

Focus BROAD AGENCY ANNOUNCEMENT

49100426R0009

National Science Foundation (NSF)

Establishing Consortia to Advance Energy-Water Security

I. PROGRAM:

1.1 Description

The primary objective of the National Science Foundation's Energy Water Security Initiative (EWSI) is to secure American energy and national infrastructure resilience by producing measurable reductions in vulnerabilities where water scarcity threatens energy production, baseload stability, and industrial water extraction. This effort aims to accelerate deployment of technical solutions, with a priority focus on the systemic crisis within the Colorado River Basin.

The NSF Energy Water Security Initiative seeks to develop the critical framework needed for research and development and accelerated, high-impact deployment. This initiative implements a two-phase program. Phase 1 awardees receive resources to develop consortia comprising multi-sector partnerships that can deliver on the goals of this initiative. Consortia should include regional partners and provide the collaborative infrastructure needed to accelerate development and deployment of technical capabilities. Phase 2 awardees will receive significant resources to expand the scale of projects leading to rapid completion and deployment of secure, public-domain technologies. The NAICS code for this BAA is 813920 (Professional Organization), which is a consortium focused on promoting professional research interests.

1.2 Overview

The U.S. National Science Foundation is an independent federal agency that supports science and engineering in all 50 states and U.S. territories. NSF was established in 1950 by Congress to promote the progress of science, advance the national health, prosperity and welfare, and secure the national defense. Our investments in science and engineering research and development aim to produce advancements for the American people.

This BAA is soliciting Phase 1 projects to develop consortia to produce measurable reductions in vulnerabilities where water scarcity threatens reliable energy production, baseload stability, and industrial water extraction. This effort prioritizes accelerating deployment of technical solutions, with a priority focus on the Colorado River Basin. Priority program outcomes are (1) Water for Energy Reliability and Reservoir Resilience and (2) Energy-Water Efficiency and Industrial Success.

Illustrative technical workstreams under the priority program outcome areas include:

- AI-informed predictive modeling for hydropower stability and federal reservoir elevation management.
- Advanced reservoir evaporation suppression technologies (physical or chemical) to preserve federal water assets in arid regions.
- Low/no water-cooling technologies for baseload thermal power generation.
- Coupled water-energy system modeling (high-performance computing) for forecasting scarcity-to-generation risk.
- Engineered or bioengineered aquifer storage and recovery systems for seasonal industrial load balancing.

- Grid-load management via high-volume water conveyance (utilizing pumping infrastructure as grid-balancing or "virtual battery" load assets).
- Closed-loop, recycled-water cooling systems for exascale data centers and high-density industrial manufacturing.
- Modular atmospheric water capture for remote industrial site security and decentralized resilience.
- Decreasing energy intensity for industrial-scale brackish groundwater desalination and municipal wastewater recycling.
- Resource and critical mineral recovery from industrial wastewater streams to secure domestic supply chains.
- Scalable technologies for the treatment and beneficial reuse of produced water associated with hydrocarbon production in water-scarce regions.

II. AWARD INFORMATION:

2.1 Anticipated Award Date

It is anticipated that awards will be issued within 12 months of issuance of this BAA.

2.2 Anticipated Funding for the Program

Although subject to the availability of funding, it is anticipated that this BAA will have up to \$50 million available for Phase 1 awards. This is projected, not an assured, funding and is subject to Government discretion.

2.3 Type of Contract/Instrument

The Government reserves the right to award procurement contracts (Firm Fixed-Price) to appropriate parties. This BAA strongly encourages Firm-Fixed Price (FFP) pricing structures; BAA proposers request for any other type of contract will be evaluated and a justification considered against program requirements and reasonability. However, a FFP structure will be utilized to the maximum extent practicable. Under the use of the BAA with Peer or Scientific Review must only be for the acquisition of basic and applied research, as well as that part of development not related to developing a specific system or hardware procurement (see FAR 35.102(a)).

