

# ESTCP FEDERAL ORGANIZATIONS OUTSIDE DOD

## INSTALLATION ENERGY

### FULL PROPOSAL SUBMISSION INSTRUCTIONS

## 1. PREPARATION AND CONTENT

A full proposal shall be submitted only by invitation from ESTCP following review of a pre-proposal. Full proposals shall contain four sections, Abstract, Technical Section, Cost Section, and Appendices, submitted as **one document**. Principal Investigators must use the guidance below to structure and submit their proposal.

- Type size should not be less than 11 point, any font.
- All margins (top, bottom, left, and right) at least 1 inch.
- Number all pages.
- Proposals should contain the section headers provided in section 1.2. These section headers correspond to criteria used to review, evaluate, and select proposals.
- Do not include table of contents, introduction, executive summary, or any other elements not prescribed by this guidance.

You will submit your proposal via the [SERDP and ESTCP Management System](#) (SEMS). No electronic mail, faxed, or hard copy proposals will be accepted. **Proposals must be submitted prior to 2:00 p.m. Eastern Time on August 17, 2020.** All full proposals must be accompanied by the signature of an individual authorized to commit the lead organization to execute the proposed work. Complete submittal instructions can be found in Section 3 of this document.

### 1.1 ABSTRACT

*In one page or less, provide a brief summary of the proposed effort following the structure outlined below.* The abstract is not included in the page limitation. If ESTCP selects the proposal for funding, the abstract will become the project overview posted on the ESTCP website. Therefore, please ensure it is well written. Items 1-4 must be located at the top of the first page:

- 1. Proposal Number:** The proposal number is generated by the SERDP and ESTCP Management System (SEMS) when the proposal details are entered. The proposal number for the full proposal is the same as the pre-proposal.
- 2. Proposal Title**
- 3. Lead Principal Investigator**
- 4. Lead Organization**
- 5. Objective:** Provide a succinct statement of the project's overall objective in the context of the energy or water problem that the proposed technology will address. Discuss how the project will provide DoD with a new capability or improve an existing capability. Indicate the relevance and importance of the problem to the DoD. Describe how the proposed demonstration will compare an old methodology or technology with an improved approach. Include specific technical objectives if relevant.
- 6. Technology Description:** Describe the innovative aspects of the technology and how it compares to the state-of-the-art. Summarize what the project will attempt to demonstrate,

how the project team will quantify economic and technical performance and what will constitute success.

- 7. Expected Benefits:** Briefly describe the anticipated cost and performance benefits of the use of the technology to the DoD as compared to current practice or state-of-the-art technology, if one exists.

## 1.2 TECHNICAL SECTION

The technical section must contain all of the content elements outlined here and must not exceed 15 pages. Many of the required sections mirror those from the pre-proposal. Expand or enhance each section to provide sufficient information that responds directly to the evaluation criteria. The emphasis should be on the technical approach. Address any comments from ESTCP on the technical aspects of the pre-proposal in the appropriate sections.

- 1. Short Descriptive Title**
- 2. ESTCP Topic Area:** Indicate the ESTCP topic area the proposal addresses.
- 3. Lead Organization:** Project lead, organization, address, telephone number, and e-mail address.
- 4. DoD Installation Point of Contact:** Installation POC, Organization, telephone number, and email address. Provide POCs for each installation involved in the demonstration.
- 5. Problem Statement:** Clearly state the problem the technology demonstration will address and its relevance and importance to DoD. Identify the current approach (if one exists) to this problem and discuss its shortcomings.
- 6. Technology Demonstration:** The technology description should include the following information:
  - Technical Objectives:** Discuss the objective(s) of the proposed effort. Fundamentally, the objective is to demonstrate how a new technology or methodology is superior to an existing practice or technology.
  - Technology Description:** Describe the technology in sufficient detail to provide an accurate and factual understanding of its theory, functionality, and operation. If appropriate, provide an overall schematic of the technology. Discuss how the technology is innovative. Compare it to the state-of-the-art, if relevant, or current DoD practices.
  - Technology Maturity:** Provide evidence that the technology is mature enough for demonstration. Include references and past funding history. Discuss any development or design work required prior to demonstration and the approximate development timeline.
  - Technical Approach:** Provide a detailed overview of how the project will address the technical objectives. Describe the specific tasks that will occur to demonstrate a comparison of a baseline to the proposed alternative. Address the following:
    - Describe the test design. Discuss the scope of the proposed demonstration in terms of a hypothesis, the independent variable and the dependent variables. Refer to the ESTCP demonstration plan guidance located on the [ESTCP website](#) for the general approach to the conceptual test design. Provide the performance objectives for the technology. These are the primary criteria established by the investigator for evaluating the performance and costs of the

