upon request) of their compliance with this requirement for covered individuals at the recipient organization and they must extend this requirement to any and all subrecipients. To fulfill this requirement, applicants may utilize the four training modules developed by the National Science Foundation at https://new.nsf.gov/research-security/training or develop and implement their own research security training program aligned with the requirements in Section 10634 of the CHIPS and Science Act of 2022. The submission of an application to this NOFO constitutes the applicant's acceptance of this requirement.

Covered Individual means an individual who (a) contributes in a substantive, meaningful way

to the development or execution of the scope of work of a project funded by DOE or proposed for funding by DOE, and (b) is designated as a covered individual by DOE.

DOE designates as covered individuals any principal investigator (PI); project director (PD); co-principal investigator (Co-PI); co-project director (Co-PD); project manager; and any individual regardless of title that is functionally performing as a PI, PD, Co-PI, Co-PD, or project manager. Status as a consultant, graduate (master's or PhD) student, or postdoctoral associate does not automatically disqualify a person from being designated as a "covered individual" if they meet the definition in (a) above.

The prime applicant is responsible for assessing the applicability of (a) against each person listed on the application. Further, the prime applicant is responsible for identifying any such individual to DOE for designation as a covered individual, if not already designated by DOE as described above.

Individuals committing no measurable effort or "as-needed" effort are not automatically exempt from being designated as a covered individual. The prime applicant's listing of an individual in the "Senior/Key Person" section of an SF-424(R&R) budget serves as an acknowledgement that DOE designates that person as a covered individual.

DOE may further designate covered individuals during award negotiations or the award period of performance.

34. Rights in Technical Data

Normally, the government has unlimited rights in technical data created under a DOE agreement, including the right to distribute to the public. Delivery or third-party licensing of proprietary software or data developed solely at private expense ("Limited Rights Data") will not normally be required except as specifically negotiated in a particular agreement to satisfy DOE's own needs or to ensure the commercialization of technology developed under a DOE agreement.

If software is specified for delivery to DOE, or if other special circumstances exist, e.g., DOE specifying "open-source" treatment of software, then the DOE Contracting Officer, after negotiation with the recipient, may include in the award special provisions requiring the recipient to obtain written approval of the DOE Contracting Officer prior to asserting copyright in the software, modifying the retained Government license, and/or otherwise altering the copyright provisions.

35. SC Statement of Commitment

The DOE SC is fully and unconditionally committed to fostering safe, diverse, equitable, and inclusive work, research, and funding environments that value mutual respect and personal integrity. SC is committed to advancing belonging, accessibility, justice, equity, diversity, and inclusion across the portfolio of activities we sponsor. SC's effective stewardship and promotion of safe, accessible, diverse, and inclusive workplaces that value and celebrate the diversity of people, ideas, cultures, and educational backgrounds across the country and that foster a sense of belonging in our scientific community is foundational to delivering on our mission. We are committed to promoting people from all backgrounds, including individuals and communities that were historically underrepresented and minoritized in science,

technology, engineering, and math (STEM) fields and the activities we sponsor in recognition of our responsibility to serve the public. We also recognize that harnessing a broad range of views, expertise, and experiences drives scientific and technological innovation and enables the SC community to push the frontiers of scientific knowledge for U.S. prosperity and security. Discrimination and harassment undermine SC's ability to achieve its mission by reducing productivity, discouraging, or inhibiting talent retention and career advancement, and weakening the integrity of the SC enterprise overall. SC does not tolerate discrimination or harassment of any kind, including sexual or non-sexual harassment, bullying, intimidation, violence, threats of violence, retaliation, or other disruptive behavior at institutions receiving SC funding or other locations where activities funded by SC are carried out. All applicants and collaborators should familiarize themselves with the SC Statement of Commitment available at https://science.osti.gov/SW-DEI/SC-Statement-of-Commitment

36. Statement of Federal Stewardship

DOE will exercise normal federal stewardship in overseeing the project activities performed under DOE awards. Stewardship activities include but are not limited to conducting site visits; reviewing performance and financial reports; providing assistance and/or temporary intervention in unusual circumstances to correct deficiencies that develop during the project; assuring compliance with terms and conditions; and reviewing technical performance after project completion to ensure that the project objectives have been accomplished.

37. Subaward and Executive Reporting

Additional administrative requirements necessary for DOE grants to comply with the Federal Funding and Transparency Act of 2006 (FFATA) are contained in 2 CFR 170. (See: www.eCFR.gov). Prime recipients must register with the new Federal Funding and Transparency Act Subaward Reporting System (FSRS) at https://www.fsrs.gov and report the required data on their first tier subrecipients. Prime recipients may be required to report the total compensation for their five most highly compensated executives as part of their registration profile in SAM.gov and for first-tier subrecipients' five most highly compensated executives as in FSRS.gov.

38. Title to Subject Inventions

Ownership of subject inventions is governed pursuant to the authorities listed below:

- **Nonprofit organizations or small business firms**: Under the Bayh-Dole Act (35 U.S.C. § 200 et seq.), nonprofit organizations or small business firms as defined by 35 U.S.C. 201 may elect to retain title to their subject inventions.
- **All other parties**: The federal Non-Nuclear Energy Act of 1974, 42. U.S.C. 5908, provides that the government obtains title to new inventions unless a waiver is granted (see below).
- **Patent Waiver**: DOE has issued Class Patent Waiver W(C) 2022-03 which allows domestic large businesses providing at least 20% cost share to elect to retain title to their subject inventions. Class Patent Waiver W(C) 2022-03 includes a U.S. Competitiveness provision requiring any products embodying or produced through the use of a subject invention first created or reduced to practice in the performance of work under this NOFO to be substantially manufactured in the United States. A domestic large business is any for-profit entity that does not qualify as a "small business" and is incorporated (or

otherwise formed) under the laws of a particular state or territory of the United States and is not owned, controlled, or influenced by a foreign government, agency, firm, corporation, or person. Applicants may request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this NOFO, in advance of or within 30 days after the effective date of the award. Even if such advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784. For more information, see https://www.energy.gov/gc/office-assistant-general-counsel-technology-transfer-and-intellectual-property. Nonprofit organizations and small business firms do not need a patent waiver in order to retain title to their subject inventions (see above).

