



Fiscal Year 2008 Annual Report on Energy Management

December 31, 2008

**U.S. DEPARTMENT OF AGRICULTURE
FY 2008 Annual Report on Energy Management**

I. MANAGEMENT AND ADMINISTRATION

A. Energy Management Infrastructure

1. USDA Senior Agency Official

During FY 2008, the designated Senior Official under Executive Order 13423 (EO 13423) for the United States Department of Agriculture (USDA) was Mr. Boyd Rutherford, who also serves as the Assistant Secretary for Administration (ASA).

The ASA is responsible for implementing the requirements of the Energy Policy Act of 2005 (EPACT), the Energy Independence and Security Act of 2007 (EISA), EO 13423, and the Department's Regulation on Facilities Energy (DR-5500-001) within USDA. In addition, he has full authority to exercise Department-wide contracting and procurement to facilitate the attainment of these requirements.

2. Agency Energy Team

USDA Sustainable Operations Council

The USDA Sustainable Operations Council (SOC), which was established in FY 2007, provides leadership to USDA agencies in conducting their energy, environmental, and transportation activities related to EO 13423. SOC objectives include continuing senior management involvement, establishing clear goals and objectives, and developing and implementing policies that result in environmentally-friendly, energy-efficient, and, economically-sound operations of USDA.

USDA's Hazardous Materials Council, Asset Management Council, and Procurement Council provide support and assistance to the SOC. Four working groups support the SOC and the three management councils by developing guidance, policies, and tools to assist in implementing EO 13423; these working groups are the Environmental Management, Facilities, Transportation, and Green Purchasing working groups. Figure 1 illustrates the relationship of the SOC to the three management councils and four working groups.

ASA Boyd Rutherford serves as Chair of the SOC to provide executive leadership in implementing EO 13423 requirements. The SOC is comprised of representatives from the USDA Mission Areas, the Office of Operations, the Global Change Program Office, the Office of Budget and Program Analysis (OBPA), the Office of the Chief Information Officer (OCIO), the Office of the Chief Financial Officer (OCFO), and the Office of the General Counsel (OGC).

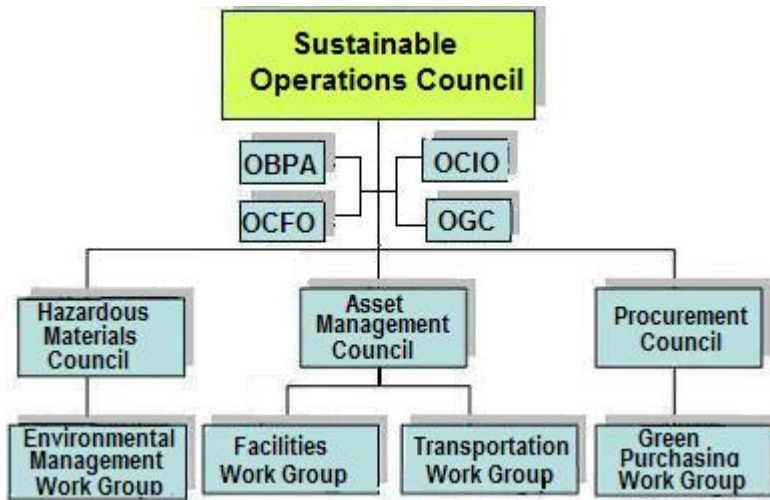


Figure 1: U.S. Department of Agriculture Sustainable Operations Council

Facilities Work Group

The Facilities Work Group, which is a subcommittee of the SOC’s Asset Management Council, is comprised of representatives from the various USDA agencies and offices. The Work Group provides an inter- and intra-departmental liaison on energy matters involving procurement, legal, real property, budget, and engineering. The Work Group is responsible for developing policy proposals and implementation strategies in the areas of energy efficiency, water conservation, and sustainable and high performance buildings. Table 1 lists key members of the Facilities Work Group.

