The NEEP Team

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1. Introduction
2. CAPEE Overview
3. Opportunities for Strategic Energy Management in Municipal Water Sector
4. Wrap-Up: Questions, Resources, and Events
Northeast Energy Efficiency Partnerships

“Assisting the Northeast & Mid-Atlantic Region in Reducing Total Carbon Emissions 80% by 2050”

Mission
Accelerate energy efficiency as an essential part of demand-side solutions that enable a sustainable regional energy system

Vision
That the region embraces next generation energy efficiency as a core strategy to meet energy needs in a carbon-constrained world

Approach
Overcome barriers and transform markets through Collaboration, Education, and Enterprise
About NEEP
A Regional Energy Efficiency Organization

One of six REEOs funded in-part by U.S. DOE to support state and local efficiency policies and programs.
Resources

- NE-CHPS
- Operations and Maintenance
- Building Energy Rating and Disclosure
- Residential Labeling
- LED Street Lighting
- Exemplars
- Cold Climate Air Source Heat Pumps
- Home Energy Management Systems
- Strategic Energy Management
- Energy Codes

Visit NEEP.org for more!
Community Action Planning for Energy Efficiency (CAPEE)

Creating pathways for clean energy communities.
Project Overview

**Focus:** Small-Mid Size and Rural Communities

**Objective:** Reduce energy usage and carbon emissions

**How:** Interactive online platform with resources for any community, regardless of their current status
Thank You Task Force!

**Task Force:** Community level stakeholders informing the project along the way

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<tr>
<th>Name</th>
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<tr>
<td>Honor Passow</td>
<td>Hanover, NH</td>
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<td>Hartford, CT</td>
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And the Regional Working Group...
Challenges for Communities:
1. Overabundance of info
2. Getting started
3. Getting buy-in and creating a plan

Overcoming these Challenges with CAPEE:
1. Action plans
2. Outline key first steps
3. Dashboard overview
How It Works
Step 1: CAPEE Home Page

Creating pathways for clean energy communities.

Welcome to the CAPEE tool. If you’ve come to this page, you’re interested in helping your community reach its energy goals, improve its efficiency, and reduce its carbon footprint. This tool will guide you on the journey, with step-by-step practical advice to turn your information and intention into action.

CAPEE was built specifically for those “energy champions” faced with limited bandwidth, resources, or expertise to tackle the many energy issues facing their communities. It will provide diagnostics and a path forward for specific issues facing your community.
Step 2: Complete Questionnaire

Customize the action plan for your community

• Getting Started:
  – Forming an Energy Committee, Benchmarking, and Turning Data into Action

• Next Steps:
  – LED Street Lighting, Operations & Maintenance, and Other Projects

• Planning for the Future:
Step 3: Dashboard Overview

Get buy-in across the spectrum of stakeholders

- Easily share a snapshot overview
- Drill down into the things you care most about

CAPEE Action Plan Overview

- Does your community have a person or group of people dedicated to tackling energy issues?
- Does your community have an energy master plan?
- Is your community actively benchmarking their buildings?
- Has your community converted ANY of its streetlights to LEDs?

Does your community have a person or group of people dedicated to tackling energy issues? (This could be a volunteer energy committee, task force, green team, or someone else)

Your Answer: No

To meet energy/carbon reduction goals, a community needs a group of people dedicated to improving energy usage. This could be a volunteer energy committee, a green team, a facility director or anyone else in the community dedicated to this task. These people are your project champions.
Step 4: Generate Action Plan

Providing communities with information in an easy to understand, usable format.

- Compilation of fact sheets – up to 32 pages
- Customized for the community based on the users responses inputs
- Action plan components:
  - Fact sheets
  - Making the business case
  - Resources
  - And more!
Benchmarking Fact Sheet

• What is benchmarking?
  – Benchmarking is the practice of measuring and comparing building performance to itself or peers

• What are the benefits?
  – Identify under performing buildings, set priorities, identify billing errors, etc.

Making the Business Case: 70% of FMs have used Energy Star Portfolio Manager to guide efficiency upgrade plans and 67% have used it to just an energy efficiency project

• Building out additional modules this year including:
  – Codes
    • Stretch codes
  – Schools
    • RFP language, questions for design teams
  – Funding and financing
• Continuously updating with new:
  – Stats/facts
  – Case studies
  – Resources
Looking Ahead to CAPEE v2.0

• Topics for Consideration:
  – Guidance for other projects (e.g. EV Charging, Electric Buses, ASHPs, ZE Homes, etc.)
  – Selecting the right project partners (ESCO, architect, etc.)
  – Integrating with DOE’s Commercial Asset rating tool
  – Streamlined access to state-specific funding opportunities
  – Matching CIP with EE Projects and Funding
  – Additional project exemplars
  – Additional info on making the business case
  – Greater focus on carbon emissions
  – Municipal Water Sector

Collecting Additional Feedback from Stakeholders
Next Steps

• Friday - you will receive a webinar follow-up email
  – Link to CAPEE
  – Slides
  – Recording

• Additional questions or feedback?
  – Email: capee@neep.org

• Need more assistance?
  – NEEP can provide technical assistance and guidance to communities
Questions?
Opportunities for Strategic Energy Management in the Municipal Water Sector

A forthcoming NEEP report
Dave Lis & John Balfe
Across the region, Communities/Municipalities are establishing aggressive energy and GHG emission reduction goals

