

Interior Energy Management News

Volume 1, Issue 1 ▪ Spring 2013

Welcome to the Newsletter!

Greetings from the Energy Management Program

Welcome to the first issue of Interior Energy Management News, the newsletter for the Department of the Interior's Energy Management Program! We hope this newsletter will be a valuable resource for keeping you informed about the progress the Department is making in the areas of energy and water conservation, new policies, laws, and regulations that will impact our work, new tools and technologies at our disposal, and new ideas and best practices from across the Federal government. The Newsletter will be released biannually (for the time being) with an issue in the spring and in the fall.

In this first issue, we focus on the challenge of climate change and how energy management at the bureau level is leading the Department's response. The feature article explores one example of the Department's many innovative and successful energy conservation and sustainability programs: the National Park Service's Climate Friendly Parks program.

We also provide an update on the deployment of the Energy Module of Interior's Financial and Business Management System (better known to you as FBMS). This system will provide more reliable energy use data as we seek to reduce our consumption in an effort to meet government-wide targets. The Department is currently meeting its targets, and its progress is described in a summary of the Fiscal Year 2012 Greenhouse Gas and Sustainability Data Report.



Dangling Rope Marina PV System, Lake Powell, Utah.
Credit: NPS.

Inside this Issue:

Welcome

NPS Climate Friendly Parks

FBMS

FY 2012 GHG/Energy
Summary

FY 2012 Award Winners

Bureau Notes

Announcements

Each issue will include a section called "Bureau Notes," which features energy and water conservation highlights such as new green buildings, renewable energy installations, and other achievements, including awards, attained by the bureaus. Finally, each issue will advertise upcoming training opportunities, reporting deadlines, and other announcements.

We hope this effort will promote the good work you are doing at the bureau level and serve as a means to share ideas, suggestions, frustrations, lessons learned, and ways forward as we all seek to make the Department more efficient and more sustainable.

Park Service Becomes Climate Friendly

Program Conserves Energy, Reduces Emissions, and Educates the Public

Climate change is one of the most difficult challenges the Department will face in the coming decades. Our public lands, parks, and refuges reflect nearly every kind of ecosystem on the planet—mountains, coastlines, prairies, rainforests, and more—each threatened in unique ways by climate change. Our historic sites represent thousands of years of human history, and they, too, will be threatened by altered weather patterns and rising sea levels. However, while the challenge may be substantial, the Department is committed to meeting it. Indeed, the Department is uniquely positioned to lead a response to climate change. Visiting the iconic landscapes that we manage and viewing the diversity of wildlife that inhabits them may inspire new generations to join the fight for a sustainable future. By greening its own operations, the Department can demonstrate to the public a commitment to the sustainable practices that will lead us there.

The National Park Service's Climate Friendly Parks (CFP) program was created out of just such a recognition—that addressing climate change was both a responsibility and an opportunity, and that National Park Service (NPS) employees needed to understand the impacts of climate change upon their parks and that they needed to communicate these impacts to the public.

Shawn Norton, Branch Chief for Sustainable Operations and Climate Change at the NPS and one of the architects of the CFP program says that visitors to the parks tend to ask two questions about climate change: What is the effect on the park going to be and what is the park going to do about it? CFP provides park rangers and other park personnel with the answers to these questions. Through the CFP program, parks measure their greenhouse gas (GHG) emissions, develop strategies to mitigate these