MEMBER	USDA AGENCY/MISSION AREA
Charles Johnson	Office of Procurement and Property Management
Ed Murtagh	Office of Operations
Glenda Wilson	Forest Service
Sandy Morgan	Agricultural Research Service
Ken Lawson	Marketing & Regulatory Program Agencies
Flora Paulino	Natural Resources Conservation Service
Joseph Shunk	Rural Development
Chris Nelson	Office of Budget and Program Analysis

Table 1: U.S. Department of Agriculture Facilities Work Group

Green Teams

USDA agencies have also established local Green Teams. The primary objective of the Green Teams is to promote energy efficiency, water conservation, and sustainable buildings at the regional and local levels. The Green Teams often collaborate with *ad hoc* groups of experts to assist in developing an ecological footprint and sustainable performance measures. Green Teams are dedicated groups of employees, regardless of discipline or organizational level, which facilitate the practical implementation of sustainable operations principles within their organizations. Green Teams range from the informal – a few employees working together to reduce energy consumption for themselves and their community, to the formal – a group specifically chartered by leadership to promote and foster sustainable operations that reduce a unit’s environmental footprint.

Successful Green Teams are very “place-based,” (i.e., the issues they choose to work on are meaningful to their specific community and geographic location). What is sustainable in one location may not be sustainable in another location because the natural resources, culture, and economic situations are all different. Most place-based Green Teams choose to work across many environmental footprint areas (e.g., water conservation, energy efficiency, renewable energy, and sustainable buildings). However, some Green Teams have been created with membership across geographic units to specifically foster dialogue about sustainable operations opportunities within a particular area such as energy management. While many Green Teams begin as an internal effort, they often grow to include members of the local community or other state, federal, or local agencies.

B. Management Tools

1. Awards (Employee Incentive Programs)

USDA participated in the Department of Energy’s Annual Federal Energy and Water Management Awards program, as well as, the “You Have the Power” (YHTP) recognition program. USDA and its agencies submitted nominations for these programs to recognize outstanding contributions by employees to the energy and water conservation effort. Ray Kerr Morgan, of USDA’s Agricultural Research Service (ARS), was selected as an YHTP Energy Champion for his work related to Energy Savings Performance Contracts (ESPCs), renewable energy, and advanced energy management systems.

Individual USDA agencies conducted their own employee award and recognition programs as well. ARS utilized existing Agency employees’ incentives and awards programs in recognizing and rewarding employees for their energy saving

contributions. The USDA Forest Service (FS) continued to administer its “Sustainable Operations” awards program; the intent is to recognize an individual or group that makes a contribution to reducing the Forest Service’s energy and environmental footprint. Also, USDA’s office of Departmental Administration (DA) participated in USDA awards programs and regularly recognized individual efforts at staff meetings and award ceremonies. Finally, the Headquarters (HQ) Green Team received the USDA Secretary’s Honor Award (the most Prestigious Award given at USDA) for leading efforts to make USDA Headquarters “greener”.

2. Performance Evaluations

USDA and its agencies incorporated provisions of EO 13423 into the performance standards of members of its SOC and other key individuals of its energy management infrastructure. Specifically, the performance standards for USDA’s ASA, Environmental Management Division (formerly Energy and Environment Division) Chief, and its Facilities Energy Program Manager have been updated to include criteria relating to the energy and water management goals of EO 13423.

FS added the following requirement in the "Mission Results" performance element for all managerial and supervisor positions: "Ensures sustainable operations and consumption and utilizes energy efficiently in daily operations. Creates initiatives and activities that demonstrate resources are managed to reduce the Agency's overall environmental footprint."

Within ARS, an energy management element continues to be incorporated into appropriate position descriptions and performance evaluation standards of agency employees considered critical for the successful implementation of the ARS’ energy management program.

3. Training and Education

Throughout FY 2008, USDA personnel participated in energy management-related training from a variety of sources, including Department of Energy’s (DOE) Federal Energy Management Program (FEMP), the U.S. Green Building Council (USGBC) and the Association of Energy Engineers (AEE). Numerous representatives from USDA agencies participated in the series of Electric Metering Webcasts and the GovEnergy Conference sponsored by FEMP. Additionally, USDA employees attended green building seminars and workshops conducted by USGBC and other training providers. Also, USDA disseminated hundreds of copies of various energy awareness and educational materials throughout the Department as part of the YHTP campaign.

