Hawai'i Energy

Water Treatment & Wastewater Facility Tips

Water treatment & wastewater facilities account for 3+% of Hawai'i's total energy consumption. In 2013, over 290 million kWh/year were used in these processes at a cost >$95 million. An estimated 10-20% energy savings can be achieved through energy efficiency measures. The water and wastewater sectors represent one of the single largest savings opportunities in Hawai'i. These tips outline ways to maximize the efficiency of your facilities.

Aeration Systems

- Monitor for even air delivery to aeration tanks & the distribution within the tank. Repair systems immediately if needed.
- Review your aeration tanks to assess if one can be idled.
- Install variable speed drives to operate the blower at an appropriate speed.
- Consider upgrading to a high-speed turbo blower for maximum efficiency.
- Check the sheave sizes on the motor & blower to identify the speed of the unit to identify if the speed can be reduced.
- Check discharge pressure of your blower to assess if the diffusers are dirty or a valve is partially closed.

Cooling

- Make sure all exterior walls, ceilings & wall cavities are properly insulated.
- Keep doors & windows closed when running your air conditioning system.
- Consider applying ENERGY STAR® "cool roof" material to your roof.
- Install an Energy Management System (EMS) to control cooling systems.
- Choose ENERGY STAR® equipment when replacing cooling systems.

Lighting

- Turn lights off when you leave an area & use natural lighting whenever possible.
- Use timers & occupancy sensors & keep them properly set
  - (e.g. no outside lights during the day).
- Replace existing lights with newer, more energy-efficient LEDs, CFLs or T-8 lamps.
- Utilize day lighting in building renovations.
- Shade windows that are receiving direct sun.

Pumping

- Check if any valves are closed or throttled on the discharge. Obtain kW readings & flow measurements on pump motor to identify its efficiency.
- Obtain power bills to check if there have been any noticeable changes.
- Note if any pumps are exhibiting excessive vibration during operation.
- Identify the pump you have had the most problems with & assess if a change in pump selection would resolve the problem, generally most pumps are oversized for their application.
- Review the load factor & length of time a pump is operating to assess if a smaller pump would help or a variable speed drive.
- Check that all appurtenances in the force main are properly working (such as a pressure release valve is functioning and not air binding the pump).

Improve your systems & save money, for more information visit:

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