



# Energy and Water Conservation News

Volume 1, Number 2

Conservation News is a quarterly publication of EPA's Facility Management and Services Division (FMSD) Conservation Information Clearinghouse. FMSD established the Clearinghouse to serve as a focal point for collecting and disseminating information about energy and water conservation to serve all EPA facilities. The newsletter's purpose is to educate, inform, and help EPA staff involved in conservation efforts at EPA-owned or -leased facilities. Some features will appear regularly, while others will be published as needed. We welcome your comments and suggestions. To receive additional copies of this newsletter, submit information for inclusion, or learn more, call the Clearinghouse Hotline at (202) 260-9803. †



## A Note From the Agency Energy Coordinator

by Phil Wirdzek, FMSD

Numerous energy, environmental, and safety requirements mandated by the federal government have made federal facility management a challenge. Facility managers are responsible for maintaining safe, efficient, and economical site operations. Additionally, competing facility needs and complex operations involving numerous factions have made it difficult to optimize facility performance. The breadth of these energy, environmental, and safety requirements reinforce the immediate need for a coordinated approach to facilities management.

Our awareness of this need was amplified during the past few months when we visited EPA facilities at Corvallis, Narragansett, Edison, and Ann Arbor. Our site visits reinforced the need for methods to manage complex building operations safely, quickly, efficiently, and compatibly. Consistently, facility managers spoke of difficulty in monitoring building systems and ensuring that systems operate properly throughout the day. Most facility managers receive information as a result of a problem and react accordingly. While some problems are rather easy to detect and respond to, others are more subtle, complex, and difficult to address — affecting greater areas of facility operations.

As these facilities managers illustrated during their discussions with us, we must establish information transfer, institute management systems, develop tools, and secure resources that will enable us to manage facilities proactively and attain a common vision. Computer-based building management systems ensure that operations are safe and efficient. Computerized monitoring systems have been developed that track and adjust operations continuously to improve safety, maximize energy efficiency, and optimize building operations. These systems have been on the market for several years; performance has improved while prices have dropped. Perhaps the best way to ensure an integrated approach — one that is consistent, parallel, and synergistic — is to pursue computer-based facility management systems. †

### ?????? DID YOU KNOW ??????

The Federal Energy Efficiency Fund (Fund), a grant program for federal agency efficiency and water conservation projects, is requesting project proposals. The Fund has \$6 million in appropriations for Fiscal Year 94 (FY94), with a minimum grant amount of \$25,000. Proposals may be submitted at any time. They will be competitively evaluated for cost-effectiveness, cost and energy savings, amount of agency co-funding, and amount of nonfederal financing. EPA facilities are strongly encouraged to identify conservation projects that meet the evaluation criteria and submit proposals as soon as possible. For more information, contact the Clearinghouse.

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## Green Lights Status

The Green Lights Program, founded by EPA, is a voluntary program aimed at reducing air pollution by promoting profitable investment in energy-efficient lighting. In January 1993, EPA signed the Green Lights Program Memorandum of Understanding, thus becoming the first agency to agree to install energy-efficient lighting in its facilities, where profitable. As part of their energy conservation and pollution prevention activities, the Agency is committed to:

- Reducing energy use for lighting by 50 percent
- Surveying utility-responsible facilities
- Designing new facilities to meet 10 CFR Part 435 requirements
- Ensuring that leases satisfy 10 CFR Part 435
- Completing lighting upgrades by the year 2000.

Installing energy-efficient lighting saves energy, reduces operating costs, prevents pollution, and enhances a facility's environment. High-efficiency lighting systems can reduce energy consumption for lighting in excess of 50 percent. Lighting upgrades are also low-risk investments, typically with a two- or three-year payback. Additionally, high-efficiency lighting technologies cost less to maintain. Every kilowatt hour of lighting electricity not used prevents emission of 1.5 pounds of carbon dioxide, 5.8 grams of sulfur dioxide, and 2.5 grams of nitrogen oxide, so it contributes to the success of your pollution prevention program as well.

EPA is responsible for the utility costs at 16 facilities, totalling approximately 2.2 million square feet of space. Several facilities are actively pursuing lighting upgrades. Ada, Oklahoma; Cincinnati, Ohio; Manchester, Washington; and Richmond, California, have been designed or retrofitted with energy-saving lighting systems.

