

# FOCUS

U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy

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*“Without the team approach and trust that each organization has in the other, none of this would have been possible.”*

—Dave Guebert  
Director of Federal Accounts  
SDG&E

## Navy’s Long-Term Partnership with Utility is a Proven Success

San Diego Gas & Electric (SDG&E) and the Department of the Navy have worked together closely over the past 6 years to improve the energy efficiency of facilities within Navy Region Southwest, Southwest Division of the Naval Facilities Engineering Command, and the Navy Public Works Center, San Diego. SDG&E’s Utility Energy Service Contract (UESC) program has executed in excess of \$118 million in mechanical energy efficiency projects since 1996. Of this work, \$65 million is in progress and will result in a reduction in Federal energy bills in San Diego County by approximately \$8 million per year.

Notable projects underway include an area-wide direct digital controls (DDC) system and a host of related projects at the Naval Medical Center, San Diego. Once complete, the area-wide DDC system will be one of the largest controls project undertaken in the nation. Current delivery orders supporting the area-wide DDC concept are valued in excess of \$14 million and are projected to save the Government more than \$1.5 million annually in energy and maintenance costs. This groundbreaking work will eventually connect 17 separate Navy and Marine Corps bases through a central control system that will enable the Government to remotely control equipment and monitor energy consumption as well as implement several electricity demand limiting strategies.

At the Naval Medical Center, San Diego, where several DDC system retrofits have been ongoing for several years, new DDC controls will manage variable-air-volume boxes, air handlers, and new variable speed drives throughout the facility. This work is being accomplished by SDG&E under a strict, not-to-interfere basis with the hospital’s normal operations. Plans at the Navy Medical Center also call for a complete test and balance of the air systems and operator workstations, which will include detailed graphics showing equipment status and providing the ability to control equipment set points to reduce energy consumption. In total, more than \$15 million in controls and mechanical projects are either ongoing or complete at the Navy Medical Center, resulting in almost \$2 million in annual savings to the Government.

Dave Guebert, Director of Federal Accounts at SDG&E said, “The most important aspect of these projects is the partnership that SDG&E and the Federal Government have been able

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Beth Shearer  
FEMP Director

## Director's Update

In the January/February 2002 issue, the *FEMP Focus* spotlights energy management partnerships. Partnerships are instrumental to all of us in the Federal Government in meeting our goals. By partnering with the private sector and agencies, FEMP is helping Federal facilities to implement energy improvements, streamline contracts, and maximize purchasing power. Whether they are partnerships with the private sector, other Federal agencies, other sectors within DOE, or universities, these collaborative efforts are advancing smart energy projects at Federal facilities. I would like to thank all of our partners for collectively helping the Federal Government to leverage financial and technical resources to advance Federal energy efficiency.

— Beth Shearer, Director  
Federal Energy Management Program

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# Resource Efficiency Manager Program Still Going Strong With Energy Efficiency Gains

Developed as a response to the cutbacks in dedicated energy staff at military facilities, resource efficiency managers (REMs) are finding a niche at a growing number of Federal facilities. Federal agencies taking advantage of REM programs include the U.S. Navy, the U.S. Army, the U.S. Postal Service facilities in California and Florida, and the National Oceanic and Atmospheric Administration's headquarters in Washington, D.C.

REM programs are designed to generate their own revenue plus additional savings from utility budgets. Working in partnership with existing part- or full-time Federal facility energy staff, REMs identify and implement energy efficiency, water conservation, and renewable projects and track resource use such as natural gas, electricity, fuel oil, water/wastewater, and solid waste.

Currently, 20 REMs work with 45 Federal sites with total energy expenditures of approximately \$200 million per year. A REM program for a large Federal facility is capable of generating a typical return on investment of 300 to 400 percent.

The REM serves as a resource for:

- identifying energy efficiency procurement opportunities,
- identifying improved operations and maintenance practices,
- providing training to building managers to identify savings opportunities,
- working with utilities and state agencies to identify rebate or technical assistance programs, and
- recommending more energy-efficient technologies to be included in new construction or remodeling of facilities.

The Army's Fort Lewis in Tacoma, Washington, pioneered the REM with great success. Launched by Washington State University's (WSU's) Cooperative Energy Program with state grants from FEMP and funding through the Pacific Northwest National Laboratory (PNNL), Fort Lewis is annually saving taxpayers more than the yearly program cost of approximately \$120,000. The REM position is self-sustaining now with the Army directly funding the REM position every year. In fact, Fort Lewis' cumulative energy cost savings since 1996 (original start of the program) amounts to about \$1.9 million. Plans are underway for the Army Forces Command to implement this program at two other sites.

Navy organizations taking advantage of REM programs include Navy Region Southwest, Navy Region Northwest, Naval Facilities Engineering Command, and Navy Public Works Center, San Diego. The Navy's six REMs creatively implemented energy savings projects by pursuing funding through Federal and State grants, utility incentives, and energy service companies to supplement energy project investments.

As Scott Wolf, manager of the Total Efficiency Network at WSU's Energy Program, explained, "The REM is a full-time, dedicated energy champion who creates other champions within the organization and outside the organization among various energy partners. Relationships with partners are critical to bringing in energy investments, and giving everyone ownership in the campaign to save energy."

The approach is paying off at the Navy Region Southwest. Here, Tetra Tech EM Inc., has identified or implemented projects and initiatives valued at \$12 million since February 2000. The program has identified or generated about \$4.8 million in annual cost savings. In addition, at the Naval Base San Diego, the REM program reduced electrical demand so much that it avoided more than \$1 million in electricity demand charges.

In addition, the Commerce Department's National Oceanic and Atmospheric Administration (NOAA), which began a REM program in February 2001 through funding from PNNL made available to WSU, realized \$250,000 in savings in about 10 months and identified \$1 million in projects for its headquarters in Virginia and other NOAA installations that will result in an additional annual savings of \$250,000.

Looking back on the lessons learned from the REM initiative, thus far, Wolf said, "It is a great idea for REMs to be physically located on-site. The interactive nature of these programs is very important." He added, "It is preferable that REMs report as high up in the organization as possible. Often the decision-making chain takes too long when the REM reports several layers down in an organization." To date, REM initiatives are faring well and are helping civilian and military facilities reach higher levels of energy efficiency. A more detailed summary report of REM activities is planned for completion later in the year and will be available on FEMP's web site.

*For more information, please contact Scott Wolf of Washington State University at 888-634-2558 or [www.energy.wsu.edu/ten/](http://www.energy.wsu.edu/ten/); Bill Sandusky of PNNL at 509-375-3709 or [bill.sandusky@pnl.gov](mailto:bill.sandusky@pnl.gov); or Cheri Sayer of DOE Seattle Regional Office at 206-553-7838.*

# Wind Powering America/FEMP Partnership Update

Wind power is the fastest growing energy technology in the world today. In the United States, wind power plant installations are expanding rapidly in many parts of the country. At the end of 2001, the installed U.S. wind capacity totaled 4,300 megawatts, enough to meet the electricity needs of 975,000 households annually.

The Federal Government supports the growth of wind energy with a variety of incentives, production tax credits, and renewable energy purchase requirements. In 1999, the Wind Powering America (WPA) Initiative, challenged the Federal Government to obtain at least 5 percent of its electricity from wind by 2010 either through the direct use of wind power or through renewable power purchases.

WPA is partnering with FEMP to assist Federal agencies with renewable power purchases and on-site wind installation. WPA can provide assistance with evaluating possible wind energy projects on Federal lands. In addition, WPA has anemometers available for loan to Federal agencies interested in finding out whether their site would be suitable for on-site wind turbines. See [www.eren.doe.gov/windpoweringamerica/regional\\_activities.html](http://www.eren.doe.gov/windpoweringamerica/regional_activities.html) for information on WPA activities in your region.

Federal facilities located in states where traditional renewable power products are not available may be able to purchase renewable energy credits (REC), also known as “green tags.” In an REC transaction, the customer continues to purchase energy from its existing utility or power marketer and purchases the RECs from a different supplier. The two key benefits of RECs to Federal agencies are availability and lower cost. RECs are available anywhere in the United States, providing Federal agencies in any location the opportunity to purchase renewable power. The purchase of RECs versus receipt of actual power eliminates the need for, and thus the associated cost of, transmission and distribution. RECs can also reduce the administrative costs associated with multiple procurements for a multi-location agency.

One of the major barriers to renewable power purchases by Federal agencies is that most energy suppliers charge a premium for their renewable power products. WPA/FEMP are available to assist Federal agencies with finding funding sources to pay any associated premiums. For example, Executive Order 13123 allows for the use of energy efficiency savings to offset

renewable power premiums. WPA and FEMP are encouraging Federal energy managers to invest part of the savings resulting from energy efficiency projects in renewable power purchases. FEMP is looking for agency volunteers for a pilot project that includes a renewable power purchase in conjunction with either energy savings performance contracts or utility energy service contracts.

## Highlighted Federal Wind Projects

DOE’s National Nuclear Security Administration (NNSA) has announced its intention to prepare an environmental impact statement for a proposal to allow the Nevada Test Site Development Corporation, M&N Wind Power, Inc., and Siemens to construct, operate, and maintain a wind farm at the Nevada Test Site. M&N Wind Power, an energy development company, has proposed to develop 1,069 acres of land administered by NNSA within the Nevada Test Site. The NNSA has received this proposal to help fulfill a national need for additional electrical energy generation. The purpose of the proposed facilities would be to provide a viable renewable energy source. This proposal, if fully implemented, would consist of 545 wind turbines generating approximately 600 megawatts of electricity. Public meetings have been held, and a summary of comments has been developed.

In another project, the Air Force’s remote tracking station on Ascension Island located about 500 miles south of the equator, halfway between South America and Africa, electricity and drinking water desalination has historically been provided by burning fuel oil to operate generators and desalination units. With assistance provided from DOE, the Air Force was able to reduce the Ascension Island Station’s dependence on fuel oil demonstrating how renewable energy sources can and should play an important role in increasing America’s energy diversity. The Idaho National Engineering and Environmental Laboratory’s design assistance efforts contributed greatly to the project resulting in the installation of four 225-kilowatt wind generators and a 90-kilowatt photovoltaic system to supplement the station’s electrical power requirements. The wind generation project is saving 290,000 gallons of fuel oil, \$350,000, and 3.2 million kilowatthours of electricity annually. The project has been operational now for 4 years.

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# GSA's Gulfport Courthouse—A New Construction Super ESPC

On September 28, 2001, the General Services Administration (GSA) awarded a Super Energy Savings Performance Contract (ESPC) for new construction at the new Federal Courthouse in Gulfport, Mississippi. The construction of the \$30 million, 204,000-square-foot Gulfport U.S. Courthouse is expected to take place over a 27-month period. Sempra Energy Solutions will contribute \$1.6 million in energy conservation improvements to the building.

