

PROGRAM ANNOUNCEMENT FOR FY 2010 ENVIRONMENTAL SECURITY TECHNOLOGY CERTIFICATION PROGRAM (ESTCP)

BAA Proposal Submission Instructions

(Reference: BAA January 8, 2009, U.S. Army Corps of Engineers
Humphreys Engineering Center Support Activity)

1.0 INTRODUCTION

The Environmental Security Technology Certification Program (ESTCP) is the Department of Defense's (DoD) demonstration and validation (Dem/Val) program for environmental technology. Throughout this document, "technology" refers broadly to integrated systems based on any combination of hardware (equipment) and software (processing), materials engineering processes, and resource management processes based on scientific principles. Technologies appropriate for demonstration and validation will be sufficiently mature that all required laboratory or other proof-of-principal work has been completed. Commercial technologies already in use are not considered appropriate for demonstration and validation.

ESTCP is seeking proposals for innovative environmental technology demonstrations as candidates for funding beginning in Fiscal Year (FY) 2010 in the following topics: 1) Remediation of Contaminated Groundwater; 2) In Situ Management of Contaminated Sediments; 3) Characterization, Control, and Treatment of Range Contamination; 4) Military Munitions Detection, Discrimination, and Remediation; and 5) Energy Efficiency and Renewable Energy for DoD Installations.

This Broad Agency Announcement (BAA) is for Private Sector organizations. DoD organizations (Services and Defense Agencies) wishing to submit proposals to ESTCP should refer to the DoD FY 2010 Call for Proposals (CFP). Other Federal agencies (non-DoD) should refer to the Non-DoD Federal FY 2010 Call for Proposals. Instructions for the Non-DoD Federal and DoD Call for Proposals may be found on the ESTCP web site (www.estcp.org/opportunities).

1.1 Background

The purpose of ESTCP is to demonstrate and validate the most promising innovative environmental technologies that target DoD's most urgent environmental needs and are projected to pay back the investment through cost savings, improved efficiencies or improved outcomes. ESTCP responds to high priority DoD environmental technology requirements and the need to improve defense readiness by reducing the drain on the Department's operation and maintenance dollars caused by real world commitments such as environmental restoration, waste and facility management, and range sustainability. The goal is to enable promising technologies to receive regulatory and end user acceptance and be fielded and commercialized more rapidly. To achieve this goal, ESTCP projects create a partnership between technology developers, responsible DoD organizations, and the regulatory community. This program announcement is seeking proposals from the technology development community.

ESTCP demonstrations are conducted under operational conditions at DoD facilities or locations for which DoD holds environmental responsibility. Candidate technologies are expected to have successfully completed laboratory testing and, when applicable, initial small scale field testing. The

demonstrations are intended to generate supporting cost and performance data for acceptance or validation of the technology. ESTCP demonstration projects are also required to support the future implementation of the tested technology through the development of appropriate guidance, design, and/or protocol documents. ESTCP will not support full scale demonstrations that are primarily intended to solve an individual installation's problem. Full-scale cleanup is not performed under ESTCP. ESTCP gives priority to those projects that address multi-Service or DoD environmental requirements.

ESTCP 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.estcp.org under PI Resources. 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 environmental 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 (www.estcp.org under PI Resources).
 - Provide a draft cost and performance report for publication by ESTCP based on the ESTCP Cost and Performance Report guidance (www.estcp.org under PI Resources).
 - Publish the results of the demonstration, when appropriate, in the scientific peer reviewed literature. Present results, as appropriate, at technical conferences.
3. Provide data and support to achieve regulatory and end-user acceptance:
 - Technologies needing regulatory approval for use will be required to engage the regulatory community at the outset of project execution. Feedback from regulators must be solicited and incorporated into the project's demonstration plan.
 - No single approach for working with the regulatory community is prescribed by the program. Interaction with individual state regulatory organizations, interstate groups, and the US EPA is encouraged. The approach taken should be appropriate for the technology being demonstrated and the regulatory issues associated with implementing the technology.