DA has a robust outreach program that contacts thousands each year. In FY 2008, DA hosted several outreach events displaying a hydrogen fuel cell vehicle (on loan from DOE and General Motors) and the benefits of compact fluorescent lighting and Energy Star[®] rated appliances. The Energy and Environmental Manager received his Certified Energy Manager credential from AEE and attended 80 hours of energy conservation training. During Energy Awareness month of October 2007, DA embarked on a campaign (“USDA Unplugged”) to bring awareness to USDA employees about the energy usage and waste that occurs at the HQ Complex during the evenings and on weekends.

In November of 2007, FS conducted its annual National Sustainable Operations in Denver, Colorado. These annual summits create opportunities for employees across FS to network and share information and success stories and discuss barriers across all footprint areas. Approximately 250 participants attended the summit including FS and other Federal and State agency partners. Also, several FS Regional Facilities Engineers have attended USGBC’s Leadership in Energy and Environmental Design (LEED) training. Additionally, some Regional FS Offices have incorporated sustainable operations training into their future environmental management systems’ training program.

Within ARS, relevant energy management training and materials were provided to the workforce. Employees were encouraged to attend energy management training offered by FEMP, private or public educational institutions, Federal agencies, or professional associations. Managers were encouraged to establish and involve energy committees in energy management decision making. At some ARS locations, the facility engineers received training by local power and water utilities on general conservation, best practices and rate structures available to minimize operating costs. Numerous individuals were trained on LEED, EnergyStar[®] Buildings, the LABS 21 program, and distributed energy. Additionally, purchase card holders were trained on energy-efficient products purchases. Furthermore, ARS maintains an Energy Awareness website that provides energy and sustainability information and links.

II. ENERGY EFFICIENCY PERFORMANCE

A. Energy Intensity Reduction Performance

1. Goal Subject Buildings

In FY 2008, we estimated USDA’s energy use index (EUI) at 67,521 British Thermal Units (Btu) per gross square foot (GSF), which represents a 21.7 percent reduction compared to the FY 2003 baseline of 86,281 Btu per GSF. The FY 2008 EUI reduction goal for EPACT is six percent (as compared to the FY 2003 baseline); and the FY 2008 reduction goals for EISA and EO 13423 are both nine

percent (as compared to the FY 2003 baseline). Accordingly, USDA exceeded all three of these goals.

Utility invoices and data compiled by USDA's National Finance Center (NFC) and its Purchase Card Management System (PCMS) form the basis for a significant portion of the consumption levels reported for energy, fuel, and water use. Consequently, the accuracy of the consumption data is limited by the controls and architecture intrinsic to these systems.

2. Excluded Facilities

USDA has no excluded facilities to report for FY 2008.

3. Non-Fleet Vehicle and Equipment Fuel Use

In FY 2008, USDA reported using 668,600 gallons (83.6 billion Btu) of aviation fuel, which represents a 17 percent increase compared to the department's FY 2007 usage. The increase in aviation fuel use from FY 2007 to FY 2008 may be due to increased fire fighting activity at National Forest System lands.

USDA's fuel use related to aircraft is reported in the Federal Aviation Interactive Reporting System (FAIRS).

B. Renewable Energy

In FY 2008, USDA agencies strived to select products, materials, and systems that maximize the use of renewable energy. We gave appropriate consideration to incorporating solar, wind, and other renewable technologies when cost-effective over the life cycle. Accordingly, through a combination of purchases and on-site generation USDA used 17,772.5 megawatt-hours (MWH) of renewable energy, which is equivalent to 3.1 percent of USDA's total electricity use for FY 2008. Thus, USDA exceeded the EPACT renewable energy use goal of 3 percent for FY 2008.

As part of the department's Renewable Energy Systems and Energy Efficiency Improvements Program, USDA's Rural Development Agency made available \$220.9 million in loan guarantees and grants to encourage agricultural producers and small rural businesses to invest in renewable and energy efficient systems. The renewable energy systems included technologies based on ethanol, biodiesel, wind, solar, geothermal, methane gas recovery systems, and biomass.

