

# A Healthy, Happy, Prosperous Ontario

## Why we need more energy conservation

2019 Energy Conservation Progress Report



# SUMMARY



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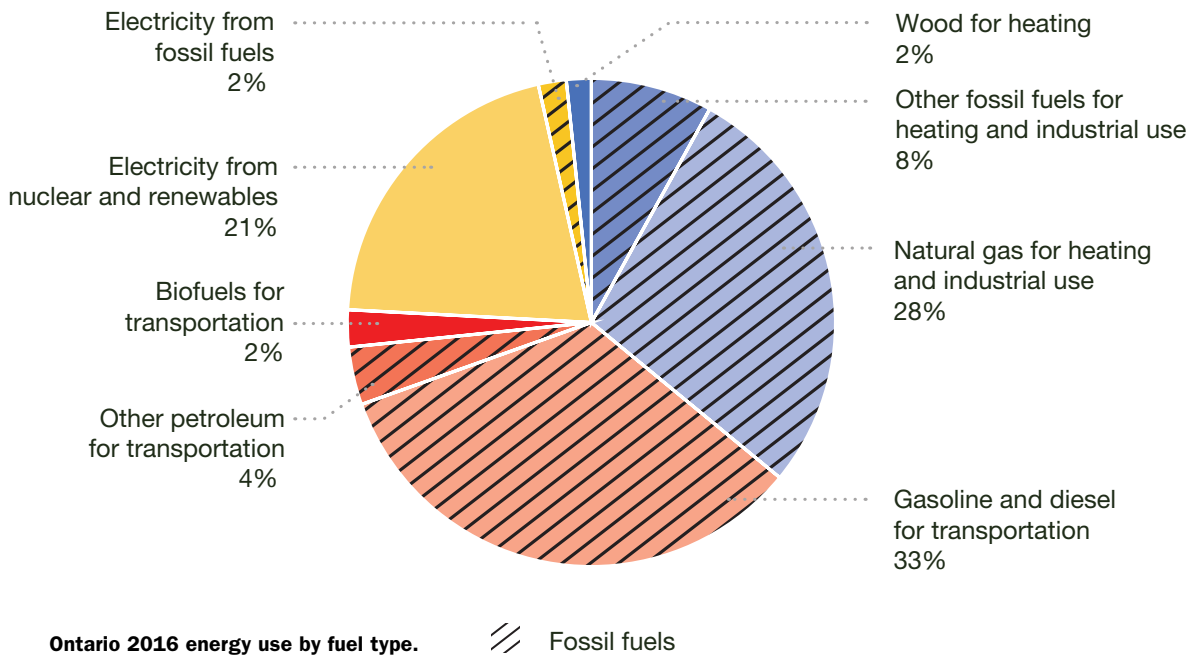


Environmental  
Commissioner  
of Ontario



Dianne Saxe  
Environmental Commissioner  
of Ontario

## 1. Why Ontario needs energy conservation



While renewable energy use has grown over the past decade, Ontario's economy is still 75% dependent on fossil fuels, mostly petroleum products and natural gas. This is not good for our economy, for our climate, for our health or for our well-being and will not be sustainable as climate change gathers speed.

The world's leading climate scientists have shown why the whole world must dramatically slash its use of fossil fuels before 2030, i.e., during the next twelve years. Ontario can do that. The key is much

