



Energy and Environment Quarterly

U.S. Department of Commerce; Office of Administrative Services; Office of Sustainable Energy and Environmental Programs

Energy and Environmental Management DAO

The Office of Sustainable Energy and Environmental Programs (OSEEP) has drafted a new Departmental Administrative Order (DAO) to formalize a comprehensive energy and environmental management policy for the Department of Commerce. The DAO has resulted from extensive coordination with Commerce bureaus and relevant staff offices and began the formal review process in late August. OSEEP anticipates that the Secretary will sign the new DAO into effect before the end of September.

The DAO will authorize OSEEP's new Energy and Environmental Management Manual (E&EMM), a comprehensive 380-page, 32-chapter guide to ensure

compliance with energy and environmental laws, regulations, and Executive Orders for Commerce

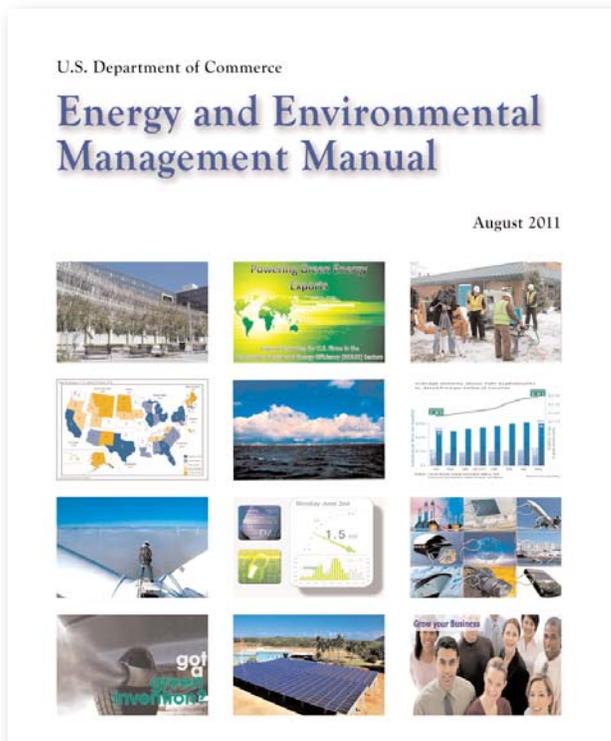
OSEEP anticipates it will be finalized in early 2012. The draft E&EMM is available for download and comment at

Management and Budget (OMB) tracks the department's progress toward these goals through the department's annual Strategic Sustainability Performance Plan and grades the department's progress twice annually.

In August, OMB released the Department of Commerce's 2011 mid-year sustainability scorecard. The department improved its scores in the areas of progress and actions completed, while scores for renewable energy use, water efficiency, reducing fleet petroleum use, building sustainability, scope 3 greenhouse gas emissions and energy efficiency were unchanged from last year. Commerce's score for scope 1 & 2 greenhouse gas emissions, however, decreased since last year, indicating a need for additional projects that aim to reduce these emissions.

The Energy and Environmental Management Manual will facilitate improvement and guide managers in meeting their targets.

For further information about the DAO or E&EMM contact Rob Tomiak at 202-482-6212 or rtomiak@doc.gov.



The cover of the draft E&EMM with one photo representing each of Commerce's 12 bureaus.

employees. The new manual will provide detailed guidance on the many programs that comprise the energy and environmental field, making it an easy-to-use reference guide for facility managers throughout Commerce and its bureaus. The manual is currently undergoing extensive review within the department's bureaus, and

<http://www.osec.doc.gov/oas/orepmp-news.html> under "Publications." OSEEP welcomes all feedback on the document.

Executive Order 13514 *Federal Leadership in Environmental, Energy, and Economic Performance* sets several numerical energy and environmental targets for federal agencies. The President's Office of

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Bureau News: Renewable Energy for the National Weather Service in Tucson

The National Weather Service's (NWS) Weather Forecast Office (WFO) in Tucson, Ariz., now has a new 12.25 kilowatt (kW) photovoltaic (PV) array supplying energy to its WSR-88D Radar Data Acquisition (RDA) site on top of the Empire Mountains southeast of Tucson. Construction began on Oct. 18, 2010 and was completed on Oct. 25, 2010. Tucson Electric Power connected the system to the regional power grid in early December 2010. WFO Tucson



RDA with solar panels near the base of the tower

coordinated the project with the Western Region Systems Operations Division, which secured matching funds through the National Oceanic and Atmospheric Administration's Green

Grant Program.

The system consists of 50 SolarWorld 245-watt panels with a Solectria PVI 13, three-phase inverter and will generate an estimated 21,000 kW hours of electricity each year. The



Close-up of solar panels

new system will supply approximately 15 percent of the site's annual electricity consumption to help power the NWS radar monitoring equipment and communications facilities, representing an annual savings of \$3,000.

