

Department of Defense



Fiscal Year 2006 Energy Management Implementation Plan

Meeting the Requirements of Executive Order 13123

*Greening the Government through Efficient Energy
Management*

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I. INTRODUCTION

The Department of Defense (DoD) remains committed to achieving the energy reduction goals set forth in Executive Order (EO) 13123, "Greening the Government through Efficient Energy Management" and the Energy Policy Act of 2005. In accordance with the EO 13123, all Federal agencies prepare an Annual Implementation Plan that outlines specific plans to make progress toward those goals. This document represents the DoD Implementation Plan for Fiscal Year 2006.

This implementation plan provides a detailed account of the strategic approaches that will be employed department-wide. It was developed using plans submitted by each of the Defense Components. The organization of this document follows that of the Annual Energy Management Report. This will facilitate the comparison of DoD's plans and goals to actual year-end outcomes. This comparison will serve as a useful tool in tracking and measuring overall progress, best practices, and goal achievement in the department's FY 2005 Annual Energy Management Report.

This introduction serves to demonstrate DoD's understanding of the order's requirements and to briefly summarize the department's integrated approach to achieve the goals. An understanding of the goals is essential in developing an effective plan. The remainder of the document consists of two chapters. Section II provides details concerning the department's energy management and administrative structure. Section III presents the department's specific FY 2006 implementation strategies, planned projects, and goals.

Goals of the Executive Order 13123

EO 13123 outlines several ambitious, but achievable energy management goals for the Federal Government. These goals specifically targeted greenhouse gas production, energy efficiency, and renewable energy, petroleum use in facilities, source energy consumption and water usage. Section 101 of the order charges the Federal Government, as the Nation's largest energy consumer, to significantly improve its energy management in order to save taxpayer dollars and reduce emissions that contribute to air pollution and global climate change.

The order also instructs the Federal Government to provide leadership to promote energy efficiency, water conservation, the use of renewable energy products, and to help foster markets for emerging technologies. DoD has undertaken an integrated program to optimize the management of its utility systems - seeking to increase efficiency and reduce costs while improving flexibility, reliability and safety. This program has four elements:

1. Reducing energy and water consumption;
2. Incorporating cost-effective renewable energy technologies;
3. Taking advantage of deregulated energy commodity markets; and
4. Privatizing the utilities infrastructure.

EO 13123 sets forth seven goals for the Federal Government to meet in order to significantly improve its energy management, thereby saving taxpayer dollars and reducing emissions that contribute to air pollution and global climate change. These goals are:

1. **Greenhouse Gases Reduction** - Through life-cycle cost-effective measures, each agency shall reduce its greenhouse gas emissions attributed to facility energy use by 30 percent by 2010 compared to such emissions levels in 1990. (Sec. 201)
2. **Energy Efficiency Improvement** - Through life-cycle cost-effective measures, each agency shall reduce energy consumption per gross square foot of its facilities, excluding facilities covered in section 203 of the order, by 30 percent by 2005 and 35 percent by 2010 relative to 1985. (Sec. 202)
3. **Industrial and Laboratory Facilities** - Through life-cycle cost-effective measures, each agency shall reduce energy consumption in Industrial and Laboratory Facilities per gross square foot, per unit of production, or per other unit as applicable by 20 percent by 2005 and by 25 percent by 2010 relative to 1990. (Sec. 203)
4. **Renewable Energy** - Each agency shall strive to expand the use of renewable energy within its facilities and in its activities by implementing renewable energy projects and by purchasing electricity from renewable energy sources. In support of the Million Solar Roofs initiative, the Federal Government shall strive to install 2,000 solar energy systems at Federal facilities by the end of 2000, and 20,000 solar energy systems at Federal facilities by 2010. (Sec. 204)
5. **Petroleum Use** - Through life-cycle cost-effective measures, each agency shall reduce the use of petroleum within its facilities. Agencies may accomplish this reduction by switching to a less greenhouse gas-intensive, non-petroleum energy source, such as natural gas or renewable energy sources; by eliminating unnecessary fuel use; or by other appropriate methods. (Sec. 205)
6. **Source Energy** - The Federal Government shall strive to reduce total energy use and associated greenhouse gas and other air emissions, as measured at the source. To that end, agencies shall undertake life-cycle cost-effective projects in which source energy decreases, even if site energy use increases. (Sec. 206)
7. **Water Conservation** - Through life-cycle cost-effective measures, agencies shall reduce water consumption and associated energy use in their facilities to reach the goals set under Sec. 503(f) of the EO. Where possible, water cost savings and associated energy cost savings shall be included in Energy-Savings Performance Contracts and other financing mechanisms. (Sec. 207)

Energy conservation is a high priority for the Department. A reduction in energy consumption can create substantial dollar savings and reduce greenhouse gas emissions. DoD intends to meet the goals of this order by implementing the following broad strategies:

- Implement cost-effective energy conservation projects with direct appropriations and alternative financing through Utility Energy Service Contracts (UESC) and Energy Savings Performance Contracts (ESPC), and by procuring energy-efficient products and services.
- Implement water conservation best management practices to achieve water efficiency.
- Promote renewable energy technology by purchasing renewable power and implementing renewable energy projects when cost-effective based on life-cycle analysis.

II. MANAGEMENT AND ADMINISTRATION

Energy management on DoD installations is focused on improving efficiency, eliminating waste, and enhancing the quality of life while meeting mission requirements. Accomplishing these objectives will reduce costs and ensure that the program goals are achieved.

The DoD facilities energy program is decentralized with Defense Component headquarters providing guidance and funding, and each military installation managing site-specific energy and water conservation programs. Funding of energy projects is multi-faceted, using a combination of Government and alternative financing initiatives. Installations are responsible for maintaining awareness, developing and implementing projects, and ensuring that new construction meets sustainable design criteria.

A. Energy Management Infrastructure

1. Senior Agency Official

The Principal Deputy Under Secretary of Defense (Acquisition, Technology and Logistics) is the DoD Senior Agency Official responsible for meeting the goals of E.O. 13123.

2. Agency Energy Team

The DoD Installations Capabilities Council (ICC), chaired by the Deputy Under Secretary of Defense (Installations & Environment) and chartered to address a broad spectrum of installation issues, is designated as the DoD Agency Energy Team. The membership of the ICC contains the cross-section of DoD senior leadership necessary to make decisions needed to remove obstacles hindering compliance with EO 13123.

B. Management Tools

1. Awards (Employee Incentive Programs)

To increase energy conservation awareness and to recognize energy-saving efforts, DoD rewards individuals and organizations that demonstrate excellence in their energy-savings and water conservation efforts. These rewards serve to highlight and share the best practices among DoD agencies and to motivate employees.

Air Force

- The Air Force will continue to use the DOE FEMP Annual Energy and Water Management Awards program to nominate the individuals and bases that exemplify the drive to meet the federal reduction goals.
- Two of the major commands will continue with their awards program by having their bases compete for the best energy/water programs within their commands.
- HQ AFCESA will continue to sponsor the REAP program to reward three installations for the best in energy reduction in the Air Force.

Department of the Navy

- Update awards criteria to include EPAct 2005 requirements.
- Present awards and have recognition programs designed to reward successes. Sponsor SECNAV Awards program. Participate in DOE's Federal awards program
- Publicize the awards programs and winner's accomplishments. Post winners on Internet, newsletters, articles, video, in-house courses.

