

# Energy Efficiency Financing for Hospitals

## A Discussion of Both Tried-and-true and New Opportunities

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## The Importance of Financing

The United States Department of Energy (DOE) has estimated that hospitals typically spend one to three percent of their total annual operating budget or 15 percent of profits on energy.<sup>1</sup> Most hospitals recognize that there are substantial opportunities to reduce energy use in their facilities that are cost-effective on a life-cycle basis. For example, Concord Hospital realized \$678,976 in guaranteed annual energy savings and reduced its energy usage from 284.2 kBtu/ft<sup>2</sup>/year to 211.8 kBtu/ft<sup>2</sup>/year.<sup>2</sup> There are many additional instances of projects within health care facilities where energy savings of 20 percent or more and payback periods of less than two years were achieved. The challenge is that hospital budgets are generally tight and therefore funding the up-front capital to make energy-efficiency investments can be challenging. Fortunately, there are a variety of financing arrangements that hospitals can consider to help surmount this obstacle. Below we summarize some of the options available and provide case studies as well as resources that offer further information.

## Financing Options

In this paper, we discuss four financing options, ranging from most to least conventional:

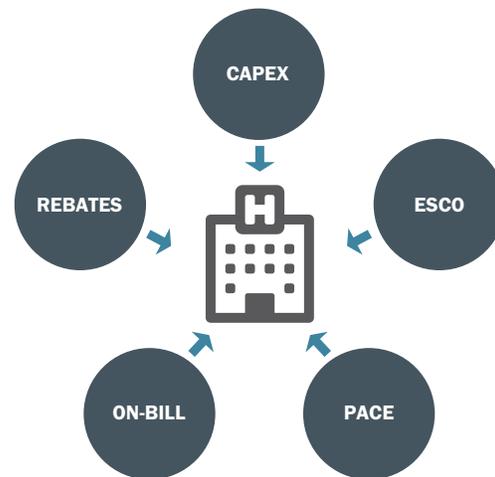
- 1 Self-financing, leveraging utility incentives and revolving funds.
- 2 Energy service companies.
- 3 Commercial PACE.
- 4 On-bill financing.

## Self-financing, Leveraging Utility Incentives and Revolving Funds

### Description

The most common approach to financing energy projects is a capital budget allocation. Most health systems use a standard approach where energy projects compete for capital with other proposed investments. Some systems set aside a block of capital funds each year as a separate allocation that is used at the facility team's discretion.

Utility incentives are commonly available and can significantly reduce project costs. The most common incentives are pre-calculated for specific energy-saving measures such as payments per fixture for LED lighting or per ton of cooling capacity for high-efficiency air conditioners. Custom incentives employing engineering calculations to pay a specific amount per kWh reduced for energy savings from other measures are also common. Incentives are widely available in Connecticut, Massachusetts, Rhode Island and Vermont.<sup>3</sup> Energy-



**Financing Options for Energy Projects**

1 Department of Energy. Department of Energy Announces the Launch of the Hospital Energy Alliance to Increase Energy Efficiency in the Healthcare Sector. (2009, April 29). Retrieved August 1, 2015, from <http://energy.gov/articles/department-energy-announces-launch-hospital-energy-alliance-increase-energy-efficiency>

2 Practice Greenhealth. Concord Hospital: Saving Energy While Simultaneously Reducing Costs. (2015, April 24) Retrieved September 12, 2015, from <http://healthierhospitals.org/get-inspired/case-studies/concord-hospital-saving-energy-while-simultaneously-reducing-costs>

3 NC Clean Energy Technology Center. Database of State Incentives for Renewables and Efficiency. Retrieved from <http://www.dsireusa.org/>

efficiency budgets are increasing in these states. Incentives are available in Maine and New Hampshire, but total program budgets are relatively small and so availability is more limited. There are policy proposals to expand energy-efficiency efforts in these states, but it is unclear whether these initiatives will move forward or not. In all states, it is useful to contact your utility or other energy-efficiency program administrator early in your planning process to coordinate on budget cycles and other details. Note that the program administrator may be your utility, or it may be a separate entity (such as Efficiency Vermont or Efficiency Maine).

