



# 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



 sus·tain·a·ble

*adjective*

1. able to be maintained at a certain rate or level.

## Capital Renewal =

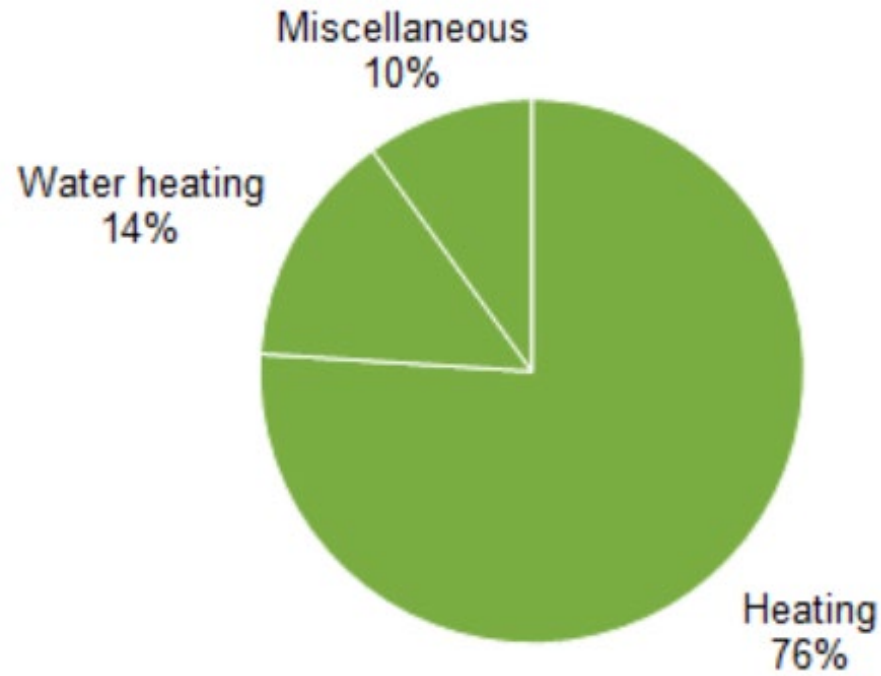
- Major Maintenance
- Major Repairs
- Equipment Replacements

# 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.

- 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

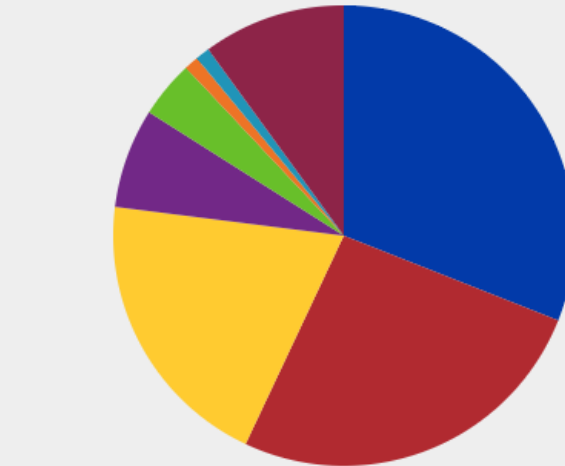
## Natural gas end uses on college campuses



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



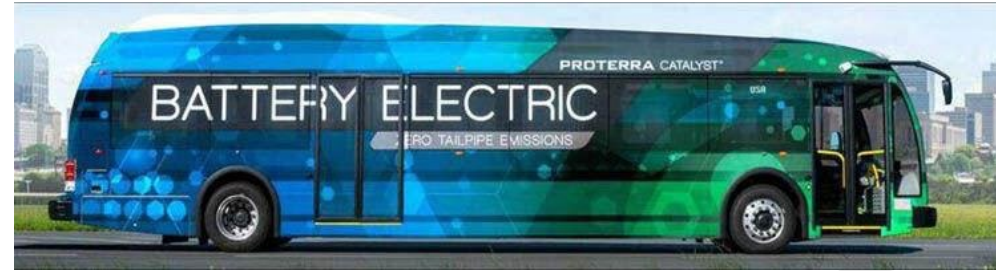
Heating & Cooling	31%
Lighting	26%
Office Equipment	20%
Ventilation	7%
Refrigeration	4%
Cooking	1%
Water Heating	1%
Other	10%