- **Determination of Exceptional Circumstances (DEC)**: On June 07, 2021, DOE approved a DETERMINATION OF EXCEPTIONAL CIRCUMSTANCES (DEC) UNDER THE BAYH-DOLE ACT TO FURTHER PROMOTE DOMESTIC MANUFACTURE OF DOE SCIENCE AND ENERGY TECHNOLOGIES. In accordance with this DEC, all awards, including sub-awards, under this NOFO shall include the U.S. Competitiveness Provision in accordance with Section IX of this NOFO. A copy of the DEC can be found at https://www.energy.gov/gc/determination-exceptional-circumstances-decs.
- Pursuant to 37 CFR § 401.4, any nonprofit organization or small business firm as defined by 35 U.S.C. 201 affected by any DEC has the right to appeal it by providing written notice to DOE within 30 working days from the time it receives a copy of the determination.
- DOE may issue and publish on the website above further DECs prior to the issuance of awards under this NOFO. DOE may require additional submissions or requirements as authorized by any applicable DEC.
- **[IF APPLICABLE] DEC**: **QUANTUM INFORMATION SCIENCE TECHNOLOGIES DEC**: On August 28, 2020, DOE approved a DETERMINATION OF EXCEPTIONAL CIRCUMSTANCES UNDER THE BAYH-DOLE ACT FOR QUANTUM INFORMATION SCIENCE TECHNOLOGIES, pursuant to 37 CFR 401.3(a)(2), which applies to agreements issued under this NOFO requiring each applicant to agree to a U.S. Competitiveness Provision. DOE has determined that exceptional circumstances exist that warrant the modification of the standard patent rights clause for small businesses and non-profit recipients under the Bayh-Dole Act, 35 U.S.C. 200 et seq., to the extent necessary to ensure that DOE "obtains sufficient rights in the federally supported inventions to meet the needs of [DOE]" and "to promote the commercialization and public availability of inventions made in the United States by United States industry and labor" and/or further promote other purposes of the Bayh-Dole Act. 35 U.S.C. § 200. In accordance with this DEC, all awards, including sub-awards, under this NOFO shall include the U.S. Competitiveness Provision in accordance with Section IX of this NOFO. A copy of the DEC can be found at https://www.energy.gov/gc/determination-exceptional-circumstances-decs.

[IF APPLICABLE] Class Patent Waiver: DOE has issued Class Patent Waiver No. W(C) 2020-001 of Patent Rights Related to Quantum Information Science and its Technology Applications that applies to this NOFO for any domestic large business that is a recipient, or

subrecipient at any tier to this NOFO and is providing at least 20% cost share. Under this Class Patent Waiver, domestic large businesses may elect title to their subject inventions similar to the right provided to the domestic small businesses, educational institutions, and nonprofits by law. In order to avail itself of the class patent waiver, a domestic large business must agree that any products embodying or produced using a subject invention first created or reduced to practice under this program will be substantially manufactured in the United States. Entities not eligible under the Class Patent Waiver are still able to petition DOE for rights under an Advanced or Identified Patent Waiver as described above.

Nonprofit organizations and small business firms do not need a patent waiver in order to retain title to their subject inventions (see above).

39. Trafficking in Persons

Awards resulting from this NOFO are subject to the requirements of 2 CFR 175 (https://www.ecfr.gov) which prohibit recipients, their employees, subrecipients, and their employees from severe forms of trafficking in persons; the procurement of a commercial sex act during the period of time that this award or any subaward is in effect; the use of forced labor in the performance of this award or any subaward; or acts that directly support or advance trafficking in persons.

40. U.S. Competitiveness

A primary objective of DOE's multi-billion-dollar research, development and demonstration investments is to cultivate new research and development ecosystems, manufacturing capabilities, and supply chains for and by U.S. industry and labor. Therefore, in exchange for receiving taxpayer dollars to support an applicant's project, the applicant must agree to a U.S. Competitiveness provision requiring to any products embodying any subject invention or produced using any subject invention will be manufactured substantially in the United States unless the Recipient can show to the satisfaction of DOE that it is not commercially feasible. Award terms, including the U.S. Competitiveness Provision, are available at https://www.energy.gov/gc/standard-intellectual-property-ip-provisions-financial-assistance-awards.

Please note that a subject invention is any invention conceived or first actually reduced in performance of work under an award. An invention is any invention or discovery which is or may be patentable. The recipient includes any awardee, recipient, sub-awardee, or sub-recipient.

As noted in the U.S. Competitiveness Provision, if an entity cannot meet the requirements of the U.S. Competitiveness Provision, the entity may request a modification or waiver of the U.S. Competitiveness Provision. For example, the entity may propose modifying the language of the U.S. Competitiveness Provision in order to change the scope of the requirements or to provide more specifics on the application of the requirements for a particular technology. As another example, the entity may request that the U.S. Competitiveness Provision be waived in lieu of a net benefits statement or U.S. manufacturing plan. The statement or plan would contain specific and enforceable commitments that would be beneficial to the U.S. economy and competitiveness. Examples of such commitments could include manufacturing specific products in the U.S., making a specific investment in a new or existing U.S. manufacturing facility, keeping certain activities

based in the U.S. or supporting a certain number of jobs in the U.S. related to the technology. DOE may, in its sole discretion, determine that the proposed modification or waiver promotes commercialization and provides sufficient U.S. economic benefits, and grant the request. If granted, DOE will modify the award terms and conditions for the requesting entity accordingly. More information and guidance on the waiver and modification request process can be found in the DOE Financial Assistance Letter on this topic, available here at https://www.energy.gov/management/pf-2022-09-fal-2022-01-implementation-doe-determination-exceptional-circumstances-under. Additional information on DOE's Commitment to Domestic Manufacturing for DOE-funded R&D is available at https://www.energy.gov/gc/us-manufacturing.

The U.S. Competitiveness Provision is implemented by DOE pursuant to a Determination of Exceptional Circumstances (DEC) under the Bayh-Dole Act and DOE Patent Waivers. See Section IX.

41. Updating Your Portfolio Analysis and Management System (PAMS) Profile

All applicants are encouraged to update their profiles in the PAMS website at https://pamspublic.science.energy.gov regularly, at least annually, to ensure SC has your most up to date information. The PAMS profile now requires that individuals provide responses to the demographic related fields. SC strongly encourages personnel at applicant and recipient institutions, including Principal Investigators (PIs), Co-PIs, and other Key Personnel, to provide their demographic information. By providing your demographic information, you are assisting with SC's continued commitment to advancing diversity, equity, and inclusion in its business practices. Alternatively, for information you wish not to disclose, please select, "Do not wish to provide." Your individual demographic information will not be shared with peer reviewers and the information in your PAMS profile is protected by the requirements established in the Federal Privacy Act of 1974. Aggregate, anonymized demographic information may be shared with confidential review committees who are charged to evaluate the quality and efficacy of SC's business practices. For example, summary statistics of all applicants to or award selections from a particular SC NOFO may be reviewed by a Committee of Visitors.

D. Reference Material

Glossary of Useful Grants and Cooperative Agreement terms

Acquisition cost	*Acquisition cost* means the cost of the asset including the cost to ready the asset for its intended use. Acquisition cost for equipment, for example, means the net invoice price of the equipment, including the cost of any modifications, attachments, accessories, or auxiliary apparatus necessary to make it usable for the purpose for which it is acquired. Acquisition costs for software includes those development costs capitalized in accordance with generally accepted accounting principles (GAAP). Ancillary charges, such as taxes, duty, protective in transit insurance, freight, and installation may be included in or excluded from the acquisition cost in accordance with the non-Federal entity's regular accounting practices.
Administrative requirements	*Administrative requirement*s mean the general business management practices that are common to the administration of all grants, such as financial accountability, reporting, equipment management, and retention of records.