III. ELIGIBILITY INFORMATION:

This BAA is being issued on an unrestricted basis with respect to the types of organizations that may apply. Any responsible source (excluding foreign entities) may submit a white paper for consideration. Eligible entities include, but are not limited to, universities or institutions of higher education, hospitals, non-profit organizations, private individuals, corporations, and businesses or commercial organizations. **All offerors must be registered in the Federal Government's System for Award Management (SAM) prior to submitting a white paper (www.sam.gov).** Offeror may submit multiple white papers in response to this BAA but may only submit one white paper under each priority outcome area.

Small Disadvantaged (SD), Service-Disabled Veteran Owned Small Business (SDVOSB) Concerns, Veteran-Owned (VO), Woman-Owned (WO), Economically Disadvantaged Women-Owned, and Historically Underutilized Business Zone (HUBZone) Small Business Concerns, Historically Black Colleges and Universities (HBCUs) and Minority Institutions (MIs) are encouraged to submit White Papers on their own and/or in collaboration with others. No portion of this BAA will be set aside or reserved exclusively for any of the groups identified above. The NAICS code for this BAA is 813920 (Professional Organization), which is a consortium focused on promoting professional research interests.

Federally Funded Research and Development Centers (FFRDCs) are not eligible to be the lead or perform more than 20% of work under any subsequent award as a subcontractor. Any FFRDC participation must include documented approval from their sponsoring agency.

IV. SUBMISSION DETAILS:

NSF expects to make multiple Phase 1 awards as a result of this BAA. Awards may be of any dollar value up to \$10 Million for 12 months duration. NSF anticipates a later BAA for Phase 2 awards that will expand and scale efforts to enhance American energy-water security.

The NSF will not issue paper copies of this announcement. NSF provides no funding for reimbursement of proposal development costs. All proposals will be treated as sensitive, competitive information.

Awards are subject to the availability of funds. No funding provision or commitment can be made at the time of award for phased or expanded work or projects beyond the initial or base phase funded at the time of award that the applicant may propose in its submissions. If appropriated funds are authorized, NSF may, at its discretion, provide additional funding for expanded effort under existing awards.

The NSF reserves the right to fund all, some, one, or none of the proposals submitted, and may incrementally fund any or all awards under this BAA. The Contracting Officer will have the ultimate authority and responsibility to make final scope determinations for selections of proposals that will not be totally funded to ensure the portion selected meets the solicited requirements. In addition, the Government reserves the right to create and maintain a reserve list of proposals for potential funding, if additional funding becomes available.

Offers considered unresponsive to the Government's requests for information in a timely manner, defined as meeting government deadlines established and communicated with the request, may be removed from further consideration.

Due Dates for Questions, Phase 1 White Papers and Phase 2 Proposals are as follows:

1. Questions shall be submitted by 5 pm ET on **07/30/2026** to Bethany Stutler via email at BAAWaterInitiative@nsf.gov Submission of questions does not guarantee the questions will be answered.
2. Phase 1 White Papers shall be submitted by 5 pm ET on **08/06/2026** to Bethany Stutler via email at BAAWaterInitiative@nsf.gov
3. Due Date for Phase 2 Proposals will be specified by the Government if/when the Government sends your entity an invite to submit a Phase 2 Proposal.

The process for Phase 1 consists of two steps described below.

4.1 Step 1 - White Papers

In preparing white papers, Offerors are required to adhere to the guidelines outlined in the following paragraphs to be accepted for evaluation. An Offeror may submit multiple white papers in response to this BAA but may only submit one white paper under each priority outcome area.

White papers must be prepared using single-spaced text in 12-point Times New Roman font, and feature margins that are at least one-inch wide on the top, bottom and sides, to allow for printing on 8.5 x 11-inch paper. Points of emphasis may be indicated using bolding, underlining and italics. The header of each page must

feature the Offeror's name, the applicable BAA number, and project priority area. When including graphic presentations, you do not have to adhere to the same font and spacing stipulations as the text.

The submittal must be **no more than five single-sided pages** excluding the cover page, and Rough Order of Magnitude Estimate (ROM estimate) cost, which is only a "ballpark" cost estimate including labor, and travel (if applicable).

