



CIRCUIT RIDER PROGRAM



ENERGY EFFICIENCY AT WATER & SEWAGE TREATMENT FACILITIES

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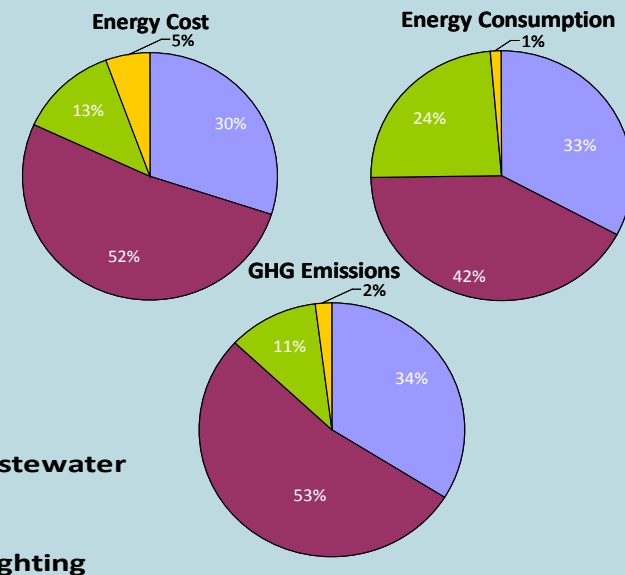


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- 8:00 am Donuts, coffee, and registration
- 8:30 am Conference program begins
- 11:30 am Lunch
- 3:30 pm Conference concludes

Energy Efficiency at Water & Sewage Treatment Facilities

- Energy costs at water and sewage treatment facilities can account for a significant portion of municipal energy costs.
- Energy costs are highly controllable. Managing energy is an opportunity to realize significant cost savings at your facilities.
- What we want you to get out of today:
 - How to track your energy consumption
 - Best practices for energy management
 - Success stories from around the region
 - Resources for implementing projects



- Buildings
- Water/Wastewater
- Vehicles
- Outdoor Lighting

Source: DVRPC, London Grove Township Municipal Authority, 2010



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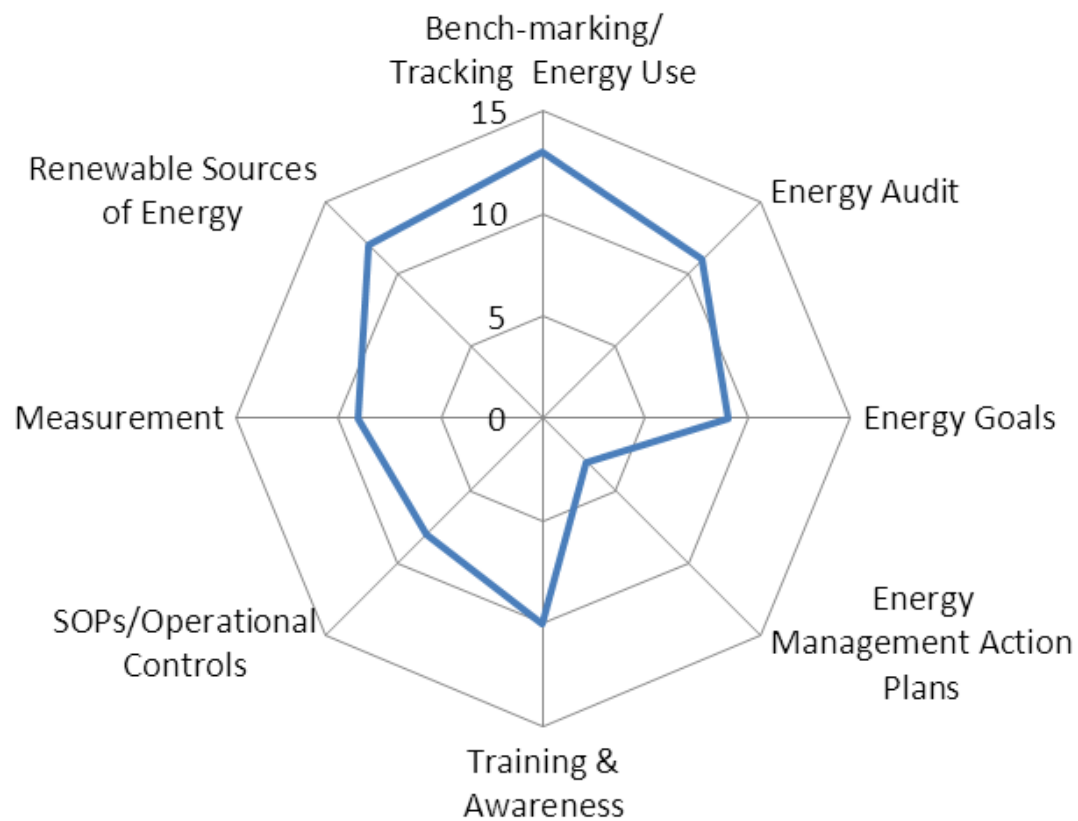
Who is represented today?

