



The Corporation of The Town of Cobourg
Sustainability and Climate Change Advisory Committee

Wednesday, December 2, 2020

2:00 P.M.

Electronic Participation

Topic: Sustainability and Climate Change Advisory Committee

Time: Dec 2, 2020 02:00 PM Eastern Time (US and Canada)

Join Zoom Meeting

<https://us02web.zoom.us/j/86212619010?pwd=N0pKaE9HcDFadmX1WTYrUnZmY2l4QT09>

Meeting ID: 862 1261 9010

Passcode: 365017

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+1 647 558 0588 Canada

Pages

1. CALL TO ORDER
2. APPROVAL/ADDITIONS TO THE AGENDA
3. WELCOME AND INTRODUCTIONS
4. DECLARATIONS OF INTEREST BY MEMBERS
5. ADOPTION OF MINUTES
Action Recommended:
THAT the minutes dated March 4, 2020 be adopted as presented/amended.
6. DELEGATIONS/PRESENTATIONS
7. COMMUNICATIONS/CORRESPONDENCE

- 7.1. 2021 Meeting Schedule for the Sustainability & Climate Change Advisory Committee

Action Recommended:

THAT the 2021 Meeting Schedule for the Sustainability & Climate Change Advisory Committee be received for information purposes.

8. REPORTS
9. NEW BUSINESS

- 9.1. Status Update of the March 4, 2020 Meeting Actions

Objective: To provide an update on what was completed after the March 4, 2020 meeting and what remains to be done.

9.2. Status of key Climate Actions Initiatives Council is undertaking:

4

- a. Climate Action Plan (Cobourg's Climate Action Plan presented to Council attached for information)
- b. ICSP and Green Development Standard
- c. Affordable and Rental Housing CIP

Objective: To briefly review progress on key climate emergency related initiatives.

9.3. Clean Air Alliance Motion to Council re Ontario's plan for gas fired power plants

32

Objective: To discuss whether the SCCAC should send a draft motion to the Council Committee of the Whole Meeting of Dec 9, 2020, as attached to this agenda or amended, to recommend that Council support the request of the Clean Air Alliance.

9.4. Priority Items for January 2021 SCCAC meeting

62

Objective: To identify key items to be discussed at the next SCCAC meeting for the purpose of moving forward the SCCAC Work Plan

10. UNFINISHED BUSINESS

11. ADJOURNMENT

12. NEXT MEETING

Wednesday, January 6, 2021



Sustainability & Climate Change Advisory Committee 2021 Schedule of Meetings

Meetings will be held on **Wednesday** at **2:00 P.M.** in the **Committee Room** or by **Zoom Video Conference**, with the following persons in attendance:

- Coordinator of Arts, Culture and Tourism Services
- Six (6) citizen appointed members
- Environmental Officer, County of Northumberland

Sustainability & Climate Change Advisory Committee Meeting Schedule 2:00 p.m. – Committee Room, Victoria Hall <u>or</u> Zoom Video Conference	
01-21	Wednesday, January 6
02-21	Wednesday, February 3
03-21	Wednesday, March 3
04-21	Wednesday, April 7
05-21	Wednesday, May 5
06-21	Wednesday, June 2
07-21	Wednesday, July 7
08-21	Wednesday, August 4
09-21	Wednesday, September 1
10-21	Wednesday, October 6
11-21	Wednesday, November 3
12-21	Wednesday, December 1



October 2020

Town of Cobourg Climate Action Plan for Future Generations


Update 2020 to 2050

Thank You

- **Mayor John Henderson and Cobourg Council**
- **The Town of Cobourg Staff: Glenn McGlashon, Rob Franklin, Brent Larmer, Ian Davey, Laurie Wills, Neil Stewart, Chris Barnes, Rene Champagne, Jason Johns, Teresa Behan, Melanie Chatten, Ashley Purdy, Joanne Taylor and former CAO Stephen Peacock,**
- **Sustainable Cobourg, Pres. Gudrun Ludorf-Weaver**
- **The Sustainability and Climate Change Advisory Committee of the Town of Cobourg, Chair Minnie de Jong**
- **Lakefront Utilities Services Inc.: Pres. Dereck Paul, Mark Turney, Danielle D'Sousa and Kenneth Hutton**
- **Enbridge/Union Gas Ltd. Xi (Sissi) Wang, Cindy Ni and Melissa Van Kesteren**
- **County of Northumberland, CAO Jennifer Moore, Mobashir Pannu, Adam McCue, Kaela Esseghiaer and Jennifer Hardy-Parr**


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FÉDÉRATION
CANADIENNE DES
MUNICIPALITÉS




Local
Governments
for Sustainability

Partners for Climate Protection

PCP MILESTONE TOOL





HOME / SMITHJ

ViewEdit

Name

Judy Smith

Member for 1 year 3 months

Group

Cobourg

The greenhouse gas calculator from FCM used to update the Town of Cobourg Climate Action Plan.

MILESTONE 1

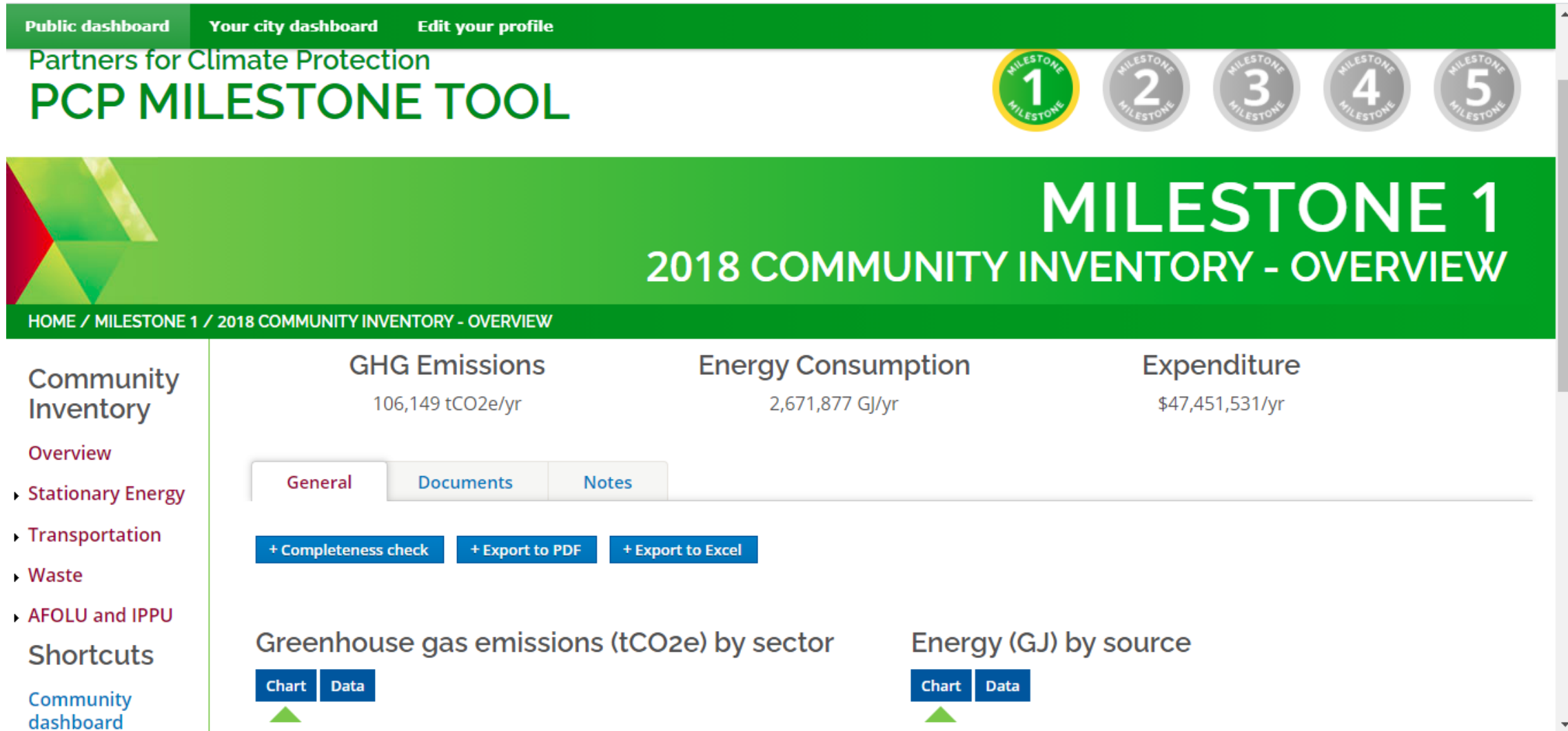
INTRODUCTION

[HOME](#) / [MILESTONE 1](#) / [INTRODUCTION](#)[Introduction](#)[Corporate
dashboard](#)[Community
dashboard](#)

Introduction

Milestone 1 is the foundation for any climate change or community energy strategy. Milestone 1 involves creating a greenhouse gas emissions inventory and forecast by gathering data on community and municipal energy use and solid waste generation. Your work on Milestone 1 reveals how your community or municipal organization consumes energy and generates waste. The inventory process also provides the necessary baseline data against which your progress will be measured. By measuring emission levels at regular intervals, you will be able to see whether your community or municipal organization is reducing its emissions or continuing along a business-as-usual trajectory.