1. Self-generated Renewable Energy

In FY 2008, USDA agencies generated a total of 4,836.1 million Btu on-site. ARS's Beltsville Agricultural Research Center (BARC) has approximately 74 installed generators operated by B-20 (Biodiesel fuel) in its facilities. BARC's dairy also utilizes a turbine which is fueled by methane abstracted from animal

waste. At an ARS facility in Honolulu, Hawaii, solar water heaters (capable of producing 21.6 million Btu per year) are used to heat cage washing water; while a facility in Bushland, Texas operated four wind energy systems which generated 78.3 MWH of electricity.

The Forest Service continued to install photovoltaic systems at remote sites, and used passive solar design strategies, to the greatest extent possible, in new facility design and construction. Since 1990, Forest Service has installed over 500 photovoltaic units mainly at remote sites formerly served by fossil-fueled generators. In FY 2008, there were many self-generated renewable energy projects implemented or continued across National Forest System lands.

In the FS Rocky Mountain Region, eight 90 watt photovoltaic panels and one 75 watt photovoltaic panel provide power for a remote water distribution system serving 60 campsites; the panels operate a 400 watt well pump and chlorinator pump. In the Intermountain Region, the Ashley National Forest (NF) installed a solar powered lighting system throughout the Colton Guard Station; the project replaced the propane fueled lighting fixtures. The Ashley NF also installed a similar system at the Trout Creek Guard Station.

Additionally the Boise NF installed a solar powered well pump that also provides DC electric power to a host site. While the Alaska Region continued to use six solar/wind/battery powered units for remote sites providing 835 KWH/season. On the Kisatchie NF in the Southern Region, a biomass project began for the Winn District Ranger Office; this project will install a BioMax[®]25(kW) gasifier that uses wood chips as fuel. The fuel will operate a generator to take the place of utility supplied power to the building.

2. Purchased Renewable Energy

In FY 2008, USDA and its agencies purchased 15,912 MWH of renewable energy (also known as green energy or green power) and renewable energy certificates (RECs). USDA's Office of Procurement and Property Management purchased 1,800 MWH of RECs to be used by the department at-large in FY 2008. The purchase, which was facilitated by the Defense Energy Support Center, includes RECs generated from new sources of wind power.

Within FS, the Headquarters Office purchase RECs equivalent to 15 percent of its energy use; the Rocky Mountain Region entered into a 5 year REC agreement for 550 MWH per year sourced by wind and biomass fuels; and the Forest Products Laboratory in Wisconsin purchased 14 MWH of renewable energy from a wind-based new renewable source. Additionally, the Ozark St. Francis National Forest purchased more than 50 MWH from a wind based "new" renewable source; the San Bernardino purchases 18% of their power from solar and wind sources; and the San Juan National Forest purchased 12 MWH of wind power.

Furthermore, ARS purchased 6,000 MWH of RECs via DESC along with 60 MWH of green energy from Gainesville Regional Utilities. Also, DA purchased renewable energy equivalent to 18% of its total electricity use through a General Services Administration Area-wide contract.

C. Water Conservation

USDA used an estimated 1,748 million gallons of water in its buildings during FY 2008 at a cost of \$5.4 million. The FY 2008 consumption level translates to 29.7 gallons per GSF, which represents a 20.6 percent reduction compared to the FY 2007 baseline amount of 37.4 gallons per GSF. The EO 13423 reduction goal for FY 2008 is two percent; accordingly, USDA has exceeded this goal.

USDA and its agencies executed a wide variety of new and ongoing water conserving practices during FY 2008, including installing water meters as part of new construction projects; installing low-flow water devices; utilizing rain sensors and native plant species for landscaping. USDA also employed techniques such as leak detection and historical data analysis throughout the department. USDA continued to operate its Sustainable Landscape Partnership to address sustainable landscaping at facilities within the National Capital Region.

Also in FY 2008, USDA issued supplemental water conservation guidance to its agencies. The primary objectives of the guidance were to assist the agencies in interpreting FEMP's Water Conservation Guidance, and ultimately comply with EO 13423 water conservation goals. USDA's guidance states that water use from agricultural irrigation and wild land firefighting should not be included in water reporting. These processes, which are an integral component of USDA's mission, are heavily dependent on weather and other parameters outside the control of USDA. The associated water use from these processes can vary significantly from year to year, which tends to make traditional water conservation efforts ineffective.

