

# Chief Energy Engineer:

*Isn't it Time One Began Working for You?*

Rising energy costs across the nation last year generated a lot of interest from facility managers about hiring someone in-house to “do energy”. With so many other responsibilities demanding attention – facilities/plant operations, plant and grounds maintenance, security, and clinical engineering among many others – facility managers told us they don’t always have time to aggressively manage energy, even as new pressure is being applied by senior management to contain energy costs. One solution more hospitals are considering is creating a position to exclusively manage energy – the Energy Manager, Director of Energy Management, or Chief Energy Engineer. By whatever name, the position is relatively new to most hospitals. What roles and responsibilities go with the title? How can you win management support for it, especially in a shrinking economy and what qualifications are best?

## Chief Energy Engineer Responsibilities

Appointing a Chief Energy Engineer (CEE) is a critical component of successful energy programs. A CEE helps a hospital achieve its goals by establishing energy performance as a core value.

The CEE is not always an expert in energy and technical systems. Successful CEEs understand how energy management helps the hospital achieve its financial and environmental goals and objectives. Depending on the size of the hospital, the CEE role can be a full- or part-time position or an addition to a broader sustainability coordinator position.

## The CEE's key duties often include:

- Coordinating and directing the overall energy program
- Acting as the point of contact for senior management
- Increasing the visibility of energy management within the organization
- Drafting an Energy Policy
- Assessing the potential value of improved energy management
- Creating and leading the Energy Team
- Securing sufficient resources to implement strategic energy management
- Assuring accountability and commitment from core parts of the organization
- Identifying opportunities for improvement and ensuring implementation (including staff training)
- Measuring, tracking, evaluating, and communicating results
- Obtaining recognition for achievements

## Energy savings is bottom line profit.

*So if your CEE saved \$50,000 in energy costs in 2007 that means your hospital didn't have to raise \$725,000 in revenues to create that profit.*



If the CEE does not report directly to a senior executive like the COO, it is often helpful for a member of senior management to serve as an “executive ally.” Upper management involvement is a key component of successful programs. Having an ally provides a direct link to upper management and helps to formalize the commitment to continuous improvement.

### Winning Management Support

Getting executives to back your proposal for a new energy management position will require running some numbers. They will want to see how much energy savings this new position could bring in, compared with the salary level being paid. Clearly, a position that can pay for itself from energy savings is the best way to sell this idea at a time when hospital budgets are tightening. One of the best ways to show need or opportunity is to benchmark and share your hospital’s ENERGY STAR® score. Set up your own free private account using ENERGY STAR’s Portfolio Manager at [www.energystar.gov/benchmark](http://www.energystar.gov/benchmark). The ratings fall on a 1 to 100 scale with 50 as the industry average. In this case, lower ratings will strengthen your hand because they indicate more saving opportunities are available.

Over the past 15 years at EPA, we’ve seen top organizations participating in the ENERGY STAR® program reduce energy costs by 3-10 percent annually. One organization that does this consistently is Providence Health and Services (PH&S), a not-for-profit Catholic health care ministry of more than 230 facilities in communities from Alaska to California. In 2005, Richard Beam, Director of Energy Management Services, believed he could mine \$15 million in energy savings over five years. To date, PH&S is finding an average of \$3 million in savings per year, system-wide: \$2.3 million in 2005 to \$3.4 million in 2006 to nearly \$4 million in 2007.

Energy savings is bottom line profit. Use this to your advantage. In 2007, the average profit margin of community hospitals was 6.9%, according to *Modern Healthcare* magazine. That means that for every \$14.50 in revenue generated, community hospitals were contributing \$1 to the margin. So if your CEE saved \$50,000 in energy costs in 2007 that means your hospital didn’t have to raise \$725,000 in revenues to create that profit. (Note: If your actual net operating margin is lower, the revenue equivalents will look even better.) As Beam told the author in 2006, revenue equivalents are a creative way to show how facility operations can make a positive contribution to the mission, rather than being viewed as just a cost.

### CEE Projects and Strategies

Chief energy engineers demonstrate that energy management and investments in energy performance projects are long-term sources of revenue for the hospital. They must understand what motivates senior management decision-making and be able to speak their language:

- **Speak Dollars, Not BTUs.** Proposals made to senior management to establish an energy management program must have specific savings goals measured in dollars. Clearly stating goals demonstrates the CEE’s objective of lowering operating costs and improving the margin.
- **Make The Case With Metrics.** Speak the language of senior administration when explaining the program. Use financial metrics such as net present value (NPV), simple payback, internal rate of return, and hurdle rate. Also consider that the risk of energy performance projects may be lower than that of competing investment alternatives. ENERGY STAR’s Financial Analysis Calculators can help with developing financial metrics. Download them free-of-charge at [www.energystar.gov/healthcare](http://www.energystar.gov/healthcare)

- **First Cost vs. Lifecycle Cost.** Usually the funding of company projects is based on first cost rather than lifecycle cost. By focusing on internal rates of return (IRR), the energy manager can demonstrate that energy projects may be better investment alternatives than capital allocated for other improvements.
- **Provide Real-world Proof.** Credibility can be gained by providing evidence to support targeted savings, such as results from a pilot energy management program implemented at a facility. Pilot programs can demonstrate the relatively short payback periods of energy performance projects and their significant savings.
- **Compare to Competitors.** Use benchmarking data to compare the company's energy performance relative to similar hospitals. This will appeal to management's desire to achieve a competitive edge. Track and benchmark energy performance using ENERGY STAR's Portfolio Manager at [www.energystar.gov/benchmark](http://www.energystar.gov/benchmark)
- **Relate Energy to Security and Risk.** Explain how investing in technologies and practices that reduce energy can impact the hospital's energy security and help insulate it from risks associated with supply and price volatilities in a deregulated market.

### Desired Qualifications

You will want to work with your human resources department to create a list of qualifications and criteria for selecting a chief energy engineer. Education and experience levels will vary, depending upon the salary range selected. An internet search of hospital job openings for energy engineers revealed a broad range of desired qualifications:

#### Degree:

- Postgraduate degree in a related field, such as Business, Environmental Studies, Commerce or equivalent experience.
- A minimum level of education equivalent to an undergraduate degree in Engineering or Science or Environmental Management (Preferably Masters)


#### Certifications:

- Certified in ISO 14001 Lead Auditor courses or the equivalent quality risk management systems.
- Certified by the Association of Energy Engineers as an Energy Manager or equivalent.
- Certified Energy Manager (CEM) designation through the Association of Energy Engineers
- Registered Professional Engineer
- LEED Professional Accreditation

#### Experience:

- Must have 5+ years experience working with projects, and/or project management; experience in conducting energy analysis a plus
- Knowledge and experience in environmental issues in addition to an understanding of business and legal issues.
- Knowledge of energy management systems design, application and maintenance needed
- Strategic Energy management Planning
- Courses/classes in Energy Manager, Utility Management, Sustainable Energy

The EPA estimates the potential for energy savings may be as high as 35% for existing hospitals, depending upon the ENERGY STAR rating. Rising energy prices, potential future carbon regulations, and the growing sustainability movement in healthcare are powerful reasons for proposing a new Chief Energy Engineer position to hospital senior management now. It's a green collar job

that offers financial savings and public health benefits for many years to come. 

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