

# PROGRAM ANNOUNCEMENT FOR FY 2014 ENVIRONMENTAL SECURITY TECHNOLOGY CERTIFICATION PROGRAM (ESTCP)— INSTALLATION ENERGY

## DoD Proposal Submittal Instructions

(Reference: Call for ESTCP New Start Proposals, Memorandum from the Director, ESTCP  
February 12, 2013)

### 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) 2014. All proposals must respond to one of the topic areas described in Section 2 of this document. Technologies appropriate for demonstration and validation will be sufficiently mature that all required laboratory or other proof-of-concept work has been completed. Mature commercial technologies already in use or with well-established operational cost and performance criteria are not appropriate for demonstration and validation.

**This Call for Proposals (CFP) is for DoD organizations (Services and Defense Agencies).** Other federal organizations (Non-DoD) wishing to submit proposals to ESTCP should refer to the Non-DoD Federal Call for Proposals. Private sector organizations should refer to the Broad Agency Announcement (BAA). Instructions for the Non-DoD Federal Call for Proposals and the BAA may be found on the ESTCP website [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. ESTCP demonstrations are conducted under operational conditions at DoD installations. The demonstrations are intended to 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 be fielded and commercialized more rapidly. 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 are designed to 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. Mature commercial technologies already in use or with well-established operational cost and performance criteria are not appropriate for demonstration and validation.

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

ESTCP Installation Energy projects must:

1. Execute 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 can be found 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 must be approved by the ESTCP Office prior to beginning any fieldwork.
  - Each project is expected to generate sufficient pertinent and high quality data to scientifically prove the validity of all claims made for the technology.
  - Cost and performance data will be collected during the demonstration(s) to allow realistic estimates to be derived 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.

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

Awardees under this CFP will be selected through 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 be notified as to whether ESTCP requests or does not request the submission of a full proposal. Each full proposal submitter will be asked to make an oral presentation to the ESTCP Technical Committee. The costs associated with this

initial, pre-award presentation shall not be included in the proposal cost estimate. This cost is borne by the proposer.

Based on evaluation of the written proposal and oral presentation, each full proposal submitter will be notified as to whether the Government wishes to enter into negotiation for the 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 to be received, ESTCP will not provide debriefs on those that are not requested to submit a full proposal.

Procedural questions may be referred 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.Galvin@osd.mil](mailto:James.Galvin@osd.mil), or by telephone at 571-372-6397.

#### 1.4 EVALUATION SCHEDULE

<b>DATE</b>	<b>ACTIVITY</b>
February 12, 2013	Call for Pre-Proposals Released
March 28, 2013; 2 p.m. Eastern Time	<b>Pre-Proposals Due to ESTCP</b>
Late June 2013	Request Full Proposals
August 15, 2013; 2 p.m. Eastern Time	<b>Full Proposals Due to ESTCP</b>
Mid to Late September 2013	Briefings before ESTCP Technical Committee
November 2013	Project Selection
March 2014	Award / Project Initiation

## 2. DESCRIPTION OF PROPOSALS SOUGHT

Technologies and innovative approaches are sought that can significantly benefit from a demonstration on a DoD installation. Priority is given to those proposals for which a demonstration on a DoD facility will result in a valid assessment of the cost and performance of the technology that will accelerate commercialization and broader adoption. Candidate technologies are sought in the following topic areas:

1. **Smart and Secure Military Installation Energy Management:** Demonstration projects are sought for innovative approaches to improve the security of an installation's overall energy management, decrease its costs, and in a secure manner provide new revenue streams. ESTCP has significant investments in technologies that address these issues. Proposers should articulate how the proposed approach provides new capabilities. Areas of interest are:
  - a. Innovative approaches to visualize and optimize the energy flows on military installations. Energy visualization and optimization capabilities should address holistic systems consisting of microgrid controls, distributed energy generation, energy storage, grid-connected services, islanding and interfaces with advanced metering systems and energy management systems.
  - b. Innovative capabilities that enable grid-tied photovoltaic arrays to operate off-grid safely, cost effectively and at a scale useful for DoD and acceptable for the utility grid. Demonstrated capabilities should apply to both rooftop and ground mounted systems that would otherwise be stranded assets when the grid is inoperable.
  - c. Network protection of energy related Industrial Control Systems (ICS) that are vulnerable to cyber-attacks. Demonstrations should help map mission dependency of ICS network / infrastructure, identify ICS vulnerabilities and result in a prioritization of threats as well as development of mitigation strategies to increase energy security while enabling the deployment of advanced energy control systems and strategies that meet this topic's objective. Demonstrations should address mixed technologies of various legacy and state of the art hardware and software systems. Strong consideration will be given to those proposals that exploit existing systems or ongoing demonstrations for the proposed project.
2. **Advanced Building Energy Management and Control:** Demonstration projects are sought for innovative approaches to advance the role of building controls in improving building energy performance. Desired energy use reductions occur through increased efficiency in commissioning, diagnostics, and operations. Strong consideration will be given to those proposals that involve simple whole-building retrofits of automated control systems using innovative sensors, switches and actuators to minimize collective costs of all building energy systems.

Mature technologies with well-established operational cost and performance criteria are not appropriate for ESTCP. Standard commercially available approaches currently deployed in the United States will be considered too mature.

Proposed technologies and methods should have completed all proof-of-principle work. Specific DoD site(s) may be suggested in the pre-proposal but are not required. ESTCP supports demonstration at a scale sufficient to determine the life-cycle operational cost and performance of the technology and its potential contribution to DoD energy security.

### 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 one of the topic areas 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. Specific DoD site(s) may be suggested in the pre-proposal but are not required.

#### 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) Smart and Secure Military Installation Energy Management; and
  - 2) Advanced Building Energy Management and Control.
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. 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 that will be required prior to demonstration. Identify specific technical or performance objectives to be validated. 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 technical approach in terms of tasks to be accomplished.
  - 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 assumptions that have been made that, if not realized, could impact the successful implementation of the project. Discuss how risks will be managed. 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 information on any relationship to other similar projects. Identify funding sources for these efforts.
6. Expected DoD Benefit: Describe the expected benefit in terms of energy security, energy savings, and/or reduced cost. Assess the benefit per site or implementation. Provide realistic projections of the number of DoD sites or facilities where the technology could

be deployed. Discuss how the information obtained from the demonstration will enable adoption of the technology throughout DoD. 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, start and end dates for the demonstration(s) and all required deliverables must be included in the Gantt chart. Required deliverables are found in the reporting guidelines at [www.serdp-estcp.org/Investigator-Resources/ESTCP-Resources](http://www.serdp-estcp.org/Investigator-Resources/ESTCP-Resources). Other appropriate milestones include obtaining any required permits, completion of any planned development work, shake down testing, and the like.
8. **Technology Transition:** Describe the method by which the technology will be transitioned to end user(s) and commercialized. Discuss the steps and timeline that will be required upon completion of a successful demonstration to the availability of a product or service suitable for acquisition or implementation by DoD installations. Discuss the mode in which you expect the product to be implemented by DoD, including but not limited to: in new construction versus retrofit; via purchase of equipment or software packages versus provision of professional services; availability of long-term support and maintenance; and other considerations relevant to your specific technology.

Specify how technology transfer methods will differ to reach appropriate audiences (e.g., energy managers, energy services companies, etc). Describe any proposed guidance, design, and/or protocol documents such as Unified Facilities Criteria that will assist in future implementation. Explicitly identify potential first DoD users and follow-on implementation. If there are known institutional or regulatory barriers that affect the transition, they should be described in this section along with recommendations for addressing these 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 to be purchased by ESTCP. For planning purposes, proposers should assume a project initiation date of March 1, 2014. Funds required should be broken out by the year in which they will be expended. 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. Ensure adequate funds are requested to meet all reporting and travel requirements. ESTCP reporting requirements are 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 March 28, 2013.**

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 website.

- 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. At that time, detailed instructions will be provided for the full proposal format. Full proposals may not be submitted outside the pre-proposal process. Any full proposal that has not been reviewed in the pre-proposal phase will not be evaluated nor considered for award under this CFP.

## **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.