In contrast to using alternative financing to retrofit or modify an existing building, the capital created from a new-construction Super ESPC is essentially capital added to the building construction budget. As with many other GSA courthouse construction projects, the construction budget is lean. "Because energy performance features of a new building are often some of the first to go under a tight construction budget, a new-construction Super ESPC can play an important role in ensuring a high-performance building," said Terry Sharp, Super ESPC project facilitator from Oak Ridge National Laboratory.

A collaborative process involving GSA, the courthouse design team, DOE's



*The Gulfport Courthouse design employs high-performance, energy-saving features.*

national laboratories, and Sempra was used to identify building efficiency improvements and achieve the final design. The early involvement of the energy service company in design reviews was a practical way to bring the project together.

The goal of the new-construction project is to limit energy-related costs in the Gulfport Courthouse and use the generated savings to ensure a high-performance building for GSA and its customers. The Super ESPC will fund improvements in the building's glazing, lighting, heating and cooling, pumping, and air handling systems. The Super ESPC will upgrade the two 300-ton

chillers that were originally planned for the building. The new construction project will produce \$84,000 annually in energy cost savings and \$78,000 in operations and maintenance (O&M) savings with a total savings of \$8.6 million over the project term (17 years).

Sempra will be taking on the O&M responsibilities for the building over the contract term. O&M savings add significantly to the overall savings of the project. Gulfport is an area where GSA has traditionally had difficulty procuring O&M services at reasonable prices.

"New-construction ESPCs help agencies get high-performance buildings from the start," said Sharp. "The experience from the Gulfport project will benefit other Federal facilities looking to new construction Super ESPCs."

The Gulfport Courthouse project is the fifth Super ESPC for the GSA's Southeast Sunbelt Region.

*For more information, please contact Terry Sharp of ORNL at 865-574-3559 or [sharptr@ornl.gov](mailto:sharptr@ornl.gov).*

## WIND POWERING AMERICA/FEMP PARTNERSHIP UPDATE

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### Moving Forward

As the largest single energy user in the United States, consuming almost 55 billion megawatthours of electricity annually, the Federal Government can continue to support the growth of the wind energy market through its use of wind energy and through its purchase of renewable power or RECs. Working together, WPA and FEMP are finding ways to remove the barriers to renewable energy purchases to make it easier for

Government agencies to meet their growing electricity needs with clean renewable energy resources like wind.

*For more information on Federal wind energy projects, visit the National Renewable Energy Laboratory's National Wind Technology Center at [www.nrel.gov/wind](http://www.nrel.gov/wind) or contact Ed Cannon of NREL at 303-384-6920 or [ed.cannon@nrel.gov](mailto:ed.cannon@nrel.gov). For information about the Nevada Test Site project, go to [www.nv.doe.gov](http://www.nv.doe.gov). For details about the Ascension Island wind farm project, visit [www.ma.doe.gov/energy100/world/51.html](http://www.ma.doe.gov/energy100/world/51.html).*

*For assistance with renewable power purchases contact Chandra Shah of NREL at 303-384-7557 or [chandra\\_shah@nrel.gov](mailto:chandra_shah@nrel.gov).*

## Fort Bragg's ESPC Project Boosts Energy Supply-Side Savings

At Fort Bragg, home to the XVIII Airborne Corps, strategic energy management is yielding positive results. With its energy partner, Honeywell, Fort Bragg is capturing supply-side savings and applying them towards traditional demand-side programs using the Army Corps of Engineers multi-state Super Energy Savings Performance Contract (ESPC). Without the ESPC, Fort Bragg's opportunities would have been greatly limited with its relatively inexpensive energy costs and under-funded operations and maintenance budgets.

Fort Bragg implemented Honeywell's Total Energy Account Management (T.E.A.M.)™ Services strategy, which is helping to:

- reduce costs and manage risk in purchasing energy;
- optimize the delivery efficiency of the energy through central and distributed heating and cooling plants;
- select energy sources and switch fuels in real-time to reduce costs and minimize emissions;
- implement a state-of-the-art, web-based information system to monitor and manage all facets of the energy operations; and
- coordinate all privatization and out-sourcing activities to maintain the efficiencies of an integrated operation.

The results from the ESPC have been impressive. In FY 2000, Fort Bragg's 12 completed projects delivered 150 billion Btu in energy savings. "The ESPC program has been a win-win for Fort Bragg in reducing energy costs, maximizing energy efficiency, and improving the quality of life for soldiers and occupants," said Georges Dib, Energy Program Coordinator, Public Works Business Center, Fort Bragg.

In conjunction with rate re-negotiations with local utilities and the incorporation of real-time pricing, more than \$5 million in cost savings was generated during FY 2000. The project's cost reductions will generate close to \$98 million in savings over the full term of the ESPC program. "We have awarded 10 ESPC projects in addition to the 12 completed projects. These new projects will contribute an additional energy savings reduction that allows Fort Bragg to meet the mandate of Executive Order 13123, and support its mission in providing facilities the latest integrated energy efficiency operation," added Dib.

A strategic Integrated Solutions Team (IST) helped to provide direction, set priorities, resolve conflicts, and acted as a board of directors for the ESPC program and its related activities. On each individual project, tactical teams worked to carry out the priorities set by the IST. Initial skepticism and reluctance have given way to positive support for the program and competition among personnel to see whose area will move up on the IST's prioritization list.

In addition, Fort Bragg has worked to identify ESPC-related costs and assigned funds to a separate account. ESPC contracting is now a part of Fort Bragg's annual budgeting process.

The successful ESPC efforts at Fort Bragg are being implemented at numerous DOD installations and non-DOD agencies throughout the United States and Europe. The IST and tactical team strategies are currently being utilized by the Army at Fort Richardson, Fort Rucker, Fort Wainright; the Air Force at Davis Monthan, Grand Forks, Hickam, Hill, Kirtland; the 104th and 26th Area Support Groups in Germany; and other military installations and Federal facilities.

*For more information, please contact Georges Dib of Fort Bragg at 910-432-5093 or [dibg@bragg.army.mil](mailto:dibg@bragg.army.mil).*



*High efficiency cooling towers are among the equipment upgrades at Fort Bragg.*

## Federal Investment in GHPs Tops \$200 Million

Federal facilities bought into geothermal heat pump (GHP) systems in a big way in 2001, bringing the total Federal investment in GHPs, also referred to as ground-source heat pumps or geexchange systems, to about \$200 million. John Shonder of Oak Ridge National Laboratory (ORNL), estimates that about 40,000 tons of GHP capacity are now installed in the Federal sector, which equates to at least 15,000 individual GHP systems in U.S. Federal buildings.\*

In late 1998, in response to agencies' interest in GHP systems, FEMP initiated a program offering technical and

\*Estimates of Federal investment in GHPs are based on Super ESPC statistics, FEMP's database of utility-financed projects, and records of Federal projects in the core team's GHP construction and maintenance cost database.

financing assistance specifically geared to the application of GHP technology. Since then the annual Federal investment in GHPs has grown from \$6 million in 1999, to \$13 million in 2000, to \$74.4 million in 2001, which includes about \$47 million under Super Energy Savings Performance Contracts (ESPCs), \$24 million under utility energy services contracts (UESCs), and \$4 million funded by appropriations. The momentum is going strong, with another \$70 million worth of Federal GHP projects already under development.

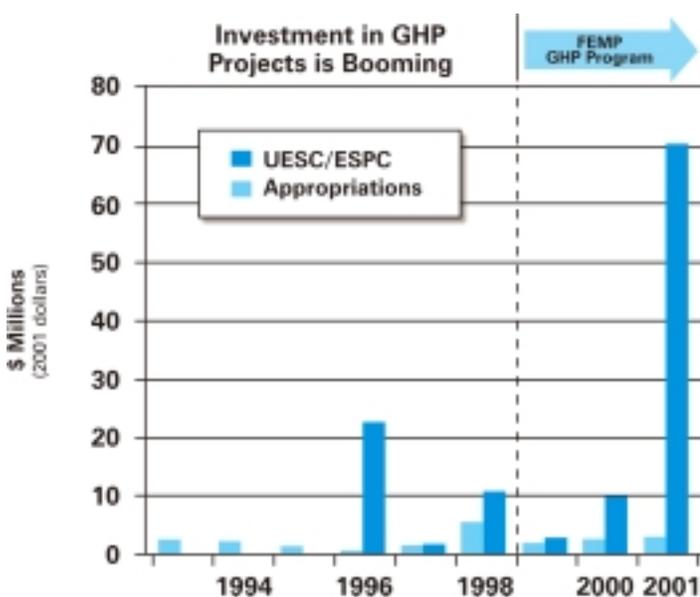
FEMP's GHP program was established to make the energy- and cost-saving benefits of GHPs easily accessible to all Federal agencies by overcoming technical obstacles and providing a vehicle for financing these projects. FEMP's long-term goal was to help bring GHPs into the mainstream to lower their cost and to

fully realize their potential to save energy and help meet energy goals in the Federal sector.

FEMP established the Technology-Specific GHP Super ESPC to (1) provide Federal agencies with access to qualified providers of GHPs, (2) provide a means of financing Federal GHP projects, and (3) generate enough activity in the industry to boost GHPs into a mainstream technology.

FEMP's GHP team, which draws on the ongoing GHP research and expertise at Oak Ridge National Laboratory, was formed to provide a reliable, unbiased source of information and technical assistance for Federal agencies. "We like to say we level the playing field, giving Federal customers access to the same level of technical expertise the ESCOs and utilities rely on," remarked Shonder. The core team supports projects of all stripes, whether funded through ESPCs, UESCs, or appropriations.

Douglas Sattler of Alliant Integrated Services (formerly known as Energy Performance Services, Inc.), one of the GHP Super ESPC energy service companies (ESCOs), remembers ORNL's early role in GHP research: "Though the technology has been available since the 1950s, GHP systems were considered by many agencies to be new and unproven before ORNL's evaluation of the 1996-97 Fort Polk GHP project," where GHPs and other energy conservation measures were



Federal investment in GHP projects surged to an estimated \$74.4 million in 2001. (UESC/ESPC numbers include the \$19 million Fort Polk ESPC project in 1996 and a \$9.4 million UESC project at Little Rock Air Force Base in 1998.)

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**FEDERAL INVESTMENT IN GHPS  
TOPS \$200 MILLION**

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installed in 4,003 family housing units under a site-specific ESPC. “That evaluation revealed that GHP systems are based on a sound, economically viable, energy-efficient, renewable technology. FEMP has been successful in mainstreaming GHP technology through the GHP Super ESPC, but also because of the FEMP GHP core team at ORNL.”

