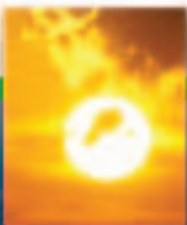


# FEDERAL ENERGY MANAGEMENT



# YEAR IN REVIEW

# 2003



U.S. Department of Energy  
**Energy Efficiency  
and Renewable Energy**  
Federal Energy Management Program



**FEDERAL ENERGY MANAGEMENT**  
**YEAR IN REVIEW**

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The federal government must lead the way in reducing its energy consumption and related environmental impacts so that the rest of the country will follow our example. For this reason we often look to our leaders -- energy champions who are providing the innovation and dedication to overcome challenges in pursuing sound energy management.

Each year the U.S. Department of Energy, along with the Federal Interagency Energy Policy Committee and the White House, sponsor prestigious award programs to honor individuals and teams of champions who are making significant contributions to the efficient use of energy and water resources in the federal government.

The Energy Champions we honor this year represent the cream of the crop of federal facility managers. Through hard work, originality, and forward-thinking, they continue to develop the creative solutions we need to maintain the efficient operation of government services while increasing our nation's energy independence. In fact, by actively identifying and implementing energy saving projects, the 2003 award winners have created energy cost savings of more than \$62 million and 3.4 trillion Btu in one year.

Our winners reflect the deep commitment that all federal employees have to the economy, environment, and energy security. They inspire us to increase our own efforts to save energy and water and to more aggressively pursue the use of renewable resources. We are grateful for their continued pursuit of excellence in facility management. We encourage you to follow their example, to set a new standard of performance, and continually look for new, creative solutions to our nation's energy challenges.

# FEDERAL ENERGY MANAGEMENT YEAR IN REVIEW 2003

## INTRODUCTION

Now more than ever before, the future of our economy, environment, and national security depend on our energy independence. Our government has a vital role to play to secure this goal for our country. In fact, in the National Energy Policy report, President Bush has asked the federal government to set the example for the rest of the country by using energy and water resources wisely and to conserve energy wherever feasible.

The government is making considerable progress in this effort. Federal building-related energy use has dropped more than 25 percent per square foot since 1985, thanks largely to the work of the Federal Energy Management Program (FEMP) and its agency partners. FEMP works with agencies to reduce the cost and environmental impact of the federal government by advancing energy efficiency and water conservation, promoting the use of distributed and renewable energy, and improving utility management decisions at federal sites.

The first section of this report outlines how FEMP's four service areas – Technical Assistance, Financing, Policy, and Outreach – are helping agencies achieve greater energy efficiency and cost-effectiveness in the following areas:

- New construction
- Building retrofits
- Equipment procurements
- Operations and maintenance (O&M)
- Utility management

The remainder of the document honors the winners of the Presidential, Federal Energy and Water Management, and Showcase awards. These awards recognize individuals and groups who are developing successful energy technology solutions and applying them to the goal of a more secure and independent energy future for America.

In addition to federal energy management, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) has a host of other conservation and efficiency programs underway to strengthen America's energy security, environmental quality, and economic vitality. To learn more about these programs, visit the EERE Web site at [www.eere.energy.gov](http://www.eere.energy.gov).

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# TECHNICAL ASSISTANCE

FEMP's "Lead by Example" ideology is demonstrated by an intensified effort to bring new and emerging energy efficient and renewable energy technologies into the federal sector, helping agencies achieve their energy goals through the development of potential applications for residential, commercial, and industrial buildings. For example, distributed energy resources has the potential to help federal agencies and facilities meet increased demand, reduce peak operating costs, enhance energy security, and improve the reliability of electric power generation. During the past year, FEMP's Technical Assistance Team worked with agencies to determine how best to use DER and other new technologies in response to the need for reliable, affordable electric power and achieving energy goals.

## Distributed Energy Resources

Taking into account recent black-outs, as well as national security concerns, FEMP has responded to increased interest in energy reliability for critical facilities. During FY 2003, FEMP completed 38 combined cooling, heat, and power (CHP) screening reports. 32 of these projects have a total capacity of 160 MW, an implementation cost of \$446 million, and annual facilities savings of approximately \$30 million.

In addition to the screening reports, FEMP provided direct technical assistance to 11 sites. A notable highlight is the new CHP project at the U.S. Marine Corps Air Ground Combat Center, Twentynine Palms, California. This project provides an outstanding demonstration of the value of CHP for addressing both energy cost and energy security issues at federal sites. The 7 MW CHP plant can provide uninterrupted power for significant base loads in the event of any utility interruption. The plant can also isolate critical loads, even when power from the utility is available. Savings from the plant will help pay for the 1.2 MW photovoltaic (PV) system, three chiller plants, and several other significant infrastructure improvements.

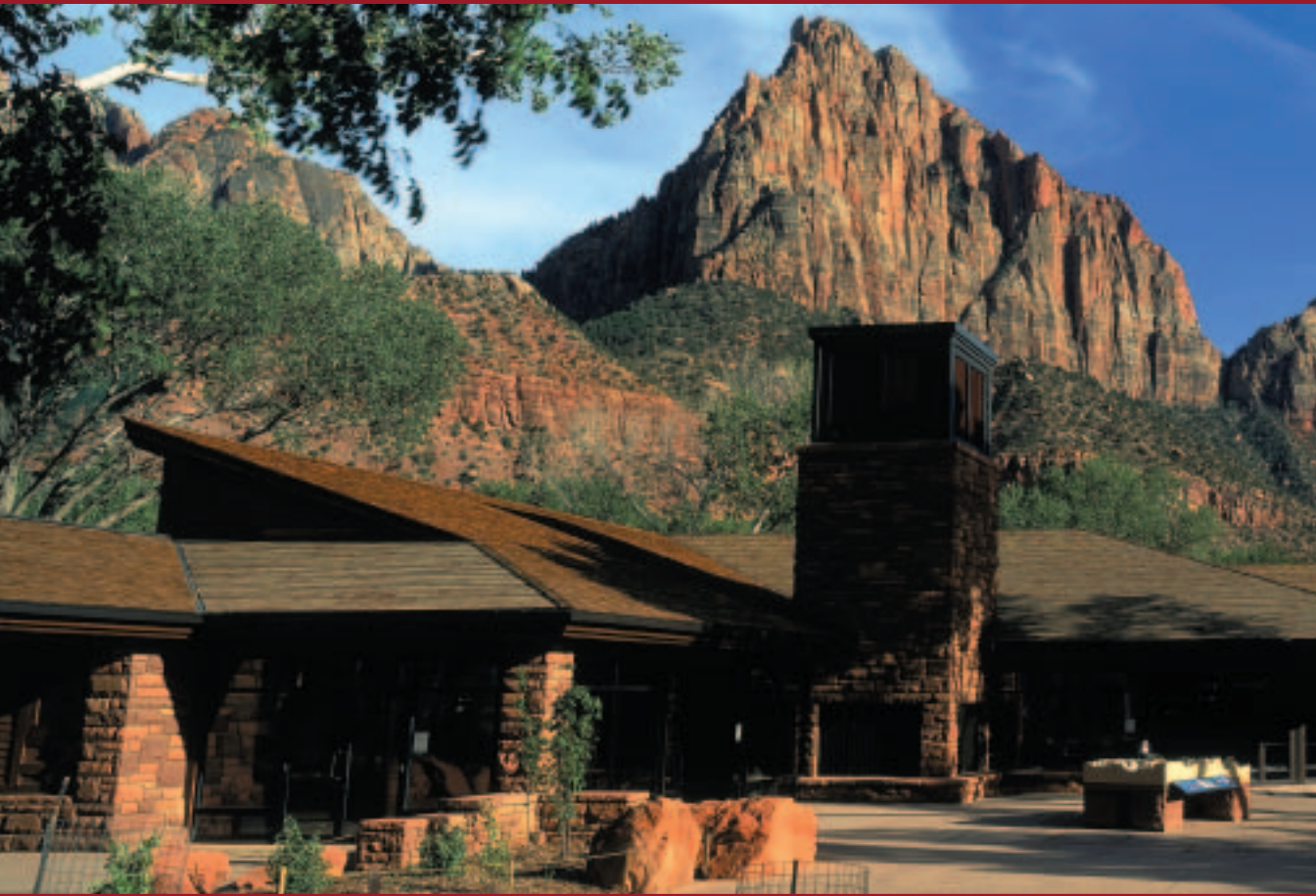
## ALERTS

In FY 2003 FEMP updated the Assessment of Load and Energy Reduction Techniques (ALERT) protocols by building in the capability to address natural gas consumption and efficiency levels at federal sites to respond to possible shortages and price volatility. FEMP prepared a list of the top 50 potential sites for ALERT assistance. To date, 11 federal sites have requested ALERT teams, and several Navy and Army sites have been identified for participation through the DoD Western Grid site assessment activity. The FEMP ALERT program is now capable of working with numerous federal sites in the event of widespread natural gas shortages or price spikes.

## Facility Assessments

In addition to design assistance, FEMP offers a variety of ways to help agencies identify methods to improve facility management. FEMP's SAVEnergy Program conducts building and water audits for agencies requesting assistance. During FY 2003, SAVEnergy awarded 39 FEMP funded audits and six agency funded audits. Audits identified energy conservation measures (ECMs) with a potential annual energy savings of over 236 billion BTU, and annual cost savings of over \$2.3 million. The expected cost to implement these ECMs is about \$9 million.

For industrial facilities, FEMP's Industrial Program provides plant-wide energy assessments and system-specific assessments. In FY 2003 assessments were conducted at DOE, the Department of the Treasury, DoD, and at the U.S. Postal Service. At DOE's Waste Isolation Pilot Plant in Carlsbad, NM, this program identified opportunities to cut water usage by 54 percent and compressed air costs from \$69,000 to \$29,000 annually.



## Labs21

The Laboratories for the 21st Century (Labs21) program is an EPA/DOE initiative to help design and construct laboratories using energy efficient and sustainable practices. A highlight of FY 2003 was the launching of a student design competition in partnership with the Association of Collegiate Schools of Architecture, challenging architecture students from both the United States and Canada to design a sustainable laboratory. Additionally, Labs21 welcomed two new Labs21 Pilot Partners – the U.S. Department of Agriculture and Harvard University – and provided tailored technical support to more than a dozen others, including Bristol-Myers Squibb, University of California-Merced, University of North Carolina-Asheville, Wyeth, and Carnegie Mellon University. Other successes involved the hosting of nine “High Performance, Low Energy Design” courses, training nearly 400 professionals. Labs21 developed a Web-based tool that provides “step-by-step” guidance on the sustainable design process and serves as a “portal” to the other resources in the Labs21 Tool Kit.

*An integrated design team of architects, engineers, and energy consultants employed a “whole building design” philosophy when planning the Zion National Park Visitors Center.*

## Operations and Maintenance

In its second full year of operation, FEMP’s Operations & Maintenance (O&M) Program has laid the foundation for some long term efforts. Most notable is the development of the Whole Building Diagnostic into a Web-based application that will be available to all federal agencies. In FY 2003 O&M directly assisted eight agencies, expanded its training to eight sessions reaching about 300 people, and supported the Building Operator Certification training conducted by the Northwest Energy Efficiency Council. O&M also conducted a full track of symposia at Energy 2003 in Orlando, which were well received and well attended. In addition, the program developed draft guidance for metering in accordance with pending energy legislation.

# TECHNICAL ASSISTANCE

## Renewable Power

In response to E.O. 13123, federal agencies are making huge strides to purchase 2.5 percent of their electricity use from renewable sources by 2005. Federal renewable energy use increased from 362 gigawatt-hours (GWH) in September 2002 to 800 gigawatt-hours in September 2003. A large portion of this increase (167 GWH) was in renewable energy purchases or renewable energy credits. Improved counting of ground source heat pumps and biomass fuels such as ethanol and biodiesel accounted for 150 GWH. One large landfill gas plant by NASA added 108 GWH. Dyess Air Force Base in Texas won a Presidential Award for Leadership in Federal Energy Management for achieving a 100 percent wind energy purchase of electricity (80 GWH).

FEMP also worked with the Department of the Interior and the Bureau of Land Management (BLM) to publish a report identifying renewable energy potential on public lands in the U.S. The study concludes that there is significant potential to develop solar, wind, biomass, and geothermal resources. The BLM will use the findings to prioritize land-use planning activities and increase development and use of renewables on public lands.

