

Alternative Financing Awards to Individuals

William H. Nutting

United States Marine Corps
Kaneohe Bay, Hawaii

William H. Nutting, Energy Manager at the Marine Corps Base at Kaneohe Bay, successfully financed the \$3.5 million necessary for a hot water decentralization project through an energy savings performance contract. Mr. Nutting researched various options for improving the existing steam and hot water distribution plants, which were in poor condition and needed replacement. Instead of running two large oil-fired steam plants, the project generates domestic hot water by reclaiming waste heat from air-conditioning chillers. The project scope also included the installation of two small modular boilers to provide steam for cooking and sterilization needs. The project saves 24.5 billion Btu of energy and more than \$590,000 per year. Due to its success, the plan for new bachelor enlisted quarters at Kaneohe Bay also calls for a central plant that will use waste heat to provide water heating. Mr. Nutting continues to seek economical ways to achieve further energy conservation measures at the Base, and has initiated three additional ESPC task orders at Kaneohe Bay.



William Nutting

Gary R. Testerman, Sr.

Department of the Army
Aberdeen Proving Ground, Maryland

Gary Testerman demonstrated his steadfast commitment to energy conservation at Aberdeen Proving Ground with a geothermal heat pump replacement project. With no funding available to replace failing air-to-air heat pumps in housing units, Mr. Testerman looked to alternative financing as a solution. Unfamiliar with energy saving performance contract financing, Mr. Testerman solicited other Federal agencies for assistance and support. Through his efforts, a Super ESPC was used to replace 643 aging heat pumps in housing units with new geothermal systems. To obtain additional energy savings, desuperheaters (used to lower the temperature of superheated steam) were installed on existing domestic hot water heaters. In total, these measures are expected to yield savings of \$600,000 and 29 billion Btu per year. Mr. Testerman's effort on this project is just one example of his tireless work for energy conservation. He continually ensures that his Command and community are educated about the importance of saving energy. His vision and passion are an inspiration to his colleagues and the entire Aberdeen community.



Gary Testerman, Sr.



Keith Yamanaka

Alternative Financing Awards to Individuals

Keith Yamanaka

U.S. Army Directorate of the Public Works

Department of the Army
Schofield Barracks, Hawaii

Keith Yamanaka, Energy Manager at the U.S. Army Directorate of the Public Works, was the initiator and champion of the 25th Infantry Division's utility energy services contract project (UESC) in Hawaii. Mr. Yamanaka led the project, a partnership between the U.S. Army and Hawaiian Electric Company, to design and construct a central 600-ton centrifugal chiller, cooling tower, condenser pump, chill water pump, and piping replacement. A second part of the UESC called for the installation of solar heating systems on 610 family housing units, 39 recreation cabins, and a fire station—the largest one-time installation of solar heating systems in the country. These projects saved more than \$1 million and close to 15 billion Btu during FY 2001.



*Colonel Michael Boardman,
Bill Stein, John Ruble,
Colonel John Custer*

Renewable Energy Awards to Organizations

U.S. Army Intelligence Center and Fort Huachuca

Department of the Army
Fort Huachuca, Arizona

Through a concerted effort to implement cost-effective energy conservation, water conservation, and renewable energy projects in FY 2001, the United States Army Intelligence Center and Fort Huachuca achieved a 270 percent increase in the use of renewable energy and an 8.2 percent (50 million gallon) reduction in water consumption from FY 2000. Their combined efforts saved more than \$44,000 and 4 billion Btu. Renewable project work, completed through the use of an innovative energy savings performance contract, included replacing an inverter on a grid-tied photovoltaic system and installing new mirrors and controls on a prototype solar thermal electric generator. Other projects included installing high efficiency lighting in 33 buildings, daylighting in 22 buildings, and two Solarwalls, as well as replacing the HVAC system and controls. Fort Huachuca continued water conservation projects by installing 1.5 gallon-per-minute showerheads and 130 horizontal axis washing machines. In addition, Fort Huachuca's Water Wise and Energy Smart Program provided water and energy conservation education and outreach services to the U.S. Army and civilian employees and their families.

Renewable Energy Awards to Organizations

Green Power Switch®

Tennessee Valley Authority
Nashville, Tennessee

Green Power Switch® is a renewable energy initiative that offers consumers in the Tennessee Valley a choice in the type of power they buy. The Tennessee Valley Authority and local public power companies, working in cooperation with the environmental community, developed Green Power Switch® as a way to bring green power—electricity generated by cleaner, renewable resources—to Valley consumers. Green power is sold to residential consumers in 150-kilowatt-hour blocks (about 12 percent of a typical household's monthly energy use). Each block adds \$4 to the customer's monthly power bills. Green Power Switch® is also being marketed to commercial and industrial consumers. Currently there are more than 5,000 residential customers signed up for almost 9,000 blocks of green power per month and 226 business and commercial customers signed up for more than 6,000 blocks per month. Sources of green power include energy from a wind-powered turbine, solar generation, and a landfill methane gas site. Although no source of energy is impact-free, an investment of an additional \$8 per month on a homeowner's power bill buys enough green power to equal the environmental benefits of planting an acre of trees in the Tennessee Valley.



