

# The Energy Tax Aspects of Hospitals

*By Charles Goulding, Robert Goulding, and Raymond Kumar*

Charles Goulding, Robert Goulding, and Raymond Kumar discuss energy management, including the availability of tax incentives.

The recent U.S. health-care system debate has focused a lot of attention on the high cost of hospital care in the country. Energy costs are one of the larger controllable costs in hospitals. It is estimated that U.S. hospitals spend over \$6.5 billion annually on energy costs, which is equal to about 15 percent of hospital profits.

Recognizing this huge opportunity in the hospital energy cost area, the U.S. Department of Energy (DOE) recently announced the Hospital Energy Alliance (HEA) to help drive energy efficiency in hospitals. As result of their 24/7 operation, patient comfort, and other needs, hospitals use about 2.5 times the amount of energy as similar sized commercial buildings. It is well recognized that as a group, hospitals are well behind other building categories in addressing energy reduction. Derek Wagner, EcoMagination leader of GE Healthcare, noted that for many years hospitals did not take energy efficient measures simply because the hospitals saw no need to improve. Things have changed recently, however, as Wagner claims that "while other sectors have led the way in becoming greener, in the past few years hospitals have really come along."<sup>1</sup>

## Lighting

Upgrading lighting is one of the easiest major energy reduction categories for hospitals to act on. For-profit hospitals are eligible for up to 60 cent per square foot tax deductions under the Energy Policy

**Charles Goulding**, Attorney/CPA, is the President of Energy Tax Savers, Inc., an interdisciplinary tax and engineering firm that specializes in the energy efficient aspects of buildings.

**Robert Goulding** is an Analyst with Energy Tax Savers, Inc.

**Raymond Kumar** is an Analyst with Energy Tax Savers, Inc.

© 2009 C. Goulding, R. Goulding and R. Kumar

Act (Code Sec. 179D) for energy efficient lighting. All government hospitals, including VA (Veterans Administration) hospitals, state and city hospitals and county hospitals, can generate Code Sec. 179D tax deductions for the architects, engineers, lighting designers, and design and build electricians that design qualifying energy efficient lighting. There are exciting new lighting products for hospital and health-care facilities that are bacteria and infection resistant. For example, GE lighting has developed a series of germicidal fluorescent lamps that can be used for sterilization. These lamps are being used in the health-care sector, laboratories, and even commercial buildings.<sup>2</sup>

Three of the world's largest lighting manufacturers, Philips, General Electric, and Siemens, also have major health-care divisions within their respective companies that focus primarily on products for the health-care sector, as follows:

Hospitals should benefit from the national account cross selling and financing available from these three large industrial group sellers of lighting products.

The deductions available for lighting range from 30 cents a square foot to 60 cents a square foot. The following table shows what type of Code Sec. 179D EAct deduction a hospital may be eligible for in its variety of spaces:

## HVAC

For profit-making hospitals and designers of government hospitals, HVAC can also generate large Code Sec. 179D tax deductions. To achieve Energy Star status demonstrating energy efficiency accomplishment, the U.S. government recommends that hospitals address five energy items, including two HVAC items.

Figure 1.

