Sneak Peak:
SEM in the Wastewater Sector

John Balfe
Buildings & Communities Solutions Associate
11/8/17
• Setting the Stage
  • NEEP’s Public Sector Efforts
  • Wastewater Market Characterization
• Barriers and Opportunities
  • Is SEM the Right Fit?
• The Outcome
  • Past Experiences
  • NEEP’s Report to Highlight Opportunities and Best Practices
NEEP’s Efforts in the Public Sector

- Increasing number of States/Cities committing to energy and carbon reduction goals
  - NYC, Ithaca, Providence, Burlington, etc.
- NEEP’s efforts historically:
  - High Performance Schools and Public Buildings, Energy Codes, Benchmarking
- NEEP’s evolving efforts:
  - LED Street Lighting, Zero Energy Buildings, EV Charging, WASTEWATER
Scale of Wastewater Sector Energy Use

Energy in WWTF’s accounts for...
- Up to 1/3rd of municipal energy bill
- 25-40% of operating budget

Energy End Uses in WWTF’s (est.):
1. Aeration: 54%
2. Pumping / Anaerobic Digestion: 14% each
3. Lighting and Buildings: 8%
4. Everything Else: 10%

14,581 in the US
2,328 in the NEEP Region

Photo Credit: USDA
Major Barriers to Energy Efficiency

- Energy is not a top priority, more concerned with meeting water quality standards
- Why change what works?
- Oversizing of facilities
- Funding
- Staffing - structure, decision makers removed from everyday processes
- Lack of trust with utilities
Is SEM the right fit for WWTF's?

- WWTF and C&I Facilities have similar processes
- Major consumers of electricity
- Peer-to-peer exchange
- Low/no cost opportunities
- Increasing number of states/cities establishing energy and carbon reduction goals
Has SEM been successfully applied to WWTF?

• Cascade Energy
  – 65 SEM Sites
  – 9% Average Savings
  – Developing trust and engaging in peer-to-peer exchange

• DOE
  – Better Plants Program
  – Sustainable Wastewater Infrastructure of the Future
  – SEP certification – difficult for WWTF’s
  – ISO 50001 Ready

• NH
  – SEP grant funded work
  – All facilities benchmarked
  – 5 training workshops

Average Energy Star Score
Goal: Assess the opportunity for SEM to help communities achieve aggressive energy savings in municipal water & wastewater treatment facilities.

- Scope and Purpose
- SEM Background and NEEP Municipal Connection
- Market Characterization
- SEM Experience in WWTF’s
- Recommendations to Expand SEM in WWTF Sector
- Compendium of Resources and Contacts
Thank You!

- Questions, comments, recommendations?

Contact Information:

John Balfe
jbalfe@neep.org
Buildings and Communities Solutions Associate
Northeast Energy Efficiency Partnerships