- Rhode Island, Maryland, Boston, Ithaca, etc.
The Opportunity

- Municipal Water sector typically accounts for 35% of Municipal energy usage (and associated carbon emissions)
- Strategic Energy Management (SEM) emerging as a pathway to achieving deep and sustained energy savings in the C&I Sector
NEEP Forthcoming Report

• Explores the potential use of SEM to achieve energy/carbon savings in the Municipal Water Sector
• Concludes with several Calls to Action
Report Contents

• Introduction
• Strategic Energy Management
• Municipal Water Sector Market Assessment
• SEM Experience in the Municipal Water Sector
• Tools, Programs and Resources to Expand SEM Practices in Municipal Water Sector
• Conclusion/ Call to Action
• Strategic Energy Management (SEM)
  – SEM is the *holistic approach to managing energy use* in Commercial, industrial and Municipal facilities in order to *continuously improve energy performance* and achieve energy, cost and carbon savings over the long term
  – SEM focuses on *business practice change* from senior management through shop floor staff, improving organizational culture to reduce energy waste and improve energy productivity.
Strategic Energy Management Continuum

- SEP
  - Verified energy performance and ISO 50001

- ISO 50001
  - Standard Energy Management System (EnMS) framework for global industrial operations (certified or self-declared)

- Foundational Strategic Energy Management (e.g., DOE 50001 Ready, ENERGY STAR For Buildings & Plants)
SEM Impacts

3M and Schneider Electric SEP and ISO 50001 certified facilities show greater energy savings than non-certified facilities.

Data analysis conducted by 3M and Schneider Electric.
• Water Resource Recovery Facilities (WRRF)
  – aka. “Wastewater” Facilities
  – Collect and treat water used in the community to reduce the amount of contaminants, prior to reintroducing the water back into earth’s natural ecosystems.

• Drinking Water Treatment Plants (DWTP)
  – Supply community with clean water usable for drinking, cooking, showering, and more
By the Numbers

14,691 in the US
2,330 in the NEEP Region

Energy in Water Resource Recovery Facilities (WRRF) accounts for...
- Up to 1/3rd of municipal energy bill
- 25-40% of facility operating budget

Drinking Water Treatment Plants (DWTP)
Fast Facts
- 51,000+ in the US
- Energy is the 2nd highest operating cost
- 25-40% of facility operating budget

Source: MWRA
Energy Consumption

Breakdown of Energy Consumption in Drinking Water Treatment Plants

- In-Plant Water Pumping: 8%
- Raw Water Pumping: 11%
- Water Treatment: 14%
- Finished Water Pumping: 67%
Sample Breakdown of Energy Consumption in Water Resource Recovery Facilities

- Aeration: 29%
- Pumping: 18%
- Plant Water: 4%
- Odor Control: 13%
- Dewatering/Thickening: 7%
- Disinfection: 4%
- Misc. Process: 1%
- Preliminary Treatment: 3%
- Primary Treatment: 2%
- Building Systems: 19%
Barriers to Energy Efficiency/SEM adoption

- Regulatory Compliance is the Top Priority
- Oversizing of Equipment
- “If it’s not broken, don’t fix it” mentality
- Lack of Capital Availability and Prioritization
- Little Incentive for Employees to Improve Energy Performance
Successful applications of SEM

- DOE’s Superior Energy Performance Water and Wastewater Pilot Project
- Cascade Energy
- NYSERDA
- New Hampshire
- Efficiency Vermont
Tools, Programs, Resources

• DOE
  – DOE 50001 Ready
  – Sustainable Wastewater Infrastructure of the Future Accelerator (SWIFt)
  – Industrial Assessment Centers
• EPA
  – ENERGY STAR Score for WRRFs
  – EPA’s Energy Management Guidebook
• Growing base of 3rd party SEM expertise
• Energy Efficiency Programs
Call to Action: *Communities*

- Collaborate with local Energy Efficiency programs
- Utilize DOE and EPA programs and resources
- Solicit expert guidance
- Implement SEM in your water sector facilities
- Looking Ahead – Water Sector resources incorporated into NEEP’s CAPEE web-tool
Call to Action: *Utility Program Administrators*

- Provide SEM trainings/offerings to C&I customers including Municipal water sector
- Leverage existing resources available from NEEP, DOE, EPA, and others (EM&V Best Practices Report)
- Engage regional and national colleagues through various networks
- Sector specific expertise is important
Call To Action: **US DOE**

- Support adoption/use of 50001 Ready for water professionals/facilities
- Accelerators provide best practices and successful models
- Industrial Assessment Centers increasing focus on the water sector
Call to Action: **US EPA**

- Continue to collect data on Water Sector
- Expand energy benchmarking to *process-related* end uses
- Continue to develop and disseminate resources
- Update right-sizing guidance
Call to Action: *Local and Regional Stakeholders*

- Engage regional/national SEM initiatives to collaborate towards successful strategies to drive adoption of SEM in the municipal water sector
  - Northeast SEM Collaborative
  - CEE’s SEM Committee
  - North American SEM Collaborative (In development)
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• Jason Lenihan, Vermont Energy Investment Corporation
• Paul Markowitz, Vermont Energy Investment Corporation
• Jeffrey Hullstrung, Vermont Energy Investment Corporation
• Tom Coughlin, National Grid
Questions?
Upcoming School Tours:

• April 3 at 3:00 pm
  – Wells HS – Wells, ME
• April 4 at 3:30 pm
  – Mill Brook ES – Concord, NH
• April 5 at 3:00pm
  – Morton MS – Fall River, MA

Join us and invite your teams!
Thank You for Attending!

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