

# PROGRAM ANNOUNCEMENT FOR FY 2015 ENVIRONMENTAL SECURITY TECHNOLOGY CERTIFICATION PROGRAM (ESTCP)

## INSTALLATION ENERGY

### DoD Pre-Proposal Submittal Instructions

(Reference: Call for ESTCP New Start Proposals, Memorandum for the Director, ESTCP dated February 11, 2014)

## 1. INTRODUCTION

The Environmental Security Technology Certification Program (ESTCP) is the Department of Defense's (DoD) demonstration and validation (Dem/Val) program for environmental and energy technologies. ESTCP is soliciting proposals for demonstrations of energy technologies on DoD installations as candidates for funding beginning in Fiscal Year (FY) 2015. All proposals must respond to the topic areas described in Section 2 of this document.

**This Call for Proposals (CFP) is for DoD organizations (Services, Defense Agencies, and National Guard).** Other federal organizations (Non-DoD) wishing to submit proposals to ESTCP should refer to the Non-DoD Federal Call for Proposals (CFP). Private sector organizations should refer to the Broad Agency Announcement (BAA). Details are available on the ESTCP web site at [www.serdp-estcp.org/Funding-Opportunities/ESTCP-Solicitations/Installation-Energy-Solicitation](http://www.serdp-estcp.org/Funding-Opportunities/ESTCP-Solicitations/Installation-Energy-Solicitation).

### 1.1 BACKGROUND

The purpose of ESTCP Installation Energy technology demonstrations is to accelerate the deployment of innovative energy technologies that target DoD needs. Project teams conduct ESTCP demonstrations under operational conditions at DoD installations. The demonstrations generate supporting cost and performance data needed for validation of the technology. The goal is to enable promising technologies to receive end user acceptance and become candidates for fielding and commercialization. To achieve this goal, ESTCP projects create a partnership between technology developers and DoD installations.

DoD spends approximately \$4 billion per year on facility energy consumption to power and fuel over 500 military installations worldwide. These installations include over 500,000 buildings and structures.

DoD has three key installation energy goals:

- Reduce energy usage and intensity,
- Increase renewable onsite energy generation, and
- Improve energy security.

Achieving these goals cost-effectively will require the increased deployment of advanced technologies. ESTCP energy demonstrations help meet these goals. Demonstrations of energy

technologies on military installations should accelerate the commercialization and broader deployment of the innovative energy technologies across DoD by reducing real and perceived risks. Pre-commercial and emerging commercial technologies are of interest.

## **1.2 REQUIREMENTS OF AN ESTCP PROJECT**

ESTCP Installation Energy projects must:

1. Conduct the technology demonstration to validate the technology's performance and expected operational costs:
  - Each project develops a demonstration plan to govern the technical execution and management of the demonstration. Guidance describing the requirements of the ESTCP Demonstration Plan is available at [www.serdp-estcp.org/Investigator-Resources/ESTCP-Resources/Demonstration-Plans](http://www.serdp-estcp.org/Investigator-Resources/ESTCP-Resources/Demonstration-Plans). The demonstration plan is reviewed and approved by the ESTCP Office prior to beginning any fieldwork.
  - Each project must generate sufficient pertinent and high quality data to scientifically prove the validity of all claims made for the technology.
  - Cost and performance data collected during the demonstration(s) enable investigators to determine realistic estimates for full-scale implementation of the technology at the demonstration site and other DoD sites.
2. Transfer the technology:
  - Identify and work with the intended DoD user community to achieve their acceptance and feedback on the usefulness of the technology.
  - Publish, as necessary, appropriate guidance, design, and/or protocol documents to assist the future implementation of the technology.
  - Publish a final report based on the ESTCP Final Report guidance at [www.serdp-estcp.org/Investigator-Resources/ESTCP-Resources/Technical-Reports](http://www.serdp-estcp.org/Investigator-Resources/ESTCP-Resources/Technical-Reports).
  - Provide a draft cost and performance report for publication by ESTCP based on the ESTCP Cost and Performance Report guidance at [www.serdp-estcp.org/Investigator-Resources/ESTCP-Resources/Technical-Reports](http://www.serdp-estcp.org/Investigator-Resources/ESTCP-Resources/Technical-Reports).
  - Publish the results of the demonstration in the scientific peer reviewed literature and present results at technical conferences, as appropriate.
  - Identify pathways to commercialization of the technology.