Sattler observes that the core team’s affiliation with DOE gives them credibility with agency customers. “The GHP core team is a valuable asset in that they have the technical expertise to review the ESCOs’ engineering and assist with price-reasonableness determinations. Federal installations usually don’t have that expertise and some would otherwise not agree to pursue a GHP project with an ESCO for that reason alone,” Sattler said.

Thomas Mitchell is CEO of Co-Energy Group, the GHP designer and provider that installed the heat pumps at Fort Polk (and in other ESPC and UESC projects across the United States). Mitchell said, “FEMP’s GHP core team is the reason a lot of our projects get installed. The unbiased information provided by the core team gives Federal customers the confidence they need to go ahead with the project.”

**GHPs Hit the Mainstream at  
Fort Jackson**

The burst of investment in 2001, and the range of GHP projects, signify the breakthrough of GHP technology into the mainstream. In September 2001, the Army’s Fort Jackson in South Carolina

awarded a \$19 million delivery order that includes \$10 million for GHP retrofits under the Southeast Regional, “all-purpose” Super ESPC rather than the GHP technology-specific Super ESPC. (See article on page 10.) This shows that the industry infrastructure to support GHP technology is growing, FEMP’s GHP strategy is paying off, and the reputation of GHPs as a proven, efficient, and cost-effective technology is now established.

FEMP’s efforts to give agencies easy access to the benefits of GHP systems have depended heavily on its partners in the energy industry — ESCOs, utility companies, and subcontractors who design and install GHP systems. An attribute seen in every successful GHP project is a healthy working relationship between agency customer and service provider.

Robert F. Payne of DukeSolutions commented on the partnerships that made the Fort Jackson project work: “I am very proud of our positive working relationship with FEMP. During development of the project, the FEMP technical support team was outstanding. They were professional, objective, and helped us and Fort Jackson consider options that significantly reduced construction costs. There is no doubt in my mind that our success at Fort Jackson was in large part due to the years of programmatic effort and refinement of GHP renewable energy technology by DOE.”

FEMP project facilitator Robert Baugh said that the Fort Jackson project went well because all parties were committed to making it work. DukeSolutions developed a project that met Fort Jackson’s needs and made economic

sense, and Fort Jackson’s acquisition team kept site command informed through routine briefings. “When time came for approval and commitment, site command was already in the loop and approval of the project was seamless,” Baugh said.

**Navy Benefits from First Delivery  
Order Under GHP Super ESPC**

The first delivery order awarded under the GHP Technology-Specific Super ESPC went to Energy Performance Services, Inc. (now Alliant Integrated Services) for a \$5 million project at the Naval Air Station Patuxent River in Maryland. Sattler said that the project is a prime example of what the FEMP team does to help agencies bring their projects to reality. “The base didn’t have the expertise to perform detailed design reviews or evaluate the computer models associated with the proposed measurement and verification plan. The FEMP team stepped in and did the necessary evaluations while supporting a very aggressive project schedule. They also made several value-engineering suggestions to reduce the capital cost of the project that were incorporated into the project by Energy Performance Services,” Sattler said.

Co-Energy Group, the project designer for Patuxent River, is currently working with the base on a future GHP project. Mel Green, base energy awareness manager, chooses GHPs for very straightforward reasons: “Each time a life-cycle cost analysis is performed, geothermal tops the list, and our experience has been that there is little to no maintenance.”

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## FEDERAL INVESTMENT IN GHPS TOPS \$200 MILLION

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### GHPs Overseas in U.S. Embassy

The GHP Super ESPC can be used for Federal facilities anywhere in the world, and the Department of State is finding GHPs especially useful in humid or extreme climates. In Seoul, Korea, the Trane Company installed GHPs in the Ambassador's residence in the U.S. Embassy and in 157 State Department residences. GHPs replaced electric air conditioners and fuel-oil-fired heaters, eliminating all use of fuel oil and resulting in a net reduction in electricity use as well. Energy and maintenance savings will pay for the \$5.9 million project in 19 years. The State Department is also considering GHPs for U.S. employees' residences in Tanzania.

### Utility-Financed GHPs at Camp Lejeune

FEMP's utility partners have not hesitated to help their customers acquire GHPs, and one of the largest Federal projects ever financed under a utility energy service contract (UESC) was for GHP retrofits. U.S. Marine Corps Base Camp Lejeune last summer finished retrofitting 2,089 family housing units with GHPs under a \$15 million contract with Carolina Power & Light. (See "Camp Lejeune Gains Utility-Financed GHPs and Superior Customer Service," *FEMP Focus*, September 2001.) Kenneth Day, Housing Director at the base, said, "We have really bought into GHP here at Camp Lejeune, considering that I have 4,447 family housing units and 2,089 have been outfitted with GHPs. We're studying GHP feasibility for at least an additional 250 housing units, and we're considering GHPs for more units in the future."

### Financing GHPs Two Ways at Marine Air Corps Station Beaufort

The Marines at Air Corps Station Beaufort in South Carolina have bought into GHPs with as much enthusiasm as Camp Lejeune. Beaufort is investing more than \$22 million in two GHP projects, one under the GHP Super ESPC and one under a UESC with Bill Eisle's team at South Carolina Electric & Gas. The Super ESPC project was awarded in September 2001 to Trane Company for commercial-type GHP systems to be installed in a chapel, theater, gymnasium, hangars, and office buildings. The project also includes energy management controls and upgrades to lighting and conventional HVAC systems. Savings of \$483,000 per year will pay for the \$11 million investment over 15 years.

Beaufort retrofitted 1,236 family housing units with GHPs in a UESC project completed in November 2001. The base requested the GHP core teams' help in reviewing preliminary designs for the \$11.5 million project, which will save \$800,000 annually. "The core team really came through for us," said Neil Tisdale, Utilities Director at Beaufort. "I believe their assistance was key to the technical and financial success of the project."

These are just a few milestones in the emergence of GHP systems into the mainstream, but there are many notable projects to learn from. Federal facilities are now using GHPs in all kinds of buildings, and benefitting from energy and cost savings, improved comfort, and minimal maintenance costs.

*For more information about FEMP's GHP program or Southeast Regional Super ESPCs, please contact Doug Culbreth of the DOE Atlanta Regional Office at 919-782-5238 or carson.culbreth@ee.doe.gov. John Shonder of the FEMP GHP core team can be reached at 865-574-2015 or shonderja@ornl.gov, or visit the GHP pages on FEMP's web site at [www.eren.doe.gov/femp/financing/esp/geothermal\\_heat\\_pumps.html](http://www.eren.doe.gov/femp/financing/esp/geothermal_heat_pumps.html).*

## Your Alternative Financing Questions Answered

**After the work begins, if I am not satisfied with contractor performance or quality or timeliness of products or services, can the work be terminated and another ESCO hired to complete the job?**

Yes. Standard procedures are in place to notify the contractor of deficiencies and the requirements to correct problems. If necessary, contractor stop-work orders will be issued by the contracting officer based on a termination for convenience or termination for default. Another competition may be held at the ordering agency's convenience.

**Who reviews the work the contractor performs or the products delivered, and how it is accepted?**

The ordering agency is responsible for contractor performance reviews and/or product acceptance, including timelines and measurement and verification (M&V) of the performance of the energy conservation measures. FEMP can provide technical assistance in these areas. Descriptions of M&V methods can be found in the *FEMP M&V Guidelines for Federal Energy Management Projects* version 2.2. The *FEMP M&V Guidelines* provide an overview of M&V methods and guidance on how to use the methods for particular types of projects or ECMs found in Federal projects. The *M&V Guidelines* are available at [www.eren.doe.gov/femp/financing/esp/measguide.html](http://www.eren.doe.gov/femp/financing/esp/measguide.html). For more information, please contact Dale Sartor of LBNL at 510-486-5988 or [dasartor@lbl.gov](mailto:dasartor@lbl.gov).

*What questions do you need answering? FEMP wants to provide the most useful information possible, but we need your help to achieve this! Please submit your questions via e-mail to Tatiana Strajnic of FEMP at [tatiana.strajnic@ee.doe.gov](mailto:tatiana.strajnic@ee.doe.gov).*

## Fort Jackson Super ESPC Project Breaks New Ground

A Super ESPC project at U.S. Army Training Center Fort Jackson, South Carolina, is breaking new ground, both figuratively and literally. Fort Jackson, the largest and most active initial entry training center in the Army, awarded a \$19 million delivery order—the largest to date—to DukeSolutions in September 2001. The project is the first to implement geothermal heat pump (GHP) systems under a regional, “all-purpose” Super ESPC rather than the GHP-technology-specific Super ESPC. The award is for chiller plant upgrades, lighting upgrades, and demand-limiting controls, as well as GHPs. Annual energy cost savings of more than \$1.3 million, plus operations and maintenance cost savings of \$267,000 per year, will pay for the investment over 21 years.

Jerry C. Fuchs of Fort Jackson’s Directorate of Engineering and Logistics reports that the new GHP systems are performing well. “A major component of the project is a GHP retrofit for 1,250 family housing units, a bachelor officers’ quarters facility, and a guest lodge. Thus far 84 of the housing unit GHP installations have been completed without a single occupant complaint on their heating or cooling performance,” he said.

Robert F. Payne, Vice President for Federal Energy Services at DukeSolutions, said the company is very excited about GHP technology, especially its positive impacts on the quality of life for military families. “DukeSolutions is also pleased with the predictable energy savings associated with GHPs,” he said. “When we can offer a technology that is consistently 30 to 45 percent more energy efficient than conventional systems, both our customer and the environment benefit. It hasn’t taken long for Government and industry to recognize the value of this proven technology. And with every successful installation, potential buyers become more assured of the value of the investment.”

### Innovative Financial Strategies Save \$9 Million

The Fort Jackson project incorporates some simple but innovative financial strategies that other agencies may find useful, according to Doug Culbreth of DOE’s Atlanta Regional Office, who manages FEMP’s Super ESPC program for the southeast region. Robert Baugh, FEMP’s project facilitator for

Fort Jackson, explained how financing costs were minimized: “Fort Jackson and DukeSolutions agreed to document the cost savings that the new upgrades would generate over the 20-month design and construction period. That sum, which turns out to be a sizeable \$1 million, will be paid to the contractor upon acceptance of the project. Fort Jackson will also make its debt-service payments annually at the beginning of the year in which they’re due, instead of paying monthly in arrears.” These two measures shorten the contract term by 3 years and reduce interest costs by \$9 million.