Advance payment	*Advance payment* means a payment that a Federal awarding agency or pass-through entity makes by any appropriate payment mechanism, including a predetermined payment schedule, before the non-Federal entity disburses the funds for program purposes.
Allocation	*Allocation* means the process of assigning a cost, or a group of costs, to one or more cost objective(s), in reasonable proportion to the benefit provided or other equitable relationship. The process may entail assigning a cost(s) directly to a final cost objective or through one or more intermediate cost objectives.
Allocability	*Allocability* means the principle which requires that an expense or service charged must directly benefit and be necessary for the performance of the project; when multiple projects are benefited reasonable proportions must be able to be assigned. See 2 CFR 200.405.
Allowable cost	*Allowable cost* means a cost incurred by a recipient that is: (1) reasonable for the performance of the award; (2) allocable; (3) in conformance with any limitations or exclusions set forth in the Federal cost principles applicable to the organization incurring the cost or in the award documents as to the type or amount of cost; (4) consistent with regulations, policies, and procedures of the recipient that are applied uniformly to both federally supported and other activities of the organization; (5) accorded consistent treatment as a direct or indirect cost; (6) determined in accordance with generally accepted accounting principles; and (7) not included as a cost in any other federally supported award (unless specifically authorized by statute). See 2 CFR 200.403.
Application	*Application* means a request for financial support of a project or activity submitted to DOE on specified forms and in accordance with DOE instructions. Also known as a proposal.
Appropriation Act	*Appropriation act* means the statute that provides the authority for Federal agencies to incur obligations to and make payments out of the U.S. treasury for specified purposes.
Approved budget	The *approved budget* for the Federal award summarizes the financial aspects of the project or program as approved during the Federal award process. It may include either the Federal and non-Federal share or only the Federal share, depending upon Federal awarding agency requirements. It must be related to performance for program evaluation purposes whenever appropriate. See 2 CFR 200.308(a).
Assurance	*Assurance* means a certification by an applicant, normally included with the application or State plan, indicating that the entity complies with, or that it will comply with, a particular requirement if awarded a Federal grant.
Authorized organizational representative	*Authorized organizational representative* means the individual, named by the applicant organization, who is authorized to act for the applicant and to assume the obligations imposed by the Federal laws, regulations, requirements, and conditions that apply to grant applications or grant awards.
Award	*Award* means the provision of funds by DOE, based on an approved application and budget or progress report, to an organizational entity or an individual to carry out a project or activity.
Award documents	*Award documents* means the entirety of the documents describing the legal relationship between DOE and an awardee or recipient. The award documents include an Assistance Agreement and other documents which may be incorporated by reference or as attachments to the Assistance Agreement. The award documents are the official, legally binding document, signed (or the electronic equivalent of signature) by a Contracting Officer that: • notifies the recipient of the award of an award; • contains or references all the terms and conditions of the grant and Federal funding limits and obligations; and, • provides the documentary basis for recording the obligation of Federal

	funds in the DOE accounting system.
Bayh-Dole Act	*Bayh-Dole Act* means a law which encourages universities and researchers to develop their inventions into marketable products; formal citation is Section 6 of the Patent and Trademark Amendment of 1980, Pub. L 96-517 as amended.
Budget	*Budget* means the financial plan for the project or program that the Federal awarding agency or pass-through entity approves during the Federal award process or in subsequent amendments to the Federal award. It may include the Federal and non-Federal share or only the Federal share, as determined by the Federal awarding agency or pass-through entity.
Budget period	*Budget period* means the intervals of time (usually 12 months each) into which a project period is divided for budgetary and funding purposes.
Business officer	*Business officer* means the financial official of the recipient who has primary fiscal responsibility for the grant. Also known as authorized organizational representative.
Capital assets	*Capital assets* means tangible or intangible assets used in operations having a useful life of more than one year which are capitalized in accordance with GAAP. Capital assets include: (a) Land, buildings (facilities), equipment, and intellectual property (including software) whether acquired by purchase, construction, manufacture, lease-purchase, exchange, or through capital leases; and (b) Additions, improvements, modifications, replacements, rearrangements, reinstallations, renovations or alterations to capital assets that materially increase their value or useful life (not ordinary repairs and maintenance).
Carryover	*Carryover* means unobligated Federal funds remaining at the end of any budget period that may be carried forward to another budget period to cover allowable costs of that budget period (whether as an offset or additional authorization). Obligated, but unliquidated, funds are not considered carryover.
Change in scope	*Change in scope* means an activity whereby the objectives or specific aims identified in the approved grant application are significantly changed by the recipient after award. Contracting Officer prior approval is required for a change in scope to be allowable under an award.
Closeout	*Closeout* means the process by which a Federal awarding agency determines that all applicable administrative actions and all required work under an award have been completed by the recipient and the Federal awarding agency.
Competitive segment	*Competitive segment* means the initial project period recommended for support or each extension of a project period resulting from a renewal award.
Conference (domestic or international)	*Conference (domestic or international)* means a symposium, seminar, workshop, or any other organized and formal meeting, whether conducted face-to-face or via the Internet, where individuals assemble (or meet virtually) to exchange information and views or explore or clarify a defined subject, problem, or area of knowledge, a published report results from such meeting.
Consortium or sub-award agreement	*Consortium or sub-award agreement* means a formalized agreement whereby a research project is carried out by the recipient and one or more other organizations that are separate legal entities. Under the agreement, the recipient must perform a substantive role in the conduct of the planned research and not merely serve as a conduit of funds to another party or parties. These agreements typically involve a specific level of effort from the consortium organization's PD/PI and a categorical breakdown of costs, such as personnel, supplies, and other allowable expenses, including F&A costs. The relationship between the recipient and the collaborating organizations is considered a sub-award relationship.
Consultant	*Consultant* means an individual who provides professional advice or services for a fee, but not as an employee of the engaging party. To prevent

	apparent or actual conflicts of interest, recipients and consultants must establish written guidelines indicating the conditions of payment of consulting fees. Consultants also include firms that provide professional advice or services. See 2 CFR 200.459.
Continuation application/award	*Continuation application/award* means a financial assistance request (in the form of an application or progress report) or resulting award for a subsequent budget period within a previously approved project period for which a recipient does not have to compete with other applicants.
Contract	*Contract* means a legal instrument by which a non-Federal entity purchases property or services needed to carry out the project or program under a Federal award. The term as used in this part does not include a legal instrument, even if the non-Federal entity considers it a contract, when the substance of the transaction meets the definition of a Federal award or sub-award (see 2 CFR 200.1 Subaward).
Contractor	*Contractor* means an entity that receives a contract as defined in 2 CFR 200.1 Contract.
Contracting (or Grants) Officer	*Contracting (or Grants) Officer* means a DOE official responsible for the business management aspects of grants and cooperative agreements, including review, negotiation, award, and administration, and for the interpretation of grants administration policies and provisions. COs and GOs are delegated the authority to obligate DOE to the expenditure of funds and permit changes to approved projects on behalf of DOE.
Contracting (or Grants Management) specialist	*Contracting (or Grants Management) specialist* means a DOE staff member who works with a Contracting or Grants Officer and is assigned the day-to-day management of a portfolio of grants and/or cooperative agreements. These activities include, but are not limited to, evaluating grant applications for administrative content and compliance with statutes, regulations, and guidelines; negotiating grants; providing consultation and technical assistance to recipients; and administering grants after award.
Cooperative agreement	*Cooperative agreement* means a type of financial assistance used when there will be substantial Federal scientific or programmatic involvement. Substantial involvement means that, after award, scientific or program staff will assist, guide, coordinate, or participate in project activities.
Cost principles	*Cost principles* means the government-wide principles, 2 CFR 200 Subpart E (or, in the case of commercial organizations, the Federal Acquisition Regulation [48 CFR 31], or, in the case of hospitals, see Appendix IX to Part 200—Hospital Cost Principles, Appendix E, "Principles for Determining Costs Applicable to Research and Development Under Grants and Contracts with Hospitals"), on allowability and unallowability of costs under federally sponsored agreements.
Cost sharing or matching	*Cost sharing or matching* means the portion of project costs not paid by Federal funds (unless otherwise authorized by Federal statute). See also 2 CFR 200.306 Cost sharing or matching.
Deadline	*Deadline* means the published date and/or time that a grant application is to be submitted to the funding agency.
Debarment and suspension	*Debarment and suspension* mean the actions taken by a debarring official in accordance with OMB guidance at 2 CFR 180, "Non-procurement Debarment and Suspension," to exclude a person or organization from participating in grants and other non-procurement awards government-wide. If debarred or suspended, the person or organization may not receive financial assistance (under a grant, cooperative agreement, or sub-award, or contract under a grant) for a specified period of time. Debarments and suspensions carried out pursuant to 2 CFR 376 are distinct from post-award suspension action by an awarding agency. See 2 CFR 901 for DOE implementation.
Direct costs	*Direct costs* mean costs that can be identified specifically with a particular sponsored project, an instructional activity, or any other institutional activity, or that can be directly assigned to such activities relatively easily with a high degree of accuracy. See 2 CFR 200.413.

