

Missouri Water Utilities Partnership Energy Management Initiative for Public Wastewater and Drinking Water Utilities

A Coordinated Approach to Advanced Municipal Energy Savings & Greenhouse Gas Reductions

May 2010

Purpose:

- To help municipalities reduce utility costs in water and wastewater treatment plants
- To improve the reliability and performance of those community assets
- To minimize the impact of water treatment utilities on the environment
- To partner with up to 10 communities to substantially reduce energy use and costs and develop individual Energy Management Plans for their water treatment utilities through a pilot program in 2009/2010

Overview: An estimated 30 to 40 percent of municipal energy use and associated operating budgets are spent treating water and wastewater. Thus rising energy costs represent a major challenge for water and wastewater utilities that are also facing the challenges of increasing demands due to population growth, more stringent regulations, and aging infrastructure. Increasing energy efficiency is one of the most effective ways to reduce costs and improve environmental performance.

The energy required to treat wastewater and drinking water also generates significant amounts of air pollutants. With energy conservation, emissions of greenhouse gases from power plants such as methane, carbon dioxide, sulfur dioxide and nitrogen oxide are reduced.

Communities Participating in the Missouri Water Utilities Partnership (MOWUP):

Branson	Harrisonville	Neosho	Rolla
Columbia	Joplin	O'Fallon	St. Peters

Initiative Actions to Date:

- Initial Assessments of Energy Use completed for each participating utility.
- Energy baselines created using Energy Star Portfolio Manager.
- Community representatives participated in workshops to develop a Management System for Energy (MSE) for their water utilities.
- Communities have identified process or equipment improvements for water utilities that will improve energy efficiency by at least 15 percent.
- Communities have identified potential funding sources for projects; some have received grant funds and loans, issued bonds and/or entered into performance contracts to develop detailed plans and implement projects.

Columbia, Mo., Wastewater Treatment Plant



The MOWUP Partners commit to...

- Assist communities in planning for and identifying project financing
- Provide technical assistance throughout the Initiative
- Assist communities in evaluating renewable energy opportunities
- Develop and publish case studies
- Facilitate communication among Initiative participants
- Share results on:
 - Energy and dollars saved
 - Improved environmental and operational performance
 - Community plans for sustainable operation of water utilities
 - Lessons learned

Pilot Program Components

Energy Use Benchmarking: Pilot utilities will develop energy baselines and conduct energy benchmarking during the pilot program.

Energy Assessments: Partners will conduct assessments using a questionnaire provided in advance, interviews with utility managers, and walk-through observations.

Energy Management Workshops: Water utility managers will receive instruction, technical assistance, and opportunities to network with other pilot utility personnel while preparing a Management System for Energy using EPA's Energy Management Guidebook.

Energy Workshop
Missouri S&T Campus
February 3, 2010



Facility Improvements: Utilities will work with partners and consultants throughout the pilot program to develop plans and implement equipment and process upgrades to improve energy efficiency.

Renewable Energy Exploration: Partners will work with communities to identify opportunities for pursuing wind power, bio-energy, solar, outfall micro-turbines, combined heat and power, and other renewable energy options.

Funding Options: Partners will assist pilot utilities in identifying available resources and financing options to implement energy improvement projects.

Case Studies: Partners and pilot program participants will develop and publish case studies that illustrate lessons learned.

Expected Pilot Program Results

Pilot communities will be knowledgeable about their energy management, and have long-term plans in place to improve the energy and environmental performance of their water and wastewater utilities. They will also be prepared to take advantage of energy improvement grant programs and power utility incentives to reduce energy consumption.

A set of case studies will be available to demonstrate the value of planning and measuring energy performance, and there will be mechanisms in place to share these studies with communities and utilities across the Midwest.

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