*For more information about the project, please contact Robert Baugh of ORNL at 865-574-7639 or [baughrn@ornl.gov](mailto:baughrn@ornl.gov), or Kyle Marshall of DukeSolutions at 704-382-0062 or [rkmarsha@duke-energy.com](mailto:rkmarsha@duke-energy.com). For more information about FEMP’s GHP program or Southeast Regional Super ESPCs, please contact Doug Culbreth of the DOE Atlanta Regional Office at 919-782-5238 or [carson.culbreth@ee.doe.gov](mailto:carson.culbreth@ee.doe.gov). John Shonder of the FEMP GHP Core Team can be reached at 865-574-2015 or [shonderja@ornl.gov](mailto:shonderja@ornl.gov).*

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### NAVY’S LONG-TERM PARTNERSHIP WITH UTILITY IS A PROVEN SUCCESS

*(continued from page 1)*

to forge over the years. Without the team approach and trust that each organization has in the other, none of this would have been possible.”

Edward Thibodo, Energy Team Contracting Officer at the Naval Facilities Engineering Command, Southwest Division, notes that without the partnership between the Government and SDG&E only a small portion of this work would have been accomplished. The partnership begins long before the project. The team cannot be built after award; it has to be in place prior to the first audit.

The Navy’s UESC program, as shown in the San Diego area, has resulted in significant savings for the Federal Government and has demonstrated the true value of an ongoing partnership.

*For more information, please contact David McAndrew of FEMP at 202-586-7722 or [david.mcandrew@ee.doe.gov](mailto:david.mcandrew@ee.doe.gov).*

# Postal Service Shared Energy Savings Partnership Successful in Atlanta Upgrade

The Atlanta District of the U.S. Postal Service recently completed construction on a \$3.2 million shared energy savings project at the Bulk Mail Center (BMC) in Atlanta, Georgia. The Postal Service's regional headquarters in Memphis, Tennessee, awarded a contract for the project to Municipal Electric Authority of Georgia (MEAG). MEAG, an Atlanta-based electrical cooperative, selected Custom Energy, LLC, an energy services company, to provide comprehensive turnkey, design-build, construction, energy, and financial services for the shared energy savings project. By implementing the MEAG/Custom Energy project, the BMC and the Postal Service are enjoying a significant reduction in facility operating costs, an increase in facility production, and a greatly improved working environment for employees.

MEAG addressed concerns regarding the Postal Service's aging central chilled water plant. Only one of the facility's two 900-ton centrifugal chillers was operational, and both used CFC-11, a banned and increasingly scarce refrigerant. The chillers were contaminated by asbestos from the cooling towers, as were the towers themselves (asbestos was used as the fill material in the original towers). The original controls for the plant's HVAC systems were also defunct, requiring that all of the equipment be operated manually.

The Postal Service's shared energy savings performance contracting approach offers several advantages—primarily it eliminates the up-front

expense involved in the analysis, design, and construction phases. The customer incurs no expense until the work is complete and operational. The performance contractor (MEAG) funds the project, including long-term financing for a period of up to 10 years. The project is designed so that the facility's monthly energy savings amount is at least as much as the finance payments, and any excess is an immediate benefit for the customer.

The BMC project began with a preliminary energy audit, which outlined a number of potential energy projects and provided estimated energy savings and implementation costs. The Postal Service evaluated a detailed feasibility study that provided investment grade estimates of energy savings and guaranteed project pricing, and selected promising projects. It was apparent early in the process that the cost savings generated by the new chillers would not be sufficient to pay for their installation in the 10-year period. Fortunately, the Postal Service was able to "buy down" the chiller plant payback period using funds earmarked for CFC replacement.

Custom Energy investigated a variety of chiller plant options, including gas-fired absorption and engine-driven chillers as well as conventional electric machines. The best solution was found to be an all-electric system of three centrifugal chillers of 525 tons each and one rotary screw chiller with a capacity of 250 tons. This combination offered an excellent combination of efficiency (0.6 kilowatt per ton) and operating flexibility, as well as a level of redundancy desired by the

Postal Service. Custom Energy also converted the facilities' original chilled water pumping system from constant to variable flow, using a primary/secondary layout with four new primary pumps and a new 100-horsepower secondary pump. The facility is now outfitted with a new secondary pump and its two existing secondary pumps were converted to variable speed operation with the installation of three adjustable frequency drives.

Custom Energy also made extensive modifications to the 28 single-zone and three multi-zone air handling units at the BMC. Other upgrades to the facility include the replacement of supply fan motors with new, energy-efficient motors equipped with adjustable frequency drives, converting the systems from constant to variable air volume. All of the chilled water and hot water control valves have been replaced with new valves with electric operators. A state-of-the-art direct digital energy management and control system is being installed that will provide total HVAC system control.

In addition, Custom Energy retrofitted the lighting systems in the three-story office portion of the facility. More than 3,300 fluorescent fixtures were converted from the existing T12 lamps and magnetic ballasts to T8 lamps with high-frequency electronic ballasts.

*For more information, please contact Ted Artis of USPS at 404-792-3133 or [tartis@email.usps.gov](mailto:tartis@email.usps.gov), or Mike Ward of Custom Energy, LLC, at 800-356-1239 or [mikew@customenergy.com](mailto:mikew@customenergy.com).*

# Energy Efficiency Measures Mitigate Pentagon Damages

When American Airlines Flight 77 slammed into the Pentagon on September 11, 2001, it crashed directly into the renovated section of the building 5 days before its long-awaited completion. Remarkably, the capabilities of the building's new energy management control system and energy efficient windows, both implemented as part of the massive building renovation, proved invaluable for containing the effects of the attack.

Pentagon officials say that the energy management system, installed to efficiently manage the heating, cooling, and lighting systems throughout the Pentagon, allowed officials to manipulate all the building systems in the first minutes after the attack. The centralized energy management system minimized the areas of the building that had to be entered to operate equipment, reducing risks to employees.

Facility managers were able to shut down air handlers immediately, preventing personnel from entering a life-threatening situation where they could be exposed to toxic conditions. Pressurized air barriers were set up to prevent fumes from migrating into occupied areas. The air barriers kept toxins, gases, and smoke contained by creating high pressure zones at each border. Facility managers were also able to use the system to open outside air dampers and close others to prevent or minimize smoke entering the HVAC system. Such steps permitted those inside to continue with the Pentagon's mission-critical activities while dealing with the tragedy at hand.

The system was also utilized to contain smoke damage in the building. Exhaust and relief fans were used to remove residual smoke and odors rather than distributing them around the building through open plenums. Air quality was maintained by increasing the outside air volume brought in for areas upwind from the fire.

In addition to the energy management control system, the Pentagon's new windows also helped to contain damage from the attack. The windows, designed to be shatterproof and permanently closed, had been installed for security reasons and for their energy efficiency benefits. Pentagon officials reported



*The DOD's Bob Billak and Lee Evey are among Pentagon officials working on the landmark building's renovation.*

that the new windows near the impact site remained intact after the plane struck. At the time of the crash many employees were standing in front of or close to the windows. The thick glass windows were potential lifesavers that day, whereas the older windows, in the unrenovated areas up to 200 feet away, blew out during the initial impact and explosion of jet fuel.

The capabilities of the Pentagon's energy management control system and the windows were far-reaching when the building was tragically attacked that Tuesday morning. The improvements served the safety purposes as they were intended, and greatly mitigated the destruction from the horrible event. In the months following the attack, the destroyed sections of the building have been quickly removed and the renovation of the Pentagon continues on, further improving the security and efficiency of the landmark building. Despite the tragic losses incurred, the Pentagon Renovation Program is continuing with its original scope of work. Structural rebuilding and all interior work of the destroyed section may last more than 3 years. Nevertheless, officials remain determined to meet the original schedule for completion in December 2012.

*For more information, please contact Bob Billak of DOD at 703-695-7909 or RBillak@ref.wbs.mil.*

# DOE Labs Join Effort to Define Next Generation of Laboratories

On January 9, 2002, three DOE National Laboratories joined an elite group of twelve Federal and private sector laboratories helping to define the laboratory of the future and set a higher standard for how laboratories are designed, built, and maintained.

Lawrence Berkeley National Laboratory (LBNL), National Renewable Energy Laboratory (NREL), and Sandia National Laboratories (SNL), were welcomed as partners into the joint DOE/EPA Laboratories for the 21st Century (Labs21) program. Each partner has identified a specific project and will strive to apply new thinking for improved laboratory performance. The projects will serve as the focus of each partner's commitment to design high performance, low-energy laboratories.

Unlike commercial office buildings, homes, and department stores, laboratories are an advanced and highly sophisticated building type. The average laboratory uses five times as much energy and water as a typical office building because of extensive ventilation requirements and other health and safety concerns. With their unique performance requirements and needs for flexibility, laboratories demand the best designers, engineers, and managers. With the added demands for energy efficiency and improved environmental performance, the challenges facing laboratory professionals are even higher.

Each of the pilot partner projects is at a different stage of planning and development. EPA and DOE are committed to working with the 12 partners to help define the scope of the project, including the performance goals planned for the finished project.



LBNL's pilot project, the Energy Efficiency and Electricity Reliability Laboratory (EEERL), is in the concept stage. EEERL will provide a center for R&D partnerships to advance the state-of-the-art in energy efficiency. LBNL's goal is to construct a building in the top 1 percent of laboratory buildings in terms of energy efficiency and healthy, comfortable working environments. Electricity use from off-site sources will be less than one-half of conventional laboratories, with the remaining electricity needs met with on-site renewable sources and distributed generation. Looking beyond energy, building materials will be selected to minimize adverse impacts to the environment.

NREL's project, the Science and Technology Facility (STF), will support the National Center for Photovoltaics and Basic Science Program and related research. STF will exceed existing Federal and national energy codes by a minimum of 30 percent by incorporating daylighting and other energy conservation measures into the design of the facility. In addition, NREL will maximize the specification of building products to minimize the impact to the environment over the facilities' life cycle. Through rigorous commissioning, NREL will ensure that the energy, environmental, and comfort expectations for the facility are met.

SNL's project, the Microsystems and Engineering Sciences Applications (MESA) Complex, will be a state-of-the-art facility for microsystems research, development, and prototyping. It will include a MicroFab building, which will house a clean-room and associated support facilities, a MicroLab building, and an Office/Light Laboratory building. MESA's goal is to use 30 percent less energy per square foot than similar buildings at SNL. SNL plans extensive metering of the various performance metrics for heating, ventilation, and air-conditioning and lighting systems. The MESA Complex will reclaim and recycle process water.

The pilot partners will help shape the program so it reflects the real issues and possibilities for designing, engineering, and operating the laboratories of the future. In addition, the program is also sponsoring education and training programs as well as practical tools and resources to support the next generation of laboratory designers, managers, and operators.

*For more information on the Labs21 program, including its Pilot Partners and annual conference, visit the Labs21 web site at [www.epa.gov/labs21century](http://www.epa.gov/labs21century). Will Lintner, the Labs21 Federal Program Manager can be contacted at 202-586-3120 or [william.lintner@ee.doe.gov](mailto:william.lintner@ee.doe.gov).*

# Fort Meade Saves Resources, Energy, and Money by Reusing Water

For more than 15 years, Fort George G. Meade has been saving at least 133,000 gallons of potable water per day by using safe effluent from its wastewater treatment plant to irrigate two golf courses on the base.

