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Climate Change Mitigation Measures for New Hampshire Wastewater Treatment Facilities

What is climate change mitigation for Wastewater Treatment Facilities (WWTFs)?

Climate change, also known as global warming, is the term used to describe the changes in average weather that have been observed across the globe over the past several decades. These changes are due to a buildup of carbon dioxide (CO₂) in Earth's atmosphere. Climate change mitigation refers to measures taken to avoid increasing the severity of climate change by reducing the amount of CO₂ released by a utility. The burning of fossil fuels for energy accounts for most of the CO₂ released, so energy management and water conservation are key elements to mitigating climate change for WWTFs. The WWTF can reduce the amount of fossil fuels used through:

1. Conserving both water and energy. If less water is used, less energy is needed to treat wastewater.
2. Improving energy efficiency to accomplish more work using the same or less energy.
3. Renewable and "low-carbon fuels" (e.g., effluent heat recovery, cogeneration, natural gas) used for on-site heat and power generation.

To avoid the most severe impacts of climate change, energy management needs to become increasingly integral to effective utility management. In addition, energy management and water conservation will be critical to meet budget limitations, increased service demand and sustainability goals.

What are the benefits of energy management?

There are numerous benefits to developing an energy management program beyond climate change mitigation. The benefits of energy management include:

1. Improved efficiency and increased energy independence.
2. Increase operational flexibility and resilience of service.
3. Reduced energy costs and an opportunity to reinvest those savings back into the WWTF.
4. Improved public image – become a resource recoverer instead of a waste producer.

Ok, I am interested in developing an energy management program. Now, how do I start?

There are many steps you can take to make a difference. Here are a few action steps to get you started:

1. Assess current energy usage.
 - Conduct an energy audit to determine current usage and identify areas for improvement.
 - Set goals for improving energy efficiency.
2. Establish an energy management team.
 - Team must have management support and input.
 - Team members should come from various levels and functions.
 - Team members should be the people within the WWTF with knowledge of specific processes, equipment and energy usage.
3. Evaluate budgets and funding opportunities.
 - Find available funds for energy management projects in both short- and long-term budgets.
 - Seek external funding sources from state or federal government, foundations, community partners, electric utilities or energy performance contracting arrangement.
4. Identify strategies.
 - Develop criteria to prioritize activities or projects to initiate.
 - Refine strategies using a plan-do-check-act process on an ongoing basis.
5. Plan to involve the community.
 - Reach out to customers to gauge interest and gain feedback on both energy management and water conservation initiatives.
 - Educate customers.
 - Connect with public interest groups that may support your energy management goals.
6. Remember that energy management is an iterative process and keep making improvements.

For additional information on Climate Ready Water Utilities, refer to <http://water.epa.gov/infrastructure/watersecurity/climate/index.cfm>. Ideas for energy efficiency for water and wastewater facilities may be found at:

<http://epa.gov/statelocalclimate/resources/strategy-guides.html>

You may also contact Sharon Rivard, P.E. NHDES WWEB at (603) 271-2508 or sharon.rivard@des.nh.gov with questions regarding climate change mitigation for WWTFs.