

Energizing EPA



Agency Targets Major Energy Users to Increase Conservation

In October 2003, EPA purchased 200,000 gallons of biodiesel fuel for use in the main heating boilers of the National Health and Environmental Effects Research Laboratory's Atlantic Ecology Division's facilities in Narragansett, Rhode Island. The clean-burning, alternative fuel is derived from soybean oil, making it essentially free of sulfur and aromatics. In addition, the fuel is less toxic than table salt and will degrade as quickly as sugar. World Energy Alternatives of Chelsea, Massachusetts, is supplying the fuel, which will be blended with traditional petroleum diesel and delivered as needed to help power the lab's primary heating system.



EPA continues to make energy and water conservation a priority at its major laboratory facilities. In fiscal year (FY) 2003, energy consumption at the laboratories where the Agency controls the utilities was 326,455 British thermal units (Btus) per gross square foot (GSF), 8.8 percent below the FY 1990 baseline stipulated in Executive Order 13123, *Greening the Government through Efficient Energy Management*. EPA's water use decreased from 187.3 million gallons of water in FY 1990 to 171.7 million gallons of water in FY 2003, a reduction of more than 8 percent, due in some part to increased water conservation efforts at several labs.

While energy use actually increased 7.7 percent on a Btu per square foot basis from FY 2002 levels (in part due to variable weather

conditions), EPA is making strides in overall Agency energy and water reduction efforts through a coordinated effort between Headquarters and facility managers (see related story below).

In FY 2003, EPA focused its energy conservation efforts on the largest energy users among its 29 reporting laboratories, making efficient energy management a priority. The biggest impact will be felt upon completion of commissioning and retro-commissioning efforts at three large facilities in Research Triangle Park, North Carolina. The new Main Building, National Health and Environmental Effects Research Laboratory, and Human Studies Facility account for nearly 45 percent of total Agency energy use, and once commissioning is complete, EPA is

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EPA Honors 2003 "Btu Busters" and "H2Overachievers"

Several EPA facility managers and other employees were recognized February 4 at the Agency's Buildings and Facilities conference in San Francisco, California for their contribution to EPA's energy and water conservation efforts.

This year's Btu Buster of the Year was **Frank Price** of the Robert Kerr lab in Ada, Oklahoma, for his determination and persistence in achieving 50 percent energy reduction through an energy savings performance contract at the lab. **Russ Alhgren** of the Environmental Effects Research Laboratory in Narragansett, Rhode Island,



Rick Dreisch receives an H2Overachiever Award from Jerry Oakley and SeVera Wilson for his water conservation projects at the Ft. Meade, MD lab.

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EPA Print Shop Reduces Environmental Footprint

Every day, EPA employees use and dispose of large amounts of paper generated through printing, photocopying, and other tasks. In fact, paper use at EPA offices across the nation includes approximately 1,000 printing orders and nearly 10 million photocopies each year. But the Office of Administration and Resources Management's (OARM) Document Production Team is working on ways to reduce the footprint EPA's paper use makes on the environment.

To help reduce the environmental impact of its paper use, EPA requires all print jobs and copying throughout the Agency to utilize 100 percent recycled paper with a minimum of 50 percent postconsumer fiber content. These standards—set forth in a January 2001 memorandum issued to Assistant Administrators, Office Directors, and other EPA officials—are an increase from the 30 percent postconsumer content required under Executive Order 13101.

"Originally, these standards only applied to EPA Headquarters Offices," says Randy Bacon, EPA printing officer, "but now they are in effect for all of the Regional Offices as well."

EPA also requires that all photocopy and print jobs within EPA's Document Production Center (commonly known as the EPA Print Shop) and individual offices nationwide use



EPA publications include a statement indicating minimum percentage of recycled-content paper.

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projecting energy savings of 10 to 20 percent. These commissioning projects will assure that these building's systems operate according to EPA's needs. An energy master plan is also underway at EPA's A.W. Breidenbach Environmental Research Center in Cincinnati, Ohio (a facility that accounts for over 10 percent of EPA energy use).

In addition to these efforts, EPA is also working to reduce the emissions associated with its energy use through the purchase of renewable energy. In FY 2003, the Agency purchased 25 million kilowatt hours (kWh) worth of green power, a number that is expected to climb to 111 million kWh in FY 2004. Once green power is netted out, EPA's energy use for FY 2003 is 14.6 percent below the FY 1990 baseline. With additional green power purchases beginning in FY 2004 (see *Energizing EPA*,

December 2003), EPA foresees a substantial decrease in fossil fuel emissions over the next year.

The Agency is also working to reduce its reliance on the regional electric grid through the use of onsite renewable energy. Efforts include the generation of nearly 71,000 kWh of solar electricity and 13,121 MMBtu (million British thermal units) of renewable thermal energy in FY 2003 alone. In addition, EPA makes every effort to use alternative fuels, such as biodiesel (see page 1), and procure alternative fuel vehicles, such as compressed natural gas shuttle buses.