Fort Meade—located in Maryland between Baltimore and Washington, D.C.—employs approximately 10,000 military personnel and more than 25,000 civilians. All four service branches and several Federal agencies, including the National Security Agency, are tenants. The wastewater treatment plant, which is owned and operated by the base, treats all its domestic, commercial, and industrial wastewater. The average effluent flow is 4.6 million gallons per day. The nonpotable treated effluent is clear, colorless, odorless, and free of pollutants, so it is satisfactory for many reuse purposes.

Two 18-hole golf courses—Applewood and Floyd L. Parks—comprise the 120-acre Fort Meade Golf Course Complex. The operators of the complex have been using nonpotable treated effluent from the wastewater treatment plant for irrigation since 1984. Using this effluent to supply irrigation water reduces the demand on potable water supplies and the nutrient load on the receiving bodies of water, such as lakes and rivers. In addition, aquifers and groundwater supplies are not depleted as rapidly, and millions of gallons of potable water can be saved each year.

This well-established technology may be the most economical way to provide irrigation water to a golf course. The Fort pays only for pumping costs associated with bringing the treated

*Nonpotable treated effluent is used to irrigate the golf courses at Fort Meade.*



effluent to the golf course, saving money that would be needed to treat the water to make it potable. There have been no complaints of odor, mosquitoes, or any other problems as a result of using treated effluent rather than potable water for irrigation. Since the effluent is pH-balanced, there is no need to add lime to irrigated areas, but some fertilizer may still be required. Five monitoring wells are located throughout the golf courses; the wells are sampled and tested about five times a year to ensure that there is no contamination to degrade the quality of the groundwater.

This type of irrigation also helps to avoid eutrophication (oversupply of minerals and organic nutrients) of bays, lakes, streams, and other bodies of water. Grasses and plants on the golf courses can effectively absorb some of the nutrients that would otherwise be discharged directly into tributaries and receiving bodies of water. Nitrogen and phosphorus are necessary for aquatic ecosystems because they support the

bottom of the food chain. However, excess nutrients like these create large blooms of phytoplankton, or algae, which cut off light to underwater grasses. These grasses are very important to aquatic systems because they provide habitat for aquatic life and help to filter water. When the algae die and begin to decompose, the decomposition process removes dissolved oxygen from the water, which fish and plants need for survival.

Using safe, nonpotable effluent for irrigation benefits the base in many ways. In addition to saving money and other resources needed to make the water potable, reusing the effluent with minimal treatment helps to preserve the ecosystems of area rivers, lakes, and streams.

*For more information, please contact Stephanie Tanner of NREL at 202-646-5218 or [stephanie\\_tanner@nrel.gov](mailto:stephanie_tanner@nrel.gov), or see the water conservation pages on FEMP's web site at [www.eren.doe.gov/femp/techassist/waterconserve.html](http://www.eren.doe.gov/femp/techassist/waterconserve.html).*

# NEW TECHNOLOGY DEMONSTRATION PROGRAM

## New Technologies Available for Reducing Energy Costs

*In the November issue of the FEMP Focus, we discussed the role of new technologies in an overall energy management program and the work of the FEMP New Technology Demonstration Program. In this, the second article in a series on the New Technology Demonstration Program, we summarize what the program has to offer energy managers and where to find information on new and emerging energy-saving, water-conserving, solar, and other renewable energy technologies.*

To date, FEMP's New Technology Demonstration Program has published more than 45 documents, each covering a different technology. These include ground-source (geothermal) heat pump systems, thermal energy storage systems, combined heat and power (cogeneration) systems, fuel cells, windows, and several renewable energy technologies.

As noted in the first article in this series, the depth of a FEMP-sponsored technology evaluation varies according to the maturity of the technology and the availability of reliable technical information. The New Technology Demonstration Program publishes five primary products: 1) demonstration reports prepared by National Laboratories, 2) *Federal Technology Alerts*, 3) *Technology Installation Reviews*, 4) *Technology Focuses*, and 5) technology guideline reports.

A metered demonstration by the New Technology Demonstration Program is used when little is known about technology performance under various operating conditions. The results are based on field research overseen by one of the National Laboratories supporting FEMP. **Demonstration reports** are published as formal DOE National Laboratory reports and available through DOE's Office of Scientific and Technical Information by calling 865-576-1188 or at

[www.osti.gov](http://www.osti.gov) and the National Technical Information Service at 703-605-6585 or at [www.ntis.gov](http://www.ntis.gov).

For other technologies, where performance is better understood but the technologies have not penetrated the Federal sector, the program has another publication series, including the *Federal Technology Alert*, the *Technology Installation Review*, and the *Technology Focus*, all of which are available through the FEMP web site at [www.eren.doe.gov/femp/prodtech/newtechdemo.html](http://www.eren.doe.gov/femp/prodtech/newtechdemo.html).

**Federal Technology Alerts**, the program's signature series, provide evaluative information on new and emerging technologies based on the cumulative results of public- and private-sector experience with a specific technology. These reports typically include a description of the technology, including where to apply the technology and what to avoid. They also include estimates for Federal-sector savings potential; a description of the technology's performance, applications, and field experience; a detailed case study; a list of known U.S. manufacturers; contact information; and worksheets to help assess the life-cycle cost-effectiveness of the technology.

**Technology Installation Reviews** are more concise but less technical publications. They include a description of the technology and a case study. The case study may include the results from another demonstration program or pilot project and is designed to provide a summary of what others have learned from their activities.

**Technology Focuses** provide brief information on a technology that may be of interest to the Federal facility or energy manager. They also identify where to find additional information on the technology.

The New Technology Demonstration Program has also released other publications from time to time. Recently, the program released the **Low-Energy Building Design Guidelines** (DOE/EE-0249). Because this publication covers multiple technologies, as well as strategies, which are used holistically to achieve a highly-efficient building design, a guideline-style publication was used. Other publications of this type are being considered by the New Technology Demonstration Program.

More than 35 additional technologies are currently being investigated by four DOE National Laboratories including

*continued on page 16*

# Get Recognized! Designate Your Facility a Federal Energy Saver Showcase

FEMP urges agencies to identify and designate their very best projects, or potential projects, so that others may benefit by example. To promote wise energy and water use throughout the Federal Government, agencies are showcasing cost-effective energy efficiency, water-conserving, and renewable energy technologies in their facilities. Since 1995, FEMP has recognized more than 90 facilities across the country as Federal Energy Saver Showcases. Each showcase site prominently displays a plaque notifying visitors that the Government building they are entering uses energy, water, and taxpayer dollars, wisely.

Showcasing facilities has many benefits, including increasing awareness of energy-efficient and renewable energy technologies applicable to a variety of Federal facilities, and recognizing agencies for their efforts. In addition, agencies can improve the quality of projects because showcase facilities may be eligible for selected design assistance from FEMP.

FEMP's showcase program functions as an energy management strategy by assisting agencies to prioritize projects at their facilities and facilitate technology transfer through partnerships between agencies, utilities, manufacturers, and others.

When selecting top projects, please consider the following criteria:

- the amount of energy and water saved, use of renewable energy, and life-cycle cost effectiveness,
- buildings receive a high level of non-Federal visitors,
- features of a project are replicable, and
- visitors can learn from site displays and implement similar projects.

In addition, outstanding projects will likely feature the following:

- creative financing methods or leveraging of funds,
- use of a variety of energy-saving and innovative technologies,
- designation as an ENERGY STAR® Building, and/or a Leadership in Energy and Environmental Design (LEED) certification.

So identify and designate your very best completed or potential projects for the 2002 Federal Energy Saver Showcases. The showcase designation form on the next page must be completed and returned to Trina Brown, FEMP Showcase Coordinator, at the fax number or mailing address included at the end of the form. All designation forms must be received by March 20, 2002.

*For additional information, please contact Trina Brown of NREL-FEMP at 303-384-7518 or [trina\\_brown@nrel.gov](mailto:trina_brown@nrel.gov).*

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## NEW TECHNOLOGY DEMONSTRATION PROGRAM

*(continued from page 15)*

microturbines, building control systems, water conservation, and new lighting technologies. For information on a specific technology, see the new *Technology Index* at [www.eren.doe.gov/femp/prodtech/newtechdemo.html](http://www.eren.doe.gov/femp/prodtech/newtechdemo.html). The Index includes links to each publication available through the FEMP web site. For larger demonstration reports, which are not available through the web site, a summary is provided along with instructions on how to order the full demonstration report. You may also sign up to be on the program's direct mailing list through the web site. Once on the mailing list, you will receive new program publications as they become available. The program releases between four and eight new publications each year.

Technologies are constantly being improved and new technologies are always being developed. Is there a new or emerging energy efficiency technology that you need to know more about? The FEMP New Technology Demonstration Program would like to hear from you. If you are a member of a Federal energy management team and you would like the New Technology Demonstration Program to consider evaluating a specific technology, please visit the program's web site at [www.eren.doe.gov/femp/prodtech/newtechdemo.html](http://www.eren.doe.gov/femp/prodtech/newtechdemo.html) and complete the technology submittal form. This will put your request on the program's monitor list.

*For more information, please contact Steven Parker of PNNL at [steven.parker@pnl.gov](mailto:steven.parker@pnl.gov), or Ted Collins of FEMP at [theodore.collins@ee.doe.gov](mailto:theodore.collins@ee.doe.gov).*

# Federal Energy Saver Showcase Designation Form

# 2002

- Submit by 3/20/02 -

**Step 1: Tell us about yourself and the facility you're nominating.**

Agency Name: \_\_\_\_\_

Applicant's Name: \_\_\_\_\_

Applicant's Title: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

Building Name: \_\_\_\_\_

Square Footage: \_\_\_\_\_

Location/Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Contact at Facility: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

Secondary Contact: \_\_\_\_\_  
(If Facility Contact same as Applicant)

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

How many Federal Energy Saver Showcase Facilities has your agency designated?