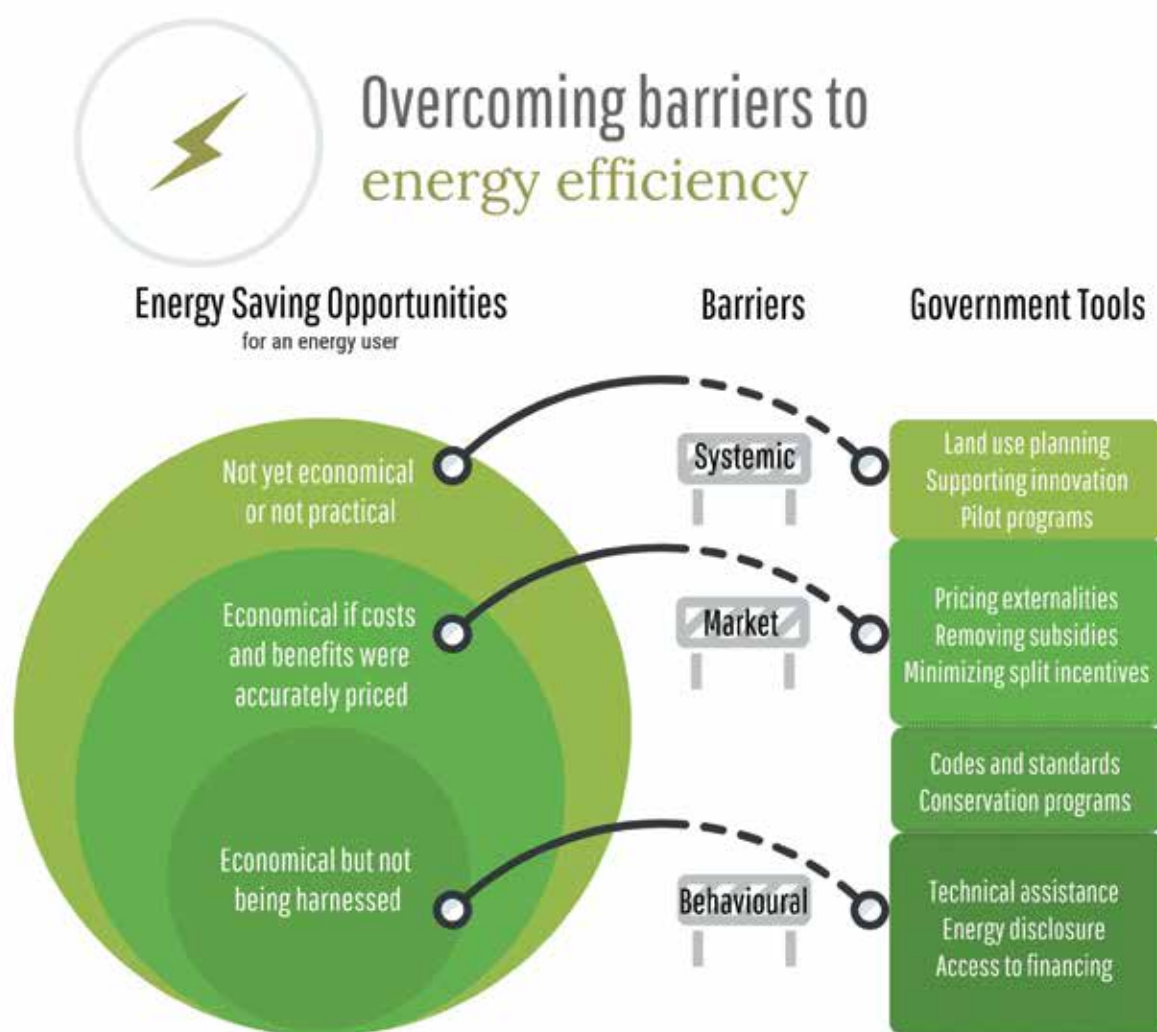
more energy conservation (including efficiency), plus switching from fossil fuel use to Ontario's clean electricity, geothermal, biomass and other renewables.

Energy conservation has tremendous potential to save money, reduce Ontario's heavy dependence on imported fossil fuels, create jobs, improve public health and reduce pollution of our air and climate. For example, Ontario spends \$16 to \$24 billion every year to import fossil fuels; conservation could keep a growing share of this money in the pockets of Ontario

families and businesses. Burning those fuels creates significant health risks, particularly for those who live or work close to heavy traffic or who spend long hours commuting on busy roads. Children and seniors are especially vulnerable.

Yet, Ontario recently cancelled its climate-polluter-pay system, and most other programs to reduce fossil fuel use. Without effective government action to conserve energy, especially fossil fuels, Ontario will continue to damage its finances, climate and well-being.