For more information on EPA's FY 2003 energy and water consumption results, or to review past annual reports, visit <www.epa.gov/greeningepa/energy/index.htm>.

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Btu Busters

received the Leading Edge Award for making EPA's first major biodiesel purchase.

A series of Energy Partner of the Year awards were given this year, including one to **Rick Koch** of the A.W. Breidenbach Research Center in Cincinnati, Ohio, for his support and vision leading to the acceptance of the Cincinnati Infrastructure Replacement Master Plan. At EPA Headquarters, **Howard Wilson** of the Safety, Health, and Environmental Management Division was recognized for his support on several facility projects that will help reduce EPA's energy use and greenhouse gas emissions for years to come.

Rolly Santos of EPA's Architecture, Engineering, and Asset Management Branch received an Energy Partner Award for continuing to assess the energy use impacts of his projects, as demonstrated in the expansion of the Region 10 Laboratory in Manchester, Washington.

A new award was added this year—the H2Overachiever Award for exemplary efforts in water conservation, which was given to **John Begley** of the Region 7 Office in Kansas City, Kansas, for his work on that facility's water softener and cooling project, which will save approximately 900,000 gallons of potable water a year. **Rick Dreisch** also received an H2Overachiever (his second Btu Award) for water conservation projects at the Fort Meade, Maryland, Environmental Science Center, which are expected to save more than 1.9 million gallons of potable water a year. **Andy Franke** also received a new Energy Reporter of the Year Award for timely and accurate energy reporting for the complex lab facilities in Cincinnati, Ohio.

For more information and past award winners, visit <www.epa.gov/greeningepa/energy/recognition.htm>.



EPA Employee Takes Green Building to Heart and Home

If you have ever considered building an energy-efficient home, EPA's Rick Crume is the person to meet. Crume, an engineer and lead management analyst in the Office of Air Quality Planning and Standards in Research Triangle Park (RTP), North Carolina, recently demonstrated that a green home can be both affordable and enjoyable. By incorporating myriad environmental features, including sustainable design techniques similar to those used at the RTP facility where he works, he and his wife recently completed a cost-effective alternative to the larger homes of their past.

"We'd watched a lot of big homes go up, but we wanted to build a house that was energy-efficient, inexpensive to live in, comfortable, and easy to maintain. So we went the opposite direction," Crume says.

Opting for a 1,600 square foot home in Durham, North Carolina, the couple utilized energy-efficient architecture to design a house that minimizes heating, cooling, and ventilation needs. Rooms feature large southern-facing windows to maximize light and heat during the winter, while the roof overhang shades these openings from the summer sun. Smaller windows on the north and west sides add protection from winter winds, and corner windows are used to distribute light more evenly and give a spacious feeling.

The interior of the house is custom-designed to stay cool during North Carolina's hot summers. An open floor plan, central staircase, ceiling fans, light-colored walls, and two screened porches provide natural cooling and ventilation, diminishing the need for energy-intensive air conditioning. In addition, windows open toward the prevailing south/southwesterly winds, and a gal-



Rick Crume's energy-efficient house in Durham, North Carolina, features south-facing windows to maximize solar heating in winter.

vanized tin roof deflects the sun's rays.

Perhaps the most impressive feature in Crume's new house is the solar-powered hot water heater. The 80-gallon heater uses the sun's energy to provide more than 75 percent of the family's hot water needs. The heater costs considerably more than a conventional heater, but Crume will receive a \$1,400 state tax credit for the energy-conserving device. Lower utility bills will help pay for the heater within three to five years.

ENERGY STAR® appliances installed throughout the house will result in additional energy savings. In fact, the house recently received a "5-Star Plus" ENERGY STAR rating, meaning it will achieve energy savings of at least 30 percent below that of a comparably sized house. According to Crume, the energy savings will actually be closer to 60 percent, meaning he and his wife will have met their goal—an energy-efficient home at a reasonable cost. More importantly, they will have demonstrated that building green is not beyond the reach of the average American family.

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process chlorine-free paper where available. This means that recycled-content paper, while it might be made from waste paper originally made from chlorine-bleached pulp, has not been bleached again with chlorine or chlorine derivatives. All virgin pulp used is completely chlorine-free. EPA coordinated with the Government Printing Office to establish contract specifications with manufacturers to supply paper that satisfies these high standards.

In addition to meeting these standards, EPA's Document Production Center also uses vegetable-based ink for all offset printed products. This ink is made with vegetable oil, such as soybean or corn oil, in

place of petroleum to reduce the amount of volatile organic compounds released into the air during printing.