The white paper must be in the following format:

Cover Page (Does not count toward the page limit)

The cover page (not to exceed one page) of the white paper must include the following information:

- Working title of the proposed project;
- BAA priority outcome area
- Name, phone number, mailing, and email address for the principal technical and contractual points of contact;
- Organization Type
- Confirmation of a current SAM.gov registration for your organization
- Names and addresses for project partners, if applicable;
- Date of submittal; and,
- Proprietary data restrictions, if any.

Proposed Project Approach

Background

Include a description of the technical development problem that the consortium is designed to solve and a statement that conveys the Offeror's vision for the consortium. A description of what makes the proposed activity innovative must be included. In addition, the Offeror should estimate the probability that the technical solutions that are developed will be deployable and adopted in the Energy-Water sector, along with a rationale for that estimate.

Scope of Work

Describe proposed plan for consortium development, technical solutions for reducing energy-water vulnerabilities, testing, and analysis activities with enough detail to portray the range of the consortium's proposed activities. However, a detailed work breakdown is not necessary. Major progress milestones and associated deliverables are not required.

Project's relative importance

State the short, medium- and long-term effects and importance of the proposed project along with the project's impact on energy and water security in the Colorado River Basin. Describe the importance of these outcomes in the context of the technical readiness level and deployability, as well as how these outcomes address the goals outlined in the description of the research topic.

Schedule and Price Estimate

Major milestones for the project must be included, in terms of weeks, from the project's start. A summary of the ROM (ballpark) price estimate, including labor, and travel (if applicable) must be included in this section.

- Schedule
The period of performance will be for up to 12 months.

- **Price Estimate**
Offerors should include a preliminary and summary level cost estimate to accomplish the technical approach described. Awards may be of any dollar value up to \$10,000,000.

4.2 Full Proposals (Step 2) (ONLY IF REQUESTED BY NSF)

In accordance with the evaluation methodology procedures outlined in Section 5 of this BAA, if a White Paper is evaluated and determined to have merit, the NSF will request the Offeror submit a Full Proposal. The full proposal must build on the contents of the associated White Paper and include any modifications agreed upon during discussions between the Offeror and NSF. Full proposals must include additional content and greater detail than what was provided within the White Paper. All proposals submitted in accordance with the terms and conditions of the BAA will be evaluated. NSF reserves the right to return unevaluated, or evaluate as is, any submissions that are incomplete or fail to respond to the technical requirements of the BAA.

NOTE: It is expected that full proposal contents described in section 4.2.1 shall be submitted as a single .pdf document.

4.2.1 Step 2 - Full Proposal Content

i. ***Cover Sheet and Project Summary:*** (Limited to one page)

Full proposals are required to include a cover page containing the following information:

- Title of the proposed project;
- BAA reference number;
- The words "Full Proposal" written below the project title;
- DUNS;
- TIN;
- Proposal Validity Period (minimum 180 days);
- Exceptions Taken;
- Points of Contact (Name, Email Address, Phone Number);
- Organization addresses for project partners;
- Date of submittal; and,
- Proprietary data restrictions, if any.

ii. ***Project Description:*** (Limited to 15 pages)

The project description should include the following Objectives in the following order (a through d). The Project Description must be a single PDF for submission.

Objectives and Significance of the Proposed Activity

a) **Background and Approach**

Describes the Offeror's vision for the fully developed consortium and its intended impact on Energy and Water Security in the Colorado River Basin.

The Offeror is required to provide a detailed description of the work that will be performed, in chronological order. The project approach should include activities designed to integrate researchers, regional partners and members of the energy and water industry either through participation in the consortium and/or technical development and/or testing of deployable solutions. It should describe the steps, tasks, and activities that are critical for achieving the anticipated results. The Offeror is required to describe all deliverables, presentations, demonstrations, tests, and periodic reports. The projected probability that the consortium

will be able to deploy solutions should be included, along with a timeline and rationale for the probability.