Wastewater treatment plants ranging from 0.12 - 200 MGD

- 5 plants between 0.0 – 1 MGD
- 7 plants between 1.1 – 5 MGD
- 6 plants between 5.1 – 10 MGD
- 3 plants between 40 – 200 MGD



Radar Graph Exercise



Source: Madeline Snow, UMass Lowell



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Energy Policy

Does your facility have an energy management policy? (1)



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Plan-Do-Check-Act Approach

Are you familiar with the Plan-Do-Check-Act Approach? (4)



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Energy Tracking

Are your monthly utility bills reviewed? (7)



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Benchmarking

Is someone at your facility familiar with energy benchmarking tools. And/or currently benchmarks your facilities energy use? (9)



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Energy Audit

Has your facility ever conducted an energy audit or does it plan to conduct one in the next year? (10)



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Energy Goals

Does your facility have quantitative energy improvement goals? (13)



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Training & Awareness

Is the staff at your facility of energy management issues? (19)



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Operational Controls/SOPs

Are there written
signage/instructions/etc. to support
energy management? (22)



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Measurement

Does your utility monitor and measure energy use by type of equipment and/or process? (25)



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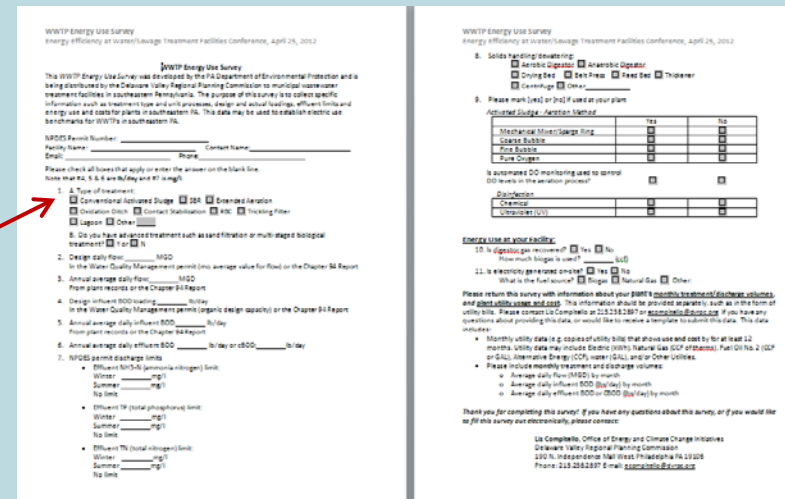
Financing

Has your facility utilized public or private financing in the past to finance measures that save your facility energy?



