Clean Energy Results Program

Resources for Water and Wastewater Utilities Interested in Energy Efficiency and Renewable Energy

Plan-Do-Check-Act Approach to Improve Energy Management

Ensuring a Sustainable Future: An Energy Management Guidebook for Wastewater and Water Utilities is an EPA guide to help utilities systematically assess their current energy costs and practices, set measurable performance improvement goals, and monitor and measure their progress over time.
US EPA Website

EPA and Massachusetts Initiatives

EPA's Community Energy Challenge: Promoting Energy Efficiency and Renewables in New England Cities and Towns is an opportunity for municipalities across New England to identify simple and cost-effective measures that increase energy efficiency and renewable energy use while reducing air pollution and saving money. US EPA Website.

Massachusetts Energy Management Pilot Project for Wastewater and Drinking Water Plants will: (1) develop energy management plans for 14 local and regional facilities with the goal of reducing the cost of treating wastewater and drinking water by 20 percent; (2) develop models for integrating public funding assistance (including MassDEP's State Revolving Fund, the Division of Energy Resources' Energy Conservation Improvement and Alternative Energy Fund, and Mass. Technology Collaborative's Renewable Energy Trust) to fund or supplement local capital funding for energy upgrades; and (3) pave the way for other municipalities to make the operations of their wastewater and drinking water treatment plants more energy efficient.

Massachusetts State Revolving Fund (SRF) program allows communities to integrate renewable energy and energy conservation into new or upgraded construction projects. Some eligible project types may include: renewable energy sources such as wind power, micro-turbine systems, photovoltaic cells, fuel cells, digester gas use for power and or heat; "green buildings", new energy efficient equipment (e.g., lighting, HVAC systems, motors, pumps etc.) and energy conservation retrofits. Additional efforts include the revision of SRF Project Selection Criteria to provide incentives for incorporating renewable energy and energy conservation into new projects. See: http://www.mass.gov/dep/energy.htm.

Commonwealth Solar provides rebates through a non-competitive application process for the installation of PV projects at residential, commercial, industrial, and public facilities. Non-residential projects are eligible for rebates for PV projects up to 500 kilowatts (kW) and residential projects are eligible for up to 5 kW. See: Massachusetts Clean Energy Center Website.

Benchmarking

EPA's newly released ENERGY STAR benchmarking tool can be used to rate the energy performance of municipal wastewater facilities. Each facility will receive a benchmarking score (1-100) to compare against similar facilities nationwide. See Portfolio Manager at US EPA-Energy Star Website. In addition, MA DOER has analyzed the energy use at your facility, and benchmarked it by comparing it to other Massachusetts water treatment facilities using the MassEnergyInsight tool. MassEnergyInsight is a free web-based tool available from DOER which is compatible with EPA's Portfolio Manager. It allows you to track the impact of energy efficiency improvements, analyze your quarterly and annual energy use by fuel, and compare your facility with other facilities located here in Massachusetts. See: http://www.massenergyinsight.net/ for more information.

Auditing

Massachusetts investor-owned electric and gas utilities energy efficiency programs can provide subsidized audits for their municipal, commercial, industrial, and residential customers. Specific technical assistance and incentive programs for energy efficiency retrofitting and new construction can be retrieved from your utility provider (see below).

In addition, the Energy Audit Program of the Massachusetts Division of Energy Resources provides technical and financial assistance to cities, towns, regional school districts and wastewater/water facilities to identify capital improvements to reduce energy costs. Mass Save is an initiative sponsored by Massachusetts' gas and electric utilities and energy efficiency service providers. The sponsors of Mass Save work closely with MA DOER to provide a wide range of services, incentives, trainings, and information promoting energy efficiency that help residents and businesses manage energy use and related costs. Please see: http://www.masssave.com/about-mass-save/ for more information.

Electric and Gas Utilities Providing Financial Incentives & Energy Efficiency Resources

Bay State Gas: Bay State Gas Website

Berkshire Gas: Berkshire Gas Website

Cape Light Compact: Cape Light Website

Keyspan Energy: Keyspan Energy Website

National Grid: National Grid Website

NSTAR: NSTAR Website

Unitil: Unitil Website

Western Mass Electric: Western Mass Electric Website

Energy Performance Contracting

In Massachusetts, governmental agencies may enter into an Energy Performance Contract (EPC) with an Energy Service Company (ESCO) (Energy Services Coalition Website) to purchase energy-saving improvements in buildings where the basis for payments is the performance level guaranteed in the contract. Contact the Massachusetts Division of Energy Resources for more information.
DOER Website

Demand Response/Forward Capacity Market

Demand Response occurs when customers voluntarily reduce their electricity consumption in response to either high wholesale prices or system reliability events. Participant customers are paid for their reduction performance based on wholesale market prices. The program is administrated by ISO-NE, the regional grid operator. Customers must enroll through an Enrolling Participant. Enrolling participants include; local utilities, most competitive suppliers, demand response providers and other companies that are members of the New England Power Pool. A summary of the ISO-NE Demand Response Program is provided at: ISO New England Website.