Technologies selected for demonstration will be teamed with a DoD partner, who will be responsible for assisting in selecting the demonstration site, validating the technology's cost and performance, interfacing with the regulatory and user community, and supporting the transfer of the technology across DoD.

1.2 Instructions to Private Sector Proposers

Awardees under this BAA 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 the Government, each of the pre-proposal submitters will be notified as to whether the Government requests or does not request the submission of a full proposal. Those submitters who are invited to submit full proposals, but who do not have a DoD partner or a DoD demonstration site, will be assigned a liaison to assist in the identification of an appropriate demonstration site. 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 of a contract. Offerors are advised that only the Contracting Officer is legally authorized to commit the Government. 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. There is no commitment by ESTCP to make any contract awards, nor to be responsible for any money expended by the offeror before contract award is made for a demonstration.

This announcement refers to five FY 2010 topic areas for which participation by the private sector is solicited pursuant to this BAA. A description of the topic areas may be found below in **Appendix A**.

The solicitation will be managed by the ESTCP Office along with the U.S. Army Corps of Engineers' Humphries Engineering Center Support Activity (HECSA) at Fort Belvoir, Virginia. For contractual information, please contact Ms. Alandra Jones at HECSA 703- 428-6551 or by e-mail at Alandra.R.Jones@usace.army.mil. Procedural questions may be referred to the ESTCP Office at 703-696-2127. For technical questions regarding this announcement, contact the individual listed within the topic area descriptions.

1.3 Evaluation Schedule

Table 1. ESTCP Project Selection Schedule

Date	Activity
January 8, 2009	BAA / Call for Pre-Proposals Released
March 5, 2009; 4 pm Eastern Time	Pre-proposals Due to ESTCP Office
June 2009	Request Full Proposals
August 6, 2009; 4 pm Eastern Time	Full Proposals Due to ESTCP Office
September 2009	Briefings Before ESTCP Technical Committee
October 2009	Project Selection
March 2010	Award of Contract/Project Initiation

2.0 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 ESTCP topic areas set forth in **Appendix A** 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.

Cover Page: Each pre-proposal must include a completed ESTCP Cover Page. The Cover Page must be prepared via the web site at <https://sems.serdp-estcp.org>. After the required information is submitted electronically, an ESTCP pre-proposal number will be generated. List ALL Co-Performers in section 13. Note that you may save or submit a cover page, and a pre-proposal number will be generated only when the cover page has been submitted. You will be immediately advised of your success in generating a pre-proposal number **and at this point, you may “view” your Cover Page and print it for inclusion with the pre-proposal.**

One web-generated signed original Cover Page must be submitted and copies of this form must be attached to all copies of the pre-proposal as the first page. Pre-Proposals lacking this Cover Page or with an unsigned Cover Page will be considered unresponsive and returned to the submitter. A cover letter beyond this Cover Page is neither required nor desired.

Pre-Proposal Length and Style: Pre-proposals should be no longer than five (5) pages, single-sided, and not less than 11 point font. A one-page curriculum vitae is required for each of the principal

performers. All margins (top, bottom, left, and right) should not be less than 1 inch. One attachment of up to three single-sided pages of supporting data may also be submitted. **The cover page, curriculum vitae, and supporting data are not included in the 5 page limit.**

Pre-Proposal Content: The pre-proposal must contain the following information:

1. Short Descriptive Title
2. ESTCP Topic Area: Each proposal must list what topic area it addresses: 1) Remediation of Contaminated Groundwater; 2) In Situ Management of Contaminated Sediments; 3) Characterization, Control, and Treatment of Range Contamination; 4) Military Munitions Detection, Discrimination, and Remediation; and 5) Energy Efficiency and Renewable Energy for DoD Installations.
3. Lead Organization: Company name, address, and project lead, phone number, fax number, and e-mail address.
4. Problem Statement: Clearly state the problem the technology demonstration is addressing and its DoD impact. Identify the current approach (if one exists) for this problem and discuss its shortcomings.
5. Technology: 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.
 - c) *Technology Maturity.* Provide evidence the technology is mature enough for demonstration (include references and funding history).
 - d) *Technical Approach.* Provide a broad overview of the experimental 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. Identify specific technical or performance issues to be validated. Describe the technical approach in terms of tasks to be accomplished.
 - e) *Methodologies.* Identify methods for measuring and assessing the performance and expected operational costs of the technology. Describe how the success of the demonstration and technology will be assessed.
 - f) *Technical Risks.* Identify potential technical risks in taking the technology from the lab to field-testing.
 - g) *Related Efforts.* Provide information on any relationship to other similar projects.
6. Expected DoD Benefit: Quantitatively describe the expected benefit in terms of reduced cost and reduced environmental risk. Assess the environmental benefit per site (e.g. in terms of area or volume treated) or implementation and the expected aggregate benefit for DoD. Provide realistic projections of the number of DoD sites or facilities where the technology could be deployed. Discuss the life cycle cost advantages over current approaches.

7. Schedule of Milestones: Provide a project schedule with expected milestones and deliverables (i.e., Demonstration Plans, Protocols, Final Report, and Cost and Performance Report) in the form of a Gantt chart that identifies the milestones and deliverables over the duration of the project. Explicitly describe any development, design, or treatability work that is required prior to actual field demonstration.
8. Transition Plan: Describe the method by which the technology will be transitioned to end user(s) or commercialized. Explain the contribution of the proposed demonstration activities. Describe any proposed guidance documents 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 effect the transition, they should be highlighted.
9. Funding: State the level of requested funding per year for the duration of the project, including any development, design, or treatability work. Identify costs for any major equipment to be purchased by ESTCP. 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 (see **Appendix B**). List other sources of expected funding to support the demonstration and leveraged resources. Provide a Point of Contact (POC) and phone number for each leveraged resource listed.
10. 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 pre-proposal count).

Submittal. All pre-proposals must include: one original hard copy with signed cover page, five (5) additional hard copies including cover page, and a CD containing a single electronic PDF file that includes both your cover page and pre-proposal. The paper copy should be printed from the electronic PDF copy to ensure consistency between the two. Paper copies should be **stapled**. Binding using any plastic or metal binder materials is NOT acceptable.

Please send all six copies and the CD to:

Ms. Jina Saunders
ESTCP Office
901 North Stuart Street, Suite 303
Arlington, VA 22203-1821
703-696-2127

Pre-proposals sent via fax or electronic mail will be rejected. Pre-proposals **must be received no later than 4:00 PM Eastern Time on Thursday, March 5, 2009**. Pre-proposals received after this time will not be reviewed in this cycle. It is strongly recommended that pre-proposals be sent via overnight carrier or certified mail to document and ensure receipt. **For proposal tracking information**, proposers are requested to contact their express carrier concerning delivery of their proposals. **Please do not contact ESTCP or HECSA.**

3.0 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. If necessary, ESTCP will coordinate and schedule a partnering meeting with an appropriate DoD partner to provide input for the full proposal including, but not limited to, selection of a DoD demonstration site. 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 BAA.

4.0 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 BAA. Relevance and technology maturity are pass/fail criteria: proposals not passing these gates will not be further evaluated. Among the evaluation factors, Technical Merit is most important, followed by Cost/Benefit, Transition Potential, and Cost.

ESTCP Relevance

An assessment will be made whether the submission responds to the DoD environmental requirement as described in the topic area (see **Appendix A**).

Technical Maturity

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 laboratory treatability work will be completed and a field ready application can be deployed for testing. Standard commercially available instruments 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 on 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 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 as to 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 as to 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 as to 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.