## **1.3 GENERAL INFORMATION FOR DOD SECTOR PROPOSERS**

Awardees under this CFP will complete a multi-stage review process, including a brief pre-proposal, a full proposal, and an oral presentation. Based upon the pre-proposal evaluation by ESTCP, each of the pre-proposal submitters will receive notification as to whether ESTCP requests or does not request the submission of a full proposal. Each full proposal submitter must make an oral presentation to the ESTCP Technical Committee. The costs associated with the initial, pre-award presentation are borne by the proposer and cannot be in the proposal cost estimate.

Based on evaluation of the written proposal and oral presentation, ESTCP will notify each full proposal submitter whether or not the Government wishes to enter into negotiation for an award.

ESTCP reserves the right to select for award any, all, or none of the proposals received. ESTCP also reserves the right to select a portion of the work proposed in any single proposal for award. Due to the volume of pre-proposals anticipated, ESTCP will not provide debriefs on those that do not receive a request to submit a full proposal.

Refer procedural questions to Ms. Jina Banks-Saunders in the ESTCP Office at 571-372-6565. For technical questions regarding this announcement, contact Dr. Jim Galvin at [james.j.galvin.civ@mail.mil](mailto:james.j.galvin.civ@mail.mil), or by telephone at 571-372-6565.

#### 1.4 EVALUATION SCHEDULE

<b>DATE</b>	<b>ACTIVITY</b>
February 11, 2014	CFP Released
<b>April 1, 2014; 2:00 p.m. Eastern Time</b>	<b>Pre-Proposals Due to ESTCP</b>
Late June 2014	Request Full Proposals
<b>August 2014</b>	<b>Full Proposals Due to ESTCP</b>
Mid to Late September 2014	Briefings before ESTCP Technical Committee
November 2014	Project Selection
March 2015	Award / Project Initiation

## 2. DESCRIPTION OF PROPOSALS SOUGHT

The Department of Defense (DoD) seeks demonstrations of innovative technologies and approaches to improve energy and water efficiency on military installations. Demonstrations must provide valid assessments of cost and performance, accelerate commercialization, lead to broader adoption and facilitate rapid implementation of cost saving technologies on military installations using third party financing mechanisms.

Standard commercially available approaches currently deployed in the United States are not appropriate as a response to this solicitation. Innovative new technologies that are fully developed, but pre-commercial, are preferable.

The demonstration program is for technologies and methods with completed proof-of-principle work. The impact of the demonstration should be to reduce real or perceived risk to increase the likelihood of adoption and deployment. Pre-proposals do not require specific DoD site(s).

Candidate technologies must relate to the following topic areas:

**Topic 1: Energy Efficiency for Military Buildings:** The DoD Installation Energy Test Bed seeks demonstration projects of innovative approaches to improve the energy efficiency of buildings on military installations. The demonstrations should increase the likelihood of the proposed technology qualifying for third-party financing for energy efficiency and cost reduction investments on military installations.

Demonstrations with the following characteristics are preferable:

- Wide applicability to the building retrofit market
- High calculable energy or water savings, in addition to cost savings, as a direct result of the technology
- Potential for high savings-to-investment ratio (SIR) and short simple payback for deployment after the demonstration
- Minimal design and engineering required for deployment of the technology after the demonstration
- Low cost to implement after the demonstration
- A clear pathway to technology adoption by Energy Service Companies (ESCOs) and utility providers for inclusion in Energy Savings Performance Contracts (ESPC) or Utility Energy Services Contracts (UESC)
- A high likelihood of adoption of the demonstrated energy conservation measure(s) in an ESPC or UESC within one year after conclusion of the demonstration
- Cost sharing

Demonstrations focused on the following are not of interest:

- Data Centers
- Plug-in electric vehicles
- Distributed Generation
- Software development
- Audit tools, except to establish baselines for the demonstrated technology

- Development of building control systems, except for control of the demonstrated technology

**Topic 2: Water Conservation and Reuse for Military Facilities:** The DoD seeks demonstration projects of innovative technologies to improve the efficient use of water in buildings and other facilities on military installations. Desired water management technologies will reduce water loss and increase the efficient usage of available water.

### 3. PRE-PROPOSAL INSTRUCTIONS

To be eligible for consideration, readers wishing to respond to this announcement must submit a pre-proposal. Any pre-proposal submitted shall be in response to only the topic area set forth in Section 2 of this document. The pre-proposal must concisely describe the technology, including its level of development or maturity, and its cost/benefit.