USDA lacks a department-wide system for tracking water use, and has to rely on cost-based estimates (from water, trash, and other utilities object class accounting codes) for reporting. However, improved collection methodologies continue to capture better consumption and costs data each year.

D. Metering of Electricity Use

In FY 2008, USDA completed all of the milestones in its Electric Metering Plan, including developing installation timelines and indentifying site support requirements. Additionally, all USDA facilities within the National Capital Region, which includes the HQ Complex and the George Washington Carver Center (GWCC), have advanced electric meters installed.

ARS has conducted training of key personnel involved in implementing the electric metering plan and conducted an in-house electric meter survey of all 3,200 buildings in its inventory. ARS Facilities Division issued a task order to an engineering firm for planning phase services in support of the electric metering project. The engineering firm validated the in-house electric meter survey, determined the cost/benefit of installing metering devices and projected energy cost savings,

provided metering recommendations to meet the requirements of EPACT, developed general conceptual designs including cost and schedule estimates, and developed a performance specification.

In FY 2008 ARS funded \$290,000 for the installation of advanced electric meters at several locations. ARS also conducted an in-house survey of natural gas and steam meters in FY 2008 at several locations. Additionally, the Forest Service estimates that approximately 4,500 buildings are currently metered either internally or by local utilities with standard meters; this figure represents about half of the buildings that have electricity service.

Until such a time that an electric metering program is completely implemented, USDA and its agencies are taking other steps to track and minimize energy use. One of the most effective means of evaluating energy use is through reviewing utility bills. These efforts not only inform decision-makers of the total costs and locations of high energy intensity, but can also identify inconsistencies such as incorrect rates as well as sites not used by the department.

E. Federal Building Energy Efficiency Standards

Through the use of sustainable design practices and standards, such as LEED, EnergyStar® Buildings, and LABS21, USDA and its agencies have incorporated the provisions of EPACT into all new building designs started after October 1, 2006. The projects, which are listed in the USDA FY 2008 Energy Management Data Report (see attachment), were started in or after FY 2007 and are expected to meet or exceed the Federal building energy efficiency standards. These projects were compiled from USDA's FY 2008 "Three-year Rolling Timeline" datacall, which is an extension of USDA's Real Property Profile required under EO 13327, *Federal Real Property Asset Management*.

Furthermore, USDA agencies have issued interim instructions to architectural-engineering (A-E) firms for performing building energy analyses in accordance with EPACT. To analyze new buildings, A-E firms must estimate both the life-cycle cost and energy consumption of the planned building as designed and an otherwise identical building meeting the minimum criteria set forth by ASHRAE 90.1 - 2004. If the 30 percent savings is not life-cycle cost effective, the A-E firm must evaluate the cost-effectiveness of alternative designs at successive decrements (of five percent) below 30 percent in order to identify the most energy-efficient design that is life-cycle cost effective for that building.

F. EISA Covered Facilities and Energy Managers

In accordance with FEMP's *Federal Energy Management Guidelines and Criteria for Energy and Water Evaluations in Covered Facilities*, USDA's list of Covered Facilities is based on its list of *Goal Subject Buildings*. However, USDA's list of

Covered Facilities does not align 100 percent with the USDA list of *Goal Subject Buildings*; this is because USDA is not able to disaggregate all of its energy use according to individual buildings. Consequently, in many cases USDA agencies have defined a covered facility as a campus or organizational grouping of buildings (which vary based on each agency's organizational structure). For instance, within DA, there are two covered facilities – the USDA HQ Complex and the GWCC. FS is divided into regions which are divided by National Forest, each of which has multiple buildings. Each National Forest has been designated as a covered facility. ARS is divided by geographical areas which are further divided into locations; each location can represent one or more buildings. Each ARS location has been designated as a covered facility. The Animal and Plant Health Inspection Service (APHIS) has designated each of its regions as a covered facility; the Natural Resources Conservation Service (NRCS) has done the same for its Plant Material Centers. A list of USDA's Covered Facilities and Assigned Energy Managers are provided in the USDA FY 2008 Energy Management Data Report (see attachment).