This is the first     Less than 5     More than 5

Did this project receive funding from FEMP's 1998 or 1999 Renewable Energy Hardware Grants? If so, what year? \_\_\_\_\_

**Step 2: Tell us about the energy-efficiency project implemented.**

Provide a Brief Project Description/Overview: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

List the Types of Technologies used: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Step 3: Estimate project energy savings.**

What are the savings from implementing this project? \_\_\_\_\_ kWh/year

What was your annual facility energy consumption prior to implementing this project? \_\_\_\_\_ kWh/year

Percent Savings = (A) ÷ (B) x 100 = \_\_\_\_\_ %

Please tell us which FEMP courses (if any) you've participated in:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

<b>Step 4: Provide us with additional information about this project and facility.</b>	
<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> Was this project funded through an ESPC or Utility Contract?</p> <p><input type="checkbox"/> Did this project involve any sustainable design concepts or strategies?</p>	<p>Please describe: _____</p> <p style="text-align: right;">➔</p>
<p><input type="checkbox"/> Is this a renewable energy project?</p> <p><input type="checkbox"/> Do you purchase electricity from any renewable energy sources?</p> <p><input type="checkbox"/> Does this project involve water conservation?</p>	<p>If yes, what type(s) of renewables? <input type="checkbox"/> Solar <input type="checkbox"/> Geothermal <input type="checkbox"/> Wind <input type="checkbox"/> Biomass <input type="checkbox"/> Passive Solar Design <input type="checkbox"/> Other: _____</p> <p>If yes, what percentage of your facility energy comes from energy sources? _____</p> <p>If yes, what type(s) of water conservation? <input type="checkbox"/> O&amp;M <input type="checkbox"/> Low-flow fixtures <input type="checkbox"/> Equipment Replacement <input type="checkbox"/> Other: _____</p> <p>How much water is saved? _____ kgal/year</p> <p>How much does your water cost on site? _____ \$/kgal</p>
<p><input type="checkbox"/> Does your project reduce greenhouse gas emissions?</p> <p><input type="checkbox"/> Is this facility an industrial or laboratory facility?</p> <p><input type="checkbox"/> Was this project identified as the result of an energy or water audit or renewable energy screening completed for the site?</p> <p><input type="checkbox"/> Does this facility receive a large number of nonfederal visitors each year?</p> <p><input type="checkbox"/> Do you plan to replicate this project within your agency?</p>	<p>If so, how much reduction is achieved? Carbon: _____ tons/year* (*see <a href="http://www.eeren.doe.gov/femp/resources/countguide.html">http://www.eeren.doe.gov/femp/resources/countguide.html</a>)</p> <p>If yes, who provided the audit/screening? <input type="checkbox"/> FEMP <input type="checkbox"/> Other: _____</p> <p>If yes, approximately how many? _____</p> <p>If so, briefly describe your replication plan: _____</p> <p>_____</p> <p>_____</p>
<p><input type="checkbox"/> Does this project meet the requirements of the Million Solar Roofs (MSR) initiative? (see <a href="http://www.eeren.doe.gov/millionroofs/">http://www.eeren.doe.gov/millionroofs/</a>)</p> <p><input type="checkbox"/> Has this facility been labeled as an ENERGY STAR® Building? (see <a href="http://www.epa.gov/buildings/esbhome/">http://www.epa.gov/buildings/esbhome/</a>)</p> <p><input type="checkbox"/> Does this facility have a LEED Rating? (see <a href="http://www.usgbc.org/programs/leed.htm">http://www.usgbc.org/programs/leed.htm</a>)</p>	<p>If so, what is the rating? <input type="checkbox"/> Bronze <input type="checkbox"/> Silver <input type="checkbox"/> Gold <input type="checkbox"/> Platinum</p>
<b>Step 5: Provide any supplementary information.</b>	
<b>Step 6: Return the completed application by 3/20/02 via fax or mail.</b>	
<p><i>Please forward any other materials applicable to your project (designation letter, design plans, project summary, press release, photos, etc.) with this application form.</i></p>	<p><b>Fax:</b> Trina Brown NREL FEMP (303) 384-7411</p> <p><b>Mail:</b> NREL, Attn: Trina Brown 1617 Cole Blvd., MS 2723 Golden, CO 80401</p>

# Deployment of Distributed Energy Resources:

## Sources of Financial Assistance and Information Resources

Distributed Energy Resources (DER) are small, modular, decentralized energy systems located in or near the place where energy is used. These integrated systems can include effective means of energy storage and delivery as well as power-generating technologies. FEMP has identified financial assistance sources that may be available to Federal agencies for the implementation of DER projects.

There are three types of funding sources available for Federal DER projects: DOE support, State programs, and utility programs. Although Federal support for energy technologies is directed primarily at research and development, some financial support is becoming available for DER deployment. When States have funding programs, they are typically at a higher dollar level than the more limited Federal programs. Some State public service commissions mandate that investor-owned utilities sponsor incentives for DER, energy efficiency, and renewable energy. Other utilities voluntarily offer these incentives to their customers.

### UPDATE: DOE State Energy Program Grants

In 2002, for the seventh year, DOE is offering States the opportunity to apply to undertake a variety of Special Projects under the State Energy Program (SEP). DOE has reviewed its end-use sector energy efficiency and renewable energy programs in which state assistance is an implementation strategy. As a result of this review, DOE is inviting States to submit proposals to implement specific DOE Office of Energy Efficiency and Renewable Energy (EERE) deployment activities and initiatives as Special Projects under SEP.

Approximately \$18,500,000 will be available for these projects.

**Applications must be received at the State's DOE Regional Office no later than March 15, 2002.**

Several of the Special Projects available as SEP grants have DER components:

- Section 6.51 - Small fuel cells (1-5 kw) as uninterruptible power supplies (UPS)
- Section 6.52 - Hydrogen power parks
- Section 6.54 - Solar photovoltaics for protecting and safeguarding power delivery infrastructure
- Section 6.55 - Solar schools
- Section 6.57 - Million solar roofs initiative
- Section 6.58 - Wind energy support
- Section 6.59 - DER electrical interconnection demonstration projects
- Section 6.60 - DER technology demonstrations
- Section 6.63 - Energy storage for transmission congestions relief, price response, and system security
- Section 6.64 - Biofuels for power generation

Additional SEP Special Project solicitations are included in the full document.

State energy offices must submit the applications and Federal agencies are encouraged to apply and partner with their State energy offices. Application details are available at [www.eren.doe.gov/buildings/state\\_energy/pdfs/special\\_projects\\_02.pdf](http://www.eren.doe.gov/buildings/state_energy/pdfs/special_projects_02.pdf).

Information on DOE's Regional Offices is available at [www.eren.doe.gov/rso.html](http://www.eren.doe.gov/rso.html).

### UPDATE: DOE FEMP FY 2002 DER Call for Projects

For the second year, FEMP is offering financial assistance to qualifying Federal DER projects. FEMP encourages public-private partnerships and leveraging of funds with other agency resources. As in past years, there are likely to be more applications submitted than can receive funding. So start thinking now about potential DER projects at your Federal facility. Look on FEMP's DER web site for the call letter and application, to be posted in March 2002 at [www.eren.doe.gov/femp/techassist/der\\_resources.html](http://www.eren.doe.gov/femp/techassist/der_resources.html).

### UPDATE: Distributed Generation Grants Available in California

The California Energy Commission's Consumer Energy Center recently announced a Solar Energy and Distributed Generation Grant Program to help offset the cost of purchasing and installing new solar energy and distributed generation systems. Funds will be awarded on a first-come, first-served basis until the available funds are exhausted, so **applications should be submitted as soon as possible**. Application forms and instructions are available at [www.consumerenergycenter.org/solaranddg/documents.html](http://www.consumerenergycenter.org/solaranddg/documents.html).

*continued on page 20*

**DEPLOYMENT OF DISTRIBUTED ENERGY RESOURCES:  
SOURCES OF FINANCIAL ASSISTANCE AND INFORMATION RESOURCES**

(continued from page 19)

**UPDATE: Power Systems Technologies, Distributed Power Generation, and Combined Heat and Power Configurations Grants Available in New York**

NYSERDA (New York State Energy Research and Development Authority) has issued a Program Opportunity Notice (PON) No. 669-01 to support new product

development of distributed generation systems, components, and related power systems technologies; and demonstration of combined heat and power configurations in industrial, municipal, institutional, commercial, and residential sectors. \$10,000,000 is available. **Proposals are due on Tuesday, March 12, 2002.** The entire solicitation, which includes program requirements, proposal format, and evaluation criteria, is available at the NYSERDA web site at [www.nyserdera.org/669pon.html](http://www.nyserdera.org/669pon.html).

**Financial Assistance**

Resource	Description	More Information
System Benefit Funds (SBF)	As some States restructure their electric utility industries, 22 States have created system benefit funds funded by electric customers. These funds help support certain energy policy goals, such as renewable energy development, energy efficiency incentives, energy research and development, and support for low-income customers. The charge to ratepayers varies by State (ranging from .5 percent to 4 percent), averaging about 3 percent of the customer's electric bill. States have the option of creating these funding sources without restructuring their electric power industry (Wisconsin is an example). Depending upon the specific design in each State, these dollars are administered either by utilities, non-profit organizations, or State agencies. According to the American Council for Energy Efficient Economy, the amount of state funds available in the U.S. totals \$1.6 billion. The emphasis on SBF allocation appears to be shifting somewhat towards peak reduction.	<p>Information on each State funding program is available at <a href="http://www.eren.doe.gov/femp/utility/utility_restruct.html">www.eren.doe.gov/femp/utility/utility_restruct.html</a>.</p> <p>An overview on SBF is contained at the following web site: <a href="http://www.hawaii.gov/dbedt/ert/symposium/brown/brown.html">www.hawaii.gov/dbedt/ert/symposium/brown/brown.html</a>.</p> <p>For California information, see the FEMP web site at <a href="http://www.eren.doe.gov/femp/resources/dir_caupdates.html">www.eren.doe.gov/femp/resources/dir_caupdates.html</a>, the California Energy Commission web site at <a href="http://www.energy.ca.gov">www.energy.ca.gov</a>, and the California Public Utilities Commission web site at <a href="http://www.consumerenergycenter.org/rebate/index.php">www.consumerenergycenter.org/rebate/index.php</a>.</p> <p>For New York information, see NYSERDA-New York Energy Smart Programs at <a href="http://www.nyserdera.org/sbc.html">www.nyserdera.org/sbc.html</a>.</p> <p>Since State laws, rules, and programs are subject to change, energy managers are encouraged to regularly check the current status of State SBF policy and financial opportunities to support DER projects. For more information, visit the following DOE web site: <a href="http://www.eren.doe.gov/state_energy/states.cfm">www.eren.doe.gov/state_energy/states.cfm</a>.</p>
Renewable Energy Incentives	The "Database of State Incentives for Renewable Energy" is a comprehensive source of information on State, local, and utility incentives that promote renewable energy. This web site is managed by the Interstate Renewable Energy Council, funded by DOE's Office of Power Technologies, and managed by the North Carolina Solar Center.	<a href="http://www.dcs.ncsu.edu/solar/dsire/frame.html">www.dcs.ncsu.edu/solar/dsire/frame.html</a>

**DEPLOYMENT OF DISTRIBUTED ENERGY RESOURCES:  
SOURCES OF FINANCIAL ASSISTANCE AND INFORMATION RESOURCES**

(continued from previous page)

