KNOW YOUR ENERGY

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How much energy does our industry consume? "The more than 60,000 water systems and 15,000 wastewater systems in the United States are among the country's largest energy consumers, using about 75 billion kWh/year nationally - 3 percent of annual U.S. electricity consumption."

Is there a difference between efficiency and conservation? Yes. Energy efficiency is "using less energy to provide the same service". Turning off a light and sitting in the dark is energy conservation, not energy efficiency. How do we reduce and conserve energy?

A visual inspection of your facility can be used to determine maintenance and operation energy saving opportunities and determine the need for a more detailed assessment. We operators can do a mini self-assessment, searching out easily identifiable energy devices at our treatment facilities, e.g. interior and exterior lighting, electric space and water heaters etc.

Finding potential energy reductions and cost savings. As mentioned before, lighting is easily identifiable. Count your lighting fixtures, wattage, and hours of operation. Then run a second calculation for an alternate device. The example noted in the table is incandescent light versus compact fluorescent lighting. Using the formulas in the table illustrates an annual reduction of 219 kilowatts per hour saving $21.90 annually.

These formulas can be easily entered in Excel® spreadsheet, calculating multiple variations for simultaneous comparison. However, this is not the whole story. Cost of the replacement product must be assessed. Assume the cost of the CFL in the table is $9.95; the return would be 5.4 months.

New York Rural Water can do a more in-depth or maxi-audit going one step further than the mini audit. It contains an evaluation of how much energy is used for each function such as lighting, process, control etc. at your water and wastewater treatment facilities. We will do an on-site assessment determining you average cost per thousand, overall energy consumption and determine your highest loads. If you would like to schedule a visit; call us at (518) 828-3155 extension 140 or email at maine@nyruralwater.org .

Item	Power Needs (watts) A	Number Of Appliances B	Hours on per day C	Energy/Day= watt-hour= A x B x C= D	Kilowatt-hour per Day D x 0.001= E	Cost per day E x $.10/kwh= F	Cost per Year F x 365= G
Incandescent Light	75W	1	10	75x1x10=750	75x.001=.75kw/h	.75x$.10=$.075	$27.38 / year
CFL Lights	15W	1	10	15x1x10=150	15x.001=.15kw/h	.15x.$.10=.015	$5.48 / year
							$27.38
							-$5.48
				Annual Reduction	219 kw/h	Annual Savings	$21.90 / year

[1] *Electric Power Research Institute, Energy Audit Manual for Water/Wastewater Facilities, (Palo Alto: 1999), Executive Summary*