The Army

Energy conservation awards will be presented to individuals, organizations, and installations in recognition of their energy-savings efforts. In addition to recognition, these awards provide motivation for continued energy-reduction achievements. The Army participates in four energy awards programs--the Secretary of the Army Energy and Water Management Awards, the DOE Federal Energy and Water Management Awards, the Presidential Award for Leadership in Federal Energy Management, and the Lou R. Harris award. These award programs recognize and reward Army employees for exceptional performance in implementing energy efficiency as set forth by Executive Order 13123. In addition to these programs, some regions, installations, and the National Guard Bureau have developed their own awards programs to recognize those who emphasize and make significant contributions to energy reduction.

Defense Commissary Agency

- DeCA will continue to use existing performance awards and on the spot awards procedures in conjunction with a facility energy and environmental conservation recognition program.
- Our DeCA Europe, ten-member, Utilities Task Force will be nominated for awards through the Secretary of Defense Environmental Awards program and the Federal Energy and Water Management Awards program for leading the region in reducing energy use and utilities cost during FY 2006.

Defense Logistics Agency

DLA will use DOE FEMP Annual Energy and Water Management Awards Program to nominate individuals and facilities that perform exceptional work in implementing Executive Order 13123. DLA will participate in local and regional awards programs if and when possible.

2. Performance Evaluations

Energy management provisions will continue to be included in performance plans of the DoD Energy Chain of Command, including major command, base and site energy managers.

Air Force

- The Air Force will continue to require each level of management be accountable for energy and water conservation within their units.
- Continuous updates to position descriptions will be made throughout the Air Force.
- The AF is investigating obtaining additional Resource Efficiency Managers (REM) for use at our MAJCOMs. This additional individual will provide the needed depth to help those commands meet the new aggressive goal of 2% reduction per year.

Department of the Navy

- Standardize the energy management function. Make energy manager functional requirements a part of performance evaluations.
- Maintain regional and installation energy management positions at a level sufficient to support and execute energy program goals locally. Implement Resource Efficiency Manager deployment plan.

The Army

AR 11-27, Army Energy Program, requires inclusion of energy and water conservation responsibilities in the position descriptions of members of the Army's energy team, principal program managers, heads of Regional offices, facility managers, designers, energy managers, and their superiors. Performance standards for energy team members will be modified to incorporate energy efficiency metrics. Energy and water will be managed intensively to ensure efficient and effective use of energy products.

Defense Commissary Agency

- Implementation of energy provisions of Executive Order 13123 will be incorporated in the position descriptions and performance evaluations of all members of the agency energy team and facility/energy managers.
- DeCA Europe position descriptions for each employee in Facilities will be revised to include the requirements of EO13123.
- Human Resources Directorate will develop a performance standard for employees with energy conservation as a collateral duty.

3. Training and Education

Awareness and training programs are important for DoD to achieve and sustain energy-efficient operations at the installation level. Below are some specifics that the DoD components are planning for FY 2006:

Air Force

- The AFIT energy-training program will sponsor one training class for new base-level energy managers in FY06.

- The Air Force will continue to provide ESPC training with a web based training program to ensure all newly assigned individuals are educated on how to use ESPC at their installations. This web site will be opened to all agencies both inside and outside the government.
- All energy/water educational information received from outside sources will be disseminated to each major command and all installations.
- The AF will continue to support the annual DoD energy workshop and sponsor the AF MAJCOM energy meeting held in conjunction with the DoD event.
- HQ AFCESA publishes an Energy Newsletter on a bimonthly basis that includes current/upcoming events plus links to energy information both inside and outside the government.

Department of the Navy

- Integrate enterprise energy and utilities transformation initiatives (such as standardized utilities systems, standardized commodity acquisition, standardized energy management functions, optimized digital control systems and increased sustainable development) into regional and installation level operations.
- Train energy managers and related supervisors. Utilize private industry and university sources where available. Develop in-house training for DON specific material.
- Encourage certification for full-time energy managers.
- Update and maintain energy monitor and energy awareness training materials.
- Train Project Team Members to become Certified Project Facilitators
- Provide training to purchasing agents on purchase of energy efficient products.
- Train O&M personnel in energy efficient O&M procedures.
- Train planners, designers, construction agents and energy managers in sustainable development principles, LEED criteria and ASHRAE 90.1-2004.
- Educate energy managers in Energy Star Building application process.
- Publicize program successes. Increase awareness and knowledge of program goals, tools, and progress at three organizational levels: Washington D.C, region, and installation.
- Maximize use of information technology for improved decision making, e.g., DON Energy web site, e-mail, Internet, displays, reports, newsletters, handbooks, and guidance.

The Army

Awareness and training programs are important for the Army to achieve and sustain energy-efficient operations at the installation level. For FY 2006, the Army's goal is to train over 2000 personnel through either commercially available or in-house-generated technical courses, seminars, conferences, software, videos, and certifications. Additionally, regions, installations, the Army National Guard and Army Reserve Components are encouraged to develop their own training programs. Examples of this are in FY 2006 the Southeast Region held a three-day Energy Managers Forum and the National Guard Bureau will hold a two-week Energy Managers Workshop at their Construction and Facility Management Offices (CFMO) University. Army personnel will also be encouraged to attend the 2006 Association of Energy Engineers (AEE) Conference.

The Assistant Chief of Staff for Installation Management (ACSIM) will provide assistance to installation staffs by providing Energy Awareness and Conservation Assessments at

approximately 12 installations. These assessments identify low cost/no cost opportunities for saving energy, help to heighten the awareness of installation personnel, and assist the installation in identifying new and improved technologies and energy-saving projects.

Defense Commissary Agency

- The DeCA Center for Learning will host six (6) Facility Energy Supervisor/Quality Surveillance Representative (FES/QSR) classes and ten (10) Quality Surveillance Representative Courses (QSR) during FY 2005. These courses provide commissary and zone training on energy usage, conservation, and reporting. In addition, the Department Operations courses address energy usage and conservation in the Store Director, Meat Management, Produce Management, Grocery and Quality Assurance courses. These courses are taught throughout DeCA's worldwide operations, and are recurring. Instruction includes lecture and field experiences. DeCA's FES training goal is two-trained FESs per facility or commissary.
- DeCA will add LEED to Energy Star training, education and awareness for store and Region personnel.
- Each employee will view our 12-minute, commissary energy awareness video, "Put Yourself in the DeCA Energy Efficiency Picture."
- A course providing detailed instruction in operating and interpreting the Refrigeration Monitoring and Control System computer will continue to be offered on a site request basis to increase the operating efficiency of refrigerated cases. Our Energy Management Program Directive will be updated with provisions requiring all DeCA employees to view our 12-minute, commissary energy awareness video, "Put Yourself in the DeCA Energy Efficiency Picture," within 30 days of hire.
- The video will continue to be presented annually to store directors and managers as a part of our Commissary Operations Basic and Advanced Courses. These courses are in a formal, classroom format.
- DeCA will include Best Water Management Practices in the FES/QSR Training classes.