Gary Harris

Renewable Energy Awards to Small Groups

Martin Kaehny, John Nicely, Meg Walkup

Eastern Neck National Wildlife Refuge

U.S. Fish and Wildlife Service
Department of the Interior
Rock Hall, Maryland

The staff at Eastern Neck National Wildlife Refuge provides renewable energy education opportunities and demonstration projects to visitors and the surrounding community. Among several projects, a 10-kilowatt wind turbine was installed in March 2002 at the Refuge's office near the shore of the Chesapeake Bay. Although the wind turbine will be grid-connected, it is expected to provide close to 100 percent of the building's power needs during high-wind months. It is estimated that \$1,700 in savings will result from electricity offsets, based on the 2001 average price of \$0.13 per kilowatt-hour. Another project involved the installation of two solar energy photovoltaic demonstration panels. A 120-watt solar panel powers a recirculating pump for a Refuge pond; another 80-watt panel stores solar energy in a battery to power a 32-watt parabolic floodlight that illuminates the American flag at night. The Refuge team also has purchased an alternative-fuel van that can run on 85 percent ethanol. Additionally, the Refuge has sponsored a public workshop on renewable energy that received enthusiastic response from the local community and media.



*Sue McMahon, Martin Kaehny,
Meg Walkup, Terry Willis*



Michael Okoro and Jerry Martin

the photovoltaic (PV) panels and ancillary equipment. GSA also provided a great opportunity for hands-on experience by conducting a PV system installation workshop where volunteers helped to install the system. The photovoltaic system will produce approximately 16,000 kilowatt hours per year—enough energy to power an average family home. The system also helps preserve the environment by reducing greenhouse gases such as carbon dioxide, sulfur dioxide, and nitrogen oxide.

Renewable Energy Awards to Small Groups

Chris Helmer, Jerry Martin
Michael C. Okoro

Northwest Arctic Region

General Services Administration
Wenatchee, Washington

In partnership with the Department of Energy, the General Services Administration's Northwest/Arctic Region installed and commissioned a 10-kilowatt photovoltaic system at the Federal Building and U.S. Post Office in Wenatchee, Washington. DOE provided funding for the studies and the design of the project, while GSA funded the purchase of



Vicki Hutchinson and Marcelo Silva

residences and by 15 percent at the Embassy, saving almost \$12,000 annually. With an expected life of 15 years, there is a 6 year payback of the total investment. This project has enabled the American families living in the government-operated residences in Brasilia to have their electricity supply guaranteed, despite the ongoing power crisis in Brazil, and will save the U.S. government more than \$112,000 over the 15 year time frame.

Vicki Hutchinson
Marcelo Silva

U.S. Embassy Brasilia Energy Project Group

Department of State
U.S. Embassy Brasilia, Brazil

About 95 percent of all the electricity generated in Brazil comes from hydroelectric plants. Consecutive years of rainfall shortages resulted in a mandatory water reduction for all consumers. To help achieve this reduction and avoid government fines, the State Department's American Embassy Brasilia installed solar water heaters at all government-owned residences and the Embassy building. The solar project reduced energy consumption by 28 percent for the

Renewable Energy Award to an Individual

Wayne Shigley

Idaho National Engineering and
Environmental Laboratory

Department of Energy
Idaho Falls, Idaho

In the late 1990s, the Idaho National Engineering and Environmental Laboratory (INEEL) began plans to replace an aging warehouse on the INEEL site with a new, modern facility in Idaho Falls. Wayne Shigley, Infrastructure Program Manager for the Department of Energy Idaho Operations Office,

saw an opportunity to install a transpired solar collector in support of the Million Solar Roofs Initiative. Mr. Shigley worked tirelessly to secure funding for the initial cost, based on the potential for life cycle cost savings and demonstration value. He successfully convinced the project team to design a transpired solar collector to passively pre-heat the fresh air supply. In addition, Mr. Shigley worked with the INEEL energy management office to add an instrumentation package to track the performance of the system over time. The building was completed in May 2001, and the instrumentation package was installed in August 2001. The total energy cost savings is \$12,500 and 945 million Btu per year.



Wayne Shigley

Energy Efficiency/Energy Management Awards to Organizations

Aberdeen Proving Ground

Department of the Army
Aberdeen Proving Ground, Maryland

Strong Command support and community involvement, coupled with sound technical initiatives, allowed Aberdeen Proving Ground to obtain a significant energy reduction in the face of rapid facilities growth. Through DOE's national geothermal heat pump Super ESPC, Aberdeen awarded a delivery order of \$5.7 million to replace 643 existing air-to-air heat pumps with geothermal heat pumps in Aberdeen's Bayside Village and Patriot Village military family housing facilities. Aberdeen Proving Ground has implemented nine energy conservation measures under the delivery order that include lighting and insulation upgrades and centrifugal chillers retrofit. Annual savings resulting from the delivery order are \$1.74 million and more than 173 billion Btu.



Colonel Mardi Mark



Bernadette Rose and Charles Howell

machines, installing compact fluorescent light bulbs in family housing units, providing for energy conservation as part of the Command Inspection program, developing a team to oversee the efficient use of existing HVAC equipment, and providing on-going energy awareness training for troop personnel. These measures achieved savings of \$587,000 and almost 80 billion Btu in FY 2001.

Energy Efficiency/Energy Management Awards to Organizations

I CORPS & Fort Lewis

Department of the Army
Fort Lewis, Washington

In response to West Coast electricity reliability issues, Fort Lewis implemented extraordinary measures to reduce overall electric demand—both unilaterally and in partnership with DOE, the Army/Air Force Exchange Service, and the local electric utility, Tacoma Power. The Fort was able to implement strategic energy conservation and demand reduction measures quickly with the support of Command level interest. Energy reduction strategies included installing VendingMisers® on refrigerated vending

Naval Support Activity
Portsmouth Naval Shipyard

Department of the Navy
Kittery, Maine



Captain William Duffey and Sharon Parshley

saved money through smart management of natural gas and fuel oil switching strategies, as well as through the use of a steam turbine. Portsmouth will attain even greater savings in years to come through the implementation of additional energy and cost saving projects already underway.