technology. There must be quantitative performance objectives and there may be qualitative performance objectives. The performance objectives are essentially the dependent variables from the test design. Discuss data required to evaluate the performance objectives and the criteria to determine when the objectives are met. Refer to the ESTCP demonstration plan guidance located on the [ESTCP website](#) for more detailed information and examples for use in developing performance objectives, metrics, data requirements and success criteria.

- Include a brief description of a proposed demonstration site(s). Discuss why this site is appropriate to meet the demonstration objectives.
  - Include a description of the data analyses used to determine whether the success criteria for the performance objectives have been met. Refer to the ESTCP demonstration plan guidance located on the [ESTCP website](#) for the general approach to the performance and cost assessments.
- e. *Technical Risks*: Identify potential issues of concern and technical risks in taking the technology from its current phase of development to the proposed scale of the demonstration. Identify any assumptions regarding equipment, procedures, materials, product development or site characteristics that, if not realized, could impact the successful implementation of the project. Discuss how the project team will manage risks associated with the assumptions. If the demonstration is not at full scale, discuss any scale-up issues that will remain at the conclusion of a successful demonstration.
- f. *Related Efforts*: Provide a description and funding sources for any similar or related projects.
7. **Expected DoD Benefit**: Describe the expected benefit in terms of energy resilience, energy savings, water savings, environmental impact, and/or reduced costs. Assess the benefit per site or implementation. Provide projections of the number of DoD sites or facilities where the technology may be applicable. Discuss how the information obtained from the demonstration will enable adoption of the technology throughout DoD, particularly by attracting private sector investments, such as Energy Service Companies. Estimate the expected return on investment and the time for payback. Discuss the life cycle cost advantages over current approaches.

Provide a preliminary analysis of the projected economic benefit of the project in terms of simple payback and savings-to-investment ratio over a 5-, 10-, and 20-year period using the NIST BLCCA process ([NIST Handbook 135](#)). Provide adequate justification for any assumptions about cost of energy and list relevant references supporting the assumptions.

8. **Schedule of Milestones**: Provide a project schedule with expected milestones and deliverables for the duration of the project in the form of a Gantt chart. Include all required ESTCP deliverables in the Gantt chart. Reporting requirements are found on the [ESTCP website](#).
- Identify any development, design or, baseline characterization required prior to demonstration.
  - Projects requiring emissions, environmental, operational or other permits must include appropriate milestones to reflect the permitting process.
  - Projects requiring an electrical or other interconnection agreement must

include appropriate milestones for the development and approval of the agreement.

- Projects requiring information assurance approvals through Risk Management Framework must include appropriate milestones to reflect the approval processes.
- Estimate the time required for the demonstration. Include the planned initiation and completion dates for critical events, including but not limited to coordination with military installation staff, baseline measurement, equipment installation, monitoring, data analysis, and other key activities.
- Include expected submission dates to the ESTCP Office for the first draft and completed final document for the Pre-Demonstrating Plan, Demonstration Plan, Technology Overview Fact Sheet, and Final Report. Separate first draft and final submission dates by a one to two-month period to allow time for ESTCP review.
- Include a Project Outbrief event, such as a webinar, and other technology transfer activities if appropriate.

9. **Technology Stage:** Technology typically moves from the stage of invention through a series of steps (translation, adoption, diffusion) until it is widely deployed. Describe in a paragraph the current maturity of the technology (translation, adoption, diffusion) in accordance with the definitions below.