Source: U.S. Energy Information Administration



- 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

- 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

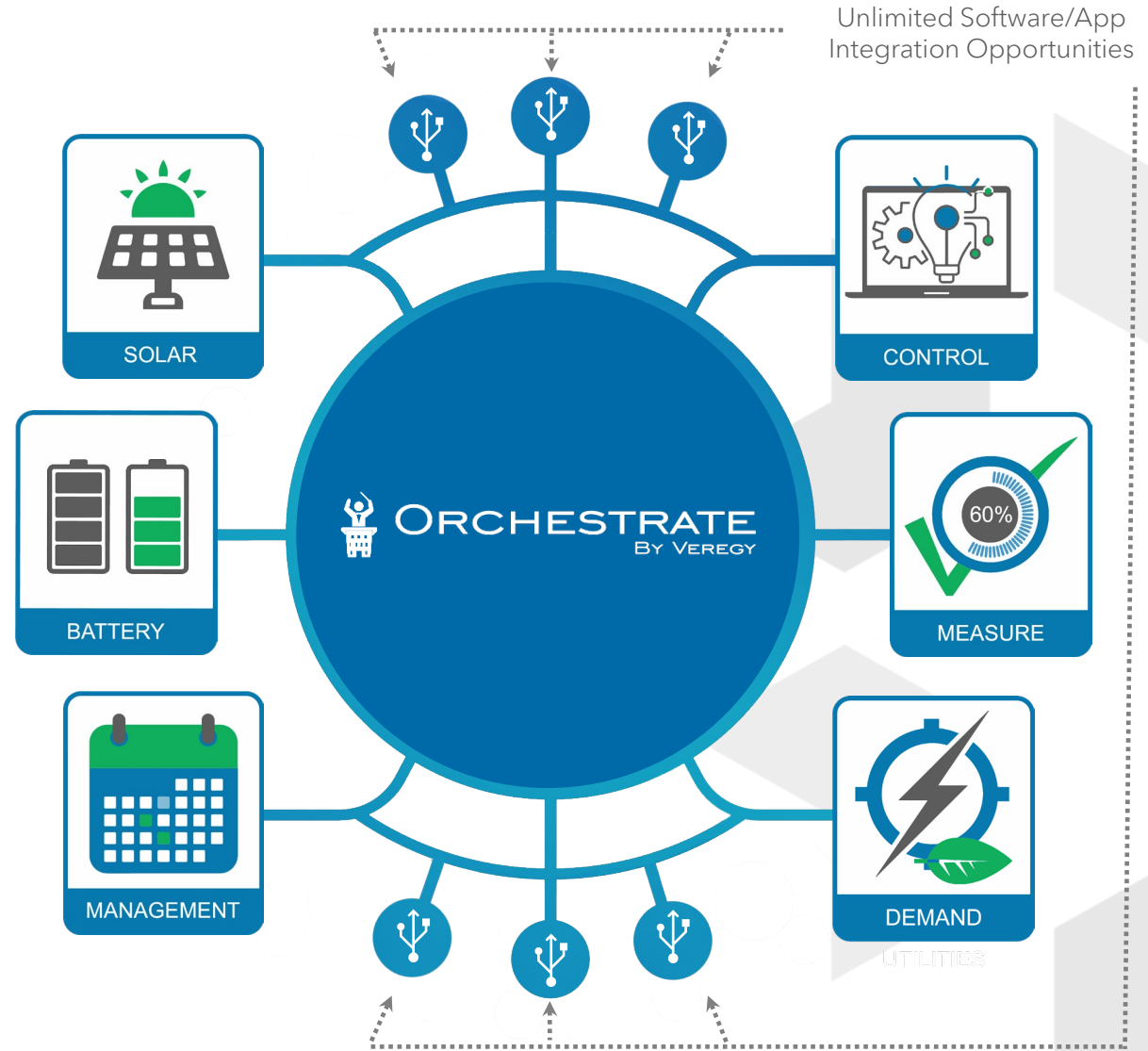




# Mine Your Data

Orchestrate 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.



