

**FEDERAL ENERGY
MANAGEMENT PROGRAM**



**YEAR IN
REVIEW
2007**



**U.S. Department of Energy
Energy Efficiency
and Renewable Energy**

Bringing you a prosperous future where energy
is clean, abundant, reliable, and affordable



Federal Energy Management Program

Year in Review 2007

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Cover photo: Larry Smith helped develop a super energy savings performance contract (Super ESPC) and utility energy services contract (UESC) program that allowed Social Security Administration to upgrade major capital improvements such as chillers, boilers, and HVAC systems with no up-front cost to the agency at the Harold Washington Social Security Administration Center, Chicago, IL.



RESEARCH LABORATORY BUILDINGS AT THE NATIONAL INSTITUTES OF HEALTH (NIH)

BETHESDA, MARYLAND

The research laboratories operated by the U.S. Department of Health and Human Services require a great deal of fresh outdoor air to maintain proper indoor air quality. During winter months, a large amount of energy is used to heat that air. NIH has installed a solar air heating system that delivers heated air directly to the outdoor air intakes, which reduces the heating load and saves energy.

Flat panel solar roofing (*in photo at left*), solar siding, and wall mounted solar air heater boards provide clean and green energy to buildings on the 300-acre medical research campus in Bethesda, Maryland.

Introduction

The U. S. Federal government is the largest consumer in the world – spending more than \$400 billion last year on goods and services. It is also the largest landholder and energy user in the world. The Federal portfolio of real property contains more than 1.2 million assets and uses more than 1.6Q (quadrillion) Btu costing \$14.5 billion annually.

With such large numbers comes equally large responsibility. Never before has the focus on energy efficiency been more prominent, nor has the need for energy savings been more important. On January 24, 2007, President Bush signed Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, requiring the Federal government to further strengthen its commitment to energy security, environmental quality, and savings. The President's order challenges Federal agencies to conserve even more energy by requiring an increase in energy savings from 2 to 3 percent annually.

It demands that the Federal government do more to conserve water by challenging agencies to save at least 2 percent annually.

Executive Order 13423 also establishes goals for increasing the use of renewable energy from new sources, to ensure buildings are designed, constructed, and operated in a sustainable manner, and to ensure the electronics agencies purchase and use are environmentally friendly and managed efficiently throughout their useful life and at the time of their disposal.

The Federal Energy Management Program (FEMP) estimates that Federal buildings will need to reduce total annual energy consumption by more than 70 trillion BTUs by 2015 in order to meet the energy performance requirements Congress set forth in the Energy Policy Act of 2005 (EPAAct 2005). To meet even tougher standards that President Bush set in Executive Order 13423, energy intensity must be reduced by 30 percent over the same period. This requires an annual, sustained reduction in government facility energy use of more than 100 trillion BTUs.

There is good reason to believe these aggressive goals will be achieved. In 2007, Federal agency accomplishments served as a model for the nation. For example, Energy Savings Performance Contracts (ESPCs) and Utility Energy Savings Contracts (UESCs) have contributed to an increase in investments of \$161 million over the previous year. This dedication demonstrates how the actions taken as Federal employees and agencies can cut America's energy bill, increase its energy security, and help ensure our prosperity for years to come. The accomplishments in the pages that follow set a powerful example that can be followed by others in government and throughout our nation.

The 2007 "Year in Review" presents FEMP's accomplishments in four areas: Financing, Technical Assistance, Policy Coordination, and Outreach. It also presents the 2007 winners of the Presidential Awards for Leadership in Federal Energy Management.

FEMP has a wealth of resources to help you obtain financing, increase energy efficiency, generate renewable energy, design sustainable high-performance buildings, and more. Visit www1.eere.energy.gov/femp. The U. S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) also has many other public-private partnerships that can help bring clean, reliable, and affordable energy technologies to your facilities. Learn more about those programs at www.eere.energy.gov.





Over the past 10 years, the National Institutes of Health has taken steps to reduce its energy use through gradual improvements to the Bethesda Campus Central Utility Plant. Projects have included replacing old, inefficient chillers with ultra-efficient, large capacity chillers; retrofitting oil-burning boilers to use natural gas as the primary fuel; replacing the utility distribution system with larger capacity lines to reduce heat-loss and chilled water operating pressures; and installing a 23 megawatt cogeneration unit that is 85 percent efficient. These measures have resulted in savings of nearly 10 million kilowatt-hours, 24 million gallons of water, and \$1 million in annual energy costs.