Disallowed costs	*Disallowed costs* mean those charges to a Federal award that the Federal awarding agency or pass-through entity determines to be unallowable, in accordance with the applicable Federal statutes, regulations, or the terms and conditions of the Federal award.
Domestic organization	*Domestic organization* means a public (including a State or other governmental agency) or private non-profit or for-profit organization that is located in the United States or its territories, is subject to U.S. laws, and assumes legal and financial accountability for awarded funds and for the performance of the grant-supported activities.
Effort	*Effort* means the amount of time, usually expressed as a percentage of the total, which a faculty member or other employee spends on a sponsored project. No one is allowed to spend more than 100% total commitment on all academic activities, including grant-sponsored research, university-sponsored research, teaching, administration, advising and other contracted duties. Effort is indicated on the budget in units of person-months.
Equipment	*Equipment* means tangible personal property (including information technology systems) having a useful life of more than one year and a per-unit acquisition cost which equals or exceeds the lesser of the capitalization level established by the non-Federal entity for financial statement purposes, or $5,000. See also 2 CFR 200.1 Capital assets, Computing devices, General purpose equipment, Information technology systems, Special purpose equipment, and Supplies.
Expanded authorities	*Expanded authorities* means authorization to recipients under certain research grant mechanisms which waives the requirement for prior agency approval for specified actions related to awards. Example: 90-day pre-award spending authority, no cost extensions for up to one additional year, and automatic carryover of unobligated funds from one budget period to the next. The expanded authorities are now contained in Uniform Guidance of 2 CFR 200 as being applicable to all research awards.
Expiration date	*Expiration date* means generally, the date signifying the end of the current project period, after which the recipient is not authorized to obligate grant funds.
Facilities and administrative costs	*Facilities and administrative costs* mean costs that are incurred by a recipient for common or joint objectives and that, therefore, cannot be identified specifically with a particular project or program. These costs also are known as indirect costs.
Federal financial report	*Federal financial report* means submitted on Standard Form (SF) 425, to indicate the status of awarded funds for the period covered. Frequency of reporting is specified in the Reporting Checklist provided as part of the award documents.
Financial assistance	*Financial assistance* means transfer by DOE of money or property to an eligible entity to support or stimulate a public purpose authorized by statute.
Financial status report	*Financial status report* means see Federal Financial Report.
Foreign travel	*Foreign travel* is meant to include travel outside of North America (Canada, Mexico, and the United States) and U.S. territories and possessions (Guam, American Samoa, Puerto Rico, the U.S. Virgin Islands. A trip is considered foreign travel for all legs of the itinerary if the traveler does not return to his or her post prior to departure for a foreign destination. Costs for foreign travel may be restricted by the language of a Funding Opportunity Announcement.
Grant agreement	*Grant agreement* means a legal instrument of financial assistance between a Federal awarding agency or pass-through entity and a non-Federal entity that, consistent with 31 USC 6302, 6304: (a) Is used to enter into a relationship the principal purpose of which is to transfer anything of value from the Federal awarding agency or pass-through entity to the non-Federal entity to carry out a public purpose authorized by a law of the United States (see 31 USC 6101(3)); and not to

	acquire property or services for the Federal awarding agency or pass-through entity's direct benefit or use; (b) Is distinguished from a cooperative agreement in that it does not provide for substantial involvement between the Federal awarding agency or pass-through entity and the non-Federal entity in carrying out the activity contemplated by the Federal award. (c) Does not include an agreement that provides only: (1) Direct United States Government cash assistance to an individual; (2) A subsidy; (3) A loan; (4) A loan guarantee; or (5) Insurance.
Grant-supported project or activity	*Grant-supported project or activity* means those activities specified or described in a grant application or in a subsequent submission that are approved by DOE for funding, regardless of whether Federal funding constitutes all or only a portion of the financial support necessary to carry them out.
Grants.gov	*Grants.gov* (https://www.Grants.gov/) has been designated by the Office of Management and Budget as the single access point for all grant programs offered by 26 Federal grant-making agencies. It provides a single interface for agencies to announce their grant opportunities and for all applicants to find and apply for those opportunities.
Indirect costs (facilities & administrative)	*Indirect (F&A) costs* mean those costs incurred for a common or joint purpose benefitting more than one cost objective, and not readily assignable to the cost objectives specifically benefitted, without effort disproportionate to the results achieved. To facilitate equitable distribution of indirect expenses to the cost objectives served, it may be necessary to establish several pools of indirect (F&A) costs. Indirect (F&A) cost pools must be distributed to benefitted cost objectives on bases that will produce an equitable result in consideration of relative benefits derived.
Institutional base salary	*Institutional base salary* means the annual compensation paid by an organization for an employee's appointment, whether that individual's time is spent on research, teaching, patient care, or other activities. Base salary excludes any income that an individual may be permitted to earn outside of duties for the applicant/recipient organization. Base salary may not be increased as a result of replacing organizational salary funds with grant funds.
Matching or cost sharing	*Matching or cost sharing* means the value of third-party in-kind contributions and the portion of the costs of a federally assisted project or program not borne by the Federal government. Matching or cost sharing may be required by statute or program regulation. Costs used to satisfy matching or cost-sharing requirements are subject to the same policies governing allowability as other costs under the approved budget.
Merit (or peer) review	*Merit (or peer) review* means the process that involves the consistent application of standards and procedures that produce fair, equitable, and objective examinations of applications based on an evaluation of scientific or technical merit or other relevant aspects of the application. The review is performed by experts (reviewers) in the field of endeavor for which support is requested. Merit review is intended to provide guidance to the DOE individuals responsible for making award decisions.
Monitoring	*Monitoring* means a process whereby the programmatic and business management performance aspects of a grant are assessed by reviewing information gathered from various required reports, audits, site visits, and other sources.
NEPA	*NEPA* means the National Environmental Policy Act (NEPA), Public Law 91-190, as amended. NEPA requires Federal agencies to assess the environmental effects of proposed major Federal actions prior to making decisions.
No-cost extension	*No-cost extension* means an extension of time to a project period and/or