National Security Agency

During FY-2006, NSA plans to train appropriate personnel on Performance and commissioning tools and methods, DDC control strategies, and Leadership in Energy and Environmental Design (LEED). We will also be implementing an outreach program notifying employees of ways to conserve energy.

Defense Contract Management Agency

Agency Energy Managers will attend the AEE World Energy Engineering Congress (WEEC) to fulfill the requirement for comprehensive training and to stay current in available technology to fully implement the provisions of Executive Order 13123 and to develop a better understanding of the new requirements of the Energy Policy Act of 2005.

National Geospatial Intelligence Agency (NGA)

- Energy conservation will continue to be in government employee Individual Development Plans (IDP).
- Contracting Officers Representatives (CORs) will continue to coordinate with the contractors to insure that BOSC team members have the proper training and skill to track, analyze, research and implement energy savings measures approved by the government.
- Training activities implemented will include technical classes and seminars for Equipment/systems, controls, operation and maintenance, plus energy management and related topics.
- NGA will participate in the DoD sponsored CEM training (approximately 20 persons)

4. Showcase Facilities

DoD will continue to participate in DOE-designated Showcase Facilities to demonstrate new and innovative energy saving technologies. Showcase facilities highlight promising best commercial practices and the use of innovative techniques to improve energy and water efficiency. The Department intends to emphasize the benefit of these facilities and has a target of developing at least one Showcase Facility for each of the services. Below are some examples of components specific plans:

Air Force

The Air Force will strive to have at least one new/renovated facility from each of the major commands designated as a showcase facility. These facilities will be considered showcase due to the use of sustainable design criteria and will meet the Energy Star building conditions.

- Edwards AFB CA, Consolidated Support Facility will be nominated for a showcase award through DOE.
- HQ AETC is working with Luke AFB TX, Lackland AFB TX and Goodfellow AFB TX to have their ESCO develop a showcase facility with award documentation.

Department of the Navy

- Identify and publicize at least one showcase project per year.
- Identify, evaluate, and implement promising best commercial practices. Partner with DOE and private sector to evaluate state-of-the-market energy (including renewable) technologies and business practices at DON sites.
- Demonstrate promising technologies, conduct surveys and ROI analysis to determine potential DON applications for heating and air conditioning duct sealants, high efficiency rooftop air conditioning systems, and improved air conditioning system occupancy controls and system filters. Validate performance of fuel cells, wave power and ocean thermal energy conversion systems.
- Provide activities and financed project developers with technical information and with sources for information on best commercial practices. Provide criteria to assist in proper installation and O&M for new technology.

The Army

The Army will continue to pursue projects that meet the criteria to be recognized by DOE as showcase facilities. The Army intends to have at least 2 showcase facilities in FY06.

Defense Commissary Agency

DeCA's 2006 showcase facility is the Barksdale AFB, LA, Commissary with design completion scheduled for November CY 2005 and construction award April 2006.

Defense Logistics Agency

DLA has one showcase facility in the MILCON Program-construction of a new physical fitness center at DSCC. This building will include USACE Sustainable Design and Development (SDD) Concepts.

III. Implementation Strategies

EO 13123 provides DoD with a number of strategies that can be employed to meet the goals of the order and promote Federal leadership in energy management. It is DoD's philosophy to give the Defense Components the flexibility of managing their own energy programs to meet these goals. The primary objectives are to improve energy efficiency and eliminate energy waste. The following provides a narrative on the strategies Defense Components will employ in FY 2005.

The Army

The Army philosophy is to give the Regional commands and installations the flexibility of running their own energy programs to meet the goals of current Executive Orders and EPACT. However, on 8 July 2005, Chief of Staff of the Army, Peter J. Schoomaker and Secretary of the Army, Francis J. Harvey signed the Army Energy Strategy for Installations, thereby authorizing the plan that the Army will use to reduce energy for the next 20 years. The Army Energy Strategy introduces 5 major initiatives, which will be supported by specific actions, that not only focus the Army on definitive areas where energy inefficiency must be eliminated, but also provides a framework detailing processes, programs, procedures, resources, etc. that will be used to meet the goals of the Energy Policy Act of 2005 (EPACT 2005). The Army's 5 major initiatives for combating energy waste and inefficiency are:

- Eliminate Energy Waste in Existing Facilities
- Increase energy efficiency in renovation and new construction
- Reduce dependence on fossil fuels
- Conserve water resources; and
- Improve energy security

To achieve these five objectives, the Army is currently developing a roadmap which will include some of the following:

- Invest in energy efficient technologies, such as high efficiency lighting and ballasts, energy efficient motors, and use of packaged heating and cooling equipment with energy efficiency ratios (EER) that meet or exceed Federal criteria for retrofitting existing buildings.
- Invest in energy monitoring and control systems (EMCS).
- Update and revise the Architectural and Engineering Instructions (AEI) design specifications on a regular basis to ensure goods and products that provide optimum cost benefits for the Government are included in the design of new buildings.
- Participate in the Energy Savings Performance Contracts (ESPC) program and the Utility Energy Savings Contract (UESC) program.
- Participate in the Demand Side Management (DSM) Program where available.
- Provide training to Region and installation level energy coordinators.
- Use Bonneville Power Administration (BPA), where appropriate, as a vehicle for acquiring alternative financing for energy projects.

In addition to these efforts, the Army is working with DoD to develop a DoD-wide metering policy. Blue Grass Army Depot has been chosen as the Army's test site for this pilot program.

A. Life-Cycle Cost Analysis

EO 13123 provides DoD with a number of strategies that can be employed to meet the goals of the order and promote Federal leadership in energy management. It is DoD's philosophy to give the Defense Components the flexibility of managing their own energy programs to meet these goals. The primary objectives are to improve energy efficiency and eliminate energy waste. The following provides a narrative on the strategies Defense Components will employ in FY 2005.

Air Force

- The Air Force will continue to require all new construction to be life-cycle cost effective and require the use of established criteria to meet these conditions. Each major command and base will review their respective projects to ensure compliance with the energy criteria.
- ESPC and UESC will be a major tool to accomplish the requirement of implementing projects that meet the 10-year simple payback rule.

Department of the Navy

- Perform risk management analysis to control energy price increases.
- Develop standard utilities software (CIRCUITS) to track utilities costs and enable better budget and cost management.
- Participate in OSD joint service initiatives to reduce energy costs and improve energy program management.
- Make energy and water efficiency investment and cost decisions based on life cycle costing

analysis.

- Continue to base energy efficiency audits on life cycle costing analysis in all centrally and alternatively financed projects. Update guidance based on current DOE price escalation factors.
- Implement all projects with 10 year or less simple payback that fit within financial constraints.
- Continue use of sustainable development, incorporating life cycle costing, as the standard business practice for all MILCON and major repair scope facility construction projects.
- Purchase life cycle cost effective energy efficient products. Work with acquisition force to develop methods and implement changes to current practices. Train purchasing agents in life cycle costing and distribute the DOE, GSA and DLA energy efficient products guides.
- Implement renewable energy projects that reduce life cycle costs.
- Purchase electricity from renewable energy sources that reduce life cycle costs.