“WWTP Energy Use Survey”

- Wastewater treatment facility-specific
- May be used to establish electric use benchmarks for WWTPs in southeastern PA.
- Survey also asks for monthly energy use and cost data



WWTP Energy Use Survey
 Energy Efficiency at Wastewater Treatment Facilities Conference, April 26, 2012

WWTP Energy Use Survey
 The WWTP Energy Use Survey was developed by the PA Department of Environmental Protection and is being distributed by the Delaware Valley Regional Planning Commission to municipal wastewater treatment facilities in southeastern Pennsylvania. The purpose of this survey is to collect specific information such as treatment type and unit processes, design and actual loadings, effluent limits, and energy use and costs for plants in southeastern PA. This data may be used to establish electric use benchmarks for WWTPs in southeastern PA.

MSDS Permit Number: _____ Contact Name: _____
 Facility Name: _____ Phone: _____
 Email: _____

Please check all boxes that apply or enter the answer on the blank line.
 (use "none" for "0" or "not applicable")

1. A. Type of treatment:
 Conventional Activated Sludge SBR Extended Aeration
 Oxidation Ditch Contact Stabilization AAO Trickling Filter
 Lagoon Other _____

B. Do you have advanced treatment such as sand filtration or multi-stage biological treatment? Yes No

2. Design daily flow: _____ MGD

3. Annual average daily flow: _____ MGD
 From plant records or the Chapter 88 Report

4. Design influent BOD loading: _____ lb/day
 In the Water Quality Management permit (organic design capacity) or the Chapter 88 Report
 From plant records or the Chapter 88 Report

5. Annual average daily influent BOD: _____ lb/day
 From plant records or the Chapter 88 Report

6. Annual average daily effluent BOD: _____ lb/day or CDD: _____ lb/day

7. NPDES permit discharge limits
 Effluent NH3-N (ammonia nitrogen) limit:
 Winter: _____ mg/l
 Summer: _____ mg/l
 No limit

Effluent TP (total phosphorus) limit:
 Winter: _____ mg/l
 Summer: _____ mg/l
 No limit

Effluent TN (total nitrogen) limit:
 Winter: _____ mg/l
 Summer: _____ mg/l
 No limit

8. Solid handling practices:
 Aerobic Dewatering Anaerobic Dewatering
 Drying Bed Dry Press Feed Bed Thinner
 Composting Other _____

9. Please mark [x] or [] if not at your plant

Activated Sludge, Greater than 1000 mg/l

	Yes	No
Mechanical Mixedbed Sludge	<input type="checkbox"/>	<input type="checkbox"/>
Large Bubbles	<input type="checkbox"/>	<input type="checkbox"/>
Fine Bubbles	<input type="checkbox"/>	<input type="checkbox"/>
Fine Carbon	<input type="checkbox"/>	<input type="checkbox"/>

Is automated DO monitoring used to control DO levels in the aeration process? Yes No

Disinfection

	Yes	No
Chlorine	<input type="checkbox"/>	<input type="checkbox"/>
Ultraviolet (UV)	<input type="checkbox"/>	<input type="checkbox"/>

Energy Use at your facility:

10. Is digester gas recovered? Yes No
 How much biogas is used? _____ MGD

11. Is electricity generated on-site? Yes No
 What is the fuel source? Biogas Natural Gas Other _____

Please return this survey with information about your plant's monthly energy use (purchase volumes and grid utility usage) and cost. This information should be provided separately, such as in the form of utility bills. Please contact us at 215-261-2897 or edvrpc@edvrpc.org if you have any questions about providing this data, or would like to schedule a workshop to discuss this data. This data includes:

- Monthly utility rates (e.g. copies of utility bills that show use and cost) for at least 12 months. Utility data may include Electric Utility, Natural Gas (SCF or thermal), Fuel Oil No. 2 (GPD or GALL), Steam Energy (GPD), sewer (GALL) and/or Other Utilities.
- Please include monthly treatment and discharge volumes:
 - Average daily flow (MGD) by month
 - Average daily influent BOD (lb/day) by month
 - Average daily effluent BOD or CDD (lb/day) by month

Thank you for completing this survey! If you have any questions about this survey, or if you would like to file this survey via electronically, please contact:

Edvrpc, Office of Energy and Climate Change Initiatives
 Delaware Valley Regional Planning Commission
 100 N. Independence Mall West Philadelphia PA 19106
 Phone: 215-261-2897 E-mail: edvrpc@edvrpc.org

Please fill this out and mail to DVRPC using enclosed envelope!