The Forward Capacity Market was developed by the regional grid operator - ISO New England, the six New England states, and industry stakeholders to promote investment in demand- and supply-side resources. Demand Resources include measures such as; Energy Efficiency, Load Management, and Distributed Generation. Participants can receive payments for their actions. Projects that qualify and clear in the annual auction will receive payments for their capacity obligation.

An introduction to Demand Resource Participation in New England's Forward Capacity is presented at:
ISO New England Website with further information about the Forward Capacity Market at: ISO New England Website. Contact the Massachusetts Division of Energy Resources for more information.

Combined Heat and Power (CHP) Case Studies

The Northeast CHP Application Center has conducted free assessments for wastewater treatment plants in MA (Pittsfield, Millbury) through a Dept. of Energy grant managed by the Massachusetts Division of Energy Resources (Northeast CHP Website). WWTP's with more than 10 MGD may be ideal candidates for CHP using anaerobic digestion. Contact the Massachusetts Division of Energy Resources for more information. See a case study at: US EPA Website.

Energy Procurement

Municipalities can derive large savings by employing a number of energy procurement strategies. Contact the Massachusetts Division of Energy Resources for more information.

1) Electricity: Municipalities should consider getting their electricity supply from a licensed electricity supplier. A list of licensed suppliers can be found at the Dept. of Public Utilities Commission website: DPU Website.
Real-time Pricing: In the event that a customer's usage tends to be during off-peak periods, large savings can be derived. Suppliers should be asked if they have a real-time rate and be requested to give an estimate for what a customer would have paid in the last year using the customer's specific usage data, indicating the supplier's charge (in $/kWh) for such a product and other charges that may apply. Some examples:
Hampshire Council of Governments Website
Berkshire Chamber of Commerce Website

2) Aggregation: It is recommended for municipal offices to aggregate as many electric and gas accounts as possible when going out to bid for energy procurement contracts. In some cases, municipalities have benefited even more by aggregating with other bordering municipalities.

Renewable Energy

Through the Renewable Energy Trust, the Massachusetts Clean Energy Center (MassCEC) provides both technical and financial support to communities interested in developing renewable energy projects that use technologies such as solar and wind energy. A summary of the programs that MassCEC offers is available on their website at: Renewable Energy Trust Website.

Additional Resources

Some additional online resources include:

- Funding & Services for Development of Wind Power on Municipal Sites: Massachusetts Clean Energy Center Website
- Wind energy site screening tool to determine wind resources at your location: MassGIS Website

Integrating Renewable Energy & Green Building into the SRF Program

Web page

MassDEP's State Revolving Fund (SRF) program, which annually provides over $500 million of low-interest loans for wastewater and drinking water projects, allows communities to integrate renewable energy and energy conservation into new or upgraded construction projects. MassDEP recently highlighted funding opportunities through the SRF program for energy efficiency and renewable energy projects at the March 2007 Community Borrowers meetings as part of water supply or wastewater treatment plant projects.

Some eligible project types may include:

- Renewable energy sources such as: wind power, micro-turbine systems, photovoltaic cells, fuel cells, digester gas use for power and/or heat

- Green Building
- New energy efficient equipment (e.g., lighting, HVAC systems, motors, pumps etc.)
- Energy conservation retrofits

Additional actions underway include:

- Revision of SRF Project Selection Criteria to provide incentives for incorporating renewable energy and energy conservation into new projects.
- SRF Pilot Clean Energy Project - MassDEP, EPA New England, and the City of Marlborough are currently evaluating green design and renewable energy options for the Marlborough West Wastewater Treatment facility upgrade. The Massachusetts Technology Collaborative (MTC) has provided information and assistance to better assess energy conservation and renewable energy options.
- Energy Management Pilot for Wastewater and Drinking Water Plants - MassDEP will coordinate a targeted pilot project involving a total of 14 municipal wastewater treatment plants and drinking water facilities through energy auditing, assessments for renewable & clean energy-related projects and support for implementation of energy-related projects. Web page

Regional & National Resources

- Consortium for Energy Efficiency: Website
- Efficiency Maine: Website
- Efficiency Vermont: Website
- New Hampshire Electric Co-op: Website
- Public Service of New Hampshire: Website
- Energy Star(r) Program (EPA): Website
- EPA Municipal Technologies: Energy Conservation and Management Fact Sheets: Website
- EPA Region 1: Energy & New England: Website
- EPA Power Profiler: How Clean is the Electricity I Use?: Website
- EPA's State & Local Clean Energy Programs: Website
- ISO New England: Website
- The Green Roundtable: An affiliate of the US Green Building Council: Website
- USDA Rural Development Energy Initiatives: Website

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