	budget period to complete the work of the grant under that period, without additional Federal funds or competition.
Non-Federal share	*Non-Federal share* means when cost sharing or matching is required as a condition of an award, the portion of allowable project/program costs not borne by the Federal government.
Notice of Funding Opportunity (NOFO)	*Notice of Funding Opportunity (NOFO)* means a publicly available document by which a Federal Agency makes known its intentions to award discretionary grants or cooperative agreements, usually as a result of competition for funds. NOFOs may be known as program announcements, requests for applications, notices of funding availability, solicitations, or other names depending on the Agency and type of program. NOFOs can be found at www.Grants.gov. A NOFO may also be known as a solicitation. NOFOs were previously known as Funding Opportunity Announcements (FOAs).
Obligations	*Obligations,* when used in connection with a non-Federal entity's utilization of funds under a Federal award, mean orders placed for property and services, contracts and sub-awards made, and similar transactions during a given period that require payment by the non-Federal entity during the same or a future period.
OMB circulars	*OMB circulars* are government-wide guidance issued to Heads of Federal agencies by the Director of the Office of Management and Budget.
Other significant contributors	*Other significant contributors* mean individuals who have committed to contribute to the scientific development or execution of the project, but are not committing any specified measurable effort (i.e., person months) to the project. These individuals are typically presented at "effort of zero person months" or "as needed." Individuals with measurable effort may not be listed as Other Significant Contributors (OSCs). Consultants should be included if they meet this definition.
Program participant	*Program participants* are the recipients of service or training provided at a workshop, conference, seminar, symposium or other short-term instructional or information-sharing activity funded by an external grant or award, or the training beneficiaries of the project or program funded by an external grant or award. A participant is not involved in providing any deliverable to the recipient or a third party or would not be terminated or replaced for failure to perform.
Participant support costs	*Participant support costs* mean direct costs for items such as stipends or subsistence allowances, travel allowances, and registration fees paid to or on behalf of participants or trainees (but not employees) in connection with conferences, or training projects.
Person months	*Person months* is the metric for expressing the effort (amount of time) PD/PI(s), faculty and other senior/key personnel devote to a specific project. The effort is based on the type of appointment of the individual with the organization, e.g., calendar year, academic year, and/or summer term; and the organization's definition of such. For instance, some institutions define the academic year as a nine (9)-month appointment while others define it as a 10-month appointment.
Pre-application or pre-proposal	*Pre-application or pre-proposal* means a brief outline or narrative of proposed work and sometimes budget, for informal review by a sponsor to determine whether an application should be submitted. Three predominant reasons for requiring submission of a preliminary pre-application are: • Reduce the applicant's unnecessary effort in proposal preparation when the chance of success is very small. This is particularly true of exploratory initiatives where the community senses that a major new direction is being identified, or competitions that will result in a small number of actual awards. • Increase the overall quality of the submission. • Distill the number of applications that will be submitted to the agency and the number of anticipated reviewers needed to review.

Pre-award costs	*Pre-award costs* mean any cost incurred prior to the beginning date of the project period or the initial budget period of a competitive segment (under a multi-year award), in anticipation of the award and at the applicant's own risk, for otherwise allowable costs.
Prior approval	*Prior approval* means written approval from the designated Contracting Officer.
Program Director/ Principal Investigator	*Program Director/ Principal Investigator* means the individual(s) designated by the applicant organization to have the appropriate level of authority and responsibility to direct the project or program to be supported by the award. The applicant organization may designate multiple individuals as program directors/principal investigators (PD/PIs) who share the authority and responsibility for leading and directing the project, intellectually and logistically. When multiple PD/PIs are named, each is responsible and accountable to the applicant organization, or as appropriate, to a collaborating organization for the proper conduct of the project or program including the submission of all required reports. The presence of more than one PD/PI on an application or award diminishes neither the responsibility nor the accountability of any individual PD/PI.
Program income	*Program income* means gross income earned by the non-Federal entity that is directly generated by a supported activity or earned as a result of the Federal award during the period of performance except as provided in 2 CFR 200.307 paragraph (f). (See 2 CFR 200.1 Period of performance.) Program income includes but is not limited to income from fees for services performed, the use or rental or real or personal property acquired under Federal awards, the sale of commodities or items fabricated under a Federal award, license fees and royalties on patents and copyrights, and principal and interest on loans made with Federal award funds. Interest earned on advances of Federal funds is not program income. Except as otherwise provided in Federal statutes, regulations, or the terms and conditions of the Federal award, program income does not include rebates, credits, discounts, and interest earned on any of them. See also 2 CFR 200.407 Prior written approval (prior approval). See also 35 USC 200-212 "Disposition of Rights in Educational Awards" for inventions made under Federal awards.
Program Manager	*Program Manager* means the DOE official responsible for the programmatic, scientific, and/or technical aspects of a grant. The same role is filled by Program Directors, Program Officers, or Project Directors at other Federal agencies.
Progress report	*Progress report* means periodic, frequently annual, report submitted by the recipient and used by DOE to assess progress and to determine whether to provide funding for the budget period that covered by the report.
Project/performance site	*Project/ performance site* means location(s) of where the work described in the research plan will be conducted.
Project period	*Project period* means the total time for which Federal support of a project has been programmatically approved as shown in the award documents; however, it does not constitute a commitment by the Federal government to fund the entire period. The total award period comprises the initial competitive segment, any subsequent competitive segments resulting from a renewal award(s), and extensions.
Proposal	See application.
Re-budgeting	*Re-budgeting* means reallocation of funds available for spending between approved budget categories to allow best use of funds to accomplish the project goals.
Real Property	*Real property* means land, including land improvements, structures and appurtenances thereto, but excludes moveable machinery and equipment.
Recipient	*Recipient* means the organization or individual awarded a grant or cooperative agreement by DOE that is responsible and accountable for the use of the funds provided and for the performance of the grant-supported project or activity. The recipient is the entire legal entity even if a particular