- Translation is the creation of a product or process. It represents pre-commercial products or early commercial development depending on the characteristics of the industry. Value proposition or price is usually unclear or ill-defined, the technology developers are required for demonstration, and the building industry is not routinely engaged.
- Adoption represents the early deployment and initial use of new technology by early adopters. Value and risks are understood by specialists or for some applications. There is limited or no independent validation of the technology's performance, limited commercial availability and support, and distribution partnerships are not well developed.
- Diffusion corresponds to increasing adoption and use of a commercial product or technology that has sub-optimal market penetration. Risks and value are understood for most applications, education of broader community is needed, and the technology is available and sustainable but not typically specified by A&E firms in their designs.

10. **Technology Transition:** Technology Transition should be included as a separate task in your project structure. Describe the method and activities the project team will use to transition the demonstrated technology to end user(s) and to commercialize or move the technology to a more mature stage. Discuss the timeline required upon completion of a successful demonstration to transition to a product or service suitable for acquisition or implementation by DoD installations. Discuss technology transfer considerations relevant to DoD Energy Managers at military installations such as implementation of the new technology, operation of the system, maintenance and any other relevant perspectives. Technology transition plans should address all of the DoD Services.

Describe technology transfer methods to reach stakeholder audiences (e.g., energy

managers, energy services companies, etc.). Describe any proposed guidance, design, and/or protocol documents such as Unified Facilities Criteria, ASHRAE or IEEE standards that will assist in future implementation. Explicitly identify potential first DoD users and follow-on implementation after the demonstration. Identify any DoD or service programs that are responsible for technology implementation or relevant requirements or regulations that will affect transition. If there are known institutional or regulatory barriers that affect the transition, describe them in this section along with recommendations for addressing these barriers. Address any constraints imposed by the use of proprietary systems.

11. **Disposition of Equipment:** Identify any major equipment purchases planned for the demonstration. Verify that equipment purchased with government funding will become government property in accordance with property transfer procedures associated with DD Form 1354. The government may waive its property rights at the conclusion of the project.

Provide a costed option to remove the equipment associated with the demonstration in the event that the government facility managers at military installation request removal. Include, in the costed option, plans to return the demonstration site to its pre-demonstration configuration.

12. **Installation Support:** Discuss support needed from the military installation personnel to conduct a successful demonstration. Include requirements for access, documentation, maintenance, and other incidental support. Include the costs to support the participation of installation personnel, on-site contractors, and any travel in the budget. If needed, the ESTCP Office provides project funding directly to the military installation staff.
13. **Performers:** List the name and organization of the lead person(s) for each organization involved in the proposed demonstration and summarize their expected contributions.
14. **ESTCP Review Comments:** Address comments from the ESTCP review of the pre-proposal, provided in the letter from ESTCP requesting a full proposal, in the appropriate sections of the full proposal. Summarize the response to each comment in this section and cite the location of the response in the full proposal. The page limitation does not apply to this section.
15. **Acronym List:** Include a list defining all acronyms used in the proposal. Not included in the page limitation.

### 1.3 COST SECTION

The cost section of the full proposal is an estimate of the total project cost. The cost spreadsheet template is found on the [ESTCP website](#). Cost sections in formats other than this template are unacceptable. The cost spreadsheet for the lead organization should reflect the costs for the entire project, including co-performers and sub-contractors. Provide separate cost spreadsheets for each co-performer or sub-contractor whose costs exceed \$50,000.

All ESTCP projects are funded incrementally, with funds provided in the year in which they are expected to be expended. The cost section should be structured to indicate annual, incremental funding required. For planning purposes, proposers should assume a project initiation date of March 1, 2021. The first year's planned funding should run through January 31, 2022, and each subsequent year should span February 1-January 31, until anticipated project completion.

1. **Labor Costs:** Show the projected labor rates in units of hourly rate or annual salary to be

charged by the PI(s), associates, and assistants. List key personnel by name. Indicate in the footnote to the cost table the units you are using. In the units column, indicate the number of hours or the fraction of annual salary to be charged. The total column is the amount per year to be paid to each performer on the project. Labor costs should be unburdened.