The project approach should also outline the procedures that will be deployed to ensure quality. A risk assessment for the future deployment of the technological solutions should also be included.

Identify any relevant past research and describe capabilities, work, and significant accomplishments in areas associated with the proposed project or closely related areas.

- b) Partnerships including a Roles and Responsibilities Table: Describe how stakeholders from multiple kinds of organizations, including academic and non-academic partners, are poised to form deep and diverse partnerships in support of the consortium. Describe the roles of different partners and team members in developing deliverables. The Roles and Responsibilities Table should also clearly identify the roles and responsibilities of all individuals, and major groups and entities included in the project. The inclusion of a qualified project manager for effective oversight is strongly encouraged for projects.
- c) Coordination Plan: Describe a mechanism for how collaboration and team effectiveness will be promoted.
- d) Operational Proximity: Selection may prioritize recipients able to leverage proximity to federal facilities and the Colorado River Basin. Direct integration with, or adjacency to, existing federal water and power infrastructure to validate real-world performance would be optimal, if feasible.

iii. ***Biographical Sketches / Resumes*** (Limited to 3 pages each)

A separate biographical sketch / resume must be provided for everyone designated as PI / PD, co-PI /co-PD, or Senior Personnel. All biographical sketches / resumes should be consolidated into a single PDF for submission.

iv. ***Letters of Collaboration:***

Letters of support or endorsement for the project are not acceptable and will be cause for return without review. Statements from individuals whose role is discussed in the Project Description as providing assistance or collaboration to the project and are substantive in nature must verify their participation and role with a document in the following format.

To: Water Security Initiative Program Director(s),

By signing below, I acknowledge that I will provide the assistance or collaborate as indicated in the proposal, entitled " _____ " with _____ as the Principal Investigator. I agree to undertake the tasks assigned to me, as described in the proposal, and I commit to provide or make available the resources described in the proposal.

Signed: _____ Print Name: _____
Date: _____ Organization: _____

NOTE: There is no limit on the number of letters of collaboration, however, all Letters of Collaboration must be consolidated into a single PDF for submission.

Priority will be placed on the quality and significance of the collaboration, and the role and involvement of the collaborator must be evident from relevant sections of the project description.

v. **Utility Integration:** a signed Memorandum of Understanding (MOU) with regional utility providers for water, electricity, grid-interface testing, and related industrial applications would be preferred.

vi. **Data Management Plan:** (Limited to two pages).

Proposals shall address within the Data Management Plan plans for data-sharing across the team, with other teams, and with the general public, during the project and after its completion as well. The Data Management Plan should be submitted as a single PDF.

vii. **Flexibility to Ensure Public Sector Sovereignty over IP:** To ensure national resilience and rapid scaling of technical outputs, NSF encourages projects that favor open-access or public-domain licensing models. Specifically, NSF encourages projects that allow states, regional utilities, and industrial partners to adopt and scale innovations in a manner that minimizes licensing barriers.

viii. **Price Proposal Budget and Budget Justification for Firm-Fixed Price Proposal:** (Limited to five pages)

The offeror will provide a breakdown of all costs by cost category that constitute the proposed firm-fixed price ; as stated previously, this BAA strongly encourages FFP pricing structures; BAA proposers request for any other type of contract will be evaluated and a justification considered against program requirements and reasonability. The proposed firm-fixed price shall include a milestone payment schedule.

Per FAR 15.403-4(a), certified cost or pricing data is required for contract actions expected to exceed \$2.5M.