M. C. Toliver, Facilities Security Specialist, Region 9, recently spearheaded a pilot installation of energy-efficient lighting. Mr. Toliver separately metered the area where this installation occurred and subsequently verified a significant reduction of energy use. Another installation was reported by Rhonda Fisk, Facility Engineer at the Cincinnati Laboratory. Cincinnati retrofitted its 320,000-square foot facility with a high-efficiency lighting system. The retrofits are taking place after hours to minimize disruption of the workforce. In each of these examples, the staff have reported increased satisfaction with their work areas and indicated their support for the project. †

THE DEADLINE FOR SUBMITTING  
INFORMATION FOR INCLUSION IN  
THE NEXT ISSUE OF CONSERVATION  
NEWS IS AUGUST 15, 1994



## Resources

The resources featured below are available through the Clearinghouse. To request assistance, obtain any of these resources, or share information, contact the Clearinghouse Hotline at (202) 260-9803 or send a fax to (202) 260-8234.

**Report: U.S. EPA's Draft Energy and Water Conservation Program Report for Fiscal Year 1993.** Prepared for the Department of Energy (DOE), this report outlines the Agency Conservation Program's strategy, FY93 accomplishments, and FY94 goals.

**Document: Presidential Executive Order 12902 Overview.** Produced by FMSD, the document provides EPA facilities with an overview of the Executive Order signed March 8, 1994.

**Policy Statement: Sample Energy and Water Conservation Policy Statement.** Prepared by FMSD, this sample energy and water conservation policy is intended for EPA facilities to adopt as a foundation for their Energy and Water Conservation Program.

**Video: Executive Order 12902, Energy Efficiency in Federal Buildings.** This five-minute video, sponsored by Johnson Controls, provides an overview of the Administration's goals for federal facilities.

**Regulations: 10 CFR Parts 400 to 499.** These DOE regulations contain specific procedures and standards for energy conservation, including design and performance standards.

**Awareness Materials, Posters: We're Doing a World of Good!** The EPA Green Lights Program has posters to increase awareness about the benefits of energy-efficient lighting. †



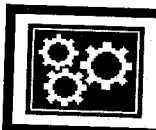
## Regulatory Update

On March 8, 1994, President Clinton signed Executive Order 12902, a mandate to improve energy efficiency and water conservation in federal buildings and to increase investments in solar and other types of renewable energy. The Executive Order is designed to meet and exceed provisions for federal energy and water efficiency that were contained in the Energy Policy Act of 1992 (EPACT).

The Executive Order exceeds EPACT's requirements by requiring federal agencies to establish a conservation program that will reduce gross square foot energy consumption by 30

percent by the year 2005. By meeting the requirements of the Executive Order, it is estimated that federal agencies will save taxpayers \$1 billion annually in lower energy bills.

Executive Order 12902 also requires federal agencies to prioritize facility audits, improve efficiency at facilities previously exempted by EPACK, incorporate efficiency provisions into new and existing leases, minimize the use of petroleum-based fuels, specify showcase buildings, purchase energy-efficient products, and report water consumption annually. To obtain an overview or a copy of Executive Order 12902, contact the Clearinghouse. f



## New Technology

### SOLAR HOT WATER SYSTEMS: ARE THEY RIGHT FOR YOUR FACILITY?

Solar-powered hot water systems are the most widely-used solar technology in the United States today. According to a study prepared by the Solar Energy Industries Association, the solar-powered hot water system is a proven technology — one that is used by more than 1.5 million Americans in their homes and businesses.

These systems use solar panels, also referred to as plate collectors, to collect the sun's energy and then use that reusable energy source to generate hot water. Solar-powered hot water systems are best retrofitted in facilities that have electrically heated hot water, a climate with good solar insolation, relatively stable daily hot water use, and south-facing surfaces. Typically, solar-powered hot water systems can supply 40 to 80 percent of a facility's hot water demand. This well-proven technology may be an excellent energy-efficient option for your facility.

### Solar Technologies Are Cost-Effective And Nonpolluting

Solar technologies have evolved tremendously over the years, both in terms of performance and cost effectiveness. Utility rebates, cost-sharing programs, and federal and state tax credits and grants can make the solar-powered hot water system an attractive investment.

Because solar energy is nonpolluting and renewable, solar-powered technologies complement pollution prevention activities; and pollution prevention works in tandem with EPA's energy conservation efforts. In fact, it is a major component of EPA's facilities management program. Both the cost-effectiveness and the nonpolluting benefits of solar-powered hot water systems make them an attractive investment.

### EPA Headquarters Is Considering Installing A Solar-Powered Hot Water System

EPA's Waterside Mall Headquarters facility in Washington, DC, is currently evaluating the feasibility of installing a solar-powered hot water system. DOE's National Renewable Energy Laboratory and the Sandia National Laboratories have designed a system for one office tower at Waterside Mall. This system includes 1,200 square feet of flat plate collectors and a 1,400-gallon thermal storage tank.

