Energy Efficiency Financing Options
Why Energy Efficiency?

Investment in energy efficiency is at the forefront of public finance as institutions increasingly seek ways to bolster both the financial and environmental bottom line.

- **Sustainability Mandates**
  - 27 States have adopted Energy Efficiency Mandates upon new and existing buildings, as well as goals for reducing consumption.

- **Hedge Against Rising Utility Costs**
  - Ratepayers exposed to commodity risk
  - Electricity and gas prices consistently increasing.

- **Facility Modernization**
  - Aging building stock is common concern in Capital Improvement Plans
  - New technology available for efficiency, conservation (demand-response) and smart metering.

- **Savings Mandates**
  - Increasing numbers of States, Counties, Cities and Higher Education institutions have set standards for government building retrofits in efforts to maximize impact of projects.

- **Legislative Break-through**
  - Many States have passed legislation allowing specific types of energy efficiency contracts with Energy Service Companies (ESCOs).

On average, utility bills comprise 7% of State and Local Government budget.

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1Source: U.S. Census Bureau, 2009 Annual Survey of State and Local Government Finances.
Energy Efficiency Benefits the Hospital

As the hospital continues to find ways to streamline its operations and reduce expenses, Citi highlights select energy efficiency alternatives that lower operating costs with no immediate out-of-pocket expense.

- Healthcare organizations are amongst the largest consumers of energy, spending more than $8.8 billion annually.1
- Energy costs are a significant part of a hospital’s cost structure, therefore any reduction in energy expenses improves operating margins, relieves revenue pressure and increases financial flexibility.
- Energy efficiency projects include both capital intensive and non-capital intensive measures:
  - Energy monitoring and control units
  - Room occupancy sensors
  - Retrofit lighting
  - Ozone laundering
  - Low flow plumbing fixtures
  - High efficient HVAC
  - Distributive combined heat, power and cooling systems
- Higher future energy costs are a real risk, energy efficiency only becomes even more valuable if energy costs increase more than projected.
- A hospital could take a programmatic approach to increase efficiencies within its constituent campuses that would allow for:
  - Increased energy efficiency and building modernization
  - Lower operating expenses and resulting
  - No initial out-of-pocket costs

1Source: EPA Energy Star Program
Current Approach to Upgrades Limited in Options

Energy and Facilities personnel typically manage procurement process, not taking full advantage of input and experience of Finance staff

- Energy Efficiency procurement generally flows through Energy/Facilities Staff
  1. ESCO or Energy/Facilities Staff identify potential sites
  2. ESCO does audit of facilities
     - Recommends upgrades
     - Estimates savings
     - Quotes price for installation, savings guarantee terms
  3. The Hospital or ESCO arranges financing
     - The Hospital could pay up-front using capital or operating budget; or
     - Pay over time from savings; or
     - Arrange tax-exempt lease through ESCO

- Process may be repeated for separate facilities or measures
- Finance personnel traditionally not engaged in process
Limiting Factors of Current Procurement Methods

When considering additional investments in energy efficiency, there are common obstacles to securing the most advantageous cost and benefit.

- **Financial Considerations**
  - Cost of capital not always competitive
  - Use of operating or capital budget
  - Use of balance sheet and debt capacity

- **Counterparty Considerations**
  - Limited bargaining power with ESCO on project-by-project basis
  - Strength of savings guarantees

- **Strategic Considerations**
  - Efficient mix of “shallow” and “deep” retrofit projects to optimize payback period
  - Coordination and standardized contracting across organization

- **Transaction Considerations**
  - Risk premiums, measurement & verification and project management fees to ESCO
New Options for Financing EE Upgrades

By engaging finance staff in the procurement process, energy/facilities staff can collaborate on solutions to typical roadblocks to energy efficiency investment

- **Aggregation of Performance Contracts**
  - Common forms for multiple projects
  - Achieves scale to allow for bond offering
  - Pipeline of projects to leverage in contract negotiation
  - Option to re-channel aggregate savings to pay for additional projects

- **Energy Savings Agreements (ESA)**
  - Similar to a Power Purchase Agreement (PPA) common to solar energy projects
  - The Hospital pays a 3rd-party sponsor a price per avoided unit of energy
  - Requires no upfront capital from customer
  - Long-term ESA contract with highly-rated credit provides security for project financing
  - Based on measured & verified savings
# Comparison of Financing Options

Provided below is a comparison of financing options the Hospital could utilize for energy efficiency projects:

<table>
<thead>
<tr>
<th>Description</th>
<th>Tax Exempt Bonds</th>
<th>Tax Exempt Lease/Installment Purchase Agreement</th>
<th>Energy Services Agreement (&quot;ESA&quot;) Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>The Hospital accesses capital markets to directly finance energy efficiency project</td>
<td>The Hospital enters into tax-exempt lease with lender</td>
<td>Project Company enters into an ESA with the Hospital under which the 3rd-party provides energy services to [Rutgers] in return for payments from the host equal to related energy savings</td>
</tr>
<tr>
<td><strong>Benefits</strong></td>
<td>▲ Utilizes low tax-exempt financing rates</td>
<td>▲ Utilizes low tax-exempt financing</td>
<td>▲ No CapEx</td>
</tr>
<tr>
<td></td>
<td>▲ Benefits from realization of full amount of energy savings</td>
<td>▲ May be a quicker process than tax-exempt bonds</td>
<td>▲ No credit risk to ESCO</td>
</tr>
<tr>
<td></td>
<td>▲ Quickest ‘payback’ period</td>
<td></td>
<td>▲ Payments structured as a service contract</td>
</tr>
<tr>
<td><strong>Considerations</strong></td>
<td>▼ Increases balance sheet and debt levels</td>
<td>▼ Increases balance sheet and debt levels from rating and accounting perspective</td>
<td>▼ Shares savings from energy efficiency</td>
</tr>
<tr>
<td></td>
<td>▼ Ratings agencies sometimes will not recognize future energy savings to offset increased debt burden</td>
<td>▼ Can be more expensive than tax-exempt bonds</td>
<td>▼ Not financed with tax-exempt rates</td>
</tr>
<tr>
<td></td>
<td>▼ Credit Risk to Energy Services Company (&quot;ESCO&quot;)</td>
<td>▼ Credit Risk to ESCO</td>
<td>▼ The Hospital “payback period” extended for underlying ESA financing/structuring costs and transfer of residual performance risk to SPV/Equity</td>
</tr>
</tbody>
</table>
Financing with Tax-Exempt Bonds

Traditional tax-exempt bond financing is the lowest cost option, but also has the highest balance sheet impact.

- Avoids the cost of third party financing
- The cost to issue tax-exempt debt is at record lows
- Requires use of debt capacity and on balance sheet financing
- Transaction sizes may be too small to fund debt offerings
- Requires preparation of offering documents and ratings
- Ratings agencies may not recognize future savings to offset increased debt
Financing with Tax-Exempt Lease/Installment Purchase

Tax-exempt lease structure fixes out the schedule of lease payments for energy efficiency improvements

- The Hospital is eligible to enter into a tax-exempt capital leases
- The Hospital makes ongoing payments for life of lease to Lessor
- If the Hospital fails to make the lease payments, the lease terminates and equipment reverts to the Lessor
- No separate financing process required
Financing with an ESA

ESA structure allows the Hospital to finance projects through savings with no balance sheet impact

- ESCO finances construction of energy efficiency improvements with third party lender (Citi) and potential equity partner
- The Hospital enters into agreement to make payments to Project Co based on actual savings over a period of time (~10yrs)
- ESCO guarantees minimum level of energy savings (typically 80-90%)
- At end of term, the Hospital has right to purchase equipment from ProjectCo for fair market value

*Equity Investor is Optional*
In July/August 2011, Citi successfully priced and closed the SEU’s inaugural $67.4 million energy efficiency revenue bond deal which resulted in net cash flow savings of greater than 30% of aggregate project cost.

- Citi served as the Sole Underwriter and Trustee for the landmark energy efficiency financing for the SEU
  - The SEU was created in 2007 in order to promote and finance energy efficiency and distributed renewable energy projects for all sectors in the State of Delaware

- Series 2011 financed $67.4 million in energy efficiency improvements for governmental agencies throughout the State
  - The State invested an additional $11.3 million to further benefit these projects

- The bonds received AA+ / Aa2 ratings reflecting the strong financial position of the State and the overall security structure of the financing
  - The agency obligations are payable from State appropriations and are absolute and unconditional as indicated in the Delaware Energy Performance Contracting Act of 2007

- The SEU energy efficiency revenue bond program developed a set of standardized documents in order to accommodate future financings
  - Proceeds from the bonds were used by 6 different Energy Service Companies ("ESCOs") to install the efficiency improvements across 5 different State agencies

- The projected net cash flow savings from energy reduction over the life of the contracts is $26.7 million
  - The ESCOs have provided Guaranteed Energy Savings Agreements ("GESA") for each agency for 20 years

<table>
<thead>
<tr>
<th>Par Amount:</th>
<th>$67,435,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Project Cost:</td>
<td>$75,102,694</td>
</tr>
<tr>
<td>Average Life:</td>
<td>13.42 years</td>
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<tr>
<td>Final Maturity:</td>
<td>9/15/2034</td>
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Citi works with its clients in greenhouse gas intensive industries to evaluate emerging risks from climate change and, where appropriate, to mitigate those risks.

efficiency, renewable energy & mitigation