## Sustainable Buildings

Executive Orders 13101 and 13123 direct federal agencies to apply the principles of sustainability to the siting, design, and construction of new facilities to improve energy efficiency, reduce consumption of non-renewable resources, minimize the waste of materials and water, and create livable, healthy, and productive environments. In FY 2003, FEMP assisted in running two charrettes for the development of new, sustainable facilities. One project is planned for the Institute for American Indian Arts in Santa Fe, New Mexico, and the other at Mesa Verde National Park in southwestern Colorado.

*Completed ahead of schedule and under budget, the new Nathaniel R. Jones Federal Building and U.S. Courthouse in Youngstown, Ohio was designed and constructed to incorporate many sustainable design principles: to increase efficiency, reduce construction costs, and improve building value.*







*The Business Case for Sustainable Design in Federal Facilities* Resource and Summary documents were published. The reports illustrate many innovative ways that federal agencies are using sustainable design principles to extract greater efficiencies from our public buildings and the tax dollars that pay for them. They also provide significant financial evidence from research findings and case studies that sustainable design is a smart business choice. The TA team followed up on work begun for *The Business Case* by determining that there is not enough measured or well-documented data on the performance of sustainable buildings. A workshop on metrics was held in November, which concluded that it is imperative to identify and select a short list of indicators of performance and to encourage a standard format to document the impact of sustainable design.

The Interagency Sustainability Working Group, comprised of representatives of federal agencies and chaired by FEMP, assisted in the development of *The Business Case for Sustainable Design*, as well as the Office of the Environmental Executive report, *The Federal Commitment to Green Building: Experiences and Expectations*. Dedication to sustainability is reflected by an increase in membership by 50 percent in FY 2003 to over 150 members.

Additionally, through a joint effort initiated by FEMP, the Department of Veterans Affairs (VA), the Environmental Protection Agency (EPA), and Oak Ridge National Laboratory, every Veterans Administration Hospital in the U.S. was benchmarked in FY 2003 for energy performance and indoor air quality. The ENERGY STAR® Award was given to 18 VA Medical Centers in recognition of their achievements.



*The 29 Palms Marine Corps base installed the largest co-generation plant in the United States in an effort to combat the California energy crisis. The 7 MW combined heat and power (CHP) plant can provide uninterrupted power for critical base loads in the event of any utility interruption. The plant can also isolate critical loads, even when power from the utility is available. The project was financed through an energy savings performance contract and will reduce electricity purchases by nearly two-thirds, saving \$5.8 million in annual energy costs.*

*Mark Duszynski of Johnson Controls and Arun Jhaveri of the Department of Energy join Colonel James Nichols and Lt. Commander Robert Tye for the Twentynine Palms cogeneration plant opening ceremony.*

# FINANCING

In these economic times, it's more important than ever to find resourceful financing opportunities. When every tax dollar is important, innovative energy financing through public-private partnerships is one of the best ways to help the federal government meet the President's energy-saving goals. Recognizing this, in FY 2003 federal agencies continued to pursue alternative financing opportunities and increase the contract dollar volume to new levels.

Super Energy Savings Performance Contracts (ESPCs) and Utility Energy Service Contracts (UESCs) are practical and flexible vehicles that allow for private-sector up-front financing of long-term energy saving projects. Contractors are paid from the savings resulting from the projects. Agencies using Super ESPCs and UESCs pay only for the services they choose, fine-tune the guarantee, and assign responsibilities to suit their own in-house resources, capabilities, and priorities.

## Super ESPCs and UESCs encompass:

- Boiler/Chiller Improvements
- Building Energy Automation Systems
- Lighting Improvements
- Building Envelope Modifications
- Electric Motors & Drives
- HVAC/Refrigeration
- Electrical Distribution or Cogeneration Systems
- Steam System Improvements
- Heat Pumps
- Renewable Energy Systems
- Water & Sewer Systems
- Rate Reduction/Audits

## SUPER ESPCs

Federal customers in FY 2003 continued to benefit from FEMP's ongoing improvement of the Super ESPC program and its capacity to respond to customers' needs.

To expand its focus on federal agency customers and to provide improved regional support, FEMP introduced its new Regional Office Alternative Financing Representatives (AFRs). The AFRs help guide customers through the process of determining whether a Super ESPC is feasible at a particular site. They explain performance contracting to the site staff and management, and they help form an acquisition team and partnering agreement with an Energy Service Company (ESCO) for the site.

Additionally, FEMP improved the way in which Project Facilitators serve their customers. Instead of signing up for a package of standard services, agencies can now choose and pay for only the services they need from a Project Facilitator. These services may include anything from guidance to training to reviewing technical proposals. Project Facilitator services are free to agency customers until the contractor submits its initial proposal. At that time, the agency knows what services will be needed and is in a better position to go forward with the project. FEMP launched the latest Technology-specific Super ESPC, Biomass and Methane Fuels (BAMF), which emphasizes the use of biomass to cut energy costs and meet federal goals for use of renewable energy at federal facilities. Five ESCO's were competitively awarded the BAMF contracts, worth \$200 million in services.



In FY 2003, 39 Super ESPC delivery orders totaling \$252 million were awarded. The total value of private-sector investment through Super ESPCs is \$583 million, covering 127 awarded delivery orders for 14 federal agencies. The cumulative guaranteed cost savings from these projects is estimated to be \$1.3 billion.

### **UESCs**

FEMP also pursues utility energy services, financing, procurement, and incentives to support federal projects in a new and changing utility environment. More than 60 electric and gas utility companies have implemented energy projects and upgrades at federal facilities around the country. These utility investments total more than \$1.2 billion. \$141 million invested in FY 2003 will save \$16.7 million each year.

To expand use of UESCs, FEMP enhanced its utility services and restructuring Web site with an easy-to-use format. FEMP also expanded the site to link to PNNL's new utility management site, which focuses on managing utility costs and improving energy use efficiency. Electric and gas cost management sections provide information on utility restructuring, energy prices and trends, and potential supply reliability concerns. The energy use management section provides information about funding and assistance for energy projects. The new link can be accessed at [www.eere.energy.gov/femp/utility/utility\\_restructuring.html](http://www.eere.energy.gov/femp/utility/utility_restructuring.html).

Many federal organizations have relied on the guidance documents, training programs, and technical assistance provided to support their use of Super ESPCs and UESCs and have found alternative financing to be an essential element of their energy management strategies. However, both federal and private-sector parties agree that an increase in the use of ESPCs and UESCs is needed to meet the mandated energy savings goals set for 2005.

*The ESPC project at Dyess Air Force Base diverted effluent water onto the base for irrigation, saving 2 percent of the city of Abilene's annual water usage, an amount equivalent to more than 160 million gallons of potable water per year. The facility also committed to a purchase of 100 percent renewable energy (from wind energy sources), the equivalent of 78 GWh of energy and the largest single purchase of renewable power ever made in the United States.*

# POLICY

In FY 2003, the Administration continued building on the policy framework established by Executive Orders 13123 and 13221 and the National Energy Policy, with new initiatives supported by FEMP.

Recognizing the government's ability to lead by example and stimulate the development of energy efficient products, President Bush signed Executive Order 13221 directing federal agencies to purchase products that use minimal standby power when possible. On July 24, 2003, this policy was codified in a new provision of the Federal Acquisition Regulations that sets forth requirements for federal agencies to buy energy-efficient standby power devices in accordance with the President's Order. DOE estimates that the federal government will save an estimated \$25 million in energy costs over the next six years from this program, which is enough electricity to power about 40,000 homes for one year.

Earlier in the year, FEMP hosted two planning workshops for energy managers within the newly-formed Department of Homeland Security, an agency which will eventually rank in the top seven in terms of energy use. Products from the workshop included a policy framework for energy management at the Department, a proposed organizational structure, and an articulated vision, mission statement, and associated goals.

The Interagency Energy Management Task Force, chaired by FEMP, continued to closely coordinate policy implementation and associated reporting requirements with the federal community. Issues highlighted in the meetings of the Task Force during the year included the following:

- Input from the Task Force for FEMP's multi-year program planning,
- DOE's biomass and alternative methane energy savings performance contract,
- Operations and maintenance best practices,
- Strategies for large green power purchasers,
- Assessment of Energy and Load Reduction Technique (ALERT) activities to address foreseen tightening in the supply of natural gas,
- Role of combined heat and power and distributed generation in energy security, and
- Credit toward federal energy efficiency goals for projects where source-measured energy use declines but site-delivered energy use increases.

## Reporting on Energy Management

During 2003, agency reports and data were compiled into the draft *FY 2002 Annual Report to Congress on Federal Government Energy Management*. Preliminary findings of the report include:

- The government reduced the energy intensity of its standard buildings by 25.6 percent in FY 2002 versus the FY 1985 baseline year.



- Six agencies, the Departments of Agriculture, Commerce, Defense, Energy, Justice, and the Tennessee Valley Authority, achieved reductions of more than 25.6 percent in buildings energy use per gross square foot from 1985.
- The federal government spent approximately \$3.7 billion for buildings energy during FY 2002, a 6.8 percent decrease (\$265.8 million) from FY 2001 expenditures. The main contributor to the overall decrease was decline in the prices paid by the government for natural gas, which declined by 25.9 percent.
- Carbon emissions from energy used in federal facilities declined 19.3 percent in FY 2002 as compared to FY 1990.

FEMP also worked closely with the Office of Management and Budget during FY 2003 to prepare a summary report of the federal agencies' energy scorecards for the FY 2002 reporting period, required by Executive Order 13123.

*Energy Secretary Spencer Abraham (center), with David Garman (right), Assistant Secretary for Energy Efficiency and Renewable Energy, visited the Solar Village that was erected on the Mall as part of the Solar Decathlon competition.*

# OUTREACH

In FY 2003, federal energy managers continued with efforts to provide guidance to their staff on strategies to use energy more efficiently while aggressively pursuing renewable energy resources to increase our energy independence and national security. Federal agencies promoted themes of clean, abundant energy, conservation, and energy independence through a variety of education and awareness programs. At the same time, agencies honored outstanding efforts of individuals and teams working hard to find innovative solutions to complex energy management challenges. Participation in expositions, meetings, and conferences brought federal workers together to share success stories, promote partnerships, and honor achievements.

## Recognition

Agencies recognized exemplary leadership through annual energy management award programs. At DOE's Federal Energy and Water Management Awards ceremony, Assistant Secretary of Energy David Garman and Assistant Secretary of the Navy Hansford T. Johnson honored 37 individuals and groups for saving energy at federal facilities in America, Europe, and Japan. The White House presented the Presidential Awards for Leadership in Federal Energy Management on October 30. Five outstanding teams were selected for their dedication and leadership in the conservation of energy. In addition, 20 federal buildings in the U.S. and abroad were designated as Energy Saver Showcases. (Read more about these programs and honorees in the special awards section).