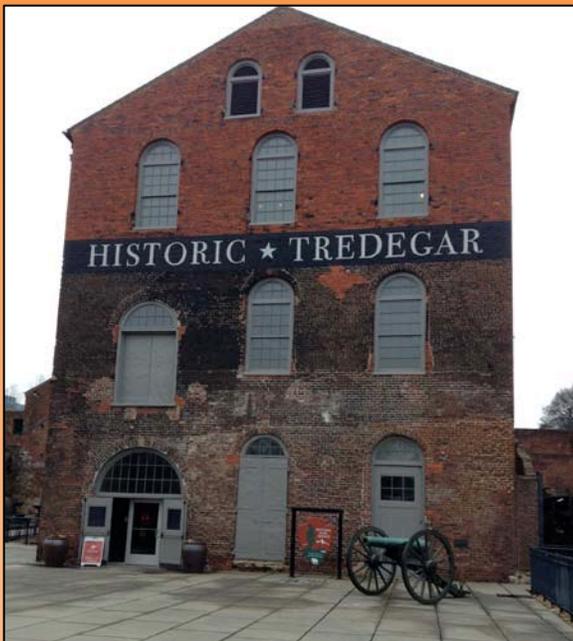


A Climate Friendly Parks Side Session, Richmond, VA

emissions and adapt to climate change impacts, and educate the public about these efforts. CFP personnel offer expertise and support while parks develop these strategies. CFP also offers a specially-designed Microsoft Excel-based Climate Leadership in Parks (CLIP) tool, which features a GHG inventory module that allows parks to establish GHG baselines and an action planning module that allows parks to choose strategies that reduce their emissions. Chief among the response strategies are improving the energy efficiency of park facilities and increasing the supply of on-site renewable energy.

CFP was founded in 2002 as a joint effort between the U.S. Environmental Protection Agency (EPA) and the NPS. The NPS now manages the program by itself. The EPA recognized the NPS's ability to connect with the public in a way that few other federal agencies could match—more than 280 million people visit the parks each year—and saw this as a vehicle for delivering a message on the importance of climate change action. According to Norton, the EPA's timing was perfect. Norton says he started to become concerned about climate change in the mid-1990s while working on the NPS's Environmental Leadership efforts. At the time, he recalls, climate change was not considered a pressing issue across the NPS, but he saw it as a growing threat to the parks. Therefore, when the EPA approached the NPS about a partnership, Norton jumped at the chance.

The most recent CFP workshop was held in Richmond, VA, from February 12-13. Five park units—Richmond National Battlefield Park, Maggie L. Walker National Historic Site, Petersburg National Battlefield, Fort McHenry National Monument and Historic Shrine, and Hampton National Historic Site—took part in the two days of education, brainstorming, and action planning. Much of the first day was given to examining the projected regional impacts of climate change and the challenges it presents for the parks' mission of historic preservation (specifically the vulnerability of buildings and other structures). The group discussed on-going energy conservation and emissions reduction plans and strategies for the future, and unveiled their initial CLIP tool-generated GHG inventories. The workshop then taught participants how to engage park visitors on issues of climate change. On day two, the workshop broke into small groups to allow each park to prioritize mitigation and adaptation strategies and begin to develop climate action plans.



Civil War Visitor Center at Tredegar Iron Works,
Richmond

The first CFP Workshop was held at Gateway National Recreation Area in June of 2003. Now, almost ten years later, there are 99 Climate Friendly Parks with an additional 174 that have completed GHG inventories. To become a CFP member park, a park must complete four milestones: (1) submit an application; (2) complete a GHG inventory and establish a baseline; (3) conduct a workshop or training; and (4) complete a Climate Action Plan (CAP) or Environmental Management System (EMS). The park must then maintain its member status by providing workshop follow-up assistance, implementing its CAP or EMS, and monitoring and reporting results yearly. The NPS aims to have 100 percent of its parks achieve member status by the Park Service's Centennial in 2016.

Over the years, CFP has seen a number of successes and the feedback from park personnel and park visitors has been resoundingly positive. Norton notes that through CFP, member parks have made a voluntary commitment to avoid emitting 80,000 metric tons of carbon dioxide equivalent. To put it in perspective, this equates to taking more than 16,000 cars off the road or eliminating the electricity usage of almost 12,000 homes for a year. Much of this reduction comes from the hard work of the parks' facility and energy management specialists. By closely aligning its energy management and climate change response programs, the NPS has made CFP the vehicle through which the agency meets its energy and climate change goals. These goals are specified in the NPS's broader sustainability roadmap, its newly-issued Green Parks Plan. For example, CFP member parks are given funding priority for energy conservation measures.

Of course, any climate change response program must emphasize adaptation as well as mitigation. For the National Parks, this means park personnel will need to plan for climatic disruptions in the coming years. CFP is anticipating this challenge. One of the priorities for the program in the near term is to deploy a facilities vulnerability assessment tool, which member parks will be able to use in their CAP or EMS planning. The vulnerability assessment tool, which incorporates geographical imaging system data with coastal flooding projections and extreme weather predictions, is being developed in conjunction with the National Oceanic and Atmospheric Administration. CFP will implement this new tool in

two phases, beginning first with the coastal parks and subsequently with the interior parks. CFP will also continue its work to make sure every park is climate friendly before 2016.

CFP now has a decade's worth of successes, but more challenges lie ahead. Adapting to climate change across our parks, refuges, and public lands, and shrinking the carbon footprint of our operations will require more of the hard work, creative thinking, and public outreach that are exemplified by the CFP program.