How it works.



An example of a module in the calculator

Community Analysis

In 2007 the manufacturing sector was the biggest contributor to GHG emissions - 34%

Today, it is the smallest, responsible for less than 15% of all GHG emissions in the community.



What has changed?

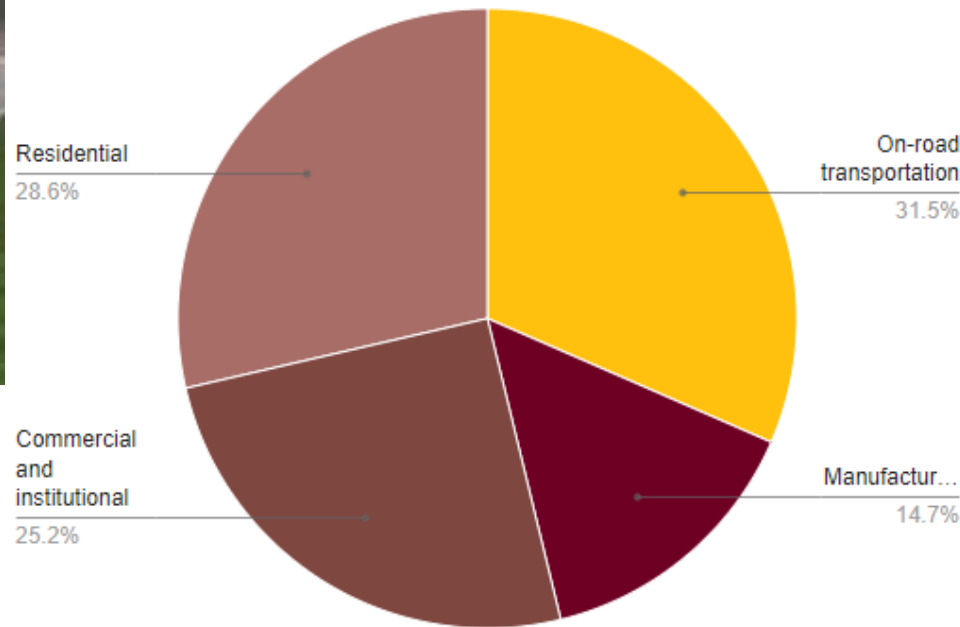
- **Energy use in manufacturing has dropped 33% due to company losses and efficiency.**
- **GHG emissions have fallen also because electricity has been 'decarbonized' by the removal of coal from the grid.**
- **GHG emissions from manufacturing are less than one quarter of what they were in 2007.**

Vehicles and homes are the biggest contributors to GHG emissions in Cobourg today

All Vehicles 32%



All Homes 29%



Total cost to Cobourg for fuel and electricity
has dropped \$13 Million since 2007 from
\$60 Million to \$47 Million*



*In 2007 \$59,982,767 and in 2018 it was \$47,299,108

Industrial energy demand dropped 38% and industrial energy expenditures dropped \$12M between 2007 and 2017

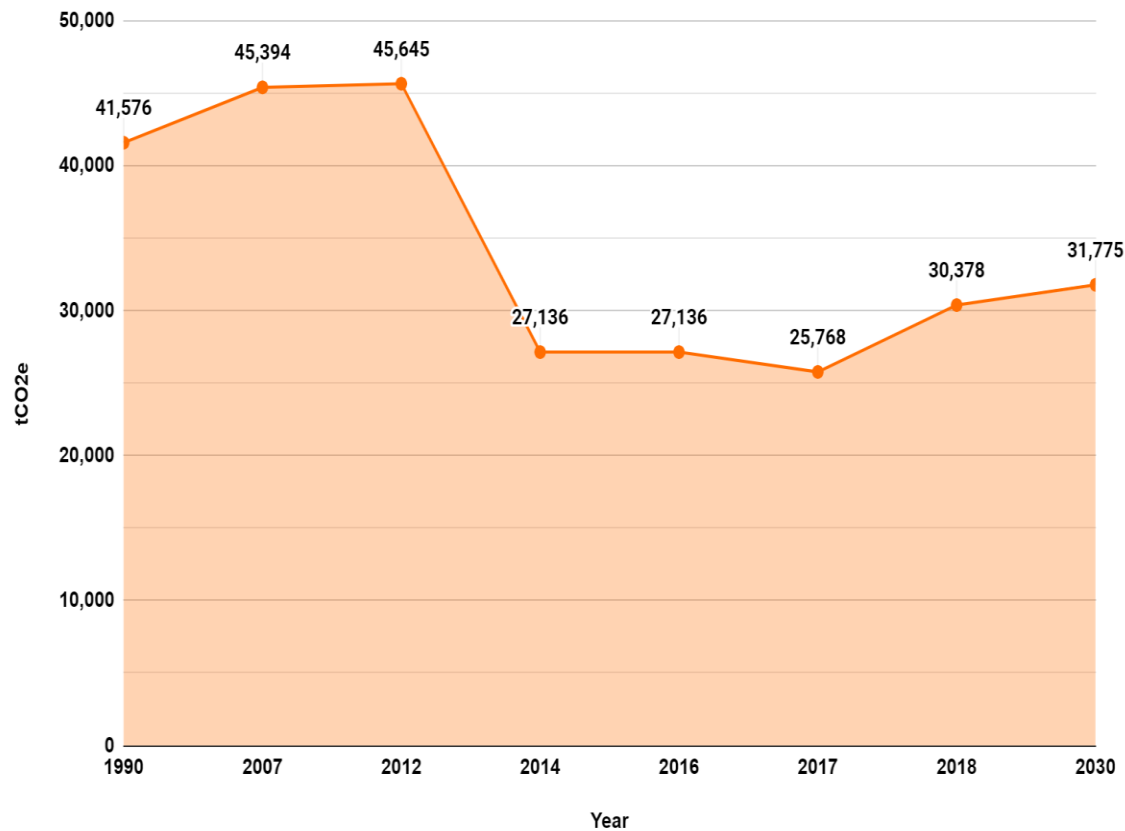
The Kraft Plant closure in 2008 may have had the biggest effect on industrial energy use and expenditures.



Today residential and vehicle energy use dominate.

Total Residential Energy Use incl. Target Year
2030

1. Cobourg Community Residential Greenhouse Gas Emissions Time Series 1990-2018



Total Vehicle Energy Use incl. Target Year 2030

1. Cobourg Community Transportation Greenhouse Gas Emissions Time Series 1990-2018



**In 2008 Cobourg set
a target of reducing
emissions 23,037
tonnes from 202,165
tonnes CO₂e in 2007
to 179,132 tonnes
CO₂e by 2012.***

***Screen capture from original
Cobourg GHG Inventory Report
July 2008**



Kyoto Target

6% below 1990 levels
by 2012

Cobourg's Goal... **11.8%**



After passing their first Climate Action Plan in 2010, Cobourg spent almost \$100,000 on greenhouse gas reduction measures including:

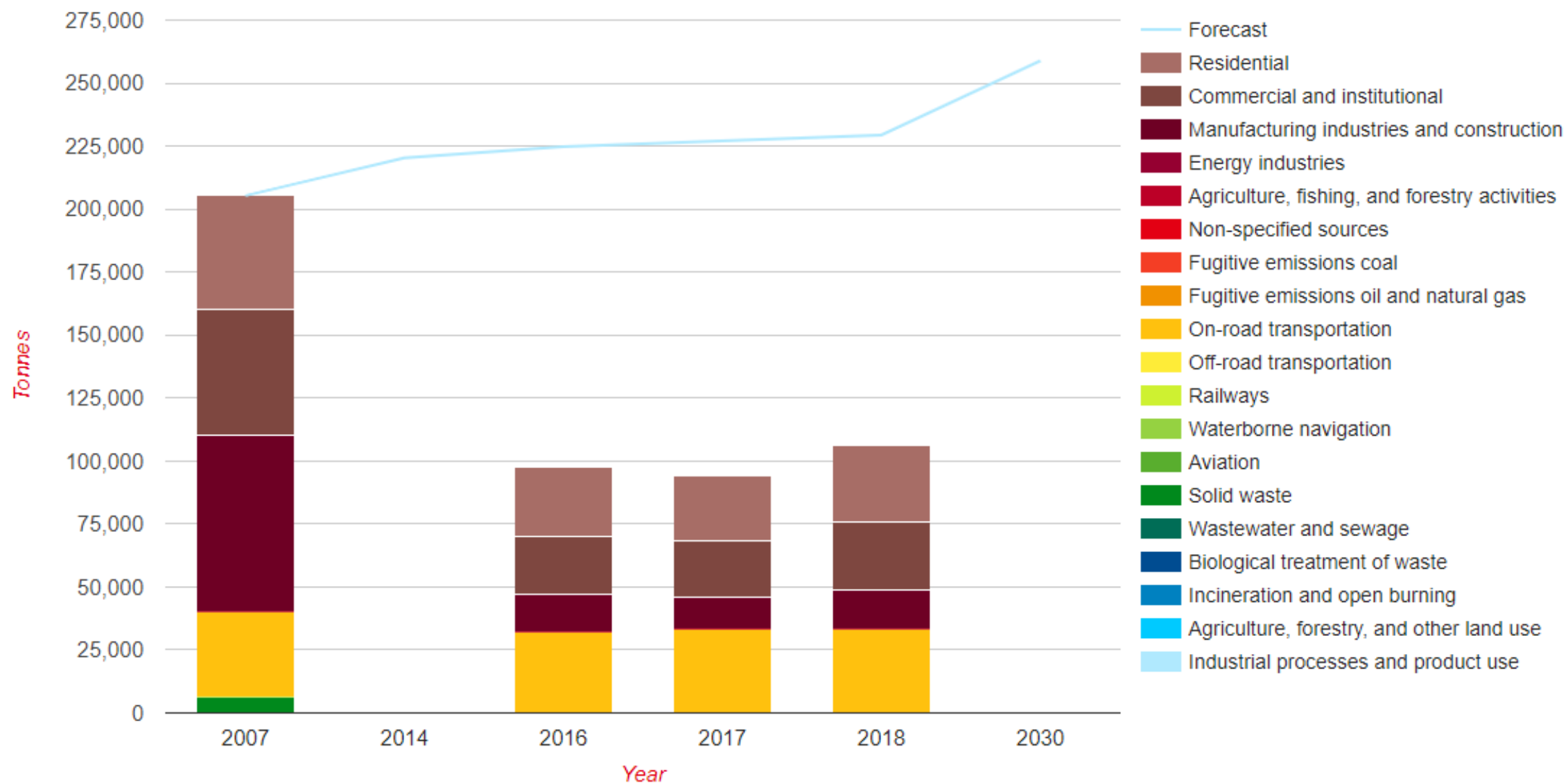
- substituting a solar thermal heating system for natural gas on the YMCA Community Pool**
- the purchase of a smaller service and hybrid vehicles for staff travel**
- retrofitting streetlights to induction lighting**