The Naval Support Activity Portsmouth Naval Shipyard energy team manages more than 156 buildings that provide residence and workspace for about 400 people. During FY 2001, they saved almost 217,000 million Btu of energy, 25 million gallons of water, and \$3.8 million through the use of technology and smart energy management. These savings are directly attributable to conservation investments such as power plant and distribution improvements, upgraded mechanical lines, central hot water distribution upgrades, building renovations, lighting controls, and window insulation. Energy managers also

Energy Efficiency/Energy Management Awards to Organizations

Presidio Trust Summer Initiative

Presidio Trust

San Francisco, California

As a resource protection organization, the Presidio Trust has always sought ways to minimize environmental impacts and conserve water and energy. However, its designation as a National Historic Landmark, which requires the Presidio to be managed in compliance with historic guidelines, is sometimes at odds with conservation goals. Despite this hurdle, the organization found a creative financing solution to help them save energy. In July 2000, the California Public Utilities Commission offered financing through a "Summer Initiative," the goal of which was to achieve significant demand and energy reductions by summer 2001. Identifying opportunities to save hundreds of thousands of kilowatt hours each year, the Presidio Trust formulated a plan to retrofit both residential and non-residential buildings with energy-efficient lighting, controls, and energy management systems under the Initiative. They also implemented an extensive outreach campaign. These efforts will save the organization more than 1 million kilowatt-hours and \$165,000 annually.



Jim Kelly

Energy Efficiency/Energy Management Awards to Small Groups

Marc Berman

Lori Freeland

Mike J. Moran, Jr.

Jeff McCullough

Curt Nichols

PNNL Electricity Reduction Contest

Department of Energy

Richland, Washington

DOE's Pacific Northwest National Laboratory has made conservation and energy efficiency key elements of its Facility Energy Management Plan, which challenges staff to reduce electricity use by 10 percent from the previous year. To provide an incentive, this group devised a contest and gave the staff tips and guidance on how to accomplish the reductions in their buildings. Over a three-month period, the group compared metered electricity use in several crucial office buildings with figures from the previous year. Results exceeded expectations, and two of the buildings reduced electricity consumption by 37.8 percent during the contest period. Savings amounted to \$16,400 and more than 1.4 billion Btu. Staff feedback indicated that the program was popular as well as successful, and will have a lasting impact on workers' habits.



*Jeff McCullough, Curt Nichols,
Lori Freeland, Mike Moran, Jr.*



*Paul Lindemer, Bob Ackley,
Dieter Haertel*

Energy Efficiency/Energy Management Awards to Small Groups

Bob Ackley
Dieter Haertel
Paul Lindemer

415th Base Support Battalion

Department of the Army
Kaiserslautern, Germany

insulation in five large maintenance and storage warehouses, renovations of several exterior buildings, and an energy savings performance contract. These projects alone have realized savings of almost 72 billion Btu and reduced energy consumption by 9 percent from FY 2000 levels. They have also laid the cornerstone for future improvements in the efficiency of the Army's utility systems, which are expected to yield long-term savings of approximately \$12 million.

Using their expert knowledge, experience, and innovation, this small group at the 415th Base Support Battalion assisted in the development and execution of numerous energy projects in FY 2001. These included modernization of heating systems in three large maintenance facilities, installation and replacement of



*Jerry Kerns, Norman Tancrator,
Chung Kim*

David A. McPhee
Mari French
Jerry Kerns
Norman Tancrator
Chung S. Kim P.E.

452nd Support Group

United States Air Force
March Air Reserve Base, California

fixtures. This retrofit has saved the Base approximately \$240,000 per year. As a result of the team's involvement with a demand side management project that introduced applications for available rebate programs, March ARB now enjoys a utility reimbursement program that realizes considerable savings in Base operational and maintenance costs. Gas leak repairs, water conservation efforts, and an energy management control system upgrade have further added to March ARB's success.

The 452nd Air Mobility Wing at March Air Reserve Base is an established leader in energy conservation due to the hard work and dedication of its energy team. During FY 2001 the team negotiated with a local utility to perform free energy audits of 37 facilities, which led to the retrofit of thousands of outdated fluorescent and incandescent lighting

Energy Efficiency/Energy Management Awards to Small Groups

Roscoe D. Johnson, Leto B. Leonen
Howard K. Ashworth, David B. Swartz
Abraham F. Cicchetti

Merritt Island Tracking Station

National Aeronautics and
Space Administration
Kennedy Space Center, Florida

With a restricted agency budget, this group sought ways to reduce costs without diminishing the performance of the Merritt Island Tracking Station, which is crucial for space shuttle launch and landing support. They demonstrated that they could make low cost/no cost energy reductions throughout the station without affecting daily operations. Among the team's methods were: replacement of 5-ton air conditioners with 3-ton units; rescheduling generator run time; replacing five exhaust fans with three energy-efficient fans; installing pull string switches for individual control of overhead lights; training personnel to turn on lights only as needed; and reducing cooling and heating levels in unoccupied buildings without equipment cooling requirements. Through these initiatives, the group succeeded in reducing costs during FY 2001 by almost \$100,000 and 14 billion Btu.