Making Progress Interior on Track to Meet Energy and GHG Goals

As all energy managers know, the Department is required by law and executive order to meet a variety of energy, water, and GHG reduction targets. Meeting these requirements makes for challenging work. We can all take pride, however, that Interior is up to the challenge and is making steady progress in its efforts to reduce energy and water consumption and GHG emissions.

The Department is required to reduce its energy intensity 30% from an FY 2003 baseline by FY 2015. This deadline is fast approaching but the good news is that we are almost there! As of FY 2012, Interior has reduced its energy intensity (measured in British thermal units per square foot) by 28.6%. Meanwhile, for renewable energy, Interior continues to exceed its mandated target. The Energy Policy Act of 2005 requires that Federal agencies' facility electricity consumption come from at least 5% renewable energy sources. This requirement jumps to 7.5% in FY 2013 and beyond. Fortunately, we are ahead of the game: In FY 2012, 8.6% of Interior's facility electricity was generated by renewable sources. The Department continues to be on track for its water reduction target as well. From an FY 2007 baseline, Interior has reduced its potable water intensity (measured in gallons per gross square foot) by 11.3% out of a required 26% by FY 2020.

FBMS Energy Module

The Department of the Interior's Financial and Business Management System (FBMS) is an integrated suite of software applications that will help DOI manage a variety of business functions. The latest deployment (D7) of FBMS includes an energy reporting module. We expect that in the years to come this will enable a more streamlined method of capturing energy use and will aid efforts to meet our reporting requirements. We encourage bureau personnel to begin to use the energy module to familiarize themselves with the processes and identify areas of improvement.

The Department is just shy of meeting several other energy requirements. Currently, 99.3% of all its appropriate buildings are metered for electricity, but we expect 100% of these buildings to meet this criterion by the end of FY 2013. Meanwhile, 99% of new building designs started since beginning of FY 2007 are 30% more energy efficient than relevant code where life-cycle cost effective or achieve the highest level of energy efficiency that is life-cycle cost effective.

On GHG emissions, Interior is also making impressive progress. The Department set a goal of reducing its Scope 1 & 2 GHG emissions by 20% from an FY 2008 baseline by FY 2020 and its Scope 3 emissions by 9%.¹ So far, the Department is on track to meet or exceed these targets as well. As of FY 2012, the Department has already reduced its Scope 1 & 2 emissions by 11.6% and its Scope 3 emissions by 7.5%. The bureaus' energy managers can take credit for much of this good work. While purchased electricity consumption continues to be our largest contributor to GHG emissions (about 30% of the total), it is also the area of Scope 1 & 2 emissions where we are seeing the

¹ Scope 1 GHG emissions include vehicles and equipment, stationary combustion, on-site landfills and wastewater treatment, and fugitive emissions. Scope 2 GHG emissions include purchased electricity, purchased heating and cooling, and purchased steam. Scope 3 GHG emissions include business travel, employee commuting, transmission and distribution losses, and contracted solid waste disposal and wastewater treatment.

largest reductions. This reduction is due in large part to the renewable energy and energy efficiency projects that the bureaus have implemented in recent years using funding from the American Recovery and Reinvestment Act (ARRA) and other sources.

While the ARRA funding is all but spent, the Department continues to make energy efficiency improvements a priority. In FY 2012, Interior spent more than \$8.3 million in direct obligations, energy savings performance contracts (ESPC), and utility energy services contracts (UESC), or about 11.5% of total facility energy costs. We anticipate that these investments will yield an annual energy savings of more than 11 billion Btus.

It is the hard work of the energy managers and facility personnel across the Department that is making these achievements possible. The more we reduce our energy and water consumption, the more we gain.

Award Winners

Bureau Energy Projects Receive Recognition in FY 2012

Interior continues to be a sustainability leader across the Federal government. In FY 2012, the Department received several **Federal Energy and Water Management Awards** from the Department of Energy's Federal Energy Management Program (FEMP).

National Park Service – Santa Monica Mountains National Recreation Area, Thousand Oaks, California, received a project award for its Net-Zero Energy Student Intern Center.

U.S Fish and Wildlife Service – Neosho National Fish Hatchery, Neosho, Missouri, won a project award for its LEED Gold-rated visitor center.