EPA is promoting its efforts to encourage other agencies to follow its example. All external publications include the statement: "Printed on 100 percent recycled/recyclable paper with a minimum 50 percent postconsumer fiber using vegetable-based ink." When the paper used for a publication exceeds 50 percent postconsumer fiber content, the exact percentage is reported.

OARM played a key role in improving EPA's printing and paper use policies, which Randy Bacon and Branch Chief

James Anderson continue to enforce. Bacon also serves as chair of the Interagency Council on Printing and Publications Management—a committee of federal printing officers that discusses the use of recycled paper and vegetable oil-based inks, as well as other issues.

The Document Production Team continues to investigate additional options to reduce EPA's environmental impact, such as tree-free paper. "We are just waiting for these alternatives to become environmentally friendly and economically feasible. Then we'll definitely be open to using them at EPA," Bacon says.

For more information contact Randy Bacon at <bacon.randy@epa.gov>.



Blanket Purchase Agreement Makes Buying Green Easy at EPA

Buying “green” office supplies just got easier for EPA purchase card holders, thanks to a new Agency-wide Blanket Purchase Agreement (BPA). The BPA will create a one-stop-shop for office supplies, with a special emphasis on products that fulfill both the Comprehensive Procurement Guidelines for buying recycled-content products and the Executive Order 13101 mandate to purchase environmentally preferable supplies.

The BPA, which EPA’s Office of Acquisition Management (OAM) awarded to Corporate Express in October 2003, will eventually become mandatory at EPA offices nationwide. It covers all non-electronic desktop supplies bought with a purchase card, such as recycled-content paper, pencil holders, paper clips, and remanufactured toner cartridges.

In 2002, EPA conservatively estimates that its Agencywide contract purchases of recycled copy paper saved approximately 11,000 trees and contributed to solid waste reductions of more than 500,000 pounds. “Implementing the BPA will greatly increase these numbers, by creating more ways for EPA employees to reduce waste and prevent pollution at work,” says Karen Lee of EPA’s National Purchase Card Program.

While EPA employees will still be able to order office supplies through existing contracts, OAM would eventually like to achieve 100 percent participation in the BPA by converting those contract purchases to BPA purchases. In addition to green products, the BPA conveniently includes products from mandatory sources of supplies for the federal government, such as small businesses and the Javits-Wagner-O’Day program (JWOD), which promotes products made by the blind or severely handicapped. The BPA also gives EPA access to group discounts, offers next-day supply delivery, and allows for more efficient tracking of office supplies bought via purchase cards.

Corporate Express and EPA have set up a user-friendly e-catalog, <www.epasupplies.com>, which makes purchasing a breeze for EPA employees. Using the system is similar to other online shopping methods—purchase card holders just need to set up an account before they buy. The site also features a hotline number, links to a training tutorial, and details about requesting onsite training offered by Corporate Express.

For more information on the BPA or online ordering system, please contact Karen Lee at (202) 564-4378 or <lee.karen@epa.gov>.

Worms, Anyone?

Have you ever finished a meal and wondered what it would be like to give your leftovers to someone—or something—instead of throwing them into the garbage? Now, there are thousands of worms ready to turn those scraps into compost in special bins at EPA Headquarters in Washington, DC.

EPA’s organic material composting program is expanding daily. The pilot worm colonies have grown large enough to be split into new bins and sent to new locations. Interested employees now have the opportunity to reap the rewards that come with a composting bin by volunteering to adopt one of these bins. For a small fee (\$25), employees receive a handbook on the composting process and a bin with 1,000 worms ready to eat all of the vegetable and fruit scraps, coffee grounds, and tea bags you can feed them. The worm colonies are capable of eating up to four pounds of food per week!

After processing the food scraps over several months, the worms produce a soil that is rich in nitrogen and other nutrients. This soil is a wonderful enhancement to any lawn or garden and can be added to existing soil or used alone to provide numerous benefits to plant life. Other than food scraps, the worm bins require little maintenance, but the bedding must be kept moist and the bins free of meat and dairy products.

Headquarters employees interested in getting involved in composting should contact Gail Wray, pollution prevention and recycling coordinator, at (202) 564-7683 or <wray.gail@epa.gov>. Regional office or lab employees are also welcome to contact Gail for more information on starting a pilot program in their facility.



Stop by Ariel Rios South to learn more about green purchasing

An exhibit showcasing recycled-content and other environmentally preferable products is now available for EPA offices and labs. Currently on display in the seventh floor rotunda of Ariel Rios South at the EPA

Headquarters Federal Triangle complex in Washington, DC, the exhibit features an office setting full of “green” office supplies, including paper products, plastic desk supplies, an energy-efficient computer and lamp, carpet tiles, a refurbished desk, and more. For more information, visit <<http://intranet.epa.gov/HQrecycling/green/products.htm>>. If you would like to set up the display in your building, please contact Margie Buchanan at (202) 564-8206 or <buchanan.marjorie@epa.gov>.

