Defense-Wide Research and Development Near Term Energy-Efficient Technologies Projects
### Defense-Wide Research and Development Near Term Energy-Efficient Technologies Projects

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**Acronyms and Abbreviations**

- AFRL: Air Force Research Laboratory  
- BAA: Broad Agency Announcement  
- CECOM: Communications-Electronics Command  
- CPFF: Cost-Plus-Fixed-Fee  
- DLA: Defense Logistics Agency  
- FAR: Federal Acquisition Regulation  
- FBO: Federal Business Opportunities  
- FPDS: Federal Procurement Data System  
- FFP: Firm-Fixed-Price  
- NAVAIR: Naval Air Systems Command  
- NTEET: Near Term Energy-Efficient Technologies  
- OMB: Office of Management and Budget  
- RDECOM: Research, Development, and Engineering Command  
- RDT&E: Research, Development, Test, and Evaluation  
- RFPs: Requests for Proposals  
- TACOM-LCMC: TACOM–Life Cycle Management Command  
- USACE: U.S. Army Corps of Engineers
MEMORANDUM FOR UNDER SECRETARY OF DEFENSE (COMPTROLLER)/
CHIEF FINANCIAL OFFICER
ASSISTANT SECRETARY OF THE AIR FORCE
(FINANCIAL MANAGEMENT AND COMPTROLLER)
DIRECTOR, DEFENSE RESEARCH AND ENGINEERING
DIRECTOR, DEFENSE LOGISTICS AGENCY
NAVAL INSPECTOR GENERAL
AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Defense-Wide Research and Development Near Term Energy-Efficient
Technologies Projects (Report No. D-2011-040)

We are providing this report for your information and use. The Defense Logistics Agency
(DLA) and the Military Departments properly justified and adequately planned and funded
15 Defense-wide Near Term Energy-Efficient Technologies (NTEET) projects. However, DLA
and the Military Departments could have improved NTEET project contracting and transparency.
We considered management comments on a draft of this report when preparing the final report.
Based on Department of the Army comments, we deleted draft report Recommendation 2.a.2 and
renumbered draft report Recommendation 2.a.1 as Recommendation 2.a in this final report.

Management comments conformed to the requirements of DoD Directive 7650.3; therefore, no
additional comments are required.

We appreciate the courtesies extended to the staff. Please direct questions to me at
(703) 604-9201 (DSN 664-9201).

Richard B. Jolliffe
Assistant Inspector General
Acquisition and Contract Management
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Results in Brief: Defense-Wide Research and Development Near Term Energy-Efficient Technologies Projects

What We Did
We reviewed the planning, funding, contracting, and initial execution of 15 Defense-wide Near Term Energy-Efficient Technologies (NTEET) program research and development projects, valued at $72.94 million, implemented by the Defense Logistics Agency (DLA), Army, Navy, and Air Force. We reviewed the projects to ensure that the contracting efforts of DLA and the Military Departments complied with the American Recovery and Reinvestment Act of 2009 (Recovery Act) requirements, Office of Management and Budget (OMB) guidance, the Federal Acquisition Regulation (FAR), and DoD implementing guidance including the DoD NTEET Program Plan of May 15, 2009.

What We Found
DLA and the Military Departments properly justified and adequately planned and funded 15 Defense-wide NTEET projects. In addition, DLA and Military Department officials generally used solicitation techniques such as Broad Agency Announcements and Requests for Proposals to solicit and award contract actions, with 69 percent of the actions using full and open competition. As of June 30, 2010, DLA and the Military Departments awarded a total of 32 contract actions, valued at approximately $56 million of the $72.94 million in available Recovery Act funds, for 14 of the 15 Defense-wide projects. However, DLA and the Military Departments could have improved NTEET project contracting and public notification processes. Specifically, DLA and the Military Departments should have:

- included FAR-required Recovery Act contract clauses in solicitation notifications, solicitations, and in contract documentation and
- posted the solicitation and/or award notifications and included a description of the work to be performed in the public notifications.

DLA and the Military Departments did not include Recovery Act clauses, properly describe work to be performed, and maintain OMB-required public notification and awareness for the NTEET projects due to a lack of consistent contract implementation and oversight. As a result, DLA and the Military Departments did not achieve the Recovery Act objective of transparency in implementing Defense-wide NTEET actions.

What We Recommend
We recommend that the Director, Defense Research and Engineering, emphasize again with DLA and the Military Departments, the need for the Defense-wide NTEET contracting officers to post public Web site solicitation and/or award notifications that include appropriate descriptions of Recovery Act work performed and appropriate Recovery Act FAR clauses. We recommend the above entities modify 5 Defense-wide NTEET contracts to include appropriate Recovery Act FAR clauses, modify 16 public Web site award notifications to include appropriate descriptions of the Recovery Act work to be performed, and post all Recovery Act actions to the required public Web sites.

Management Comments
Management comments were responsive to the recommendations, and no further comments are required. Based on the comments, we deleted draft report Recommendation 2.a.2 and renumbered draft report Recommendation 2.a.1 as Recommendation 2.a in this final report. Please see the recommendations table on the back of this page.
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<th>Recommendations Requiring Comment</th>
<th>No Additional Comments Required</th>
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<td></td>
<td>1.a, 1.b, 1.c, and 1.d</td>
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<tr>
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<td></td>
<td>2.a and 2.b</td>
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<td>Head of Contracting Activity, Army Contracting Command National Capital Region Contracting Center</td>
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<tr>
<td>Commander, U.S. Army Corps of Engineers</td>
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<td>5.a and 5.b</td>
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<td>Director, Defense Logistics Agency</td>
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Introduction

Objectives
The primary objective of the audit was to determine whether DoD and its Components were planning and implementing the American Recovery and Reinvestment Act of 2009 (Recovery Act) by meeting the requirements in the Recovery Act; Office of Management and Budget (OMB) Memorandum M-09-10, “Initial Implementing Guidance for the American Recovery and Reinvestment Act of 2009,” February 18, 2009; and subsequent related guidance. For this audit, we reviewed the planning, funding, contracting, and initial execution of 15 Near Term Energy-Efficient Technologies (NTEET) program research and development projects to ensure that Military Departments and Defense Logistics Agency (DLA) contracting efforts complied with Recovery Act requirements, OMB guidance, the Federal Acquisition Regulation (FAR), and DoD implementing guidance. See Appendix A for a discussion of our scope and methodology.

Recovery Act Background
The President signed the Recovery Act into law on February 17, 2009. It is an unprecedented effort to jump-start the economy and create or save jobs.

The purposes of this Act include the following:
(1) To preserve and create jobs and promote economic recovery.
(2) To assist those most impacted by the recession.
(3) To provide investments needed to increase economic efficiency by spurring technological advances in science and health.
(4) To invest in transportation, environmental protection, and other infrastructure that will provide long-term economic benefits.
(5) To stabilize State and local government budgets, in order to minimize and avoid reductions in essential services and counterproductive state and local tax increases.

... the heads of Federal departments and agencies shall manage and expend the funds made available in this Act so as to achieve the purposes specified ... including commencing expenditures and activities as quickly as possible consistent with prudent management.

Recovery Act Requirements
The Recovery Act and implementing OMB guidance require projects to be monitored and reviewed. We grouped these requirements into the following four phases: (1) planning, (2) funding, (3) execution, and (4) tracking and reporting. The Recovery Act requires that projects be properly planned to ensure the appropriate use of funds. Review of the funding phase is to ensure the funds were distributed in a prompt, fair, and reasonable manner. Review of the project execution phase is to ensure that contract actions awarded with Recovery Act funds were transparent, competed, and contained specific FAR clauses; that Recovery Act funds were used for authorized purposes; and that instances of fraud, waste, error, and abuse were mitigated. Review of the initial execution phase also ensures that program goals were achieved, including specific program outcomes and
improved results on broader economic indicators; that projects funded avoided unnecessary delays and cost overruns; and that contractors or recipients of funds reported results. Review of the tracking and reporting phase ensures that the recipients’ use of funds was transparent to the public and that benefits of the funds were clearly, accurately, and timely reported.

