ICCCFO Fall 2022 Conference

A Strategic Approach to Sustainability – How Efficiency Can Drive Campus Renewal
Agenda

What Is Sustainable Capital Renewal?
Aging Campuses
Master Plan
Capital Renewal Model
Improve Your ROI
Case Study
Sustainable Capital Renewal

- Major Maintenance
- Major Repairs
- Equipment Replacements

**Capital Renewal**

**adjective**

1. able to be maintained at a certain rate or level.
Higher education sector sees 19 percent reduction in facilities investments

Colleges and universities face a growing backlog of capital needs and funding shortfalls, according to Gordian's 2022 State of Facilities in Higher Education report.
Age DOES Matter

• 30% of buildings are 10-25 Yrs Old
• 3/4 at some Colleges are 30+ Yrs Old
• Operating budgets have plunged 9% since FY19
• Older buildings waste energy
• Wasted energy = wasted dollars
The Utility Spend

### Natural gas end uses on college campuses

- Water heating: 14%
- Heating: 76%
- Miscellaneous: 10%

Notes: Cooling and cooking end uses represent less than 5 percent of gas consumption and are included in "Miscellaneous" uses.

© E Source

### Electricity Consumption by Colleges & Universities

- Heating & Cooling: 31%
- Lighting: 26%
- Office Equipment: 20%
- Ventilation: 7%
- Refrigeration: 4%
- Cooking: 1%
- Water Heating: 1%
- Other: 10%

Source: U.S. Energy Information Administration
The Data Overload

- Every year there are more and more systems that must be managed
- This trend will continue for years to come
- The tools and systems of yesterday are suffering from data overload
- Buildings can use technology to enable the efficient and economical use of resources
- Systems that integrate:
  - HVAC
  - Load Management
  - Security
  - Lighting
  - Building Access
  - Internet of Things connected devices
And What About Energy Storage and Production?

- On-site energy production and storage quickly increasing

- Managing energy production and storage is a complicated task

- Managing load shifting, utility connections, and infrastructure all new
Orchestrating unifies complex, fragmented, and labor-intensive building management systems into a collaborative, user-friendly platform that drives unparalleled smart building control, virtual management, visibility, and energy efficiency savings.

>30%
Master Plan to Identify Savings Opportunities

Energy Efficient Solutions
Design and implementation of industry leading energy efficiency solutions.

Facility Services
Full-service energy system operations and maintenance; continuous commissioning, monitoring, and preventive maintenance.

Engineering Solutions
Specialize engineering solutions supported by accredited electrical, geothermal, mechanical, plumbing and technology engineers.

Distributed & Renewable Energy
Design, installation and maintenance of renewable on-site generation, storage, vehicle electrification (EV), charging stations, and grid modernization.

Smart Building and Systems Integration
With “Orchestrate”, we assess, monitor and produce data analytics to optimize energy consumption, asset performance and demand management.

Energy Efficiency: Energy Conservations Measures

- HVAC
- Building Automation
- Distributed Energy
- Water
- Electrical Distribution
- Building Envelope
- Controls

ICCCFO Fall Conference 2022
## An Eight Step Plan

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
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<tbody>
<tr>
<td>1.</td>
<td>Audit and Identify What Needs to be Replaced</td>
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<tr>
<td>2.</td>
<td>Assign a Cost for Budgeting and Planning</td>
</tr>
<tr>
<td>3.</td>
<td>Prioritize Needs Based on Your Goals</td>
</tr>
<tr>
<td>4.</td>
<td>Use Your Digital Data for Additional Insight</td>
</tr>
<tr>
<td>5.</td>
<td>Phase In as Funds Allow</td>
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<td>6.</td>
<td>Timing Based on Available Incentives</td>
</tr>
<tr>
<td>7.</td>
<td>Capture and Optimize Data</td>
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<tr>
<td>8.</td>
<td>Use Utility Savings from Efficiency Projects to Self-Fund Renewal</td>
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</tbody>
</table>
Self-Funded Capital Renewal

- Uses current funds spent on utility bills to pay for infrastructure
- Improves educational environment
- Implement strategies to create safer, healthier learning environments
- No disruption to staff
- Enhanced safety, comfort and energy efficiency
- Redirection of maintenance and operations costs to fund capital renewal projects
- Improves Sustainability Planning and reduces Carbon Footprint
Improve Your ROI - the Inflation Reduction Act (IRA)

The Inflation Reduction Act (IRA) was signed into law by President Biden on 8/16/22

Key Highlights include:

• The Investment Tax Credit (ITC) (One-Time Credit) will go from 26%-30% on 1/1/23

• The Production Tax Credit (PTC) (Annual Credit) will go from 1.5 cents per kWh to 2.7 cents per kWh and adjusted annually for inflation

• Battery Storage, including stand-alone projects, also qualify for these credits

• There is a Direct Pay option for Schools, Municipalities, Higher Education, Non-Profits and other political subdivisions. For example, a $1M solar array will now qualify for a $300k check from the federal government.