Twenty of the largest federal agencies participate 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"—employees making extraordinary efforts to help their agencies save energy and money. Accomplishments are highlighted through campaign posters sent to regional offices around the nation. In FY 2003, 20 individuals were recognized, increasing the total number of Energy Champions to 358 since 1997. In addition, 10 agencies developed posters featuring their Showcase or other important energy projects for recognition during Energy Awareness Month in October. The posters highlighted

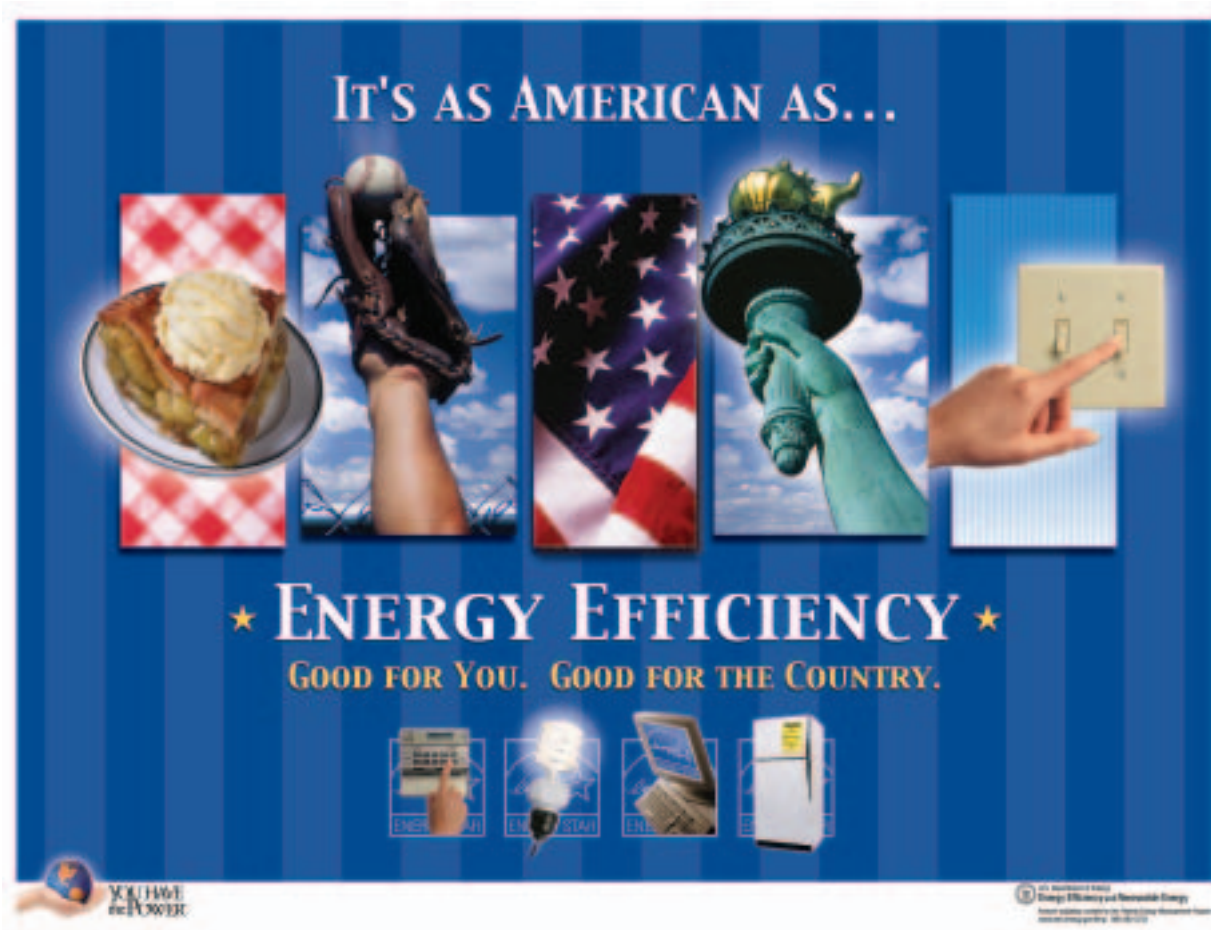
federal efforts such as sustainable building design and construction, effluent water re-use, installation of wind turbines and fuel cells, lighting and equipment retrofits, and installation of base-wide direct digital control systems.

## Awareness

Energy managers, financial officers, and administrators received guidance on time-sensitive issues through the FEMP Web site at [www.eere.energy.gov/femp](http://www.eere.energy.gov/femp). In September 2003 alone, there were 68,629 visits to the FEMP Web site, a 15 percent increase from the same month in FY 2002. In-depth information was also available through the *FEMP Focus* newsletter, published five times in FY 2003. *FEMP Focus* provides information

about successful federal energy-saving projects and partnerships, conferences and workshops, innovative financing strategies, technical analysis tools and updates, and developments in 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. Agencies celebrated Earth Day 2003 by conveying the message that each individual, by taking actions to conserve energy, has the power to make a world of difference. For Energy Awareness Month, federal personnel were encouraged that, by using energy wisely every day, we can make energy efficiency an integral part of the American values and culture.

### Energy Expo

To help educate staff and share information about their own energy management activities and programs, agencies participated in a number of federal conferences and expositions, the largest being Energy 2003: "Real World, Real Solutions" held during August in Orlando, Florida. The three-day workshop was sponsored by FEMP and co-sponsored by the General Services Administration and the Department of Defense. The workshop was attended by more than 1,500 public and private-sector participants, and featured specialized learning tracks on Acquisition, Energy Security, New Technologies, Energy Markets, and Transportation. A trade show featured more than 100 vendors exhibiting the latest products and services. FEMP's next annual workshop will be held August 8-11, 2004 in Rochester, New York.

*Outreach materials featuring patriotic themes helped to promote energy independence and security by encouraging the increased use of renewable resources.*

# PRESIDENTIAL AWARDS *for* LEADERSHIP *in* FEDERAL ENERGY MANAGEMENT

Established under Executive Order 13123, the Presidential Awards for Federal Energy Management are the most prestigious awards given to federal employees for excellence in the wise management of energy and water resources in federal facilities. Now in its fourth year, the Awards were presented at a White House ceremony to recognize the very best efforts of federal agency energy teams.

The federal government has a responsibility to lead in the challenge to achieve energy independence, and the teams receiving awards are at the forefront of this challenge. The projects presented here – which include energy management strategies, use of alternative financing tools, public outreach and communication programs, water management programs, and renewable energy projects – are helping us to meet growing energy demands while driving new markets for advanced technologies. These innovative approaches to energy management and the use of leading-edge technologies serve as an example to the federal government and the nation.

The awards program was hosted by and included remarks from Clay Johnson, Deputy Director for Management, Office of Management and Budget; David Garman, Assistant Secretary, Energy Efficiency and Renewable Energy, Department of Energy; Hansford T. Johnson, Assistant Secretary, Installations and the Environment, Department of the Navy; and Ralph A. Moden, Senior Vice President, Government Relations, U.S. Postal Service.

President Bush and Vice President Cheney extended their congratulations and gratitude to those federal agency teams recognized for outstanding efforts to make the federal government's energy management program a beacon for the nation.



# U.S. Department of Defense

## Naval Facilities Engineering Command

### “Outstanding Performance”



The Naval Facilities Engineering Command (NAVFAC) Energy Program invests worldwide in energy efficiency, incorporating nearly all the Executive Order tools into its policies and practices to promote energy efficiency and achieve results. In this model program, NAVFAC:

- Used alternative financing mechanisms, including energy savings performance contracts and utility energy service contracts, to fund cost effective energy efficiency improvements sooner rather than later, repaying the contractors with guaranteed energy cost savings;
- Installed renewable energy technologies such as photovoltaic arrays and geothermal systems to displace electricity generated from fossil fuels and to reduce dependence on the grid;
- Installed highly energy-efficient cogeneration plants, which produce both electricity and heat;
- Implemented water conservation plans, which save both water and energy;
- Purchased ENERGY STAR® high efficiency appliances and lighting fixtures;
- Applied ENERGY STAR® Building benchmarking standards to evaluate efficiency of existing buildings; and
- Used sustainable building design standards in planning for construction of all new buildings.

The NAVFAC program has generated significant results for the Navy and Marine Corps. To date, it has reduced energy consumption per gross square foot by 26 percent in standard buildings relative to the FY 1985 baseline. Energy intensity in industrial and laboratory facilities has also declined by 27 percent relative to the FY 1990 baseline. Investments of \$200 million in energy saving projects during FY 2002 are expected to reduce energy consumption by more than 900 billion Btu per year, or enough energy for 600 typical office buildings. NAVFAC developed Internet-based reporting tools, such as the Defense Utility Energy Reporting System, to better track energy expenditures and ultimately reduce energy use and costs. The Naval Facilities Engineering Service Center Web site features the Navy Energy Program’s business plan, information on establishing an energy program, technical information, on-line progress reporting of ongoing projects, tips for raising energy awareness, and recognition of past Secretary of the Navy Energy Award winners.



Naval Facilities Engineering Command team members (l to r):  
Gil Siqueido, Beverly Thompson, Mike Reavis, Dan Magro, Donna Munyon, RADM Michael Loose, Jose Maniwang, Clay Johnson, Jim Heller, Clyde Hoelzer, Matt Kelly, William Tayler, Hansford T. Johnson



## U.S. Department of Health and Human Services

### Food and Drug Administration

### Jefferson Laboratories Division of Facilities Engineering

#### “Implementation”

The Division of Facilities Engineering (DFE) at the Food and Drug Administration's Jefferson Laboratories has been aggressively pursuing energy savings on campus for more than 20 years, reflecting the dedication and long-term commitment of top management.

To date, the Jefferson Laboratories have achieved a 39 percent reduction in energy consumption and a 24 percent reduction in energy costs per gross square foot relative to the FY 1990 baseline. DFE estimates that projects implemented will save 128 billion Btu per year, equivalent to 10 hours of energy use for every household in Arkansas. Contributing to the DFE's success is their extensive use of various tools from Executive Order 13123, notably alternative financing. DFE relied on technical assistance from the Industrial Assessment Center at the University of Arkansas to help complete a comprehensive energy audit outlining specific actions for energy reduction and water conservation. With an action plan in hand, officials signed a master agreement with Entergy Arkansas, the local electric utility, to initiate projects under a utility energy service contract, which generates savings that the Labs can use to pay back contractors performing the upgrades. A preliminary energy audit identified 26 potential projects, followed by detailed engineering studies on selected projects, some of which include:

- Installation of capacitor banks to correct facility power factor and increase the efficiency of the campus electrical distribution system;
- A natural gas procurement agreement reducing costs by 21.5 percent;
- Lighting retrofits, which replaced old inefficient fluorescent and incandescent fixtures with highly efficient lighting systems; and
- A comprehensive district cooling system upgrade for the entire campus.

DFE also used direct agency funding to save energy by conducting lighting retrofits, reducing laboratory air changes, performing water use inspections, repairing steam traps, and supplying a library with chilled water from an existing laboratory chiller.



*Jefferson Laboratories Division of Facilities Engineering team members (l to r): CMDR Adam Scully, Marcia Park, Bruce Rice, Ted Kozak, Clay Johnson, Alan Hope, Vicky Culp, David Burnette, Sam Andrews, Scott Waldman, William Stamper*



# United States Postal Service

## Pacific Area Energy Management Program

### “Institutionalization”

The U.S. Postal Service (USPS) Pacific Area’s Strategic Energy Management Plan enables the USPS to save millions of dollars in energy costs, significantly reduce electricity consumption, and mitigate the impact of USPS operations on the environment. The Plan created a framework that includes an effective administrative structure, energy management tools for data collection and reporting to management and staff, performance goals, contractual vehicles, and implementation tools to evaluate and complete numerous energy efficiency projects. The Pacific Area USPS participates in national USPS energy management planning and policy activities, and its Plan serves as a model to other USPS regions throughout the United States.

In FY 2002, the Pacific Area developed a database structure that collects energy consumption data at 75 sites representing almost 80 percent of the total energy consumption in the Area. These reports help the Pacific Area identify the most likely sites for retrofit projects and instill a sense of competition among them to achieve the best energy performance. This program is being evaluated for replication in the USPS national energy program.

During FY 2002, the Pacific Area awarded more than \$3 million in contracts for energy efficiency retrofits. The Pacific Area anticipates \$70 million more will be awarded competitively under its Shared Energy Savings performance contract vehicle, an alternative financing mechanism in which contractors are repaid for energy efficiency investments through guaranteed energy cost savings. Savings from these contracts awarded in FY 2003 have been projected to be on the order of 7 to 10 gigawatt-hours annually, equivalent to the electricity use of approximately 1,000 typical households in the region.



*U.S. Postal Service Pacific Area team members (l to r):  
Ralph Moden, Joe Vanden Berg, Clay Johnson, Ray Levinson, Bill Golove*



## U.S. Department of Defense

### Department of the Army

### 7th Infantry Division at Fort Carson

#### “Outreach”

In FY 2002, Fort Carson’s energy use per square foot was 25 percent less than the base year of FY 1985. Compared to the previous year, the Fort avoided costs of more than \$2.3 million on its utility bills for electricity, natural gas, and water.