APPENDIX A

Topic Areas

Topic 1: Remediation of Contaminated Groundwater

Cleanup of groundwater contaminated with chlorinated solvents, energetic compounds, heavy metals, and mixtures of these contaminants is often difficult and can be prohibitively expensive. Remedial costs are particularly high at challenging sites, such as those where (1) contamination is extensive, but contaminant concentrations are low, (2) dense, non-aqueous phase liquid (DNAPL) is present in the subsurface, (3) site hydrogeology is complex (e.g., fractured bedrock) or (4) site conditions require extensive long-term monitoring.

In situ remediation technologies are sought that specifically address the cleanup or management of groundwater contaminated with chlorinated solvents, metals, energetic compounds, emerging contaminants of interest to DoD, or mixtures of these contaminants. Characterization, optimization, assessment, and/or long-term monitoring tools related to remediation of contaminated groundwater also will be considered. In particular, cost-effective management tools or technologies to address DNAPL source zones that cause persistent groundwater plumes are of interest, as well as management tools or technologies that reduce costs associated with long-term monitoring. Both passive treatment approaches (e.g., treatment barriers or walls) and active treatment approaches will be considered.

Proposed technologies should have completed all required laboratory work, although site-specific treatability work prior to the field demonstration is acceptable. Specific DoD demonstration site(s) may be suggested in the pre-proposal but are not required. Technologies and methods are sought that have well-defined demonstration/validation questions to address. ESTCP demonstrations should address technical and/or regulatory issues that inhibit the widespread use of the proposed approach across DoD. ESTCP supports demonstrations at a scale sufficient to determine the operational performance of the remediation technology and to estimate its expected full-scale costs. Full-scale cleanup of specific sites is not performed under ESTCP.

ESTCP has supported the demonstration of a number of technologies designed for remediation of contaminated groundwater. Proposers should be familiar with the ESTCP portfolio of technologies and tools in order to avoid duplication of previous efforts. ESTCP project descriptions are available on the ESTCP web site (<http://www.estcp.org> under Technologies).

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Topic 2: In Situ Management of Contaminated Sediments

Marine and fresh water sediments are the ultimate receptors of contaminants in effluent from urban, agricultural, industrial, and recreational activities, both at sea and on shore. The DoD is responsible for the management of thousands of sites with organic compounds and metals contamination in sediments. A growing body of evidence suggests that sediment removal as a means of contaminant remediation can at times result in more ecological damage or show no measurable ecological improvement. Therefore, development of cost effective in situ management strategies for contaminated sediments at DoD sites is a critical need.

The current regulatory paradigm for characterizing risks associated with the level of contamination in sediments generally does not include measures of the actual bioavailability of these contaminants to human or ecological receptors. However, there is clear and growing evidence that demonstrates that some of these contaminants are less available to potentially harm humans or ecological receptors than is suggested by simply extrapolating effects based on total concentrations of contaminants in bulk soil or sediment. ESTCP co-sponsored a Workshop on Research and Development Needs for Understanding and Assessing the Bioavailability of Contaminants in Soils and Sediments in August 2008 that identified high-priority research and demonstration topics in this area. Results of the workshop highlighted the need to refine and validate the assessment and reduction of contaminant bioavailability. A description of these research and demonstration issues can be found in the workshop report (www.serdp.org/Research/upload/Bioavailability_Wkshp_Nov_2008.pdf). We strongly encourage proposers to review the workshop report for additional details on the critical demonstration needs for contaminated sediments.

In situ technologies are sought that specifically address the management, characterization, remediation, or monitoring of sediments contaminated with polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), heavy metals, or mixtures containing these contaminants. In addition, technologies or tools are sought that address the critical demonstration needs for contaminated sediments identified within the above-referenced workshop report. Contaminated marine, estuarine, brackish, and fresh water sediments are of interest. Projects proposed to address sediments contaminated with radionuclides will not be considered.

Proposed technologies should have completed all required laboratory work, although site-specific treatability work prior to the field demonstration is acceptable. Specific DoD demonstration site(s) may be suggested in the pre-proposal, but are not required. Technologies and methods are sought that have well defined demonstration/validation questions to address. ESTCP demonstrations should address technical and/or regulatory issues that inhibit the widespread use of the proposed approach across DoD. ESTCP supports demonstration at a scale sufficient to determine the operational performance of the remediation technology and to estimate its expected full-scale costs. Full-scale cleanup of specific sites is not performed under ESTCP.

