

Commercial Building Performance

Healthcare Facilities



Sector Fact Sheet

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Commercial Building Performance

Healthcare Facilities

CEE members have indicated increased interest in sector-specific commercial building programs (e.g., hospitals, schools, etc.). To help members make a strong case for energy efficiency in healthcare facilities, CEE has compiled market intelligence from various sources.

This information describes the opportunity, some of the key decision-makers, challenges, potential program strategies and resources.

Energy Use and Savings Potential

Hospitals have unique and intensive energy use requirements. In addition to the need for lighting and heating 24 hours a day, hospitals demand extensive energy for ventilation, equipment, sterilization, laundry and food preparation.

Every year, U.S. hospitals spend an average of \$1.67 per square foot in electricity costs, and another 48 cents per square foot on natural gas.

Lighting (25 percent) and HVAC (45 percent) are the largest parts of a typical hospital's energy bill. Both areas present opportunities for significant savings. For example, regular evaluations and tune-ups to the HVAC system (costing 4-20 cents per square foot) have been proven to cut those costs by 10-15 percent. This translates into roughly \$34,000/year in savings for a 100,000 square-foot facility.

Energy savings have the potential to dramatically impact a hospital's bottom line. The ENERGY STAR® Financial Value Calculator estimates that if hospitals reduce energy use by 5 percent, it is the equivalent of increasing the Earnings Per Share (EPS) by 1 cent. Similarly, each dollar of energy savings is equivalent to \$20 of increase in revenue.

Market Size and Growth

Trends in hospital construction suggest that this market sector will continue to be an important target for energy-efficiency measures.

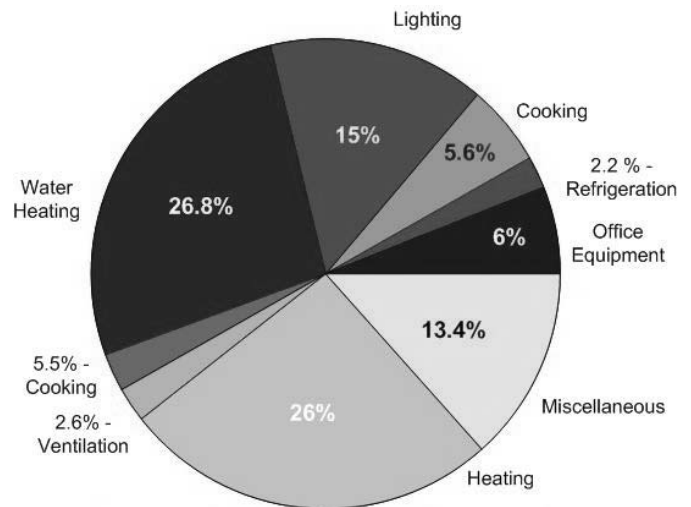
- As of 2002, there were 5,794 registered hospitals in the U.S.
- Hospital construction has grown consistently since 2000. In 2004, construction spending on healthcare increased 46 percent from 2003, with the bulk of the spending focused on large hospital projects.
- The number of elderly Americans is increasing. People aged 65 and above require six times as much hospitalization as younger people.

Financing and Decision-makers

Financing and decision-making structures depend partially on whether a healthcare facility is public or private. However, each structure involves at least some of the following actors:

Energy Use in Hospitals

(averaged across climate zones)



Source: *Managing Energy Costs in Hospitals: Energy Consumption Data*. Platts, 2004

State legislatures or Governors

Primarily acting in the public sector, they will determine budgets, institutional priorities and set guidelines. They will also make sure that construction is up to regulatory standards.

An administrator or a president, and a board of trustees

Aside from governmental bodies or agencies, these are the primary decision-makers in decisions regarding design, function and goals.

Private funding organizations

Lenders that can offer a variety of funding mechanisms play significant roles in both public and private hospital financing.

Market Trends Potentially Affecting Energy Use

- Hospitals are increasingly part of multi-hospital networks (an increase from 30.8 percent in 1978 to 53.6 percent in 2001). Administrative decisions on energy use may have a wider impact.
- Tight hospital budgets often change intensity or duration of patient services (e.g., less in-patient surgery, increased use of the ER), which can lead to shifts in energy demands.
- In order to compete, hospitals are offering new or specialized services and equipment. Equipment availability impacts energy use.
- Studies indicate that newer hospitals use more energy than older hospitals.