*Abraham Cicchetti, Roscoe Johnson,
Leto Leonen, David Swartz*

Ernest L. Fossum
Richard J. Horsley
Marshall G. Knight
Mike Nitzel

Engineering Research Office Building
ENERGY STAR® Label for Buildings

Department of Energy
Idaho Falls, Idaho

Since the construction of the Engineering Research Office Building, Idaho National Engineering and Environmental Laboratory energy management engineers have worked closely with the building's facility engineer to develop and implement projects that incorporate energy-efficient technologies into existing systems and to further enhance the performance of the original building design. Projects included installation of occupancy-sensing lighting controls, analysis of HVAC systems to optimize energy performance, and change of the janitorial shift so that the building could be fully unoccupied for a greater period of time. DOE's Departmental Energy Management Program provided funding to complete these projects. These efforts ultimately will save more than \$23,000 and more than 1 billion Btu per year. This in turn has qualified the Engineering Research Office Building for an ENERGY STAR® Label for Buildings certification, which signifies not only energy efficiency in the building, but also tenant comfort and productivity.



Ernest Fossum



Kathie Nell

Energy Efficiency/Energy Management Awards to Individuals

Kathie Nell

Idaho National Engineering and Environmental Laboratory

Department of Energy
Idaho Falls, Idaho

During FY 2001, Kathie Nell creatively reinvented employee and public awareness programs for energy and water conservation at the Idaho National Engineering and Environmental Laboratory. Ms. Nell's actions included: authoring a monthly newsletter and distributing it to all 6,000 employees; developing a traveling display for public events

featuring DOE energy and water conservation achievements and INEEL conservation programs; and organizing the design and construction of a small working model that demonstrates passive solar and photovoltaic technologies. Both the display and the solar model enjoyed a warm reception at Earth Day and other community events. Ms. Nell's efforts have resulted in increased employee appreciation of in-house conservation measures and interest from the public in DOE programs.



Jeff Seaton

Jeff Seaton

Arizona Army National Guard

Department of the Army
Phoenix, Arizona

In an organization where customer satisfaction and compliance with energy requirements are primary directives, Jeff Seaton's steadfast commitment to energy conservation stands out. Mr. Seaton led the Arizona Army National Guard to implement lighting retrofits, distributed generation projects featuring three 200-kilowatt fuel cells and 12 kilowatts of photovoltaic arrays, daylighting systems at two aviation hangars, and water saver pumps. Mr. Seaton also stayed abreast of the latest energy

technologies by attending a number of conferences. He then shared the knowledge he gained with employees through a newsletter and other outreach efforts. Mr. Seaton's endeavors resulted in savings of almost \$179,000 and more than 8 billion Btu.

Energy Efficiency/Energy Management Awards to Individuals

Daniel B. Wood

Directorate of Public Works

Department of the Army
Fort Eustis, Virginia

During FY 2001, Fort Eustis modernized its central energy plant and completed its annual peak electrical demand and fuel management programs. Daniel Wood was a driving force in planning, programming, and project development for the central energy plant modernization. Mr. Wood oversaw the upgrade of seven of its central heating plants while decentralizing six other plants. The project allowed for the elimination of tremendous distribution system losses and avoided the cost of replacing steam and condensate distribution lines. As a result of Mr. Wood's hard work, Fort Eustis reduced its normalized energy consumption and cost of natural gas/fuel oil by more than 81 billion Btu and more than \$670,000.



Daniel Wood

Innovative/New Technology Awards to Small Groups

Jimmy Hale , Carol Jones
John Murphy , Chun Park
Darwin Simmons

Atrium Lighting Retrofit Group

General Services Administration
Atlanta, Georgia

The atrium at the Peachtree Summit Building serves as the entrance to the General Service Administration's 845,000 square-foot Atlanta Federal office building. To brighten the atrium, the building's Property Management Center undertook the project of retrofitting the entire ceiling lighting system. They conducted an in-depth technical analysis and considered all the viable advanced lighting options. The final selection was the Icetron electrodeless lamp. With a life of 100,000 hours, the Icetron lamp system would last more than 11 years if it were on 24 hours a day, 7 days a week. The new lighting design uses 5,854 watts of electricity compared to the 10,030 watts used by the old metal halide equipment, reducing energy use by 42 percent. Furthermore, reduced maintenance will save an additional \$6,462 during the life of the system, while the use of daylighting controls will bring about even more savings. The lighting levels in the atrium area have gone up by approximately a third, and vertical areas previously without light are now illuminated. During 2001, total savings were \$1,829 and nearly 125 million Btu.



*John Murphy, Carol Jones,
Jimmy Hale, Darwin Simmons,
Chun Park*



Mark Levi and Stephen May

Innovative/New Technology Awards to Small Groups

Mark Levi, Stephen May

David McBride, Mary Ann Piette, Dan Traill

Pacific Rim Region GEMNet Group

General Services Administration

San Francisco, California

The General Services Administration Pacific Rim Region developed the GSA Energy Maintenance Network (GEMNet) to save energy and reduce operational costs by optimizing, monitoring, benchmarking, and supporting its facilities. The network uses a common database management system to integrate maintenance management with real-time systems such as building automation systems. The database and ancillary applications are used as a technical support framework for building diagnostics, management, and operator information, and as a platform for participation in special programs such as electricity demand relief. Energy savings of approximately 5 percent are likely, primarily from preservation of efficiencies achieved through ancillary retrocommissioning and building automation system improvements. If the 5 percent energy reduction comes from use of the GEMNet infrastructure, it will lead to annual regional cost savings of around \$1.25 million and 45 billion Btu.