U.S. Fish and Wildlife Service – Audubon National Wildlife Refuge, Coleharbor, North Dakota, won a project award for its new Energy Star-rated Visitor Center and Headquarters building.

In addition, the **Bureau of Reclamation, Brackish Groundwater National Desalination Research Facility**, Alamogordo, New Mexico, received the inaugural **Better Buildings Federal Award** from the Department of Energy. The competition tracked single year energy savings among a field of competing facilities across the Federal Government.



Santa Monica Mountains Student Intern Center. Credit: Tom Lemmer, NPS.



Neosho National Fish Hatchery Visitor Center. Credit: Janice Eaton, FWS



Audubon National Wildlife Refuge Visitor Center/Headquarters. Credit: Jackie Jacobson, FWS

A number of the winners of **Interior's Environmental Achievement Awards** focused on energy management, including the following:

National Park Service – Mr. Brian L. Cook, Southeast Regional Sustainability Manager, NPS, Georgia, was named a Sustainability Hero for a multitude of sustainability accomplishments.

National Park Service –The Using Our Wits to Save Watts program, Point Reyes National Seashore, California, is an active leader in promoting and practicing sustainable operations and climate change mitigation.

U.S. Fish and Wildlife Service – San Francisco Bay National Wildlife Refuge Complex, California, Headquarters Office Renovation transformed the building into a model of sustainability.

U.S. Fish and Wildlife Service – Benton Lake National Wildlife Refuge, Montana, Hybrid Solar PV and Wind Energy System is the first of its kind in the Mountain-Prairie Region.

U.S. Fish and Wildlife Service – Kooskia National Fish Hatchery, Idaho, New Egg Incubation Water Reuse - Chiller System saves energy and reduces well water use.

U.S. Fish and Wildlife Service – Rocky Mountain Arsenal National Wildlife Refuge Visitor Center: The land, once use by the U.S. Army to manufacture chemical weapons was placed on the EPA's National Priorities List. The new visitor center sits upon the cleaned-up land and includes many energy- and water-saving features.

U.S. Fish and Wildlife Service – Turnbull National Wildlife Refuge Maintenance Shop Energy Retrofit: An integrated design team guided the collaborative planning and design process for the high-performance, heavy equipment maintenance building renovation at Turnbull NWR.



The Brackish Groundwater National Desalination Research Facility. Credit: BOR.



Point Reyes National Seashore Administration Building. Credit: NPS.



San Francisco Bay National Wildlife Refuge Complex Headquarters Office. Credit: FWS



Benton Lake National Wildlife Refuge Solar PV and Wind Energy System. Credit: FWS.

Bureau Notes

Sustainability Updates from Around the Bureaus

Bureau of Indian Affairs:

BIA has just completed two employee quarters projects—five homes at **Ute Mountain Agency**, Colorado, and two homes in **Moencopi**, Arizona—with rooftop PV systems designed to supply one-third of each unit's expected electricity needs.



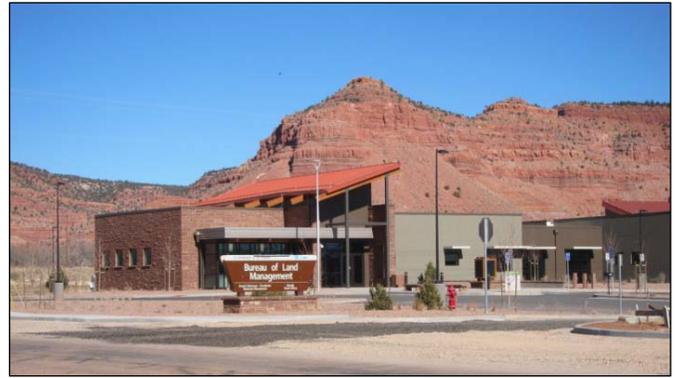
Solar Powered Homes at the Ute Mountain Ute Agency in Colorado. Credit: BIA.

Bureau of Land Management:

BLM completed three LEED buildings in FY 2012: the **Farmington Field Office** (LEED Gold) and **Warehouse** (LEED Certified) in Farmington, New Mexico and the **Kanab Field Office** (LEED Gold) in Kanab, Utah.

Bureau of Reclamation:

BOR has constructed a new office building designed for LEED Platinum status in its **Date Street Complex** in Boulder City, Nevada. The project was funded through ARRA at a total cost of about \$14.8 million. The building includes state-of-the-art materials and fixtures that cut energy use and reduce costs and a 588-panel, 135 kW capacity solar farm to generate enough electricity to provide 62 percent of the building's annual energy demand.