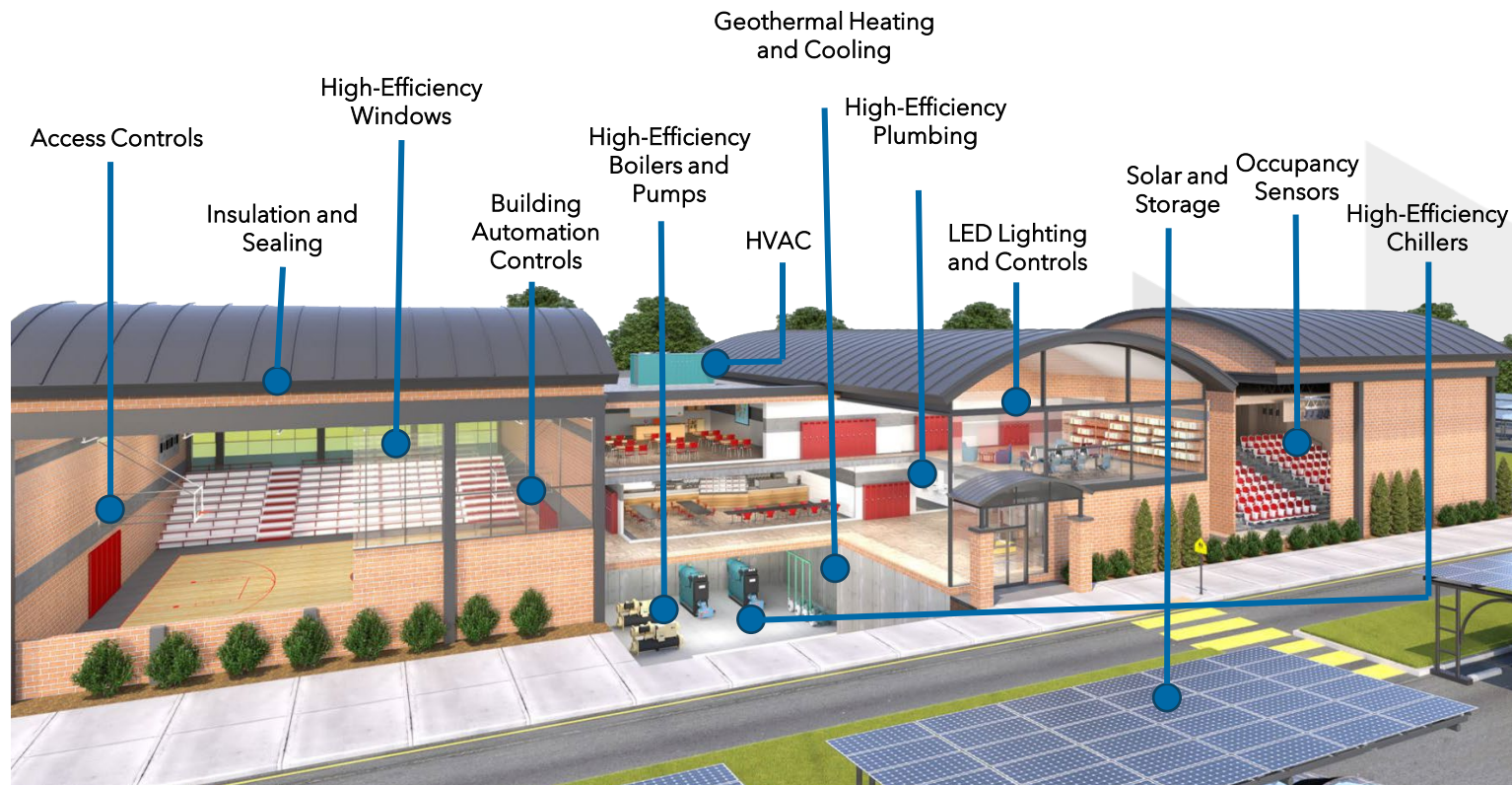
## Distributed & Renewable Energy

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



Distributed Energy



Water



Building Envelope



Building Automation



Lighting



Electrical Distribution

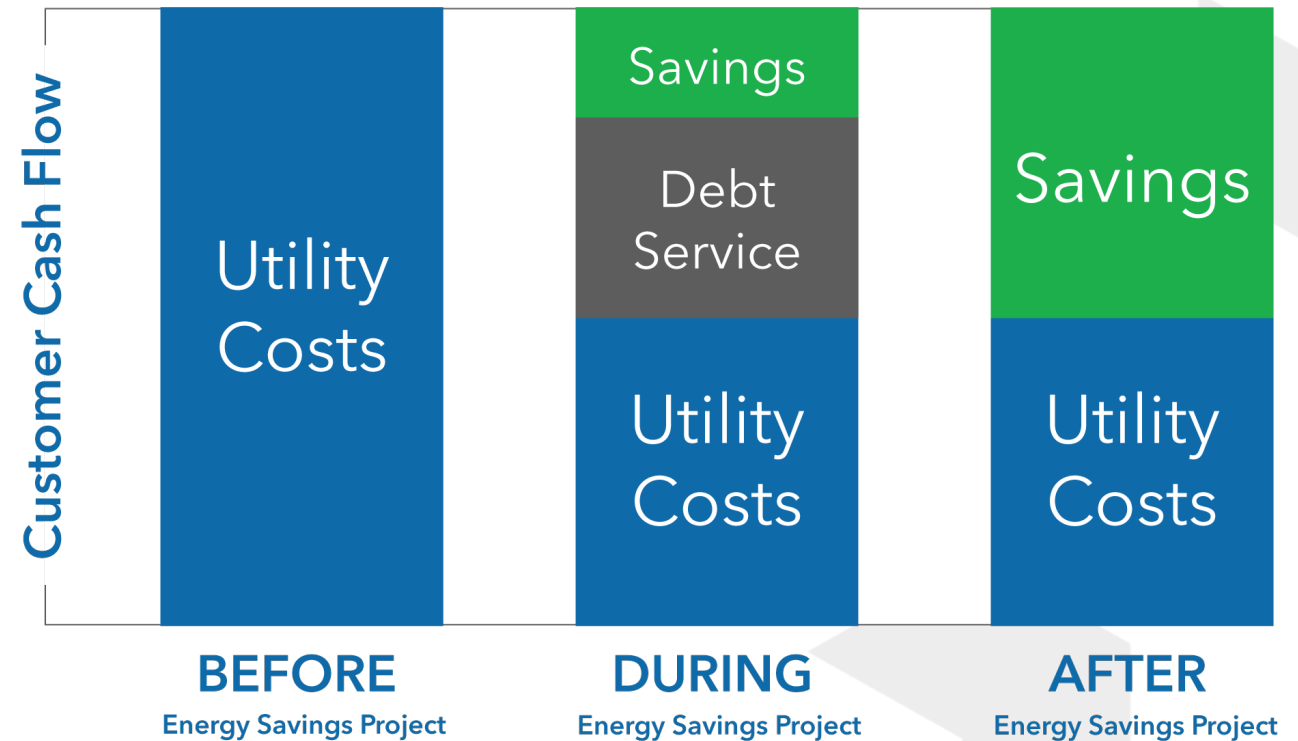


Controls

<b>An Eight Step Plan</b>	
1.	Audit and Identify What Needs to be Replaced
2.	Assign a Cost for Budgeting and Planning
3.	Prioritize Needs Based on Your Goals
4.	Use Your Digital Data for Additional Insight
5.	Phase In as Funds Allow
6.	Timing Based on Available Incentives
7.	Capture and Optimize Data
8.	Use Utility Savings from Efficiency Projects to Self-Fund Renewal