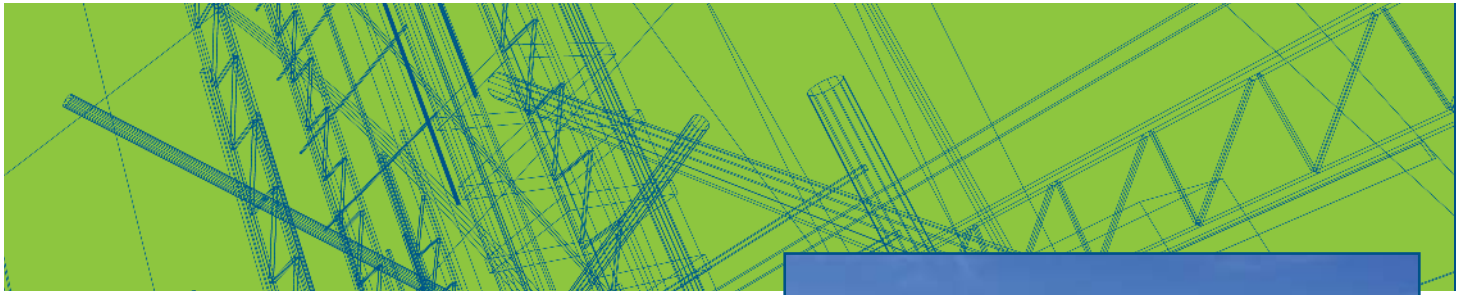
TECHNICAL ASSISTANCE

To meet provisions of Executive Order 13423 and support the President's "20 in 10" plan to reduce dependence on foreign sources of oil, FEMP is advancing new Federal fleet initiatives to reduce petroleum consumption by 2 percent annually and increase alternative fuel use by 10 percent annually through 2015. Within DOE, FEMP is spearheading a comprehensive site-level compliance plan to target the top 20 DOE sites that use 80 percent of fuel and own 74 percent of vehicles. The four-part plan will focus on 1) alternative fuel vehicle acquisitions and use; 2) biodiesel blend use; 3) acquisition of high efficiency and advanced technology vehicles; and 4) improved fleet efficiencies through carpooling and reduced vehicle miles traveled.

In 2007, FEMP also published the *Metering Best Practices* guide to achieving utility resource efficiency. The Guide provides Federal energy managers with useful information and action templates to achieve significant cost savings through metering technologies, equipment, and applications. Among other critical subject areas, the Guide covers utility management, operations validation, building system monitoring, revenue billing, rate verification, and benchmarking.

The Labs 21 technical team published several new *Best Practices* guides on specific energy efficient technologies in 2007. Each guide was developed with significant participation by industry experts and was peer-reviewed for technical accuracy. Topics include On-site Power Systems, Daylighting, Energy Recovery, Water Efficiency, and many others.

In 2007, FEMP also published four new technical documents including a Federal Technology Alert titled *Testing a 30-kW Microturbine and CHP System*; a Federal Technology Focus titled *Testing Pre-Production Residential Heat Pump Water Heater*; and two Technology Installation Reviews, one titled *Wireless Temperature Sensors for Improved HVAC Control*, and one titled *Energy Savings from Small Near-Zero Energy Houses*.



In 2007, increased emphasis was placed on the importance of water efficiency. Executive Order 13423 requires Federal agencies to reduce water consumption by 2 percent annually through FY 2015. To help achieve this target, FEMP provided best management practices for facility managers, and Guidance to establish specific water efficiency improvement goals for Federal agencies. The Guidance helps agencies reduce potable water usage by implementing life cycle cost-effective water efficiency programs. FEMP also provided Guidance to help agencies determine baseline water usage to describe total estimated water usage and monitor the impact of future water use.



The Naval Base Coronado's solar power system, financed through an ESPC, is one of the largest Federal solar power installations in the nation.

RENEWABLE POWER

In 2007, FEMP served as the catalyst to help agencies understand the renewable energy requirements of Executive Order 13423. After a thorough review and comment period, FEMP issued draft instructions to senior officials in August 2007 and is coordinating final review through DOE and the White House Office of Management and Budget. Under EO 13423, at least half of the statutorily required renewable energy consumed must come from new renewable sources placed into service after January 1, 1999, to meet the legislative goal of 7.5 percent of electric energy by 2013. As the lead agency for coordinating the implementation of the renewable energy goals, FEMP continues to offer a variety of on-line resources to increase the use of, and investment in, renewable energy generation, and also published a *FEMP Focus* Special Issue on Renewable Energy and Sustainable Design in the winter of 2007.



FEMP also is leading the renewable energy goals of the DOE Transformational Energy Action Management (TEAM) initiative to meet and exceed the Executive Order goal of 7.5 percent. To support the TEAM Initiative, FEMP developed plans to maximize installation of secure on-site renewable energy projects at all DOE facilities, including utility-scale renewable projects on DOE lands and distributed generation at DOE sites, including new construction.



Financing



The Visitors Center, Zion National Park, Springdale, UT is a Federal Showcase facility that incorporates the area's natural features and energy efficient building concepts into an attractive design that saves energy and operating expenses while protecting the environment.

In August 2007, the White House Center for Environmental Quality (CEQ) issued a Project Financing Memorandum to all Federal agencies stating that Energy Savings Performance Contracts (ESPCs) and Utility Energy Service Contracts (UESCs) were the preferred contract vehicles for funding energy efficiency and renewable energy projects in the Federal sector. In the communication, department heads were directed to increase ESPC and UESC contract volumes throughout the operations of their facilities.

