Keeping Pace with Changes
New Requirements Necessitate New Approaches

The one constant in energy management is change. New technologies change the market and change assumptions about what is possible; new legislation changes the requirements we face. 2015 was a year of change with the first major new Federal directive on energy and sustainability in several years. Executive Order (EO) 13693, “Planning for Federal Sustainability in the Next Decade,” which was issued in March 2015, sets a host of new targets for agencies to meet and extends many existing targets out by a decade.

In many cases, the new EO builds upon the progress agencies had made under existing executive orders and legislation. In some cases, the requirements of the EO are brand new and will challenge agencies to think creatively and try new methods. To do so, energy managers across the Department will need additional training to keep pace with the changes. This past August, the Department of Energy hosted a three-day, in-person training event in Phoenix, Arizona. DOI bureaus sent many attendees to this event, called Energy Exchange. This issue’s featured article provides a recap of this event. The Announcements section of the Newsletter outlines some free, on-demand training opportunities for those who were unable to attend Energy Exchange. We hope you will find the information useful in your own programs.
Energy Exchange Training Event
DOI Attendees Learn Latest Energy and Water Conservation Strategies

This past August, Departmental and Bureau energy and sustainability professionals attended the Energy Exchange training event for three days of intensive training, meetings, and networking.

The training event, sponsored by the Department of Energy’s Federal Energy Management Program (FEMP), brought together more than 1,000 Federal military and civilian employees, private sector professionals, and educators to discuss the many energy and sustainability challenges facing the Federal Government, and to learn about innovative solutions. The event was held at the Phoenix Convention Center in Phoenix, Arizona from August 11-13, 2015. It was the first event of its kind since the last GovEnergy conference in 2011. Since that time, Federal requirements have grown dramatically, most recently with the issuance of Executive Order (EO) 13693.

The training event offered ten distinct tracks, each with nine sessions, many of which offered Continuing Education Units. Attendees could choose between tracks featuring emerging technologies, building performance, leadership, institutional change, and more. Every single presentation from each of the sessions is available for download on the Energy Exchange website.

Attendees were greeted at the opening plenary by FEMP Program Director, Timothy Unruh, and Phoenix Mayor, Greg Stanton. Guest speakers featured high ranking representatives from government and private industry. On Thursday, the training event closed with more rousing speeches and an invitation to join next year’s event, scheduled for August 9-11 in Providence, Rhode Island.

FEMP Director, Timothy Unruh, kicks off the closing plenary session.

One of the primary topics running through the minds of many attendees was how to comply with the challenging new requirements of EO 13693. This EO builds upon work that agencies have already done, extends current goals, and sets aggressive new targets for agencies to meet by 2025. In order to meet these important goals, particularly with a constrained fiscal outlook for the foreseeable future, agencies will need to partner with each other and with the private sector to find creative solutions that make good economic sense.

A concurrent trade show, Energy ConneXions, was held, allowing Energy Exchange participants to explore the many exhibits and speak with representatives from dozens of private sector firms, each offering various energy management services and technologies. An Emerging Technologies section allowed attendees to explore new, cutting-edge research, products, and solutions.

The Department was well represented in Phoenix. More than 40 employees from across the bureaus came to the event. For many, it was a chance to meet their colleagues for the first time face to face.

After the sessions ended on Thursday, Interior’s Departmental Energy Conservation Committee held a rare in-person meeting. The group discussed Interior’s progress on the President’s Performance Contracting Challenge (see page 8 for more details), DOI’s Federal Energy and Water Management Award winners (see page 4), and DOI’s new Scope
Richard Isensee of the USGS also gave a presentation on the progress of USGS’s multi-site ESPC. More information on this project is available in the Spring 2015 issue of Interior Energy Management News available on the DOI Energy Management Program homepage.

Most importantly, Energy Exchange offered Departmental attendees an opportunity to learn from each other how to move their own projects and programs forward in a sustainable direction. We hope to see many of you in Providence next year!