The Army

The Army facilities will continue to utilize life-cycle cost analysis in making decisions about their investment in products, services, construction, and other projects to lower the Federal Government's costs and to reduce energy and water consumption. The Army will consider the life-cycle-costs of combining projects, and encourages bundling of energy efficiency projects with renewable energy projects, where appropriate. The use of passive solar design and active solar technologies will be required when cost-effective over the life of the project. Sustainable development projects will continue to use life-cycle-costing methodology and follow the whole building design guide.

Defense Commissary Agency

The DeCA Design Criteria Handbook, DeCAH 20-1, September 2005 will be revised to further emphasize use of life cycle cost requirements in design of commissaries. The Handbook emphasizes life cycle cost analysis of systems for different types of fuel sources. Designs include other items such as: occupancy sensors, energy efficient lamps and ballasts, LED exit signs, high efficient motors on air handling units and display cases, maximized use of glass door refrigerated cases instead of open cases, use of Refrigeration Monitoring and Control Systems for the most efficient operation of Refrigeration Systems and HVAC, automatic water controls for restroom fixtures for efficient use of water, use of dual path and desiccant air handling units for the most economical means of cooling and dehumidification, maximized use of wall and roof insulation, implementation of energy efficient doors and windows, and plastic curtains on refrigerated cooler doors.

National Security Agency

NSA will continue to utilize comprehensive energy audits to identify life cycle issues regarding energy conservation projects. The agency's Facility Planning Board and the Energy Team prioritize this list according to mission, payback, and O&M cost value. New projects are added

to the list and prioritized accordingly. Projects with a 10 year or less payback have priority over longer payback projects.

Defense Contract Management Agency

DCMA will evaluate recommendations from the SAVEnergy Audit performed in FY 2005 to determine the feasibility or potential for energy and water conservation and renewable energy measures that are life-cycle cost-effective. DCMA has budgeted \$80K in FY 2006 funding to implement energy efficiency projects.

B. Facility Energy Audits

Energy audits, as well as commissioning and re-commissioning of HVAC systems, evaluate current energy usage and assist installations in determining the best locations to incorporate energy savings measures. EO 13123 requires Federal agencies to audit approximately 10 percent of their facilities each year.

Air Force

- ESPC and UESC projects will be the primary way for the Air Force to meet the 10% annual energy audits as required by E pact.
- At least one AF base will be audited by a DOE sponsored energy audit team.

Department of the Navy

- Audit 10% of facilities annually for energy and water efficiency improvement projects.
- Target installations with high energy costs and consumption. Priorities are given to installations where it is likely that projects can be financed and paid for, within a 10-year payback term.

The Army

EO 13123 requires Federal agencies to audit approximately 10 percent of their facilities each year. Since auditing 10 percent of Army facilities each year has been cost prohibitive in the past, the Army conducts a large percentage of its energy audits using alternative financing through UESC and ESPC projects. The Army also uses its Energy Awareness and Assessment Program as a vehicle for auditing facilities. In addition to facility audits, Renewable and Energy Efficiency Planning and the Federal Energy Decision Screening system will be used to assist this process by determining the investment required to implement energy projects with a 10-year payback or better. Also, in FY 2006 the Army will use the DOE Federal Energy Management Program-sponsored Assessment of Load and Energy Reduction Techniques (ALERT) audits and/or SAVEnergy Audits.

Defense Commissary Agency

- DeCA will audit at least 10 percent of its total inventory (approximately 17 million SF) in FY

2006.

- The prioritization criteria for audits is to first consider the most energy intensive facilities and then look at the oldest facilities.

National Security Agency

During FY 2006 NSA will continue to perform energy audits on facilities and specific mechanical and electrical systems on an as needed basis. Older systems will take precedence and be studied first providing they will not be overcome by scheduled renovation. Partial audits are mainly due to on-going or planned building renovation projects. Additionally, comprehensive commissioning and re-commissioning of HVAC systems will continue to be performed.

Defense Logistics Agency

DLA will perform one audit at Defense Supply Center Richmond (DSCR). All other DLA host sites facility audits are complete.

C. Financing Mechanisms

Partnerships with the private sector through UESC and ESPC are a crucial tool for financing energy efficiency measures and allow installations to improve their infrastructure and pay for the energy efficiency measures through the savings generated by the project over time. For FY 2006, the Defense components have earmarked funds from their Operation and Maintenance budget for the negotiation and administration of UESC and ESPC contracts. These contracts will include infrastructure upgrades and new equipment to help the installations reduce energy and water consumption. Projects will consist of new thermal storage systems, chillers, boilers, lights, motors, Energy Management Control Systems (EMCS) systems and water reducing devices.

Air Force

- ESPC and UESC will continue to be the primary mechanisms used to meet mandated energy/water goals. We have 23 ESPC proposals in the system and expect to award all this FY for an estimated investment from the ESCO for \$183,291K.
- The Air Force will continue to participate in the Energy Conservation Investment Program (MILCON) with the program emphasis on renewable energy projects. For FY06 we have \$14M for 10 projects. The annual energy savings expected when these are implemented will be 275,000 MMBtus and over \$2M.
- Additionally, finance mechanisms such as the Air Force Productivity Investment Fund (PIF) and Fast Capitalization Fund (FASCAP) will be used to develop projects where appropriate.

Department of the Navy

- Add measurement and verification to Utility Energy Services Contract delivery orders.
- Develop and annually update program funding requirements.
- Educate commanding officers, comptrollers and installation staff on the benefits of

- alternatively financed energy and water projects.
- Continue to utilize centralized team of engineers and contracts specialists to develop and execute alternatively financed delivery orders.
 - Work with OSD, DOE and DESC to replicate and fast track an ESPC delivery order for multiple installations.
 - Update guidance and data collection systems for financed projects in response to GAO concerns.
 - Utilize existing government UESC and ESPC contracts where appropriate and award DON specific contracts if necessary.
 - Target \$170M/yr (first cost) annual investment in energy projects. The investment will consist of a mix of ECIP MILCON, O&M (DEMVAL), and financed energy projects.
 - Include energy efficiency and cost reductions in standard MILCON and special projects.

The Army

Partnerships with the private sector UESCs and ESPCs are a crucial tool for financing energy efficiency measures and allow installations to improve their infrastructure and pay for the energy efficiency measures through the savings generated by the project over time. For FY 2006, the Army through a decentralized approach will continue to strive to award UESC and ESPC task orders/contracts to help reduce energy consumption. These contracts will include infrastructure upgrades and new equipment to help the installations reduce energy and water consumption. Projects will consist of new thermal storage systems, chillers, boilers, lights, motors, Energy Management Control Systems (EMCS) and water reducing devices. Other financing mechanisms that will be used are OMA, ECIP, Bonneville Power Administration (BPA) where appropriate, and the Utilities Modernization Program.

Defense Commissary Agency

- In FY 2006, DeCA will continue to pursue construction via ESPC task order measures using partnerships with DOE Northeast Region, the Kaiserslautern Military Community (KMC) and possibly the Huntsville District Corps of Engineers.
- DeCA will continue to pursue construction via UESC in areas where the local utility is active in this program.