In conjunction with the CEQ Memorandum, in August 2007, at the record-breaking GovEnergy 2007 workshop in New Orleans, DOE Secretary Samuel Bodman announced the TEAM Initiative,

DOE's Transformational Energy Action Management plan. The TEAM Initiative will reduce the DOE's nationwide energy intensity by 30 percent and save approximately \$90 million each year, relative to the FY 2003 baseline. In his address, Secretary Bodman announced that DOE would use ESPCs and UESCs to fund up-front investments in order to upgrade and improve DOE's facilities and fleet, which includes 110 million square feet and 14,000 vehicles.

ENERGY SAVINGS PERFORMANCE CONTRACTS (ESPCs)

To promote the accelerated use of ESPC contracting, and to promote emphasis placed on SuperESPCs by DOE Secretary Bodman and Assistant Secretary Karsner, FEMP produced and widely distributed a Super ESPC toolkit, which included outreach to 1,225 additional FEMP contacts linked to projects and the facilities they affect. The "toolkit" included a brochure on the benefits of SuperESPCs as well as a Fact Sheet, Program Overview, Quick Study Guide, and Case Studies.

FEMP also expanded its free services to facilitate SuperESPCs at Federal agencies. More than 400 ESPC projects have been awarded since 1992. Between that time and FY 2007, ESPC projects have been awarded by 19 different Federal agencies in 46 states, totaling approximately \$2 billion, and saving the equivalent of the amount of energy to power a city of about 450,000 people.

In FY 2007 alone, 15 new SuperESPC contracts were awarded around the world with a project investment of \$144 million and guaranteed cost savings of nearly \$360 million.

UTILITY ENERGY SERVICE CONTRACTS (UESCs)

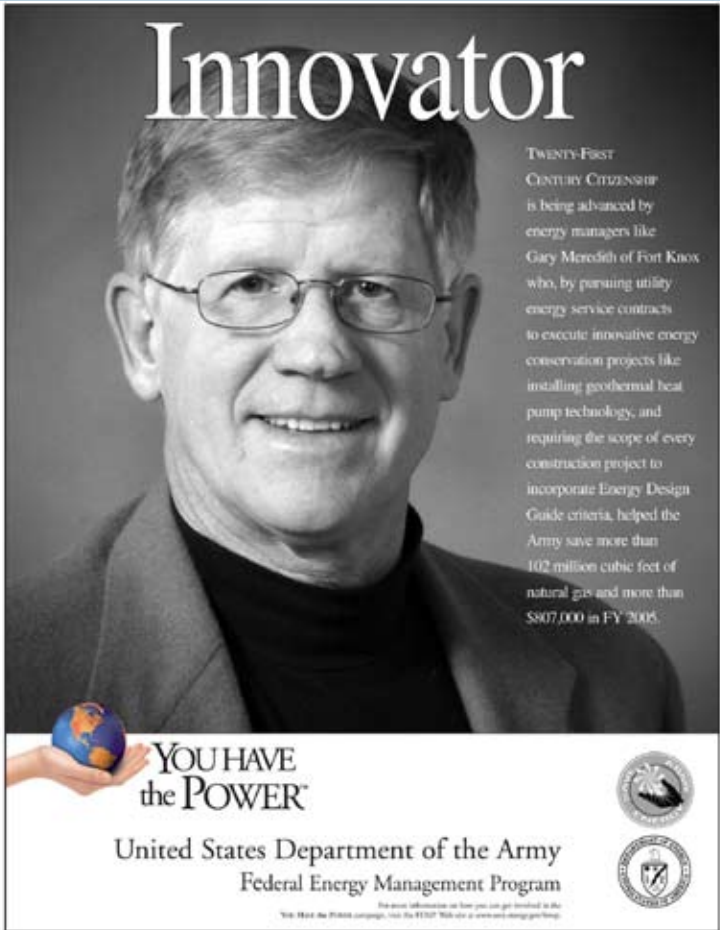
In 2007, the Federal Utility Partnership Working Group (FUPWG) completed a Strategic Action Plan to chart a road map for future growth of UESCs in the Federal sector. The Strategic Action Plan set a goal of doubling the number of projects and UESC contract dollar volume, and it focuses on four areas of special emphasis: partnership building, direct assistance, marketing and communications, and high-quality UESC data collection and analysis.

Financing

The National Defense Authorization Act of 2007 also strengthens DOD usage of the UESC contract vehicle. In this light, FEMP responded to initiatives from the U. S. Army with the Army Specific Training Program in 2007. These efforts provided excellent results at Fort Knox, Fort Detrick, Fort Bragg, and Fort Riley, among others.

Also in 2007, Nolin Rural Electric Cooperative Corporation was awarded the 2007 Community Service Award by the National Rural Electric Cooperative Association (NRECA) for its UESC program at Fort Knox. Nolin and Fort Knox have implemented 74 renewable energy and energy efficiency projects that lowered energy usage by 43 percent, improved quality of life for base residents and personnel, and turned an unfunded energy problem into a UESC solution with savings of more than \$9.1 million.

