

ENERGY EFFICIENCY SOLUTIONS: Water Treatment Plants and Pumping



Put Energy Efficiency to Work for Your Community

Imagine what could happen if water treatment plants reduced their energy costs by 10% and reinvested the savings into local priorities. **Now that's powerful thinking.**



A Great Head Start

Ontario municipalities are on the right track when it comes to making their water treatment plants more energy efficient.

Since 2010, they have invested at least \$19 million through Save on Energy programs in upgrades at their local drinking water and wastewater treatment plants. These upgrades helped save about 14 gigawatt-hours (GWh) of electricity. They've also tapped additional savings from making low-cost operational changes within their facilities.

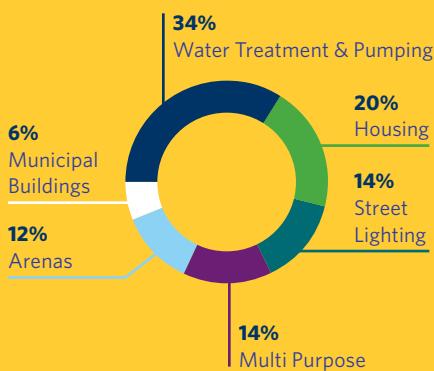
And still, there's significant potential for municipalities to drive even greater efficiencies.

SaveOnEnergy.ca



DID YOU KNOW?

Water treatment plants are the largest user of energy for most municipal governments. They account for over one-third of total municipal energy consumption.



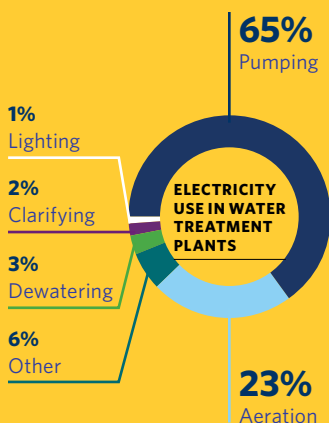
NUMBER OF FACILITIES

340
Wastewater Treatment Plants

423
Drinking Water Treatment Plants

1,246
Wastewater Pumping Stations

990
Drinking Water Pumping Stations



Aim for 10% More Savings

Many Ontario water treatment plants have already upgraded their lighting, controls, HVAC systems and pumps. A recent IESO report (SaveOnEnergy.ca/Publications) shows that municipalities can reduce their electricity consumption by an additional 10% through:

- Process Optimization
- Equipment Replacement
- Load Shifting
- Combined Heat and Power (CHP)

Pump Up the Savings

Pumping is a big energy user for water treatment plants. It can account for about 11% of municipal electricity use.

To manage pumping costs, consider these process optimization measures:

- Right-sizing equipment
- Replacing motors and pumps with high-efficiency models
- Installing variable frequency drives on pump motors and reducing the speed to low-flow rates
- Carrying out preventive maintenance

Energy Efficiency Solutions That Work

Ontario wastewater plants can significantly increase their electricity savings by:

- Using combined heat and power (CHP) systems. Plants that already have anaerobic digestors are good candidates for these systems.
- Looking for ways to optimize their plant's aeration systems.
- Over-aerating water during off-peak hours when electricity rates are lower. This will reduce peak demand.

Drinking water treatment plants

can also reduce their energy consumption by optimizing their pumping systems.

To reduce peak demand when electricity costs more, they can **schedule pumping during off-peak hours** when electricity costs less.

High-lift pumps represent the biggest opportunity for load shifting. Approximately one-half of all drinking water treatment plants in Ontario can shift their energy loads because they have sufficient water storage.

Find the solution that's right for your community

Every community is different. But there's one thing they all have in common: they want to do the right thing for the people who live there.

Start making your community more energy efficient today:

- Make energy efficiency a regional planning priority
- Develop an energy plan for your community's municipal buildings and share the plan with municipal employees and consumers
- Hire a dedicated energy manager or invest in energy training for in-house facility operators (SaveOnEnergy.ca/Training)
- Look into the provincial Save on Energy program (SaveOnEnergy.ca) for potential financial incentives



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