Since the new system will not be able to supply hot water for the total demand, it will be augmented by the existing electric-resistance water heater. It is expected that the Waterside Mall's solar-powered hot water system will generate 71,000 kilowatt hours of energy to provide 69 percent of the tower's hot water demand. By supplying the majority of the annual hot water required, the solar-powered system is expected to save \$4,200 a year in electricity costs. Additionally, 25 percent of the project will be funded through DOE's Solar Process Heat Program. That, coupled with a 10 percent federal tax credit, makes the estimated project cost \$32,000, which is a \$15,600 savings over the originally estimated cost of \$48,000.

Once the system is installed, the local utility has agreed to rebate \$350 for each kilowatt of electrical demand eliminated. Excluding the utility rebate of approximately \$10,000, the project is expected to have a 7.5-year payback. Moreover, if other benefits — such as the amount of pollution prevented — are quantified, the project will be even more cost-effective.

\* \* \* \* \*

Future issues of the *Energy Conservation Newsletter* will contain news of additional federal facilities that are considering or actually implementing renewable energy technologies. f



### Reminder

If we have not received your First through Third Quarter FY94 Energy and Water Consumption Reports, please fax them to the Agency Energy Coordinator at (202) 260-8234.

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## Conservation Calendar

If you have questions or want to publicize an event, call the Clearinghouse at (202) 260-9803. For further information about the activities below, contact the Clearinghouse staff.

### July

1 Third quarter FY94 Energy and Water Consumption Reports are due.

14-15 Course: "Effective Energy Management: Developing a Program that Gets Results," held in Lake Tahoe, Nevada.

26-27 FEMP-sponsored course: "Water Resource Management," held in Washington, DC.

### August

17-18 Course: "Fundamentals of Lighting Efficiency," held in Atlantic City, New Jersey.

23-25 Workshop: "Federal Energy Decision Screening," held in San Antonio, Texas.

### September

12-13 Courses: "Fundamentals of Energy Management," held in Dallas, Texas; "Energy Management in Federal, State, and Local Government Buildings," held in San Francisco, California.

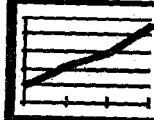
### October

(October is Energy Awareness month. The Clearinghouse staff will be sending EPA's Energy Managers materials to support this event.)

1 Fourth quarter FY94 Energy and Water Consumption Reports are due.

20-21 Course: "Energy Management in Federal, State, and Local Government Buildings," held in Boston, Massachusetts. f

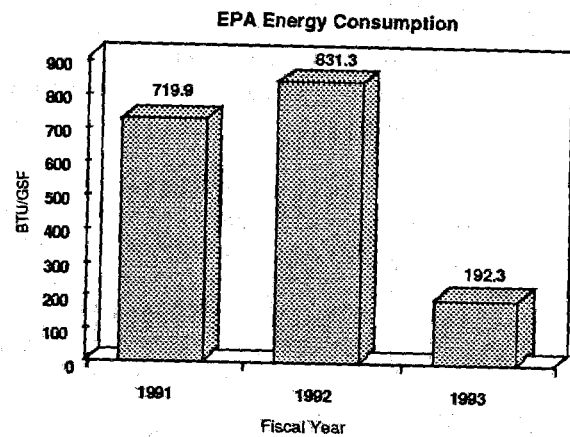
The Green Lights Program's free Lighting Upgrade Workshops demonstrate how to reduce electrical costs by retrofitting facilities with energy-efficient lighting. Workshops are scheduled for July 13-15 in Cincinnati, Ohio, and August 2-4 in San Francisco, California.



## Goals and Milestones

FY93 marks the first time in EPA's Energy Conservation program history that all EPA facilities responsible for paying energy utilities reported annual energy consumption data. In prior years EPA facilities reported minimal consumption data, causing consumption figures to be reported to DOE mainly from estimates. In FY91, EPA reported one of the lowest amounts of total energy consumption — ranking 18th out of a total of 22 federal agencies — yet, the Agency's per square foot consumption was the highest among federal agencies.

The energy consumption data chart below shows that EPA has dramatically reduced its reported square foot consumption from 719,000 British Thermal Units (BTUs) in FY91 to 192,300 BTUs in FY93. (Source: *Draft Annual Report to Congress on Federal Government Energy Management Conservation Program, FY91.*)



EPA's Energy Managers are commended for reporting their data in a timely fashion. f

### ENERGY CONTACTS

#### Agency Energy Coordinator

Phil Wirdzek, FMSD

Phone: (202) 260-2094

FAX: (202) 260-8234

#### Energy Conservation Information Clearinghouse

Staff: Caren Hamilton and Carleen Shea  
Booz-Allen & Hamilton Inc.

Hotline: (202) 260-9803

FAX: (202) 260-8234