FEMP also helped NRECA's National Rural Utilities Cooperative Finance Corporation (CFC) and the U. S. Department of Interior in developing a Memorandum of Understanding (MOU) to finance projects at Interior sites across the nation. The MOU will promote the widespread duplication of the successful partnership between Nolin and Fort Knox. The goal of the MOU is to pair up electric co-ops that serve Interior facilities, including schools located on Native American reservations and National Park Service visitor centers.



Innovator

TWENTY-FIRST CENTURY CITIZENSHIP is being advanced by energy managers like Gary Meredith of Fort Knox who, by pursuing utility energy service contracts to execute innovative energy conservation projects like installing geothermal heat pump technology, and requiring the scope of every construction project to incorporate Energy Design Guide criteria, helped the Army save more than 102 million cubic feet of natural gas and more than \$807,000 in FY 2005.

YOU HAVE the POWER™

United States Department of the Army
Federal Energy Management Program

The most information on how you can get involved in the "You Have the Power" campaign, visit the FEMP Web site at www.femp.dod.mil

Energy Champions like Gary Meredith at the Army's Fort Knox developed UESCs to help the base conserve more than 102 million cubic feet of natural gas annually.



The Fort Knox Disney Barracks Area is made up of 38 buildings that comprise more than 800,000 square feet. UESCs helped replace 70 percent of the existing HVAC system with geothermal heat pumps and new ventilation systems to save more than \$800,000 each year.

Policy



Secretary of Energy Samuel Bodman and President George Bush.

On January 24, 2007, President Bush issued Executive Order 13423, “Strengthening Federal Environmental, Energy, and Transportation Management,” raising the bar for Federal leadership and performance in several areas. Executive Order 13423 revokes Executive Order 13123 and requires agencies to reduce energy intensity of facilities by 3 percent a year, leading to a reduction of 30 percent by 2015 compared to the base year of 2003. This increases the challenge of the 2 percent per year and the goal of 20 percent overall from the Energy Policy Act of 2005. Federal agencies must also ensure that at least half of renewable energy used to meet the EPCA 2005 goal comes from new renewable sources developed after January 1, 1999.

Also under the new Executive Order, agencies must reduce water consumption by 2 percent annually leading to a 16 percent reduction 2015 compared to a 2007 base year.

Agencies must also ensure new construction/major renovation comply with the 2006 Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding.

With the new Executive Order, agencies must ensure fleet petroleum reduction of 2 percent annually, increased use of alternative fuels of 10 percent annually, and increase the use of plug-in hybrids.

As the lead agency for coordinating the implementation of the energy and water goals, FEMP has the responsibility for drafting numerous guidance documents under Executive Order 13423 and its subsequent implementing instructions (released March 29, 2007). These guidance documents address the following subjects:

- Long term planning and strategies for achieving energy goals;
- Renewable energy goal and use of renewable energy credits and investment in renewable energy generation;



- Use of alternatively financed projects such as ESPCs and UESCs;
- Calculating and validating funds available for retention in accordance with Section 102(f) of EPAct 2005; and
- Water conservation goals.

In addition, the annual reporting guidance to agencies was revised and released, clarifying and addressing performance and goal metric issues raised by the new requirements.

On December 19, 2007, President Bush signed the Energy Independence and Security Act of 2007 into law. This codified energy intensity reduction goals of Executive Order 13423 into statute.

REPORTING ON ENERGY MANAGEMENT

During 2007, FEMP compiled and prepared the *Annual Report to Congress on Federal Government Energy Management* for FY 2007, the first year for agency reporting under the new statutory goals of the Energy Policy Act of 2005. FY 2007 will be the first year for a complete reporting on requirements of Executive Order 13423.

Some of the key findings from the Report follow.

- Taking into account renewable energy purchases and improvements in the efficiency of certain energy generating facilities, the Federal government decreased energy use per gross square foot by 6.4 percent in fiscal year 2006 relative to fiscal year 2003 for buildings subject to the EPAct 2005 amendments goal. Based strictly on total site energy use per gross square foot (excluding renewable energy purchases and improved generating efficiency), the Government cut its energy intensity by 3 percent. Using either accounting method, the Government surpassed the EPAct 2005 amendments goal of a 2 percent reduction and met the Executive Order 13423 goal of 3 percent.

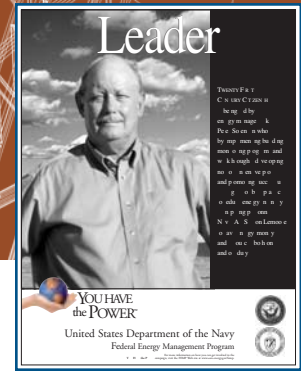
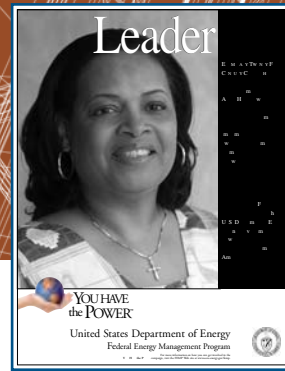


- The Federal renewable energy goals in EPAct 2005 began in FY 2007. The goal under Executive Order 13123 called for the equivalent of 2.5 percent of electricity consumption in Federal facilities should come from new renewable energy sources by 2005. Federal agencies reported purchasing or producing 12.9 trillion Btu of new renewable energy in FY 2006, equivalent to 6.9 percent of the Federal Government's electricity use.