By 2016 GHG emissions were down to 97,438 by best estimates, a drop of 52% from 2007. We met the Kyoto target.

GHG emissions have risen slightly since, yet by 2018 we surpassed the provincial and federal GHG target of a 30% reduction in greenhouse gas emissions below 2005 levels by 2030. In fact, we have made a 47% reduction below 2005 GHG levels*.

*** 2007 data is used as a surrogate for 2005 because it is the best real data available from the original 2008 Town of Cobourg GHG Inventory Report, July 2008.**

Community GHG emissions and forecast



The next target is an 80% to 100% reduction in GHG emissions by 2050 below 2005 levels. We should start on that now. It is a race against time.



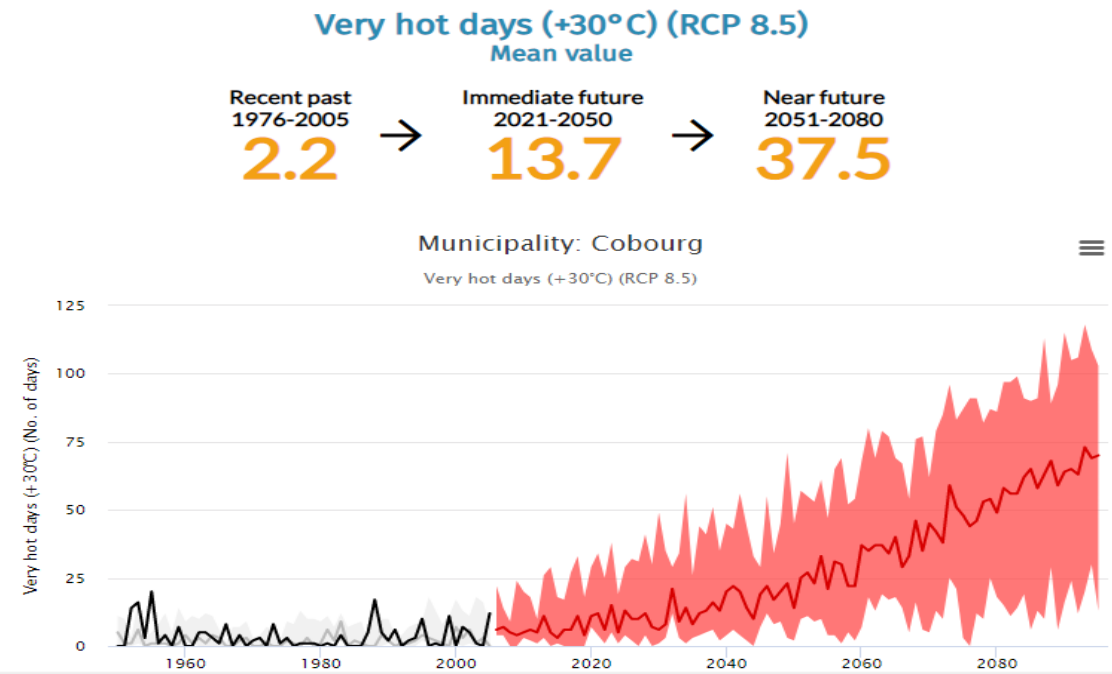
<https://youtu.be/9SvIT6z5nhc>

Why? Because we are already implementing
the carbon future our children will inherit.



Impacting the future level of greenhouse gas emissions is not a choice, it is already *implicit* in everything we do. The real choice is whether we exercise that power and influence *now, while we still can*.

Climate scientists say we have 10 years to flatten the curve to prevent serious runaway climate change.



Consequently, the Town of Cobourg has declared a Climate Emergency



Pop [P](#)

NOW THEREFORE BE IT RESOLVED THAT Council of the Town of Cobourg declare a Climate Emergency conveying its recognition that we are facing an unprecedented crisis requiring unprecedented climate mitigation measures; and

FURTHER THAT, in response to this Climate Emergency, Council deem the need to reduce the effects that the Town of Cobourg is contributing to the climate crisis by way of the following actions:

1. That Council create a staff position on a one (1) year contract basis, under the supervision of the Chief Administrative Officer to develop a Request for Proposal (RFP) for the Integrated Community Sustainable Plan (ICSP) and Green Design Standards and manage the project through to completion;

Next Steps

- **Working with Community partners and Town staff**
- **Planning for energy efficiency in the short term and in the long term**
- **Taking advantage of federal and provincial incentives**
- **Regular annual reporting on our progress**

Defining Measures to Reduce our GHG Emissions

- Measures need to address the most critical sectors vehicles and buildings both residential, commercial and institutional.
- Measures need to support equity and access to funds for low income residents.
- Measures need to be affordable.
- The greatest needs should be tackled first, i.e. housing retrofits, vehicle and home decarbonization.
- Measures should also be judged by their ability to deliver the most gain with the least pain[cost].

A full list of measures opportunities

A Running Start Vehicles

Electrification of:

- Passenger vehicles
- Fleets
- Transit
- Ambulances

Biofuels for

- Heavy trucks
- Plows

A Running Start - Housing

- **Neighbourhood Deep Retrofits**
- **A Revolving Low-interest Long-term Community Fund for Retrofits.**
- **Green Development Standards for new builds and large renovations.**
- **Incorporating community gardens, parks and trees, bike sharing, car-sharing, EV charging –'complete neighbourhoods'**



A Running Start - Microtransit

- Smaller more energy efficient bus transit
- Hybrid or electric vehicles
- On demand door to door service
- No fixed route
- Accessible to handicapped and able-bodied residents.
- Equality of service
- Bike racks on front
- Okotoks Transit Example:
- <https://www.youtube.com/watch?v=9nkjAFL6kA8&feature=youtu.be>



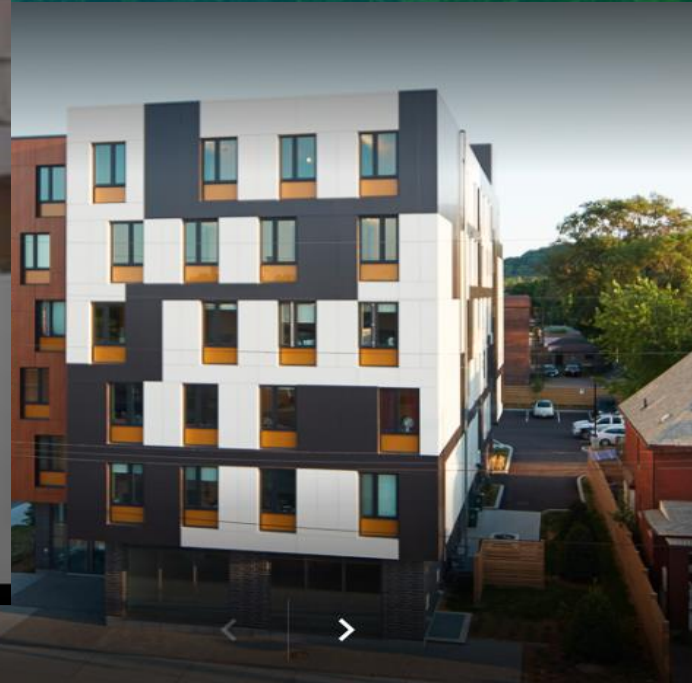
A Running Start – Ending Energy Poverty

- **Build affordable housing that is net zero energy and net zero ghg**
- **Work with landlords and condo boards to retrofit existing buildings to a Passive House Standard.**
- **Pass operational energy savings onto tenants.**
- **Make used electric vehicles accessible to low income residents through low interest long term loans, and a car sharing program.**



Example of Social and Affordable Housing and the Passive House Standard - Indwell [not for profit]