Why does Ontario waste so much energy, and leave so many cost-effective energy conservation opportunities unused? Wise energy use depends on good public policy. Ontarians face behavioural, systemic, and market barriers to reducing energy waste, and need supportive government action to overcome them.



Overcoming barriers to energy efficiency.

## 2. Making utility conservation more effective

Ontario's electricity and natural gas utilities operate successful conservation programs that have produced significant environmental benefits plus several dollars of savings for every dollar spent. Without the past decade of conservation programs, Ontario's electricity and natural gas use would now be roughly 7% higher, and Ontario's climate pollution would be about 6 megatonnes (Mt) CO<sub>2</sub>e higher. Conservation programs can do even more.

Electricity conservation has been better funded than gas conservation for a decade, because of the supply crisis that Ontario's electrical system faced in the early 2000s. This seems likely to change. The government's November 2018 draft Environment Plan ignores electricity conservation, but counts on expansion of utility natural gas conservation programs to reduce Ontario's annual greenhouse gas emissions by 3.2 Mt by 2030.

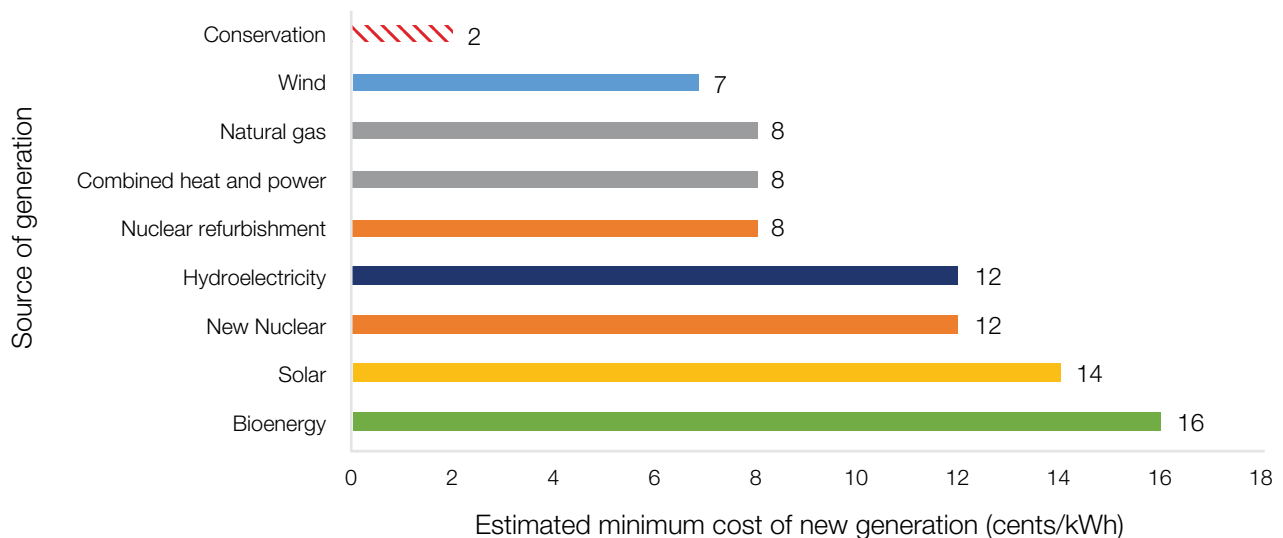
Utility-funded conservation programs can deliver this reduction. Natural gas is a fossil fuel, and Ontario's second largest energy source; reducing its use has climate and air pollution benefits as well as financial ones. There are even greater benefits from reducing other fossil fuels used for space heating, such as propane and oil, by increasing efficiency and/or switching to cleaner

energy sources. Expanding conservation programs to include these other fuels could minimize the cost of the 3.2 Mt emission reduction, although this is challenging in the current utility-delivered structure.

Electricity conservation programs can and should produce more economic, climate and environmental benefits by being focused on times of high demand, the only times that Ontario burns fossil fuels to make electricity. However, cancelling electricity conservation outright would increase annual emissions by 2 Mt by 2030, offsetting most of the benefits of expanding utility conservation of natural gas.