D. Energy-Star® and Energy-Efficient Products

When life-cycle cost-effective, the Defense Components are encouraged to select Energy Star® and other energy-efficient products when acquiring energy-consuming products. Guidance generated by DOE, GSA and DLA for energy-efficient products are being incorporated into the sustainable design and development of new and renovated facilities. Defense components will invest in energy-efficient technologies, such as high efficiency lighting and ballasts, energy-efficient motors, and use of packaged heating and cooling equipment with energy efficiency ratios (EER) that meet or exceed Federal criteria for retrofitting existing buildings. Information technology hardware, computers and copying equipment will be acquired under the Energy Star® Program using GSA Schedules, Government-wide contracts, or Service Contracts.

Air Force

- All bases will be kept current on the use and purchase of products that are Energy Star compliant or in the upper 25% efficiency for that type of product.
- Each base will be informed on where to obtain information from the GSA/DOE and EPA web sites including DOE guidance based on the EPACT 2005.

Department of the Navy

- Purchase life cycle cost effective energy efficient products. Work with acquisition force to make use of the DOE, GSA and DLA energy efficient products guides.
- Include energy performance criteria in statements of work for acquisition of products and services such as construction, service contracts, leases, privatized utilities contracts, and Government owned/contractor operated facilities.
- Develop standard business practices, contract clauses, and guidance.

The Army

When life-cycle cost-effective, Army installations are encouraged to select ENERGY STAR[®] and other energy-efficient products when acquiring energy-consuming products. Army will continue to invest in energy-efficient technologies, such as high efficiency lighting and ballasts, energy-efficient motors, and use of packaged heating and cooling equipment with energy efficiency ratios (EER) that meet or exceed Federal criteria for retrofitting existing buildings. Information technology hardware, computers and copying equipment will be acquired under the Energy Star Program using GSA Schedules, Government-wide contracts, or Service Contracts. Procuring agents, including users of government credit cards, will continue to be encouraged to procure ENERGY STAR[®] products and other products in the top 25 percent of energy efficiency.

Defense Commissary Agency

DeCA's Contracting Business Unit will continue to use written procedures to include ensuring and validating that, as much as practicable, efficient-energy using products are identified within the specifications and evaluation criteria received from and coordinated with the Director of Operations or other customers.

E. Energy-Star[®] Buildings

The Energy Star[®] Building program was developed by the U.S. Environmental Protection Agency (EPA) to promote energy efficiency in buildings. Actual Energy Star[®] Buildings certification and labeling is based on measured building data and a comparison with archetypes in various regions of the country. Since DoD buildings are not generally metered and temporary metering schemes may be cost prohibitive, DoD has not been able to certify buildings under this program. However, DoD, DOE, and EPA completed a memorandum of understanding regarding Energy Star[®] labels for all DoD buildings in June 1997. The MOU considers buildings as Energy Star[®] buildings equivalents if they were included in comprehensive audits and all projects with a 10-year or better payback are implemented, to the maximum extent practicable,

within agency resources and allows the installation to self-certify and develop a local label for non-metered buildings. Below are some approaches that Defense components are using:

Air Force

The Air Force will continue to educate the bases on the use of the Energy Star software program and the criteria to apply for this certificate. No estimate of how many facilities will meet the criteria for this FY. All new MFH units will be designed and built using the Energy Star program.

Department of the Navy

- Increase number of EPA certified energy star buildings.
- Optimize the use of energy management systems and direct digital controls to monitor facilities and maintain energy efficiency. Minimize O&M costs for these systems.
- Integrate energy efficiency in Anti-terrorism force protection procurements.

The Army

Since the Army buildings are not generally metered and temporary metering schemes may be cost prohibitive, the Army has not been able to certify buildings under this program. However, DoD, DOE, and EPA completed a memorandum of understanding (MOU) regarding ENERGY STAR[®] labels for all DoD buildings in June 1997. The MOU considers buildings as ENERGY STAR[®] buildings equivalents if they were included in comprehensive audits and all projects with a 10-year or better payback are implemented, to the maximum extent practicable, within agency resources and allows the installation to self-certify and develop a local label for non-metered buildings. Army Regions and installations will strive to assess their buildings against the ENERGY STAR[®] criteria to determine an accurate count of the number of buildings in which energy projects with a 10-year or better payback have been installed and report this equivalent number for the FY 2006 Annual Energy Report.

Defense Commissary Agency

- Energy Star incremental costs for Energy and Transportation Efficiency Management report is zero for FY2005, 2006 and 2007. OMB Circular No. A-11 includes a requirement to report "additional costs for incorporating and certifying these requirements" when incurred or anticipated. DeCA's design criteria is predicated on the intent to conserve energy, therefore requires designers to address the same issues the Energy Star program addresses for energy conservation. Therefore, DeCA anticipates no additional costs to comply with Circular No. A-11.
- DeCA expects to self-certify up to 85 CONUS commissaries in FY 2006. This represents 32 percent (85/268) of our commissary facilities.

F. Sustainable Building Design

Sustainability initiatives require an integrated design approach to the life-cycle of buildings and infrastructure. The concepts of sustainable development as applied to DoD installations will

continue to be incorporated into the master planning process of each of the Services. All new facility construction and major renovations will use ASHRAE standard 90.1-2001 for design criteria and follow best value sustainable development principles. DoD components will document sustainable development costs on 1391 forms and are encouraged to approach land use planning and urban design in a holistic manner and integrate it with energy planning. Additional information on "sustainable design" is available in the "Whole Building Design Guide", a collaborative interagency effort to which DoD provides annual financial support. This intuitive, internet-based tool (located at www.wbdg.org) serves as a portal to the design criteria and other resources needed to construct cost-effective, sustainable buildings.

Air Force

- The Air Force policy on sustainable design will be used to ensure every MILCON project and major renovation project is reviewed using the current guidance on sustainable design. For FY06 at least fifty percent of the AF projects will be selected to use LEEDs. As shown in our annual report the AF fell short of the FY05 goal. We plan to aggressively pursue this goal with Air staff providing guidance to the field to ensure our MILCON program meets the intent of sustainable design and construction. At this time several commands have policies directing the incorporation of sustainability (LEEDs) within all MILCON projects for FY06 and beyond.
- Robins AFB GA has two projects identified for sustainable design. They are Fire/Crash Rescue Station, \$6.9M and Software Support Facility, \$21.5M.

Department of the Navy

- Increase the number of LEED certifiable facilities. Produce LEED checklists for all proposed MILCON projects.
- Construct new buildings 30% better than the International Energy Conservation Code or ASHRAE Standard 90.1-2004, if life-cycle cost effective.
- Ensure MILCON and special project requirements, design and building commissioning involves the energy management staff at the installation, and that follow-on O&M practices follow sustainable development practices.
- Develop a LEED-Antiterrorism Design Tool. This tool will provide designers with a view of each LEED credit and determine if antiterrorism requirements are: conflicting, synergistic or not applicable.
- Continue development of UFC for Sustainable Development. This UFC will consolidate and align the Services' policies, processes and guidance into a single Tri-Service resource
- Work with DOD to update unit cost factors for facilities to include the cost of exceeding the ASHRAE standard.
- Develop and conduct online training for all business lines identifying changes in their processes to implement Sustainable Design/Development and conduct specialized sustainable training as needed.
- Develop enforceable design/build contract language to incorporate EPA Act 2005 requirements.
- Develop process and collect Sustainable Design/Development planning, design and construction data for NAVFAC projects. Identify where in the process sustainable features are dropped and take corrective action.

- Integrate Green Procurement into the NAVFAC Sustainable Development Program.