Passive House Projects in Ontario



A Running Start – Protect our Vulnerable Populations

- **Provide resilient housing that protects residents from extreme weather events and power outages.**
- **Establish a neighbourhood level program to check on vulnerable people during times of emergency**
- **Set a Maximum Temperature Bylaw to protect from heatwaves.**



More to come
-Town Corporate GHG emissions Inventory and
in-house GHG Reduction Measures
- Appendices

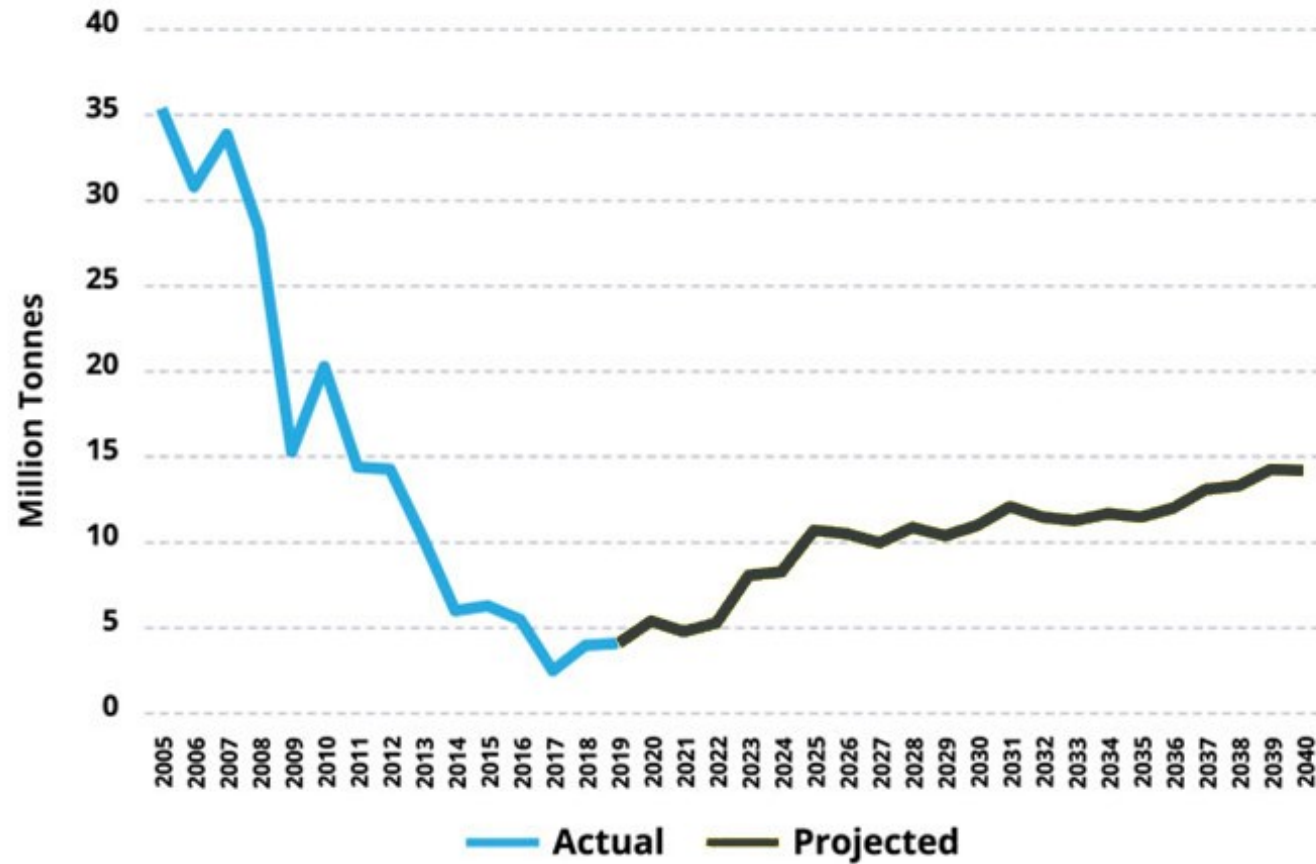
Judy Smith, Environmental Officer County of
Northumberland
Nov 2 2020

Ontario's Growing Climate Crisis

**Gas Plant Pollution
to increase by more
than 300%**

Ontario's rising emissions

Ontario's Historic
and Forecast GHG
Pollution from its
Electric Power Plants



(IESO)

What's behind these rising emissions?

- ▶ Ontario's demand for electricity will rise by about 1% per year.
- ▶ The Pickering Nuclear Station will close in 2024.
- ▶ Virtually all of our need for new electricity resources will be met by ramping up province's gas-fired power plants.



Reaching Ontario's 2030 Climate Target

- ▶ According to Ontario's Auditor General, we need to implement measures that will reduce our greenhouse gas pollution by an additional 7.3 to 14 million tonnes per year to achieve our 2030 climate target.
- ▶ A phase-out of Ontario's gas plants would provide our province with all or virtually all of the incremental pollution reductions that it needs to achieve its 2030 climate target.

Historic and Forecast GHG Pollution and Electricity Generation from Ontario's Gas-Fired Power Plants

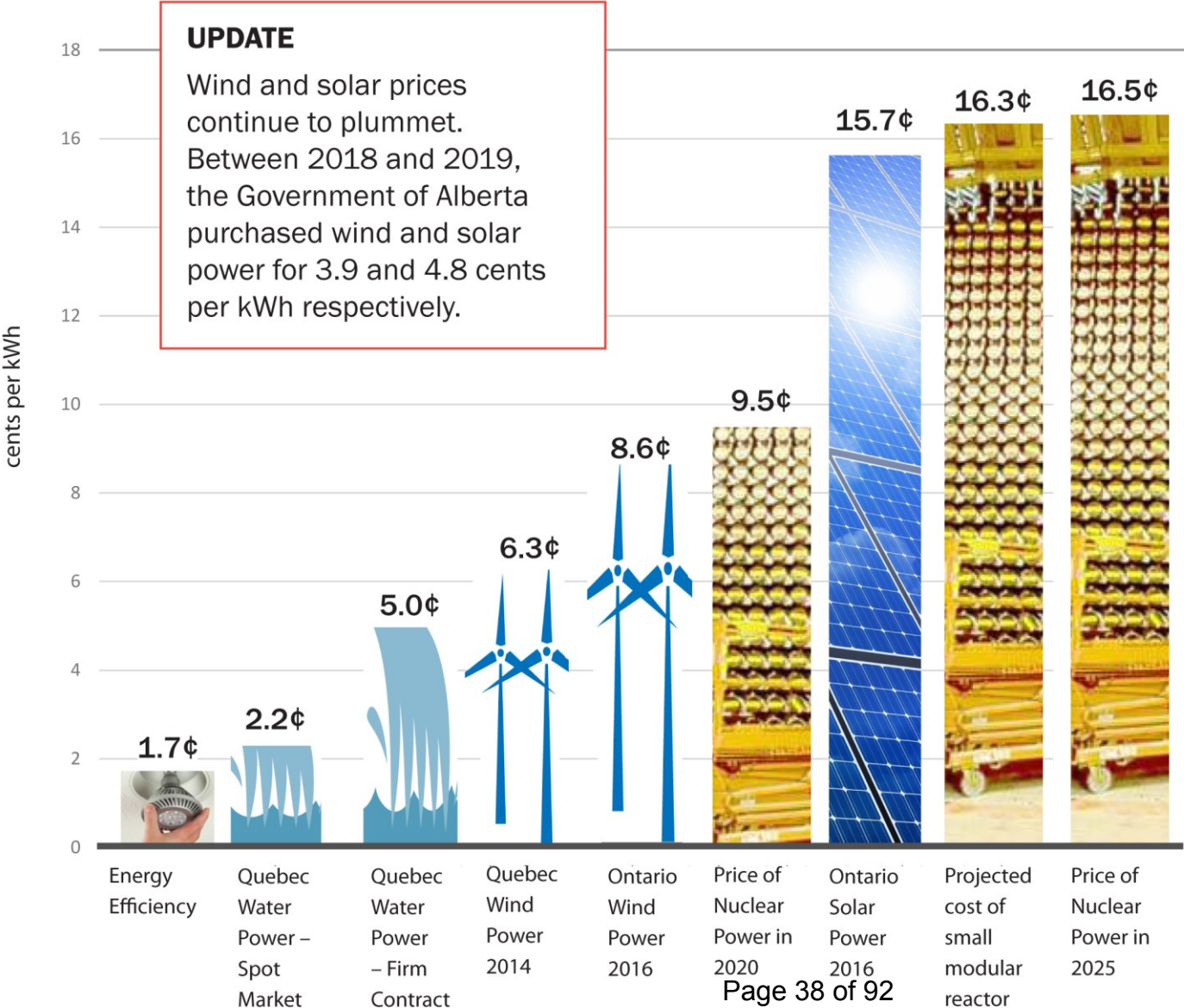
Year	2017	2018	2019	2020	2025	2030	2040
GHG Pollution (Million Tonnes)	2.5	4.0	4.1	5.4	10.7	11.0	14.2
Electricity Generation (Billion kWh)	5.9	9.6	9.5	13.6	28.0	28.6	37.0

How can we phase out Ontario's gas plants?