Why does Ontario still need electricity conservation? First, it saves money. Costs have dropped dramatically; more than ever before, conservation is the cheapest electricity resource.

Second, conservation helps keep the lights on when the weather is very hot or very cold, times when the electricity grid strains to assure everyone a reliable electricity supply. While some think that Ontario has more electricity than we need, this is only true some of the time, i.e. during those hours when Ontarians do not use much electricity, such as spring, fall and weekends.



**Estimated minimum cost of new electricity generation in Ontario, 2016.**

### 3. Older homes: the renovation opportunity

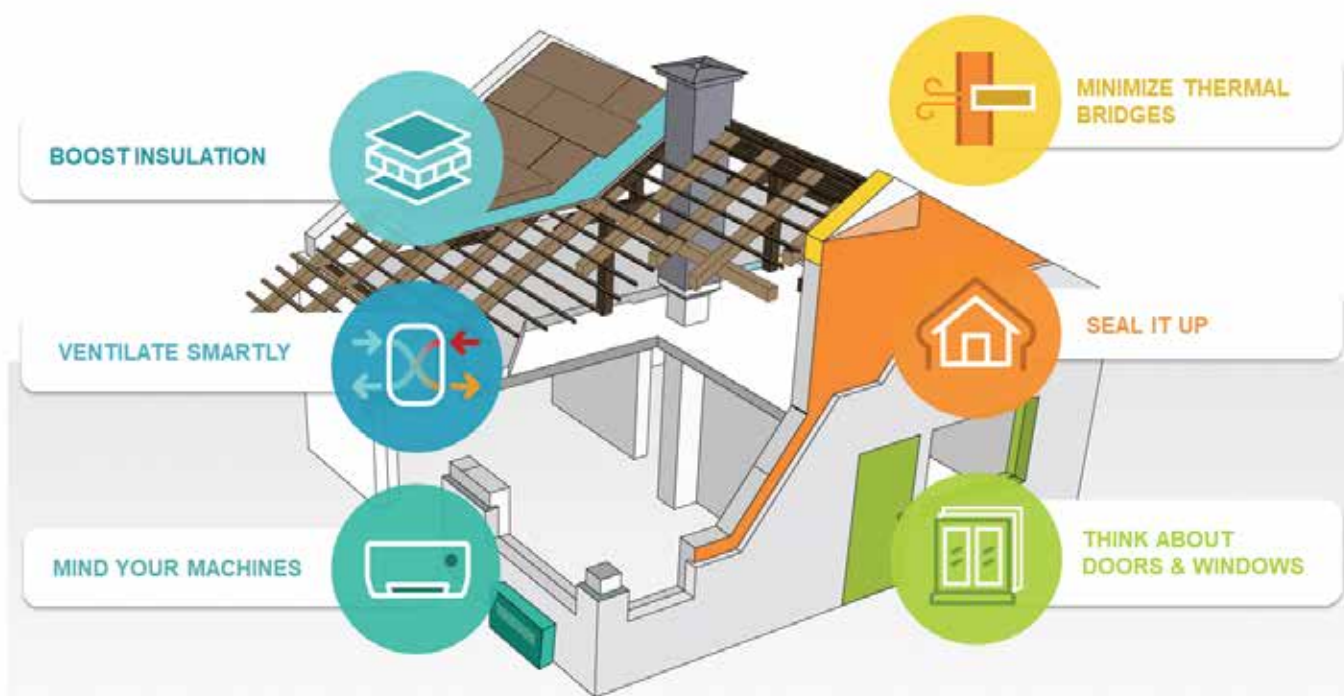
Older Ontario buildings use unnecessarily large amounts of energy, mostly fossil fuels. This is especially true for one important group of older Ontario buildings – existing low-rise homes. The 85% of Ontario homes built in or before 2005 use at least twice as much energy (as modelled) as those of the same size built today.

