



# FACILITY ENERGY DECISION SYSTEM (FEDS 7.0)

## DECISION MAKING SOFTWARE FOR BUILDING ENERGY EFFICIENCY

### OVERVIEW

The focus on improving building energy efficiency to reduce consumption, costs, and related emissions is growing worldwide. The Facility Energy Decision System (FEDS) software facilitates the analysis and assessment of energy efficiency opportunities in single buildings and campus settings, providing a quick yet comprehensive method for objectively identifying cost-effective energy improvements.

FEDS simulates current building energy use and identifies energy efficiency measures (EEMs) that offer maximum savings at minimum life-cycle cost (LCC). Energy savings, project costs, and return on investment are reported enabling a prioritization of options for meeting energy efficiency goals. FEDS further provides an easy-to-use analysis platform for comparing energy savings potential across buildings and sites and for exploring a range of what-if scenarios. FEDS can help agencies meet key provisions of EISA 2007 and other mandates to evaluate and improve energy performance of federal facilities.

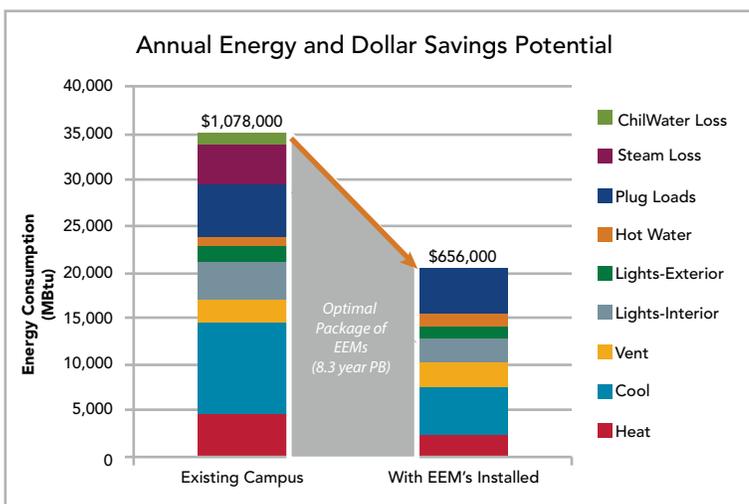
### NEW FEATURES FOR FEDS 7.0

- » New lighting options including LEDs
- » Additional HVAC technology options (e.g., VAV, reheat, economizers, demand controlled ventilation)
- » Updated performance and cost data with enhanced regional cost resolution
- » Improved modeling accuracy with full hourly simulation
- » Enhanced report writer features
- » And more - visit [www.pnnl.gov/FEDS](http://www.pnnl.gov/FEDS)



### AN EFFECTIVE PROJECT PLANNING TOOL

FEDS offers many benefits as part of an energy- and cost-savings program:



- » Assesses a wide variety of facility types
- » Accepts detailed or high-level data, reducing the effort required for collection, input, and analysis
- » Estimates energy consumption and electric demand
- » Recommends the most LCC-effective EEMs, considering physical and operational characteristics, climate, energy prices, and project costs
- » Delivers information necessary for project evaluation and proposal development
- » Provides a consistent basis for decision-making

A wide range of energy systems professionals can use FEDS to identify, prioritize, and realize key facility upgrades, and evaluate the impact of changing conditions (e.g., increasing energy rates, facility expansions or renovations, operational changes).

## FEDS SOFTWARE WORKS WITH YOU

FEDS offers powerful and flexible features that facilitate scalable analysis for actionable results – without the need for extensive building energy simulation experience. FEDS requires minimal user input yet accepts detailed characterization for more robust analysis. Thus, FEDS enables complex analysis of large installations with many buildings, but requires only a limited amount of information. Unspecified parameters are automatically inferred to assist users in scaling efforts to meet their needs ranging from quick screening and prioritization to detailed project evaluation.

FEDS estimates energy use and calculates the cost effectiveness of potential EEMs using its comprehensive energy simulation, retrofit optimization and financial engines. Projects are identified from thousands of proven building system technologies and can be targeted to select end-uses, buildings, or the entire campus including central energy plants. Project labor rates and materials costs are location-specific and can be adjusted for greater accuracy. FEDS reports results from the LCC analysis in a number of formats, incorporating a range of economic evaluation criteria along with energy savings and emissions impacts to suit a variety of needs.



## ORDER FEDS 7.0 TODAY!

VISIT [WWW.PNNL.GOV/FEDS](http://WWW.PNNL.GOV/FEDS)

FEDS software is available 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' KEY FEATURES

**Flexible Input Requirements** – accepts but does not require detailed data input; an intelligent inference engine reduces input requirements, accelerating model development and analysis.

**Large Campus Modeling** – excels at modeling single buildings and large campuses and installations, allowing similar buildings to be modeled together to reduce time and effort.

**Central Plants and Thermal Loops** – models system efficiencies and costs to value the energy supplied to buildings; savings options are evaluated simultaneously with other building opportunities.

**Demand Tracking** – calculates the hourly contribution of each technology and building to the billing meter peak demand allowing accurate valuation of the energy and demand savings associated with an EEM; supports detailed cost accounting considering multiple rate periods, demand costs and ratchets.

**Life-Cycle Cost Optimization** – selects the minimum LCC EEM package for a single building or an entire campus considering interactions between energy systems; results are easily transferrable to project funding proposals including DoD's DD1391 format.

**Alternative Financing Analysis** – allows comparison of financing mechanisms including leases, loans, and ESPCs.

**Emissions Tracking** – reports the impact of EEMs on greenhouse gas and other emissions.

## TO LEARN MORE ABOUT FEDS:

Visit the FEDS website, [www.pnnl.gov/FEDS](http://www.pnnl.gov/FEDS)



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