ENERGY EFFICIENCY STARTS WITH YOU
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Agenda

• Focus on Energy background
• City of Burlington Wastewater Treatment Facility:
  • Getting started
  • First energy survey 2002-2003
  • Aeration modification projects
  • Focus on Energy program transition
  • Developing an energy efficiency culture
  • Key takeaways
• Becoming energy efficient
• Focus on Energy assistance
• Questions
Focus on Energy
background
What is Focus on Energy?
What does Focus on Energy do?

- Assists Wisconsin residents and businesses in identifying and implementing energy efficiency projects
- Offers unbiased information and technical assistance to participating utilities’ electric and/or natural gas customers
- Provides financial incentives for energy saving projects that would not otherwise occur
Focus by the numbers

• Focus on Energy has delivered more than $1 billion in economic benefits over the past eight years
• Focus on Energy’s positive net employment impacts supported more than 1,000 full-time equivalent jobs per year over the Quadrennium
• Served customers at more than 128,000 residences and more than 6,100 businesses in 2018
• When economic benefits are counted, cost-effectiveness findings calculated that Focus on Energy provided $5.16 in benefits for every $1.00 invested over the 2018 program year
• Energy saved last year would power more than 69,000 homes for one year

Visit focusonenergy.com/evaluation-reports to view the full report
City of Burlington
Wastewater Treatment Facility
Getting started

- Discussed the Focus on Energy Program with the City’s Superintendent
- Expressed interest to reduce energy use
- Estimated level of potential incentive
- Discussed opportunities to assess
- Requested data and information prior to site visit
- Completed a site visit
First energy survey

• Surveyed site on April 5, 2002
• Identified the following energy efficiency opportunities:
  • Energy-efficient fluorescent lighting
  • Occupancy sensors
  • Premium efficient motors
  • Demand-side management
  • Utilize existing biogas
  • Redistribute aeration diffusers
  • Modify aeration controls
  • Evaluate need to downsize aeration blower
First project installed

- Installed a biogas conditioning system
- Treated hauled-in waste impacting biogas quality but provided quantity needed
- Started to utilize biogas being produced
- Reduced the need to purchase natural gas
Aeration modification projects

- Initial survey identified a complete array of aeration modifications:
  - Diffuser distribution
  - Blower size
  - Controls
- Continued contact and encouragement to modify the aeration system
- Delayed implementation
Aeration project installed

• Studied aeration system and confirmed forecasted savings and project cost
• Implemented aeration system modifications
• City of Burlington applied and received a Focus on Energy incentive to install identified energy-efficient modifications:
  • Blowers – New technology
  • Diffusers – Redistribution of diffusers increased density for improved oxygen transfer and mixing at lower air flow rates
  • Controls – Dissolved oxygen (DO) probe per basin SCADA monitors and controls blowers
Diffusers
Control System
Focus on Energy Program transition

• Transitioned after the implementation offering and acceptance occurred prior to implementation
• Focus on Energy continued to support the City of Burlington during implementation of the aeration system modifications
New superintendent (foreman)

- During project implementation a transition in the management of the WWTF also occurred
- A new WWTF foreman came on board
Developing an energy efficiency culture

- Former superintendent conveyed the value of energy efficiency
- Present foreman continued to promote energy efficiency awareness including training staff on the subject
- Current staff are regularly challenged to identify energy efficiency opportunities
- Staff continue to maintain consistent discussions on energy efficiency and operations
- Staff encouraged to identify opportunities on either capital investment or in operations
Continued energy efficiency projects

- Updated VFDs on bio-filter feed pumps
- Paced bio-filter feed pumps off of influent flow rather than constant speed operation
- Delivered modifications to ventilation system to increase air flow rate but not increase energy used
- Converted all exterior lighting to LED lighting
- Upgraded administration building HVAC:
  - Installed new air handler with VFD
  - Upgraded to new VAV boxes
  - Replaced aging condensers with efficient two stage units
Continued energy efficiency projects

• Updated interior lighting
• Operated high demand equipment during off peak times
• Allowed SCADA system energy use monitoring at WWTF and pump stations
Burlington takeaway

• How was energy efficiency achieved?
  • Assistance from Focus on Energy
  • Staff persistence
  • Precise process and power monitoring
  • Consideration of projects or modifications of all sizes

• Change in KPI
  • 2001 – 2,063 kWh/MG
  • 2019 – 1,445 kWh/MG
Becoming energy efficient
How do I become energy efficient?

• Baseline your energy use
• Review the **Top 25 Low Cost – No Cost Saving Opportunities** handout
• Identify easy-to-implement energy-efficient opportunities
• Meet with your Energy Advisor to discuss opportunities
• Develop an energy efficiency plan
• Regularly update your energy efficiency plan as projects are implemented and new opportunities are identified
Baseline energy use

- Presently, most Wisconsin wastewater treatment facilities have this information in their CMAR document
Review Low-Cost/No-Cost Saving Opportunities

Visit focusonenergy.com/wwfacilities to download a copy
Meet with your Energy Advisor

Visit focusonenergy.com/ea-map
Develop an energy efficiency plan

- Become aware of your energy use
- Provide education in energy efficiency
- Gather data
- Analyze data
- Interpret what the data telling is you
- Create a plan
- Implement the plan
- Identify a timetable to continually review and update the plan
Working with less energy

I JUST SAVED A BUNCH OF MONEY
JUST BY WASTING LESS ENERGY
Focus on Energy assistance
Prescriptive incentives

- Specific dollar amounts for completing a qualifying energy efficiency measure
- Direct one-for-one replacement for commonly installed equipment
- Technology requirements and incentive amounts are found in the catalogs
- Visit focusonenergy.com/applications for most current incentive application
- Customer has **60 days** after project installation to submit application and invoice(s)
Custom incentives

- Based on estimated first-year energy savings associated with a project/technology
- Customers must receive pre-approval by working with an Energy Advisor prior to purchasing equipment
- Customer signs project completion notice and provides invoices once the project is complete
2019 Custom Incentives

- Custom Incentives
  - $0.04 per kWh saved
  - $100 per peak kW reduced
  - $0.80 per Therm saved (additional $0.20 bonus for 2019)
  - Projects limited to a 1.5-10 year payback window based on energy savings
  - Incentive is limited to 50% of the estimated project cost
Maximize the Focus on the Energy Program

- Start talking with your Energy Advisor while in the planning phase of your project
- Invite your Energy Advisor to upcoming project planning meetings
- Include Focus on Energy language in your RFP to ensure your Trade Ally contractors use qualifying energy efficient equipment
Energy best practices guide

• Outlines the basic steps in building an energy management program
• Provides general best practices and recommendations
• Visit focusonenergy.com/guidebooks to download your FREE copy today!
Questions
Contact us

Call: 888.947.7828
Visit: www.focusonenergy.com/wwfacilities