A potentially powerful variation on the self-financing approach is the revolving fund, used widely in the education sector. In this scenario, senior management agrees to track energy bill savings and deposit this revenue into a dedicated energy project fund that can be used to finance future energy-efficiency projects. In this way, after the initial capital allocation, future projects become self-funded as energy savings grow.

## Strengths and Weaknesses

The advantage of using capital funding is that it is potentially available to any hospital, particularly ones in areas where substantial utility incentives can be leveraged. Disadvantages are that hospital capital budgets are often tight, and thus getting approval can take years. The revolving fund concept requires developing support for an unusual capital planning idea and setting up tracking and accounting procedures, but once established can be self-perpetuating.



## Revolving Loan Fund Examples

Spectrum Health System implemented the revolving loan concept several years ago when they established a "Sustainability Fund." Their approach has been to use the fund to finance low-cost projects. Large projects are financed with a conventional annual capital allocation approach. The Spectrum sustainability fund has invested a total of \$970,000 in 42 projects, which together has leveraged \$99,000 in utility rebates and generated \$410,000 in energy savings.<sup>4</sup> Bon Secours Health System has recently launched a similar fund and is currently developing the details.

## Energy Service Companies

### Description

Energy service companies (ESCOs) develop, design, build and fund projects that save energy, reduce energy costs and decrease operations and maintenance expenses at their customers' facilities.<sup>5</sup> In general, ESCOs act as project developers for a comprehensive range of energy-efficiency measures and assume the technical and performance risks associated with a project. ESCOs commonly use the performance-based contracting methodology where the ESCO identifies, implements and finances energy-efficiency measures and the ESCO's compensation is directly linked to the actual energy cost savings. Commonly, ESCOs guarantee that a specified level of energy savings will be achieved. If the savings are not seen, the ESCO needs to invest in additional energy savings measures, or else their payments will be substantially reduced.

<sup>4</sup> Karas, J., & Chartier, Sarah, & Rusk, R. Spectrum Health Energy Program (PowerPoint slides). Retrieved from <https://wmsbf.files.wordpress.com/2015/01/spectrum-health-sustainability-fund-and-energy-program-1.pdf>

<sup>5</sup> National Association of Energy Service Companies. (2013). Retrieved October 1, 2015, from <http://www.naesco.org>

## Strengths and Weaknesses

Multiple ESCOs have substantial expertise in hospital energy efficiency. Hospitals are one of the core markets for ESCOs, representing approximately six percent of their revenues in recent years. ESCOs are also able to obtain financing and guarantee savings, making them attractive to hospitals without capital and who do not want to shoulder enormous risk. On the other hand, ESCOs strongly prefer large projects to justify upfront marketing and engineering costs. Most ESCOs look for projects with investments of \$1 million or more. ESCOs need to earn a return for their efforts—hospitals with internal expertise and capital will often find that they can achieve greater net benefits by financing projects themselves. Additionally, some perceive ESCOs as having a built-in incentive to exaggerate savings, so contracts and monitoring (such as by a third party) need to be structured to ensure accuracy. Also, in some cases, ESCOs seeking larger projects may combine rapid payback and long payback measures in the hope that the combined project may be appealing.

## Energy Service Company Example

Children's Hospital in Boston has worked with Ameresco, an energy service company based in Framingham, Massachusetts, for more than a decade, undertaking HVAC system as well as water conservation measures. Ameresco has invested millions of dollars in Children's Hospital. The projects together are saving Children's Hospital an average of \$1.45 million in annual utility costs and \$76,000 in annual maintenance cost savings.<sup>6</sup>

## Commercial Property Assessed Clean Energy (PACE) Finance

### Description

Property Assessed Clean Energy (PACE) is a special type of financing provided through municipal or state governments.<sup>7</sup> The government provides the upfront capital, issues bonds to cover the principal and other costs, and attaches annual payments to cover the bonds to tax bills (either current bills in the case of private borrowers or new voluntary bills in the case of non-profit organizations that do not normally pay taxes). Tax bills have a very low default rate, in part because they are considered to be more senior than even a primary mortgage. This means that financing associated with tax bills is low risk and can get favorable interest rates.

Commercial PACE financing is becoming popular in Connecticut and California. Rhode Island and New Hampshire are now setting up commercial PACE programs, although funds in New Hampshire will be limited.<sup>8</sup> Other states are also exploring the opportunity.