ESTCP has supported the demonstration of a number of technologies related to contaminated sediments. Proposers should be familiar with the ESTCP portfolio of technologies and tools in order to avoid duplication of previous efforts. ESTCP project descriptions are available on the ESTCP web site (<http://www.estcp.org> under Technologies).

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Topic 3: Characterization, Control, and Treatment of Range Contamination

Sustaining test and training ranges is essential to meet DoD's responsibility to ensure adequately trained personnel and properly tested equipment. It is essential to restore and sustain the environment on these ranges in such a way as to allow continued long-term use of these ranges for military testing and training. Test and training ranges present unique challenges for characterization, control and treatment technologies. They may encompass thousands of acres, have limited historical records, and are subject to continued use, which may result in introducing additional contamination.

Management tools and technologies are sought to cost effectively and more accurately delineate munitions constituent source zones and contaminant loading on test and training ranges. Technologies that account for the difficulties of sampling on operational ranges are of particular interest. In addition, management tools or technologies are sought that address soil and groundwater contamination emanating from these source zones, in terms of effective monitoring, sentinel systems, and/or improved exposure assessments.

Treatment and control technologies are sought that specifically address the remediation or containment of range-related contaminants and residue such as metals, energetics (RDX, HMX, TNT, DNT, picric acid), propellants such as perchlorate, or mixtures containing these contaminants in soils. Remedial and control technologies that allow for continued range operation during technology implementation, are deployable over large areas, or can serve to sustain areas subject to continued use are of interest. Of particular interest is understanding the long-term protectiveness of natural or engineered reductions in bioavailability of contaminants of concern. ESTCP co-sponsored a Workshop on Research and Development Needs for Understanding and Assessing the Bioavailability of Contaminants in Soils and Sediments in August 2008 that identified high priority research and demonstration topics in this area. A description of demonstration issues associated with contaminated soils can be found in the workshop report (www.serdp.org/Research/upload/Bioavailability_Wkshp_Nov_2008.pdf). We strongly encourage proposers to review the workshop report for additional details on the critical demonstration needs for contaminated soils.

Proposed technologies should have completed all required laboratory work, although site-specific treatability work prior to the field demonstration is acceptable. 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 operational performance of the characterization, control or treatment technology and to estimate its expected full-scale costs.

POINTS OF CONTACT

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Topic 4: Military Munitions Detection, Discrimination, and Remediation

As a result of past military training and weapons-testing activities, military munitions, including unexploded ordnance, are present at sites designated for base realignment and closure (BRAC) and at Formerly Used Defense Sites (FUDS). Current estimates indicate that millions of acres of land and water potentially contain munitions contamination. Ongoing military operations deposit additional munitions on active installations, necessitating periodic maintenance. Construction and reconfiguration of ranges can involve substantial costs for UXO removal and safety support. Using current technologies, the cost of identifying and disposing of munitions in the United States is estimated to be in the tens of billions of dollars.

Technologies that address the two needs listed below are of particular interests:

Classification: Technologies are needed that can discriminate munitions ranging from 20 mm projectiles to 2000 lb. bombs from other items in the sub-surface. A single technology need not be applicable to all possible ordnance types, nor all possible site conditions. Technologies are requested for ultimate inclusion in a series of live-site Classification Demonstrations being conducted by ESTCP in four categories:

- Integrated systems (hand held, man-portable, or vehicle towed) that can survey tracts of land, detect potential munitions and discriminate munitions from clutter;
- Systems that are cued by other survey technologies which can cost effectively, non-invasively interrogate the suspected item and discriminate munitions from clutter;
- Signal processing technologies that can exploit the current state-of-the-art magnetic and electromagnetic induction survey data to improve classification capabilities; and
- Production technologies that have demonstrated the ability to collect classification-quality survey data and analyze these data using advanced processing techniques.