**Recovery Act Contracting Requirements**


The specific FAR Recovery Act requirements are for:

- buying American construction material,*
- protecting contractor whistleblowers,
- publicizing contract actions,
- reporting, and
- giving the Government Accountability Office and agency Inspectors General access to contracting records.


- identify the action as funded by the Recovery Act,
- post pre-award notices for orders exceeding $25,000,
- describe supplies in a clear narrative to the general public, and
- provide the rationale for awarding any contracting actions that were not both fixed-price and competitive.

FBO is the Federal Government’s central source of Federal procurement opportunities. FBO is a Web-based portal that allows agency officials to post Federal procurement opportunities and contractors to search and review those opportunities. Agencies also post contract award notices on FBO. In addition, to provide transparency, FBO has a separate section identifying Recovery Act opportunities and awards.

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*FAR Section 25.6, “American Recovery and Reinvestment Act – Buy American Act – Construction Materials,” is not applicable to Defense-wide Recovery Act NTEET projects because these projects are research and development, not construction.*
FPDS is the Federal Government’s central source of procurement information. Contracting officers enter information, to include the Treasury Account Symbol, in the FPDS for all Recovery Act contract actions. The Treasury Account Symbol enables FPDS to provide transparency by generating and posting a report containing all Recovery Act contract actions.

FAR 6.1, “Full and Open Competition,” describes the steps necessary for full and open competition. Full and open competition includes full and open competition after exclusion of sources, which allows an agency to exclude a particular source(s) when doing so would ultimately be more beneficial to the agency than if competition was full and open. FAR 6.302, “Other Than Full and Open Competition,” allows for sole-source contracts when “only one responsible source and no other supplies or services will satisfy agency requirements.”

**OMB Recovery Act Guidance**

Criteria for planning and implementing the Recovery Act continue to change as OMB issues additional guidance, and DoD and the Components issue their implementation guidance. OMB has issued 10 memoranda and 1 bulletin to address the implementation of the Recovery Act. See Appendix B for Recovery Act criteria and guidance.

**DoD Recovery Act Program Plans**

Under the Recovery Act, Congress appropriated approximately $12 billion to DoD for the following programs: Energy Conservation Investment; Facilities Sustainment, Restoration, and Modernization; Homeowners Assistance; Military Construction; Near Term Energy-Efficient Technologies; and U.S. Army Corps of Engineers (USACE) Civil Works (see Table 1).

<table>
<thead>
<tr>
<th>Program</th>
<th>Amount (in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Conservation Investment</td>
<td>$120</td>
</tr>
<tr>
<td>Facilities Sustainment, Restoration, and Modernization</td>
<td>4,260*</td>
</tr>
<tr>
<td>Homeowners Assistance</td>
<td>555</td>
</tr>
<tr>
<td>Military Construction</td>
<td>2,185</td>
</tr>
<tr>
<td>Near Term Energy-Efficient Technologies</td>
<td>300</td>
</tr>
<tr>
<td>U.S. Army Corps of Engineers Civil Works</td>
<td>4,600</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$12,020</strong>*</td>
</tr>
</tbody>
</table>

The Recovery Act divides the approximately $12 billion among 32 DoD and USACE line items of appropriations.

**Research and Development Contracting**

The primary purpose of contracted research and development programs is to advance scientific and technical knowledge and apply that knowledge to achieve agency and national goals. Unlike contracts for other services and supplies, most research and development contracts contain objectives for which the work or method cannot be precisely described in advance. Although the Government prefers to use fixed-price contracts, they do not usually apply in research and development contracting, where specifications and cost estimates are usually not precise enough to permit a fixed-price preference. Therefore, the DoD NTEET Program Plan, May 15, 2009, forecasted a smaller percentage of fixed-price contract actions for anticipated Recovery Act NTEET program projects than for other Recovery Act project categories.

FAR Part 35, “Research and Development Contracting,” states that the Broad Agency Announcement (BAA) is used by agencies to fulfill their requirements for scientific study and experimentation directed toward advancing the state of the art or increasing knowledge or understanding rather than focusing on a specific system or hardware solution. A BAA is used when proposals with varying technical or scientific approaches can be reasonably anticipated. A BAA describes the agency’s research interest in an individual program requirement or in broadly defined areas of interest covering the full range of an agency’s requirements.

**Review of Internal Controls**

DoD Instruction 5010.40, “Managers’ Internal Control Program (MICP) Procedures,” July 29, 2010, requires DoD organizations to implement a comprehensive system of internal controls that provides reasonable assurance that programs are operating as intended and to evaluate the effectiveness of the controls. We identified an internal control weakness in the posting of solicitation and award notices for Defense-wide NTEET program contract actions. The Commander, Communications-Electronics Command (CECOM); the Commander, Research, Development, and Engineering Command (RDECOM); the Commander, USACE; and the Director, DLA, should better facilitate the transparency of Recovery Act contract actions posted on Government Web sites by implementing Recommendations 2.a, 3.b, 5.a, and 6, respectively. The Commander, CECOM; Commander, RDECOM; the Head of Contracting Activity, Army Contracting Command National Capital Region Contracting Center; and the Commander, USACE, should better facilitate the inclusion of required Recovery Act FAR clauses in Defense-wide NTEET contracts by implementing Recommendations 2.b, 3.a, 4, and 5.b, respectively. We will provide a copy of the report to the senior officials responsible for internal controls at the commands.
Finding. Defense-Wide Near Term Energy-Efficient Technologies Program Implementation

DLA and the Military Departments properly justified and adequately planned and funded 15 NTEET projects. In addition, DLA and the Military Departments generally competed Defense-wide NTEET contract actions through the use of solicitation techniques such as BAAs and RFPs. As of June 30, 2010, 32 contract actions, valued at $56 million of the $72.94 million in available Defense-wide RDT&E Recovery Act funds, were awarded for 14 of the 15 Defense-wide Recovery Act NTEET projects. However, DLA and the Military Departments could have improved NTEET project contracting and public notification processes. Specifically, the Military Departments and DLA should have:

- included required Recovery Act contract clauses in solicitation notifications for 28 of the 32 Defense-wide NTEET contract actions,
- included at least 1 missing Recovery Act contract clause in 5 contracts,
- increased public awareness by posting the solicitations and/or award notices for 13 contract actions, and
- increased public awareness by describing the work to be performed for 16 contract actions.

DLA and the Military Departments did not include FAR-required Recovery Act clauses in the contracts, properly describe work to be performed, and maintain OMB-required public notification and awareness for all Defense-wide NTEET projects because of inconsistent contract implementation and oversight. The inclusion of all applicable Recovery Act clauses in the solicitations informs contractors about reporting requirements and promotes compliance. As a result, DLA and the Military Departments did not achieve the Recovery Act objective of transparency in implementing Defense-wide NTEET actions.

Defense-Wide NTEET Program Adequately Planned

Under the Recovery Act, Congress appropriated $300 million for DoD Research, Development, Test, and Evaluation (RDT&E) funds in four appropriation accounts of $75 million each for Army, Navy, Air Force, and Defense-wide NTEET Recovery Act projects. The Defense-wide program is directed by the Director, Defense Research and Engineering, who assigned specific projects to each Military Service and DLA. The services and DLA submitted RDT&E candidate projects for review in five broad areas:

- fuel optimization for mobility platforms,
- facility energy initiatives,
- operational efficiencies and commercial practices,
- domestic energy supply and distribution, and
- tactical power systems and generators.
See Appendix C for a further description of each of these five program areas.

The DoD Energy Security Task Force, with members from the Military Departments, Defense agencies, and the Office of the Secretary of Defense and chaired by the Director, Defense Research and Engineering, reviewed the projects. The DoD Energy Security Task Force planned and selected the 15 Defense-wide NTEET projects shown in Table 2 based on their ability to satisfy DoD capability gaps, present opportunities for military applications, or spur initiatives within industry and DoD Components. Of the 15 Defense-wide NTEET projects, 10 are being implemented by the Army; 1 by the Naval Air Systems Command (NAVAIR), Warfare Center Weapons Division; 2 by the Air Force Research Laboratory (AFRL); and 2 by DLA. Of the 10 Army Defense-wide NTEET implemented projects, 6 are being implemented by USACE; and 1 each by the Army Contracting Command National Capital Region Contracting Center; the TACOM-Life Cycle Management Command (TACOM-LCMC), CECOM; and RDECOM.