2. **Indirect Charge #1:** Indicate burden or fringe rate applied to salaries and the total cost per year. Provide an explanation in the table footnote of what is included in this indirect charge.
3. **Indirect Charge #2:** Indicate other relevant indirect charges such as G&A. Provide an explanation in the table footnote of what is included in this indirect charge and to which cost elements it will be applied.
4. **Major Equipment:** Provide an itemized list of permanent equipment, if any, to be acquired in support of the project, showing the cost for each item. Use the second tab in the cost spreadsheet located on the [ESTCP website](#) as a template. Permanent equipment is any article of non-expendable, tangible property having a useful life of more than two years and an acquisition cost of \$5,000 or more per unit.
5. **Materials, Supplies and Consumables:** Provide a general description and total estimated cost of expendable equipment and supplies.
6. **Subcontracts and Government Partners:** The cost spreadsheet for the lead organization must include all costs for sub-contractors and co-performers. For any co-performer or subcontract totaling \$50,000 or more, provide a breakout of the tasks and associated costs in a separate cost estimate using the cost spreadsheet template located on the [ESTCP website](#). Government partners will be provided a separate allocation of funds directly based upon this separate estimate. The cost spreadsheet for the lead organization should include all costs for sub-contractors and co-performers. The lead organization should plan to manage all sub-contracts to non-government partners.
7. **Travel Costs:** Estimate total travel costs. List the number of trips, the destinations, purposes for all proposed travel, including co-performers and sub-contractors. For planning purposes, ESTCP conducts an annual in-progress review of management and technical status of each project in the Arlington, VA area. New start projects funded to begin in 2021 will be reviewed first in February 2022, with additional annual reviews in either April/May or October/November thereafter for multi-year projects. ESTCP will support attendance at one domestic technical meeting each year. ESTCP intends to sponsor an annual technical Symposium in the Washington, D.C. area. Investigators are encouraged to budget for students working on the project to attend the Symposium in the total travel costs. In years when the Symposium takes place, investigators are expected to attend. In the event the Symposium is not held, investigators may attend an appropriate meeting of their choice at comparable cost.
8. **Publication and Report Costs:** Estimate the costs of publishing and reporting results, including the direct charges for clerical preparation, page or illustration charges, and distribution. The ESTCP reporting requirements are found on the [ESTCP website](#).
9. **Fixed Fee:** Eligible organizations shall list the fixed fee, if any, applied to the demonstration project. Indicate in the footnote to the table the cost elements included in the basis for the fixed fee.

10. **Cost by Task Summary Table:** Provide a breakout of cost per task. The third tab in the cost spreadsheet located on the [ESTCP website](#) provides a template. These numbers must match those on the main cost spreadsheet.
11. **Leveraged Funds:** Identify the source and amount of any funding for costs that are part of the project but not funded through the ESTCP budget.
12. **Costed Options:** Proposals should include costed options addressing transition of the projects to Installation control after the demonstration or removal of equipment at the conclusion of the demonstration. Costs associated with transition could include the provision of operator's manuals, engineering drawings, guidance documents, service agreements, and the like.

#### 1.4 APPENDICES

Appendices are not included in the page count for the full proposal.

1. **Required: Letters of Support:** Obtain a memo, letter, or email from the Commander, Director of Public Works, Base Civil Engineer or someone of an equivalent position from each Installation who can commit to hosting the demonstration at their facility. The letter should designate a point-of-contact (POC) at the installation who will work with the project team and ESTCP staff to help coordinate the project and participate in occasional meetings or teleconferences. The POC must be able to coordinate with other installation staff to address public works, engineering, range control, health and safety, environmental or security issues associated with the project.
2. **Required: POC Email or Memo:** The POC at the military installation must indicate that he/she alerted the following staff offices at the potential host military installation about the possible ESTCP demonstration project – Public Works/Base Civil Engineer, Energy Manager, Resource Efficiency Manager, Environmental, Security, Master Planner and Information Assurance Office (Communications Squadron, NETCOM, etc.). The POC should indicate if there are any potential issues identified by the military installation staff that will require resolution to conduct the demonstration.
3. **Optional: Supporting Technical Data: (limited to 5 pages)** Include data sheets, charts, and excerpts from referenced research.
4. **Required, if literature is cited: Literature Citations:** Provide literature citations for any material cited in the technical section or the supporting technical data.
5. **Required: Abbreviated Curricula Vitae (CV) (3 pages or less per CV)** are required for all key technical personnel at the lead organization and the lead individual for all key co-performers or subcontractors.