Underwater Munitions: Technologies are needed that can reliably detect and classify munitions that are proud or buried, either individually or in clusters, in the underwater environment. Munitions of interest range from small projectiles to large bombs at depths to 120 feet.

Proposed technologies should have completed required proof-of-concept work showing evidence of the technology's capabilities. Initial demonstrations may be at a controlled test site, in which case subsequent testing at live munitions response sites will depend on the performance demonstrated during the controlled tests. Demonstrations directly on live sites, with appropriate supporting performance information, will also be considered. These live site demonstrations may be integrated with ongoing munitions response projects or may be part of the series of large-scale ESTCP demonstrations that are currently being executed.

Technologies applicable to the detection and remediation of explosives in soil or groundwater are not responsive to this topic area.

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Topic 5: Energy Efficiency and Renewable Energy for DoD Installations

The Department of Defense (DoD) manages over 577,500 buildings and structures worth \$712 billion that are located on more than 400 installations in the United States. Almost one-third of these assets are over fifty years of age and eligible for consideration as historic properties. It is DoD's preference to reuse existing (often historic) infrastructure when feasible to support mission needs.

DoD spends about \$3.5 billion per year on facility energy consumption. DoD is the largest single energy consumer in the Nation, representing 78% of the federal sector and a significant (and sometimes the largest) energy user in many local metropolitan areas. Energy and water conservation are often linked. As a result, reducing water demand often can lead to reductions in energy usage. Moreover, in some cases, restoration of degraded waters can be accomplished with energy production as a by-product. It is DoD policy to increase energy conservation, reduce energy and water demand, and increase the use of renewable energy to improve energy flexibility and both save financial resources and reduce emissions that contribute to air pollution and global climate change.

Innovative technologies and methods are sought to improve energy efficiency and increase the use of renewable energy on DoD installations. Technologies of interest include but are not restricted to: 1) innovative energy efficient lighting, heating, air conditioning, and other technologies to support sustainable building design and operations to reduce energy demand for all types of DoD buildings, including historic properties; 2) renewable energy sources at various power levels; 3) supporting technologies such as energy storage and control technologies to manage these resources; and 4) technologies that reduce both water and energy demand

Technologies are sought that have well-defined demonstration/validation questions tied to DoD needs or requirements that can benefit from a technical assessment of their operational cost and performance. Mature technologies whose operational cost and performance are well established 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 to be identified until submittal of the full proposal. ESTCP supports demonstration at a scale sufficient to determine the life cycle operational cost and performance of the technology.

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APPENDIX B

ESTCP Project Reporting Requirements and Deliverables

1. ESTCP Project Reporting Requirements

A. Revised Proposal

A revised full proposal is required for all projects after project selection. This will document all requested modifications.

B. Milestone Execution Plan

A milestone execution plan is required for all projects. Execution plans explicitly show all major milestones through completion of the project. They include the dates for Demonstration Plans, Fieldwork, Draft Final Report, Draft Cost and Performance Report and other critical events as defined in the approved proposal/contract. Execution plans are submitted through the SERDP and ESTCP Management System (SEMS) on the web.

C. Financial Reporting

For each year that funding is provided, an obligation and expenditure plan is required for each ESTCP project. A plan for monthly obligation and expenditure of funds must be submitted via SEMS prior to receipt of funds. On the fifteenth day of every month (or the next working day), all ESTCP projects are required to report monthly financial progress via SEMS. This report provides the actual project obligations and expenditures for the previous month and must be done on time every month.

D. Quarterly Progress Reports (QPR)

All ESTCP projects are required to report technical and programmatic progress on a quarterly basis. All reporting will take place via SEMS no later than the fifteenth day (or the next working day) of the beginning of each quarter.

2. ESTCP Deliverables and Meetings

In addition to project unique requirements (such as appropriate guidance, design, and/or protocol documents to assist the future implementation of the technology), all ESTCP projects must provide the following deliverables and participate in the following meetings.