FEMP also worked closely with the Office of Management and Budget during January and July of 2007 to assess agency performance toward energy management requirements and develop scorecards for each agency rating their status toward statutory and Executive Order goals and progress made on OMB and agency-designated action items. The scorecards were key discussion points at two meetings of agency Senior Energy Officials at the White House.

Outreach

The advanced energy technologies promoted and deployed by today's Federal workforce are more than just technological achievements in sustainable, high performance design. They reflect a growing commitment to replace waste with efficiency and to replace reliance on fossil fuels with the use of renewable energy resources. In FY 2007, FEMP's recognition efforts and outreach campaigns provided examples of energy and money saving technologies and practices that all of us can choose -- at home, at work, and in our daily commutes. Agencies also honored those who worked to incorporate innovative tools and solutions into projects to achieve new, more aggressive energy management goals.



RECOGNITION

The Federal Energy and Water Management Awards were held on October 1, 2007 at the Omni Shoreham hotel in Washington, D.C. Samuel Bodman, Secretary of Energy, and Alexander Karsner, Assistant Secretary for Energy Efficiency and Renewable Energy, presented awards to 25 individuals, small groups, and organizations for saving more than \$18 million in energy costs in one year alone. In addition, five Federal buildings representing exceptional models of energy efficiency, innovation, and sustainable design were designated Federal Energy Saver Showcases.

The White House honored five energy management teams from the U.S. Air Force, Department of the Interior's Bureau of Land Management, Department of Justice's Bureau of Prisons, Department of Homeland Security, and jointly from the Department of Energy and Environmental Protection Agency for their exemplary dedication and Federal leadership. These teams were responsible for efforts resulting in estimated annual savings of more than \$133 million and almost 4.6 trillion Btu, equivalent to the energy use of approximately 50,000 typical homes. (Read more about these programs and honorees in the special awards section).

Twenty-one of the largest Federal agencies participate year-round in FEMP's *You Have the Power* campaign to help reach their energy management goals by recognizing outstanding achievements and raising awareness. The campaign promotes "Energy Champions" whose accomplishments are highlighted through campaign posters sent to regional offices around the nation. In FY 2007, 32 individuals were recognized, increasing the total number of Energy Champions to 452 since 1997. In addition, 9 agency sites developed posters featuring a showcase building or other important energy project for recognition during Earth Day and Energy Awareness Month. Please visit the campaign Web site at: www.eere.energy.gov/femp/services/yhttp/index.html to view these and other posters from past years of the campaign.

Champions

TWENTY-FIRST CENTURY CITIZENSHIP is being fostered by Federal employees like Brian Magden, Mike Ziskind, and Mark Ewing who – by instituting a unique practice that arranges for donations of clean fuel cell power to offset environmental emissions generated by the three-day annual GovEnergy conference and tradeshow – are helping to significantly reduce carbon dioxide, sulfur dioxide, and nitrous oxide pollutants at virtually no cost to the Federal government.

YOU HAVE the POWER™

General Services Administration
Federal Energy Management Program

For more information on how you can get involved in the You Have the Power campaign, visit the FEMP Web site at www.eere.energy.gov/femp

Twenty-first century citizenship is being fostered by Federal employees like Brian Magden, Mike Ziskind, and Mark Ewing who – by instituting a unique practice that arranges for donations of clean fuel-cell power to offset environmental emissions generated by the three-day annual GovEnergy conference and tradeshow – are helping to significantly reduce carbon dioxide, sulfur dioxide, and nitrous oxide pollutants at virtually no cost to the Federal government.

AWARENESS

Energy managers, financial officers, and administrators received guidance on timely issues through the FEMP Web site at <http://www.eere.energy.gov/femp>. In FY 2007, there were more than 320,000 visits to the FEMP Web site, with visitors viewing over 1 million pages with an average of more than 2,800 pages each day. FEMP also produced a wide variety of print publications, including fresh issues of *FEMP Focus* and new case studies, technology alerts, and technology focuses for FY 2007. Thousands of these documents are distributed each year through the EERE Information Center. Energy managers may call the Center toll free at 877-337-3463 to request copies of these publications or to get answers to questions about Federal energy management.

Federal agencies marked Earth Day and Energy Awareness Month by promoting energy efficiency and renewable energy through the distribution of posters and other awareness materials at local and regional events. FEMP's Earth Day poster asked agencies to "Think Globally, Act Locally" by making wise choices every day to turn off lights while not in use; use compact fluorescent bulbs and Energy Star equipment; drive fuel-efficient vehicles; combine trips and share rides; and walk, bike, or use mass transit. Energy Awareness Month materials again depicted these "Clean and Green" choices to help us attain a secure energy future.

