

# 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.

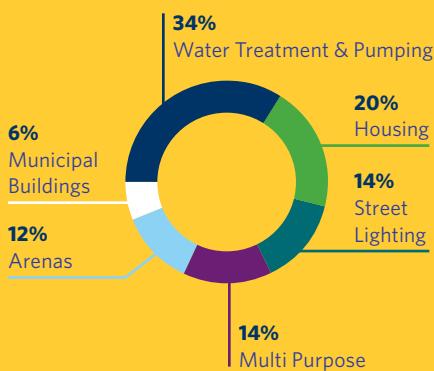
And still, there's significant potential for municipalities to drive even greater efficiencies.

[SaveOnEnergy.ca](http://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.



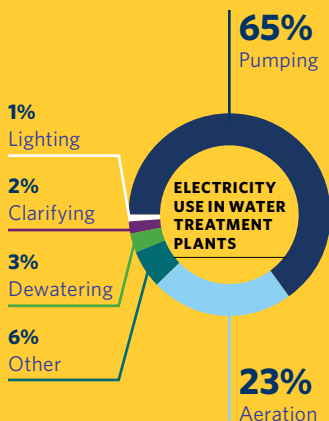
### NUMBER OF FACILITIES

**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](http://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](http://SaveOnEnergy.ca/Training))
- Look into the provincial Save on Energy program ([SaveOnEnergy.ca](http://SaveOnEnergy.ca)) for potential financial incentives



### Independent Electricity System Operator

1600-120 Adelaide Street West  
Toronto, ON M5H 1T1

Phone: 905.403.6900

Toll-free: 1.888.448.7777

Email: [customer.relations@ieso.ca](mailto:customer.relations@ieso.ca)

 [@IESO\\_Tweets](https://twitter.com/IESO_Tweets)

 [OntarioIESO](https://www.facebook.com/OntarioIESO)

 [linkedin.com/company/ieso](https://www.linkedin.com/company/ieso)

[ieso.ca](http://ieso.ca)