DOI attendees hold an in-person Departmental Energy Conservation Committee Meeting

Energy Action Month

On October 7th, Principal Deputy Assistant Secretary – Policy, Management, and Budget, Kristen Sarri, sent all DOI employees a memorandum celebrating National Energy Action Month and reminding employees that individual choices and actions have a tremendous impact in making the Department’s operations as sustainable as possible. Likewise, those actions can be brought home to save energy and cut down on utility bills. The memorandum is included in its entirety below:

October is National Energy Action Month. It is a chance to recommit ourselves to conserving energy and reducing our carbon footprint.

President Obama recently directed agencies to take new steps to conserve energy and reduce greenhouse gas emissions over the next decade. The Department of the Interior is committed to meeting or exceeding our goals and making the Federal Government a leader in sustainability. These efforts help to secure our nation’s energy future, bolster our economy, and protect our environment.

National Energy Action Month is an opportunity to demonstrate best practices to save energy. From turning off our desk lamps, to buying environmentally friendly products, to retrofitting buildings, we can make a difference. Across the Government, Federal employees just like you are leading our nation toward a secure, clean, and prosperous energy future. Each year, these innovators are recognized with awards by the Department of Energy’s Federal Energy Management Program. Visit this site to read about these achievements, including Interior’s winners, and learn how to bring these lessons to your workplace.

Here are a few lessons to apply this October and beyond:

Lights out! Turn off your lights and other equipment when leaving an office unoccupied;
- Use compact fluorescent lights (CFLs) and light emitting diodes (LEDs), and take advantage of natural lighting;
- Use carpooling, vanpooling, public transportation, and bicycle and transit subsidy programs;
- Opt for telework, conference calls, and videoconferencing when possible;
- Purchase ENERGY STAR® and FEMP-designated energy efficient equipment;
- Recycle and reuse materials;
- Install programmable thermostats and replace air filters every three months at a minimum;
- Suggest energy saving improvements to your manager;
- Finally, create a green “buddy system” with an officemate to help each other remember to act on these energy saving tips. Together, you will develop a green routine.

We can save energy—and save money—at home as well. Last year, the Department issued an employee greening guide that all employees can voluntarily
use to find ideas for reducing their carbon footprint both at work and at home.

Together, our individual actions can bring about real change.

New Scope 1&2 GHG Goal

EO 13693 required agencies to set new Scope 1&2 greenhouse gas (GHG) reduction targets for FY 2025.

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.

These targets continue to be measured against the FY 2008 baseline that agencies set under EO 13514. DOI has made substantial progress toward achieving its original goal (a 20% reduction compared to FY 2008 levels by FY 2020). As of FY 2014, DOI had already achieved an 18.9% reduction.

Taking into account the progress made to date, Interior has set an aggressive but attainable goal to reduce its Scope 1&2 GHG 36% below FY 2008 levels by FY 2025. In order to meet this target, DOI will need to increase its reliance on clean energy, including renewable electric energy, continue to improve the efficiency of its building stock and vehicle fleet, and reduce fugitive and industrial process-related emissions.

The target is challenging, but by working together we will get there!

Federal Energy and Water Management Awards

The Department has won four FY 2015 Federal Energy and Water Management Awards. The awards, sponsored FEMP, recognize innovative energy- and water-saving projects, programs, and individuals across the Federal Government.

This year’s DOI winners include three shining examples of sustainable building design and management, and one example of a career’s worth of service given to efficient water management. The winning individuals and teams were recognized at a ceremony in Washington, DC, on October 14th.

The Department’s four award recipients are as follows:

U.S. Bureau of Reclamation – Tom Scott. Tom Scott of the Bureau of Reclamation’s (USBR) Lahontan Basin Area Office, Nevada, received a Career Exceptional Service Award for contributions to the establishment of the Truckee River Operating Agreement (TROA). This agreement will provide for flexibility in reservoir operations and improve water use efficiency through water exchanges between parties. TROA’s innovative system of water exchanges and credit water storage will help to buffer the Truckee River Basin against the effects of drought; maintain water supply for industrial, municipal, and agricultural uses; increase the flow of water to support endangered species; and improve

Pyramid Lake, NV, terminus of the Truckee River. Credit: Jo Moore, USBR.
recreational opportunities on the Truckee River. Mr. Scott served as the lead engineer guiding efforts for the computer modeling required for implementation of TROA and the associated Environmental Impact Statement, and his expertise was instrumental in the 18-year long negotiation of the agreement.