### Table 2. Defense-Wide RDT&E Recovery Act Projects Funded by RDT&E Appropriation

<table>
<thead>
<tr>
<th>Projects</th>
<th>Implementing Command</th>
<th>Amount (in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Materials – Ceramic Matrix Composites</td>
<td>AFRL</td>
<td>$4.86</td>
</tr>
<tr>
<td>2. Fuel Efficient Ground Vehicle Demonstrators</td>
<td>TACOM-LCMC</td>
<td>8.75</td>
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<tr>
<td>3. Energy Modeling</td>
<td>Army Contracting Command National Capital Region Contracting Center</td>
<td>1.60</td>
</tr>
<tr>
<td>4. Continuous Building Commissioning</td>
<td>USACE</td>
<td>6.80</td>
</tr>
<tr>
<td>5. Energy Enterprise Management</td>
<td>USACE</td>
<td>1.94</td>
</tr>
<tr>
<td>6. Solid Waste Gasification</td>
<td>USACE</td>
<td>2.92</td>
</tr>
<tr>
<td>7. Anaerobic Digestor Technology</td>
<td>USACE</td>
<td>1.94</td>
</tr>
<tr>
<td>8. Landfill Gas Energy Capture</td>
<td>USACE</td>
<td>2.43</td>
</tr>
<tr>
<td>9. Wind Lift Power Generator</td>
<td>RDECOM</td>
<td>0.97</td>
</tr>
<tr>
<td>10. Mobile Waste to Energy</td>
<td>DLA</td>
<td>7.31</td>
</tr>
<tr>
<td>11. HPCM Maui Energy Improvement Initiative</td>
<td>AFRL</td>
<td>3.89</td>
</tr>
<tr>
<td>12. Algal Derived Biofuel Program</td>
<td>DLA</td>
<td>5.85</td>
</tr>
<tr>
<td>13. Plasma Fusion (Polywell)</td>
<td>NAVAIR, Warfare Center Weapons Division</td>
<td>1.94</td>
</tr>
<tr>
<td>14. Fuel Cells</td>
<td>CECOM</td>
<td>18.47</td>
</tr>
<tr>
<td>15. Tactical, Deployable Micro-Grid</td>
<td>USACE</td>
<td>3.26</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td><strong>72.94</strong></td>
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<tr>
<td>Small Business Innovative Research and Small Business Tech Transfer Set-Aside*</td>
<td>Various</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>$75.00</strong></td>
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See Appendix D for more detail on the 15 Defense-wide NTEET projects.
Defense-Wide NTEET Program Properly Funded

Office of the Under Secretary of Defense (Comptroller)/Chief Financial Officer personnel released Defense-wide NTEET funds totaling $75 million appropriated in Public Law 111-5, “American Recovery and Reinvestment Act of 2009,” on March 10, 2009, by using two funding authorization documents. The Director, Budget and Finance Washington Headquarters Services, received $61.5 million, and DLA received the remaining $13.5 million. On March 27, 2009, DLA used a funding authorization document to transfer the money to program offices implementing the Mobile Waste to Energy project and the Algal Derived Biofuel project. Washington Headquarters Services transferred $59.44 million in funds to recipient commands to support the 13 remaining Defense-wide NTEET projects by issuing a sequence of Military Interdepartmental Purchase Requests and funding authorization documents from April 8 through September 15, 2009. Once the funds were received, the commands began to award contracts for their respective projects.

Defense-Wide NTEET Contract Actions Were Generally Competed

DLA and the Military Departments used contract actions to execute work for the 14 projects. See Appendix E for a summary of the issues covering the 32 contract actions reviewed. According to FPDS, 22 of the 32 Defense-wide NTEET contract actions (69 percent) were solicited and awarded on a full and open competitive basis; an additional 7 contract actions (22 percent) were solicited and awarded through full and open competition after exclusion of sources. The remaining 3 contract actions (9 percent) were awarded on a sole-source basis.

Use of Broad Agency Announcements and Request for Proposals

DLA and Military Department officials used BAAs and RFPs to solicit and award 27 contract actions for a total of $41.25 million. BAAs were issued in accordance with FAR 6.102(d) (2), “Use of Competitive Procedures,” and FAR 35.016, “Broad Agency Announcement,” which provide for competitive selection of research and development proposals. RFPs were issued in accordance with FAR paragraph 15.203, “Request for Proposals,” to negotiate “acquisitions to communicate Government requirements to prospective contractors and to solicit proposals.” Generally, BAAs and RFPs are used for full and open competition.

Use of Modifications to Original Contract

The Army and the Air Force used modifications to existing contracts for eight Defense-wide NTEET actions, valued at $20.58 million. For example, AFRL issued three modifications for the Ceramic Matrix Composite project. The Army issued five modifications: one modification for the Fuel Efficient Demonstrator project and one for
the Landfill Gas Energy Capture project, and three modifications for the Fuel Cells project. The 3 Air Force modifications along with the 1 Army Landfill Gas Capture project modifications were issued on contracts that were initially awarded based on full and open competition. The remaining 4 Army modifications were issued on contracts that were initially awarded based on full and open competition after exclusion of sources.

**Sole-Source Contracts Were Justified**
The Army and the Navy used sole-source justifications for three contracts, using $4.46 million of Recovery Act funds. FAR 6.302 allows for the use of sole-source contracts when “only one responsible source and no other supplies or services will satisfy agency requirements.” All three awards included acceptable justification and approval documentation in the contract files. The Army used sole-source justifications for two contracts, one by the Army Contracting Command National Capital Region Contracting Center for the Energy Modeling project and the other for the RDECOM Wind Lift Power Generator project. NAVAIR, Warfare Center Weapons Division, used a sole-source justification to award a contract for the Plasma Fusion (Polywell) project.

**NTEET Contracting Actions Awarded Through Three Contract Types**
Different contract types were used by the contracting offices for the 32 contracting actions. The contracts included 5 firm-fixed-price (FFP), 25 cost-plus-fixed-fee (CPFF), and 2 cost-reimbursable contracts.

**Defense-Wide Use of Fixed-Price Contracts for NTEET**
Of the 32 Defense-wide NTEET contract actions, 5 actions, valued at $5.4 million, used fixed-price type contracts. FAR 35.006, “Contracting methods and contract type,” states that the absence of precise specifications and difficulties in estimating costs with accuracy normally precludes the use of fixed-price contracting for research and development; therefore, the use of cost-reimbursement contracts can be appropriate. However, for four Defense-wide projects contracted for by the Army and DLA, specifications were sufficiently precise that five FFP contracts were awarded. The four Defense-wide NTEET projects include:

- Energy Modeling—Army Contracting Command National Capital Region Contracting Center, one contract;
- Wind Lift Power Generator—RDECOM, one contract;
- Tactical Deployable Micro-Grid—USACE, one contract; and
- Algal Derived Biofuel—DLA, two contracts.

**Defense-Wide Use of Cost-Plus-Fixed-Fee Contracts for NTEET**
Twenty-five of the 32 Defense-wide NTEET contract actions, valued at $48.6 million of Recovery Act funds, used CPFF type contracts. As previously stated, FAR 35.006 allows for the use of cost-reimbursement contracts.
Defense-wide NTEET projects that used CPFF contracts include:

- Materials – Ceramic Matrix Composites – AFRL, two contracts;
- Fuel Efficient Ground Vehicle Demonstrator – TACOM-LCMC, one contract;
- Continuous Building Commissioning – USACE, four contracts;
- Energy Enterprise Management – USACE, one contract;
- Solid Waste Gasification – USACE, four contracts;
- Anaerobic Digester Technology – USACE, one contract;
- Landfill Gas Energy Capture – USACE, two contracts;
- HPCM Maui Energy Improvement Initiative – AFRL, one contract;
- Algal Derived Biofuel Program – DLA, one contract;
- Plasma Fusion (Polywell) – NAVAIR, Warfare Center Weapons Division, one contract;
- Fuel Cells – CECOM, six contracts; and
- Tactical Deployable Micro-Grid – USACE, one contract.