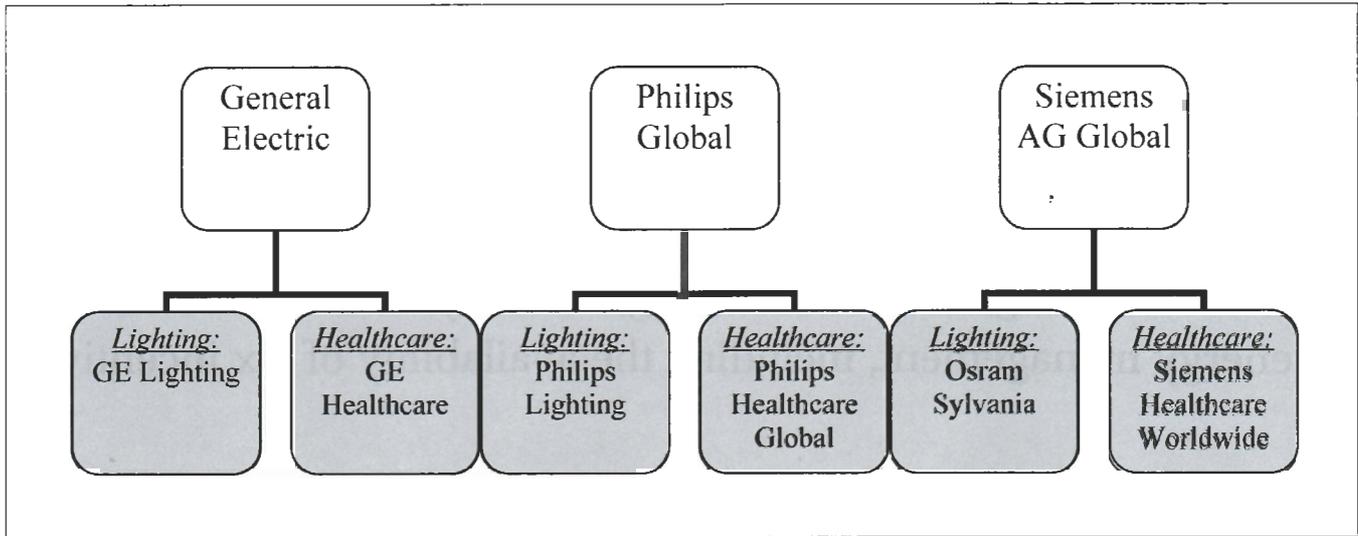


Figure 2.

800,000 Square Foot Hospital Example Common Space Categories and Deductions Available				
Space Type	Square Footage	Lighting Deduction	HVAC Deduction	Building Envelope Deduction
Exam Rooms	171,000	\$102,600	\$102,600	\$102,600
Kitchen/Dining	56,000	\$33,600	\$33,600	\$33,600
Lobby/Corridor	57,000	\$34,200	\$34,200	\$34,200
Mechanical	175,000	\$105,000	\$105,000	\$105,000
Offices	23,000	\$13,800	\$13,800	\$13,800
Operating	87,000	\$52,200	\$52,200	\$52,200
Patient Rooms	112,000	\$67,200	\$67,200	\$67,200
Storage	119,000	\$71,400	\$71,400	\$71,400
Totals	800,000	\$480,000	\$480,000	\$480,000

Figure 3.

Five Hospital EnergySmart Initiatives and EPAct	
Hospital Energy Alliance (HEA)	EPAct
1. Lighting	Lighting incentive up to \$0.60 a square foot
2. Right Sized Chillers	HVAC incentive of up to \$0.60 a square foot additive to lighting
3. Air Handlers A. Energy Recovery Ventilation B. Demand Recovery Ventilation C. Heat Recovery Ventilation	Specialized measures such as these may increase the EPAct Deduction up to a \$1.80 per square foot instead of just \$0.60 or \$1.20
4. Commissioning	Is required for LEED buildings, where required modeling supports tax deduction.
5. Supplemental Load Reduction	Reducing the energy used inside a hospital will result in large energy savings and may be eligible for incentives, such as Energy Star. This equipment is not eligible for tax deduction.

The five measures are

1. lighting,
2. right-sized, high-efficient chillers,
3. air handling equipment,
4. commissioning, and
5. supplemental load reduction.

The following table lists the tax incentives available for certain energy efficient measures that hospitals can take:

The emphasis on right-sizing (*i.e.*, fit the chiller to the size of the building based on energy performance

*Continued on page 38*

The potential tax deductions presented above are available for the commercial building owner or the government building designer, if qualifying. To achieve the HVAC and building envelope tax deductions, each building seeking tax deductions will have to be modeled in IRS-approved software.

## Conclusion

The Energy Policy Act of 2005 time-of-day pricing mandate means that time-of-day pricing electricity cost savings will be available throughout the country. This means that property owners who already have existing thermal storage systems or are contemplating thermal storage systems have the opportunity to obtain large tax deductions for qualifying building projects completed before December 31, 2013.