**U.S. Bureau of Reclamation – Animas-La Plata Permanent Operating Facility.** The USBR’s Animas-La Plata Permanent Operating Facility (POF) received a Project Award for its newly constructed high performance and sustainable building. The POF, located in in Southwestern Colorado, has attained a certification of Leadership in Energy and Environmental Design (LEED) Gold. It also meets 100% of the Guiding Principles for High Performance and Sustainable Buildings (Guiding Principles) for new construction, as required by Executive Order. As such, the POF met every applicable requirement for integrated design, water and energy performance, indoor environmental quality, and materials. The combination of a passive solar wall; a high-efficiency heating, ventilation, and air conditioning (HVAC) system; efficient lighting; and natural lighting provide significant energy savings. Indoor and outdoor water is conserved via efficient plumbing fixtures and fittings and the use of xeriscape and natural landscaping, which does not require any permanent irrigation. All told, the energy efficient design is estimated to avoid 52 metric tons of greenhouse gas (GHG) emissions per year, equivalent to the annual emissions of 11 vehicles.

**U.S. Fish and Wildlife Service – Corn Creek Administrative Office and Visitor Center.** The U.S. Fish and Wildlife Service’s Corn Creek Administrative Office and Visitor Center (Visitor Center) at Desert National Wildlife Refuge (NWR), Nevada, earned a Project Award. The Visitor Center is a new high-performance, LEED Platinum-certified facility that is designed to achieve net zero energy use. Net-metered solar photovoltaic (PV) arrays totaling 91.5 kilowatts (kW) provide renewable electricity for all energy needs. The HVAC system’s 23.5 ton water-source heat pumps and hydronic piping circulate surface water from an onsite pond to a geo-heat exchanger in the building to provide heating and cooling needs at a fraction of the energy use of traditional air source heat pumps. No petroleum products generate heat or electricity. Total annual renewable energy production is approximately 608.3 million British thermal units (MMBTU). Low-flow WaterSense® plumbing fixtures reduce the building’s potable water consumption 40.4% below current standards, saving approximately 7,100 gallons per year. Xeriscaping with wildlife-friendly native plants and forbs and limited drip irrigation avoids chemical application and reduces outdoor water use by about 84.7% or over 663,000 gallons. Overall, the project avoids at least 98 metric tons of GHG emissions annually, the average annual emissions of 21 cars.
provided building in Hadley, Massachusetts. A multi-year effort by a regional FWS “Green Team,” GSA, and Pearson, the building owner’s representative, made remarkable strides in renewable energy and sustainability, reducing electricity consumption by approximately 600,000 kilowatt-hours and natural gas consumption by approximately 2,408 MMBTU in FY 2014. A new roof-mounted, net-metered 108 kW PV system over a new cool roof can contribute up to 12% of electrical energy used on-site. Low-flow Water Sense® plumbing will save an estimated 136,425 gallons of potable water annually. Multiple sustainable strategies combine to avoid at least 354 metric tons of GHG emissions per year, equal to taking 75 cars off the road for a year. The U.S. Green Building Council awarded the building with a LEED for Existing Buildings - Operations & Maintenance Gold rating in February 2014. Lastly, two pollinator gardens featuring pollinator-friendly plants were created in support of the June 2014 Presidential Memorandum, “Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators.”

Bureau Notes
Sustainability Updates from around the Bureaus

Bureau of Land Management:

The BLM installed an 11.2 kW PV array at the King Range National Conservation Area in California during the summer of 2015. The Casper Historic Trails Center, Wyoming replaced a chiller and re-programmed lighting control panels. The BLM is also replacing the Cottonwood Field Office in Idaho with a building that meets the Guiding Principles. The design started in FY 2014.