	component is designated in award documents. The recipient is legally responsible and accountable to DOE for the performance and financial aspects of the grant-supported project or activity. Also known as awardee or grantee.
Renewal application	*Renewal application* means an application requesting additional funding for a period subsequent to that provided by a current award. Renewal applications compete for funds with all other peer reviewed applications and must be developed as fully as though the applicant is applying for the first time.
Research	*Research* is defined as a systematic study directed toward fuller scientific knowledge or understanding of the subject studied. See 2 CFR 200.1 Research and Development (R&D).
Research misconduct	*Research misconduct* means fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results, but does not include honest error or differences of opinion. See 10 CFR 733.
SAM.gov	*SAM.gov* is the System for Award Management (SAM) a consolidated service that includes Entity Registration, Assistance Listings, and other services for making, managing, and receiving Federal awards.
Scope of work	*Scope of work* means the aims, objectives, and purposes of a grant; as well as the methodology, approach, analyses or other activities; and the tools, technologies, and timeframes needed to meet the grant's objectives. This includes the research or training plan included with the original grant application, along with any approved modifications.
Senior/Key Personnel	*Senior/Key personnel* means the PD/PI and other individuals who contribute to the scientific development or execution of a project in a substantive, measurable way, whether or not they receive salaries or compensation under the grant. Typically, these individuals have doctoral or other professional degrees, although individuals at the masters or baccalaureate level may be considered senior/key personnel if their involvement meets this definition. Consultants and those with a postdoctoral role also may be considered senior/key personnel if they meet this definition. "Zero percent" effort or "as needed" is not an acceptable level of involvement for Senior/Key Personnel.
Significant re-budgeting	*Significant re-budgeting* means a threshold that is reached when expenditures in a single direct cost budget category deviate (increase or decrease) from the categorical commitment level established for the budget period by more than 25 percent of the total costs awarded. Significant re-budgeting is one indicator of change in scope.
Small business concern	*Small business concern* means a business that meets the regulatory and size requirements established by the SBA at 13 CFR 121.
Solicitation	See Funding Opportunity Announcement.
Subaward	*Subaward* means a legal instrument by which a recipient provides funds (or property in lieu of funds) to an eligible subrecipient (or a lower-tier transaction) to perform a substantive portion of the grant-supported program or project. The term includes such financial assistance when provided by any legal agreement (even if the agreement is called a contract) but does not include any form of assistance which is excluded from the definition of a grant, including the recipient's procurement of property or services needed to carry out the project or program. The term includes consortium agreements.
Subrecipient	*Subrecipient* means a non-Federal entity that receives a subaward from a pass-through entity to carry out part of a Federal program; but does not include an individual that is a beneficiary of such program. A sub-recipient may also be a recipient of other Federal awards directly from a Federal awarding agency.
Supplement	*Supplement* means a request for an increase in support during a current budget period for expansion of the project's scope or to meet increased costs unforeseen at the time of the new or renewal application. A

	supplement may increase support for future years in addition to the current year. Supplements require applications and are subject to administrative and merit review.
Terms and conditions of award	*Terms and conditions of award* means all legal requirements imposed on a grant by DOE, whether based on statute, regulation, policy, or other document referenced in the grant award, or specified by the grant award document itself. The award documents may include both standard and special conditions that are considered necessary to attain the grant's objectives, facilitate post-award administration of the grant, conserve grant funds, or otherwise protect the Federal government's interests.
UEI	*UEI* is the Unique Entity Identifier, a twelve-digit alphanumerical sequence established and assigned by the System for Award Management at https://www.SAM.gov to uniquely identify an entity.
Unallowable costs	*Unallowable costs* mean costs that cannot be charged, directly or indirectly, to Federal awards because the costs are prohibited by law, regulation (including applicable cost principles), or the terms and conditions of award. Costs that are not allowable, allocable, or reasonable are unallowable.
Unliquidated obligation	*Unliquidated obligations* mean, for financial reports prepared on a cash basis, obligations incurred by the non-Federal entity that have not been paid (liquidated). For reports prepared on an accrual expenditure basis, these are obligations incurred by the non-Federal entity for which an expenditure has not been recorded.
Unobligated balance	*Unobligated balance* means the amount of funds under a Federal award that the non-Federal entity has not obligated. The amount is computed by subtracting the cumulative amount of the non-Federal entity's unliquidated obligations and expenditures of funds under the Federal award from the cumulative amount of the funds that the Federal awarding agency or pass-through entity authorized the non-Federal entity to obligate.
Validate	In the context of the data management plan requirements, *validate* means to support, corroborate, verify, or otherwise determine the legitimacy of the research findings. Validation of research findings could be accomplished by reproducing the original experiment or analyses, comparing and contrasting the results against those of a new experiment or analyses, or by some other means.

1. Additional Definitions

COMMERCIALIZATION

This concerns the process of developing markets and producing and delivering products for sale (whether by the originating party or by others). As used here, commercialization includes both Government and private sector markets.

CONSULTANT

A consultant is generally an individual who is not using any institutional or organizational facilities and is acting as a direct agent. The individual usually bills by the hour, submitting invoices. Invoices occasionally include additional direct expenses incurred. Consultants are normally subject matter experts and are not directly supervised by the awardee.

EMPLOYEE

A person listed on the budget form (Section A - Key/Senior Person or Section B - Other Personnel) as an employee of the SBC is required to either (a) be paid using a W-2 form or (b) possess an Internal Revenue Service determination that the person is an employee using

Form SS-8. Persons paid by a 1099 (and not possessing an employee determination using Form SS-8) are to be treated as independent contractors and should be listed on the budget form in Section F - Other Direct Costs.

GRANT AGREEMENT

Grant agreement means a legal instrument of financial assistance between a Federal awarding agency or pass-through entity and a non-Federal entity that, consistent with 31 U.S.C. 6302, 6304:

(a) Is used to enter into a relationship the principal purpose of which is to transfer anything of value from the Federal awarding agency or pass-through entity to the non-Federal entity to carry out a public purpose authorized by a law of the United States (see 31 U.S.C. 6101(3)); and not to acquire property or services for the Federal awarding agency or pass-through entity's direct benefit or use;
(b) Is distinguished from a cooperative agreement in that it does not provide for substantial involvement between the Federal awarding agency or pass-through entity and the non-Federal entity in carrying out the activity contemplated by the Federal award.
(c) Does not include an agreement that provides only:
    (1) Direct United States Government cash assistance to an individual;
    (2) A subsidy;
    (3) A loan;
    (4) A loan guarantee; or
    (5) Insurance.

GRANTEE

Grantee means the organization or individual awarded a grant agreement by DOE that is responsible and accountable for the use of the funds provided and for the performance of the grant-supported project or activity. The grantee is the entire legal entity even if a particular component is designated in award documents. The grantee is legally responsible and accountable to DOE for the performance and financial aspects of the grant-supported project or activity. Also known as awardee or recipient.

HISTORICALLY UNDERUTILIZED BUSINESS ZONE (HUBZONE)

An SBC Meeting the Following Criteria:
Located in a "historically underutilized business zone" or HUBZone area located in one or more of the following:

- A qualified census tract (as defined in section 42 (d)(5)(c)(i)(l) of the Internal Revenue Code of 1986; or
- A qualified "non-metropolitan county" (as defined in section 143(k)(2)(B) of the International Revenue Code of 1986) with a median household income of less than 80 percent of the state median household income or with an unemployment rate of not less than 140 percent of the statewide average, based on U.S. Department of Labor recent data; or
- Lands within the boundaries of Federally recognized Indian reservations.
- Owned and controlled by one or more U.S. citizens
- At least 35 percent of its employees must reside in a HUBZone.

To find out if your business is in a HUBZone, use the mapping utility provided by the U. S. SBA at its HUBZone Contracting website at https://www.sba.gov/hubzone/.

INNOVATION

Something new or improved that has marketable potential, including (1) development of new technologies, (2) refinement of existing technologies, or (3) new applications for existing technologies.