A. Technology Demonstration Plans

A draft Demonstration Plan is required of all projects at least two months prior to initiating field-testing. Available on the ESTCP web site under PI Resources are "Demonstration Plan Guidelines for Funded Projects" (www.estcp.org).

B. Final Report, Cost and Performance Summary Report, and Final Briefing

All ESTCP projects are required to submit a final technical report (Final Report). A draft report for review by the Program Office is required prior to publication of the Final Report. Concurrent with submitting the Final Report, a draft Cost and Performance Report to be published by the ESTCP Office will also be submitted. This Cost and Performance Report is essentially an executive summary of the Final Report. It will be placed on the ESTCP web site and be used as a technology transfer product. Available on the ESTCP web site are documents for "ESTCP Final Report Guidelines" and "Cost and Performance Report Guidelines" under PI Resources (www.estcp.org). A final briefing by phone is also required of all projects.

C. In-Progress Reviews

ESTCP projects are reviewed during annual In-Progress Reviews (IPRs) held in Arlington, VA. All continuing projects are reviewed in April or early May. New starts are reviewed in February after the first year of execution. A short oral presentation is required of all projects.

D. Annual Symposium

ESTCP co-sponsors a 3-day annual Symposium in or near Washington, D.C. ESTCP project investigators are expected to participate in this conference.

E. Project Publications

All ESTCP projects are expected to publish the results of their work to the maximum extent possible in the open peer reviewed literature. All projects are required to complete or update periodically, but on no less than annual basis, their list of project publications. Submission of this list to the ESTCP Office is an open action item for all projects. The list is reviewed each year at the IPR. Use the "Publications" button in the SEMS to submit this information.

F. Fact Sheet Guidance

Upon initial ESTCP funding, a fact sheet summarizing your project to promote technology transfer is required. Refer to the project descriptions at the ESTCP web site for examples of format and information desired for these fact sheets. Examples of project fact sheets can be found by clicking the "Technologies" link on the ESTCP homepage (www.estcp.org). ESTCP will have the material cleared for public release. At the end of the project concurrent with submission of the draft Cost and Performance Report, the fact sheet must be updated and submitted to ESTCP.

APPENDIX C Electronic Proposal Instructions

An electronic PDF file of all sections of your proposal should be in the following format:

- Media: CD
- File Format: Adobe PDF (Adobe.pdf format is being used to protect the proposals from any form of modification.) **All sections** of the proposal, including the signed cover page and cost proposal should be saved into **ONE** PDF file.
- File Name: ESTCP Proposal Number (i.e., 10 EB-MM1-001, obtained from the proposal cover page section 2)
- Labeling: Proposal number on the CD case and CD label.

Creating an Electronic PDF File of your proposal:

1. Open each file of your proposal separately (word, spreadsheet, etc.), and convert to a PDF. Once all files have been converted, merge **ALL** files in the proper order, into the **one electronic PDF file**.
2. From the File Menu, choose Print.
3. Select Adobe PDF Writer as your printer.
4. Select the Properties Button.
5. From the Properties menu box change the Default Settings to “Smallest File Size”.
6. Adobe document security settings must be turned **off / None** to allow for printing and copy/pasting of data for internal use.
7. Click OK to accept the changes.
8. Now you are ready to Print the Proposal to PDF.

Notes:

1. Send one original and (5) hard copies of the proposal along with ONE electronic PDF file on CD.
2. One electronic PDF file with ALL sections, including all appendices of the proposal is requested. A signed copy of the Web PTS cover page, proposal, cost spreadsheets, curricula vitae, and any supporting technical data (*optional*) **must be converted to PDF format and compiled into ONE electronic PDF file**.
3. To ensure continuity and consistency between the paper copies and the electronic PDF file of the proposal, the **paper copy should be printed from the electronic PDF file**.

*If you do not have Adobe Writer or the ability to save your proposal as a PDF document on CD, send the electronic Word Processing version of your proposal. We will PDF this document for our files.