

# Strengthening Communities through Energy Efficiency

Putting energy efficiency to work for Ontario's municipal sector

## INSIDE

How municipalities are reducing their electricity use

Why energy efficiency is a game-changer for municipalities

Where municipalities can look for additional savings

Building a knowledgeable workforce to continue the energy-efficiency journey



# How municipalities are reducing electricity use

Municipalities are achieving strong results when it comes to managing their energy costs. In doing so, they're also discovering that energy efficiency provides good economic value, better quality of life, increased safety for their citizens, and a healthier environment.

## Why are municipalities taking steps to become more energy efficient?

Electricity is the primary energy source for municipal operations. It accounts for roughly 60 percent of the six billion kilowatt-hours (kWh) of energy used in municipally-owned facilities, social housing, streetlighting and other end-uses. Research shows that in 2014, municipalities spent more than \$900 million annually on electricity. (The primary sources of energy for Ontario municipal operations were electricity (63%) and natural gas (35%), with minor use of other fuels including hot water and steam from district heating, chilled water from district cooling, propane, and fuel oils.) At the same time, since 2006, they also decreased their electricity consumption by six percent in part due to their participation in Save on Energy programs.

## What are municipalities doing to become more energy efficient?

Municipalities are achieving energy savings by monitoring and understanding their energy end-use, investing in energy-efficient equipment, and sharing information through capacity building and best practices. Increasingly, they're also recognizing the importance of an energy-minded work culture, where employees actively participate in the energy-planning process.

## How much more energy could municipalities save by continuing to pursue energy efficiency?

There is untapped potential when it comes to energy efficiency in Ontario municipalities. Estimates show potential savings range between 1,176 and

2,620 gigawatt-hours (GWh) per year, representing a possible reduction of between 19 and 42 percent.

## What type of projects are responsible for the greatest energy savings?

Between 2006 and 2016, municipalities achieved a 27 percent reduction in energy consumption from street lighting. Almost half of Ontario municipalities that undertook energy retrofits focused on upgrading street light fixtures.

Municipal Electricity Use - 2014



Wastewater Treatment	14%
Lighting	14%
Street lighting	14%
Ventilation	12%
Pumping	11%
Water Treatment	8%
Space Heating	8%
Arena Loads	7%
Plug Loads & Misc.	7%
Space Cooling	3%
Drain Water Heat Recovery	2%

## Municipal participation in the Save on Energy Retrofit Program

To date, about 75 percent of municipalities have completed at least one project through Save on Energy and a majority of them have participated in at least two programs. As a result, they have:

- Achieved electricity savings of over \$100 million (2011-2017)
- Received more than \$44 million in incentives.

The majority of these incentive dollars were delivered through the Save on Energy Retrofit Program, which includes incentives for lighting upgrades, motor and heating installations, new control systems and more.

To find out what your municipality can do to become more energy efficient, contact your local utility, or visit [saveonenergy.ca/Business](http://saveonenergy.ca/Business)



Research used in this brochure is taken from the Ontario Municipalities Energy Profile (February 2018). The report was prepared for the Independent Electricity System Operator (IESO) and the Ontario Ministry of Energy by ICF Canada. To review the complete report visit: [www.ieso.ca/MunicipalReport](http://www.ieso.ca/MunicipalReport)



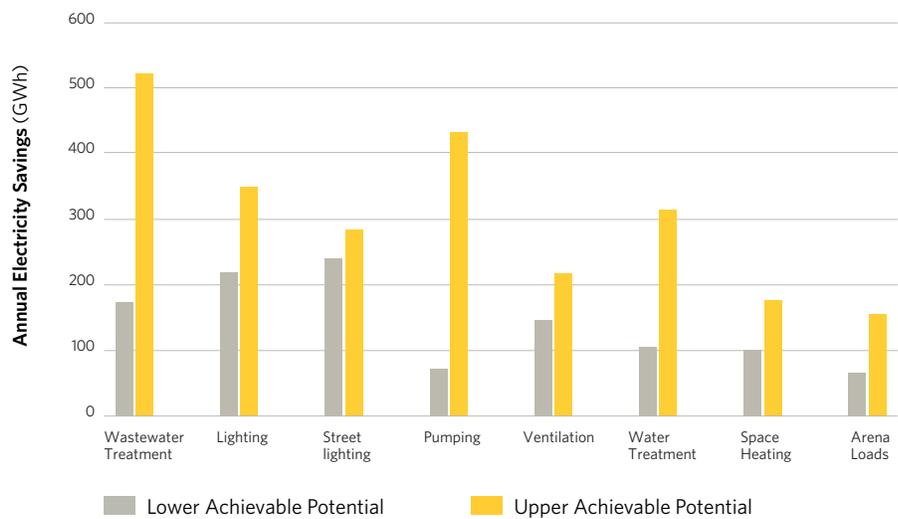
# Targets for energy saving

Municipalities have a wide range of facilities and types of equipment in their asset portfolios, each with varying electrical loads. Many municipalities focus their energy management plans on projects where end-use electricity consumption is highest.

## Consider these results:

- Street lighting retrofits do more than help save money on electricity costs; they also reduce labour costs as there is no need to change light bulbs as often. And because LED lights are often brighter, street lighting retrofits can lead to increased safety and overall better quality of life for communities.
- Municipally-run social housing makes up 20 percent of total municipal electricity use, a 15 percent increase from 2006. Programs offered under Save on Energy can help social housing providers undertake energy audits to identify potential energy savings opportunities and make upgrades to equipment, such as HVAC systems, in-suite appliances and lighting fixtures, as well as to upgrade the building envelope.