Fort Carson achieved this success with a comprehensive energy program based on “top down” Command emphasis of energy awareness and forward-thinking project implementation. Fort Carson’s Commanding General personally set the objectives of the annual Command Energy Policy, which were published in the post newspaper, *The Mountaineer*. To address severe drought conditions, the Commanding General signed water restrictions policy that matched the local Colorado Springs Utilities watering program for the summer of 2002 reducing water use by 10 percent compared to the previous year. The entire installation also embarked on establishment of a sustainability program in FY 2002. Nearly 250 persons from Fort Carson, the local community, the state government, and other interested parties participated in a three-day conference to establish 25-year sustainability goals for Fort Carson. Twelve long term goals were established which included goals for increased renewable energy use, increased energy efficiency, and significant water usage reductions. Fort Carson’s Super Peak program, which helped garner savings through electrical reductions in certain peak use periods, used e-mails and phone calls to make the entire base aware of “super peak” periods for shedding electricity use. This program saved approximately \$50,000 during FY 2002. Outreach efforts extended beyond the base, as articles on Fort Carson’s efforts were shared with the Army Environmental Center and the Army Corps of Engineers’ Public Works Digest. Other outreach activities at Fort Carson include:

- Energy and water conservation training modules for quarterly Environmental Protection Officer classes,
- “Energy Tips of the Week” distributed to Commanders, Directors, and Building Energy Managers, and
- Energy and water conservation brochures sent to family housing occupants to spread the conservation message base-wide.



*Department of the Army, 7th Infantry Division at Fort Carson team members (l to r): Geoffrey Prosch, COL Michael Resty, Jr., Clay Johnson, Scott Clark*

# U.S. Department of Defense

## U.S. Air Force

### Dyess Air Force Base



#### “Results”

Through the efforts of the Dyess Air Force Base energy program, the Base is saving 79 billion Btu annually (equivalent to the energy used in 940 households in the region) and over \$1.6 million annually in avoided energy costs. Their efforts have also eliminated more than 83 percent of greenhouse gases emitted by Dyess Air Force Base prior to the implementation of their program. Dyess identified numerous energy savings opportunities by taking advantage of energy audits from various sources. These projects were financed first through a demand side management agreement and then through a series of three task orders under the Air Force Regional Energy Savings Performance Contract. Finally, Dyess took advantage of electricity deregulation in Texas to negotiate the procurement of 100 percent of its electricity from renewable wind resources. This is the largest purchase of renewable power ever made in the U.S. and amounts to more than 20 percent of the federal government’s current renewable energy purchases. Other energy program results at Dyess include:

- More than 42,000 inefficient fluorescent tubes were replaced with efficient low mercury tubes;
- More than 18,000 PCB-containing magnetic ballasts were replaced with electronic ballasts;
- 496 solar day-lighting units were installed, reducing lighting costs;
- More than 1,500 tons of air-conditioning equipment was replaced with efficient systems, including an ice storage system for electricity peak shaving;
- All steam boilers on Base were replaced with new energy-efficient boilers; and
- Effluent water from the city of Abilene, Texas was redirected to the Base for irrigation purposes, reducing potable water consumption by 160 million gallons and water costs by \$300,000 per year.



*Dyess Air Force Base team members (l to r):  
Ronald Orr, SrA Regenia Matthews, Lynda Sisk, SrA Jason Blair, Michael Santoro,  
Steve Dumont, Ron Miller, Tom Denslow, Clay Johnson, Mark Krog, LTC Darren Daniels,  
Willis Barrow, Deb McGrath, Tim Adams, Kathleen Ferguson, Col Jeffrey Leprone*

# FEDERAL ENERGY *and* WATER MANAGEMENT AWARDS

Federal Energy and Water Management Award winners are leading the way to greater energy independence with innovations that help our nation achieve affordable, reliable, and clean energy solutions.

The Awardees have used a number of tools to help revolutionize energy management – from energy audits and energy savings performance contracts ... to utility energy service contracts ... to the use of distributed generation technologies. The awards described here are achievements worthy of great recognition, and reflect the efforts of thousands of men and women who are finding creative and resourceful ways to manage energy at U.S. installations around the world.

The people and projects honored here show how individuals, as good citizens and good federal employees, can cut our nation's energy bill, reduce greenhouse gas emissions, and increase our nation's energy security. FEMP is grateful for their work on the front lines of federal energy and facility management.



## Water Conservation Awards to Organizations

### United States Air Force 15th Civil Engineer Squadron Hickam Air Force Base, Hawaii

Undertaking a comprehensive approach to water conservation and management, Hickam Air Force Base serves as a model for other military bases and federal sites around the world. The 15th Civil Engineer Squadron has been extremely active in their efforts to reduce water use, improve infrastructure, and educate residents and the general public. The successes of their many initiatives have resulted in more than \$800,000 in savings from avoided water and sewer charges. Among the many projects implemented was an aggressive approach to managing irrigated landscaping on Hickam. By adjusting irrigation system operations, repairing an aging water distribution system, and implementing xeriscaping, Hickam has achieved an impressive 10 percent reduction in overall water consumption. As good stewards of the Base, the 15th Civil Engineer Squadron plans to continue making reductions so that pure potable water can be enjoyed by all, and funds can be applied to vital mission requirements, rather than wasted on unnecessary utility expenses.



*Dave Stiner*

## Water Conservation Awards to Organizations

### United States Marine Corps Marine Corps Base Camp Butler Okinawa, Japan

By locating and repairing hard-to-find leaks under pavement, Marine Corps Base Butler reduced water use by 22 percent in the Plaza Housing area and 46 percent in Headquarters area. During FY 2002 Camp Butler, and the entire island of Okinawa, was facing possible water rationing due to lack of precipitation and low water reservoir conditions. To alleviate this problem, a Leak Detection Team identified numerous leaks in the water distribution system.

As leaks were detected, a maintenance crew used heavy equipment to remove soil, pavement, and sidewalks for visual verification and subsequent repair. The expedient manner in which the Team planned and executed the leak survey and repair work was carried out so that occupants suffered very few water outages. The proactive efforts of this water conservation project made water resources available for critical base activities without increasing total water use. Annual water/sewer savings at Camp Butler are estimated to be \$123,000.



*Clyde Eagle, Kiyuna Choju*



*SrA Jason Blair, SrA Regenia Matthews, Tom Denslow, Deborah McGrath, Ronald Miller, LTC Darren Daniels, Mark Krog, Willis Barrow*

## **Water Conservation Awards to Small Groups**

**Tom Denslow  
Deborah McGrath  
Ronald Miller  
Dwain Wadlington**

**United States Air Force  
Effluent Water Project  
Dyess Air Force Base, Texas**

Using an energy saving performance contract (ESPC), Dyess Air Force Base implemented more than \$3 million in improvements to the Base infrastructure. The Effluent Water Project Team conceived and installed a new effluent water delivery system for irrigation at the Base. Using the ESPC, a pair of 11 million-gallon reservoirs were added, including two pumping stations

and more than three miles of piping. The reservoirs were equipped with aeration fountains to reduce algae growth, and were constructed to meet state environmental standards. This project was particularly important as the Base, as well as the entire west Texas region, have been under extreme drought restrictions for four years. By working with the city of Abilene and local industry, the Team was able to reduce potable water consumption by more than 30 percent, or 160 million gallons annually. This saves more than \$300,000 annually and reduces the potable water demands of Abilene by 2 percent.



*Michael Clawson*

## **Water Conservation Award to an Individual**

**Michael Clawson**

**Air Force Civil Engineer Support Agency  
Tyndall Air Force Base, Florida**

As Water Systems Engineer at Tyndall Air Force Base, Mr. Clawson has overall responsibility for the entire Air Force Water Conservation Program. His accomplishments during FY 2002 include development of the Air Force Water Conservation Guidebook, which guides bases in implementing water conservation goals mandated by Executive Order 13123. The guidebook simplifies the process of developing a

water management plan and evaluating best management practices. By providing assumptions, engineering estimates, formulas, and a methodology, the Guidebook allows bases to complete their water management plan without facility audits or detailed water use information. Mr. Clawson also set up the Air Force Water Conservation Web pages, re-wrote Air Force policy to encourage the use of non-potable water, and gave numerous presentations on water conservation to various federal agencies and the general public. Since Mr. Clawson took over the Air Force Water Conservation program in 2000, annual Air Force potable water use has been reduced by almost 14 percent, saving more than 7 billion gallons annually.



## Mobility Energy Efficiency Awards to Organizations

### U.S. Department of Energy Lawrence Livermore National Laboratory Livermore, California

The Lawrence Livermore National Laboratory (LLNL) Transportation Systems Management Program (TSMP) develops effective methods to improve traffic-related air quality and to reduce congestion management problems at LLNL's main site, its site in Tracy, California, and in surrounding areas. The TSMP keeps employees informed through electronic media and LLNL's campus newspaper about convenient and cost-effective commuting alternatives such as buses, carpools, and vanpools. Through TSMP, employees discover opportunities to join carpools or vanpools, take public transportation, or ride their bikes to work. TSMP also provides a way to estimate commuter costs with the RIDES Commute Calculator, an interactive computer program available through LLNL's network. LLNL offers incentives for commuters, such as preferential parking for car- and vanpools, whose participants are never left stranded if they miss their ride, thanks to the Guaranteed Ride Home Program. For on-site transportation needs, LLNL offers its own taxi service. Additionally, more than 800 bicycles are available to all employees for getting around the main site. During FY 2002, \$655,000 was saved in employee and LLNL fuel costs. Total FY 2002 fuel savings for LLNL and its employees was more than 72 billion Btu.



*Beverlee Morales*

## Mobility Energy Efficiency Awards to Organizations

### Department of the Navy Squadron VT-10 Pensacola, Florida

Training Squadron 10 (VT-10) continued its aggressive energy conservation program during FY 2002 while providing the highest quality training to more than 250 Undergraduate Naval Flight Officers and Air Force Navigators. The VT-10 Team began using an innovative flight scheduling system that combined student training with other flights as much as possible. This eliminated unnecessary flight training hours and dramatically reduced fuel consumption. Additionally, electricity costs were reduced through energy-efficient lighting upgrades and water conservation measures were implemented throughout VT-10. These efforts resulted in savings of more than \$586,000 and 10 billion Btu during FY 2002.



*Accepted by: Dr. Alan Roberts*



## Mobility Energy Efficiency Awards to Organizations

### Department of the Navy USS IWO JIMA

During FY 2002 the crew of the USS IWO JIMA adopted an aggressive energy conservation awareness program that led to the implementation of a number of energy-saving projects. More than 1,200 personnel were trained in ways to conserve energy on the USS IWO JIMA when the ship is both in port and underway. The energy-conscious crew identified and repaired water and air leaks, inspected insulation, and shut down unnecessary lighting and ventilation systems. Underway, IWO JIMA now conducts its routine operations with one less boiler and one less generator than the standard. In port,

*Accepted by: Dr. Alan Roberts*

additional savings are realized by securing hot water heaters in troop spaces that are not in use and operating on two instead of three air conditioning units. These efforts resulted in savings of more than \$900,000 in diesel fuel and 19 billion Btu.

## Mobility Energy Efficiency Awards to Organizations

### Department of the Navy USS RAINIER

Every crew member on the USS RAINIER learns the importance of energy conservation through an aggressive training program. New sailors are taught everyday practices they can employ to save energy, and energy efficiency ideas are encouraged, discussed, and implemented at every level of the chain of command. Throughout FY 2002, the Rainier crew saved water by conducting a Fresh Water Management Campaign; reduced fuel consumption by maintaining the ultimate fuel efficiency possible at varying ship positions; reduced unnecessary lighting and air conditioning use; and enforced numerous energy efficiency strategies while operating at sea and in port. Through their exceptional planning and conservation routines, the Rainier crew was able to save more than \$615,000 and 12 billion Btu.

*Award accepted by: Dr. Alan Roberts*

## Alternative Financing Awards to Organizations

### Department of the Navy Naval Station Great Lakes Great Lakes, Illinois

Naval Station Great Lakes implemented phase VIII of a utility energy services contract, continuing a long, highly successful partnership with its local utility company. For the contract cost of \$5.3 million, the Station is saving \$790,000 per year. Phase VIII consists of a wide range of energy improvements, including lighting retrofits, steam pipe and valve insulation, direct digital controls installations, HVAC upgrades, air handler unit installations, hot water heating system replacement, and refrigerator system upgrades on 34 buildings at Naval Station Great Lakes. During FY 2002, these energy improvements reduced the Station's energy consumption by 5.4 percent, saving 61.4 billion Btu annually. The reduced energy consumption translates to fewer pollutants emitted into the air, including 9,893 tons of carbon dioxide, 146 tons of sulfur dioxide, and 52 tons of nitrogen oxide.



