Facility Energy Decision System – FEDS 7.0
Decision-Making Software for Energy Efficiency

The critical need to reduce energy consumption, costs, and related emissions is increasing worldwide. Companies, utilities, schools, state buildings, and federal facilities across the United States are looking to building energy efficiency as a valuable resource and investment. The Facility Energy Decision System (FEDS) 7.0 software facilitates the assessment and analysis of energy efficiency opportunities in single and multi-building settings, providing a quick yet comprehensive method for objectively identifying energy improvements that offer maximum savings. FEDS provides an easy-to-use tool for identifying minimum life cycle cost retrofits, determining payback, and enabling users to prioritize options for meeting their goals. Users can also quickly compare energy savings potential across different sites through multiple FEDS runs. FEDS supports activities to meet EISA 2007 guidelines as well as executive orders related to building energy efficiency.

FEDS is developed at the Pacific Northwest National Laboratory (PNNL) in partnership with a number of organizations, including: the U.S. Army Installation Management Command (IMCOM), U.S. Coast Guard, Tennessee Army National Guard, Canadian government, the U.S. Department of Energy's (DOE) Federal Energy Management Program (FEMP), DOE's Rebuild America Program, Defense Commissary Agency, U.S. Army Construction Engineering Research Laboratory, the Naval Facilities Engineering Service Center, the U.S. Army Forces Command, and the U.S. General Services Administration.

New Features for FEDS 7.0

FEDS 7.0 provides another big step forward in the evolution of energy analysis. FEDS now performs a full 8760 hourly energy simulation to provide even better modeling accuracy and flexibility, and provides a number of other enhancements including:

- New HVAC technology options e.g., VAV, reheat, economizers, demand controlled ventilation, etc.
- LED lighting
- Fully updated retrofit performance and cost data with enhanced regional cost resolution
- Enhanced report writer features
- And much more - visit **www.pnnl.gov/FEDS**!

An Effective Project Planning Tool

Using readily available information, FEDS assesses the energy-saving potential for a wide variety of facilities, while featuring an interactive, flexible input format and energy and peak-demand modeling. As a user-friendly, Windows-based program, FEDS offers many benefits as an effective planning tool:

- Accepts detailed or high-level building data, reducing time and labor required for collection, input, and analysis

- Recommends the lowest life cycle cost-effective energy systems for all building types

- Delivers the information necessary for writing project funding proposals

- Provides a consistent basis for decision-making

- Serves as an integral part of a cost-savings program

A wide range of energy systems professionals can benefit from the FEDS software. Energy and facility managers, architect-engineers, utility planners, and energy consultants use FEDS to identify, prioritize, and realize key facility upgrades. Monitoring and tracking energy-efficiency improvements as well as forecasting and estimating impacts of change are other valuable uses of FEDS.

FEDS Software Works with You

FEDS determines the optimum set of cost-effective retrofits from a current database of hundreds of proven building technologies. These include retrofits for heating, cooling, lighting, motors, building shell, and hot water. Replacement or modification considerations vary from complete replacement to functional enhancements to fuel switching. Optimization can be targeted to a single end-use, single building, or entire installation including central energy plants, and retrofit cost data can be modified to better represent costs at your site.

FEDS relies on a minimum of user interactions and input to operate. It begins with your entry of readily available facility and energy price data. Next FEDS asks about your location, building types, characteristics, and operating hours. From this information, FEDS develops building prototypes and infers parameters not specified by the user. Using hourly weather data, sophisticated energy simulation and financial engines determine energy consumption, electric demand, and calculate the cost effectiveness of potential retrofits. Additionally, FEDS determines the impact of retrofit projects on emissions of CO, CO_2, NO_x, SO_2, hydrocarbons, and particulates.

FEDS also provides the user access to the engineering parameters necessary to perform a comprehensive analysis. For example, a review of results might reveal a need for refinement of inferred parameters. If better information is available, changes to the inferences are easily accomplished. Thus, FEDS allows detailed analysis of large installations with many buildings, but only requires a limited amount of information.

Order FEDS 7.0 Today!

Visit **www.pnnl.gov/FEDS**
or
Contact the Energy Efficiency and Renewable Energy Clearinghouse at
(800) DOE-EREC

FEDS software is provided at no charge for use on federally funded projects and those projects funded and directly performed by a state government on a state owned facility. Copies of the software can also be purchased for other use.

FEDS' Unique Features

FEDS provides a unique set of capabilities found in no other energy-efficiency software:

Life Cycle Cost Optimization – selects the minimum life cycle cost retrofit for a single building or an entire campus/installation considering the interactions not only between energy systems but also between buildings; second and third best retrofits can also be examined.

Technology and Fuel Independence – chooses the technology that provides the required service at the minimum life cycle cost; no technology or fuel bias.

Peak Tracking – determines the hourly contribution of each technology to the installation's peak demand allowing accurate determination of the value of the energy and demand savings associated with a retrofit.

Alternative Financing Analysis – allows a comparison of various financing mechanisms including leases, loans, and energy saving performance contracts (ESPCs).

Central Plants and Thermal Loops – optimizes buildings and decentralization simultaneously.

Emissions Tracking – reports the impact of efficiency measures on six different types of air emissions.

Product Support

FEMP and PNNL conduct periodic FEDS training workshops based on user demand. To inquire about the possibility of future FEDS workshops offered by FEMP contact Beverly Dyer at (202) 586-7753 or beverly.dyer@ee.doe.gov. Individual agencies can also contract directly with PNNL to conduct FEDS training.

For questions on using the FEDS software:

Visit the FEDS web site **www.pnnl.gov/FEDS** or contact FEDS Support at FEDS.Support@pnnl.gov.

Pacific Northwest
NATIONAL LABORATORY