- ▶ Energy efficiency
- ▶ Quebec water power
- ▶ Wind and solar energy

- ▶ Distributed resources can create jobs in every community
- ▶ Quebec water power can back-up wind and solar energy

Ontario Electricity Options: A Cost Comparison



Phase out supporters



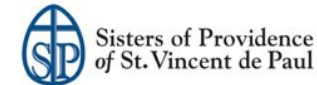
Braden Homes



Canadian Environmental Law Association
EQUITY. JUSTICE. HEALTH.



FONDATION DAVID SUZUKI
Un monde. Une nature.



Kitchener council calls on province to phase out gas-fired power production

Kitchener City Council voted unanimously on Monday to join Halton Hills in calling on the Government of Ontario to phase-out the province's gas-fired power plants by 2030.

about 10 hours ago By: [Casey Taylor](#)



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Lennox Power Station near Bath, Ontario, Canada. November 2010.

Municipal Leadership



Phasing-Out Ontario's Gas-Fired Power Plants:

A ROAD MAP

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Let's get to work!

Jack Gibbons
jack@cleanairalliance.org

Angela Bischoff
angela@cleanairalliance.org

CleanAirAlliance.org
OntarioClimateAction.ca

Draft Template for Municipal Resolution Calling for Gas-Fired Electricity Generation Phase-Out

Background

The Government of Ontario is planning to [ramp up the greenhouse gas pollution](#) from Ontario's gas-fired power plants by more than 300% by 2025 and by more than 400% by 2040 to replace the output of the Pickering Nuclear Station (scheduled to close in 2024). This plan will throw away more than a third of the greenhouse gas reductions Ontario achieved by phasing-out its dirty coal-fired power plants.

To support this massive increase in fossil fuel electricity and climate-threatening greenhouse gas (GHG) pollution, the provincial government recently [purchased 3 gas plants](#) at a cost of \$2.8 billion.

Greenhouse gas pollution is causing temperatures in Canada to rise at [more than double](#) the rate in the rest of the world, causing adverse impacts for the citizens of *[insert name of municipality]*. (*Insert specifics about relevant risks to municipality such as forest fires, flooding, agricultural failures, public health impacts, etc.*)

[insert name of municipality] has declared a Climate Emergency and is taking measures to reduce its greenhouse gas pollution. (*Insert specifics about relevant advisory committee, activities such as Climate Action Plan, Community Energy and Emissions Plan, and achievements.*)

The planned increase in GHG pollution will reduce the effectiveness of *[insert name of municipality]*'s climate adaptation and mitigation efforts. It will decrease the effectiveness of electrification programs (deep building retrofits, EV programs) due to increased GHGs associated with electricity, discourage development of distributed renewable energy initiatives, delay municipal transition to the clean economy of the future, and prevent Ontario from meeting its GHG reduction commitment.

Ontario can phase-out its gas-fired power plants by 2030 by an integrated combination of energy efficiency investments, wind and solar energy and Quebec water power. The costs of the alternatives to gas-fired generation are [all less than](#) the price Ontario Power Generation's current price per kilowatt-hour (kWh) for power from nuclear plants (9.5 cents per kWh).

Ontario can increase its investments in quick-to-deploy and low-cost energy efficiency programs. Ontario can cost-effectively maximize its energy efficiency efforts by paying up to the same price for energy efficiency measures as it is currently paying for power from nuclear plants.

Ontario can become a leader in developing increasingly low-cost renewable energy resources rather than investing in high-cost nuclear re-builds. Ontario should support renewable energy projects that have costs that are below what we are paying for nuclear power and work with communities to make the most of these economic opportunities.

Quebec has offered Ontario [low-cost](#) 24/7 power from its massive water power system at less than one-half the cost of the planned re-buildings of the aging Darlington and Bruce Nuclear Stations.

In addition, Quebec's system of hydro-electric reservoirs can be used like a giant battery to provide load balancing/back-up for Ontario's intermittent sources of renewable energy.

Ontario can benefit from making long-term electricity deals with its green energy-rich neighbour.

The phase-out of Ontario's gas-fired power plants will help *[Insert name of municipality]* and the Province of Ontario to achieve their greenhouse gas pollution reduction goals.

Municipal Resolution

WHEREAS: The Government of Ontario is planning to increase electricity generation and greenhouse gas pollution from Ontario's gas-fired power plants by more than 300% by 2025 and by more than 400% by 2040, reversing more than a third of the greenhouse gas pollution reductions achieved by phasing out our coal-fired power plants;

AND WHEREAS: Greenhouse gas pollution is causing temperatures in Canada to rise at more than double the rate of the rest of the world, causing impacts to the operations and citizens of the *[insert name of municipality]*;


AND WHEREAS: The *[insert name of municipality]* has declared a Climate Emergency and is taking measures to mitigate and adapt to the climate impacts caused by increasing greenhouse gas pollution;

AND WHEREAS: There are feasible, cost-effective alternatives to increasing gas-fired electricity generation without increasing greenhouse gas pollution at costs well below the current price for Ontario's nuclear energy (9.5 cents/kWh), including:

- energy efficiency investments;
- low-cost, distributed, renewable energy, providing employment in Ontario communities and restoring our leadership in this industry;
- the purchase of low-cost power offered by the Province of Quebec from its existing hydroelectric generating stations; and
- using Quebec's system of reservoirs like a giant battery to back-up made-in-Ontario renewable power, eliminating the need to use gas-fired power plants for this purpose;

THEREFORE BE IT RESOLVED that the *[insert name of municipality]* requests the Government of Ontario to place an interim cap of 2.5 megatonnes per year on the greenhouse gas pollution from Ontario's gas-fired power plants and develop and implement a plan to phase-out all gas-fired electricity generation by 2030 to help Ontario and *[insert name of municipality]* meet their climate targets.

AND BE IT FINALLY RESOLVED that this resolution be sent to the Premier of Ontario, the Minister of Energy, Northern Development and Mines, the Minister of the Environment, Conservation and Parks, all local MPPs and the Association of Municipalities of Ontario.



Phasing-Out Ontario's Gas-Fired Power Plants:

A ROAD MAP

April 9, 2020




ONTARIO
CLEAN AIR
ALLIANCE
RESEARCH

Introduction

According to Ontario's Independent Electricity System Operator (IESO), **the greenhouse gas (GHG) pollution from Ontario's gas-fired power plants will increase by more than 300% by 2025 and by more than 400% by 2040** as the province uses gas to replace aging nuclear plants and to meet growing demand for electricity from population growth and increased electrification. If this occurs, Ontario will lose 35% of the pollution reduction benefits it achieved by phasing-out its dirty coal plants.

This report provides an alternative road map for how Ontario can phase-out its gas plants by importing Quebec waterpower and by investing in energy efficiency and cost-effective Made-in-Ontario renewable energy while meeting future electricity demand.

This report will show that if we ramp up our expenditures on energy efficiency and renewable energy and ramp down our expenditures on much higher cost nuclear re-build projects, we will be able to simultaneously phase-out the gas plants, achieve Ontario's 2030 climate target, move our province towards a 100% renewable electricity grid and lower our electricity bills.

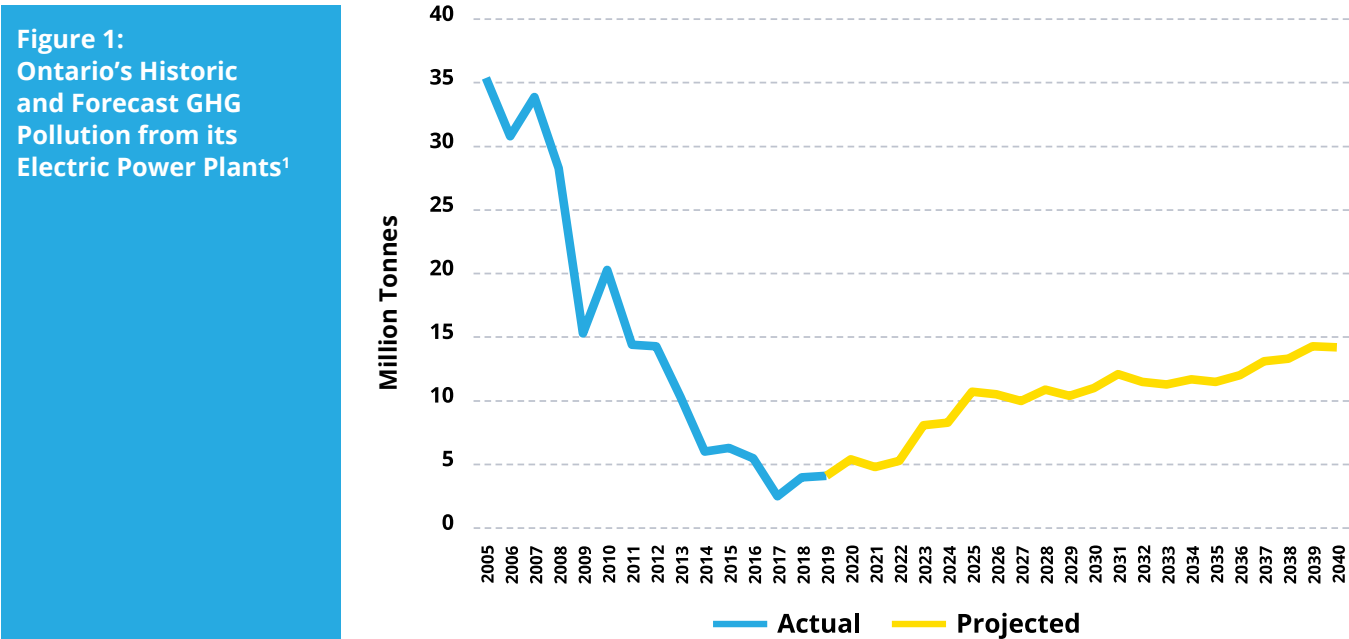


Thanks to the M.H. Brigham Foundation, the Green Sanderson Family Foundation and the Taylor Irwin Family Fund at the Toronto Foundation for their generous support.