*Rick Rodriguez, George Wakoma,  
Ted Zalewski*

## Alternative Financing Awards to Organizations

### United States Marine Corps Marine Air Ground Task Force Training Command Twentynine Palms, California

Twentynine Palms Marine Air Ground Task Force Training Command is the largest Marine Corps Base encompassing 932 square miles of open desert in southeastern California, with a population of more than 25,000 military personnel including dependents. Following two years of enduring the California energy crisis, Twentynine Palms "fired back" in the Base's energy war by installing the largest cogeneration plant in the U.S. Marine Corps. The 7 megawatt dual-fueled combined heat and power cogeneration plant will support most of the energy and hot water needs for the Combat Center's Mainside buildings and homes during the winter and a large portion during the summer. The project was financed through an energy savings performance contract with Johnson Controls. Providing thermal load to the Central Heat Plant will increase the plant's efficiency and lower air pollutants. The project will reduce electricity purchases from the local utility company by 185 billion Btu (65 percent), which will save \$5.9 million in annual energy costs. Twentynine Palms also replaced five aging absorption chillers with new high efficiency electric rotary-type and centrifugal chillers, increasing comfort and reliability, and changed the operation of domestic water pumps to take advantage of the local utility company's off-peak electric rate structure. This project saved 38 billion Btu (63 percent reduction) and \$285,000 in energy and operation and maintenance costs during FY 2002. The cost savings from these projects will go toward additional projects to further the Facilities Management Division's mission to lower energy costs, to be more environmentally friendly, and provide energy security to the Base.



*Cmdr Rob Tye, Jim Geherke,  
Gary Morrissett, Col. Walter Hamm,  
Wayne Hofeldt*



*Joseph Jackson, Robert Lawrence*

## Alternative Financing Awards to Organizations

**United States Marine Corps  
Marine Corps Air Station Cherry Point**

**Cherry Point, North Carolina**

Marine Corps Air Station Cherry Point is home to Headquarters 2nd Marine Aircraft Wing and Headquarters Marine Corps Air Bases East. During FY 2002, Cherry Point began replacing 1,128 conventional air-to-air heat pumps in family housing with geothermal heat pumps using a utility energy service contract with Progressive Energy. Although work did not begin until mid-year and was not completed during FY 2002, the project realized a 5.8 billion Btu reduction in energy consumption (nearly an

8 percent reduction) and more than \$83,000 in cost savings compared to 2001. After project completion, the total savings are estimated to be 51.3 billion Btu and more than \$918,000 annually. The reduced energy consumption will eliminate 1,539 metric tons of carbon dioxide annually.



*Jim Woods, Bernard Denno, Jr.,  
Gregory Banes, Regina Larabee*

## Alternative Financing Awards to Small Groups

**Gregory Banes  
Bernard Denno, Jr.  
Judith Gray  
LT Joseph Pica  
Sharon Walker**

**U.S. Department of Commerce  
Atlantic Oceanographic  
& Meteorological Laboratory**

**National Oceanic and  
Atmospheric Administration  
Miami, Florida**

The National Oceanic and Atmospheric Administration awarded a utility energy services contract for its Atlantic Oceanographic & Meteorological Laboratory in Miami, Florida. The project upgraded the building lighting system, replaced HVAC controls, and installed a thermal energy storage system to shift some of the HVAC load to off-peak hours. These energy conservation measures reduced the electric demand by 117 million Btu (39 percent) while making badly needed improvements in the building infrastructure. Annual energy and operations and maintenance savings resulted in almost \$46,000.

## Alternative Financing Awards to Small Groups

**Russell Dominy**  
**Christopher Henschel**  
**Darryl Matsui**  
**Donna Munyon**  
**Beverly Thompson**

**Department of the Navy**  
**Energy Savings Performance**  
**Contracting Team**  
**Port Hueneme, California**

The ESPC Team developed and implemented eight major projects throughout the Department of the Navy at Port Hueneme. The projects include the two largest federal photovoltaic systems in the United States, 13 megawatts of cogeneration and diesel generating capacity, and the Base-wide decentralization of an antiquated steam plant. These projects are economically self-sufficient, financed through reduced energy consumption and reduced operations costs. The ESPC Team awarded \$134 million worth of contracts during FY 2002, yielding \$43.3 million in life-cycle savings to the Navy after the financing, operations and maintenance, and repair and replacement services are paid from total project savings. Total energy savings for FY 2002 are 592 billion Btu and total cost savings are \$18.2 million. ESPC Team members are often invited to make presentations at national conferences, and they are also sitting members on several interagency boards including the DoD/DOE ESPC Steering Committee, Federal ESPC Measurement and Verification Working Group, and Federal ESPC Initiative.



*Beverly Thompson, Darryl Matsui,  
Donna Munyon, Russell Dominy*

## Alternative Financing Awards to Small Groups

**Vista Gifford**  
**David Meals**  
**Roger Wright**

**John Jarosz**  
**Michael Okoro**

**U.S. General Services Administration**  
**Northwest/Arctic Region**  
**Auburn, Washington**

With utility bills exceeding \$650,000 annually, the GSA Northwest/Arctic energy team recognized that the 1970s era Edith Green/Wendell Wyatt Federal Building needed major system repairs and improvements. Through DOE's Super ESPC, the regional energy team accomplished energy conservation improvements that included installation of a new energy management and control system, variable frequency drives, HVAC upgrades, water and sewer improvements, and building commissioning. Through the team's effort, the facility has achieved annual energy savings of more than 6 billion Btu and cost savings of more than \$153,000. The water and sewer improvements will save 5,000 cubic feet of water annually. The reduced energy consumption will eliminate 1,377 metric tons of carbon dioxide, 2.7 metric tons of sulfur dioxide, and 4.5 tons of nitrogen oxide annually.



*Kit Meith, Roger Wright, John Jarosz,  
Carole Diamond, Michael Okoro*



*Roosevelt Allen*

## Alternative Financing Awards to Individuals

### Roosevelt Allen

#### United States Postal Service Memphis, Tennessee

Roosevelt Allen of the United States Postal Service Southeast Area has developed an aggressive five-year energy plan to improve energy efficiency at 3,700 Postal Service facilities. Through Mr. Allen's leadership, an energy profile system was developed to rank the 3,700 Postal facilities in the Area based on energy savings opportunities. Based on the ranking, the Area can allocate resources that range from energy awareness efforts to capital improvement to

provide the best return on investment while accomplishing energy conservation objectives. Mr. Allen was instrumental in conducting comprehensive energy audits at these facilities using a priority scheme based on energy savings potential. He also developed a checklist of solution-based approaches for implementing retrofit projects at facilities of less than 5,000 square feet, resulting in \$25 million of retrofit projects and a total annual savings of \$4 million. For larger facilities, Mr. Allen worked with several energy service companies to award shared energy savings contracts. He is currently managing eight such contracts with a total contract value of \$25 million. In addition, Mr. Allen organized an employee awareness campaign and has written several articles about energy and environmental issues in area publications to further promote energy awareness to the 90,000 employees in the Southeast Area.



*Captain Henry Jackson*

## Alternative Financing Awards to Individuals

### Captain Harry Jackson

#### United States Air Force Laughlin Air Force Base, Texas

Captain Harry Jackson, Deputy Chief of the 47th Civil Engineer Operations Flight at Laughlin Air Force Base, Texas, rejuvenated the Base energy savings performance contract program to positively impact more than 4,000 active duty members, civilian employees, contractors, and Base residents. Through the Air Force Region 6 ESPC, Captain Jackson garnered more than \$380,000 in utility rebates to finance lighting retrofits in 37 facilities; replace two air conditioning system water chillers; and install

two thermal storage systems -- an 800 ton-hour ice system and a 3,150 ton-hour chilled water tank. Captain Jackson also educated senior leaders, squadron commanders, and the Base populous about energy and water conservation by organizing the Base Energy Steering Group, and through briefings at commander's calls, news articles, and his day-to-day contacts on and off Base. FY 2002 savings exceed \$238,000 and 10 billion Btu.

## Renewable Energy Awards to Organizations

### Department of the Navy Navy Public Works Center San Diego, California

In this ground-breaking project, the Navy Region Southwest, in partnership with the Navy Public Works Center, San Diego, demonstrated the successful implementation of a large-scale renewable energy system using alternative financing. The 750-kilowatt photovoltaic (PV) system installed at the Naval Base Coronado is one of the largest PV systems installed by the federal government, and is among one of the largest PV systems in the world. Consisting of 3,078 modules with more than 664,000 semi-crystalline silicon solar cells, the Base's PV system delivers solar electricity to the Navy electric grid while providing a covered carport structure for more than 400 vehicles. Designed and installed using Super ESPC financing, the solar electric system is expected to produce 1.2 gigawatt-hours of electricity per year and save the Base \$228,00 annually in electricity and demand charge expenses. Utility- and state-incentive funds and the Department of Defense's commitment to green power together resulted in a system that will provide about 3 percent of the Naval Base's peak electrical demand during summer months. By replacing fossil-fuel-generated electricity with solar power, the Navy's PV system is expected to yield an annual energy savings of 4.0 billion Btu.



*Joyce Ferrenburg, Wade Wilhelm*

## Renewable Energy Awards to Organizations

### U.S. National Park Service Mojave National Preserve Barstow, California

The harsh rugged beauty of California's Mojave National Preserve is the setting for this renewable energy project for the Preserve's Hole-In-The-Wall Wildland Fire Center. Up to 16 firefighters and crew are stationed at the Center's remote (4,500 foot elevation) location to respond to emergencies in the Preserve's vast 1.5 million acres of land. Drawing upon the area's abundant sunlight and a desire to protect the natural quiet of the desert, the National Park Service mobilized to replace the Center's outdated modular facility that relied on diesel power. The newly-constructed fire center and dormitory is a highly functional, energy-efficient, and cost effective structure that harmoniously blends into the desert landscape. The facility features an 11 kilowatt hybrid system with 85 thin flexible photovoltaic panels placed on the Center's roof, eliminating the expense of a solar panel array frame. Insulation under the roof serves as an energy-efficient environment for the thermostatically controlled evaporative coolers located in the attic. Throughout the buildings, energy-efficient windows reduce the facility's energy use. In interior spaces without windows, solar light tubes practically eliminate the need for electrical lighting during the day. A solar-powered radiant floor heating system prevents the water lines in the fire engine bays from freezing. During FY 2002, this impressive facility achieved an energy savings of 624 million Btu and a cost savings of more than \$16,000.



*Mary Martin, Sean McGuinness*



*Michael Santoro, Paul Weaver*

## Renewable Energy Awards to Small Groups

**Amy Hoffer**  
**Mike Keeling**  
**Maj Jeffrey Renshaw**  
**Michael Santoro**  
**Paul Weaver**

### United States Air Force Renewable Energy Purchase Edwards Air Force Base, California

Edwards Air Force Base strategically developed a creative power contract that saved the federal government millions of dollars in power costs and resulted in the Air Force's first major renewable

power purchase. The Base faced major electricity rate increases beginning in the summer of 2000 and an uncertain energy market as the State of California was heading into an energy crisis. The Edwards team knew they had to act to stabilize the Base's electricity costs. Timing was critical, but the team successfully moved from energy crisis to energy security by negotiating a multi-year renewable power contract for the Base at fossil fuel prices. Supplying 60 percent of the Base's electricity needs from wind and biomass sources, the purchase will save the Base \$8.4 million annually and provide 113 billion Btu in energy savings. With the success of the Edwards contract, 12 additional Air Force Bases have made significant purchases of wind power. The Air Force is now a leader among federal agencies, responsible for approximately 50 percent of federal renewable power purchases.



*Jim Kurth, Melissa Ennis,  
Vivian Rice-Smuin*

## Renewable Energy Awards to Small Groups

**Greg Austin**  
**Melissa Ennis**  
**Vivian Rice-Smuin**

### U.S. Fish and Wildlife Service Ventura, California

A public-private partnership is working quietly and diligently to reintroduce the majestic California condor back to the wild. Playing a principle role in pulling the condor back from extinction are the dedicated researchers of the California condor research station at Hopper Mountain National Wildlife Refuge, who are monitoring and caring for the condors. Working

and living throughout the year at the refuge's remote research station, which was never connected to utility power lines, the researchers' primary source of power was an old, unreliable gasoline-powered generator. During FY 2002, a team from the U.S. Fish and Wildlife Service's Pacific Region successfully secured Service funds to install a 1.76-kilowatt solar system with 110-watt photovoltaic (PV) modules. The new PV array provides 100 percent of research station's electricity and water pumping needs, saving 78 million Btu annually and more than \$1,000. Energy-efficient lights are adding to the energy savings and maximizing the effectiveness of the solar system. For this motivated team, eliminating the dependence on gasoline for electrical power and reducing the transfer of hazardous fuel just made sense for the fragile habitat of the condor.