Slashing the energy needed in existing homes can make them more comfortable and more resilient, lower utility bills, and increase resale values, while growing the renovation economy and reducing climate pollution. Most people would prefer homes that are draft-free, warm in the winter and cool in the summer, and inexpensive to keep that way. Every Ontario home has the potential to be like that, but most are not.

Ontario's energy conservation programs have already led to some improvements in existing

buildings, especially in their lighting, furnaces, and air conditioners. But deep energy efficiency, to make buildings more than 30% more efficient, can typically be achieved only by improving the building envelope: the walls, roof, floors, doors and windows. To date, Ontario conservation programs have done little to improve building envelopes in existing homes, yet serious progress in reducing their energy use and climate impact is not possible without taking this step.

Ontario misses a crucial opportunity when energy efficiency is left out during renovations. Ontarians love to renovate their homes; an estimated one-third of dwellings underwent some renovation in 2017. Modest government policy changes could help homeowners make energy-efficient building envelopes part of planned renovations, when improvements are cheaper and less disruptive.



**Recommendations for energy efficiency in homes primarily focused on improving the building envelope.**

Source: Energy Step Code Council, Energy Step Code.

## 4. Urban sprawl: the road to gridlock

Petroleum fuels used for transportation, like gasoline and diesel, are Ontario's largest energy sources and the primary sources of its climate and air pollution. Today, Ontario is doing little to reduce consumption of these fuels. Instead, government policies drive up their use by favouring costly and destructive urban sprawl, which also destroys farmland, forests and wetlands.

Ontarians drive a lot, creating congestion and air and climate pollution, because urban sprawl has spread out the places they need to go. Most Ontarians live inconveniently far from jobs, grocery stores, libraries, and schools, because government decisions about land use and transportation have given them no real alternative. Now they are locked into car-based commutes that are ever longer and more congested, commutes that are going to get worse.

GTA residents spend an average of

# 8 hours

commuting each week, more than LA, NYC and most other big cities.



Urban sprawl creates congestion, which costs us all.

By 2041, the population of the Greater Golden Horseshoe will grow by

# 39%

leading to more sprawl, fossil fuel use, GHG emissions, and

# congestion.



Congestion costs the economy

# \$11 billion

every year (more than Ontario spends on public transit and highways).

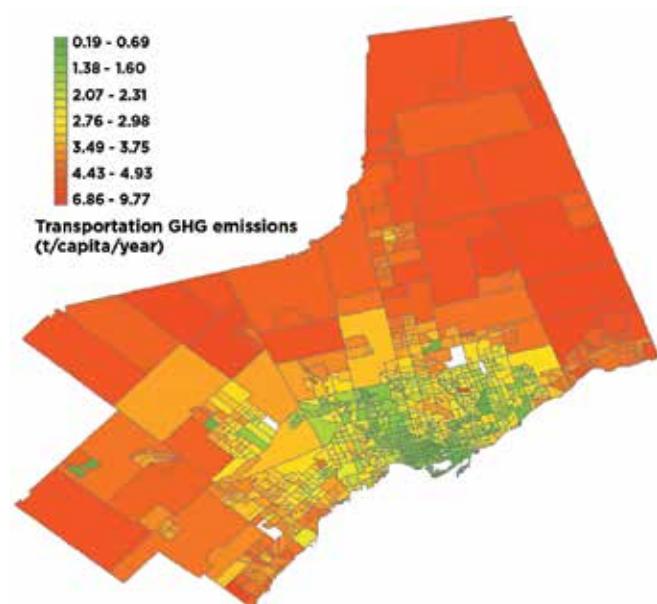


It is now widely accepted that building or expanding roads does little to alleviate traffic congestion.

Credit: André-Phillippe Côté.

Ontario's land use plans are creating urban sprawl, which will increase the already high costs of congestion.

The Growth Plan for the Greater Golden Horseshoe is supposedly designed to prevent urban sprawl, and to accommodate the growing population in compact, complete communities with a high quality of life. Instead, the plan actively increases sprawl, directing hundreds of thousands of people to new distant suburbs with high transportation-related fossil fuel use and greenhouse gas emissions (see figure below), high servicing costs, few employment opportunities, and densities too low to support public transit.