On top of the 30% Direct Payment (ITC), tax exempt entities can also receive specific “Adders” and/or “Provisions”:

• 10% for U.S. Domestic Content on material (solar panel content, roof materials). Waiting on U.S. Treasury for final definition.

• 10% for work in an Energy Community through 2024. Defined as an area that used to be a coal mine, oil field or natural gas storage, transport or extraction site. Waiting on U.S. Treasury for final definition.

• 10%-20% adder if the work is in an Environment Justice area (qualified low-income community) or on Indian land through 2024

Waiting on U.S. Treasury for final definition.
Improve Your ROI - the Inflation Reduction Act (IRA)

Customer Benefit
• New Direct Pay ITC allows our education and government clients to receive a direct payment.
• Opens more options for our clients outside of the traditional PPA.

Eligible Renewables
• Solar and Battery Storage, Geothermal, and Biogas (Starting 2025 all Zero Emissions tech qualifies)

Eligible Clients
• Schools, Municipalities, Counties, State Government, Colleges and Universities, Rural Electric Cooperatives, and nonprofits (501(c)(3)).
• Any organization that has filed an application with the federal government for tax-exempt status.

Timeframe
• Installs in 2023 will complete tax form in 2024 and receive reimbursement in 2024.
• Installs in 2024 will receive tax form in 2025.

ITC Transfer
• The ITC may be transferred 1 time potentially allowing project developer to offset the project cost at the start and collect the tax payment later. Further treasury guidance, and professional tax help will be needed.
# Improve Your ROI – Utility Incentives

## Business Energy Efficiency Programs

### Incentive Reference Guide

**Program Year 2022: Jan 1 – Dec 31, 2022**

#### Incentive Information by Equipment Type

| Equipment Type | Measure Description | Incentive
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>Lighting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Lighting</td>
<td>Replace existing T12 fluorescent fixtures with DLC or ENERGY STAR qualified LED lighting</td>
<td>$0.65/watt reduced</td>
</tr>
<tr>
<td></td>
<td>Replace existing T8 fluorescent fixtures with SLL or ENERGY STAR qualified LED lighting</td>
<td>$0.65/watt reduced</td>
</tr>
<tr>
<td></td>
<td>Replace existing T12 fluorescent fixtures with DLC or ENERGY STAR qualified LED lighting</td>
<td>$0.65/watt reduced</td>
</tr>
<tr>
<td></td>
<td><strong>LED Light Fixtures</strong></td>
<td>$0.75/watt reduced</td>
</tr>
<tr>
<td></td>
<td><strong>Driveshare® Option for Nonprofit Customers</strong></td>
<td>$0.00/watt reduced</td>
</tr>
<tr>
<td><strong>Indoor Lighting</strong></td>
<td>Low-Wattage Occupancy Sensors Plus Daylight Dimming Controls</td>
<td>$0.10/watt reduced</td>
</tr>
<tr>
<td></td>
<td><strong>Unvented Lighting Controls</strong></td>
<td>$0.10/watt reduced</td>
</tr>
<tr>
<td></td>
<td><strong>DC- or ENERGY STAR qualified LED lighting (Excluding Title II Sanitation or Replacement)</strong></td>
<td>$0.10/watt reduced</td>
</tr>
<tr>
<td></td>
<td><strong>Commercial LED Grow Lights</strong></td>
<td>$0.10/watt reduced</td>
</tr>
<tr>
<td><strong>High Bay Lighting</strong></td>
<td><strong>DC- or ENERGY STAR qualified LED lighting (Excluding Title II Sanitation or Replacement)</strong></td>
<td>$0.10/watt reduced</td>
</tr>
<tr>
<td></td>
<td><strong>Indoor Lighting Controls</strong></td>
<td>$0.10/watt reduced</td>
</tr>
<tr>
<td><strong>Municipal Street Lighting</strong></td>
<td><strong>LED Traffic and Pedestrian Signals</strong></td>
<td>$0.60/watt reduced</td>
</tr>
<tr>
<td></td>
<td>** ENERGY STAR or DLC qualified LED lighting**</td>
<td>$0.75/watt reduced</td>
</tr>
</tbody>
</table>

#### Incentive Details

**ComEd Energy Efficiency Program**

**Standard Incentives Application Form**

January 1 through December 31, 2022

The ComEd Energy Efficiency Program offers incentives to help customers save money by improving the efficiency of their equipment. Eligible customers can receive standard incentives for common energy efficiency improvements.

**How to Get Started**

- Check project and equipment eligibility in the incentive worksheets available at ComEd.com/Workshops.
- Apply online at ComEd.com/StandardsOnlineApp or submit this standard application form (if applicable) for an incentive reservation.