To minimize environmental impacts, the area under the solar panels was restored with a layer of gravel and rock. This is NWS's second PV system - a similar 12.48 kW PV system was installed at the NWS's RDA in Miramar, Calif., site in 2003.

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Lessons Learned: Process Improvement

The Annual Energy and Environmental Data Call Process Improvement Team (AEEDCPIT) has completed an assessment of ways to improve performance and timeliness on Commerce's annual energy and environmental report to the President's Office of Management and Budget following a late submission last year. Representatives from the Census Bureau, the National Institute of Standards and Technology, the National Oceanic and Atmospheric Administration, the U.S. Patent and Trademark Office, and three Office of Administrative Services divisions made up the team, which established a charter in May with a goal of reducing process cycle time by 10 percent.

The team followed the Lean Six Sigma process improvement method. First, the team mapped the existing process, establishing a baseline cycle time of 163 days from start to finish for the existing annual energy

and data call process. Following brainstorming sessions, the team was able to identify several root causes of the problems, prioritize these problems, and make recommendations to address them. Some of the key improvements recommended by the team are:

- The Office of Sustainable Energy and Environmental Programs (OSEEP) will tailor the data call to individual bureaus;
- OSEEP will increase communication and training in advance of the data call;
- Bureaus will use the Environmental Protection Agency's Energy Star Portfolio Manager system as a common database to upload and track utility data;
- Bureau sustainability points of contact will be more actively involved with their facility managers;
- Larger bureaus will develop a written reporting hierarchy, and,
- Bureaus will brief their

Energy and Environmental Tips

- Drinking bottled water generates huge amounts of waste from empty water bottles. The water in the Herbert C. Hoover Building's **drinking water fountains** is carbon-filtered on-site and tested monthly to ensure the highest quality. Help reduce waste by filling up at the water fountains instead of purchasing bottled water.
- You can save around 10% a year on your **heating and cooling** bills by simply turning your thermostat back 10°–15° for eight hours. You can do this automatically without sacrificing comfort by installing an automatic setback or programmable thermostat. For more information visit http://www.energysavers.gov/your_home/space_heating_cooling/index.cfm/mytopic=12720
- **Quiz question:** What can you recycle or donate for reuse at the Herbert C. Hoover Building?
 - (a) Personal cell phones and personal digital assistants (PDAs)
 - (b) Toner cartridges
 - (c) Packing peanuts
 - (d) All of the above
 (answer on back page)

senior management prior to submission to OSEEP.

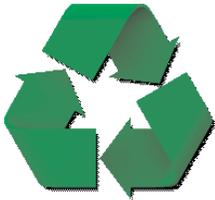
A new process map was developed that includes the recommended improvements, showing the potential for a reduction of 81 days or 50 percent cycle time—far exceeding the original 10 percent goal—and a savings of approximately

1,000 man-hours of labor department-wide. The team will apply these improvements to the fiscal year 2011 data call and track their success with a control plan. For more information about the AEEDCPIT, contact Morris Thompson at 202-482-0540 or mthompson2@doc.gov. SE

Understanding Statutes: The Resource Conservation and Recovery Act (RCRA)

The Resource Conservation and Recovery Act (RCRA), best known as "cradle to grave," was enacted by the 96th United States Congress and signed into law by President Gerald Ford on October 21, 1976. Congress enacted RCRA to govern the disposal of solid and hazardous waste. RCRA amended the Solid Waste Disposal Act of 1965. RCRA goals are:

- Protecting human health and the natural environment from potential hazards of waste disposal;
- Conserving energy and natural resources;
- Reducing the amount of



- waste generated through source reduction and recycling; and,
- Ensuring the

management of waste in an environmentally sound manner.

The RCRA statute authorizes states to carry out functions of the federal law through their own hazardous waste programs as well as their state laws if such programs have been approved by the Environmental Protection Agency. Sections include:

Amendments and Related Legislation

The Comprehensive Environmental Response Compensation, and Liability Act (CERCLA), also known as "Superfund," was enacted in 1980 to address the problem of remediating abandoned hazardous waste sites by establishing legal liability as well as a trust fund for cleanup activities. In general, CERCLA applies to contaminated sites, while RCRA focuses on controlling the ongoing

generation and management of particular waste streams. Both laws include provisions to require cleanup of past contamination.

In 1984, Congress expanded the scope of RCRA with the enactment of the Hazardous and Solid Waste Amendments. The amendments strengthened the law by covering small quantity generators of hazardous waste and establishing requirements for hazardous waste, incinerators, and the closing of substandard landfills.