**Per capita annual transportation greenhouse gas emissions in the Toronto Census Metropolitan Area (includes private automobiles and public transit).** Emissions can vary by at least a factor of ten based on residents' location, transportation options, and urban density.

Source: Jared VandeWeghe and Christopher Kennedy, "A Spatial Analysis of Residential Greenhouse Gas Emissions in the Toronto Census Metropolitan Area" (2007) 11:2 *Journal of Industrial Ecology* 133-144.

Contrary to good planning and to best practices, the government is proposing to weaken the Growth Plan to allow even more sprawl, spreading new suburbs over yet more farmland, forests and wetlands. This will lengthen commutes, increase congestion, and drive up fossil fuel use (and therefore climate and air pollution), while also reducing resilience to floods and increasing costs for municipalities. Ample evidence shows it will not be possible to solve this congestion by building more roads.

Ontario can and should accommodate its growing population without creating further urban sprawl and gridlock. There is room to add the housing that we need in compact, complete communities while revitalizing the inner suburbs and other built-up areas that today are stagnant or losing population. Removing regulatory obstacles to medium-density housing (that is neither tall nor sprawl) in existing areas can shorten commutes, reduce fossil fuel use, help address high living costs, and protect natural areas and farmland.

## Appendices

This report contains four appendices of information related to energy conservation progress in Ontario that are available online at [eco.on.ca/reports/2019-why-energy-conservation](http://eco.on.ca/reports/2019-why-energy-conservation).

- **Appendix A.** A summary of the changes to energy policy that occurred in Ontario in 2017 and 2018. Related changes to climate change policy were described in the ECO's 2018 report *Climate Action in Ontario: What's Next?*
- **Appendix B.** Statistics on Ontario's progress towards meeting any government-established targets for reducing the use or making more efficient use of electricity, natural gas, propane, oil and transportation fuels, based on latest available data. Because of the change in provincial government in 2018, some of these targets may be under review.
- **Appendix C.** The 2016 and 2017 quantitative results of electricity conservation programs funded by electricity ratepayers. These include programs delivered to customers by local distribution companies (LDCs) and the Independent Electricity System Operator (IESO), and market mechanisms to curtail electricity use at times of peak system demand.
- **Appendix D.** The 2016 quantitative results of natural gas conservation programs funded by natural gas ratepayers.



## Summary of Recommendations

The ECO recommends that the Government of Ontario follow these evidence-based best practices:

1. Significantly reduce Ontario's bill for importing fossil fuels through energy conservation and fuel switching. Set targets for reducing Ontario's use of each fossil fuel, track and report progress.
2. Deliver its planned 3.2 megatonnes of greenhouse gas reductions from conservation programs by:
  - a. growing natural gas conservation funded by ratepayers
  - b. including conservation of other heating fuels and fuel switching
  - c. focusing electricity conservation on programs that save electricity during hours of high demand, when fossil fuels are being used to generate electricity, and
  - d. accurately measuring and valuing greenhouse gas reductions.
3. Slash the energy needed in older homes by improving more building envelopes during planned renovations, by ensuring that:
  - a. buyers know the energy use of their potential home, and homeowners have reliable information about the financial and well-being benefits of efficiency improvements
  - b. efficiency improvements are easy and low-risk for homeowners to finance
  - c. the Building Code sets minimum levels of efficiency in renovated homes, and
  - d. renovation professionals have energy efficiency capacity and expertise.
4. Provide homes and jobs for the growing population, without locking them into sprawl, congestion and gridlock, by:
  - a. removing regulatory obstacles to adding density into areas with existing transit and jobs, thus creating more housing in compact, complete communities with a lower total cost of living
  - b. revising population allocations in the Growth Plan to direct much more growth towards these compact communities
  - c. limiting development of new suburbs and requiring them to have densities of residents and jobs that support frequent transit
  - d. requiring transit-supportive densities around transit stations and corridors as a condition of provincial funding, and
  - e. regular, credible reporting of the Growth Plan's performance in sustainably managing growth.