**Defense-Wide Use of Cost-Reimbursement Contracts for NTEET**

Two Defense-wide NTEET contract actions were cost-reimbursement types. One of the three Ceramic Matrix Composites contract actions awarded by AFRL for $1.52 million and one of two Energy Enterprise Management project contracts awarded by USACE used a cost-reimbursement contract for $400,000 of Recovery Act funds. FAR 16.302 states “a cost contract may be appropriate for research and development work, particularly with nonprofit educational institutions.” The Energy Enterprise Management contractor is a state-funded university that cannot utilize CPFF contracts.

**Transparency of Defense-Wide NTEET Contracting Needs Improvement**

We found multiple instances in which public awareness was not achieved in Defense-wide project contracts and solicitations. The problems included missing Recovery Act clauses in solicitations and contracts and lack of public notification of contracts solicited and awarded. See Appendix E for a summary of transparency problems for all 32 contract actions.

**Recovery Act Contract Clauses Missing in Defense-Wide NTEET Solicitations and Contracts**

Only 4 of the 32 contract actions listed required FAR clauses on presolicitation or award notices posted on FBO. DLA and the Military Departments should have included FAR-required Recovery Act clauses in the solicitation notification for the other 28 contract actions reviewed. For example, USACE should have included clauses in the 16 solicitation notifications. USACE contracting officials stated that the clauses were not included in the notifications because the applicable
underlying BAAs were posted prior to the release of the Recovery project appropriation. We believe that DoD needs to reemphasize to the Military Departments and DLA to include required FAR clauses in the solicitation notifications posted on the FBO Web site.

We found that 27 of the 32 contract actions reviewed included required Recovery Act clauses in the contract as documented in the official contract file. The 5 contract actions that did not include at least one required contract clause included:

- Energy Modeling project–Army Contracting Command National Capital Region Contracting Center, one contract,
- Landfill Gas Energy Capture Project–USACE, one contract action,
- Wind Lift Power Generator–RDECOM, one contract, and
- Fuel Cells–CECOM, two contract actions.

The RDECOM contracting officer stated that the “Whistleblower Protection Under the American Recovery and Reinvestment Act of 2009” clause was left out due to contracting office error. The Army should modify the noted contracts to comply with Recovery Act contracting requirements.

**Public Awareness of Defense-Wide NTEET Solicitations and Contracts Could be Improved**

Only 4 of the 32 Defense-wide NTEET contract actions met transparency requirements. One contract for the NAVAIR, Warfare Center Weapons Division, Plasma Fusion project; two of the three contracts for the Algal Derived Biofuel project; and one of the two contracts for the Tactical Deployable Micro-Grid met the transparency requirements. Public awareness was not achieved for 13 contract actions where contract officials did not post a presolicitation, contract modification, or a contract award notice on FBO. Sixteen contract actions did not include a detailed description in the presolicitation or award notice posted on FBO. Contracting officials did not post the required FAR clauses in the notices on FBO for 28 contract actions. See Appendix D for description of individual project transparency problems.

**Projects Lacked Recovery Act Solicitations**

Army, Air Force, and DLA officials did not post a solicitation notification on FBO for five Defense-wide NTEET contract actions. The AFRL did not post a Recovery Act solicitation notification for three Materials – Ceramic Matrix Composites project contract actions because contracting officials believed that the three solicitation notifications were connected to potential contract modifications that were within the scope of the original non-Recovery Act contract. However, per FAR 5.7, “Publicizing Requirements Under the American Recovery and Reinvestment Act of 2009,” the solicitation notifications must be posted.

DLA did not post a notification for Algal Derived Biofuel Program project for one of the three contracts. Also, USACE did not post a notification for one of the two contracts for the Energy Enterprise Management project due to lack of oversight by the contract specialist.
Projects Without Recovery Act Award Notices

Army and DLA officials did not issue required FBO award notices for eight Defense-wide NTEET contract actions. Seven of the eight contract actions were awarded by the Army; one contract for the Wind Lift Power Generator project and six contract actions for the CECOM Fuel Cells project. After we notified CECOM personnel of the error, the CECOM contracting officer took corrective action by posting five award notices on June 1, 2010. Contract officials awarded the sixth contract action on June 9, 2010, and posted an award notice on August 3, 2010, after we notified them of the missing award notification. DLA did not post an award notice for one of the three contracts on FBO for the Algal Derived Biofuel Program project. DLA managers noted that the award notification was not posted because the contracting officer made a determination that it was not required because the Algal Derived Biofuel Program project was ongoing. We concluded that the award notification was required because the contract action was specifically for new Recovery Act work.

Reasons for Transparency Deficiencies in Defense-Wide NTEET Contracting

Public awareness was not achieved for 28 of the 32 Defense-wide NTEET contract actions. This was due to lack of contracting office oversight; by not posting solicitations and/or award notices; by not including required FAR clauses in the solicitation notification, solicitation, and contract; and by not describing the work to be performed in the solicitation or award notice posted on FBO. Inclusion of all applicable Recovery Act clauses in solicitations informs contractors about reporting requirements and promotes compliance.

Conclusion

DLA and Military Departments officials generally used competitive Defense-wide NTEET contract actions, awarding 32 actions, valued at approximately $56 million, for 14 of the 15 Defense-wide NTEET Recovery Act projects. We found 13 contract actions that did not have a solicitation and/or an award notice posted on FBO. In addition, we found 16 solicitations and award notices for which contracting officials did not facilitate transparency by providing detailed descriptions of the projects. Also, only 4 of the 32 contract actions listed required FAR clauses on the presolicitation or award notices posted on FBO; however, 27 of the 32 actions included the required FAR clauses in the contract file documentation.

Management Comments on the Finding

The Director, DLA Acquisition, responding on behalf of the Director, DLA, agreed with the finding without further comment.
Deleted and Renumbered Recommendations

As a result of comments from the Executive Director, CECOM, we deleted draft report Recommendation 2.a.2 and renumbered draft report Recommendation 2.a.1 as Recommendation 2.a in this final report.

1. We recommend that the Director, Defense Research and Engineering, improve Recovery Act contract compliance for the Defense-wide Near Term Energy-Efficient Technologies program by re-emphasizing with the Service Acquisition Secretaries and the Director, Defense Logistics Agency, the need for the Defense-wide Near Term Energy-Efficient Technologies program contracting officers to:

   a. Post to the required public Web site presolicitation notices, solicitations, and/or award notifications.

   b. Include appropriate descriptions of the Recovery Act work to be performed in public postings.

   c. Include full justification for solicitations or awards that are not fixed-price in nature.

   d. Include all appropriate Recovery Act Federal Acquisition Regulation clauses for Defense-wide Near Term Energy-Efficient Technologies program contracts.

Office of the Secretary of Defense Comments

The Principal Deputy, Director, Defense Research and Engineering, responding on behalf of the Director, Defense Research and Engineering, agreed and stated that Defense Research and Engineering would continue to monitor the progress of projects throughout the life-cycle of the effort.

Our Response

The Principal Deputy, Director, Defense Research and Engineering, comments are responsive and meet the intent of the recommendation. In supplementary correspondence, Defense Research and Engineering staff stated that the implementation of the recommendations would be completed by March 1, 2011.

2. We recommend that the Commander, Communications-Electronics Command:

   a. Direct the modification of contracts W15P7T-10-C-B009, W15P7T-10-C-B010, W15P7T-10-C-B011, W15P7T-10-C-B010-P00002, W15P7T-10-C-B011-
P00002 to: include full justification for awards that are not fixed-price in nature in the Federal Business Opportunities and other required Web sites.

b. Direct the modification of contract W15P7T-10-C-B009 to include all required Recovery Act clauses.