## Renewable Energy Awards to Small Groups

**Charles Caldwell**  
**Mary Ann Crafton-Williams**  
**Ken Edwards**  
**Mark Orton**

**U.S. Fish and Wildlife Service**  
**Imperial National Wildlife Refuge**  
**Yuma, Arizona**

The team from the U.S. Fish and Wildlife Service's Southwestern Region knew that solar collectors were the optimal choice to power the buildings serving the Imperial National Wildlife Refuge, a federally designated wilderness area receiving more than 350 days of sunshine annually. During FY 2002, the team, undeterred by budgetary and management hurdles, mobilized to install photovoltaic (PV) solar collectors on the Refuge's visitor center and office with funding received from the Service. The system provides approximately 47 percent of the facility's annual energy requirements at a yearly savings of 69 million Btu and \$1,625. Added to the project's success is a \$20,000 rebate from Arizona Public Utilities Commission. To meet the team's goal to eventually provide 100 percent solar power for the facility, the system was designed with the capability to increase the capacity of the PV collectors for future expansion. Quiet, non-polluting renewable energy is now protecting the delicate ecological balance of this remote green oasis, surrounded by desert mountains and conveying the importance of sustainable energy practices to refuge's visitors.



*Jim Kurth, Mary Ann Crafton-Williams, Ken Edwards, Mark Orton*

## Renewable Energy Awards to Small Groups

**Gene Cheney**                      **Zeb Darrah**  
**Jeff Harmon**                      **Jim Ziolkowski**

**U.S. National Park Service**  
**Mount Rainier National Park**  
**Ashford, Washington**

Gone are the noise and emissions from diesel-powered generators, as well as wasted diesel fuel, at the White River Entrance of Mount Rainier National Park. The entrance is a gateway to the east side of the Park with visitor functions and residence area for 14 Park employees. Since 1931, the constant drone of diesel generators, and more recently liquid propane fired units, could be heard 24 hours a day. The Park's new 20-kilowatt solar hybrid system brings reliable electrical power to this remote area of Mount Rainier without a connection to an electric utility. The dedicated project team spearheaded nearly all phases of the project, from decreasing the site's electrical load; partnering with DOE's Bonneville Power Administration for design and installation of the solar array, battery bank, and inverter; performing preliminary system installation; working alongside the contracting team during the installation of the array; to performing maintenance and oversight of the system. The effectiveness of the system is a tribute to the Mount Rainier team, whose uncompromising attention to detail is saving the White River installation more than \$9,000 in fuel costs and approximately 776 million Btu annually.



*Zeb Darrah, Gene Cheney, Jeff Harmon, Jim Ziolkowski*



*Edward Danchik, Michael Watkins, Douglas Bielan, Kenneth Grossnickle, Louis D'Angelo, David Wilson, Harry Callis*

## **Energy Efficiency/Energy Management Awards to Organizations**

### **U.S. Department of Energy Germantown Facility, ENERGY STAR® Label Washington, DC**

Without sacrificing occupant comfort, health, or safety, the U.S. Department of Energy (DOE) was able to implement a number of energy conservation projects at its Germantown Facility, resulting in a 41 percent reduction in energy consumption at the end of FY 2002, compared to a 1985 baseline. Some of the conservation projects implemented were window upgrades, the installation of a building-wide energy management control system, renewable energy purchases, numerous product replacements with energy-efficient models, and HVAC upgrades. DOE's energy conservation measures qualified the Germantown Facility for the ENERGY STAR® Building Award, which identifies buildings that save energy and money while maintaining an acceptable indoor environment. FY 2002 energy and cost savings at the Germantown facility reached \$340,000 and almost 40 billion Btu.



*Jim Kerr, Bill Miller, Don Sachs*

## **Energy Efficiency/Energy Management Awards to Organizations**

### **U.S. Army Corps of Engineers Major Rehabilitation Project**

### **Garrison Hydroelectric Power Plant Riverdale, North Dakota**

A major rehabilitation project took place at the Garrison Dam powerhouse in North Dakota during FY 2002. Two of the five generating units were returned to service after turbine runner replacement, generator rewinding, and realignment. The original purpose of this effort was to improve reliability. However, the Corps team took advantage of opportunities to increase energy production without creating any negative environmental effects. When all five units are returned to service, annual energy production at Garrison will increase by nearly 200 million kilowatt-hours.

## Energy Efficiency/Energy Management Awards to Organizations

### Department of the Army Fort Carson

#### Fort Carson, Colorado

Fort Carson has established and maintained a comprehensive energy management program that emphasizes command, management, awareness, and project implementation. With the support of Fort Carson's Commanding General and various working groups, the Base was able to implement energy efficiency projects that saved more than \$1.7 million and 42 billion Btu during FY 2002. One project involved the completion of a prototype green building training center that features low-e ENERGY STAR® windows, high-efficiency ENERGY STAR® furnaces, natural lighting, and LED exit signs. Other efforts included the installation of energy-efficient lighting, roof replacements, and the use of photovoltaics to power water pumping systems, which improves wildlife habitat and provides water for wildland resources.



*Col. Michael Resty, Jr., Scott Clark*

## Energy Efficiency/Energy Management Awards to Small Groups

Kurt Kasules  
Michael Michalak  
Gary Sliwicki  
Romesh Sood  
Ted Thorson

### U.S. Department of Energy Fermi National Accelerator Laboratory Industrial Building Controls Retrofit

#### Batavia, Illinois

The Fermilab Industrial Building Controls Retrofit is a cooperative solution to reduce energy use associated with five HVAC units in Fermilab's main manufacturing facility for cryogenic superconducting accelerator components. This project replaced outdated pneumatic control systems with state-of-the-art direct digital controls, which are more accurate and maintainable, and allow for more sophisticated controls strategies. The project included new operating controls sequences for night setback of temperatures and ventilation, optimum start/stop of systems, and carbon dioxide monitoring for outside air control. Efforts resulted in savings of \$5,000 and 402 million Btu.



*Kurt Kasules, Gary Sliwicki,  
Romesh Sood,*



## Energy Efficiency/Energy Management Awards to Small Groups

**Karlin Canfield  
Gail Cowen  
Alice Jeffreys  
Paul R. Viergutz**

**Southwest Division Energy Team  
Department of the Navy  
Navy Public Works Center  
San Diego, California**

*Paul Viergutz, Alice Jeffreys,  
Gail Cowen, Gary Gates*

The energy management systems/direct digital controls (EMS/DDC) team at the Navy Public Works Center, San Diego executed \$21 million in technically feasible, cost-effective EMS/DDC projects during FY 2002. The projects will yield \$6 million annually in energy cost savings while enhancing the operation, maintenance, and readiness of hundreds of facilities at 17 Navy and Marine Corps bases in the San Diego area. The team overcame technical, financial, and institutional obstacles to put in place one of the most highly-integrated, functional EMS/DDC networks in the federal government. The projects developed and executed during FY 2002 will save about 128 billion Btu and reduce associated air emissions by more than 23,000 tons per year.



## Energy Efficiency/Energy Management Awards to Small Groups

**Carol Lautzenheiser  
Guy Lunay  
Robert Seiffert  
Mark Trimarchi**

**Dallas Energy Saving Performance  
Contract Project  
Dallas, Texas**

*Mark Trimarchi, Carol Lautzenheiser,  
Robert Seiffert, Guy Lunay*

The U.S. General Services Administration's (GSA's) Greater Southwest Region's Energy Team implemented an ESPC project in three buildings located in Dallas and Sherman, Texas. The majority of the work took place in the building that houses the Department of Justice's national computer operations, which is a mission-critical operation that calls for an extremely high degree of reliability from the cooling equipment. The work in this building included consolidating two chiller plants into one, computer room cooling modifications, a lighting retrofit, and installation of an energy management system. The \$2.4 million project saves more than 16.7 billion Btu and \$245,000 annually.

## Energy Efficiency/Energy Management Awards to Small Groups

Larry Albright  
Raul Cantu  
Dave Macek

Jeff Allen  
Larry Davis  
Tim Vincent

**United States Marine Corps  
Marine Corps Base, Camp Pendleton  
Facilities Maintenance Department  
Camp Pendleton, California**



*Dave Macek, Jeff Allen*

During FY 2002, under direction from the Energy Manager, the Facilities Maintenance Department (FMD) at Marine Corps Base (MCB) Camp Pendleton implemented several energy conservation projects and expanded the use of its Resource Efficiency Management (REM) Program. These efforts resulted in approximately two million dollars in savings. One project implemented by MCB Camp Pendleton included using in-house funds to replace more than 20 large steam boilers with high efficiency hot water boilers and domestic hot water systems. The replacement allowed the boilers to be shut off during the summer months while meeting all requirements for domestic hot water. The new boilers are 35 percent more efficient, require less maintenance, and have less harmful emissions than the old steam boilers. MCB Camp Pendleton was also able to generate significant energy and cost savings through its REM Program, where a full-time, on-site Resource Efficiency Manager supported the Energy Manager's efforts to reduce energy costs and consumption and meet the Base's mandated energy conservation goals. The REM Program focused on behavior, operation and maintenance, and efficiency upgrades to reduce energy use, help the environment, and save money. By analyzing energy usage, identifying and implementing opportunities for energy and emission reductions, conducted training and awareness, and obtaining rebates and incentives from the local utility. Through these efforts, FMD has conserved energy, reduced labor costs, reduced air emissions, and improved overall quality of life at MCB Camp Pendleton.

## Energy Efficiency/Energy Management Awards to Individuals

**Morgan Benson**

**Department of the Army  
Dugway Proving Ground, Utah**

Since 2000, Morgan Benson has developed a successful energy conservation program at Dugway Proving Ground. As energy program coordinator, Mr. Benson worked closely with the building energy monitors to develop viable projects for U.S. Department of Defense funding.

He reviewed all installation suggestions, validated project scopes, calculated savings-to-investment ratios and simple payback periods, and prioritized and submitted projects. Mr. Benson also successfully awarded an energy savings performance contract. His energy conservation program has decreased energy consumption despite a one-third increase in population and a 400 percent increase in mission testing at Dugway. Mr. Benson became a Certified Energy Manager, and used his knowledge to involve personnel in the energy conservation program. Additionally, he has instilled an energy conservation ethic in the community through his outreach efforts during Energy Conservation Week. As a direct result of Mr. Benson's efforts, Dugway Proving Ground has achieved savings of more than 28 billion Btu and more than \$114,000 during FY 2002.



*Morgan Benson*



*George Lopez*

## **Energy Efficiency/Energy Management Awards to Individuals**

**George Lopez**

**United States Air Force  
Andrews Air Force Base, Maryland**

George Lopez single-handedly manages the energy program for Andrews Air Force Base. With a \$14.7 million energy budget, he has averaged a 33 percent energy reduction during the past five years. Last year alone, Mr. Lopez orchestrated a program that produced 36 percent reduction in energy usage based on the 1985 baseline. This achievement is particularly noteworthy because he has not had the benefit of a large energy savings performance contract. All of the savings generated at Andrews Air Force

Base were derived solely from Mr. Lopez's establishment of programs and small projects. He has changed the Base mindset, making energy conservation the norm for maintenance, retrofit, or new construction. His emphasis on "do it yourself relighting" and the Energy Management Control System continues to reap big benefits. Mr. Lopez also was instrumental in awarding the Base's first utility energy services contract (UESC) for \$300,000, an effort that has become the model of future work. The next phase of the UESC work holds promise for an additional \$600,000 per year of savings. Mr. Lopez's endeavors resulted in savings of \$340,000 and more than 30 billion Btu.



*Bruce Collison, Reese Voskuilen*

## **Innovative/New Technology Award to an Organization**

**Department of the Army  
U.S. Army Corps of Engineers -  
Walla Walla District**

**Walla Walla, Washington**

The U.S. Army Corps of Engineers, Walla Walla District, collaborated with public and private partners to develop an innovative passage system to improve fish migration in the lower Snake River in southeastern Washington State. The unique removable spillway weir—the first of its kind ever built—improves downstream fish migration while keeping the Lower Granite Dam operational. Its hinged construction allows the structure to be rotated out of the spillway to the bottom of the

reservoir during flood events. The surface flow concept of the weir attracts and passes more fish using less water than the original conventional spillway configuration. Reduced spillway flow significantly improves river water quality, and the water that is conserved can be utilized at the powerhouse, resulting in increased hydropower electricity production. When fully implemented, the new technology is expected to result in cost savings of \$1.1 million annually.