# 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



## 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

## 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

Lighting		
Standard Lighting		
Code	Measure Description	Incentive*
BPL17	Replace Existing T12 Fluorescent Fixtures with DesignLights Consortium® (DLC) or ENERGY STAR® Cooler/Freezer LED Lighting	\$0.20/watt reduced
BPL18	Replace Existing T12 Fluorescent Fixtures with DLC or ENERGY STAR Interior LED Lighting	\$0.20/watt reduced
BPL19	Replace Existing T12 Fluorescent Fixtures with DLC or ENERGY STAR Exterior LED Lighting	\$0.20/watt reduced
BPL26	LED "Open" Sign Replacing an Existing Neon-Type Sign	\$20/sign
BPL30	Occupancy Sensor Plus Daylight Controls (Interior Only)	\$50/control
BPL31	Low-Wattage Occupancy Sensors Plus Daylight Dimming Controls (Interior Only)	\$25/control
BPL32	Networked Lighting Controls	\$0.40 - \$0.75/watt controlled
BPL50	DLC or ENERGY STAR Exterior LED Lighting (Excluding T12 Fluorescent Replacement)	\$0.45/watt reduced
BPL55	Commercial LED Grow Lights	\$0.80/watt reduced
BPL67	DLC or ENERGY STAR Interior LED Lighting (Excluding T12 Fluorescent Replacement)	\$0.45/watt reduced
BPL68-69	Permanent Fixture or Lamp Removal	\$0.15/watt reduced
BPL72	Fixture-Mounted Occupancy Sensors for Fluorescent or LED Systems	\$40/control
BPL73	Remote-Mounted Occupancy Sensors	\$40/control
BPL74	Wall Switch Plate-Mounted Occupancy Sensors	\$40/control
BPL79	Low-Wattage Occupancy Sensors or Daylight Dimming Controls	\$20/control
BPL93	DLC Standard or ENERGY STAR Cooler/Freezer LED Lighting (Excluding T12 Fluorescent Replacement)	\$0.45/watt reduced
BPL94	LED Cooler/Freezer Lighting Controls and Sensors	\$12/sensor
Municipality-Owned Street Lighting		
Code	Measure Description	Incentive*
BPL15	LED Traffic and Pedestrian Signals	\$20/lamp replaced
BPL16	ENERGY STAR or DLC Exterior LED Lighting	\$0.75/watt reduced
HVAC/Water Heaters		
Code	Measure Description	Incentive*
BPWH4	High-Efficiency Condensing Tanked Water Heater (Gas)	Private \$300/heater Public \$450/heater
BPWH5	High-Efficiency Tanked Water Heater (Gas)	Private \$150/heater Public \$225/heater
BPWH7	Controls for Multifamily Central Domestic Hot Water Plants	\$50/living unit served
BPC6,8,25	Air Conditioner or Air Source Heat Pump	\$600-\$1,600/unit
BPC12,26	Air-Cooled Chiller	\$3,000/unit
BPC27,30	PTAC/PTHP Unit (Less Than 65 kBtu/h Input)	\$35-\$40/unit

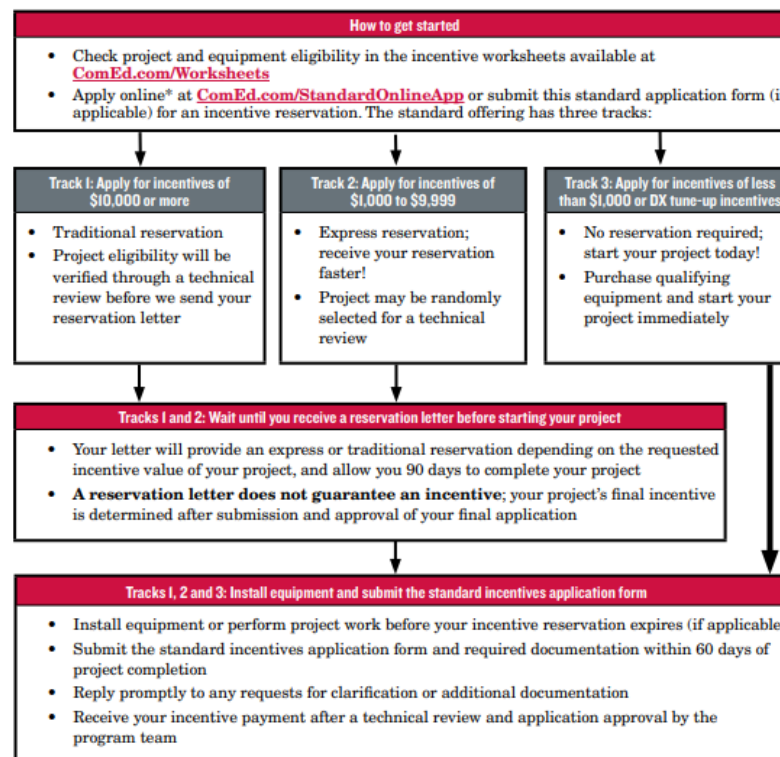
8.12.2022

ComEd Energy Efficiency Program

## STANDARD INCENTIVES APPLICATION FORM

January 1 through December 31, 2022

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



**Save time - apply online\*.** If you register for an account, you can track your project's progress. Questions? Call **855-433-2700** or email [BusinessEE@ComEd.com](mailto:BusinessEE@ComEd.com)

\*Streetlight applications are only eligible under Track 1, and are not eligible for online application.