#### 3.1 COVER PAGE

Each pre-proposal must include an ESTCP cover page prepared via the Web Proposal Tracking System (WebPTS) module within the SERDP and ESTCP Management System (SEMS) web site.

1. Go to <https://sems.serdp-estcp.org>, and follow the instructions to create a user name and password. If you already have an account, log in and click on the WebPTS tab at the top of the screen if you are not already on that page. As you make entries in the cover page, you may save data that have been entered or submit a completed cover page. A cover page **must** be completed and submitted before an electronic proposal can be uploaded via WebPTS.
2. After you submit your cover page, additional on-screen instructions will be displayed. A **signed** web-generated cover page must be included as the first page of the pre-proposal. The pre-proposal can be signed by the Principal Investigator or other authorized individual. ***Pre-proposals lacking a Cover Page or with an unsigned Cover Page will be considered unresponsive.*** A cover letter beyond this Cover Page is neither required nor desired. The Cover Page is not included in the page limitation.

If you require assistance with WebPTS, contact Amy Kelly at [akelly@hgl.com](mailto:akelly@hgl.com) or by telephone at 910-579-8052, or the ESTCP office at 571-372-6565.

#### 3.2 PRE-PROPOSAL LENGTH AND STYLE

Pre-proposals shall be no longer than five (5) pages and type face not less than 11 point. All margins (top, bottom, left, and right) shall not be less than 1 inch. A one-page curriculum vitae is required for each of the principal performers. One attachment of up to three pages of supporting data may also be submitted. The cover page, curricula vitae, literature references, and supporting data are not included in the five-page limit.

### 3.3 PRE-PROPOSAL CONTENT

The pre-proposal must contain the following information:

1. Short Descriptive Title
2. ESTCP Topic Area: Each proposal must list the topic area title as described in Section 2:
  - 1) Energy Efficiency for Military Buildings; or
  - 2) Water Conservation and Reuse for Military Facilities.
3. Lead Organization: Project lead, organization, address, telephone number, fax number, and e-mail address.
4. Problem Statement: Clearly state the problem the technology demonstration is addressing and its relevance and importance to DoD. Identify the current approach (if one exists) for this problem and discuss its shortcomings.
5. Technology Description: The technology description should include the following information:
  - a) *Technical Objectives*. Briefly state the objective of the proposed effort.
  - b) *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.
  - c) *Technology Maturity*. Provide evidence the technology is mature enough for demonstration (include references and funding history). Discuss any development or design work that is required prior to demonstration.
  - d) *Technical Approach*. Provide a broad overview of the test design of the demonstration proposed for evaluating the technology. Refer to section 5.0 of the ESTCP Energy & Water Demonstration Plan Guidance cited in Section 1.2 above for more perspective on Test Design. Discuss the major elements of the demonstration and identify the key aspects of the overall approach as they relate to the evaluation of the technology. Include a brief description of a proposed site(s), if known, or the desired site characteristics. Discuss the scale of the proposed tests and any design work required for the demonstration. Identify specific technical or performance objectives to validate as a result of the demonstration. Identify methods for measuring and assessing the performance and expected operational costs of the technology. Describe criteria for success of the demonstration and the technology. Describe the tasks required to conduct the demonstration.
  - e) *Technical Risks*. Identify potential issues of concern and technical risks in taking the technology from its current level of maturity to the proposed scale of the demonstration. Identify any major assumptions regarding equipment, procedures or any other areas of the project that may impact the outcome. Discuss risk mitigation and management.
  - f) *Related Efforts*. Provide a description and funding sources for any similar or related projects.
6. Expected DoD Benefit: Describe the expected benefit in terms of energy security, energy savings, 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. Estimate the expected return on investment and the time for payback. Discuss the life cycle cost advantages over current approaches.

7. Schedule of Milestones: Provide a project schedule with expected milestones and deliverables for duration of the project in the form of a Gantt chart. At a minimum, include start and end dates for the demonstration(s), required deliverables and activities such as system commissioning, accreditation, permitting or operation. Required deliverables are available in the reporting guidelines at [www.serdp-estcp.org/Investigator-Resources/ESTCP-Resources](http://www.serdp-estcp.org/Investigator-Resources/ESTCP-Resources).
8. Technology Transition: Describe the method and activities the project team will use to transition the demonstrated technology to end user(s) and to commercialize the technology if feasible. 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.

