IGEN Annual Conference - April 10, 2019

Tim Gibson
Director of Buildings and Grounds - John A. Logan College
Energy Efficiency Improvements Continue –

Lighting upgrades – 4’ LED bulbs & “smart lighting”

High efficiency replacement for HVAC equipment

Upgraded building automation system
Update – Section 20/3.1 IL Solid Waste Management Act

1995 - Mandates institutions of higher learning develop waste reduction plans – submit every 5 years

Goal – to reduce solid waste generated by 40% by year 2000

Program was administered by IL DCEO –
Update – Section 20/3.1 IL Solid Waste Management Act

Now administered by IL EPA and next update due 2020

Plans/reports from previous years were not transferred to IL EPA – asking schools to do so.

Plan outlines and deadlines to be sent out by end of March 19 (still waiting on this)
2 MW Solar Array
40% of JALC campus energy use!
SEDAC Energy Assessment & Feasibility Report

John A. Logan College
Carterville, Illinois 62918

Smart Energy Design Assistance Center (SEDAC)
Level III Energy Assessment Report
SEDAC performed a site visit on 10-30-2018

Purpose – to provide energy savings and cost analysis for various Energy Cost Reduction Measures (ECRM’s).

Results -
- Report focused on 584,488 sq. ft.
- Identified 13 Energy Conservation Reduction Measures
- Recommended 12 ECRM’s
- Reported on Utility Incentives to apply to ECRM’s
The current U.S. National Median Reference Values for site energy use for universities and colleges is 84.3 kBtu/ft². JALC’s energy usage is below the median at approximately 76 kBtu/ft². That is commendable considering the aged mechanical, electrical, lighting, and control systems staff have to deal with.
### Table E2: Energy Cost Reduction Measure Analysis

<table>
<thead>
<tr>
<th>ECRM #</th>
<th>ECRM Description</th>
<th>Potential Annual Savings</th>
<th>Estimated Project Cost</th>
<th>Potential Incentive</th>
<th>SPB w/o Incentive (yrs)&lt;sup&gt;2&lt;/sup&gt;</th>
<th>IRR (%)</th>
<th>NPV ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bldg C: Wireless pneumatic thermostats</td>
<td>52.1 kWh 312,400 Therm 10,790 $33,100 $141,990 $47,330</td>
<td>4.3 23%</td>
<td>$270,500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>DCV for Comm. Bldg</td>
<td>0.0 kWh 35,500 Therm 5,800 $7,200 $36,225 $8,211</td>
<td>5.0 20%</td>
<td>$19,400</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Schedule D Bldg. AHU</td>
<td>0.0 kWh 62,500 Therm 0 $5,200 $20,000 $7,826</td>
<td>3.8 26%</td>
<td>$20,200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Install daylight harvesting sensors</td>
<td>1.3 kWh 6,100 Therm -110 $400 $3,000 $1,100</td>
<td>7.5 13%</td>
<td>$100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Kitchen Exhaust Hood DCV</td>
<td>0.0 kWh 25,500 Therm 960 $2,800 $12,000 $3,400</td>
<td>4.3 23%</td>
<td>$9,600</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>VFDs for Pump Motors</td>
<td>63.2 kWh 289,900 Therm 0 $23,200 $168,000 $52,500</td>
<td>7.2 14%</td>
<td>$11,100</td>
<td></td>
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</tr>
</tbody>
</table>
Figure 5: Energy Breakdown (kBtu)

Figure 6: Cost Breakdown
SEDAC Quick Tip: Sharing the Environmental Impact of Energy Savings

Your facility has made big energy efficiency improvements and now you want to share your success with the world! People usually talk about success in terms of kWh or dollars saved, but how can you capture the environmental impact in a way that gets people excited?

We recommend using the [EPA Greenhouse Gas Equivalencies Calculator](https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator). This handy tool helps ordinary people visualize the power of energy savings. You enter the amount of kWh or therms you've saved, and the calculator generates "equivalencies."

For instance, SEDAC estimated that Pekin Community School District would save 378,000 kWh annually by implementing energy savings measures from an RCx study. These savings are equivalent to greenhouse gas or CO2 emissions from:

- 56.8 passenger vehicles driven for one year
- 32 homes' energy use for one year
- 34,084,435 number of smartphones charged

Now those are exciting savings! By sharing the environmental impact of your energy savings, you demonstrate to building users and communities that you are committed to a greener future.
Thank you!

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