The General Services Administration Pacific Rim Region developed the GSA Energy Maintenance Network (GEMNet) to save energy and reduce operational costs by optimizing, monitoring, benchmarking, and supporting its facilities. The network uses a common database management system to integrate maintenance management with real-time systems such as building automation



*Mark Ewing, Linda Collins,
Brian Magden, Richard Butterworth*

Richard Butterworth, Linda L. Collins

Mark Ewing, Brian K. Magden

E-Commerce Reverse Auction Group

General Services Administration

Washington, DC

As a result of deregulation and the turbulent energy market in New York State, the GSA Energy Center of Expertise sought to mirror how industry procures and sells energy. They awarded a delivery order to Science Applications International Corporation to use the World Energy Solutions electronic Web-based reverse auction platform. Their first \$165 million Web-based energy procurement avoided duplications of effort, saved time and resources, and allowed Federal agencies and organizations to focus their attention on critical missions. The procurement spanned 6 utility service territories and involved 20 competitive electricity suppliers, 10 qualified agencies, and approximately 900 electric accounts, and resulted in the fulfillment of approximately 624 gigawatt hours of annual electricity requirements— enough power for 62,000 residential homes for one year. In certain service territories there was a 35 percent difference between the highest and lowest bids, representing tens of millions of dollars in reduced pricing for GSA and its customers. The deregulated electricity industry in New York State combined with GSA's e-commerce reverse auction will save approximately \$24 million over a three year period.

As a result of deregulation and the turbulent energy market in New York State, the GSA Energy Center of Expertise sought to mirror how industry procures and sells energy. They awarded a delivery order to Science Applications International Corporation to use the World Energy Solutions electronic Web-based reverse auction platform. Their first \$165 million Web-based energy procurement avoided duplications of effort, saved time and resources, and allowed Federal agencies and organizations to focus their attention on critical missions.

Innovative/New Technology Awards to Individuals

William B. Turner

92 Civil Engineer Squadron

United States Air Force

Fairchild Air Force Base, Washington

As Energy Manager at Fairchild Air Force Base, William Turner worked with Fairchild Civil Engineering, Bonneville Power, and building facility managers to oversee design and construction of a \$2.1 million demand side management energy savings project and initiate a \$15.2 million energy savings performance contract project. The DSM project involved installing light pipe technology and infrared radiant heating in an 11-acre building. This effort will save almost 2.5 gigawatt hours of electricity and more than 26 billion Btu of natural gas annually while dramatically improving lighting levels. The ESPC project will replace the central steam plant with distributed heating systems for 79 buildings, saving 236 billion Btu of natural gas annually.



William Turner

Effective Program Implementation and Management Awards to Organizations

Naval Station Guantanamo Bay

Department of the Navy
Guantanamo Bay, Cuba

Naval Station Guantanamo Bay maintains self-sufficient water and energy operations, producing 1 million gallons of water and more than 250 megawatt hours of electricity daily. During FY 2001 the Station began to realize enormous energy savings. Through more than \$12 million in conservation investments, largely focused on the repair and renovation of the Base's power and water production plants, the Station saved more than 300 billion Btu, reducing its energy demand from FY 2000 levels by 22 percent. These accomplishments resulted in energy budget savings of more than \$1.8 million. The Station will also move ahead with a \$9.6 million wind turbine project that will save an additional \$1.26 million per year.



Art Torley and Rick Baggett



Gary Whitford, Cecil Wood, Commander Jean Dumlao, Gary Marker, Deputy Commander William Klemm

Effective Program Implementation and Management Awards to Organizations

Norfolk Naval Shipyard

Department of the Navy
Portsmouth, Virginia

During FY 2001, the Norfolk Naval Shipyard made great strides in improving energy efficiency, employing energy saving technologies and best practices, raising energy awareness, and providing exemplary energy and water conservation leadership. The Shipyard upgraded equipment based on the energy manager's standard operating practice of reviewing designs and purchasing recommendations to put energy efficiency at the forefront of decision-making. Through the implementation of more than \$2.8 million in upgrades to office and industrial HVAC, lighting, steam infrastructure, and other industrial operations, the Shipyard energy managers saved more than \$850,000 and 61 billion Btu in annual energy use.



Lieutenant Colonel Donald Archibald, Dennis Dougherty, Darcy Immerman, Clarence Dukes

The Partnership for Energy Performance at Fort Detrick

The National Cancer Institute

Department of the Army
Frederick, Maryland

The Partnership for Energy Performance, a unique performance contracting initiative at Fort Detrick, brought together a dedicated group of employees from Allegheny Power, the National Cancer Institute, the U.S. Army Garrison, and SAIC Frederick. This team successfully managed \$25 million in facility improvements for energy reduction, with guaranteed energy savings during the contract term exceeding \$60 million. Some of the project's completed facility improvements include boiler replacement, insulation, lighting retrofits, and water conservation measures. Through this project, the team has demonstrated that diverse groups sharing a Federal facility can work together towards a common goal. This project is also unique because the stakeholders worked together to develop a mission statement and community outreach program before a single energy audit was completed.

Effective Program Implementation and Management Awards to Small Groups

Richard Brisbois
Janice K. Moyer

David C. Wynecoop Memorial Clinic Energy Management Program

Indian Health Service
U.S. Department of Health & Human Services
Wellpinit, Washington

This team at the David C. Wynecoop Memorial Clinic has diligently pursued and implemented highly successful energy management practices with limited personnel and operational resources. Their innovative approach and creative use of resources has resulted in a 68 percent reduction in energy intensity. Specific projects implemented include replacement of inefficient heat pumps, expansion of HVAC zoning to optimize operational control, installation of energy-efficient lighting and windows, and retrofit of plumbing fixtures with low-flow models. The energy savings have enabled the clinic, an energy intensive facility, to far exceed the 2010 energy reduction goal of 25 percent compared to a 1990 baseline. The conservation projects not only contribute to a cleaner environment and a more pleasing atmosphere for employees, but also save energy and valuable taxpayer dollars that can be redirected to direct patient care.