III. IMPLEMENTATION STRATEGIES

In FY 2008 USDA employed the following implementation strategies to reduce energy consumption and enhance energy efficiency:

A. Life-Cycle Cost Analysis (LCCA)

ARS used life-cycle cost methodologies and value engineering to identify energy conservation opportunities. During FY 2008, agency policies and procedures (P&P) were in place requiring use of LCCA for evaluating energy conservation opportunities and decision making. For example, P&P 242.5, *Economic Analysis and Decision for Facility Modernization*, requires performance of economic analysis to determine the best method of implementing facility modernization between such options as selective renovation or gutting and rebuilding of existing buildings, and constructing new replacement facilities. Also, P&P 242.7, value engineering (VE), implements the ARS policy and procedural requirements of OMB Circular No. A-131 in the use of VE techniques to reduce cost and improve and maintain optimum quality of ARS construction and acquisition program functions.

FS policy requires the use of life-cycle cost analysis and value engineering for new buildings, as directed by the Forest Service Manual. For major facilities renovations and equipment replacement, life-cycle cost analysis is integral to decisions about products, services, construction, and other projects at the Forest Product Laboratories (FPL). FPL conducts benefit-cost and cost-effectiveness analyses in accordance with OMB Circular No. A-94, "Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs." Long-term savings to the Government and near-term investment payback, along with dependability, energy efficiency, ease of operation and low maintenance, are always prime considerations when programming an

equipment purchase or system renovation. Major capital improvement projects that were implemented in FY2008 were selected, in part, for benefits determined by life-cycle cost analysis. Also, FS has funded the Missoula Technology and Development Center to do an analysis of the LCCA tools available from the Whole Building Design Guide.

B. Retrofits and Capital Improvement Projects

As part of the Department's ongoing facilities modernization, repair, and maintenance activities, USDA spent more than \$ 5.5 million for related building energy efficiency improvement projects during FY 2008.

These projects included improving the energy efficiency of existing pre-engineered buildings by means of re-insulating the roof areas and interior perimeter walls with fiberglass faced insulation and installing energy efficient lighting and vent fans. Other projects entailed installing energy efficient boilers and heating, ventilating, and air conditioning (HVAC) equipment; upgrading plumbing equipment; installing variable speed drives on pumps and air handlers; upgrading digital control systems; and implementing computer-controlled metering for electricity. Furthermore, agencies refurbished insulation for coolers; installed alarm systems on freezers; cleaned HVAC condenser/evaporator fan coils; repaired compressed air leaks; and installed rain sensors, hot water tank timers, and restroom occupancy light sensors.

Within USDA's HQ Complex, daylight harvesting light fixtures were installed in all stairwells of the Jamie Whitten Federal Building. Also, within the HQ Complex, over 1,000 incandescent bulbs were replaced with compact fluorescent lamps (CFLs); malfunctioning automatic motion and photoelectric sensors were replaced; and several aging fixtures were replaced with new energy efficient fixtures.

C. Use of Performance Contracts

Energy Saving Performance Contracts (ESPCs)

In FY 2008, USDA agencies realized energy and cost savings from Energy Savings Performance Contracts (ESPCs) awarded in previous fiscal years.

ARS' National Agricultural Research Library (NARL), in Beltsville, Maryland, continued its ESPC to cover lighting retrofits, burner replacement, chiller plant automation, and building automation systems. The NARL ESPC, which was awarded in 2000, yields an estimated energy savings of 11,322 million BTUs per year. Payments totaling \$127,907 were made to NORESKO, Inc. in FY 2008 for the NARL ESPC. Also, the ESPC at the National Animal Disease Center (NADC), in Ames, Iowa, which was awarded in 1999 under the DOE Mid-West Area Super ESPC, yields an estimated energy savings of 20,396 million BTUs per year. In FY 2008, USDA paid a total of \$691,565 to Johnson Controls, Inc for the NADC ESPC. Other

ongoing ESPC projects within ARS include the ESPC project at the Beltsville Agricultural Research Center (BARC) in Beltsville, Maryland, which was awarded in 2003. In FY 2008, USDA paid \$680,029 to AMERESCO, Inc. for the BARC ESPC, which yields annual savings of 48,685 million BTUs.