**Business Symposium**  
Wed., Oct. 19 | Crowne Plaza, Springfield  
Join me at the in-person Symposium and get your 20% bonus coupon when you register at [AmerenIllinoisSavings.com/Symposium](http://AmerenIllinoisSavings.com/Symposium)  
Artwork by Chantell Marlow, member of the Peoria Guild of Black Artists



**THE INTERLOCAL  
PURCHASING SYSTEM**  
“PURCHASING MADE PERSONAL”



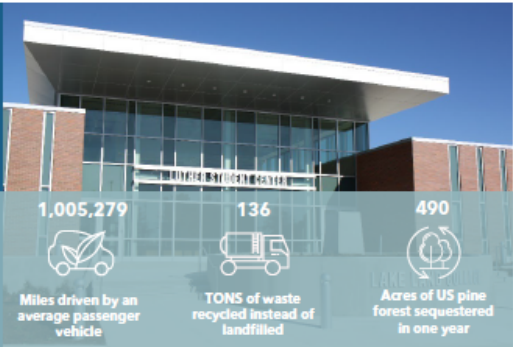




## Lake Land College Phases 1-17

Mattoon, IL

PROJECT SAVINGS



DECARBONIZATION

**Goals: Carbon Neutral Campus & Address Deferred Maintenance**

**Type: Guaranteed Performance Contracts**

**Grants/Incentives: >\$2.3M**

**Cumulative Savings: \$52,300,000 in Energy & Operational Savings**

**Cumulative CO<sub>2</sub> Savings: 400 Metric Tons**

**Length: 17 Phases/14 Year \$70 Million**

**Contact: Madge Shoot  
Comptroller  
(217) 234-5375**

**5001 Lake Land Blvd  
Mattoon, IL 61938**

The success of the five-year plan allowed Veregy to be recognized as a valuable partner in reaching the College's goal of a carbon neutral campus. Veregy became the College's Life Cycle Infrastructure Program Manager.

### PROJECT OVERVIEW

Lake Land College developed a long-range infrastructure master plan with the goals 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 2008 through 2021 and beyond. Lake Land also wanted a turnkey solution with guaranteed performance to avoid the hidden costs of growing permanent staff.

Lake Land needed a responsible and accountable resource for every detail of the project and also one that had the expertise to develop a valuable program. Veregy initially developed a four-phase, five-year plan totaling \$20 million. At completion in 2012, Veregy's work saved ~850,000 kilowatt hours (kWh) of electricity and nearly 70,000 therms of natural gas each year due primarily to the geothermal heat pump system. Lake Land also updated school buildings with modern electrical, mechanical, plumbing, LED lighting, HVAC, roofing, windows, IT outlets, cabling, ADA compliant restrooms, and building automation systems.

Lake Land also implemented solar photovoltaic arrays and saved ~\$50K annually. Lake Land continues to work with Veregy—in 2020, Veregy is managing the new Foundation & Alumni Center and the Workforce & Community Ed building. In 2021, Veregy installed a 60KW generator.

### PROJECT HIGHLIGHTS

- Geothermal diversification loop
- LED lighting/dimming 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



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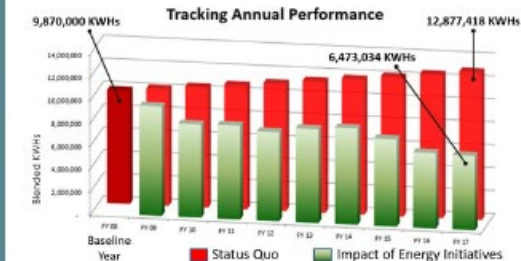
## Lake Land College A Carbon Neutral Campus becomes a reality through Energy Saving Initiatives



Solar photovoltaic arrays were installed on campus building rooftops. Each array's electrical output has the ability to exceed the building loads on sunny days.