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 or IEEE standards that will assist in future implementation. Identify potential first DoD users and follow-on implementation after the demonstration. If there are known institutional or regulatory barriers that affect the transition, describe them in this section along with recommendations for addressing the barriers.

9. Performers: List the name and organization of the lead person(s) for each organization involved in the proposed demonstration and their expected contributions. Provide a one-page curriculum vitae for each of the performers (not included in the five-page limit).
10. Funding: State the level of requested funding per year for the duration of the project, including any design work. Identify costs for any major equipment needed for the demonstration. Assume a project initiation date of March 1, 2015. Although identification of a specific demonstration site is not required for pre-proposals, include an estimate for the cost for a representative field demonstration of the technology. Request adequate funding to meet all reporting and travel requirements available at [www.serdp-estcp.org/Investigator-Resources/ESTCP-Resources](http://www.serdp-estcp.org/Investigator-Resources/ESTCP-Resources). List other sources of expected funding to support the demonstration and leveraged resources. Provide a Point of Contact and telephone number for each leveraged resource listed.

#### 4. SUBMITTAL INSTRUCTIONS

Your pre-proposal will be officially submitted on-line via WebPTS. No hard copies are required. **Pre-proposals must be submitted prior to 2:00 p.m. Eastern Time on April 1, 2014.**

Once your proposal has been finalized, create a single PDF that contains all required sections. Make sure to insert the signed and scanned cover page as the first page of the PDF. You are now ready to upload your proposal to the web site.

- Log in at <https://sems.serdp-estcp.org> and go to the WebPTS Tab.
- Follow the on-screen instructions. You must SUBMIT your cover page before the proposal upload function will be activated. Instructions for creating your Cover Page can be found in Section 2.1.

**NOTE:** A system-generated cover page will be appended to your uploaded proposal as the first page. Once your proposal has been uploaded you will receive an on-line confirmation message in WebPTS and an email will be sent to the submitter.

You may continue to modify your cover page and upload revisions to your proposal until the due date. Should you need to re-upload a proposal or revise your cover page, go to **“My Cover Pages,”** select **“Edit”** next to your proposal title, and click on **“Submit”** to arrive at the proposal upload screen. Make sure any changes to the cover page are made first. Prior versions of your proposal will be over-written and only the last version uploaded will remain in the system. It is recommended that you upload your proposal as early as possible prior to the deadline, to ensure a successful and timely submission.

For WebPTS or proposal upload questions, contact Amy Kelly at [akelly@hgl.com](mailto:akelly@hgl.com) or by telephone at 910-579-8052, or the ESTCP Office at 571-372-6565.

## **5. FULL PROPOSAL**

After evaluation of the pre-proposals, ESTCP will contact all submitters and either request or not request each to submit a full proposal. Full Proposal requests will include submittal instructions and the full proposal format. ESTCP will not accept unsolicited Full Proposals.

## **6. EVALUATION FACTORS FOR PRE-PROPOSALS AND FULL PROPOSALS**

The following evaluation factors will be the sole basis for reviewing pre-proposals and full proposals submitted in response to this CFP. ESTCP Relevance and Technology Maturity are pass/fail criteria evaluated at the pre-proposal stage only; proposals not passing these gates will not be further evaluated. Among the other evaluation factors for both pre-proposals and full proposals, Technical Merit is most important, followed by Cost/Benefit of Technology, Transition Potential, and Cost of Proposal.

### ESTCP RELEVANCE (PRE-PROPOSAL ONLY)

An assessment will be made whether the submission responds to the DoD requirement as described in Section 2.

### TECHNOLOGY MATURITY (PRE-PROPOSAL ONLY)

An assessment will be made of the appropriateness of the proposed technology for demonstration and validation. Proposed technologies should have completed required proof-of-concept work and have evidence of the technology's capabilities. Technologies should be mature enough that within one year of project initiation any required design work will be completed and a field-ready application can be deployed for testing. Standard commercially available technologies or approaches currently deployed at DoD sites will be considered too mature. ESTCP will not consider project submissions that fall in the categories of basic research (scientific foundation) or exploratory development (bench-scale applied research).

### TECHNICAL MERIT

An assessment of the technical merit of the proposal will be made. 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

An assessment of the cost/benefit of the proposed technology, if it were deployed, will be made. 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

An assessment of the potential for a successful transfer of the technology to the DoD user will be made. 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

An assessment of the reasonableness of the proposed cost will be made. Costs should be appropriate and traceable to the level of effort required to execute the project. Cost sharing is highly desirable but not required.