## Potential Electricity Savings for Ontario Municipalities



*The largest opportunities for electricity savings lie in water and wastewater treatment and pumping, building lighting, and street lighting. Savings can also be achieved in space heating, arenas and ventilations.*

## After retrofits, what's next?

Municipalities that have already tracked their electricity end-use, identified areas for improvement and completed some initial retrofits may want to consider going even further by participating in Demand Response initiatives.

### Industrial Conservation Initiative

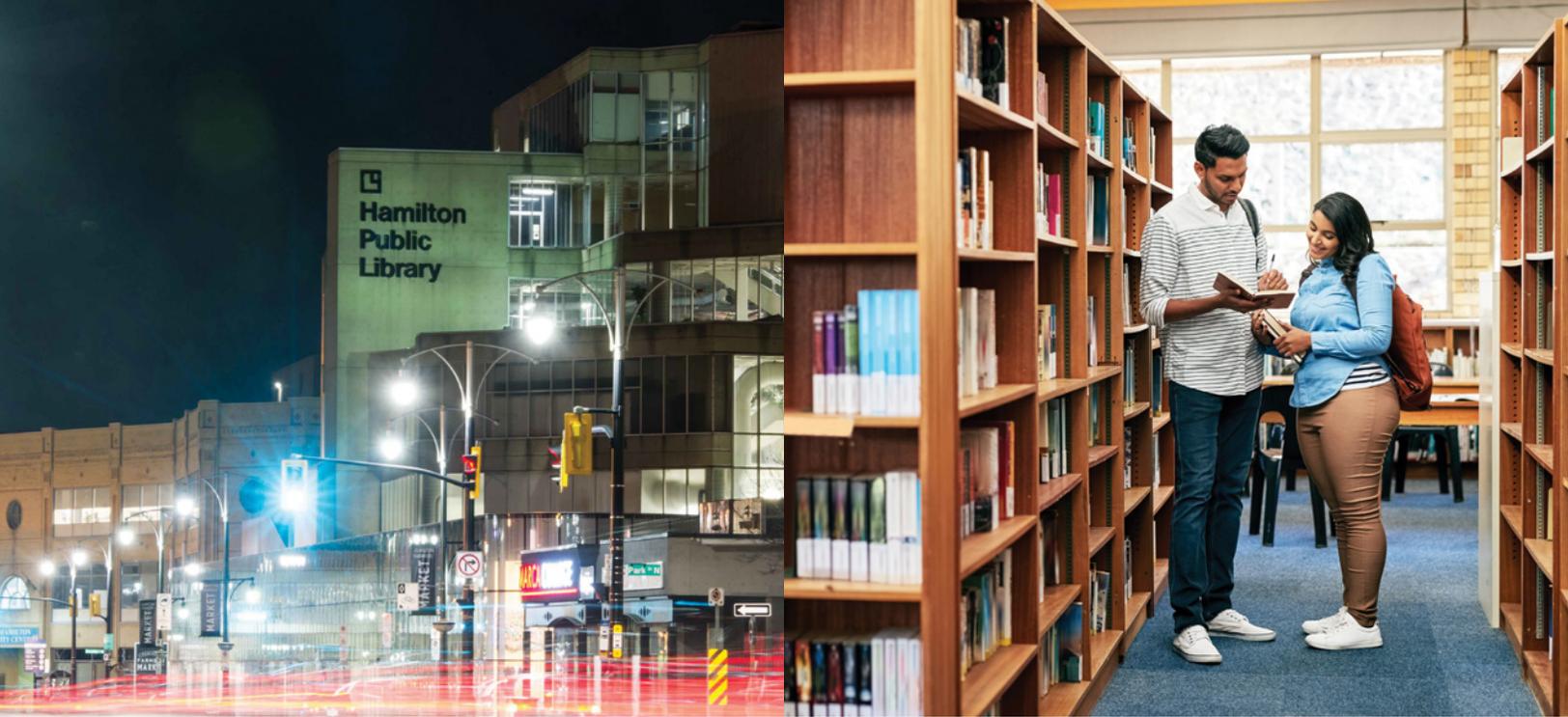
**(ICI):** The ICI is a form of demand response that allows participating customers to manage their global adjustment (GA) costs by reducing their demand during peak periods. To date, 72 municipal facilities are participating in this initiative, with

sewage treatment and water treatment facilities making up 67 percent of all participating municipal facilities.

### Demand Response Auction:

The auction is an annual competitive process through which the IESO selects residential, commercial and industrial consumers to be available to reduce their electricity consumption as needed. The auctions help the IESO reduce the cost of procuring electricity supply and generate revenue for demand response providers.





## Investing in energy management training makes sense

Since 2013, over 20 municipal organizations have received funding through the IESO's Training and Support initiatives to receive industry-recognized training and accreditation.

### Here are training opportunities to consider investing in:

- Building Operator Certification (BOC) training to help your operations and maintenance staff better understand how to run their buildings more efficiently
- Dollars to \$ense Workshops that offer standard or customized training for financial or technical staff, building operators or project managers to help acquire energy management knowledge
- Energy-efficient building operations training for arenas/pools, libraries, water treatment plants, and more

Save on Energy provides financial incentives for energy management training that can be customized for almost any municipal building type.

Visit [saveonenergy.ca/trainingandsupport](http://saveonenergy.ca/trainingandsupport) for more information

### 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

 OntarioIESO

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

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

For a copy of the full report:  
[ieso.ca/MunicipalReport](http://ieso.ca/MunicipalReport)

**SAVE ON ENERGY**  
POWER WHAT'S NEXT

 **ieso**  
Connecting Today.  
Powering Tomorrow.