Note that

- **Direct Labor** – Individual labor category or person, with associated labor hours and unburdened direct labor rates.
- **Indirect Costs** – Fringe benefits, overhead, G&A, etc. Include base amount and rates. Include the basis for determining these rates (Government issue indirect cost rate agreement, etc.)
- **Materials, supplies and equipment** - Description and cost of materials, supplies, and equipment, to include the basis of the cost estimate (e.g., historical data, competitive market quotes, and in-house transfers). Specific mention should be made of any highly specialized or costly test equipment or supplies needed to accomplish the project.
- **Travel and Transportation**– Detailed information including the number of trips, number of travelers, destinations, duration, etc.
- **Subcontractor Costs** – A cost proposal as detailed as the offeror's cost proposal will be required to be submitted for each subcontractor.
- **Consultant** – Provide consultant agreement or other document which verifies the availability of the consultant and the proposed loaded daily/hourly rate.
- **Other Direct Costs** – Particularly any proposed items of equipment or facilities. Equipment and facilities generally must be furnished by the contractor/recipient. Justifications must be provided when Government funding for such items is sought.
- **Miscellaneous** - Identification of any other direct or indirect cost elements not identified elsewhere. For each indirect rate (identified here or elsewhere), indicate if the proposed indirect rate and allocation base have been approved by a government audit or cognizant agency for use in proposals and when the rate(s) was approved and the name of and telephone number of the cognizant auditor or approving official. Minimizing Federal Capital Liabilities: Federal funds shall not be used for the construction of new, federally owned test beds or research real estate. NSF encourages operational proximity to existing federal infrastructure and the use of current federal assets as "live laboratories."

ix. Supplemental Information:

a) Requested Procurement Instrument and Pricing Arrangement

The offeror shall include, in the cost/price budget justification narrative, a summary of the recommended procurement instrument (e.g., contract or “other arrangement”). Note, only contracts or other arrangements will be awarded as a result of this BAA. The Offeror shall also specify the requested pricing arrangement (e.g., fixed-price) and the rationale for its use. If the offeror is seeking an “other arrangement,” (similar in nature to an “other transaction”) it must explain to NSF the basis for seeking the other arrangement and the areas of regulatory relief requested by the offeror. The NSF will consider awarding another arrangement only if it is in the best interests of NSF.

b) Subcontracting Plan

Any offeror, other than small businesses, submitting a proposal for an award anticipated in excess of \$900,000.00, must submit a subcontracting plan in accordance with FAR 19.109 or if no subcontracting opportunities exist, a statement to that effect. This information, if applicable, must be included in the Phase 2 full proposal. Pursuant to Section 8(d) of the Small Business Act (15 U.S.C. § 637(d)), it is the policy of the Government to enable small business and small disadvantaged business concerns to be considered fairly as subcontractors to contractors performing work or rendering services as prime contractors or subcontractors under Government contracts, and to assure that prime contractors and subcontractors carry out this policy.

A subcontracting plan identifies the offeror's approach to awarding subcontracts to small business, small disadvantaged business, women-owned small business, service-disabled veteran owned small business, and Historically Underutilized Business Zone (HUBZone) small business concerns, and Historically Black Colleges and Universities/Minority Institutions (HBCU/MI) on this effort. An approved master subcontracting plan may be submitted in lieu of an individual subcontracting plan. The offeror must demonstrate how small business concerns will be used in the performance of the contract. The plan must also specify how the Offeror will identify small business concerns throughout contract performance that can be added to the contract team. The emphasis of the plan must be to maximize small business participation to the maximum extent practicable.

If an FFRDC is proposed as a subcontractor, the FFRDC shall check with their cognizant Contracting Office to determine if their sponsoring agreement allows them to compete for this requirement. A statement affirming the FFRDC can compete as a subcontractor shall be included in the proposal.

c) Past Performance

The Government reserves the right to perform a past performance review before awarding a contract. Sources for the review may include the U.S. Federal Government’s Past Performance Information Retrieval System, and Government program managers and contracting officers who are familiar with the Offeror’s relevant past performance.

V. EVALUATION

5.1 White Paper Evaluation Criteria

An interested party must address the evaluation criteria by providing sufficient information and by keeping the entire paper within the five (5) page limit (excluding cover page and ROM).

White papers will be evaluated for:

- Project Merit,
- Offeror’s Capabilities.