## **2. EVALUATION FACTORS FOR FULL PROPOSALS**

The following evaluation factors will be the sole basis for reviewing full proposals submitted in response to this CFP. Among the evaluation factors, Technical Merit is more important than Cost/Benefit of Technology, Transition Potential, and Cost of Proposal.

### **TECHNICAL MERIT**

Proposal reviewers will assess the technical merit of the proposal. Factors to be considered include: (a) the methodology is scientifically sound; (b) the technology is innovative and is the current or an advancement of the state-of-the-art; (c) the technical risks are well characterized; and (d) the technical team is qualified to execute the proposed project.

### **COST/BENEFIT OF TECHNOLOGY**

Proposal reviewers will assess the cost/benefit of the proposed technology, if it were deployed. Factors to be considered include: (a) the projected cost savings and/or risk reduction are significant; (b) the projected benefits are reasonable and consistent with the proposed technology; and (c) the payoffs from the proposed technology are commensurate with the projected costs and risks.

### **TRANSITION POTENTIAL**

Proposal reviewers will assess the potential for a successful transfer of the technology to the DoD user. Factors to be considered include: (a) there is a well-defined DoD user for the technology; (b) there are clearly identified activities that will support and enhance the transfer of the technology; and (c) the technology can be implemented within DoD.

### **COST OF PROPOSAL**

Proposal reviewers will assess the reasonableness of the proposed cost. Costs should be appropriate and traceable to the level of effort required to execute the project. Cost sharing is desirable but not required.

### 3. SUBMITTAL INSTRUCTIONS

Proposals are submitted via the SERDP and ESTCP Management System (SEMS). No electronic mail, faxed, or hard copy proposals will be accepted. **Proposals must be submitted prior to 2:00 p.m. Eastern Time on August 17, 2020.**

Complete all steps below in order to submit a proposal.

- Create a single PDF file that contains all required sections outlined in the proposal guidance.
- Log in to [SEMS](#).
- Enter all required proposal details into SEMS. Proposal details may be saved and edited prior to final submission.
- Download or print the “Proposal Details” page. This must be signed by an individual with the authority to commit the lead organization to execute the proposed work. The document may be electronically or hand-signed. Ensure all information on the signed summary matches the proposal file.
- Upload the signed “Proposal Details” page.
- Add the system-generated proposal number, project title, lead PI name and organization to first page of proposal as instructed in Section 1.1 above.
- Upload the final proposal file.
- Submit the proposal. Only proposals that have been submitted will be considered. Proposals with a “Saved” status will not be reviewed.

Once the proposal has been submitted, SEMS will display an on-line confirmation message and will send an email notification to the proposer. It is the sole responsibility of the proposer to make certain the proposal is properly received by ESTCP.

The proposer may continue to modify proposal details and upload revised proposal files until the due date. Prior versions of the proposal will be over-written and **only the last version uploaded** will remain in the system. Ensure the proposal details entered into the system match the contents of the proposal file. It is recommended that proposals are uploaded as early as possible prior to the deadline, to ensure a successful and timely submission.

For proposal upload questions, contact the ESTCP Office at 571-372-6565.

For technical questions, contact the Program Manager.

#### **4. REQUIREMENTS FOR PROPOSALS SELECTED FOR FUNDING**

Proposals selected for funding may require revision following the selection process and prior to contract award. Common revisions include adjustments to schedule, task structure, funding profile, or specification of required deliverables. These requirements are considered part of the proposal process and the associated costs are to be borne by the proposer.