The Luther Student Center incorporated **natural light** to maintain lighting throughout the day. With sensor controls, additional **LED lighting** turns on when light levels are low. **Sensors** also determine if lights are needed when no occupants are present.



The savings over ten years from the hybrid geothermal field, the solar arrays, the chilled beam, and other energy efficiencies are highlighted in this graph.

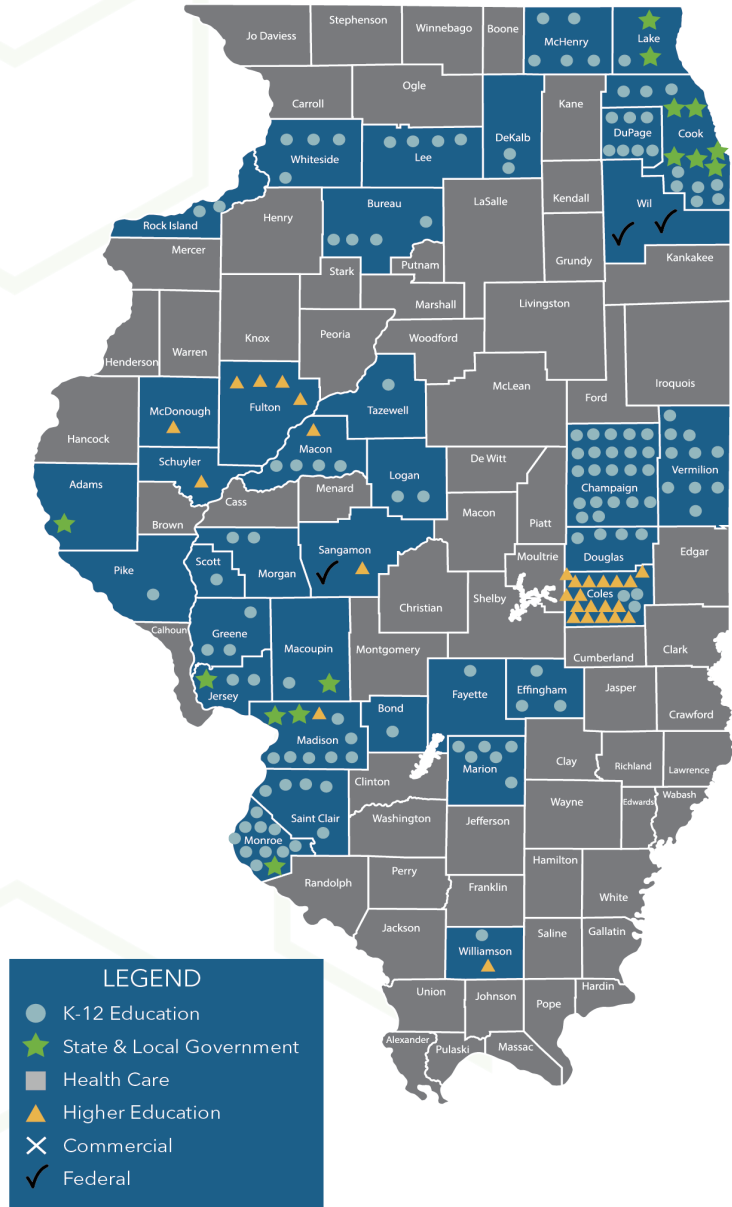
While Veregy utilized the **hybrid geothermal loop** to provide heating and cooling to each campus building, there was an additional need to control temperature, ventilation, and humidity within each classroom. Veregy researched **Chilled Beam** technology for Webb Hall and Northeast Buildings. The result of this technology is an extremely comfortable and quiet environment, 40% decrease in building energy usage, and \$32,000 in annual savings.

Lake Land's life cycle infrastructure master plan has been the backbone for the energy saving renovations 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.

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- 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



## 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

31 YRS  
Industry  
Experience

\$1.7 BIL  
Energy Saving  
Projects

1,000s  
Buildings  
Optimized

600+  
Veregy  
Professionals

8 BIL  
kWhs of  
Energy Saved

20 BIL  
Gallons  
Water Saved

12.4 BIL  
Carbon Dioxide  
Pounds Reduced



## Contact Information



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