The Army

The Army has embraced this concept and is identifying projects in FY 2006 and beyond as Army SDD Showcase Facilities. The USACE has the mission to incorporate sustainability principles into the Army's design and construction process.

Sustainability initiatives require an integrated design approach to the life-cycle of buildings and infrastructure. In 2001, The Army (OACSIM) and USACE issued a policy requiring all Army projects to be scored against the Sustainable Project Rating Tool and require all project designs to achieve the Bronze level. The Army now requires that all Major Construction, Army (MCA) projects planned for construction in FY 2006 or later be designed to achieve the SPiRiT Gold. The Army hopes to engage the perspectives and expertise of its personnel throughout the plan, design, build and commissioning process and to establish sustainable goals. In FY 2005, 74% of all new Army facilities were designed using sustainability principles. In FY 2006, the Army intends to begin construction on two (2) projects that will meet or exceed the construction criteria for designation as a Showcase Facilities. All Army installations have been encouraged to designate their own SDD Showcase Projects and strive for higher sustainable rating levels (Silver, Gold, and Platinum).

Defense Commissary Agency

DeCA Design Criteria Handbook, DeCAH 20-1, September 2005, documents increased sustainable design requirements in siting, design, and construction of new facilities.

G. Energy Efficiency in Lease Provisions

DoD will continue to emphasize energy and water conservation in leased facilities and each Service will issue guidance directing that all leased spaces shall comply with the energy and water efficiency requirements of the Energy Policy Act of 1992. While some of the Services are moving away from the use of leased buildings, preferring to make use of government-owned facilities, where leasing of building continues, it is DoD's intent to have the landlord make appropriate investments in energy efficiency. These leases will amortize the investments over the economic life of the improvements. Build-to-lease solicitations for DoD facilities will contain criteria encouraging sustainable design and development, energy efficiency, and verification of building performance. DoD will continue to rely upon GSA to ensure the above provisions are included in buildings that they lease for DoD.

Air Force

- The Air Force actively reviews its lease agreements to ensure compliance with energy and water conservation goals.
- All new leases will include reviews to ascertain whether they are Energy Star compliant or built using sustainable design criteria.

Department of the Navy

- Develop standard business practices, contract clauses, and issue guidance directing that all leased facilities comply with E.O 13123 and the Energy Policy Act.
- Include energy performance criteria in statements of work for acquisition and extension of leased facilities.
- Work with GSA to include these provisions in facilities they lease for DON.

The Army

The Army will continue to emphasize that energy and water conservation should be included in leased facilities and requires that leased facilities meet energy and water requirements of the Energy Policy Act of 1992. It is the Army's intent to have the landlord make appropriate investments in energy efficiency which can be amortized in the lease, provided the new total cost (energy costs plus lease cost) does not exceed total costs without improvements. These leases will amortize the investments over the economic life of the improvements. Build-to-lease solicitations for Army facilities will contain criteria encouraging sustainable design and development, energy efficiency, and verification of building performance. The Army will continue to rely upon GSA to ensure the above provisions are included in buildings that they lease for the Army.

Defense Commissary Agency

DeCA uses GSA as a leasing agent for its few leased facilities. In FY 2006 DeCA will follow up on negotiation of the leases at Hopewell, VA, DeCA Headquarters, and Sacramento, CA to improve energy and water efficiency.

H. Industrial Facility Efficiency Improvements

Air Force

- Using ESPC and UESC, all energy intensive facilities will be reviewed for potential retrofits to reduce energy consumption.
- FE Warren AFB has a programmed ECIP (FY08) to convert forced air heating in high bays in semi-industrial facilities to natural gas fired radiant heat.

Department of the Navy

- Conduct industrial process specific audits for energy efficiency improvements. Partner with DOE's Office of Industrial Technologies Program, and Labs21 Program.
- Identify projects to improve steam systems, boiler operation, compressors, industrial processes, fuel switching, cogeneration and other efficient technologies in energy audits and fund to the maximum extent possible, within agency funding constraints. Local natural resources, such as biomass, geothermal, wind and solar, will be surveyed to optimize their use.
- Utilize Energy Conservation Investment Program (ECIP MILCON) funds and alternative

financing contracts to effectively execute projects.

The Army

Initiatives for industrial facility efficiency improvements utilizing fuel switching, waste heat usage, and thermal storage units will continue for FY 2006. Dual-path air conditioning to control humidity as an alternative to natural gas or propane fired desiccant dehumidification systems, heat-pipe technology for dehumidification, and domestic hot water heat reclaim systems will continue to be utilized for commissary stores. Exploration in efficiency opportunities in renewable energy technologies such as geothermal ground source heat pumps and photovoltaics will also be continued. Army Industrial facilities will continue to utilize the Process Energy and Pollution Reduction (PEPR) software developed by and available from CERL to evaluate their energy reduction potential.

Defense Commissary Agency

- Domestic hot water and HVAC heat reclaim systems are standard in most large commissary store systems. We will continue to explore efficiency opportunities in renewable energy technologies such as geothermal ground source heat pumps and photovoltaics.
- DeCA will complete lighting efficiency upgrades at a minimum of five commissaries in FY 2006.
- DeCA's Agency Energy Manager will continue education initiatives for commissary, zone, regional offices, and Headquarters management on the issue of warehouse sales and cost effective operation of doors between the sales area and the warehouse.
- DeCA Europe will continue to identify and replace refrigeration systems with newer more energy efficient refrigeration systems. Several small projects were initiated in FY 2004 to replace portions of aging refrigeration systems. In addition, replacement of lights in the sales area in one of our commissaries with more energy efficient fixtures was initiated in FY 2004.
- The DeCA East Utilities Task Force evaluated the use of a "fabric-style" curtain to be specified in place of the conventional vinyl strip curtain used in display cases and walk-in coolers. These curtains are not only more durable than the vinyl type, but they are also better in reducing heat and moisture infiltration due to their higher insulating "R" value. These were approved for DeCA wide use by our Facility Requirements Review Board. We are evaluating two brands of refrigerated case night covers and anti-sweat heater controls for glass door frozen food cases.

National Security Agency

- Several projects are underway to replace older R-12 and R-500 chillers with newer, more efficient, and environmentally safer R-134a machines. Associated chilled water pumps will be converted to variable speed systems.
- We are continuing our campus-wide EMCS replacement program. This new system is more flexible, monitors and controls more points, and uses new control strategies to control HVAC systems. Additionally, all systems are being fully commissioned upon installation.
- A new project is being explored to supply landfill gas to our boiler plant. If undertaken, this new source will supply 20% of our winter gas demand, and 50% of our summer demand.

I. Highly Efficient Systems

DoD encourages Defense Components to combine cooling, heating, and power systems in new construction and/or retrofit projects when cost-effective. Components are also encouraged to survey local natural resources to optimize use of available biomass, bio-energy, geothermal, and other renewable or naturally occurring energy sources when life-cycle cost-effective.

Air Force

ESPC and UESC will evaluate installing these systems where economically feasible. An example:

- The 611th ASG will continue the development of a waste heat loop at Eareckson Air Station.
- AFRC is performing a command wide study investigating the use of high efficient systems.
- PACAF will continue to explore the opportunity to build a CHP plant to service the C-17 complex at Hickam.