Kanab Field Office. Credit: BLM



Date Street Complex. Credit: Alexander Stephens, BOR.

Meanwhile, BOR's **Snake River Area Office** in Boise, Idaho, reduced water usage by replacing all water head sprinklers with drip irrigation and increasing mulching to retain moisture. Composting was established on site for added water retention. An outside water meter was installed to measure and record irrigation water use separately from potable building water.

U.S. Fish and Wildlife Service:

In FY 2012, FWS opened a new net-zero energy, LEED Platinum designed building at **San Luis National Wildlife Refuge** (NWR) in California. A roof-mounted 55 kW PV system is designed to generate all the electricity needs for the building. The **San Diego Bay NWR Complex**, California, opened a brand new building designed for LEED Gold status and featuring a 30 kW PV system. The **Long Island NWR**, New York, also opened a new visitor center and headquarters with a 6.5 kW PV system.



San Luis National Wildlife Refuge Visitor Center. Credit: FWS.



Alcatraz Island PV System. Credit NPS.



Long Island National Wildlife Refuge Visitor Center. Credit FWS.



Santa Monica Mountains King Gillette Visitor Center. Credit NPS.

National Park Service:

NPS completed a number of new on-site renewable energy projects during FY 2012. **Alcatraz Island Golden Gate National Recreation Area**, California, completed a multi-phased installation of a 307 kW PV system to replace diesel generated power on the island. The brand new **Mesa Verde Visitor Center and Research Center**, Colorado, designed to LEED Platinum standards, features a 67 kW PV system expected to deliver 100,500 kWh of renewable electricity per year, an 80 square foot solar hot water heater, and a 20 kW microhydro system. NPS has gained its first net-zero visitor center: the Anthony C. Beilenson Visitor Center at the King Gillette Ranch in the **Santa Monica Mountains National Recreation Area** in California.

At the **National Mall and Memorial Parks** in Washington, DC, NPS completed the renovation of the reflecting pool between the Lincoln Memorial and the World War II Memorial and has nearly completed the first of three phases to restore turf and improve drainage on the National Mall. The project will reduce the amount of potable water required for irrigating the Mall, and the collection of stormwater will improve regional water quality by reducing the amount of flow from the Mall into area sewer systems and keeping raw sewage and pollutants out of Chesapeake Bay tributaries.

Office of Facilities and Administrative Services:

The Office of Facilities and Administrative Services (OFAS), which was formerly part of the National Business Center, continued upgrades to the **Main Interior Building** (MIB) in Washington, DC, including the replacement of shower heads with low flow shower heads, the addition of aerators to faucets in all kitchenettes and restrooms, the installation of 1.4 gallons per flush (gpf) flush toilets and 0.6 gpf

urinals in selected locations, and the use of xeriscaping to replace landscaping around MIB.

OFAS is installing blast mitigation windows, which are energy efficient, in the MIB using a UESC with Washington Gas Energy Services. Window installation began in FY 2012. Additional energy conservation projects at MIB include: the installation of motion sensors in MIB wings 3-6, and the installation of NEMA motors and cogged V-belts on air handling units, the installation of Green Roofs on 5 Wings of MIB, and the completion of design documents for **South Interior Building** Green Parking Lot.

U.S. Geological Survey:

The USGS **National Wildlife Health Center** in Madison, Wisconsin, completed (95 percent) of an ESPC. The project estimates an annual energy savings of 5,825 MMBtu and \$82,000. The **Patuxent Wildlife Research Center** in Laurel, Maryland, built a zero-energy residential home with ARRA funding under a joint project with the FWS. The **Woods Hole Gosnold Building**, Massachusetts, uses renewable energy as a major component of the facility's sustainable design. Extensive passive solar design strategies were incorporated into the entire building, including the "Nice Day Switch," which allows occupants to turn off the heating or cooling system and to open clearstory windows for natural

ventilation, sunscreens that lessen the need for mechanical air conditioning, and structural light. The facility also features 300 individual solar evacuated tubes mounted in ten roof-top solar array panels that circulate hot water to radiant floor zones throughout all spaces in the building. The tubes collect enough solar energy to heat the addition.

USGS **Boise District Office** in Boise, Idaho, renovated Building 3 with \$1.3 million of direct agency and ARRA funds to transform the building from a warehouse to a modern office building. Finally, the **Columbia Environmental Research Center** in Columbia, Missouri, completed a laboratory consolidation project that eliminated nine smaller buildings and constructed one new, more efficient laboratory building (LEED Silver).