The Forest Service's Forestry Laboratory in Corvallis, Oregon entered into a ten year ESPC with Honeywell in 1999 at a cost of \$740,500. The ESPC, which focuses on heating retrofit and building automation systems, has achieved \$48,100 in cumulative savings beyond the guaranteed savings of \$598,536. Also, the Forest Service's Region 2 has entered into a Region-wide ESPC for eleven National Forests.

Furthermore, USDA agencies are considering and pursuing other ESPCs opportunities. Specifically, agencies are reviewing data from the Federal Energy Management Program's Energy Efficiency Expert Evaluations and other energy audits conducted in FY 2008 to determine if it will be cost effective to employ the use of ESPCs or Utility Energy Services Contracts (UESC) as a follow-up to the site evaluations and audits.

Utility Energy Services Contracts (UESCs)

In FY 2008, USDA's Departmental Administration awarded the first task order of its UESC with Washington Gas Energy Services (WGES). The UESC, which USDA signed with WGES in FY 2007, is a ten year contract for ten million dollars and covers the USDA HQ Complex and the George Washington Carver Center (GWCC). The HQ Complex and GWCC (located in Beltsville, Maryland) contain more than three million gross square feet. The UESC is open to all USDA agencies that operate facilities within the Washington Gas service area. The HQ Complex projects began with an investment grade energy audit, and will potentially explore energy conservation measures for electrical and mechanical systems, lighting, heating and cooling upgrades, weatherization, water conservation, co-generation, summer steam use reduction through on-site generation, and renewable and alternative energy projects.

ARS has entered into an interagency agreement with Bonneville Power Administration (BPA) for lighting upgrades at Prosser and Pullman, Washington. The work will cost \$103,600 and will earn a \$45,888 incentive that will be used for other energy efficiency projects in BPA's territory. Also, the U.S. National Arboretum (which is a part of ARS) is contracting with Washington Gas to perform energy upgrades as an unfinanced UESC for a new cooling tower and a water meter study. Additionally, ARS contacted over 100 utilities to find opportunities for energy audits and UESC agreements. Of these, 24 utilities agreed to conduct free energy audits at ARS Locations, which will potentially lead to at least seven UESC agreements.

D. Use of ENERGY STAR[®] and Other Energy-Efficient Products

USDA continued to execute its Electronics Stewardship Plan (ESP), which addresses how the Department will implement the electronics stewardship provisions of EO 13423. In FY 2008, USDA worked through its SOC workgroups to execute EO 13423 objectives and to formulate methods for tracking and reporting on their status. Also, USDA continued to work closely with the Federal Electronics Stewardship Work Group to help elaborate tracking and reporting procedures so that these performance metrics are incorporated into USDA's methodology.

In FY 2008, USDA continued its policy of buying electronics and appliances that meet ENERGY STAR[®] and EPEAT requirements. USDA incorporated electronic stewardship goals into its Departmental Regulation on End User Workstation Standards; and issued a memorandum requiring its organizational elements to enable ENERGY STAR features on all USDA workstations (whenever possible). Also, purchases of equipment made directly and indirectly (through O&M contracts), were monitored to ensure that they meet ENERGY STAR[®] and EPEAT requirements.

E. Sustainable Building Design and High Performance Buildings

USDA continued to execute its Sustainable Buildings Implementation Plan (SBIP), which delineates how USDA intends to fully comply with EO 13423, including implementing sustainable practices for high performance construction, leasing, operation, and maintenance of buildings. USDA completed all required actions in its SBIP, including developing criteria and mechanisms for reporting agency progress; developing sustainability assessments checklists; conducting sustainability assessments; and establishing policy requiring cross functional teams for the design, construction, and commissioning of USDA buildings. In FY 2008, the SBIP was incorporated as an appendix in the USDA Asset Management Plan (required by EO 13327) and will be updated annually. USDA also continued to implement other policies and regulations, such as the USDA Facilities Energy Departmental Regulation (DR-5500-001), which promote energy-efficiency, water conservation, and sustainable building design and construction.