**Incentive Structure**

- **Track 1:** Apply for incentives of $10,000 or more
  - Traditional reservation
  - Project eligibility will be verified through a technical review before we send your reservation letter

- **Track 2:** Apply for incentives of $0 to $9,999
  - Express reservation; receive your reservation letter

- **Track 3:** Apply for incentives of less than $10,000 or $0.50/watt reduction
  - No reservation required; start your project today!
  - Purchase qualifying equipment and start your project immediately

**Incentive Details**

- Your letter will provide an express or traditional reservation depending on the requested incentive value of your project, and allow you 90 days to complete your project.
- A reservation letter does not guarantee an incentive; your project’s final incentive is determined after submission and approval of your final application.

**How to Submit**

- Install equipment before your incentive reservation expires (if applicable)
- Submit the standard incentives application form and required documentation within 60 days of project completion.
- Respond promptly to any requests for clarification or additional documentation.
- Receive your incentive payment after a technical review and application approval by the program team.

**Contact Information**

- Call 855-435-2700 or email BusinessKS@ComEd.com

**Performance Measures**

- Energy savings and performance metrics are used to determine incentive eligibility.

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*Note: “Smart” applications are only eligible under Track 1, and are subject to additional requirements.*
Improve Your ROI – Purchasing Cooperatives
Case Study – Lake Land College

**Lake Land College**
**Phases 1-17**
Mattoon, IL

**PROJECT OVERVIEW**
Lake Land College developed a long-range infrastructure master plan with the goal of addressing deferred maintenance problems and developing a carbon neutral campus that is self-sustaining through renewable energy. These goals have been achieved through energy saving initiatives, many of which, through Veregy’s experience were implemented starting in 2009 through 2017 and beyond. Lake Land also worked on a turnkey solution with guaranteed performance to avoid the hidden costs of growing permanent staff.

Lake Land worked with a responsible and accountable resource for every detail of this project and also one that had the expertise to develop a validated program. Veregy totally developed a four-phase, five-year plan totaling $20 million. As completion of the 2011 Veregy’s work saved 1,653,489 kWh of electricity and nearly 76,300 tons of carbon each year due primarily to the geothermal heat pump system. Lake Land also upgraded several buildings with modern electrical, mechanical, plumbing, LED lighting, HVAC, control systems. If needed, existing A1A compliant windows and building automation systems.

Lake Land also implemented solar photovoltaic arrays and saved $30K annually. Lake Land continues to work with Veregy in 2020. Veregy managed the new Foundation & Academic Center and the Workforce & Community Ed Building in 2021. Veregy reached an 60MW generation.

**PROJECT HIGHLIGHTS**
- **Geothermal Dispersification Loop**
- **LED High-Bay Lighting Controls**
- **Solar Photovoltaic Arrays**
- **Water Flow Controls**
- **Energy Efficient HVAC Systems and Chilled Beam Systems**
- **Energy Efficient Windows and Insulation, Daylight harvesting**
- **Environmentally Safe Floors, Walls, and Ceilings**
- **Extensive renovation of campus facilities**

**Lake Land College**
A Carbon Neutral Campus becomes a reality through Energy Saving Initiatives

Lake Land College

**Lake Land College**

- Solar photovoltaic arrays were installed on campus building rooftops. Each array is designed such that the ability to cover the building loads on sunny days.

**Tracking Annual Performance**

<table>
<thead>
<tr>
<th>Year</th>
<th>kWh</th>
<th>Impact of Energy Initiatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>4,724,546</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>4,724,546</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>4,724,546</td>
<td></td>
</tr>
</tbody>
</table>

**Lake Land College**

The Lakes Student Center installed a solar cell array to generate the critical load, and other energy efficiencies are highlighted in this graph.

While Veregy utilized the hybrid geothermal loop to provide heating and cooling to each campus building, there was an additional need to control temperature, ventilation, and humidity within each classroom. Veregy researched Chilled Beam technology for Wolfe Hall and Northeast Buildings. The result of this technology is an extremely comfortable and sleek environment, 40% decrease in building energy usage, and $20,000 in annual savings. Lake Land’s lifecycle infrastructure master plan has been the backbone for the energy saving innovations that continue to take place, transforming Lake Land College into a model for other campuses across the country. Together, Lake Land College and Veregy continue an ongoing partnership of sustainable renovations to the 317-acre campus, turning Lake Land’s vision into reality.
To Summarize

- Assess Your Facilities Through a Master Plan
- Prioritize Needs
- Phase In As Funding is Available
- Use Utility Savings to Fund Capital Renewal
- Adjust Timing for Available Incentives
- Capture and Optimize Data
Company Overview

Energy Service Company (ESCO)
- Award winning ESCO comprised of nine regional brands
- Turnkey energy and infrastructure provider

Deep Bench of Talented Professionals
- 600 employees across 14 states
- In-house designers and engineers including LEED/LEED AP accredited professionals
- Construction and implementation specialists

Customers We Serve
- State and Local Government
- K-12
- Higher Education
- Public Transit
- Healthcare

LEGEND
- K-12 Education
- State & Local Government
- Health Care
- Higher Education
- Commercial
- Federal
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