What's New in Federal Energy Management

Program Overview

FEMP

FEDERAL ENERGY MANAGEMENT PROGRAM

MASTER

In-House Energy Management Program

U.S. Department of Energy sites are working to reduce energy use

The U.S. Department of Energy (DOE) has field offices, major laboratories, and other facilities located throughout the United States. More than 50 DOE field sites contain about 15,000 buildings and more than 120 million square feet (11 million square meters) of space. In fiscal year (FY) 1994, these sites consumed 45.2 trillion Btu (47.7 terajoules) at a cost of \$373.5 million. During FY 1994, DOE reduced energy consumption per gross square foot in buildings by more than 24% when compared to the FY 1985 baseline.

The Energy Policy Act of 1992 and Executive Order 12902 require that Federal agencies reduce the energy consumed in Federal buildings. The Executive Order set a goal of reducing energy use by 30% from 1985 levels by 2005. In addition, agencies are required, to the maximum extent possible, to install all energy and water conservation measures with paybacks of less than 10 years.

To reach these goals, DOE established the In-House Energy Management (IHEM) Program to assist DOE sites in reducing energy use and increasing energy efficiency. The program is now part of the Federal Energy Management Program under the Assistant Secretary for Energy Efficiency and Renewable Energy.

What are the program goals?

Specific program goals as stated in the program plan are to

- Increase energy and water use efficiencies in facility operations, retrofits of existing buildings, and the construction of new facilities
- Designate personnel responsible for achieving energy management requirements
- Provide guidance for ranking retrofit projects
- Include counsel for leveraging appropriated funds with private-sector funds.

The program energy goals are

- **For building energy consumption**—10% reduction per gross square meter by FY 1995, 25% reduction per gross square meter by FY 2000, and a 30% reduction per gross square meter by FY 2005 compared with FY 1985 use.
- **For industrial process energy consumption**—10% reduction per gross square meter by FY 1995 and a 20% efficiency increase by FY 2000 compared with FY 1990 consumption.

By FY 2002, DOE plans to survey all buildings for energy efficiency and water conservation opportunities and install all cost-effective life-cycle projects identified from the survey by January 1, 2005.

Some new strategies include a certification process for the energy performance of new buildings,

Energy efficiency and awareness begin at home. Photo of DOE Headquarters Forrestal Building where employees reduce energy use by turning off the lights at night. Keep up the good work DOE!

U.S. Department of Energy

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DOE performance toward 20% reduction goal

comprehensive site audits to identify all retrofit projects with a payback period of 10 years or less, and expansion of employee suggestion programs to include monetary awards for ideas that increase energy efficiency and conserve water.

DOE operations offices are responsible for energy management activities for most of the field sites and for ensuring that the sites under their oversight implement the strategies of the IHEM plan to accomplish the DOE energy management goals.

The most significant aspect of the program is to develop and implement cost-effective life-cycle retrofit projects. To date, most of the projects implemented have focused on retrofitting building envelopes; lighting; and heating, ventilating, and air-conditioning (HVAC) systems.

From now until 2004, DOE will continue to emphasize retrofit projects for lighting, process waste-heat use, modern control systems, energy-efficient motors, and variable-speed pumps. It will also emphasize project financing sources, such as Energy Savings Performance Contracting (ESPC), for lighting, integrated chiller replacement projects, and cogeneration projects.

What are the current activities?

Current IHEM program activities include the following:

- **Criteria**—Develop and improve issuance and maintenance of criteria to ensure energy-efficient planning, procurement, construction, operation, and maintenance of DOE facilities, vehicles, and equipment. These

Survey and evaluate the energy and water efficiency of existing DOE buildings and processes and evaluate the cost-effectiveness of various actions to improve the energy efficiency of the existing facilities

- **Energy Conservation Awareness/Incentives**—Manage employee awareness programs, suggestion programs, the annual IHEM awards program, and workshops, and evaluate energy management in determining contract award fees
- **Operations and Maintenance Acquisition Assistance**—Assist the field sites in acquiring energy-efficient goods and products
- **Retrofit Projects**—Retrofit existing DOE facilities to make them more energy and water efficient
- **New Buildings Program**—Develop and strengthen the energy efficiency of new buildings—design criteria and evaluate the resulting designs
- **ESPC**—Develop retrofit projects and new construction to improve DOE energy efficiency using private-sector financing
- **Utility Contract Improvement**—Review and improve utility contracts, intervene in utility rate cases, and provide innovative power procurement approaches
- **Metering**—Meter major DOE buildings and facilities to provide management information on major energy consumers. This information will be used to monitor conservation progress, charge users for actual energy used, and assign goals at the site level.

include the DOE Order on In-House Energy Management, Energy Conservation Survey Manuals, Energy Conservation Design Criteria for new building designs, Life-cycle Costing Handbook, and a Ride-Sharing Manual

• Energy Conservation Surveys—

- **Demand-Side Management**—Receive and use demand-side management services, incentives, and rebates offered by utility companies and private energy service providers
- **Central Plant Improvement**—Make existing and new central heating and cooling plants more energy efficient. This includes the identification of retrofit projects; boiler operator training; boiler tune-ups; steam trap maintenance; and HVAC training. It also includes evaluating the feasibility of using solid waste as a fuel and the cogeneration of electricity and steam or hot water.
- **Transportation**—Increase the efficiency and diversity of the DOE transportation fleet.

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