The USGS Woods Hole Gosnold Building. Credit USGS.

Announcements

- **EISA Covered Facilities Compliance Tracking System:** EISA requires Federal agencies to complete energy and water evaluations of its designated covered facilities annually so that all covered facilities are evaluated once every 4 years. Bureau reporting templates, pre-populated with covered facilities information, evaluation due dates, and previous submissions of evaluation findings, have been forwarded electronically to bureau energy managers. These templates should be updated to incorporate the results of new evaluations for covered facilities that had their initial evaluations completed by June 2009. Updated templates should be submitted electronically to Mary Heying at mary_heying@ios.doi.gov no later than June 14, 2013.
 - **Implemented Projects:** EISA also indicates that Federal agencies may implement any energy or water conservation measure that was identified in the covered facility evaluation that is life cycle cost effective. Project information can be inputted into CTS by bureau energy managers at any time throughout the year either individually by covered facility or through spreadsheet uploads. DOI's Energy Management Program will conduct spreadsheet uploads at the end of each quarter. To participate in this process, please electronically submit completed project templates to Mary Heying no later than March 29th, June 28th, September 30th, and December 31st, 2013. All bureaus

should input or provide implemented project data for at least 10 covered facilities semi-annually but no later than June 28th and December 31st.

- **Benchmarking Metered Buildings:** Lastly, EISA requires Federal agencies to enter energy use data for each individually metered building that is part of a covered facility into a building energy use benchmarking system. To date, the bureaus have reported 2,820 buildings within covered facilities which are individually metered for electricity. Of this total, only 23 buildings are currently benchmarked. All bureaus should ensure that covered facility buildings benchmarked in EPA’s Portfolio Manager, or approved equivalent, have been uploaded into CTS. All bureaus should strive to benchmark 10 percent of their covered facilities metered buildings by December 31, 2013.
- **Energy Savings Performance Contracts:** In response to the Presidential Memorandum “Implementation of Energy Savings Projects and Performance-Based Contracting for energy savings” DOI made a commitment to award \$5 million in ESPCs by December 31, 2013.
 - DOI is currently on track to meet this goal but we should strive to commit to more ESPC projects using the Department of Energy’s ESPC program, the General Service Administration’s Schedule 84, and DOE’s ESPC ENABLE for small sites.
 - ESPC ENABLE is well-suited to the Department’s many small sites that may be interested in addressing energy conservation measures such as lighting, HVAC controls, and water. More information on the ESPC ENABLE program may be found at http://www1.eere.energy.gov/femp/financing/espc_enable.html.
- **Awards:** The Federal Energy Management Program (FEMP) Energy and Water Management Awards call for nominations is now open. Interior has traditionally done well in this competition. Please consult the [2013 Criteria and Guidelines](#), [Nomination Quick Reference](#), and [Frequently Asked Questions](#) for guidance on preparing and submitting nominations. Nominations must be submitted for approval by Wednesday, April 17.
- **Training:** FEMP has released eight new online training courses in partnership with the National Institute of Building Sciences. The courses are supportive of the Federal Building Personnel Training Act core competencies. The [eTraining Courses](#) include the following:

Course	Length	CEUs
Commissioning for Existing Federal Buildings	5.0 hrs	.5 FEMP CEUs
Planning an Energy Assessment for Federal Buildings	4.7 hrs	.5 FEMP CEUs
Launching a Utility Energy Services Contract: Getting to Yes	3.7 hrs	.4 FEMP CEUs
Federal On-Site Renewable Power Purchase Agreements	3.5 hrs	.4 FEMP CEUs
Advanced Electric Metering in Federal Facilities	4.0 hrs	.4 FEMP CEUs
Managing Water Assessments in Federal Facilities	4.0 hrs	.4 FEMP CEUs
Selecting, Implementing, and Funding Photovoltaic Systems in Federal Facilities	4.0 hrs	.4 FEMP CEUs
Sustainable Institutional Change for Federal Facility Managers	3.5 hrs	.4 FEMP CEUs

For More Information Please Contact:

Mary Heying
 Energy Program Manager
Mary_Heying@ios.doi.gov
 (202) 513-0722

Dan Collinge
 Energy Program Analyst
Daniel_Collinge@ios.doi.gov
 (202) 513-0724