Richard Brisbois

Marcos Irizarry
Claudia Montijo-Wentz
Zoia Rose
Jones Tong
Mark Zulim

San Francisco Mint
Energy Performance Team

Department of the Treasury
San Francisco, California

In order to meet and exceed the Federally-mandated energy reduction goals set forth in Executive Order 13123, the San Francisco Mint Energy Performance Team continually strives to find new ways to conserve energy throughout the facility. In FY 2001, the team reduced energy costs and consumption at the Mint's largest coin production plant by more than 11 percent by implementing an aggressive energy program that includes a regular energy newsletter and a bulletin board containing energy saving tips. The team also prepared an energy plan including procurement procedures that require contract clauses for new equipment to be energy-efficient. During FY 2001, the program saved 4.6 billion Btu in energy consumption, reduced water consumption by almost 1.7 million gallons, reduced carbon emissions by 116 metric tons, and saved the facility more than \$100,000 in avoided costs.



Marcos Irizarry and William Kuran



*John Havens, Emory Lehman,
John Gadley*

undergo retrofits or as new buildings are designed, this team carefully studies the lighting, heating, and cooling systems to ensure they are efficiently sized. The team also has performed hands-on demonstrations of its utility tracking software and energy management systems to state agencies and other facilities management groups. The savings in avoided energy costs during FY 2001 exceeded \$1.3 million, and the avoided energy use was more than 113 billion Btu.

Effective Program Implementation and Management Awards to Small Groups

John Gadley
John Havens
Emory Lehman
Tim Walker

Washington Army National Guard
Tacoma, Washington

This team at the Washington Army National Guard has been working on a long-term program to reduce energy consumption and costs through a series of energy conservation measures. Projects include the installation of energy management systems, relighting programs, installation of more efficient boilers, and the implementation of intelligent new construction practices. As buildings



John B. Nerger

several interrelated initiatives that include awareness, energy management, training, energy engineering and project development efforts, project implementation, new contracting standards, and demonstrations of innovative technologies. Mr. Nerger's support and commitment to the Army Facilities Energy Program has been crucial in ensuring efficient energy management throughout the Army. The structure he has chosen for the execution of the energy plan allows Commanders the flexibility to create their own unique energy programs, which fosters cooperation from most Army units and results in greater overall energy and cost savings throughout the agency.

Exceptional Service Awards to Individuals

John B. Nerger
Department of the Army
Washington, DC

John Nerger's leadership and visionary thinking has contributed to the Army's secure energy future by encouraging the use of clean, renewable technologies, increasing energy efficiency in facilities, and promoting energy awareness at Army facilities and housing worldwide. Under his leadership at the Army Facilities and Housing Directorate, the Army developed a strategic energy conservation plan that achieved more than \$17 million in energy savings and reduced energy use by almost 2 trillion Btu during FY 2001. The plan has a multi-faceted approach made up of

Exceptional Service Awards to Individuals

Lieutenant Commander Wade B. Wilhelm, CEC

United States Navy
San Diego, California

Lieutenant Commander Wade Wilhelm is recognized for his strong leadership and outstanding achievements in directing the energy and utilities management programs for the Navy Region Southwest and the Navy Public Works Center, San Diego. He carried out several energy programs and projects that helped alleviate the cost and operational impacts of uncontrolled electricity prices and rolling black-outs that characterized the California energy crisis. Through innovative energy management techniques, an energy awareness and training campaign, and a series of new energy policies, Lt. Commander Wilhelm's efforts have cut Navy shore facilities' electrical demand by up to 30 percent. He also led one of the largest and most aggressively financed energy programs in the Federal government, helping to develop and award more than \$48 million in energy project investment during FY 2001. The program consists of almost \$26 million in utility energy service contracts and more than \$22 million in energy savings performance contracts.



*Lieutenant Commander
Wade Wilhelm*

Louis R. Harris, Jr. Award

Dave Guebert, PE, CEM

San Diego Gas & Electric
San Diego, California

Dave Guebert's dedication and leadership have reinforced and strengthened partnerships between the U.S. Navy and its utilities. A collaborative Federal partnership with San Diego Gas & Electric established a broad-based alliance to address not only the mutually beneficial opportunities of utility energy service contracting, but also many other critical energy issues in Southern California. Thanks to Mr. Guebert's leadership and team-building skills, Navy Region Southwest and Sempra Energy Utility Companies are continuing to meet the energy needs of the Federal government. Additionally, Mr. Guebert has played a key role in the privatization of more than 30 installations and Public Private Venture initiatives for more than 30,000 military families in government housing. Mr. Guebert has also promoted the use of new energy-efficient technologies such as fuel cells and micro-turbines and renewable energy sources such as photovoltaics and wind. His support for the use of alternate fuel vehicles has been absolutely crucial in Southern California military organizations' ability to maintain their outstanding readiness level and to deploy on short notice.