Bureau of Reclamation:

In FY 2015, the USBR continued to increase the efficiency of renewable hydropower generation by initiating turbine rewinds at Yellowtail (Montana), Folsom (California), Spring Creek (California), and Glen Canyon (Arizona) power facilities and completing a rewind at San Luis (California) power facility. The USBR had a total of 7 buildings reach 100% compliance with the Guiding Principles in FY 2015. Moreover, achievement of the Guiding Principles resulted in significant energy and water savings, including a 43% reduction in potable water and 45% reduction in natural gas and electricity consumption at the Provo Area Office, Utah.
Fish and Wildlife Service:

In FY 2015, the FWS installed a 24 kW solar PV power system at the Office/Visitor Center at Dale Bumpers White River NWR, Arkansas. FWS made efforts to conserve water in drought-ravaged California. For example, Kern NWR decreased its use of water for habitat management by 100% by not flooding any of its seasonal wetlands in 2015, and efficient water fixtures were installed at Lower Klamath NWR and Merced NWR. The FWS replaced the Visitor Center and Administrative Headquarters at Mingo NWR, Missouri, with a new, sustainable building that features a 14.57 kW solar PV power system and a 30 ton ground source heat pump.

National Park Service:

As part of Phase 1 of the National Capitol Region ESPC, five solar installations totaling 390 kW were initiated at Manassas National Battlefield Park, Virginia, Monocacy National Battlefield Park, Maryland, and National Mall and Memorial Parks, Washington, DC. The NPS’s Flight 93 Visitor and Learning Center, Pennsylvania, which opened in 2015, features a 40 ton geothermal ground source heat pump system. Carl Sandburg Home National Historic Site, North Carolina, installed a roof water runoff collection system, and used the collected water to support a tree and shrub nursery that will maintain the cultural landscape in the park.

Office of Facilities and Administrative Services:

The Main Interior Building (MIB), Washington, DC, operated by OFAS, is installing a combined heat and power plant as part of an ESPC. The system will utilize natural gas to provide all the electricity consumed, making the MIB a net-zero electricity building. The heat generated by the micro turbines will be used by an absorption chiller that will help cool the building. The 1 megawatt system allows for electricity to be put back onto the grid. Domestic hot water will be via natural gas boilers in lieu of GSA-provided steam. The MIB’s electricity consumption is slated for a 62% reduction under the ESPC project.

U.S. Geological Survey:

As part of the multi-site ESPC, the USGS installed a solar PV system at the National Center, Virginia. The 125.33 kW array generated 96,500 kWh and saved roughly $7,350 in FY 2015. The National Wetlands Research Center, Louisiana, replaced chillers and cooling towers; installed variable frequency drives, variable air volume boxes, and water meters; and upgraded ten fume hoods. Lastly, the Conte Research Center, Massachusetts, upgraded boilers, exhaust fans and the building automation system. It is estimated the new boiler could save up to 40% on heating costs.
Announcements

(1) **Greenhouse Gas and Sustainability Data Report:** Bureaus and offices submitted their FY 2015 Annual GHG and Sustainability Data Reports on December 4, 2015. The Department, in turn, will be submitting the consolidated report to DOE FEMP on January 29, 2016. This data report serves as the Department’s collection tool for GHG and energy management data. Results of the FY 2015 report will be discussed in a subsequent newsletter issue.

(2) **President’s Performance Contracting Challenge:** The Department of the Interior established an agency target of $20 million in energy savings performance contract awards by December 2016. To date, the Department’s bureaus and offices have exceeded the target by awarding nearly $85 million in energy savings performance contracts. The most recent award was the $13 million Phase 2 of the ESPC at the **Main Interior Building**, Washington, DC, in July 2015.

(3) **Training:** FEMP continues to expand their selection of training courses. Many of these courses are available on demand [here](#). Many of these courses also will assist Federal energy and facilities personnel in meeting the core competencies of the Federal Buildings Personnel Training Act.

FEMP continues to increase its on demand eTraining courses in partnership with the National Institute of Building Sciences’ Whole Building Design Guide to offer online to help federal agencies develop core competencies and comply with energy efficiency, renewable energy, water management and sustainability requirements. The offerings include a seven-part course on renewable energy applications for federal facilities and a five-part course on meeting the Guiding Principles for Sustainable and High Performance Buildings.

FEMP has also made every single presentation from the Energy Exchange training event available [here](#).

---

**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