Market Barriers

- Energy-efficiency measures often require a high initial capital investment. Financial constraints make that unattractive.
- Low profit margins and tight capital keep energy projects (viewed as "optional") from implementation.
- Planners may lack information or credible case studies. Decision-makers may think researching and incorporating energy efficiency would be prohibitively time-consuming.
- Operations and management are an important part of an energy-efficiency strategy. Staff motivation or training is needed to achieve and maintain maximum equipment efficiency.

Promotional Strategies

Financial Benefits

Hospitals are under financial pressure. An increasing number are operating with narrow or negative profit margins, and/or below-average credit ratings. Energy savings are a way to cut costs without cutting services. Energy savings are equivalent to an increase in revenue, and an increase in EPS.

Logistical Benefits

Technological advances make energy-efficiency retrofits easier and more cost-effective than before.

Other Benefits

Improvements in indoor climate control (ventilation, humidity, and temperature) can significantly improve the health and recovery rate of patients.

Hospitals rely on good reputation for patronage. They profit if their public image is of a responsible and progressive community citizen.

PROGRAM RESOURCES

NEW CONSTRUCTION

Leadership in Energy and Environmental Design (LEED) Green Building Rating System®

LEED provides a national performance rating system, developed by members of the United States Green Building Council. This point system encourages use of many aspects of environmental design. The energy-efficiency section contains the greatest number of potential points.

www.usgbc.org/LEED/publications.asp

Green Guide for Health Care

This is a quantifiable sustainable design tool kit for integrating enhanced environmental and health principles and practices into the planning, design, construction, operations and maintenance of health care facilities.

The guide provides a voluntary, self-certifying metric toolkit of best practices that designers, owners, and operators can use to guide and evaluate their progress towards high performance healing environments.

www.gghc.org/index.cfm



Advanced Buildings (New Buildings Institute)

This organization provides a roadmap to achieve a high-performance building. The Benchmark tool "provides designers with the resources to incorporate integrated design strategies ... to reduce energy usage and improve indoor environmental quality."

www.poweryourdesign.com

Healthy Buildings Network (for Healthcare Facilities)

The Healthy Buildings Network offers a quick link to resources from ASHE - the "Green Healthcare Construction Guidance Statement" and the draft "Green Guidelines for Healthcare Construction" – as well as the Eco Tool Kit from Kaiser Permanente.

www.healthybuilding.net/healthcare/goals.html

ENERGY STAR Target Finder

This tool helps manage energy during the design of a new building by setting an energy performance target and comparing the estimated energy consumption to the established target.

www.energystar.gov/index.cfm?c=tools_resources.bus_energymanagement_tools_resources

EXISTING CONSTRUCTION

Building Operator Certification (BOC)

BOC is a certification program for facilities operations and maintenance staff. Training focuses on maintaining and operating of building systems at peak efficiency.

www.theboc.info

LEED – EB

Developed under the LEED umbrella (see below left), this ranking system addresses building issues, retrofits, and upgrades where "the majority of interior or exterior surfaces remain unchanged."

www.usgbc.org/LEED/existing/leed_existing.asp

Federal Energy Management Program (FEMP)

While this program is focused primarily on saving energy within the federal government, it offers software tools, publications, videos, and other resources for a wide range of energy managers.

www.eere.energy.gov/femp/about/about.cfm

ENERGY STAR Program

EPA has developed tools to illustrate the impact of energy savings in existing construction, including the Financial Value Calculator, benchmarking tools, and others.

www.energystar.gov/index.cfm?c=tools_resources.bus_energymanagement_tools_resources

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MARKETING RESOURCES

American Society for Healthcare Engineering (ASHE)

ASHE, an international professional organization with regional chapters, organizes conferences and provides information and resources to engineers.

www.ashe.org

American College of Healthcare Executives

This is another international professional organization with regional chapters. It offers educational resources to executives in many parts of the healthcare industry.

www.ache.org

American College of Healthcare Architects

The ACHE mission is to improve the quality of medical care facilities through the certification of experienced healthcare design professionals.

www.healtharchitects.org

Hospitals for a Healthy Environment

This is a collaboration of EPA and the American Hospital Association. It aims to educate healthcare professionals

about pollution prevention opportunities in hospitals and healthcare systems.

www.h2e-online.org

TECHNICAL RESOURCES

CEE and ENERGY STAR both publish specification lists for various types of commercial equipment.

CEE: www.cee1.org

ENERGY STAR:

www.energystar.gov/index.cfm?fuseaction=find_a_product

For additional information, references, or text excerpts from this document:

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