Department of the Navy

Include consideration of highly efficient systems in energy audits and project funding alternatives.

The Army

The Army encourages the installations to combine cooling, heating, and power systems in new construction and/or retrofit projects when cost-effective. Components are also encouraged to survey local natural resources to optimize use of available biomass, bio-energy, geothermal, and other renewable or naturally occurring energy sources when life-cycle cost-effective. Highly efficient systems are consistent with the Army's requirement that all new or major renovations strive to achieve the SpiRiT Gold rating.

Defense Commissary Agency

- DeCA plans no combined CHP systems in the coming fiscal year for FY 2005. Geothermal heat pump and photovoltaic systems will continue to be evaluated for commissary store use.
- New refrigeration systems utilize electronic controls, heat reclaim, and "floating head pressure controls" to reduce energy usage. Designs include refrigeration hot gas heat reclaim for HVAC and domestic hot water.

Defense Logistics Agency

At the Defense Supply Center Columbus, DLA will de-centralize the heating plant and install individual boilers to optimize energy efficiency.

Off-grid generation, owned and operated by Defense Components may make sense for mission criticality and remote sites when it is life-cycle cost-effective. In these cases, innovative energy generation technologies such as solar lighting, large photovoltaic arrays, wind turbine generators, micro-turbines and fuel cell demonstration projects will be utilized.

Air Force

ESPC/UESC/ECIP programs are evaluating the economics of installing off-grid technology, examples include:

- AMC is pursuing a 5 to 10 MW power production capability using gas produced from a local composting facility at McGuire AFB NJ.
- ACC is pursuing a waste to energy project at Dyess AFB TX that will produce 5.4 MW.
- AETC is pursuing a project at Luke AFB AZ using landfill gas from the city of Glendale.
- AETC will install a 122KW solar roof PV system at Luke AFB AZ.

Department of the Navy

- Utilize results of OSD renewable study to develop a DON renewable energy plan based on life cycle cost effective applications.
- Install renewable electricity projects to provide an additional 50,000 MWH by 2010 and a total of 200,000 MWH by 2013.
- Award P/PV development of geothermal electrical generating plant at Naval Air Station Fallon, NV.
- Improve energy and cost reporting of renewable energy projects via DUERS.
- Validate the benefits of PEM fuel cells, wave power, and ocean thermal energy conversion in DON applications.

The Army

The Army will continue to pursue off-grid generation where it is life-cycle cost-effective. Innovative energy reduction technologies will be utilized for FY 2006. For example, Fort Lewis intends to install a small renewable demonstration project in FY 2006 and Fort Buchanan will continue to install photovoltaic street lighting systems, and Fort McPherson will install a 5kW proton exchange membrane (PEM) hydrogen fuel cell in one of their residences.

Defense Commissary Agency

- Solar powered outdoor lighting will be evaluated for DeCA facility and commissary store use in FY 2006.
- If the installation cannot provide dependable power to the commissary, the programming and design review teams will evaluate what other sources are available. Generators have typically been used for this backup power.

K. Renewable Energy

- If the installation cannot provide dependable power to the commissary, the programming and design review teams will evaluate what other sources are available. Generators have typically been used for this backup power.

K. Renewable Energy

DoD is committed to creating opportunities to install renewable energy technologies and purchase electricity generated from renewable sources when life cycle cost-effective. Passive solar designs, such as building orientation and window placement and sizing, will be implemented in a variety of building types and new facility construction.

Air Force

- The Air Force will continue to pursue the purchase of renewable energy.
- ACC is currently partnering with a developer to install an 18MW photovoltaic array at Nellis AFB beginning in FY06.

The Army

The Army at Fort Lewis has committed in FY 2006 to purchase 24000 MWH of green power, or 10% of the installation's total. The Army is a major, active supporter of Renewable Energy within the federal government and will continue to purchase and use renewable energy and power to meet the efficiency goals set forth by Executive Order 13123.

Defense Commissary Agency

- DeCA is working with PowerLight Corporation, Berkeley, CA, and the energy manager of Los Angeles AFB, CA to install a roof mounted, photovoltaic solar array capable of producing 152 kW at the Los Angeles AFB Commissary, CA, in FY 2006.
- We will continue to purchase thermal energy generated from renewable sources at our Keflavik, Iceland commissary.

Defense Contract Management Agency

DCMA has budgeted \$10K in FY 2006 funding for renewable energy purchases to enable meeting the new requirement for three percent of electricity consumption to be from renewable sources in FY 2007 - FY 2009 and increasing to five percent in FY 2010 - FY 2012, and 7.5 percent in 2013 and thereafter.

L. Electrical Load Reduction Measures

Defense components will continue to identify load-shedding techniques to cut electricity consumption in buildings and facilities during power emergencies. Examples techniques include:

- Energy Monitoring and Control Systems (EMCS),
- Sub-metering,
- Cogeneration,
- Thermal storage systems,
- Duty cycling of air conditioning units in military family housing by EMCS,
- Alternative energy sources for air-conditioning, turning off unneeded lights with motion, sensors and separate lighting circuits, and
- Distributed Energy Resources (DER) for on-site generation using micro-turbines, fuel cells, combined heat and power, and renewable technologies.

In addition, DoD continues to focus its energy conservation program on measures that reduce electric consumption.

Air Force

The Air Force will investigate the use of several load reduction techniques this FY. Examples include:

- Beale AFB will continue to operate its radio load shed system to control base demand when electricity shortages are probable/predicted.
- Pope AFB SC is developing a load-shedding plan to put in place measures that can be activated to aid Ft. Bragg with their Real Time Pricing and Cogeneration plans.
- All Space Command GSU's (Geographically Separated Units) are implementing strategies within their budgets. CFL changeouts, T8 changeouts, energy awareness, turning off lights when exiting workspaces, sensors, premium motors, and VFD's.
- Kunsan AB Korea uses back-up generators to peak shave during the summer months.
- McGuire AFB goal is to award an ESPC task order in FY2006 that will provide for EMCS Demand Limiting.

Department of the Navy

- Implement cogeneration, DER, peak shaving and renewable electricity projects to reduce demand.
- Validate performance of heating and air conditioning duct sealants, high efficiency rooftop air conditioning systems, and improved air conditioning system occupancy controls and system filters.
- Utilize Energy Management Systems to automatically control loads.
- Metering Systems
 - Develop metering implementation policy, guidance and plans.
 - Where life cycle cost effective, install remote readable electricity meters on 15% of buildings annually.
 - Benchmark facilities. Use real-time electrical consumption data to reduce energy costs and consumption.

The Army

Army installations are developing electric load reduction plans to implement during power emergencies, as well as during normal operations. For example, Fort Hood will continue to use a FM load management system - radio - controlled energy management system to assist in reducing peak demand. Fort Carson will continue to utilize generators for demand/load management. Fort Bragg plans to use 20 MW natural gas fired turbine that will allow them to operate critical systems during full interruption of power. Fort Gordon leases 13.5 MW of diesel generator assets from the 249th Prime Power Program. The generators allow Fort Gordon to peak shave electrical load shape which amounts to at least \$300,000 in annual savings and credits. In addition, The Army continues to focus its energy conservation program on measures that reduce electric consumption. The Army is also committed to creating opportunities to install cost-effective renewable energy technology. As the price of conventional power sources increases and technological advances improve their efficiency, renewable sources become attractive cost-effective alternatives. All solicitations for the competitive purchase of electricity in states that have restructured their electricity markets shall include provisions for procuring cost-effective renewable power.