### Strengths and Weaknesses

C-PACE is a creative way to obtain financing. The program is only available in states or municipalities that have established a program. Many projects also receive utility incentives—without these incentives it can be more difficult to make the math work. C-PACE involves a tax lien on the property, which may make it unsuitable for some facilities. If there is a primary mortgage, the mortgage holder may need to be notified before a C-PACE loan is closed. Interest rates available from C-PACE will need to be compared with interest rates available from other sources.

<sup>6</sup> Ameresco. (2013, September 1). Children's Hospital Boston, MA. Retrieved from [http://www.ameresco.com/sites/default/files/cs\\_childrenshospitalboston\\_09\\_2013.pdf](http://www.ameresco.com/sites/default/files/cs_childrenshospitalboston_09_2013.pdf)

<sup>7</sup> PACENation. (n.d.). Residential and Commercial PACE Market Growth. Retrieved September 1, 2015, from <http://www.pacenation.us>

<sup>8</sup> Welcome to the RI Infrastructure Bank. Retrieved from <http://www.ricwfa.com> ; Jordan Institute. (n.d.). C-Pace Financing: An innovative solution. Retrieved July 18, 2015, from <http://www.jordaninstitute.org/c-pace.html>.

## PACE Examples

The Connecticut Clean Energy Finance and Investment Authority (CCEFIA) has completed 25 commercial projects.<sup>9</sup> An example is a project with the Bushnell Auditorium in Hartford, CT. CCEFIA provided a \$384,000 loan (five percent interest rate for 20 years) to pay for new high-efficiency boilers and a water heater. Annual energy cost savings offset the \$30,411 per year tax assessment. Additional financial incentives of \$266,000 were provided by the local utility. So far they have not financed any hospital projects.

Similarly, the Tiburcio Vasquez Health Center in San Leandro, California used PACE financing (structured in the form of a lease) to install a 200 kW solar system in a new health center. The new building already incorporated extensive energy-saving improvements as part of the construction budget. PACE financing was only needed for the solar system, which was designed to offset about 90 percent of the building's energy use.

## On-bill Finance and On-bill Repayment

### Description

Utilities and other program administrators will sometimes offer to finance the portion of energy-efficiency upgrades that are not covered by program incentives.<sup>10</sup> Loan payments are often included on the utility bill making them easier to pay. Commonly the value of the energy savings is greater than the loan payments, providing immediate cost savings. These come in two forms, where the utility (1) provides the capital (on-bill finance); or (2) arranges for outside finance but includes the loan payments on energy bills (on-bill repayment). The choice of model is made by the utility, not by the customer. On-bill finance/repayment is more common for residential and small business customers, but sometimes used for larger customers.

<sup>9</sup> Connecticut Green Bank. (n.d.). Projects. Retrieved August 1, 2015, from <http://c-pace.com/projects>.

<sup>10</sup> American Council for an Energy-Efficient Economy. (2015). On-bill Financing for Energy Efficiency Improvements. Retrieved from <http://aceee.org/sector/state-policy/toolkit/on-bill-financing>.

<sup>11</sup> Lifespan. (2014, September 1). Energy Conservation Project Recognized. Retrieved August 1, 2015, from <http://www.lifespan.org/Lifelines-Digest-September-2014.html>.

## Strengths and Weaknesses

On-bill finance/repayment can be an easy-to-use source of financing and is a useful complement to utility incentives. However, on-bill finance/repayment is rarely offered to large customers such as hospitals. Where it is offered, interest rates and other details need to be compared with rates available from other sources—hospitals that can get tax-exempt financing may be able to get lower rates elsewhere.

### On-Bill Finance Example

Lifespan, which runs five hospitals in Rhode Island, and National Grid teamed up on a three-year partnership to improve energy efficiency in Lifespan's hospitals. Under the agreement National Grid is providing engineering and planning support, financial incentives and on-bill financing. The project includes lighting, HVAC equipment and building control system upgrades. Lifespan is expecting to save about \$1.3 million per year in utility costs.<sup>11</sup>

## Conclusion

Hospitals can reduce their operating costs through effective investments in energy efficiency. Utility incentives can help finance these improvements but additional capital will be needed. The conventional route is for funds to come from hospital capital budgets. However, a variety of other capital sources should be explored including revolving funds, energy-service companies, PACE financing and on-bill finance.

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