USDA agencies such as ARS continued to implement the *Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings*. These principles have been incorporated into facilities design standards. Specifically, appropriate sustainable design considerations were given in the siting, design, and construction of new facilities. Also, new building construction projects are managed by integrated design teams and commissioning is integrated into design and construction phases. Additionally, indoor environmental quality specifications are included in the design of all new building construction. Furthermore, new construction requires the use of hazardous materials and hazardous substances abatement services; and gives preference to the reuse or recycling of materials. Within ARS, the Administration building at the National Arboretum, The Consolidated Laboratory Facility Building in Ames, Iowa, and the Animal Bioscience Facility in Bozeman, Montana are being designed to LEED standards.

Sustainable building design is inherent in the LEED certification process, which the Forest Service has adopted. The Bessey Ranger District Office in Halsey, Nebraska, is the Forest Service's first building to be LEED certified at the silver level. Also, at the Forest Products Laboratory (FPL) in Madison, Wisconsin, sustainable building design principles are incorporated into all aspects of construction of new facilities and, where feasible, into existing facility renovations. The design and construction incorporate environmentally sensitive practices that reduce pollutants and improve indoor air quality, while also conserving water, energy, and other natural resources. Many of the building materials were derived from recycled products. FPL was awarded the ENERGY STAR[®] label in October 2001, and is also certified as a Green Built House.

F. Energy Efficiency/Sustainable Design in Lease Provisions

USDA is committed to pursuing environmental stewardship and energy efficiency in its leased facilities nationwide, and has solicited assistance from the General Services Administration (GSA) Public Building Service in meeting that commitment. USDA requested that GSA, when entering into contracts and leases on behalf of USDA and its agencies, incorporate lease provisions that encourage energy and water efficiency wherever life-cycle cost effective. Furthermore, USDA instructed GSA that build-to-suit lease solicitations for USDA and its agencies should include criteria encouraging sustainable design and development and verification of building performance. Also, as available and cost-effective, USDA has expressed a preference for EnergyStar[®] labeled buildings in leased facilities.

In FY 2008, USDA continued to direct its agencies to incorporate the model lease provisions contained in the USDA Real Property Leasing Handbook and the GSA Energy and Environmental Business Practices in Lease Acquisition Guide. Also, USDA continued to implement provisions of its departmental regulation on Facilities Energy, which instructs agencies to incorporate energy efficiency provisions into leases.

Several USDA agencies have direct leasing authority and continued to address energy issues in their lease solicitations. FS worked on developing green lease provisions for leases; use of these provisions was discussed by the agency leasing officers for possible national implementation. ARS complies with the energy conservation guidelines set forth in the *Federal Energy Management and Planning Programs*, and ensures that all new lease contracts are in conformance with the policies prescribed in the Federal Property Management Regulations. Also in FY 2008, USDA's Marketing and Regulatory Program agencies continued to require its offices to incorporate lease provisions that encourage energy and water efficiency whenever life-cycle cost effective.

G. Distributed Generation

In FY2008, USDA agencies continued to use and consider (when life-cycle cost-effective) distributed generation technologies that provide energy and environmental benefits. Cogeneration and standby generation systems completed in FY 2001 allow USDA's National Animal Disease Center to generate electrical power off-grid as needed. Off-grid generation is also provided to USDA's National Soil Tilth Laboratory by Iowa State University, where small solar cell systems are used on several field instrumentation operations.

Within ARS, some locations in the Pacific West Area (PWA) provided hot water by utilizing heat exchangers that recapture energy generated in the buildings. Other locations in PWA used solar water heaters and photovoltaic systems for lighting and to pump irrigation water at out-buildings. An ARS laboratory in the Southern Plains Area operated nine wind energy systems and three solar water pumping systems; and the Mid South Area initiated an investigation into the use of peak shaving generators and other power generation alternatives.

IV. DATA TABLES AND INVENTORIES

A. FY 2008 Annual Energy Management Data Report.

{See attachment}

B. Excluded Facilities Inventory.

USDA has no excluded facilities to report for FY 2008.