## Innovative/New Technology Award to an Individual

**David Murphy**

**United States Postal Service  
Dallas, Texas**

David Murphy has been a long-time pioneer in energy management for the U.S. Postal Service. His service of excellence continued during FY 2002 as he established the first electronic utility invoicing and payment system in the Postal Service. Working with utility companies, Mr. Murphy spearheaded development of the electronic data interchange system to coordinate the collection of utility data from Postal Service facilities and maintain accurate energy consumption information. The system is projected to save \$341,000 per year by cutting the costs of processing invoices. Energy data can now be captured, allowing for improved energy consumption analysis. This pilot effort is only the beginning of Mr. Murphy's continuing work on deployment of the system for facilities in other areas. The electronic data interchange system is now considered an important long-term cost-containment strategy for the Postal Service, and there are plans to transfer all utility payments to this system. Because of Mr. Murphy's tireless efforts, the Postal Service is achieving significant cost savings through better energy data management. The project has already resulted in FY 2002 savings of \$38,000.



*David Murphy*

## Effective Program Implementation and Management Award to an Organization

**U.S. Department of Health  
and Human Services**

**Jefferson Laboratories. Jefferson, Arkansas**

The Food and Drug Administration's Jefferson Laboratories in Jefferson, Arkansas, has surpassed the energy reduction mandates of Executive Order 13123 through an energy program centered around a utility energy services contract (UESC). Eight task orders have now been completed, including the installation of a large electrical capacitor bank to correct the facility's power factor, the design and construction of a new cooling tower with variable frequency drive fans and motors, establishment of a supply-side management program for natural gas procurement, and implementation of an extensive lighting retrofit project. Implementing the UESC with the local utility has helped institutionalize energy efficiency activities and policies at the Lab. The Division of Facilities Engineering has addressed energy and water efficiency issues in the campus master plan, and presents project ideas to top-level management. This level of exposure to the Division's efficiency efforts motivated the team to look more closely at how the facility was managed. In a four-year period, energy consumption has been reduced by 10 percent and greenhouse gas emissions by 12 percent. These results are a tribute to the value of alternative financing to federal energy and water efficiency efforts.



*Theodore Kozak, Bruce Rice*



*Ray Levinson*

## **Effective Program Implementation and Management Award to an Individual**

**Ray Levinson**

**United States Postal Service  
Pacific Area**

The Pacific Area of the U.S. Postal Service, under the leadership of Ray Levinson, has established one of the most comprehensive energy management programs in the federal sector. Mr. Levinson has created a set of policies, procedures, and tools that have enabled his region to move toward an advanced state of economically and environmentally efficient

use of energy, consistent with federal energy goals and objectives. Mr. Levinson structured his energy efficiency activities around three program areas: establishing an effective administrative structure; providing useful tools including energy data collection and reporting and contractual vehicles; and implementing specific energy management related projects. For example, Mr. Levinson was responsible for the acquisition by the Postal Service of the largest building-integrated photovoltaic system among all federal agencies – a 127 kilowatt system installed on the roof of the Marina Processing and Distribution Center in Los Angeles that was subsequently designated a Federal Energy Saver Showcase Facility. As a result of his activities, the Postal Service is poised to save millions of dollars in energy costs, significantly reduce the consumption of energy, and mitigate the impact of Postal Service operations on the environment.



*James Paton*

## **Exceptional Service Awards to Individuals**

**James Paton**

**Department of the Army  
Installation Management Agency,  
Europe Region**

James Paton is recognized for his leadership and vision in his position as Energy Manager of the Installation Management Agency, Europe Region, and for the personal contributions he has made to the Army's Energy Program. During the period of FY 1999 to FY 2002, Mr. Paton's efforts saved 80 billion Btu with a utility cost avoidance to the American tax

payer of nearly \$8 million. Mr. Paton was directly responsible for the awarding of the first Army energy savings performance contract and first task order for facilities in Europe. He also has been involved in the awarding of four more task orders, applying his energy project experience to ensure the use of valid savings measurement and verification procedures. Mr. Paton's energy awareness seminars, energy savings performance contracts, and energy manager training programs have been so successful that several of the other Army IMA Regions are beginning to adopt his program.



## Exceptional Service Awards to Individuals

### David Powers

#### U.S. Department of Transportation Renton, Washington

David Powers is recognized for his strong leadership and outstanding achievements in directing the Northwest Mountain Region's Energy Compliance Program for the Federal Aviation Administration. Mr. Powers sponsored and funded in-house projects to retrofit efficient lighting and to upgrade HVAC systems to super high efficiency units. Mr. Powers supported the region's first FAA delivery order on an energy savings performance contract (ESPC) in Auburn, Washington, and has since been the motivation behind an ESPC delivery order for additional FAA facilities in the Salt Lake City and Denver areas. Mr. Powers successfully implemented the Region's first cost beneficial landscape project in Longmont, Colorado, and a second long term xeriscape project in Salt Lake City. He also is coordinating efforts between the FAA, the U.S. Department of Energy, and Lawrence Berkeley National Laboratory to study the feasibility of fiber optics and very efficient light emitting diode lighting for runway and navigational lighting systems. Finally, to ensure that the various projects are not perceived as novelties, he developed and has begun implementing a regional training program for energy and water managers of FAA facilities, as well as an energy awareness campaign for the region. Overall, Mr. Powers helped to save more than \$340,000 in energy costs in FAA's Northwest Mountain Region.



*David Powers*

### Louis R. Harris, Jr. Award

#### Ed Anderson

#### Florida Power and Light Company West Melbourne, Florida

As Manager of Business Development for Federal Accounts with Florida Power and Light (FPL), Ed Anderson has worked closely with various federal customers to develop an impressive legacy of energy projects. His relationship with the National Aeronautics and Space Administration's Kennedy Space Center (KSC) has been especially fruitful. KSC and FPL established a basic ordering agreement for utility energy service contracting services and have completed two significant delivery orders to date. FPL provided turnkey services for these projects, including feasibility studies, design, construction, commissioning, and financing. Through his leadership, enthusiasm, and customer focus, Mr. Anderson continues to push the envelope of federal energy management. He has frequently obtained FPL funding to investigate the energy conservation potential of new technologies for KSC including thermal energy storage and wind energy. Mr. Anderson is an active member of the Federal Utility Partnership Working Group, is an integral member of the KSC Energy Working Group, and has actively supported many energy awareness events for the Space Center work force and the local community.



*Ed Anderson*

## Louis R. Harris, Jr. Award

**Linda Collins**

**U.S. General Services Administration  
Energy Center of Expertise  
Washington, DC**



*Linda Collins*

During her tenure as a public utilities specialist and contracting officer at GSA, Linda Collins has provided meritorious support to the federal government through the establishment of contracting vehicles and by providing assistance to federal agencies to help achieve the goals and objectives set forth by the Federal Energy Management Program. Ms. Collins has helped agencies acquire energy management services that reduced consumption of energy at federal facilities while improving the efficiency

and quality of operations. Her efforts have helped to broaden and strengthen the partnership between the federal government and regulated public utility companies. Ms. Collins teaches the Utility Energy Services Workshop, which offers training to federal government and utility company employees on how to implement a utility energy service contract. She also provides guidance to agency contracting officers on how to procure utility services. Ms. Collins shares her knowledge with industry on government contracting and how to do business with the federal government, thus fostering a collaborative partnership between the federal government and regulated utility companies and enabling both parties to successfully address mutually beneficial opportunities and critical energy issues. Additionally, Ms. Collins lends her expertise to the Federal Utility Partnership Working Group, actively participating as a member of the Steering Committee.



*Shirley Harris with Linda Collins,  
Mark Ewing, Dave Guebert and  
Ann Everett*



*Shirley Harris with Ed Anderson and  
Tracie Bagans*

## ENERGY STAR® Building Award for Superior Performance

ENERGY STAR® is a symbol of energy efficiency established by the U.S. Environmental Protection Agency and DOE. Buildings that are among the top 25 percent nationwide in terms of energy performance (earning a benchmarking score of 75 or greater) and maintain an indoor environment that conforms to industry standards can qualify to receive the ENERGY STAR® label for buildings. Three buildings are being recognized this year as outstanding examples of energy efficiency in the federal sector.

### The Centre Phase 5 Building Farmers Branch, Texas

#### U.S. General Services Administration

GSA Region 7 awarded \$1.25 million in energy projects in FY 2002, earning the Centre Phase 5 Building a score of 98. Improvements included retrofits of fluorescent lighting with specular reflectors, T-8 lamps, and electronic ballasts; lighting replacements and conversions; installation of occupancy sensors, direct digital controls for variable air volume boxes, energy monitoring and control systems, and variable speed drives; and chiller and chiller plant upgrades. These projects are generating savings of almost 8,000 MBtu and more than \$180,000 annually.



*Mark Trimarchi*

### VA Puget Sound Health Care – Seattle Division

#### Seattle, Washington

#### U.S. Department of Veterans Affairs

With a score of 96, the VA Puget Sound Health Care System is the largest and most comprehensive VA facility in the region. The Seattle Division has been active in energy projects for many years, achieving its goals incrementally while maintaining the primary goal of quality patient care. Energy efficiency upgrades have included the replacement of exit sign lamps with LEDs, electronic ballast and lamp replacements, and installation of variable frequency drives and high efficiency motors on HVAC equipment. The project costs have totaled \$2.5 million dollars, saved approximately 14,000 Mbtu, and produced annual cost savings of \$225,000. The VA Puget Sound Health care System is an outstanding example of an energy team in action – implementing projects, reducing government costs, and maintaining quality service in their core mission.



*Raj Garg*



*Stuart Rice, Richard Ames, Raj Garg, James Dudley, Bill Lewis*

## **ENERGY STAR® Building Award for Superior Performance**

### **Hunter Holmes McGuire Veterans Affairs Medical Center**

#### **Richmond, Virginia**

#### **U.S. Department of Veterans Affairs**

The McGuire VA Medical Center has participated in a Veterans Affairs energy monitoring program for the past 20 years. The 2,000,000 square foot building, which earned an Energy Star score of 95, underwent upgrades including replacement of lighting with T-8 lamps, replacement of a chiller with a high efficiency unit, replacement of steam traps with improved units, and replacement of boiler controls with energy-efficient units. These projects have resulted in significant improvements in the facility's energy savings.



*Jim Kurth, Tom Roster, Susan McMahon, Kurt Otting*

## **Showcase Facility Award**

### **Herbert H. Bateman Educational and Administrative Center**

#### **U.S. Department of the Interior, U.S. Fish and Wildlife Service Chincoteague National Wildlife Refuge, Virginia**

The construction of the Center will eliminate nearly \$800,000 in backlog maintenance needs by replacing five inadequate buildings with the new facility. Much of the currently occupied land will revert to wildlife uses, and xeriscaping and onsite wastewater recycling will lead to reduced site disturbance. The project utilized daylighting and energy-efficient lighting as well as geothermal heat pumps and rapidly renewable building materials.

## Director's Award

### Lt Gen Richard Kelly

#### U.S. Marine Corps

Lieutenant General Richard Kelly is the Deputy Commandant for Installations and Logistics at the U.S. Marine Corps Headquarters. He is responsible for the leadership, management, integration, and modernization of worldwide Marine Corps logistics, engineering, services, and installations.

Under General Kelly's leadership, the Marine Corps has achieved outstanding energy efficiency goals, particularly in the area of mobility. Last year, the Marine Corps met 182 percent of its alternative fuel vehicle acquisitions requirements, purchasing 512 such vehicles. In addition, the Marine Corps continues to concentrate its compressed natural gas (CNG) vehicles where CNG infrastructure is already established. Neighborhood Electric Vehicles (NEV) have been successfully used at several locations for light hauling and administrative purposes, and installations are finding unique ways to use NEVs and reduce the number of gasoline vehicles. In 2002, five California installations received 115 various NEV models.

Through the aggressive purchase and use of alternative fuel vehicles, the Marine Corps has exceeded EPAct requirements by 82 percent, is helping reduce harmful emissions, and is spreading the word about the benefits of non-traditional transportation methods. The Marine Corps estimates that it has reduced petroleum consumption by more than 24 percent compared to the FY 1999 baseline, exceeding the Executive Order 13149 20 percent reduction goal for FY 2005 three years ahead of schedule.