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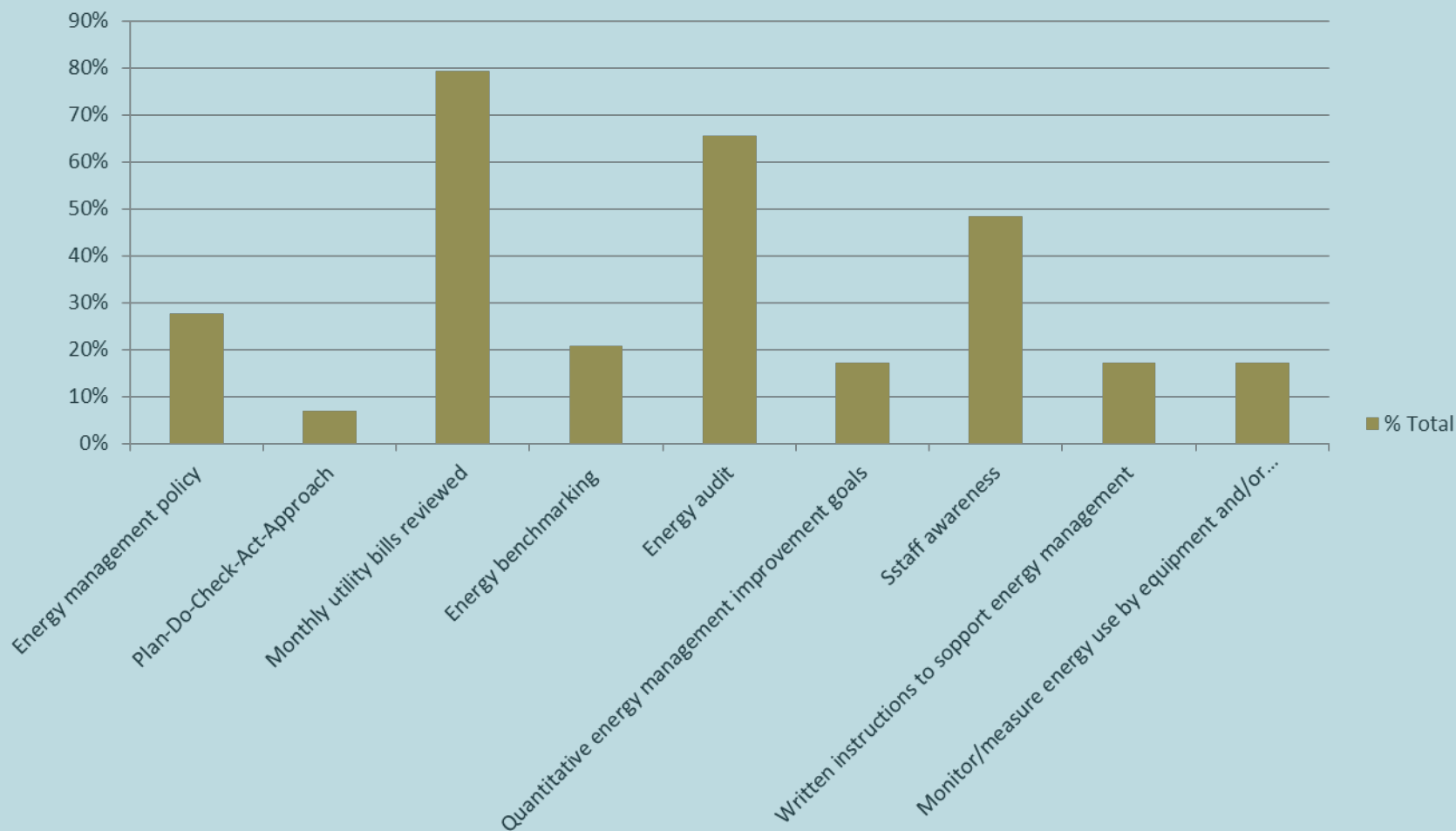
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Radar Graph Exercise