The Superfund Amendments and Reauthorization Act of 1986 addressed cleanup of leaking underground storage tanks (USTs) and other leaking waste storage facilities. The amendments established a trust fund to pay for the cleanup of leaking UST sites where responsible parties cannot be identified.



The Land Disposal Program Flexibility Act of 1996 allowed some flexibility in the procedures for land disposal of certain wastes. For example, waste is not subject to land disposal restrictions if it is sent to an industrial waste water treatment facility, a municipal sewage treatment plant, or is treated in a "zero discharge" facility. *so*

Upcoming Events

- The second annual GreenGov Symposium will take place October 31-November 2, 2011 at the Washington Hilton Hotel in Washington, D.C. At this conference, the White House Council on Environmental Quality will bring together leaders from Federal, state, local and tribal governments, non-profits, academic communities and the private sector to identify opportunities to share sustainability challenges, recognize best practices, and discuss cutting-edge approaches for the future.
- The fiscal year 2011 annual energy and environmental data call guidance from the President's Office of Management and Budget (OMB) will be out soon. Bureau reports will be due to OSEEP on November 23, 2011.
- In January 2012, the Office of Sustainable Energy and Environmental Programs will begin soliciting applications for the fifth annual Department of Commerce Energy and Environmental Stewardship Awards. Nominate your office or staff for outstanding achievements in energy or environmental performance. Draft nomination categories and criteria are available in the Energy and Environmental Management Manual at <http://www.osec.doc.gov/oas/orepmp-news.html>.
- Training is available 24/7 on the use of the Energy Star Portfolio Manager system for tracking your building's energy consumption, water consumption, and progress toward becoming a sustainable building. Go to <http://www.osec.doc.gov/oas/orepmp-news.html> to view three training videos.

New Technology Corner: Photovoltaic Thermal Hybrid Solar Collectors

Electricity produced by photovoltaic (PV) cells has become increasingly popular over the past several decades. One major criticism of this technology has been its inability to produce or capture heat, which we need to keep our buildings warm in the winter and to heat water. Now several manufacturers are producing hybrid PV/Thermal (PV/T) collectors. According to these manufacturers, the hybrid systems deliver up to



SolarWall® schematic diagram of PV/T air heating collector technology. Heat is captured by the black SolarWall® panel and transferred to an air duct, while the PV panels (dark blue) produce electricity. Courtesy of Conservall Engineering.

five times the energy output of conventional photovoltaic systems.

How do hybrid PV/T systems achieve such high energy output compared to traditional PV? Heat is a major byproduct of photovoltaic electricity generation, and the accumulation of heat around PV panels has been shown to significantly reduce both their efficiency and their lifetime. So capturing and removing heat from PV/T collectors

simultaneously increases the efficiency of electricity generation and the PV panels' lifetime.

Two kinds of solar PV/T are currently on the market: the combination solar water heater and PV cell, and the combination solar air

heating collector and PV cell. Both systems produce solar hot water or solar heat and low-cost electricity in a single module. This technology can help to meet both renewable energy goals and hot water requirements.

While the PV/T technology is not new, in the past its use has been restricted due to its relatively high cost. But the recently decreasing cost of PV per square foot has increased the demand for PV/T technology, thus making it more affordable. For more information on hybrid photovoltaic/thermal energy systems, contact Morris Thompson at 202-482-0540 or mthompson2@doc.gov.



SolarWall® installed PV/T system at Turner Fenton School in Ontario, Canada. Courtesy of Conservall Engineering.

Quiz Answer

- You can recycle or donate for reuse (d) all of the above - cell phones, PDAs, toner cartridges, and packing peanuts - at the Herbert C. Hoover Building. To find out what else you can recycle around your home or office, visit <http://earth911.com>.

Getting to Know a Community Member: BEA's James Murphy



James Murphy, BEA's sustainability representative to the department

James Murphy is the voice of the Bureau of Economic Analysis (BEA) on sustainability for the Office of the Secretary. In this capacity, he reports on

BEA's compliance with all environmental requirements and tracks scope three greenhouse gas emissions. James' recent initiatives include rolling out the carbon footprint survey to BEA staff last spring and tracking telecommuting. James also serves as BEA's Records Officer and Space Manager. He has been BEA's sustainability representative since 2008.

Like most of the department's sustainability representatives, James is new to the environmental

field. After serving in the U.S. Air Force from 1988 to 1991, James obtained a Bachelor of Business Administration from George Washington University in 1995. He subsequently worked in the private sector for 10 years in budgeting and marketing. James has been with BEA for more than 7 years.

James looks forward to working with BEA's leadership to meet the agency's sustainability goals.



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