**Department of the Army Comments**
The Executive Director, CECOM Contracting Center, responding on behalf of the Commander, CECOM, agreed with Recommendations 2.a. and b. The Executive Director noted that CECOM staff updated the FBO Web site to include the rationale for using cost-plus-fixed-fee contracts and modified the contract to include all required Recovery Act clauses.

**Our Response**
The Executive Director, CECOM Contracting Center, comments are responsive and meet the intent of the recommendations. We confirmed that CECOM updated the FBO Web site to include the rationale for cost-plus-fixed-fee contracts and modified the contract to include the required Recovery Act clauses. No further management comments are required.

3. We recommend that the Commander, Research, Development, and Engineering Command:

   a. Direct the modification of contract W911QX-09-C-0093 to include all required Recovery Act clauses.

   b. Direct the posting of the award announcement of contract W911QX-09-C-0093 to the Federal Business Opportunities and other required Web sites.

**Department of the Army Comments**
The Executive Director, U.S. Army RDECOM Contracting Center, responding on behalf of the Commander, RDECOM agreed, noting that RDECOM modified the contract to include required Recovery Act clauses and updated the FBO Web site to include the required award notice.

**Our Response**
The Executive Director, U.S. Army RDECOM Contracting Center, comments are responsive and meet the intent of the recommendations. We confirmed that RDECOM amended the contract to include the required Recovery Act clauses and updated the FBO Web site to include the required award notice. No further management comments are required.
4. We recommend that the Head of Contracting Activity, Army Contracting Command National Capital Region Contracting Center, direct the modification of contract W91WAW-09-C-0162 to include all required Recovery Act clauses.

**Department of the Army Comments**
The Director, National Capital Region Contracting Center, agreed and modified the contract to include the required Recovery Act clauses.

**Our Response**
The Director, National Capital Region Contracting Center, comments are responsive and meet the intent of the recommendation. We confirmed that the National Capital Region Contracting Center modified the contract to include the required Recovery Act clauses. No further management comments are required.

5. We recommend that the Commander, U.S. Army Corps of Engineers Humphrey’s Engineering Center:

   a. Direct the revising and posting of the award notices for contracts W912HQ-08-C-0040-P00002, W912HQ-09-C-0053, W912HQ-09-C-0054, W912HQ-09-C-0055, W912HQ-09-C-0056, W912HQ-09-C-0058, W912HQ-09-C-0059, W912HQ-09-C-0060, W912HQ-09-C-0061, W912HQ-10-C-0001, and W912HQ-10-C-0050, to include the appropriate descriptions of the Recovery Act work to be performed in the Federal Business Opportunities and other required Web sites; and

   b. Direct the modification of contract W912HQ-08-C-0040 to include all required Recovery Act clauses.

**Department of the Army Comments**
The Deputy Chief, Headquarters Internal Review Office, responding on behalf of the Commander, USACE, agreed and stated that USACE updated the FBO Web site to include the required project description and amended the contract to include the required Recovery Act clauses.

**Our Response**
The Deputy Chief, Headquarters Internal Review Office, comments are responsive and meet the intent of the recommendation. We confirmed that USACE amended the contract to update a clause to conform to Recovery Act requirements. No further management comments are required.

6. We recommend that the Director, Defense Logistics Agency, direct the posting of the award announcement of contract SP4701-09-C-0040 to the Federal Business Opportunities and other required Web sites.
Defense Logistics Agency Comments
The Director, DLA Acquisition, responding on behalf of the Director, DLA, agreed and noted that DLA updated the FBO Web site to include the required award notice. The Director also stated that she instructed the Director for Acquisition Policy to prepare correspondence to the DLA contracting workforce reminding the workforce of its responsibility to post contract award announcements to FBO.

Our Response
The Director, DLA Acquisition, comments are responsive and meet the intent of the recommendation. No further management comments are required.
Appendix A. Scope and Methodology

This is the second in a series of reports on DoD implementation of the Recovery Act NTEET program. We conducted this performance audit from September 2009 to December 2010 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and our conclusions based on our audit objectives. The evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

We visited or contacted all 15 Defense-wide NTEET Recovery Act project offices, excluding Small Business Innovative Research projects. Locations visited include AFRL Wright Patterson Air Force Base, Dayton, Ohio (1 project); TACOM-Life Cycle Management Command, Warren, Michigan (1 project); USACE Humphrey’s Engineer Center, Alexandria, Virginia (5 projects); DLA, Fort Belvoir, Virginia (2 projects); NAVAIR, Warfare Center Weapons Division, China Lake, California (1 project); and CECOM, Aberdeen Proving Ground, Maryland (1 project). During these visits we researched each project, its status in the contract award process, and how it was being managed to comply with the transparency and accountability objectives in the Recovery Act and with OPM, FAR, and DoD implementing guidance.

The remaining four project officials were contacted by phone or through e-mail. Those commands included the Army Contracting Command National Capital Region Contracting Center, Washington, D.C. (1 project); RDECOM, Adelphi, Maryland (1 project); AFRL, Kirtland Air Force Base, New Mexico (1 project); and USACE, Philadelphia District (1 project). We obtained documentation, including charts on individual Defense-wide projects, BAA announcements, and milestone timelines. We reviewed Defense-wide NTEET program-related solicitation and contract award notices posted on the FBO Web site through June 30, 2010. Specifically, we determined whether:

- the selected projects were adequately planned to ensure the appropriate use of Recovery Act funds (Planning);
- funds were awarded and distributed in a prompt, fair, and reasonable manner (Funding); and
- contract actions contained required Recovery Act FAR clauses (Initial Execution).

We used this supporting documentation to determine whether the contract solicitations and awards met OMB, FAR, and DoD Recovery Act implementation and transparency requirements. We applied the Recovery Act Contract Checklist developed by the Recovery Accountability and Transparency Board. In addition, we met with officials in the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics to learn how candidate NTEET projects were selected for Recovery Act funding.

We did not use classical statistical sampling techniques that would permit generalizing results to the total population because there were too many potential variables with
unknown parameters at the beginning of this analysis. The predictive analytic techniques employed provided a basis for logical coverage not only of Recovery Act dollars being expended, but also of types of projects and types of locations across the Military Services, Defense agencies, State National Guard units, and public works projects managed by USACE.

**Use of Computer-Processed Data**

We used computer-processed data to perform this audit. Specifically, we used the notices on the FBO Web site, data reported from the FPDS and the Excluded Parties List System, the DoD Recovery Act Financial and Activity Report, and contract documentation from the Electronic Data Archive System posted from April 2009 to July 2010. We tested the accuracy of this data by comparing the project data reported on different systems for consistency and by meeting with program officials responsible for reporting on the applicable Recovery Act requirements. Our audit focused on the reporting of contract actions on specific Defense-wide projects. From these procedures, we concluded that the DoD data were sufficiently reliable for meeting the audit objectives.

**Prior Coverage**

The Government Accountability Office, the Department of Defense Inspector General, and the Military Departments have issued reports and memoranda discussing DoD projects funded by the Recovery Act. You can access unrestricted reports at [http://www.recovery.gov/accountability](http://www.recovery.gov/accountability).
Appendix B. Recovery Act Criteria and Guidance

The following list includes the primary Recovery Act criteria documents (notes appear at the end of the list):


- White House Memorandum, “Ensuring Responsible Spending of Recovery Act Funds,” March 20, 2009


- OMB Memorandum M-09-16, “Interim Guidance Regarding Communications With Registered Lobbyists About Recovery Act Funds,” April 7, 2009

- OMB Memorandum M-09-19, “Guidance on Data Submission under the Federal Funding Accountability and Transparency Act (FFATA),” June 1, 2009


- OMB Memorandum M-09-24, “Updated Guidance Regarding Communications with Registered Lobbyists About Recovery Act Funds,” July 24, 2009

• OMB Office of Federal Procurement Policy, “Interim Guidance on Reviewing Contractor Reports on the Use of Recovery Act Funds in Accordance with FAR Clause 52.204-11,” September 30, 2009


• White House Memorandum, “Combating Noncompliance With Recovery Act Reporting Requirements,” April 6, 2010

• OMB Memorandum M-10-17, “Holding Recipients Accountable for Reporting Compliance under the American Recovery and Reinvestment Act,” May 4, 2010


Notes

1 The Memorandum provides Government-wide guidance for carrying out programs and activities enacted in the American Recovery and Reinvestment Act of 2009. The guidance states that the President’s commitment is to ensure that public funds are expended responsibly and in a transparent manner to further job creation, economic recovery, and other purposes of the Recovery Act.