Ontario Power Generation's Lennox Gas-Fired Power Plant, near Napanee.

Historic and Forecast GHG Pollution from Ontario's Electric Power Plants

As Figure 1 shows the **GHG pollution from our electricity system fell by 93% between 2005 and 2017** due to the phase-out of Ontario's coal plants. Specifically, it fell from 35.4 million tonnes in 2005 to 2.5 million tonnes in 2017.



Unfortunately, as Figure 1 reveals, in 2018 the GHG pollution from Ontario's power plants started to rise again – a rise that the IESO is forecasting will continue for the next 20 years. Specifically, the IESO is forecasting that the GHG pollution from Ontario's gas-fired power plants will rise by more than 300% by 2025 and by more than 400% by 2040, relative to the 2017 baseline.

The IESO's forecast is based on the following three assumptions.

- 1. Ontario's demand for electricity will rise by approximately 1% per year.²
- 2. The Pickering Nuclear Station will close in 2024.³
- 3. Virtually all of our need for new electricity resources due to rising demand and the closure of the Pickering Nuclear Station will be met by ramping up the output of the province's gas-fired power plants.⁴

The IESO's forecast is a reasonable assessment of the implications of the Ford Government's electricity plan, which is described on page 4.

The Ford Government's Electricity Plan

The Ford Government is planning to meet Ontario's electricity needs between 2020 and 2040 by:

1. **Ramping up the output of the province's existing gas-fired power plants;**⁵
2. **Re-building 10 of Ontario's aging nuclear reactors at a forecast cost of \$25.8 billion;**⁶
3. **Working with New Brunswick and Saskatchewan to develop and deploy small modular nuclear reactors;**⁷ and
4. **Upgrading Hydro One's transmission system to enable it to import up to 1,650 megawatts (MW) of firm power from Quebec by December 2022.**⁸

The Ford Government's plan does **not** include:

1. **Any new energy efficiency investments to reduce electricity demand post-2020⁹ ;**
2. **Any new electricity supply agreements with Hydro Quebec; or**
3. **Any new investments in Made-in-Ontario renewable electricity projects.**

Since new small modular nuclear reactors and re-building the Darlington and Bruce Nuclear Stations are the highest cost options to keep our lights on, the Ford Government's plan will lead to **rising electricity rates** as well as **rising GHG pollution**.

Enbridge's proposed fracked gas Hamilton pipeline



To help fuel the planned ramp up of Ontario's gas plants, Enbridge is seeking permission from the Ontario Energy Board **to build a large pipeline in Hamilton to enable it to import more fracked gas from Pennsylvania.**

In addition, the Hamilton pipeline would allow Pennsylvania fracked gas to flow through Canada to U.S. utilities in Maine and New Hampshire. According to a report prepared for Enbridge, this gas must be routed through Canada because U.S.

regulatory authorities will not permit the construction of new pipelines to deliver fracked Pennsylvania gas to New England.

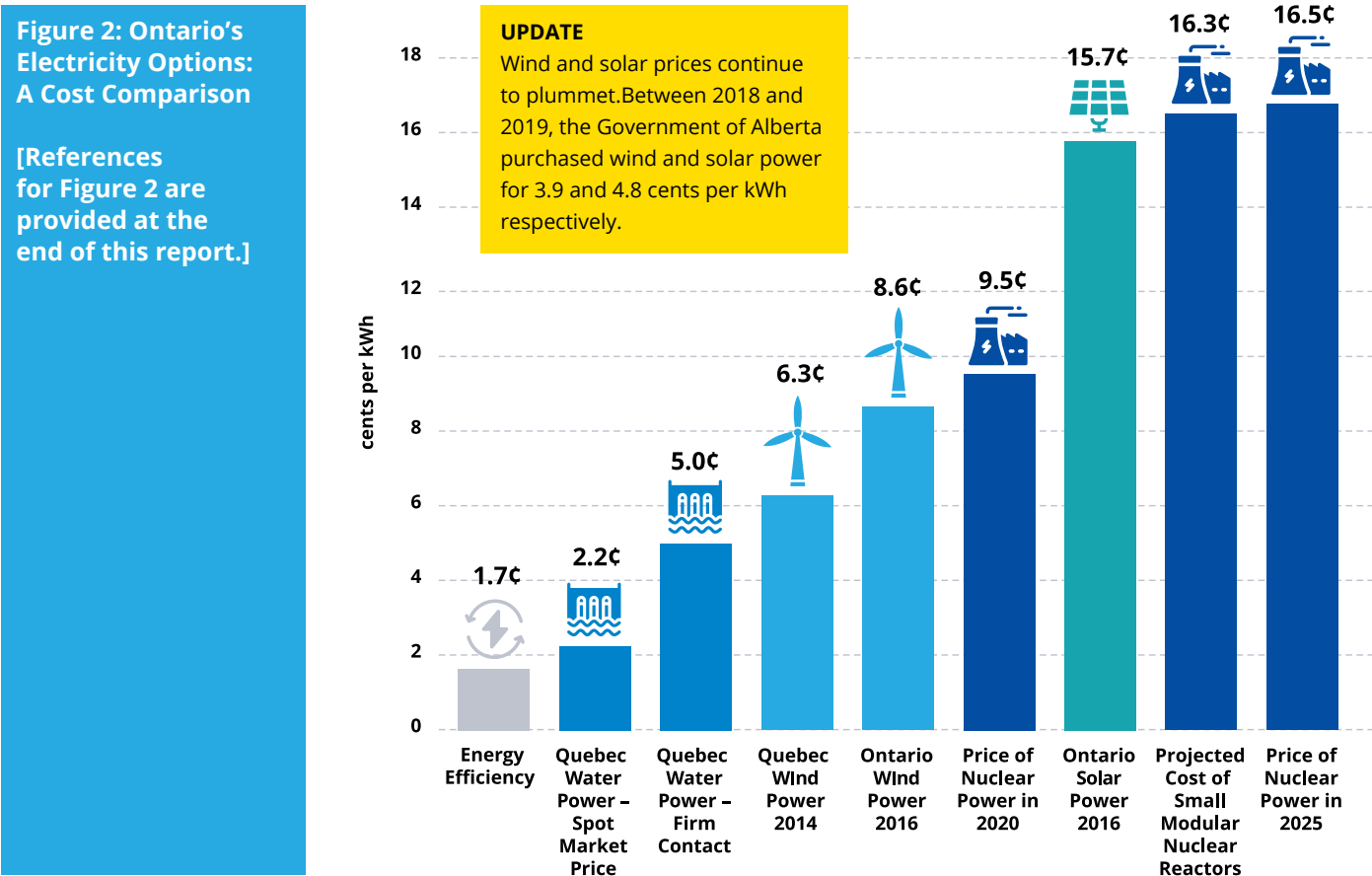
To add insult to injury, Enbridge's proposed pipeline is not financially self-sustaining. As Enbridge admits, its forecast revenues are \$120 million less than its forecast costs. Instead of proposing to raise rates for the Ontario gas plants and U.S. utilities the pipeline is designed to serve, **Enbridge is proposing to raise rates for all**

Canadian gas consumers by \$120 million to subsidize the cost of the pipeline.

The capital cost of the proposed Hamilton Pipeline is \$204 million. If Enbridge were to spend \$204 million on energy efficiency programs instead of the proposed pipeline, it could reduce its customers energy bills by \$963 million to \$3.4 billion and also reduce their GHG pollution.¹⁰

How Ontario can phase-out its gas plants and lower our electricity bills

Figure 2 compares the costs of various options to keep our lights on. Specifically, it shows that the Ford Government’s preferred nuclear options are significantly more costly than energy efficiency, Quebec power and Made-in-Ontario renewable electricity.



As Figure 2 shows, Ontario Power Generation's (OPG) price for nuclear power in 2020 is 9.5 cents per kilowatt-hour (kWh). **According to OPG, its price of nuclear electricity must rise to 16.5 cents per kWh by 2025 to pay for the re-building of the Darlington Nuclear Station.**

Small modular nuclear reactors are also a very high-cost option. The Canadian nuclear industry is forecasting that their cost will be **16.3 cents per kWh**. However, they note that if there is a 3% capital cost overrun, the cost will rise to 21.5 cents per kWh. They are hoping that the first commercial small nuclear reactor will be in-service by 2030, but currently no commercial designs have been approved in Canada and proponents have not explained what will be done with radioactive waste from these new reactors. (After 50 years of commercial operation of nuclear reactors, Canada still has no long-term storage site available).