Jesse Sandoval



Edward Thibodo

Louis R. Harris, Jr. Award

Edward D. Thibodo

Department of the Navy
San Diego, California

As the lead contracting specialist for the entire Southwest Division, Mr. Thibodo has negotiated and implemented more than \$116 million in utility energy service contracts for the Navy, with more than \$18 million in energy, water, and maintenance cost savings in the last two-and-a-half years. Mr. Thibodo has been directly responsible for various energy projects including: interior and exterior lighting upgrades; thermal energy storage; steam and condensate system upgrades; refrigerant system upgrades; elimination of ozone depleting

refrigerants; ultra low flow plumbing fixture installations; compressed air system upgrades; leak repairs on the base-wide system; high efficiency compressor installation; boiler plant modifications; and weatherization of walls and ceilings. Mr. Thibodo consistently demonstrates superior leadership, technical skill, and innovative management. His team-building efforts have been a model and inspiration to the Southwest Division community, as well as the numerous contractors and utilities with whom he is involved.

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.

During FY 2001, the following building operated and maintained by the General Services Administration achieved a score of 97:

James C. Coreman Federal Building, Van Nuys, California

The superior performance of this Federal building reflects the leadership, dedication and contributions of the GSA building designers, operators, and managers who are responsible for the Federal government's real property assets.

A number of energy projects were implemented at the Coreman Federal Building during FY 2001. These projects include lighting retrofits, lighting controls, HVAC DDC controls, installation of variable frequency drives, a water conservation project inclusive of a new cooling tower, and replacement of restrooms fixtures. Additionally, the existing elevator motor generator sets are being replaced with new energy-efficient variable voltage, variable frequency solid state motor drive units. Future projects include a 121 kilowatt peak solar photovoltaic system.



FEDERAL ENERGY SAVER SHOWCASE FACILITIES

Nineteen outstanding Federal facilities received the designation of Federal Energy Saver Showcases in 2002. These facilities are expected to save the government 32 million kilowatt-hours of energy, or about \$2 million in energy costs, each year. Each facility will display a plaque notifying visitors they are entering a government building that uses energy and water wisely and saves taxpayer dollars.

Since 1995, FEMP has recognized more than 80 facilities across the country as Federal Energy Saver Showcases. Located throughout the Nation, this year's showcase facilities utilize technologies and strategies that range from low-energy building design and construction to geothermal heat pumps and distributed energy resources. Each facility, nominated by their respective agency, features energy efficiency, renewable energy, or water conserving technologies designed to save natural resources and reduce operating costs.



Department of Commerce—
National Oceanic and Atmospheric Administration

National Marine Fisheries Service
Honolulu Laboratory

Honolulu, Hawaii

The redesign of an existing research laboratory, this project makes use of low-energy building design strategies, efficient technologies, and renewable energy. The project team is striving to attain a Gold LEED™ rating for the facility through the use of natural daylighting, solar water heating, liquid desiccant dehumidification, occupancy sensors, and a new building management system.



Department of Defense—Air Force

Aircraft Hangars 450, 452, 454, and 456 at
Columbus Air Force Base

Columbus, Mississippi

Implemented through an Energy Savings Performance Contract (ESPC) covering four aircraft hangars and over 74,000 square feet, energy efficient lighting retrofits and replacement of existing hot air furnaces with energy efficient infrared (IR) heaters improve occupant comfort while reducing energy use.



Department of Defense—Air Force

DISA/Defense Enterprise Computing Center Ogden
Hill Air Force Base

Ogden, Utah

Energy efficiency improvements for this computer operations facility included the replacement of several old, inefficient chillers with newer, high-efficiency units; variable frequency drive (VFD) pumps; and a new direct digital controls (DDC) system. Additionally, a new chemical feed system allows reuse of 50 percent of the cooling water.

Department of Defense—Air Force

Military Family Housing at
Charleston Air Force Base

Charleston, South Carolina

Charleston Air Force Base replaced 885 conventional air conditioners and gas furnaces with geothermal heat pumps in their family housing units. The alternatively financed project eliminates the need for natural gas for heating, resulting in demand reductions of 42 percent and overall energy savings of 30 percent.



Department of Defense —Army

Arizona Army National Guard EcoBuilding

Phoenix, Arizona

This unique facility is a true showcase of sustainable design and an example of how the Federal sector can lead by example. The 5,200 square foot office facility makes use of natural daylighting, passive solar design strategies, recycled materials, solar-powered evaporative cooling, rainwater harvesting and collection, and 12 kilowatts of photovoltaic power.



Department of Defense—Army

Building 110 at Watervliet Arsenal

Watervliet, New York

Natural gas engine driven air compressors serving the Arsenal's industrial shop facilities were replaced with conventional electric motor driven units, saving an average of \$60,000 per year. Demonstrating the success of this unique and straightforward project, it has already been replicated at the Picatinny Arsenal.





Department of Defense—Army

Cleland Multipurpose Sports Complex

Fort Bragg, North Carolina

The ESPC project completed at this ice rink and sports complex results in energy savings exceeding 40 percent each year. High-efficiency metal halide lighting, a new desiccant dehumidification air handling unit, VFD pumps, a reflective ceiling system, and a new energy management control system (EMCS) save over one million kilowatt-hours each year.



Department of Defense—Marine Corps

Laurel Bay and Pine Grove II Housing at Marine Corps Air Station Beaufort

Beaufort, South Carolina

Through a utility energy services contract (UESC), 2500 tons of existing HVAC systems and hot water heaters were replaced with energy efficient geothermal heat pumps in 1,236 family housing units at this Marine Corps installation. The geothermal units reduce energy consumption by more than 40 percent and reduce CO2 emissions by approximately 11 tons per year.



Department of Defense—Navy

Naval Medical Center San Diego

San Diego, California

A host of energy efficiency and renewable energy technologies were financed through a utility energy services contract at this showcase facility. Energy efficient lighting, new high-efficiency HVAC systems and DDC controls, adjustable speed drives (ASDs) for fans and pumps, and solar swimming pool heating and low-flow plumbing fixtures result in significant annual energy and water savings for the Navy.