2 These documents provide Government-wide guidance for carrying out the reporting requirements included in section 1512 of the Recovery Act. The reports will be submitted by recipients beginning in October 2009 and will contain detailed information on the projects and activities funded by the Recovery Act.
Appendix C. DoD Near Term Energy-Efficient Technologies Program Funding and Functional Areas

The Recovery Act appropriated $300 million in DoD RDT&E funds in four appropriation accounts of $75 million each for Army, Navy, Air Force, and Defense-wide RDT&E Recovery Act projects. The DoD NTEET program divided the funds to support project categories. The table below provides the RDT&E funding and category of the planned work.

### Table. Program Categories and Values of Energy-Related RDT&E Projects
(values in thousands)

<table>
<thead>
<tr>
<th>Category</th>
<th>Army</th>
<th>Navy</th>
<th>Air Force</th>
<th>Defense-Wide</th>
<th>DoD Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel Optimization for Mobility Platforms</td>
<td>$40,000</td>
<td>$52,900</td>
<td>$28,000</td>
<td>$16,000</td>
<td>$136,900</td>
</tr>
<tr>
<td>Facility Energy Initiatives</td>
<td>10,000</td>
<td>3,500</td>
<td></td>
<td>9,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Operational Efficiencies and Commercial Practices</td>
<td>None</td>
<td>None</td>
<td>1,000</td>
<td></td>
<td>10,000</td>
</tr>
<tr>
<td>Domestic Energy Supply and Distribution</td>
<td>15,000</td>
<td>16,100</td>
<td>37,000</td>
<td>47,000</td>
<td>115,100</td>
</tr>
<tr>
<td>Tactical Power Systems and Generators</td>
<td>10,000</td>
<td>2,500</td>
<td>9,000</td>
<td>3,000</td>
<td>24,500</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$75,000</strong></td>
<td><strong>$75,000</strong></td>
<td><strong>$75,000</strong></td>
<td><strong>$75,000</strong></td>
<td><strong>$300,000</strong></td>
</tr>
</tbody>
</table>

The energy-related projects have the potential to identify technologies that can increase our fuel efficiency and thereby reduce our dependence on foreign energy.

**Fuel Optimization for Mobility Platforms**

These RDT&E efforts include testing various materials, like ceramics, in engine and equipment design to lower thermal loads and decrease the need for cooling of component parts that require additional energy to perform the cooling tasks. Efforts also include conducting demonstrations on the fuel efficiency of low observable subsonic propulsion systems for unmanned aerial vehicles.

**Facility Energy Initiatives**

These projects include developing or reviewing off-the-shelf enterprise energy auditing programs and software that can couple energy security with energy efficiency, reduce power consumption in tactical heating and air-conditioning systems, and develop whole-building energy modeling and monitoring systems and renewable energy building integration.
Operational Efficiencies and Commercial Practices
These projects include developing or reviewing off-the-shelf enterprise energy auditing and water management programs and software that can couple energy security with energy efficiency, whole-building energy modeling, monitoring systems, and renewable energy building integration.

Domestic Energy Supply and Distribution
These include waste-to-energy and waste-to-fuel technology research and demonstrations, landfill gas use, biomass and algae fuel oil production, multi-junction solar photovoltaics for cells and sensors, wave and thermal energy from oceans, wind power, and analyzing radar cross sections.

Tactical Power Systems and Generators
These projects include developing and demonstrating methanol-based portable fuel cells with improved energy densities, long-duration multi-junction photovoltaics for Unmanned Aerial Vehicles, waste heat to cooling using absorption environmental control systems, and scalable micro-grid electrical distribution systems for fixed and tactical installation use.
Appendix D. Description and Status of Defense-Wide Near Term Energy-Efficient Technologies Projects

The Recovery Act provided $75 million of RDT&E funding for improvements in energy generation and efficiency, transmission, storage, and for use on military installations and within operations forces. The projects include research and development of energy from algae biofuel, micro-grids, and kite-powered generators.

1. **Materials – Ceramic Matrix Composites**

Ceramic Matrix Composites are high-temperature materials that are replacing metals in high-temperature components of turbine engines and nuclear reactors. They are more lightweight and last longer than metals but cost more to manufacture at the present time because the technology is just now being scaled up. The AFRL at Wright Patterson Air Force Base, Ohio, awarded three modifications to existing contract actions under this project for a total of $4.86 million, the total funded amount. Public awareness would have been improved by posting presolicitation notices on the FBO Web site.

2. **Fuel Efficient Ground Vehicle Demonstrator**

The Fuel Efficient Ground Vehicle Demonstrator is designing and fabricating one full-scale vehicle system demonstrator. This vehicle is utilizing fuel efficient technologies by maximizing fuel economy. The TACOM-LCMC Contracting Center awarded one modification that was an exercised option under the original contract for this project for $8.75 million, the full funded amount.

3. **Energy Modeling**

The Energy Modeling project is developing a fully burdened cost-of-fuel analysis tool. This is enabling the Army Contracting Command National Capital Region Contracting Center to predict the fuel consumption of all its vehicles for different scenarios with more accuracy. The Army awarded one contract for this effort for $1.55 million. The Army Contracting Command National Capital Region Contracting Center would have improved transparency by ensuring all of the required Recovery Act clauses were included in the contract.

4. **Continuous Building Commissioning**

The Continuous Building Commissioning project is demonstrating monitoring systems capable of identifying, classifying, and quantifying energy and water consumption deviations from design intent or optimal usage. This project is identifying the causes of those deviations, and recommending, prioritizing, and implementing corrective actions. The USACE Humphrey’s Engineer Center awarded four contracts for this project, with a total value of $5.72 million. Two of these contracts are in combination with two other projects, Solid Waste Gasification (#6) and Landfill Gas Energy Capture (#8). Public awareness would have been improved by adding project descriptions to the four...
presolicitations and award notices posted on FBO. After we notified them of the error, contract officials posted project descriptions to FBO on July 29 and 30, 2010. The USACE Humphrey’s Engineer Center also utilized two Military Interdepartmental Purchase Requests to transfer $1.08 million of Continuous Building Commissioning project Recovery Act funds to the Department of Energy.

5. Energy Enterprise Management
The Energy Enterprise Management project is assessing, evaluating, and prototyping an energy enterprise management application that can be used from the building level, all the way up to the Office of the Secretary of Defense level, to manage and aggregate energy data and to affect technology information transfer. The USACE Humphrey’s Engineer Center awarded two contracts for this project totaling $1.71 million. Public awareness would have been improved by posting a presolicitation notice on the FBO Web site for one contract and by adding project descriptions to one presolicitation and both award notices posted on FBO Web site. After we notified them of the error, contract officials posted project descriptions to FBO on July 29 and 30, 2010.

6. Solid Waste Gasification
The Solid Waste Gasification project is validating a Waste-to-Energy Conversion system capable of converting combustible municipal solid waste and biomass, such as plant materials, into electricity and heat on permanent DoD installations. All DoD installations generate solid wastes that contain biomass from packaging and paper, construction debris, and wood removed for land clearing and maintenance of the forested areas within the installation boundary. The USACE Humphrey’s Engineer Center awarded four contracts for this effort, for $2.79 million. Two of these contracts are in combination with two other projects, Continuous Building Commissioning (#4) and the Tactical Deployable Micro-Grid projects (#15). Public awareness would have been improved by adding the four project descriptions to the presolicitations and award notices posted on the FBO Web site. After we notified them of the error, contract officials posted project descriptions to FBO on July 29 and 30, 2010.