Results of interactive Radar Graph Exercise – 4/25/12

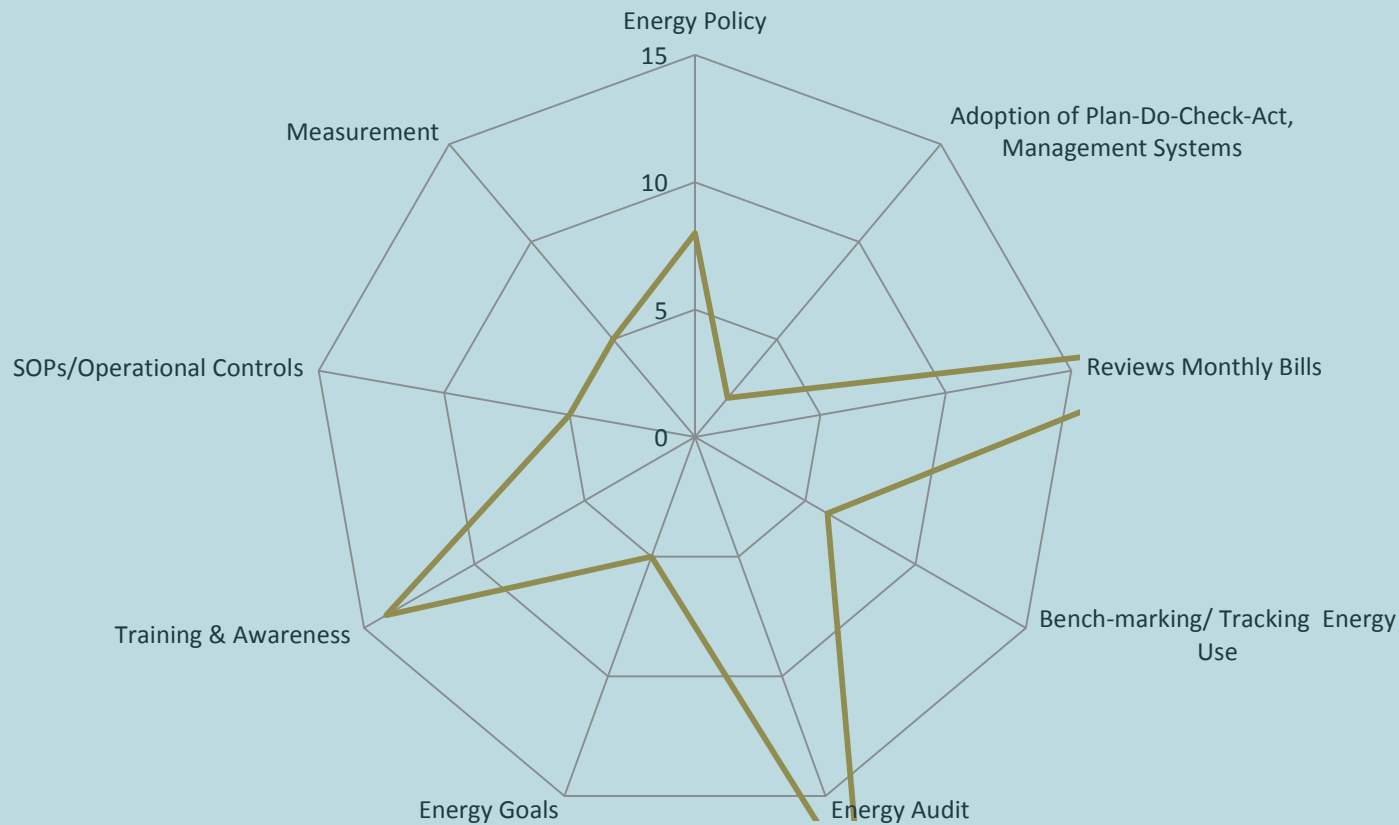


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