The campaign also designed and produced new animated energy awareness messages in FY 2007 to promote employee energy awareness all year round. The messages can be attached to e-mail messages as a simple, cost-free way for agencies to spread the word about energy efficiency. The animated files, as well as other low resolution artwork, are available for download at:
http://www.eere.energy.gov/femp/services/yhttp/campaign_materials.html.

ENERGY EXPO

Agencies participated in a number of Federal meetings, conferences, and expositions, to share success stories, promote partnerships, and honor achievements. FEMP's tenth annual premier energy conference, *GovEnergy 2007: Jazz Up Your Energy Program*, was held this August in New Orleans, Louisiana and was cosponsored by the Departments of Defense, Veterans Affairs, and Homeland Security; the General Services Administration; and the Environmental Protection Agency. Procurement and energy professionals attended nine technical and policy tracks, more than 80 workshop sessions, tours of energy efficient buildings, and an exposition featuring a wide spectrum of the latest innovative products and



The theme for Earth Day 2007 was "Think Globally, Act Locally".



The poster for Energy Awareness Month 2007 featured the benefits of "Clean and Green" energy resources, and listed ways we can all save energy every day.

services. FEMP's next annual workshop will be held August 3-6, 2008 in Phoenix, Arizona.



Presidential Awards For Leadership in Federal Energy Management

2007 marks the eighth annual presentation of the Presidential Awards for Leadership in Federal Energy Management. In 2007, the Federal Energy Management Program forwarded 19 team nominations for consideration by the Office of Management and Budget (OMB) for the selection of Presidential Awards. The five winners this year represent the Department of the Interior, the Department of Homeland Security, the Department of Justice, the Environmental Protection Agency and the Department of Energy, and the U. S. Air Force. They are great examples of how our government can manage itself more effectively, conserve energy, protect the environment, and save money – all at the same time.

The 2007 winners found ways to use landfill gas for electricity generation; ways to use photovoltaic, wind, and geothermal heat pump installations; and ways to finance green power purchases and energy-efficient equipment upgrades. Moreover, the 2007 winners have been innovators in the incorporation of sustainable design principles in new construction and have been at the forefront of public outreach regarding these new technologies and principles. These initiatives are helping America meet the energy demands of today... and are creating a more energy-secure tomorrow.

This year's winners are responsible for estimated annual savings of more than \$133 million and almost 4.6 trillion BTUs — enough energy to run 50,000 typical households for one year.

As the nation's single largest energy consumer, the Federal government is uniquely positioned to lead the nation toward greater energy efficiency. The 2007 winners have consistently met this challenge -- through hard work, innovation, and forward thinking – and serve as models for all of us.

President Bush has said that keeping America competitive requires renewable and affordable energy, and our Federal agencies must lead the way in energy conservation. The President and Vice President Cheney extend their sincere congratulations to the winners and their families.

While we must increase our investment in alternative fuels and renewable energy sources, we must also continue to promote enhanced energy efficiency wherever we can – in our homes, our vehicles, and our offices.

– Samuel W. Bodman
Secretary of Energy



DEPARTMENT OF THE
INTERIOR

BUREAU OF LAND
MANAGEMENT ENERGY
EFFICIENCY TEAM



Implementation

- Nancy Adrain
- John Miles Crego
- Robert Donelson
- Michael Henry
- Rachael Jacobs
- Kenneth D. Morin
- Wilson Reynolds
- Charles R. Svoboda
- Ben Tsu

Awarded for an agency's use of the energy efficiency tools identified in Executive Order 13123, such as use of alternative financing, purchasing energy efficient products, competitive power and renewable energy, and using sustainable building design and model leases.

The Department of the Interior's Bureau of Land Management (BLM), comprises numerous small facilities scattered in remote areas of the country which have a low dollar value of energy consumption. BLM in partnership with the Department of Energy and Johnson Controls, Inc. (JCI) developed an innovative approach to streamline and tailor the Energy Savings Performance Contract (ESPC) process to meet its needs — one that can be applied at other Federal agencies with small, remote facilities.

Based on energy surveys conducted, energy conservation measures and renewable energy opportunities were identified for 105 facilities. As a result, these sites are receiving \$4.9 million in energy efficiency improvements with guaranteed annual savings of nearly \$400,000 and annual energy savings of 20 billion Btu, enough energy for 285 typical households per year. In addition, BLM received \$258,000 in utility rebates that further reduced the cost of the projects.