7. Anaerobic Digester Technology
The Anaerobic Digester Technology project is demonstrating anaerobic digestion of food and associated wastes for generating renewable energy in the form of biogas. The USACE Humphrey’s Engineer Center awarded one contract for this project for $1.91 million. Public awareness would have been improved by adding a project description to the presolicitation and award notice posted on the FBO Web site. After we notified them of the error, contract officials posted a project description to FBO on July 30, 2010.

8. Landfill Gas Energy Capture
Landfills produce waste gas streams containing methane that is often vented, flared, or otherwise destroyed. This project is generating electrical power from these landfill gases. The USACE Humphrey’s Engineer Center awarded two contract actions for a total of $2.43 million. One of these contracts is in combination with the Continuous Building
Commissioning project (#4). Public awareness would have been improved by adding the two project descriptions to presolicitations and award notices posted on FBO and by ensuring that all of the required Recovery Act clauses were listed in the modification. After we notified them of lack of project descriptions, contract officials posted one of the descriptions to FBO on July 29, 2010. The other project description was posted to FBO on August 23, 2010. The contracting officer made two amendments to the contract. The first amendment was made on September 24, 2009, to include the required Recovery Act clauses. The second amendment was made on December 27, 2010 to update a clause from the original contract to conform to Recovery Act requirements.

9. Wind Lift Power Generator
The Wind Lift Power Generator is using a kite-like apparatus to harness the power of the wind. The harnessed wind is being converted into usable energy and stored in batteries that can be used to power lights, refrigerators, fans, etc. The RDECOM Acquisition Center at Adelphi, Maryland, awarded one contract for this effort for $970,000. Public awareness would have been improved by posting an award notice on the FBO Web site. After we notified RDECOM of the error, RDECOM posted an award notice along with the justification and approval for use of a sole-source on July 23, 2010, to FBO.

10. Mobile Waste to Energy
The Mobile Waste to Energy program is assessing technology that converts waste to liquid fuel in a scalable mobile unit that could potentially be used at forward operating bases. DLA posted a solicitation on FBO but resolutions could not be met through the contract negotiation process. Contract officials posted a new solicitation in April 2010 with responses due in July 2010.

11. HPCM Maui Energy Improvement Initiative
The Maui Energy Improvement Initiative project is researching and developing high-efficiency solar cells. This effort will produce a solar power demonstration, providing a significant power generation capability of new high-efficiency solar cells. The AFRL at Kirtland Air Force Base, New Mexico, awarded one contract for this effort for $3.88 million.

12. Algal Derived Biofuel Program
The Algal Derived Biofuel Program project is evaluating technology to increase the production of algae-derived fuels and to support the Military Services’ test and certification programs. DLA awarded three contracts for this project for a total of $4.09 million. DLA Energy, Fort Belvoir, Virginia, awarded two contracts. DLA Contracting Services Office Philadelphia, Philadelphia, Pennsylvania awarded the third contract. The third contract lacked transparency by not posting a presolicitation or award notice on FBO. After we notified them of this error, contract officials posted an award notice on December 16, 2010. In addition, one of the DLA Energy contracts used Defense-wide NTEET Recovery Act funds in conjunction with Navy Recovery Act NTEET funds.
13. **Plasma Fusion (Polywell)**

The Plasma Fusion (Polywell) project is developing a machine that uses magnetic fields to contain a cloud of electrons. The cloud of electrons establishes an electric field that will be used to accelerate positively charged ions of fusible material. The NAVAIR Warfare Center Weapons Division has awarded one contract for this project for $1.94 million. This contract is in combination with a Navy Recovery Act NTEET project and met transparency requirements.

14. **Fuel Cells**

This project is developing a fuel cell battery source capable of a 300-watt output. This fuel cell reduces the size and weight of past designs while increasing the reliability, durability, and service life. The CECOM Contracting Center awarded six contract actions for this effort for a total of $12.16 million. Public awareness would have been improved by posting all six award notices on FBO and by ensuring all of the required Recovery Act clauses were included in two of the contract actions. Three of the contract actions are modifications to the original contracts and do not list the required clauses; however, since two of the three original contracts list the required Recovery Act clauses, this is acceptable for these two actions. The third original contract did not list all of the required clauses; therefore the third modification does not list the required clauses. Corrective action was taken to post the required award notices on June 1, 2010, for five of the six contract actions; however, these award notices did not state why the contract was awarded as CPFF. The sixth contract action award notice was posted on August 3, 2010, and included the rationale for using CPFF. Four of the five award notices posted on June 1, 2010, were modified on August 3, 2010, to include rationale of why the contract actions were not awarded using a firm fixed price. CECOM also utilized a Military Interdepartmental Purchase Requests to transfer $6.3 million of Fuel Cells project Recovery Act funds to the U.S. Air Force.

15. **Tactical, Deployable Micro-Grid**

Micro-grid technology improves security, reliability, and efficiency of DoD power management, thus reducing energy costs and the carbon footprint. Renewable electrical power generation can come from a variety of distributed generation sources. The USACE Humphrey’s Engineer Center and USACE–Philadelphia District awarded one contract each for this project for a total of $3.23 million. One of the contracts is in combination with the Solid Waste Gasification project (#6). This contract would have improved public awareness by adding a project description to the presolicitation and award notice posted on FBO. After we notified them of the error, contract officials posted a project description to FBO on July 30, 2010. The other contract met transparency requirements.
# Appendix E. Defense-Wide Near Term Energy-Efficient Technologies Contracts

<table>
<thead>
<tr>
<th>Project / Contract Number</th>
<th>Contract Action</th>
<th>Contract Type</th>
<th>Competition Level</th>
<th>Solicitation Format</th>
<th>Posted Solicitation on FBO</th>
<th>Posted Award on FBO</th>
<th>Posted Adequate Project Description on FBO</th>
<th>Included Appropriate Recovery Act Clauses on the Contract</th>
<th>Included Contract Action in FPDS</th>
<th>Contract Action Amount</th>
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<tbody>
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<td>CPFF</td>
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<td>Yes</td>
<td>Yes</td>
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<td>Full Competition</td>
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### Appendix E. Defense-Wide Near Term Energy-Efficient Technologies Contracts (cont’d)

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### Appendix E. Defense-Wide Near Term Energy-Efficient Technologies Contracts (cont’d)

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MEMORANDUM FOR DIRECTOR, DEPARTMENT OF DEFENSE INSPECTOR GENERAL

THROUGH: DIRECTOR, ACQUISITION RESOURCES AND ANALYSIS

SUBJECT: Response to DoDIG Draft Report on Defense-Wide Research and Development Near Term Energy Efficient Projects (Project No. D2009-DO00AB-0170.004)

As requested, I am providing responses to the general content and recommendations contained in the subject report.

Recommendation:
After reviewing the draft report, dated 18 Nov 10, the Director, Defense Research and Engineering (DDR&E), offers no additional comments to the report and will continue to monitor progress of projects throughout the life-cycle of this effort.

Response:
Concur with recommendations suggested.

Please contact my Action Officer – [redacted] if additional information is required.

Alan R. Shaffer
Principal Deputy
Director, Defense Research & Engineering
MEMORANDUM FOR Department of Defense Inspector General (DoDIG), ATTN: Mr. Daniel R. Blair, Room 300, 400 Army Navy Drive, Arlington, VA 22202-4704

SUBJECT: Command Reply to Draft Report on Defense Wide Research and Development Near Term Energy Efficient projects (Project No. D2009-D000AB-0170.004) (D1107)

1. The U.S. Army Materiel Command (AMC) has reviewed the subject draft report. AMC endorses the enclosed comments on the draft report from the Army Contracting Command.

2. The AMC point of contact is

Encl

TERESA W. GERTON
Executive Deputy to the Commanding General
MEMORANDUM FOR [Name], Director, Internal Review and Audit Compliance Office, Headquarters, U.S. Army Materiel Command, 9301 Chapec Road, Fort Belvoir, VA 22060

SUBJECT: Defense-Wide Research and Development Near Term Energy-Efficient Projects (Project No. D2009-D000AB-0170.004) (D1106)

1. References:
   d. Memorandum, DOD Inspector General, 18 Nov 2010, subject: same as above.

2. After reviewing the documents at references 1d and 1e, the U.S. Army Contracting Command (ACC) concurs with the comments in references 1a, 1b, and 1c (enclosed).