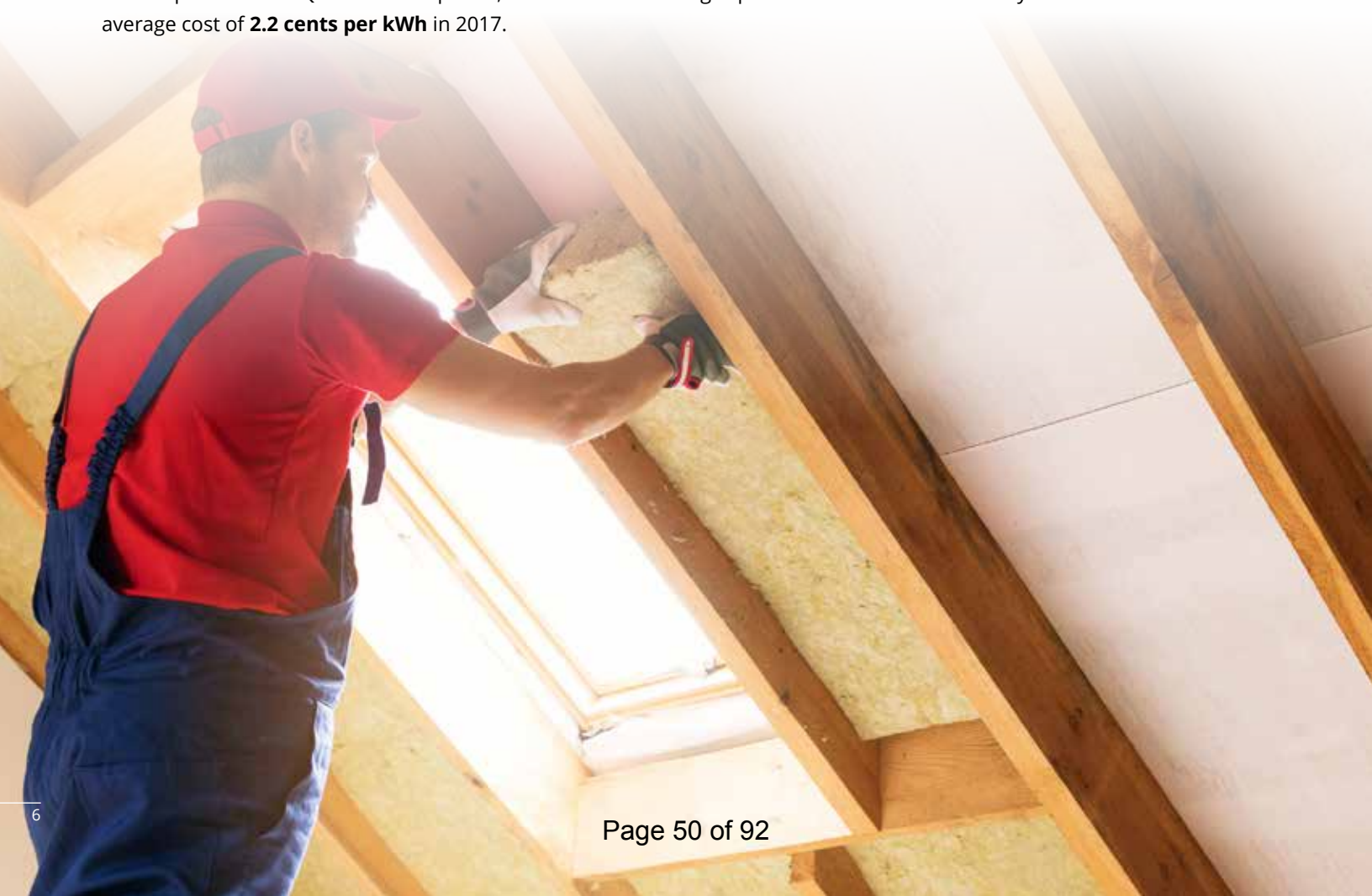
In contrast, in 2017, the IESO purchased electricity savings from residential, commercial and industrial consumers at an average cost of only **1.7 cents per kWh**, which is less than one-eighth OPG's forecast price of nuclear power in 2025.

Our lowest-cost source of renewable electricity is spot market purchases of Quebec water power, which had an average cost of **2.2 cents per kWh** in 2017.

Hydro Quebec is offering to sell us a firm supply of **waterpower at a price of only 5 cents per kWh** under a long-term contract. Hydro Quebec's proposed price for a 20-year firm supply is less than one-third of OPG's forecast price of nuclear electricity in 2025.

In the past, wind and solar were very high-cost sources of electricity supply, but in recent years their costs have fallen dramatically due to technological improvements and economies of scale. Ontario procured new wind and solar resources in 2016 for 8.6 and 15.7 cents per kWh respectively. However, the costs of these options have continued to fall and in 2018 the Province of Alberta **procured wind power for a cost of only 3.9 cents per kWh**; and in 2019 it **procured solar power at a cost of only 4.8 cents per kWh**. Bloomberg New Energy Finance is forecasting that the cost of wind and solar power will fall by an additional 48% and 63% respectively by 2050.¹¹

As a consequence, if Ontario ramps down its planned expenditures on high-cost nuclear reactor re-builds while it increases its imports of Quebec water power and invests in energy efficiency and Made-in-Ontario renewable electricity, it will be able to simultaneously phase-out its gas plants and lower our electricity bills.



Our Energy Efficiency Potential

In 2018 Ontario’s Independent Electricity System Operator and the Ontario Energy Board retained Navigant Consulting to estimate the potential for energy efficiency investments to reduce the demand for electricity at an average cost of 3.9 cents per kWh or less. Table 1 below summarizes their findings.

Table 1: Ontario’s Achievable Energy Savings for 3.9 cents per kWh or less¹²

Year	Energy Savings	Average Cost per kWh Saved
2023	6.9 billion kWh	2.7 cents per kWh
2030	17.1 billion kWh	3.3 cents per kWh
2038	23.8 billion kWh	3.9 cents per kWh

As Table 1 shows energy-efficiency investments could reduce Ontario’s electricity demand by 17.1 billion kWh per year by 2030 at an average cost of 3.3 cents per kWh. This is equivalent to 60% of the forecast output of Ontario’s gas plants in 2030. [See Table 3 below]

By 2038, energy efficiency investments could lower our electricity demand by 23.8 billion kWh. This is equivalent to 68% of the forecast output of Ontario’s gas plants in 2038.

But there is no reason why our energy efficiency investments should be capped at an average cost of 3.3-3.9 cents per kWh. **To minimize our electricity costs the Government of Ontario should pursue all energy efficiency investments that can keep our lights on at a lower cost than nuclear power.** As we have noted above, in 2020 OPG’s price of nuclear power is 9.5 cents per kWh and OPG says it will need to raise its price of nuclear electricity to 16.5 cents per kWh by 2025 to pay for the re-building of its aging Darlington nuclear reactors. If the Government of Ontario were to pay up to just 9.5 cents per kWh for electricity savings, it is reasonable to assume that the resulting reduction in our electricity demand would save more energy than Ontario’s gas plants are forecast to produce in 2030.



Quebec Water and Wind Power

Existing interconnections

As Figure 3 shows, there are seven interconnections between the Ontario and Quebec electricity transmission systems. Using these existing interties, Ontario can import 16.5 to 18.5 billion kWh per year from Quebec.¹⁴

In 2019, Ontario’ net electricity imports from Quebec were only 5.4 billion kWh.¹⁵ As a result, Ontario could increase its electricity imports from Quebec by up to 13.1 billion kWh per year using existing transmission lines. This is equivalent to 45% of Ontario’s forecast gas-fired electricity generation in 2030.¹⁶

Furthermore, by expanding its transmission links with Quebec, Ontario could import even more low cost, clean and safe renewable electricity.

Potential new interties

In 2017 the IESO issued a report that described three options to increase our ability to import power from Quebec. The report’s key findings are summarized in Table 2.

All of these potential new transmission lines would be built in existing Hydro One transmission corridors.¹⁸

If just one of these interties was built, our total import capability would rise to approximately 35 billion kWh per year, which would be equivalent to 122% of Ontario’s forecast gas-fired generation in 2030.¹⁹

Table 2: Potential new interties to allow Ontario to import more power from Quebec¹⁷

Option	Length	Peak Capacity	Maximum Annual Electricity Imports	Cost
New Intertie in Ottawa	20 km	2,000 megawatts (MW)	17.52 billion kWh	Approximately \$80 million
New Intertie near Beauharnois	100 km	2,000 MW	17.52 billion kWh	Approximately \$400 million
New Intertie at Chats Falls	350 km	2,000 MW	17.52 billion kWh	Up to \$1.4 billion

“

Quebec generates a large surplus of electricity, primarily from emissions free hydroelectric generating stations, and electricity prices in Quebec are the lowest in Canada. The proximity of Quebec to Ontario’s major cities presents an attractive opportunity for Ontario to meet its electricity needs with imports from Quebec.”¹³

-Financial Accountability Office of Ontario

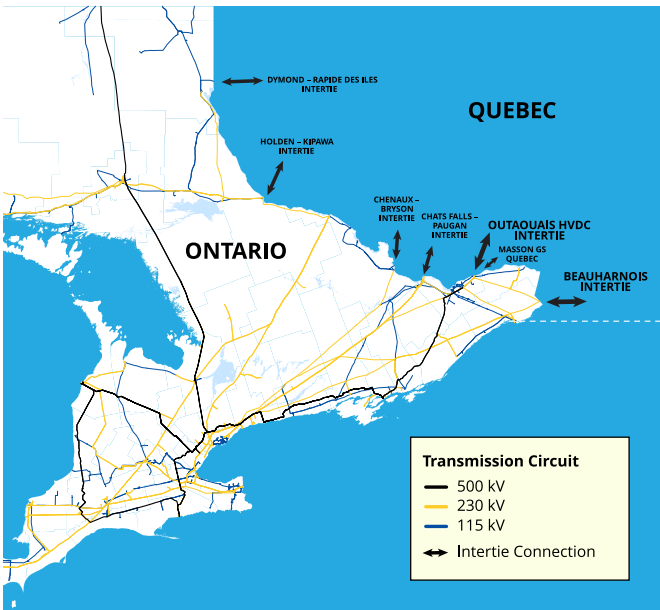


Figure 3: Existing Ontario-Quebec Interconnections²⁰

Quebec's existing exports

In 2019, Hydro Quebec exported 35 billion kWh of electricity at an average price of 4.3 cents per kWh.²¹ Most of Quebec's exports are spot market sales to the U.S., which could be easily diverted to Ontario.