DEPARTMENT OF
HOMELAND SECURITY
ENERGY MANAGEMENT
COMMITTEE

Institutionalization

Under the leadership of its Energy Management Committee (EMC), the Department of Homeland Security (DHS) institutionalized energy-efficient standard practices and procedures for nine major components. The EMC published a comprehensive “Master Energy Plan 2006-2015,” which establishes specific direction and goals for the Department’s facility energy management activities and tracks the performance of DHS component agencies by measuring five major factors quarterly:

- 12-month rolling average of energy expenditures,
- Purchases of renewable energy,
- Number and total gross square feet of energy audits conducted,
- Number of viable projects ranked according to life-cycle cost effectiveness, and
- Number of viable energy projects under consideration for alternative financing.

The strategies and guidelines instituted by DHS resulted in an 18 percent decrease in energy intensity in 2006 from 2003 levels.

Robert Baer
Frank R. Bereitschaft
Andrew Bouie
Daniel J. Gore
Timothy D. Harper
Timothy R. Jeter
Chris Oh
Dr. Teresa R. Pohlman
Edward J. Rynne, Jr.
Joseph Sabel
Celeste A. Steele
Richard R. Tarosky
Holly M. Tuck
Gary Wobler
Steven W. White



DEPARTMENT OF
JUSTICE

FEDERAL BUREAU
OF PRISONS



Outreach

Bobby Addison
Robert Chapman
Alan Edwards
Sarah Piell

Awarded for the extent to which an agency's implementation of the Executive Order has affected the energy efficiency policies, practices, or perceptions of the agency, other agencies, state and local governments, the private sector, or the general public.

The Director of Bureau of Prisons initiated an energy outreach program that educates each of its regions' staff on energy conservation and ensures collaboration with community leaders and businesses to spread knowledge about Federal efforts in energy conservation, renewable energy, and sustainable practices.

The Federal Bureau of Prisons also conducts outreach activities within its own facilities. Low-risk inmates have the opportunity to receive education and training on renewable technologies through an apprenticeship training program. Eligible inmates learn skills that can enhance post-release employment opportunities in energy efficiency and renewable energy. In addition to its outreach efforts, the Federal Bureau of Prisons demonstrated energy savings.

At the Federal Correctional Complex in Victorville, CA, the Bureau of Prisons invested \$3.5 million to install its first wind turbine and photovoltaic array, saving \$350,000 in annual energy costs and almost 1.9 million kilowatt hours annually. The Federal Bureau of Prisons is replicating its success with plans to cover its 98 remaining institutions within six years.



Results

Awarded for the net effect the work of the energy management team has had on achieving the main goals of the Executive Order: reducing greenhouse gas emissions and improving energy efficiency to save taxpayer dollars.

Laboratories for the 21st Century (Labs21) is a voluntary partnership, cosponsored by EPA and DOE, dedicated to improving the energy and environmental performance of laboratories, which are 5 to 10 times more energy intensive than office buildings.

With the help of Labs21, 18 active partners reduced their combined annual energy use by 533 billion BTU, equivalent to the average annual electricity use of more than 14,500 typical U.S. households. Not only have they saved nearly \$18 million per year, they avoided emissions of nearly 218 million pounds of carbon dioxide — the equivalent of removing nearly 21,000 cars from the road. Since its start nine years ago, the Labs21 network has grown to include 158 supporters and 5,000 professionals.



**ENVIRONMENTAL
PROTECTION AGENCY**
DEPARTMENT OF ENERGY
**LABS FOR THE
21ST CENTURY**

Dan Amonn
Geoffrey Bell
Marjorie Buchanan
Nancy Carlisle
Will Lintner
Paul Mathew
Dale Sartor
Otto Van Geet



**DEPARTMENT OF
DEFENSE
AIR FORCE
ENERGY STRATEGY
SENIOR FOCUS GROUP**



Outstanding Performance

- Michael A. Aimone
- The Honorable
William C. Anderson
- Major Morshe D. Araujo
- Lieutenant Colonel
Mark Bednar
- Paul P. Bollinger Jr.
- William H. Budden
- Gerald E. Doddington
- Colonel Anne L. Dunlap
- Lieutenant Colonel
Anne Gorney
- Brian J. Lally
- Lieutenant Colonel
James McClellan
- Patrick G. Mumme
- The Honorable
Ronald M. Segal
- Lieutenant Colonel
Brian D. Weidmann
- BJ White-Olson

The Air Force Energy Strategy Senior Focus Group (SFG) took a comprehensive approach to energy management that saved the Air Force \$100 million and more than 3.3 trillion Btu in FY 2006 — enough savings for the annual household energy needs of a city of 100,000.

The SFG instituted a culture where energy usage and sustainable practices are considered in every decision and implemented energy reduction and sustainable practices by purchasing ENERGY STAR® and energy efficient equipment, promoting Leadership in Energy and Environmental Design (LEED®) certification of its buildings, installing highly-efficient combined heat and power systems, and mandating that performance evaluations of all base energy managers highlight their progress in meeting Federal energy goals.

SFG's training programs and monetary incentives for bases exceeding Federal energy goals have institutionalized a culture of energy conservation and sustainable practices. In FY 2006, the Air Force remained the largest green power purchaser in the Federal Government with more than 990 gigawatt hours of renewable-generated electricity.