Department of Defense—Navy

PV Covered Parking at Building 652
Naval Air Station North Island

San Diego, California

As part of their facility demand reduction efforts, Naval Air Station North Island is constructing a new 750-kW photovoltaic array to provide covered, shaded parking and over 1 million kilowatt-hours of energy each year. The system, which may be the largest PV installation of its kind, is being partially financed through an ESPC.



Department of Energy—
Bechtel Hanford Headquarters

Richland Corporate Center

Richland, Washington

Building energy consumption has been reduced by almost 15 percent and water use has been reduced by 5 percent through the implementation of off-the-shelf technologies and improved system operations. Specifically, savings were achieved through the use of lighting timers, new HVAC operating parameters, sprinkler adjustments, and low flow plumbing fixtures.



Department of Energy—
Fermi National Accelerator Laboratory

Main Injector 8 GeV Beamline

Batavia, Illinois

Radical new concepts in accelerator design have completely eliminated the use of non-renewable energy at the FermiLab Main Injector. The use of permanent magnet electromagnetic displacement has dramatically reduced energy and water use, as well as maintenance requirements.





Department of Energy—
Lawrence Berkeley National Laboratory

Building 46A – Engineering Division Offices
Berkeley, California

The Laboratory has already implemented a number of energy and water efficiency strategies reducing energy consumption by 35 percent compared to 1985 and water consumption by 65 percent compared to 1988 levels. Recent installations of their Berkeley Lamp, which uses 25 percent of the power of a 150-Watt incandescent bulb without sacrificing luminous output, results in additional savings.



Department of Energy—
National Renewable Energy Laboratory

Thermal Test Facility
Golden, Colorado

This energy-efficient research facility makes use of passive solar design, high-efficiency lighting with natural daylighting, two-stage evaporative cooling, VSDs, instantaneous water heating, xeriscaping, and a whole-building EMCS. A true showcase of innovation, the facility has received several awards including an ASHRAE Technology Award, and has been featured in several publications including the *ASHRAE Journal* and *Solar Today*.



Department of Energy—
Oak Ridge National Laboratory

Buildings Technology Center
Oak Ridge, Tennessee

Already designated an ENERGY STAR® Building, this showcase facility also generates its own power. A new distributed generation system installed at the Buildings Technology Center consists of 8.5-kW of photovoltaic power, a 30-kW microturbine, and an ultra-capacitor power system that supplies almost 35 percent of the building's total electricity use.

Environmental Protection Agency and
General Services Administration

EPA New England Regional Laboratory

North Chelmsford, Massachusetts

Thanks to a collaborative effort between GSA and EPA, this showcase is a prototype for future EPA labs and a potential Gold rated LEED™ facility. The laboratory incorporates natural daylighting, highly efficient HVAC systems, a building-integrated photo-voltaic sunshade, and recycled and reused materials. It is electrified with 100 percent green power.



Department of Health and Human Services—
Indian Health Service

David C. Wynecoop Memorial Clinic

Wellpinit, Washington

New high efficiency HVAC systems, energy efficient lighting and occupancy sensors, low-e windows, additional exterior wall and ceiling insulation, and new plumbing fixtures with improved preventive maintenance practices have resulted in energy savings of 56 percent per gross square foot.



Postal Service

Marina Processing and Distribution Center

Inglewood, California

A recently installed 127-kW roof-mounted grid-connected solar photovoltaic system is coupled to an EMCS, optimizing control of the cooling system and solar energy generation. It is expected to save almost 300,000 kilowatt-hours per year and reduce the facility's peak demand by about 10 percent.



Department of Transportation—
Federal Aviation Administration

Ft. Lauderdale/Hollywood Air Traffic Control Tower

Fort Lauderdale, Florida

Although air traffic control towers tend to be high energy-consuming facilities, the FAA found opportunities for substantial annual energy savings. Extensive energy efficiency improvements included the installation of new HVAC equipment, reflective roof coating, ENERGY STAR® appliances, and highly efficient T-8 lamps and electronic ballasts.



SUMMARY

One of the great challenges facing our Nation is ensuring that cleaner, more affordable, and more reliable energy resources are available for the future. Increased energy production, efficiency, and conservation are crucial for the security and prosperity of our country. The Federal government has a responsibility to show the way, and there are many dedicated Federal workers who are leading by example. The efforts of Federal energy and facility managers are increasing energy conservation and integrating innovative and efficient technologies into existing energy systems to help achieve important goals set forth in the National Energy Policy.

In FY 2000, the Federal government not only met, but exceeded the goal of the Energy Policy Act of 1992 for a 20 percent improvement in energy efficiency. The Federal government is also on track to meet the 2005 goal of 30 percent and 2010 goal of 35 percent reduction in energy consumption in Federal buildings. In FY 2001, agencies reduced the energy intensity of their standard buildings by 23.3 percent compared to 1985, the legislatively established baseline year. The government spent \$6 billion less on energy costs across all end-use sectors in 2001 than it did in 1985.

Doing whatever it takes ... going the extra mile ... making the extra sacrifice ... these efforts reflect the deep commitment that Federal employees have to the economy, the environment, and energy security. Such efforts serve as a model for all of us to increase awareness of energy use and become less wasteful in our jobs and communities.



United States
Department of Energy

Office of Energy Efficiency
and Renewable Energy

Federal Energy
Management Program

www.eren.doe.gov/femp

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