Defense Commissary Agency

In FY 2006, DeCA will continue to investigate installation of sub-metering to identify high intensity loads to be shed during emergencies; continue to investigate thermal storage systems or alternative energy sources for air-conditioning; continue to install motion sensors and separate lighting circuits to allow turning off of unneeded lights; and consider adding on-site generation using micro-turbines, fuel cells, combined heat and power, renewable, or other appropriate technology.

Defense Contract Management Agency

DCMA will evaluate recommendations from the SAVEnergy Audit performed in FY 2005 to determine the feasibility or potential for energy and water conservation and renewable energy measures that are life-cycle cost-effective. DCMA has budgeted \$80K in FY 2006 funding to implement energy efficiency projects.

National Geospatial Intelligence Agency (NGA)

- NGA's largest facility in St. Louis has an established electrical load shed plan consisting of using the EMCS to cycle or shed all non-essential loads, such as air handlers serving administrative areas, non-essential lighting and other non- production loads.
- A similar plan will be considered for NGA's remaining facilities and the ALERT study facilitates the bases for planned actions.

M. Water Conservation

EO 13123 requires water efficiency improvement goals for Federal agencies, suggesting specific strategies that include development of a water management plan and adoption of at least four of

the Federal Energy Management Program Water Efficiency Improvement Best Management Practices (BMP). The BMPs range from system-related (boiler/steam, cooling tower, faucets and showerheads, etc.) to public information and education programs. Installations will incorporate water management plans in their existing operation and maintenance plans and will focus on dissemination of information to all levels to educate personnel on water conservation practices. Audits will be conducted to identify the best opportunities and where economical, installations will initiate water conservation projects using UESCs and ESPCs.

Defense Components will continue to concentrate on water conservation methods such as public awareness programs, early leak detection and repair, and installation of low-flow water-efficient fixtures in housing and administration buildings consisting of electronic flush sensors, electronic sensor control valves for hand wash lavatories, and waterless urinals.

Air Force

- The Air Force is using an AFCESA developed water management guide. The guide has been disseminated to all levels to further educate personnel on water conservation practices.
- Installations have begun incorporating water management plans in their existing operation and maintenance plans.
- Where economical, we will begin initiating water conservation projects using ECIP and the regional ESPC contracts. ECIP has two projects approved in the FY06 program. These projects, \$2.8M for Water Efficient Landscaping at Nellis AFB NV and \$1.6M for Greywater Irrigation at Beale AFB CA, will save 145,000 kgal annually.
- Randolph AFB TX will install another 200 AMR water meters with leak detection capability.
- Goodfellow AFB TX will implement an ESPC to replace a grass ball field requiring irrigation to a synthetic grass not requiring water.

Department of the Navy

- Improve percentage of installations reporting water consumption, and cost.
- Develop water management plans and implement at least four best water management practices in at least 30% of facilities.
- Develop and prioritize projects based on condition readiness and SIR.
- Centrally and/or locally fund projects and utilize alternative financing contracts.

The Army

EO 13123 requires water efficiency improvement goals for Federal agencies, suggesting specific strategies that include development of a water management plan and adoption of at least four of the Federal Energy Management Program's Water Efficiency Improvement Best Management Practices (BMP). In FY 2005, the Army had 71 installations with completed Water Management Plans. The BMPs range from system-related (boiler/steam, cooling tower, faucets and showerheads, etc.) to public information and education programs. Installations will begin incorporating water management plans in their existing operation and maintenance plans and will focus on disseminating information to all levels to educate personnel on water conservation

practices. Audits will be conducted to identify the best opportunities and where economical, installations will initiate water conservation projects using UESC and ESPC. Army installations will continue to concentrate on water conservation methods such as early leak detection and repair, installation of low-flow water-efficient fixtures in housing and administration buildings, and public awareness programs.

Defense Commissary Agency

- In FY 2006 DeCA will implement best management practices for efficient use of water by requiring low consumption toilets and urinals with electronic flush sensors for new, renovated and existing commissaries.
- We will implement water management plans in at least 30 percent of our facilities.
- Our Design Criteria will continue to require low consumption toilets and urinals with electronic flush sensors for new and renovated commissaries. Electronic sensor control valves will be specified on hand wash lavatories. Waterless urinals will continue to be included in projects at all locations where host installations maintain these devices. Current locations are commissaries at Nellis AFB, NV, Davis-Monthan AFB, AZ, and Yuma Proving Ground, AZ.
- Our DeCA East Utilities Task Force will continue investigation of water use practices in their region.

National Geospatial Intelligence Agency (NGA)

- NGA established a Water Management Program in FY 2003 and continues to implement at least one Best Management Practice (BMP) at each site in FY 06.
- All water supplied to NGA in FY-2006 will be metered.
- The Bethesda Site requested the Washington Water and Sewage Authority, to install new water meters. This was initiated in July 2003. Two meters were added in 2004. An additional seven meters are scheduled for installation during 2005 that will bring the total to 10 meters. NGA will carefully monitor the new water consumption figures, measure and report the results of the (BMPs) that are implemented.

Army Equipping Conference 4.0 (AEC 4.0)

An essential component of the Army Campaign Plan (ACP) is the Army Equipping Strategy, a plan to use all sources of equipment and provide balanced fielding of the best available to the entire force to achieve operational readiness.

Army Force Generation (ARFORGEN), a readiness model, facilitates execution of this equipping strategy and maximizes use of constrained resources.

Another tool is the Army Equipping Conference (AEC), which provides opportunities to refine requirements and solutions for equipping the Army.

The most recent AEC, held 5-9 December at the Army Force Management School at Fort Belvoir and hosted by G-8 Force Development (FD) directorate, provided an opportunity to update the Army Equipping Strategy for more than 300 selected line items to be set in the near-term (FY 06/07).

Nearly 400 attendees representing combatant commands, ARSTAF and Army secretariat, MACOMs, and Reserve components.

Objectives were:

- Determine quantity of equipment necessary to execute the Army's modular growth to support ACP.
- Determine required dollar value associated with modular growth and resourcing efforts.
- Develop Equipment Distribution Plans to support Army Transformation for FY06/07.
- Plan for evolving requirements to build Theater Augmentation Sets and New Team Configurations for OIF/OEF in response to G-3 guidance.

A new AEC player is EQUIPFOR -- an automated tool that develops equipment distribution plans to support Army Transformation for FY06/07 and the POM. EQUIPFOR uses data from Logistics Integrated Databases to give on-hand quantities to UIC level of detail. The Army Flow Model provides data to EQUIPFOR to determine shortages throughout the Army. EQUIPFOR then uses the Dynamic Army Resourcing Priority List (DARPL) -- an automated ARPL -- to distribute equipment in accordance with G-3 priorities.

A key finding was that Equipment Fielding Plans depend on timely funding to meet key milestones for Deployers, Next Deployers and Transformers. Another was that ARFORGEN needs to be driven at UIC level of detail.

Some equipment shortfalls for transforming units will be addressed in 08-13 POM.