FEDERAL SUMMARY



The Harold Washington Social Security Center in Chicago, Illinois, used UESCs and ESPCs to reduce energy use by 20 percent and save 2 million gallons of water each year.



The U. S. Department of the Treasury's Bureau of Engraving and Printing facility in Washington, D.C. implemented an energy reduction strategy to monitor and control 86 air handling units via Web-based Intranet.



The U.S. Army Garrison HESSEN, IMCOM Europe, implemented a new, flexible approach to building management that saves \$400,000 each year.

As the nation's largest property owner, the Federal government manages a broad range of facilities, from courthouses to military bases to laboratories. All this space adds up to more than three billion square feet. Operating this real estate property portfolio also costs the Federal government more than \$5 billion in annual energy bills. To manage this property wisely and meet the goals of operational and energy efficiency set by EAct 2005, Federal agencies must overcome challenges of volatile energy prices, aging infrastructure, and increased environmental concerns.

In addition to the mandates of EAct 2005, President Bush issued Executive Order 13423 on January 24, 2007. The new Executive Order further recognizes the critical role the Federal government plays in meeting the nation's energy, transportation, and environmental goals. It establishes efficiency and renewable energy objectives for Federal agencies that are comprehensive and aggressive.

In 2007, FEMP assumed a leadership role to meet the mandates of the EO 13423, by:

- Accelerating UESC and SuperESPC financing of leading edge technologies;
- Reducing energy use through advanced metering and related building technologies;
- Facilitating sustainable and high-performance design and construction practices; and
- Increasing energy security through the use of alternative and renewable fuels.

Achieving the goals of EO 13423 will not come quickly or easily. It will require time to implement its provisions and overcome a number of significant institutional challenges on the path to success. It will demand new ways of working with the private sector in a continually changing energy marketplace.

Reducing energy consumption and increasing alternative energy use in buildings and fleets is not only the work of engineers, acquisitions personnel, and contract experts. FEMP's message is strong and clear that every Federal worker shares the responsibility for greater energy security by raising productivity, reducing waste, and doing the simple things that result in tremendous positive change. With assistance from FEMP, agencies are disseminating timely and accurate information, setting standards for the purchasing energy efficient products, and deploying advanced technologies



with up-front private investment in Federal energy solutions. In FY 2007 alone, 15 new SuperESPC contracts were awarded with a project investment of \$144 million and guaranteed cost savings of nearly \$360 million.

Fiscal year 2008 will bring the implementation of DOE's new TEAM initiative – Transformational Energy Action Management. With it will come another leadership role for FEMP in reducing the DOE's nationwide energy consumption by 30 percent. FEMP will also renew its commitment to help all Federal agencies:

- set new benchmarks for measurement and verification to enhance energy price and risk management;
- increase energy security and reliability through diversification of alternative and renewable energy generation and use; and
- optimize facility operations through increased energy efficiency performance standards financed with assistance from the private sector.

In every aspect of its financing, technical assistance, outreach, and policy coordination, FEMP will continue to lead by example and work to save money for American taxpayers and create a more secure energy future for the nation.

The year ended with a new energy bill, the Energy Independence and Security Act, which presents new challenges and opportunities for Federal energy management. The Federal energy community's response to these and other new challenges has been impressive thus far, and FEMP is currently redesigning its products, its processes, and itself to better serve you in meeting these opportunities.



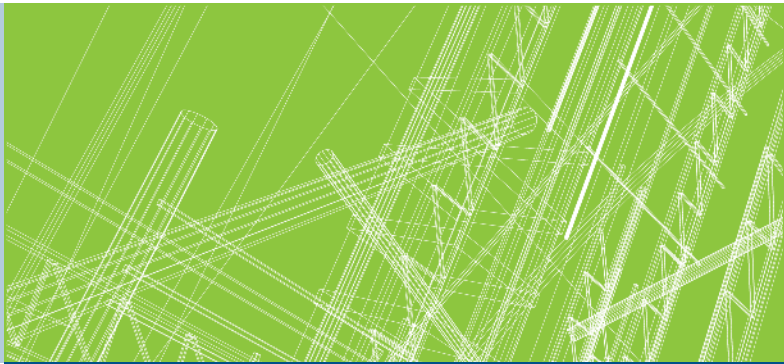
The Social Security Administration initiated a Super ESPC Project at the Frank Hagel Federal Building in Richmond, California as part of its efforts to reduce energy consumption and greenhouse gas emissions.



The Robins Air Force Base Large Aircraft Corrosion Control Paint and Depaint Hangar uses the first air recirculation system in the Air Force, and saves \$2 million each year.



NOAA's Dr. Nancy Foster Florida Keys Environmental Complex includes a green roof, sustainable building materials, and energy efficient technologies that reduce energy use by 30 percent.



**FEDERAL ENERGY
MANAGEMENT PROGRAM**

January 2008



**U.S. Department of Energy
Energy Efficiency
and Renewable Energy**

Bringing you a prosperous future where energy
is clean, abundant, reliable, and affordable