### ENDNOTES

- <sup>1</sup> Energy Policy Act of 2005 (EPAAct) (P.L. 109-58).
- <sup>2</sup> H.R. 6—109th Congress: Energy Policy Act of 2005, [www.govtrack.us/congress/bill.xpd?bill=h109-6](http://www.govtrack.us/congress/bill.xpd?bill=h109-6), Act Sec. 1252.
- <sup>3</sup> Mike Perfette, Director, Operations and Maintenance of Northwind Phoenix, *Night Ice: Thermal Energy Storage Advantages to the Electricity Grid*, District Energy - IDEA Centennial Conference, "Local Energy, Global Solution," June-July 2009 ([www.districtenergy.org/2009-07-10-files/powerpoint/3B1\\_Perfette.pdf](http://www.districtenergy.org/2009-07-10-files/powerpoint/3B1_Perfette.pdf)).
- <sup>4</sup> *Id.*

## Hospitals Tax Aspects

Continued from page 16

requirements) makes a chiller is a perfect interface for tax saving. The optimal way to right-size and select a chiller is to model a building using building energy simulation software and the HVAC EPAAct tax deduction, which requires building energy simulation modeling in IRS-approved software.

The emphasis on air handling equipment is also crucial for hospitals since it is particularly important for hospitals to replace or ventilate existing air with fresh outside air. Air handling equipment includes heat recovery ventilation, energy recovery ventilation, and demand recovery ventilation. These are all good techniques to improve air quality, reduce energy costs, and help generate EPAAct HVAC tax deduction.

Commissioning is the process of ensuring that all of the building's energy systems are calibrated and performing as they should. Supplemental load reduction involves measures to reduce other electrical loads, which in a hospital can be kitchen equipment, TVs, computer monitors, laundry equipment, MRIs, and laboratory equipment.

Hospitals are also excellent candidates for special purpose HVAC measures that can greatly reduce energy costs and qualify for large EPAAct HVAC tax deductions. Such measures include thermal storage and geothermal. Thermal storage systems that make ice at night and cool a building down during the day are able to use so-called "time of day pricing," and purchase electricity at night when it is generally much cheaper than a daytime electricity purchase. Geothermal systems will often qualify for large EPAAct tax deductions and for commercial purchasers, there is a 10 percent credit or 10 percent grant under Code Sec. 48.

## Building the LEED Way

One way for hospitals to attain energy efficiency and recognition for going green is building to LEED standards. LEED (Leadership in Energy and Environmental Design),

developed and administered by the U.S. Green Building Council (USGBC), is a set of standards for environmentally sustainable construction. In 2007, the USGBC and Green Guide for Health Care (GGHC) entered into a partnership to develop tools, educational programs, and other activities and functions to support the health-care industry's efforts to go green.<sup>3</sup>

In 2009, the Dell Children's Medical Center of Central Texas became the first hospital in the world to achieve LEED status. Being a not-for-profit hospital, it is ineligible for any kind of tax incentives, but the building and measures taken are a good example of what type of design would generate tax incentives available to energy efficient buildings.<sup>4</sup>

## Conclusion

The overall mandate to reduce medical costs, along with U.S. federal government-sponsored initiatives to reduce hospital energy costs, means that hospital energy management is getting a lot of attention. A variety of tax incentives can be used to support these initiatives, which can be helpful to all Americans.

### ENDNOTES

- <sup>1</sup> Environmental Leader, *Hospitals Due for Energy Efficiency Overhaul*, ENVIRONMENTAL LEADER, Jul. 27, 2009, [www.environmental-leader.com/2009/07/27/hospitals-due-for-energy-efficiency-overhaul](http://www.environmental-leader.com/2009/07/27/hospitals-due-for-energy-efficiency-overhaul).
- <sup>2</sup> GE Consumer & Industrial Lighting, *UV Lamps for Germicidal Applications*, GE Brochure.
- <sup>3</sup> Taryn Hollowka, *USGB & GGHC Working Together to Green the Healthcare Industry*, USGBC News Release, [www.usgbc.org/Docs/News/USGBC%20GGHC%20112907.pdf](http://www.usgbc.org/Docs/News/USGBC%20GGHC%20112907.pdf).
- <sup>4</sup> Claire Bloxm, *Dell Children's Hospital of Central Texas Receives LEED-Platinum Certification from the U.S. Green Building Council*, TALK MEDICAL, Mar. 2, 2009, <http://talk.news-medical.net/profiles/blogs/dell-childrens-hospital-of>.