Specifics on the evaluation criteria are as follows:

5.1.1 Project Merit

- The submission includes sound technical and management approach to addressing energy and water security.
- The Offeror has demonstrated understanding of consortium development, technical solutions for reducing energy-water vulnerabilities and the challenges that face the Colorado River Basin.
- The white paper clearly states the challenge to be addressed and illustrates how the project will resolve it.
- The project scope of work, tasks, and milestones are clearly identified.
- The project directly and clearly addresses Water for Reliability and Reservoir Resilience and/or Energy-Water Efficiency and Industrial Success.

5.1.2 Offeror's Capabilities

- Feasibility of proposed work (within time, budget and skill set).
- Degree to which the scope of work, tasks, and milestones support the goals and objectives of the project.
- Degree to which the offeror's team, including key personnel, and team organization partners have the appropriate experience that relates to the proposed work and will support a successful outcome.

The Energy Water Security initiative has a preference for Offerors located in EPSCoR jurisdictions. In addition, Offerors that are able to partner with existing federal water and power infrastructure to validate real-world performance would be optimal, if feasible. An Offeror providing a white paper deemed worthy of further consideration, and meeting the criteria of this BAA, may be notified with possible suggestions for minor changes in scope and detailed guidelines for submitting a full proposal.

5.2 Full Proposal Evaluation and Award (for Full Proposals):

The National Science Foundation strives to invest in a robust and diverse portfolio of projects that creates new knowledge and enables breakthroughs in understanding across all areas of science and engineering research and education.

Each proposal will be evaluated on its own merit without regard to other proposals submitted under this announcement. All awards are subject to the availability of funds. All Offerors will receive written notification of the final decision regarding their proposal. If selected for award, the Contracting Officer will contact the Offeror with further instructions, including negotiation procedures, if needed.

VI. PROPOSAL EVALUATION INFORMATION:

6.1 Evaluation Criteria

6.1.1 Technical Merit

- The proposal includes sound technical and management approach to addressing energy and water security.
- The offeror demonstrates a strong understanding of consortium development, technical solutions for reducing energy-water vulnerabilities and the challenges that face the Colorado River Basin.
- The proposal clearly states the energy and water security challenge (Water for Reliability and Reservoir Resilience and/or Energy-Water Efficiency and Industrial Success) to be addressed and illustrates how the project will resolve it.

- The project scope of work, tasks, and milestones are clearly identified.

6.1.2 Offeror's Capabilities

- Feasibility of proposed work (within time, budget and skill set).
- Degree to which the scope of work, tasks, and milestones support the goals and objectives of the project.
- Degree to which the offeror's team, including key personnel, and team organization partners have the appropriate experience that relates to the proposed work and will support a successful outcome.
- Partner roles and responsibilities in the project should be clearly outlined.
- The comprehensiveness of the project management plan.
- Strength of plans for communicating results with key stakeholders and partners

6.2 Award/Funding Decisions

Proposals submitted to this BAA will be evaluated in accordance with the evaluation criteria specified. Multiple awards may be made and are dependent upon the technical merit of the submission(s), how well it fits within the Energy Water Security Initiative, and the availability of funding.

6.3 Award Notification

NSF will provide notification of selection and non-selection. However, NSF will not provide feedback on non-selected offers as described in FAR 15.206-2 and 15.301-1.

6.4 Reporting Requirements

The offeror must submit an annual project report to YYY@NSF.gov with a copy to the Contracting Officer no later than 90 days prior to the end of the budget period. (Some awards may require submission of more frequent project reports). No later than 120 days following expiration of a contract, the offeror is also required to submit a final project report, and a project outcomes report for the general public.

6.5 Award Administration Information:

- Section 508 Compliance Paperwork Reduction Act of 1995 (Please note that if your proposed project includes information collection, any award issued as a result of this BAA must comply with the Paperwork Reduction Act of 1995).
- Reporting Requirements (SAM, Representations and Certifications)

VII. OTHER INFORMATION:

Questions concerning this BAA will be accepted by the Government through **July 30, 2026 at 5 pm ET.** Question must be submitted via email using the attached template to the Agency Contact Bethany Stutler via email at BAAWaterInitiative@nsf.gov Phone calls will not be accepted.