INTELLECTUAL PROPERTY

The separate and distinct types of intangible property that are referred to collectively as "intellectual property," including but not limited to: patents, trademarks, copyrights, trade secrets, SBIR/STTR technical data, ideas, designs, know-how, business, technical and research methods, and other types of intangible business assets, and including all types of intangible assets either proposed or generated by an SBC as a result of its participation in the SBIR or STTR program.

JOINT VENTURE

A joint venture is an association between two or more firms and or individuals to participate jointly in a single business enterprise. There must be a community of interests, a sharing of profits and losses, and, for the purposes of this NOFO, the new entity must qualify as a small business. If a joint venture is selected for award, a DOE Contract Specialist will request a signed agreement from the parties involved. The agreement must state which company will negotiate the award and serve as the main point of contact. See 13 CFR 121.103(h) Affiliation based on joint ventures.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

The National Environmental Policy Act of 1969 (NEPA). The Long Title describes it as follows: "An Act to establish a national policy for the environment, to provide for the establishment of a Council on Environmental Quality, and for other purposes." NEPA requires Federal Agencies to assess and consider potential impacts from Federal actions in their decision-making.

POTENTIAL IMPACT ON THE ENVIRONMENT

DOE understands "potential impact on the environment" to apply if the work described in the application could potentially have any of the impacts identified below:

(1). Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health;
(2). Require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators);
(3). Disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment;
(4). Have the potential to cause significant impacts on environmentally sensitive resources. Environmentally sensitive resources include, but are not limited to:
   i) Property (such as sites, buildings, structures, and objects) of historic, archeological, or

architectural significance designated by a Federal, state, or local government, Federally recognized Indian tribe, or Native Hawaiian organization, or property determined to be eligible for listing on the National Register of Historic Places;

ii) Federally-listed threatened or endangered species or their habitat (including critical habitat) or Federally-proposed or candidate species or their habitat (Endangered Species Act); state- listed or state-proposed endangered or threatened species or their habitat; Federally-protected marine mammals and Essential Fish Habitat (Marine Mammal Protection Act; Magnuson- Stevens Fishery Conservation and Management Act); and otherwise Federally-protected species (such as the Bald and Golden Eagle Protection Act or the Migratory Bird Treaty Act);

iii) Floodplains and wetlands, as defined in 10 CFR 1022.4, "Compliance with Floodplain and Wetland Environmental Review Requirements: Definitions," or its successor;

iv) Areas having a special designation such as Federally- and state-designated wilderness areas, national parks, national monuments, national natural landmarks, wild and scenic rivers, state and Federal wildlife refuges, scenic areas (such as National Scenic and Historic Trails or National Scenic Areas), and marine sanctuaries;

v) Prime or unique farmland, or other farmland of statewide or local importance, as defined at 7 CFR 658.2(a), "Farmland Protection Policy Act: Definitions," or its successor;

vi) Special sources of water (such as sole source aquifers, wellhead protection areas, and other water sources that are vital in a region); and

vii) Tundra, coral reefs, or rain forests; or

(5). Involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species.

In addition, DOE understands "potential impact on the environment," to apply if the work described in the application could potentially have any of the impacts identified below:

Any other high consequence impacts to the environment which have any possibility for high consequence impacts to human health (e.g., use of human subjects, Biosafety Level 3-4 laboratory construction/operation, manufacture or use of certain nanoscale materials which are known to impact human health, or any activities involving transuranic or high level radioactive waste or materials or exposure to any radioactive materials beyond de minimis levels) or:

a) Have extraordinary circumstances (i.e., scientific or related public controversy) related to the significance of environmental effects [see 10 CFR 1021.410(b)(2)];

b) Are connected to other actions with potentially significant impacts [see 10 CFR 1021.410 (b)(3)]; or

c) Are related to other nearby actions with the potential for cumulatively significant impacts [see 10 CFR 1021.410 (b)(3)].

RESEARCH OR RESEARCH AND DEVELOPMENT (R&D)

Research or R&D is any scientific or engineering activity which is (1) a systematic, intensive study directed toward greater knowledge or understanding of the subject; (2) a systematic study directed specifically toward applying new knowledge to meet a recognized need; and/or (3) a systematic application of knowledge toward the production of useful materials, devices,

and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements.

RESEARCH INSTITUTION

A research institution is one that has a place of business located in the United States, which operates primarily within the United States or which makes a significant contribution to the U.S. economy through payment of taxes or use of American products, materials or labor, and is:

1) A non-profit institution as defined in section 4(3) of the Stevenson-Wydler Technology Innovation Act of 1980 (that is, an organization that is owned and operated exclusively for scientific or educational purposes, no part of the net earnings, which benefits any private shareholder or individual); or
2) A Federally funded R/R&D center (FFRDC) as identified by the National Science Foundation (NSF) in accordance with the Federal Acquisition Regulation issued in accordance with section 35(c)(1) of the Office of Federal Procurement Policy Act (or any successor regulation) may be included as a research institution. The Master Government List of FFRDCs is accessible at https://www.nsf.gov/statistics/ffrdclist/.

- A non-profit institution can include hospitals and military educational institutions if they meet the definition above.
- Research institutions may include a non-profit college or university.
- DOE FFRDCs include Ames National Laboratory, Argonne National Laboratory, Brookhaven National Laboratory, Fermi National Accelerator Laboratory, Idaho National Laboratory, Lawrence Berkeley National Laboratory, Lawrence Livermore National Laboratory, Los Alamos National Laboratory, National Renewable Energy Laboratory, Oak Ridge Institute for Science and Education, Oak Ridge National Laboratory, Pacific Northwest National Laboratory, Princeton Plasma Physics Laboratory, Sandia National Laboratories, Savannah River National Laboratory, SLAC National Accelerator Facility, and the Thomas Jefferson National Accelerator Facility. DOE-sponsored FFRDC's may be viewed by selecting the Department of Energy under the Sponsoring agency tab at https://www.nsf.gov/statistics/ffrdclist/.
- Research institutions may include government-owned, government-operated facilities. However, for this NOFO, the National Energy Technology Laboratory (NETL) may not participate as a research institution on topics managed by the Office of Fossil Energy listed in the table below.

Topic Title
ADVANCED FOSSIL ENERGY AND CARBON MANAGEMENT TECHNOLOGY RESEARCH
ADVANCED FOSSIL ENERGY CROSSCUTTING RESEARCH
ADVANCED FOSSIL ENERGY TECHNOLOGY RESEARCH
ADVANCED SUBSURFACE ENERGY TECHNOLOGIES
RARE EARTH ELEMENTS

RESEARCH MISCONDUCT

Research misconduct means fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results, but does not include honest error or differences of opinion. 2 CFR 910.132 Research misconduct.

SOCIALLY AND ECONOMICALLY DISADVANTAGED SMALL BUSINESS

A socially and economically disadvantaged small business is one:

- That is at least 51 percent owned by (i) an Indian tribe or a native Hawaiian organization, or (ii) one or more socially and economically disadvantaged individuals; and,
- Whose management and daily business operations are controlled by one or more socially and economically disadvantaged individuals. A socially and economically disadvantaged individual is defined as a member of any of the following groups: African Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Subcontinent Asian Americans, other groups designated from time to time by the Small Business Administration (SBA) to be socially disadvantaged, or any other individual found to be socially and economically disadvantaged by SBA pursuant to section 8(a) of the Small Business Act, 15 U.S.C. 637(a).