**Other Regulatory and Funding Information**

Resource	Description	More Information
Wind Project Incentives	The American Wind Energy Association's (AWEA) <i>Inventory of State Incentives for Wind Energy in the U.S.</i> , March 2001, provides a state-by-state survey, with information about the local wind resource and financial, economic, and regulatory incentives for wind energy in each State.	<a href="http://www.awea.org/policy/index.html">www.awea.org/policy/index.html</a>
Combined Heat and Power Information	The FEMP web site includes resources on opportunities for combined heat and power (also known as cogeneration). The web site includes an overview, fact sheets, and sources of financial assistance, such as a call for projects and DER workshops.	<a href="http://www.eren.doe.gov/femp/techassist/der_resources.html">www.eren.doe.gov/femp/techassist/der_resources.html</a>
Financing Distributed Generation	<i>Financing Distributed Generation</i> , an 11-page report produced by Dr. Andy Walker of the National Renewable Energy Laboratory's FEMP Program, outlines several mechanisms for financing DER projects.	E-mail a request for the "Conference Paper for the Association of Energy Engineers' 2001 Annual Meeting" to <a href="mailto:pamela_lee@nrel.gov">pamela_lee@nrel.gov</a> .
Private Sector Guidebooks*	Private companies prepare guidebooks of funding sources and incentives for DER. Two reports were recently produced by EFI Consulting Services and Energy Info Sources.	Information about EFI Consulting Services' <i>2001 Guidebook of Funds and Incentives-Version 2 for Distributed Energy Resources</i> is located at <a href="http://www.efinc.com/guidebook_facts.asp">www.efinc.com/guidebook_facts.asp</a> .  The 2nd edition of Energy Info Source's <i>Distributed Generation: Technologies, Opportunities, and Participants Report</i> is located at <a href="http://www.energyinfosource.com/products/product.cfm?report_ID=7">www.energyinfosource.com/products/product.cfm?report_ID=7</a> .
DER How-To Guide	Implementing a successful DER project involves several steps. A FEMP publication, entitled <i>Implementing Distributed Energy Resources: A How-To Guide For Federal Facilities Managers</i> will address the process for getting a DER system up and running at your site.	<i>Implementing Distributed Energy Resources: A How-To Guide For Federal Facilities Managers</i> will be published by March 2002 and will be available on the FEMP DER web site at <a href="http://www.eren.doe.gov/femp/techassist/der_resources.html">www.eren.doe.gov/femp/techassist/der_resources.html</a> .

\* FEMP does not endorse private products, and FEMP recognizes that other companies may offer similar reports. The omission of other reports is not intended to endorse the two reports that have been referenced.

## Links for More DER Information

### FEDERAL WEB SITES

**Department of Energy – Federal Energy Management Program (FEMP)**  
[www.eren.doe.gov/femp](http://www.eren.doe.gov/femp)

**Department of Energy – Distributed Energy Resources Program**  
[www.eren.doe.gov/der](http://www.eren.doe.gov/der)

**Department of Energy – Regional Office Representatives**  
[www.eren.doe.gov/femp/utility/femp\\_services\\_who.html](http://www.eren.doe.gov/femp/utility/femp_services_who.html)

**FEMP Design Assistance Program**  
[www.eren.doe.gov/femp/techassist/designassist.html](http://www.eren.doe.gov/femp/techassist/designassist.html)

**FEMP Energy Saver Showcase Program**  
[www.eren.doe.gov/femp/prodtech/get\\_recogniz.html](http://www.eren.doe.gov/femp/prodtech/get_recogniz.html)

**FEMP SAVEnergy Program**  
[www.eren.doe.gov/femp/techassist/savenergyprog.html](http://www.eren.doe.gov/femp/techassist/savenergyprog.html)

**FEMP Renewable Energy Resources**  
[www.eren.doe.gov/femp/techassist/renewenergy.html](http://www.eren.doe.gov/femp/techassist/renewenergy.html)

**Energy Information Administration**  
[www.eia.doe.gov](http://www.eia.doe.gov)

**Federal Incentives for Commercial Solar Applications**  
[www.mdv-seia.org/federal\\_incentives.htm](http://www.mdv-seia.org/federal_incentives.htm)

**FEMP Guide to Greening of Federal Facilities**  
[www.eren.doe.gov/femp/greenfed](http://www.eren.doe.gov/femp/greenfed)

**FEMP Handbook for Promoting Behavior-Based Energy Efficiency in Military Housing**  
[www.eren.doe.gov/femp/yhttp/strategies.html](http://www.eren.doe.gov/femp/yhttp/strategies.html)

**Department of Energy – Office of Power Technologies**  
[www.eren.doe.gov/power](http://www.eren.doe.gov/power)  
[www.eren.doe.gov/power/repi/html](http://www.eren.doe.gov/power/repi/html)

**Environmental Protection Agency**  
[www.epa.gov](http://www.epa.gov)

### INDUSTRY AND OTHER WEB SITES

**American Council for Energy Efficient Economy**  
[www.aceee.gov](http://www.aceee.gov)

**Edison Electric Institute**  
[www.eei.org](http://www.eei.org)

**Energy-Efficient Product Information**  
[www.energystar.gov](http://www.energystar.gov)

**Engine and Turbine Manufacturers Directory**  
[www.dieselpub.com/catalog/](http://www.dieselpub.com/catalog/)

**Fuel Cell Developers**  
<http://216.51.18.233/fcdevel.html>

**Solar Energy Industries Association**  
[www.seia.org](http://www.seia.org)

**American Wind Energy Association**  
[www.awea.org](http://www.awea.org)

**United States Fuel Cell Council**  
[www.usfcc.com](http://www.usfcc.com)

**Online Fuel Cell Information Center**  
[www.fuelcells.org](http://www.fuelcells.org)

**Electricity Storage Association**  
[www.energystorage.org/](http://www.energystorage.org/)

**Distributed Power Coalition of America**  
[www.distributedpower.com](http://www.distributedpower.com)

**National Association of Regulatory Utility Commissioners**  
[www.naruc.org](http://www.naruc.org)

**Institute of Electrical and Electronics Engineers**  
[www.ieee.org](http://www.ieee.org)  
[www.solarbuzz.com](http://www.solarbuzz.com)

# FEMP Seeks Public Input on Low Standby Power Plan

On October 24, 2001, FEMP conducted a public meeting in Arlington, Virginia, to gather comments from the public and Federal agencies on its proposed approach to implement Executive Order 13221, "Energy-Efficient Standby Power Devices." Issued by President Bush on July 2001, the Order calls on Federal agencies to purchase products that use standby power of 1 watt or less where possible.

At the meeting, FEMP sought input from interested parties and stakeholders on how to:

- minimize the economic and reporting burden on manufacturers and vendors,
- maximize business opportunities for selling efficient products to Federal and other buyers,
- identify efficient products for Federal buyers, and
- improve implementation of the Executive Order.

The public meeting included discussion on the categories of products included in the proposed plan (e.g., computer and office equipment, communication devices, video, audio, among others), procedures for testing and certifying standby power levels, the creation of a public-domain database on such products based on voluntary industry testing and data submissions by Federal suppliers and manufacturers, and procedures for periodic updates of the database and product categories. In the afternoon, the meeting was open for

comments from the public, including Federal agencies. The relation of this new effort to other FEMP activities in support of energy-efficient Federal purchasing and to the ENERGY STAR® labeling program was also examined.

Based on input received, FEMP developed a preliminary list of products that use minimal standby power. The standby power database is now available at [www.eren.doe.gov/femp/resources/standby\\_power.html](http://www.eren.doe.gov/femp/resources/standby_power.html). The web site includes information on public/industry involvement, interagency coordination, technical issues, a product list, and outreach materials. Manufacturers are encouraged to submit additional data on the standby power levels of their products. The database will be updated continually.

*Please send your questions or comments regarding Executive Order 13221 and standby power devices to Alison Thomas of FEMP at 202-586-2099 or [alison.thomas@ee.doe.gov](mailto:alison.thomas@ee.doe.gov).*

## Ask the Energy Expert

### What is Executive Order 13221 and what is FEMP's approach to implementing it?

Issued by President Bush on July 2001, Executive Order 13221, "Energy-Efficient Standby Power Devices" calls on Federal agencies to purchase products that use 1 watt or less in standby power mode where possible. Products that use standby power include battery chargers, cell phone chargers, computer systems, and other electronics that continue to consume electricity even though they are turned off. The Executive Order directs FEMP, in collaboration with the General Services Administration (GSA), the Defense Logistics Agency (DLA), and the ENERGY STAR® program to develop a list of products that comply with this requirement.

FEMP held a public meeting on October 2001 to discuss the new Executive Order and created a database on devices with low-standby power.

As part of its effort to implement Executive Order 13221, FEMP has undertaken the following:

- developed a web site with educational and outreach materials on standby power products;
- established a definition and measurement guideline for standby power;
- conducted a public meeting as well as smaller meetings with manufacturers and industry associations to gather input from industry and other affected groups;
- created a list of the types of products that use standby power and are purchased by the Federal Government;
- collected standby power data from manufacturers for a limited number of products; and
- evaluated available data and selected maximum standby levels for Federal purchases for a limited number of categories.

The clearest way to recognize products that use standby power is to measure their energy consumption with a watt-meter. There are, however, a number of clues that can help you identify products that use standby power:

- If the device has a remote control - TV, VCR, garage door opener, audio equipment - then it probably uses standby power.

- If the device has an external power supply then it uses standby power. Examples are cell phone chargers, cordless telephones, many TV set-top boxes, and battery chargers. Typical offices will have a few devices with external power supplies in each room.
- A continuous digital display requires standby power. These are in microwave ovens, coffee makers with clocks, certain new washing machines, and other white goods.
- Any device containing a rechargeable battery will use standby power when re-charging even after the battery is fully charged (e.g. portable re-chargable tools, such as drills, lights, and vacuum cleaners).

*For more information, visit the FEMP web site at [www.eren.doe.gov/femp/resources/standby\\_power.html](http://www.eren.doe.gov/femp/resources/standby_power.html).*

*If you have any questions pertaining to Federal energy management that you would like answered, send them to Annie Haskins of FEMP at [annie.haskins@ee.doe.gov](mailto:annie.haskins@ee.doe.gov).*

## FEMP Awards FY 2002 Technical Assistance Projects

Recently, 44 Federal facility projects were selected to receive FY 2002 FEMP technical assistance. A total of 121 applications were submitted over the summer in response to FEMP's call for projects. A team of experts from FEMP Headquarters, the DOE Regional Offices, and the National Laboratories reviewed the requests.

The types of technical assistance offered by FEMP include screening for project opportunities, feasibility studies, procurement specification, design review, and performance measurement. Project assistance was awarded to the following organizations:

- Department of Defense,
- Department of the Interior,
- Department of Transportation,
- General Services Administration,
- National Institutes of Health,
- Presidio Trust, and
- Department of Agriculture.