3. The ACC point of contact is [Name].

3 Encls
1. CECOM-CC Response
2. RDECOM-CC Response
3. NCR-CC Response

JEFFREY P. PARSONS
Executive Director
MEMORANDUM FOR Executive Director, US Army Contracting Command, ATTN: AMSCC-IR (Ms. Sonya Moman), 9301 Chapek Road, Fort Belvoir, VA 22060-5527


1. Command comments on the subject final report are enclosed.

2. Point of contact is [Redacted], CCCE-CQA.

Edward G. Elgart
Executive Director
CECOM Contracting Center
Army Contracting Command

Encl 4
AUDIT CONCLUSION:
Department of Defense, Office of Inspector General (DOD-IG) reviewed 32 award actions for planning, funding, contracting, and initial execution of 15 Defense-wide Near Term Energy-Efficient Technologies (NTEET) program research and development projects. Thirteen (13) contract actions were found that did not have a solicitation and/or an award notice posted on FBO. In addition, 16 solicitations and award notices did not facilitate transparency by providing detailed descriptions of the projects. Also, only 4 of the 32 contract actions listed required FAR clauses on the pre-solicitation or award notices posted on FBO; however, 27 of the 32 actions included the required FAR clauses in the contract file documentation.

ADDITIONAL FACTS:
Review to ensure that Military Departments (Army, Navy, Air Force) and Defense Logistics Agency (DLA) contracting efforts complied with Recovery Act requirements, Office of Management and Budget (OMB) guidance, Federal Acquisition Regulation (FAR), and DOD guidance.

CECOM Contracting Center addressed the following recommendations as noted in report.

RECOMMENDATION 2:
For the Executive Director, CECOM Contracting Center:

a. Direct the modification of contracts W15P7T-10-C-B009, W15P7T-10-C-B010, W15P7T-10-C-B011, W15P7T-10-C-B010-P00002, W15P7T-10-C-B011-P00002 to:

(1) Include full justification for awards that are not fixed-price in nature in the Federal Business Opportunities and other required Web sites.

(2) Modify public award notifications to include the appropriate descriptions of the Recovery Act work to be performed in the Federal Business Opportunities and other required Web sites.
b. Direct the modification of contract W15P7T-10-C-B009 to include all required Recovery Act Clauses.

**COMMAND COMMENTS AND ACTION TAKEN**

CECOM Contracting Center concurred with the following and provided corrective action:
- Justification for awards that are not fixed price has been posted to Federal Business Opportunities (FBO) for contracts; W15P7T-10-C-B009, W15P7T-10-C-B010, and W15P7T-10-C-B011. Corrective action was completed December 6, 2010.

CECOM Contracting Center does not concur with the following:
- Modification of public award notifications to include the appropriate descriptions of the Recovery Act work to be performed in the FBO and other required Web sites.

CECOM Contracting Center reviewed contracts W15P7T-10-C-B009, W15P7T-10-C-B010, and W15P7T-10-C-B011 notice of award description and determined that a description of the Recovery Act work was posted June 1, 2010.
MEMORANDUM FOR Director, Internal Review and Audit Compliance Office, U.S. Army Contracting Command, ATTN: AMSCC-IR, 9301 Chapek Road, Fort Belvoir, VA 22060-5527

SUBJECT: Comments on DoDIG Draft Audit Report “Defense-Wide Research and Development Near Term Energy-Efficient Projects”

The U.S. Army Research, Development and Engineering Command Contracting Center (RDECOM CC) acknowledges receipt of subject report and provides the following comments to the findings therein:

a. Response related to “Direct the modification of contract W911QX-09-C-0093 to include all required Recovery Act clauses,” on page 20 of the report: RDECOM CC has modified the contract to include all required Recovery Act clauses.

b. Response related to “Direct the posting of the award announcement of contract W911QX-09-C-0093 to the Federal Business Opportunities and other required Web sites” on page 20 of the report: RDECOM CC has posted the award announcement in the Federal Business Opportunities web site.

BRYON T. YOUNG
Executive Director
MEMORANDUM FOR Internal Review and Audit Compliance Office (IRACO), Army Contracting Command, 9301 Chapeck Road, Fort Belvoir, VA 22060


1. The National Capital Region Contracting Center (NCRCC) Command Reply on subject follow-up audit is as follows:

IG Recommendation Number 4 – Head of Contracting Activity, Army Contracting Command, National Capital Region Contracting Center direct the modification of contract W91WAW-09-C-0162 to include all required Recovery Act clauses. NCRCC concurs with recommendation and contract has been modified to include all required recovery act clauses. Action completed on 30 September 2010 and a copy of modifications P00001 and P00002 are attached as enclosures.

2. If there are any questions pertaining to this action, please contact [Redacted]

Encls

GEORGE A. SEARS
Director
National Capital Region Contracting Center

Attachments not included
MEMORANDUM FOR U.S. Department of Defense, Office of the Inspector General
400 Army Navy Drive
Arlington, 22202-4704

SUBJECT: DODIG Draft Report-Defense-Wide Research and Development Near Term Energy-Efficient Projects (Project No. D2009-D000AB-170.004)

1. Reference DODIG, subject as above.

2. The USACE Headquarters concurs with the Humphrey's Engineering Center Support Activity.

3. If you have additional questions, please contact the undersigned, or my point of contact.

Encl

BRENDA L. MAYES
Deputy Chief
HQ Internal Review Office
MEMORANDUM THRU CECT-WIN

FOR CEIR

SUBJECT: DODIG Draft Report-Defense-Wide Research and Development Near Term Energy-Efficient Projects (Project No. D2009-D000AB-0170.004)

1. References:
   a. Email dated 30 November 2010, SAB.
   b. Memorandum dated November 18, 2010, SAB.

2. The undersigned has reviewed subject report and submits the following comments:
   a. Paragraph 5a-Agree. Corrective Action: A copy of modification P00003 for contract W912HQ-08-C-0040 was forwarded showing all the mandatory Recovery Act Clauses that were omitted in Modification P00002, Corrective action completed July 29, 2010.
   b. Paragraph 5b-Agree. Corrective Action: The Humphreys Engineer Center Support Activity (HECSA) Contracting Center amended the award notices for contracts W912HQ-09-C-0053, W912HQ-09-C-0054, W912HQ-09-C-0055, W912HQ-09-C-0056, W912HQ-09-C-0058, W912HQ-09-C-0059, W912HQ-09-C-0060, W912HQ-09-C-0061, W912HQ-10-C-0001, and W912HQ-10-C-0050 to include the URL to the SERDP/ESTCP Website. The URL is attached to a fact sheet which gives the description of the work being done and its benefit to the DoD, the taxpayer and the end user; Corrective action completed July 29, 2010.

3. If additional information is needed, please contact...

DEBORAH L. GIORDANO
Center Contracting Chief
MEMORANDUM FOR PROGRAM DIRECTOR, ACQUISITION AND CONTRACT MANAGEMENT DIRECTORATE, DEPARTMENT OF DEFENSE, OFFICE OF THE INSPECTOR GENERAL

SUBJECT: Draft Audit Report: Defense-Wide Research and development Near Term Energy-Efficient Projects (Project No. D2009-D000AB-0170.004)

The Defense Logistics Agency (DLA) has reviewed this draft audit report and concurs with the finding and recommendation as presented. The award announcement for contract SP4701-09-C-0040 was posted to the Federal Business Opportunities (FedBizOps) on December 16, 2010. It was also posted on the FederalReporting.gov site on August 31, 2009 and then every four months thereafter until all funds were spent. Additionally, I have instructed my Director for Acquisition Policy to prepare correspondence to the DLA Contracting Workforce reminding them of their responsibility to post contract award announcements to FedBizOps.

The administrative point of contact for this response is [redacted].

NANCY M. HEIMBAUGH
Director, DLA Acquisition
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