SUBCONTRACT

A subcontract is any agreement, other than one involving an employer-employee relationship, entered into by the recipient of a Federal Government award, calling for supplies or services required solely for the performance of the original award.

WOMAN-OWNED SMALL BUSINESS

A woman-owned small business is a small business that is at least 51 percent owned by a woman or women who also control and operate it. "Control" in this context means exercising the power to make policy decisions. "Operate" in this context means being actively involved in the day-to-day management.

2. Working with National Labs, Universities, Research Institutions, and Other Subcontractors

DOE USER FACILITIES

DOE operates a number of major scientific user facilities to serve researchers from universities, national laboratories, and industry. These facilities enable the acquisition of new knowledge that often cannot be obtained by any other means. Thousands of researchers collaborate with these facilities and analyze their respective data from the experiments to publish new scientific findings in peer-reviewed journals. These facilities may be found at the following web addresses: https://science.osti.gov/bes/suf/User-Facilities and https://science.osti.gov/ber/Facilities/User-Facilities.

Potential applicants to the SBIR or STTR programs should consider whether the use of any of these facilities would contribute to the scientific efforts proposed in either Phase I or II. For approved experiments (access to these facilities is through a peer-reviewed system), operating time is available without charge to those scientists whose intent is to publish their results in the open literature. If the investigator wishes to perform proprietary research, the user must

pay the full-cost recovery rate with private funds (not SBIR/STTR funds) for facility usage; in return, the facility will treat all technical data generated as proprietary, and the user may take title to any inventions resulting from the research. Information on other laboratory facilities which may be available on a case- by-case basis may be obtained through the Federal Laboratory Consortium Locator or directly from the DOE laboratory involved.

Use of Federal Facilities or Personnel, e.g., National Nuclear Security Administration (NNSA) Plants and Sites

The SBA may issue a case-by-case waiver to DOE or other Federal Government agency to permit the applicant to use a Federal facility or personnel, after review of the applicable agency's waiver request to the SBA. The applicant must submit to its point of contact at the Federal facility, as soon as possible, before the application due date, a letter from the SBC Official explaining why the SBIR/STTR research project requires the use of the facility or personnel, including data that verifies the absence of non- Federal facilities or personnel capable of supporting the research effort. The applicable agency will provide to the SBA: a) the applicant's explanation and b) agency's statement, signed by the appropriate Government official at the facility, verifying that the facility will be available for the required effort and that the agency will not and cannot fund the use of the facility or personnel for the SBIR/STTR project with non-SBIR/STTR money. DOE cannot guarantee that a waiver will be obtained from SBA. A waiver must be obtained before award. Federal facilities designated as Federal (National) laboratories are exempt from this waiver requirement.

Identifying Institutions

Experts at institutions such as DOE contractor-operated national laboratories, universities, colleges, or other research institutions, may be consulted during the preparation of the application. Any of these institutions may also serve as a subcontractor to SBIR/STTR Phase I or Phase II projects, providing technical expertise, facilities, or equipment. In such cases, the SBC must have the necessary expertise to direct the project.

For STTR, the SBC must conduct cooperative R&D with a research institution (see definition list). An alliance between the SBC and a research institution must be formed before submitting the application. Awards will be awarded to the applicant, which will receive all funding for the project and disperse the appropriate funds to the research institution.

A list of DOE National Laboratories and relevant small business contacts is available at https://science.osti.gov/sbir/Applicant-Resources/National-Labs-Profiles-and-Contacts. For help in contacting personnel at other Federal agency laboratories, go to https://www.federallabs.org, or contact the FLC Management Support Office by, Phone: (856) 667-7727 or email: flcmso@utrs.com.

Scientific and Technical Information Resources

Applicants may want to obtain scientific and technical information related to their proposed effort as background or for other purposes. Sources of this information are listed in the references for each technical topic and below (https://science.osti.gov/sbir/Funding-Opportunities/FY-2024).

National Technical Information Service – Reports resulting from Federal research and those

received from exchange agreements with foreign countries and international agencies are available to the public in both paper copy and microfiche through the National Technical Information Service. They may be ordered electronically from https://www.ntis.gov/ or by phone at 1-800-553-6847.

DOE Office of Scientific and Technical Information (OSTI) - OSTI is responsible for fulfilling the requirements of the Energy Policy Act of 2005 to maintain "… publicly available collections of scientific and technical information resulting from research, development, demonstration, and commercial application activities supported by the Department." OSTI collects, preserves, and disseminates research results via web-based information systems developed on behalf of DOE.

SBIR and STTR applicants may obtain scientific and technical information related to their proposed effort as background or for other purposes. Sources of this information are listed in the references for each technical topic and below.

National Technical Information Service – Reports resulting from Federal research and those received from exchange agreements with foreign countries and international agencies are available to the public in both paper copy and microfiche through the National Technical Information Service. They may be ordered electronically from https://www.ntis.gov/ or by phone at 1-800-553-6847.

DOE Office of Scientific and Technical Information (OSTI) - OSTI is responsible for fulfilling the requirements of the Energy Policy Act of 2005 to maintain "… publicly available collections of scientific and technical information resulting from research, development, demonstration, and commercial application activities supported by the Department." OSTI collects, preserves, and disseminates research results via web-based information systems developed on behalf of DOE.

SBIR and STTR applicants may obtain information from the following OSTI sources, available via the web at https://www.osti.gov or at the specific web addresses below.

- Information Bridge (https://www.osti.gov/bridge), over 125,000 searchable full-text documents reporting results of DOE-funded research.
- Energy Citations Database (https://www.osti.gov/energycitations), over 2 million searchable citations covering disciplines of interest to DOE from 1948 to the present, with links to full-text when available.
- E-print Network (https://www.osti.gov/search/eprints), which offers single-query access to a network of scientific and technical information and communication, searching more than 900,000 manuscripts, scholarly papers, and other scientific documents residing on approximately 35,300 websites and databases worldwide, containing over 5.5 million e-prints in basic and applied sciences.
- DOE R&D Accomplishments (https://www.osti.gov/accomplishments), a central forum for information about the outcomes of past DOE R&D.

Other Resources

Literature and database searches for abstracts, publications, patents, lists of Federal research in progress, and names of potential consultants in the specific research area can be obtained at

good technical libraries (especially those of universities), and from some state organizations.

Science.gov (https://www.science.gov/), a web portal providing single-query search of more than 50 million pages of science information and research results from DOE and 11 other Federal science agencies.

Technical Assistance for Application Preparation and Project Conduct - SBCs may wish to contact their local National Institute of Standards and Technology Hollings Manufacturing Extension Partnership (MEP) for manufacturing and other business-related support services.

The MEP works with small and mid-sized companies to help them create and retain jobs, increase profits, and save time and money. The nationwide network provides a variety of services, from business development assistance to innovation strategies to process improvements and the identification of commercialization opportunities. MEP is a nationwide network of locally managed extension centers with over 1,400 technical experts - located in every state. To contact an MEP center, call 1-800-MEP-4- MFG (1-800-637-4634) or visit MEP‘s website at https://www.nist.gov/mep.