FEMP supports agency projects in need of technical assistance in the following areas:

- energy-efficient new construction,
- energy and water efficiency retrofits,
- distributed energy resources (DER) including new construction or retrofits of existing facilities,
- renewable energy applications, and
- Assessments of Load and Energy Reduction Techniques (ALERT).

FEMP tasks DOE National Laboratories to provide technical assistance that agencies request for

specific projects. The total value for FY 2002 technical assistance projects is approximately \$800,000. FEMP used the following criteria to select projects for FY 2002:

- agency management support for the project,
- cost effectiveness and value,
- cost sharing commitments,
- project implementation schedule,
- strategic value,
- replication/showcase potential, and
- technical merit.

Examples of selected projects include:

### *Fuel Cell Feasibility Study*

Naval Base Point Loma located in San Diego, California, requested technical assistance for a study to determine the technical and economic feasibility of deploying natural gas-fired fuel cell systems with thermal energy recovery. Naval Base Point Loma is a Naval installation comprised of numerous Naval commands occupying three large sites in the Point Loma area. The study will determine the optimum size of the fuel cell plant, the most advantageous location for the plant, and the best use of the thermal energy produced by the plant. The study will also include a life-cycle-cost analysis.

### *Water Source Heat Pump with Natural Gas, Cooling/Heating*

The Department of Defense, Army National Guard sought technical assistance to determine available options for a natural gas heat pump, an inverter-driven, multi-indoor-unit heat pump, a

FEMP thanks you for participating in the FY 2002 technical assistance call for projects. Many excellent projects were submitted. Unfortunately, sufficient funds were not available to support all projects. A spreadsheet detailing both selected and non-selected projects is available on the FEMP web site at [www.eren.doe.gov/femp/techassist/designassist.html](http://www.eren.doe.gov/femp/techassist/designassist.html).

Technical assistance projects selected will receive assistance from DOE National Laboratories and contractors. If your project was not selected under this call, we will try to provide the assistance you need through one of FEMP's many other programs. Please contact the FEMP office located in your region for further assistance. FEMP also offers technical assistance if Federal agencies are willing to cost-share.

Again, I thank you for your participation and I hope you will participate again next year.

— Beth Shearer  
Director, Federal Energy  
Management Program

water source heat pump, and a designed hybrid system. The National Guard has also been awarded a DOE/DER design assistance/specifications and life-cycle cost analysis to determine the optimal air conditioning system for this site.

### *U.S. Forest Service/Yavapai-Apache Nation Wood Chip Biomass Renewable Energy Project*

U.S. Department of Agriculture requested technical assistance with the preparation of a feasibility study that includes assessments of need, natural and human resources, environmental and safety considerations, preliminary system design, and an evaluation of financial and cost issues. With dual mandates of the U.S. Forest Service for hazardous fuel

*continued on next page*

## Gulf Power Company to Host Free Utility Workshop in Florida

On April 30-May 1, 2002, the Gulf Power Company will host a workshop in Pensacola, Florida, for Federal customers on utility energy services contracting. Sponsored by FEMP, GSA, and Gulf Power, this workshop will provide attendees with an overview of the contracting options and services available from their local utility companies to engineer, finance, and install cost effective energy and water savings projects. Participants will learn about the typical project process, from the audit phase to commissioning the equipment. Upon completing this workshop, participants will have the contracting and technical knowledge to begin a project at their facility. This innovative alternative financing opportunity provides a mechanism to help solve facility problems and meet program objectives and goals. Priority will be given to Federal personnel; however, State and local government customers are welcome.

*The registration fee is waived for this workshop. Space is limited, so register by calling FEMP's Workshop Hotline at 703-243-8343 by April 15, 2002.*

## Low-Energy, Sustainable Building Design Workshop to be Held in Solar Energy Research Facility

One of the nation's most advanced buildings is the site of FEMP's Low-Energy, Sustainable Building Design for Federal Managers workshop on April 18-19, 2002 in Golden, Colorado. The workshop is free to Federal Government employees (\$99 for contract architects and engineers; fee includes a resource book) and helps agencies comply with Executive Orders 13123 and 13101 and qualifies attendees for 12 AIA Learning Unit Hours. Experienced instructors who are experts in sustainable building design teach this two-day workshop, which focuses on new construction and the "whole building" approach. Buildings designed with an integrated approach use significantly less conventional energy, make more effective use of renewable energy (such as photovoltaics and solar hot water), incorporate recycled and recyclable building materials, conserve water, and minimize construction waste.

*To register, or for more information about the course, please contact the Sustainable Buildings Industry Council (SBIC) at 202-628-7400 x211 or sbic@sbicouncil.org or visit www.sbicouncil.org. To learn more about the Solar Energy Research Facility, please visit www.nrel.gov.*

### FEMP AWARDS FY 2002 TECHNICAL ASSISTANCE PROJECTS

*(continued from previous page)*

reduction and the promotion of small diameter timber market expansion, and coupled with the Yavapai-Apache Nation's aggressive stance on energy management, this project has a high probability of success. This project can be replicated and has available a high level of sustainable biomass resources, as well as financial and human resources to implement the project if proven viable by the feasibility study.

Agencies that were not selected to receive assistance are encouraged to reapply next year or contact FEMP for help to

complete your project with SAVEnergy Audits and alternative financing strategies such as energy savings performance contracts, utility energy savings contracts, and other partnerships. The next FEMP call for projects will be for DER projects in March 2002 (See page 19.) and the FY 2003 technical assistance call for projects will be issued in summer 2002.

*For more information, please contact Shawn Herrera of FEMP at 202-586-1511 or shawn.herrera@ee.doe.gov.*

# FEMP Training Reminders

**Energy Management Telecourse: Part 1  
Life-Cycle Costing-Basic;  
Buying Energy Efficient Products**  
March 12  
[www.energyworkshops.org/femp](http://www.energyworkshops.org/femp)  
865-777-9869

**Energy Management Telecourse: Part 2  
Operations and Maintenance Management;  
Water Resource Management**  
March 19  
[www.energyworkshops.org/femp](http://www.energyworkshops.org/femp)  
865-777-9869

**Energy Management Telecourse: Part 3  
Energy Savings Performance Contracts;  
Utility Energy Service Contracts**  
March 26  
[www.energyworkshops.org/femp](http://www.energyworkshops.org/femp)  
865-777-9869

**GLOBALCON 2002 (FEMP Symposia)**  
March 27-28  
Philadelphia, PA  
[www.energyevent.com](http://www.energyevent.com)  
770-447-5083 x224

**Labs 21 High Performance,  
Low-Energy Design Course**  
April 10  
Washington, DC  
[www.epa.gov/labs21century/index.htm](http://www.epa.gov/labs21century/index.htm)  
781-674-7374

**FEMP Lights (Advanced)**  
April 10-12  
Dallas, TX  
916-962-7001

**Designing Low-Energy, Sustainable Buildings**  
April 18-19, 2002  
Golden, CO  
202-628-7400 x211

**Labs 21 High Performance,  
Low-Energy Design Course**  
May 8  
San Francisco, CA  
[www.epa.gov/labs21century/index.htm](http://www.epa.gov/labs21century/index.htm)  
781-674-7374

**FEMP Super ESPC**  
May 14-15  
Boston, MA  
703-243-8343

## Upcoming Events

# Upcoming Conferences

**National Facilities Management and  
Technology Conference**  
March 6-8  
Baltimore, MD  
[www.nfamt.com](http://www.nfamt.com)

**TechAdvantage 2002**  
March 6-11  
Dallas, TX  
[www.techadvantage.org](http://www.techadvantage.org)

**6th Annual Distributed Generation &  
On-Site Power Conference**  
March 11-13  
Atlanta, GA  
[www.dist-gen.com](http://www.dist-gen.com)

**Globe 2002**  
March 13-15  
Vancouver, Canada  
[www.globe2002.com/conference.htm](http://www.globe2002.com/conference.htm)

**Electric Power 2002**  
March 19-21  
St. Louis, MO  
[www.electricpowerexpo.com](http://www.electricpowerexpo.com)

**Building Energy Conference**  
March 20-23  
Medford, MA  
[www.nesea.org](http://www.nesea.org)

**National Green Building Conference**  
March 24-26  
Seattle, WA  
[www.nahbrc.org](http://www.nahbrc.org)

**2002 Worldwide Energy Conference**  
April 29 - May 3  
Washington, DC  
[www.desc.dla.mil/default.asp](http://www.desc.dla.mil/default.asp)

**National Conference on  
Building Commissioning**  
May 8-10  
Chicago, IL  
[www.peci.org/ncbc/2002/index.html](http://www.peci.org/ncbc/2002/index.html)

## Plan Now for March Teleworkshop

FEMP's free updated "Energy Management Telecourse" will take place March 12, 19, and 26, 2002. This course is presented using state-of-the-art distance learning technology. The information presented is designed to assist facility management personnel in achieving EPACT and Executive Order 13123 objectives for energy and water savings, and alternative financing. Using a live, interactive format, brief lectures will be followed by live question and answer sessions, problem solving and web references. All three sessions are from 12 - 4 pm EST:

- March 12 - Part 1: Executive Order 13123 Update; Life-Cycle Costing - Basic; Buying Energy Efficient Products.
- March 19 - Part 2: Operations and Maintenance Management; Water Resource Management.
- March 26 - Part 3: Energy Savings Performance Contracting; Utility Energy Services Contracting.

Register now at [www.energyworkshops.org/femp/](http://www.energyworkshops.org/femp/) or call 865-777-9869. If you need help finding a downlink location or if you wish to sponsor a downlink site, please send an e-mail to [bbs@icx.net](mailto:bbs@icx.net) or call Heather Schoonmaker at 865-777-9869.

# FEMP Contacts

For information on topics not listed here, call the FEMP Help Desk at 1-800-363-3732.

FEMP Office: 202-586-5772  
FEMP Fax: 202-586-3000  
FEMP on the Web: [www.eren.doe.gov/femp](http://www.eren.doe.gov/femp)

**Beth Shearer**  
Director  
202-586-5772

**Joan Glickman**  
Special Assistant  
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[joan.glickman@ee.doe.gov](mailto:joan.glickman@ee.doe.gov)

**Schuyler (Skye) Schell**  
Office Director - Planning, Budget, and Outreach  
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[schuyler.schell@ee.doe.gov](mailto:schuyler.schell@ee.doe.gov)

**Veronica Bellamy**  
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**Helen Krupovich**  
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**Ladeane Moreland**  
Administrative Assistant  
202-586-9846  
[ladeane.moreland@ee.doe.gov](mailto:ladeane.moreland@ee.doe.gov)

## Customer Service, Planning and Outreach

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