*Lt. General Richard Kelly*

# FEDERAL ENERGY SAVER SHOWCASE FACILITIES

In 2003, 20 federal facilities representing 15 states and two foreign countries received Federal Energy Saver Showcase designations. Department of Defense facilities – represented by the Navy, Army, Air Force, and Marines – received 12 of the 20 awards. Their outstanding efforts demonstrate in particular that the country is making great strides in implementing renewable energy solutions. Other agencies receiving awards include the Department of Health and Human Services, the Department of Agriculture, the Department of the Interior, the Department of Commerce, and the General Services Administration.

Since 1995, FEMP has recognized more than 100 facilities across the country as Federal Energy Saver Showcases. Located throughout the nation, this year's showcase facilities highlight photovoltaics, wind power, fuel cells, ESPCs, recycled building materials, and many energy technologies and best management practices.

Each Showcase facility, nominated by its respective agency, features energy efficiency, renewable energy, or water conserving technologies designed to save natural resources and reduce operating costs for the American taxpayer.

## Department of Agriculture

### U.S. Arid Land Agriculture Research Station

#### Maricopa, Arizona

This building incorporates a variety of energy saving features, including daylighting, glazing and thermal break frames, occupancy sensors, and automatic daylight controls. It also utilizes DDC controllers, variable frequency drives, and water-efficient plumbing fixtures. Rainwater collection and a wetland sewage treatment system complete the outside of this energy-efficient building.



## Department of Commerce—NOAA

### Atlantic Oceanographic and Meteorological Laboratory

#### Miami, Florida

This project included upgrading the building lighting system, replacing HVAC controls, and installing a thermal energy storage system to shift some of the HVAC load to off-peak hours. It resulted in reducing demand by almost 40 percent and made possible badly needed improvements to the building infrastructure.



## Department of Commerce—NOAA

### Caribou Weather Forecast Office

#### Caribou, Maine

A prototype for future weather forecast offices and a potential Silver-rated LEED building, this office incorporates recycled building materials. Use of these materials diverted 75 percent of the total project waste from landfills. The building also uses daylighting and a geothermal heating and cooling system.





## **Department of Defense —Air Force**

### **Dyess Air Force Base**

#### **Entire Base Facility**

#### **Dyess, Texas**

This energy savings performance contracting project diverted effluent water onto the base for irrigation, saving 2 percent of Abilene's annual water usage, an amount equivalent to more than 160 million gallons of potable water per year. The facility also committed to a purchase of 100 percent renewable energy (from wind energy sources), the equivalent of 78 GWh of energy and the largest single purchase of renewable power ever made in the United States.



## **Department of Defense—Air Force**

### **Fairchild Air Force Base**

#### **Entire Base Facility**

#### **Fairchild, Washington**

Utility energy service contract projects on this base included the installation of light pipe technology, infrared radiant heat in hangars, and energy-efficient lighting. A central steam plant was replaced with boilers in 78 buildings through an energy savings performance contract, which boosted energy reductions from 15.6 percent to 33.4 percent. Also notable is the base's purchase of 7,800 MW of electricity from wind and 3,500 MW from other sources of green power. The base's goal is to have 100 percent of its electricity come from wind or green power by FY 2004.



## **Department of Defense—Air Force**

### **Grand Forks Air Force Base**

#### **Entire Base Facility**

#### **Grand Forks, North Dakota**

This energy savings performance contracting project included the installation of distributed high-efficiency boilers, high-efficiency lighting, infrared radiant heaters, and hot water heaters, as well as the construction of a synthetic natural gas (SNG) plant on base. The natural gas savings from the SNG provided a 29 percent reduction in natural gas usage from the previous year.



## Department of Defense—Air Force

### Laughlin Air Force Base

**Buildings 241, 244, 246, 253, 255, 256**

#### Laughlin, Texas

The central hot/chilled water plant on this base received numerous modifications, including the installation of a direct digital facility automation system and a thermal storage system. These projects, done through an energy savings performance contract (ESPC), also included lighting retrofits for three buildings (more are planned). The savings from all the retrofits and modifications are projected to be more than \$1.9 million over the 20-year life of the ESPC contract.



## Department of Defense—Air Force

### McConnell Air Force Base

#### Entire Base Facility

#### McConnell, Kansas

Efficient gas-fired pulse combustion boilers replaced two high-pressure natural-gas-fired steam boilers at the Base. This replacement project eliminated the need for a \$290,000 per year service contract. The project also included replacing existing conventional air conditioning chillers with a rotary chiller unit, as well as replacing short-life inefficient boilers with an efficient, long life expectancy domestic hot water boiler and a scotch marine boiler. These measures, combined with other projects, produce an estimated energy cost savings of \$65,000 annually.



## Department of Defense—Air Force

### Travis Air Force Base

#### Entire Base Facility

#### Travis, California

Three steam boilers were replaced with six compact pulse hydronic boilers on the Base. The project also included lighting retrofits for 51 buildings. Magnetic ballasts and T-12 fluorescent tubes replaced electronic ballasts and T-8 tubes. Energy savings are projected to be 53 percent from the lighting retrofits and 72 percent from the boiler replacements (over previous energy use).





**Department of Defense—Army**

**Coleman Barracks, Building #57**

**Mannheim, Germany**

This project capitalized on the need to repair a damaged roof by simultaneously installing photovoltaic panels and repairing the roof. The results were saving manpower and money, and ultimately saving energy and reducing emissions.



**Department of Defense—Army**

**Fort Carson Green Training Building**

**Fort Carson, Colorado**

This 2,800 square foot sustainable training facility incorporates natural daylighting and high-efficiency windows to reduce energy use for heating and cooling and a natural cooling cupola that eliminates the need for air conditioning. The building was constructed with recycled content materials and has an exterior photovoltaic (PV) security light, PV walkway lights, low-flow and metered faucets, and xeriscaping.



**Department of Defense—Army**

**Watervliet Arsenal**

**Buildings 19, 110, and 115**

**Watervliet Arsenal, New York**

Ten proton exchange membrane fuel cells were installed at three sites within the arsenal. This cutting-edge technology is expected to save the site 37,488 kWh per year.

## Department of Defense—Marine Corps

### Marine Corps Air Station Beaufort

#### Entire Base Facility

#### Beaufort, South Carolina

The installation at this facility of an energy management and control system is saving more than 34,000 MBTU, or 9,961,910 kWh, annually. The system controls heating, cooling, and lighting as well as managing peak loads. This project started a chain reaction; Air Force and Navy bases are working to implement the same systems.



## Department of Defense—Marine Corps

### Twentynine Palms Marine Corps Base,

#### Building 1579

#### Twentynine Palms, California

This base installed the largest co-generation plant in the United States in an effort to combat the California energy crisis. The 7 MW combined heat and power plant can provide uninterrupted power for critical base loads in the event of any utility interruption. The plant can also isolate critical loads, even when power from the utility is available. The project was financed through an energy savings performance contract and will reduce electricity purchases by nearly two-thirds, saving \$5.8 million in annual energy costs.



## Department of Defense—Navy

### Naval Surface Warfare Center

#### Dahlgren Division

#### Entire Base Facility

#### Dahlgren, Virginia

A single direct digital control system was installed at this site and now controls 80 percent of the facility square footage. This system can shut down HVAC systems basewide in seconds and has saved nearly \$7 million since its inception in FY 1991.





**Department of Health and Human Services—  
Food and Drug Administration**

**Jefferson Laboratories**

**Washington, DC**

Variable frequency drive and pumping controllers were installed in this lab building, as well as variable air volume fume hoods, daylighting, and low flow plumbing fixtures. The building now boasts a 39 percent reduction in energy consumption.



**Department of Interior—  
Fish and Wildlife Service**

**Herbert H. Bateman Educational and  
Administrative Center**

**Chincoteague National  
Wildlife Refuge, Virginia**

The construction of the Center will eliminate nearly \$800,000 in backlog maintenance needs by replacing five inadequate buildings with the new facility. Much of the currently occupied land will revert to wildlife uses, and xeriscaping and onsite wastewater recycling will lead to reduced site disturbance. The project utilized daylighting and energy-efficient lighting as well as geothermal heat pumps and rapidly renewable building materials.



**Department of Interior—  
National Park Service**

**White River Facility Operations Center**

**White River, Washington**

Capitalizing on the need to replace an old garage, designers created a structure to optimize the solar potential for a photovoltaic (PV) array in the rainy Pacific Northwest. But this system is highly effective, eliminating noise and pollution previously emitted by generators, as well providing a 95 percent energy savings over the previous generation system.

## General Services Administration

### Oroville-Osoyoos Border Crossing Station

#### Oroville, Washington

This station, a collaboration between the U.S. and Canadian governments, uses a ground source heat pump (GSHP) for high efficiency heating and cooling. The GSHP is said to save 4,898,000 kWh of electricity per year. The building also has recycled steel and studs, low VOC paint, fly ash concrete, automated irrigation, and a low maintenance native landscape.



## General Services Administration and Social Security Administration

### Annex Building Main Complex

#### Baltimore, Maryland

A complete renovation of this building avoided \$25 million in new construction costs. The recycling and salvaging of materials from the original interior led to reusing 76 percent of the original materials. Daylighting and updated lighting reduced energy use by 32 percent. Installation of thermal ice storage, auto shut-offs, low-flow bathroom fixtures and the addition of indigenous shrubs and trees were among other energy-savings measures.



# SUMMARY

The President has challenged all of us in federal service to revolutionize how we approach energy efficiency and renewable energy technologies while we pursue the recommendations of the National Energy Policy. Congress has also assigned a high priority to energy conservation and renewable energy in legislation.

This national priority is high because America's prosperity and quality of life depend on an economy fueled by affordable, reliable energy. Each of us plays a vital role in ensuring that energy and water resources remain available to sustain our economy and are abundant for future generations. In order to achieve greater energy independence and security, we all must continue to increase our efforts to conserve energy and aggressively pursue renewable energy opportunities.

With limited budgets and resources, pursuing these goals can be challenging. However, many federal employees have found successful solutions using a number of innovative tools and creative projects that serve as shining examples for us to follow. The dedication of our federal energy champions demonstrates how every action we take as federal employees and individuals can cut our nation's energy bill and help ensure our national security and prosperity for years to come.

The Department of Energy is working hard to maintain and increase the pace established by this year's award winners. We will continue to provide all available resources, expertise, and assistance so the federal energy management community can continue on its well-established path of excellence.

# A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. By investing in technology breakthroughs today, our nation can look forward to a more resilient economy and secure future.

Far-reaching technology changes will be essential to America's energy future. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a portfolio of energy technologies that will:

- Conserve energy in the residential, commercial, industrial, government, and transportation sectors
- Increase and diversify energy supply, with a focus on renewable domestic sources
- Upgrade our national energy infrastructure
- Facilitate the emergence of hydrogen technologies as vital new "energy carriers."

## THE OPPORTUNITIES

### **Biomass Program**

Using domestic, plant-derived resources to meet our fuel, power, and chemical needs

### **Building Technologies Program**

Homes, schools, and businesses that use less energy, cost less to operate, and ultimately, generate as much power as they use

### **Distributed Energy & Electric Reliability Program**

A more reliable energy infrastructure and reduced need for new power plants

### **Federal Energy Management Program**

Leading by example, saving energy and taxpayer dollars in federal facilities

### **FreedomCAR & Vehicle Technologies Program**

Less dependence on foreign oil, and eventual transition to an emissions-free, petroleum-free vehicle

### **Geothermal Technologies Program**

Tapping the Earth's energy to meet our heat and power needs

### **Hydrogen, Fuel Cells & Infrastructure Technologies Program**

Paving the way toward a hydrogen economy and net-zero carbon energy future

### **Industrial Technologies Program**

Boosting the productivity and competitiveness of U.S. industry through improvements in energy and environmental performance

### **Solar Energy Technology Program**

Utilizing the sun's natural energy to generate electricity and provide water and space heating

### **Weatherization & Intergovernmental Program**

Accelerating the use of today's best energy-efficient and renewable technologies in homes, communities, and businesses

### **Wind & Hydropower Technologies Program**

Harnessing America's abundant natural resources for clean power generation



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

[www.eere.energy.gov/femp](http://www.eere.energy.gov/femp)

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U.S. Department of Energy

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and Renewable Energy**

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