Quebec energy efficiency investments can increase export potential

Quebec's electricity consumption per person is the highest in the world.²² As a consequence, Quebec could export even more waterpower by investing in low-cost energy efficiency measures, which would reduce the electricity bills of its domestic customers and free up even more of its existing heritage water power capacity for export.

According to Professor Pierre-Olivier Pineau of the University of Montreal, cost-effective energy efficiency investments could increase Quebec's export potential by approximately 30 billion kWh per year.²³

New wind power projects can increase export potential

Hydro Quebec prices are low thanks to its heritage waterpower facilities. But developing new hydro dams would be expensive and environmentally damaging.

Fortunately, Quebec's lowest cost source of new electricity is now wind power.²⁴ Quebec has enormous wind power potential and could produce approximately 300 billion kWh of wind power per year at a cost of approximately 6 cents per kWh.²⁵ That is, Quebec's wind power potential is more than double Ontario's total annual electricity consumption.

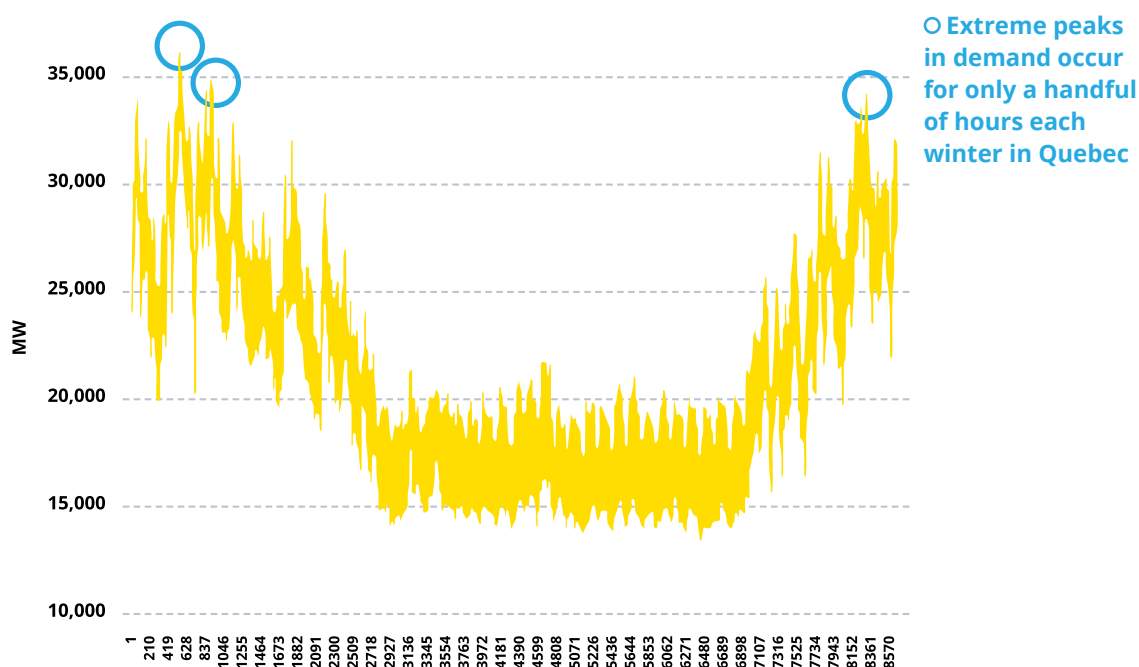
Because of its large system of waterpower reservoirs that can be operated like giant batteries (water stored when wind is blowing, released to generate power when it is not), Quebec can turn intermittent wind power into firm exportable power, available 24/7.

Availability of Quebec power

According to a spokesperson for Canada's nuclear industry, Quebec power is not a viable option for Ontario since it is not available in the winter.²⁶ Fortunately, this claim has no basis in fact.

Figure 4 shows Quebec's demand for electricity during every hour of the year from January to December in 2013.

Figure 4: Hydro Quebec's 2013 Hourly Demand for Electricity²⁷



As Figure 4 shows Quebec’s demand for electricity spikes sharply upwards on a few very cold winter days. When these needle peaks occur Quebec may not have power available for export. But these needle peaks last for less than 1% of the hours of the year. As a result, **during at least 99% of the hours of the year Quebec has surplus power available for export.**

In 2019 Hydro Quebec introduced time-of-use pricing for its residential and business customers to provide them with a financial incentive to reduce their electricity demands

on very cold winter days.²⁸ By ramping up its energy conservation and efficiency programs and by providing its customers with financial incentives to reduce their electricity demands during very cold winter hours, Hydro Quebec can ensure that it will be able to export power to Ontario and the U.S. during 100% of the hours of the year.

In this context, it is important to remember that nuclear generating stations are not available for 100% of the hours of the year either. In fact, **the Darlington Nuclear Station’s average annual capacity factor is only 83%.**²⁹

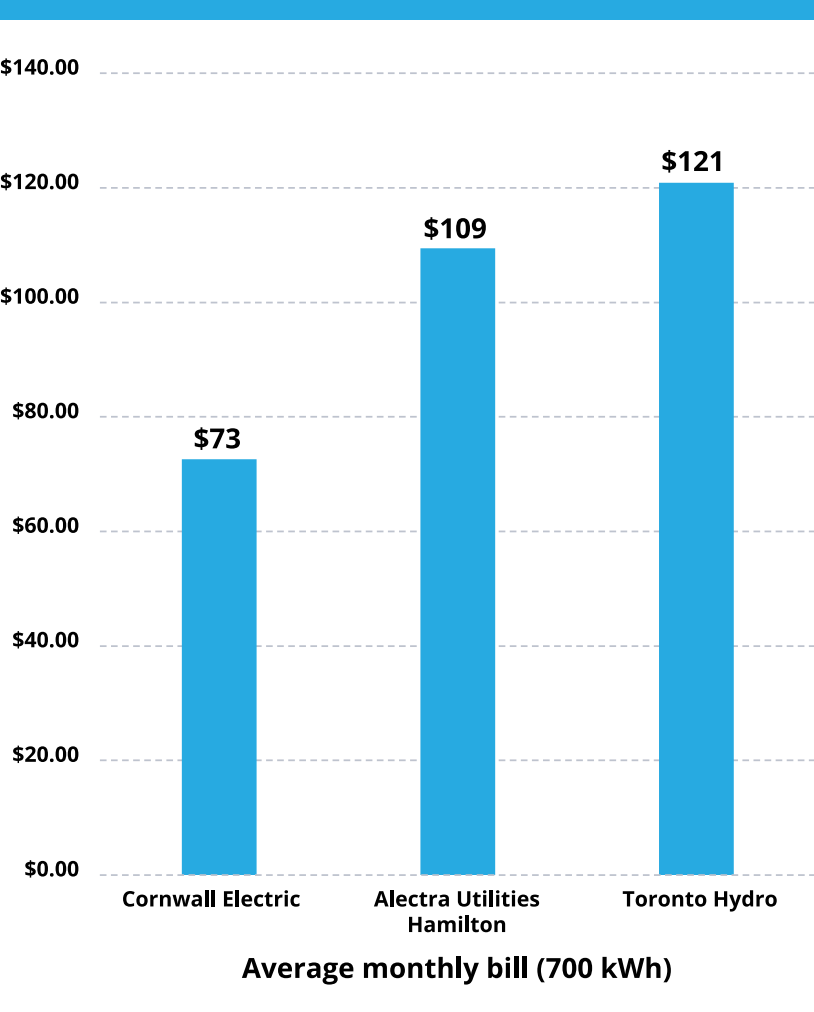
City of Cornwall

The City of Cornwall’s electricity rates demonstrate the economic benefits of Quebec waterpower. **Cornwall has obtained 100% of its electricity from Hydro Quebec for 50 years and it has the lowest electricity rates in Ontario.**

As Figure 5 shows the average residential electricity bills in Hamilton (Alectra Utilities) and Toronto are 50% and 66% higher respectively than Cornwall’s.

In addition, during the 2003 blackout the lights did not go out in Cornwall, whereas in the rest of Ontario it took more than eight days to return our electricity system to full power due to our dependency on nuclear power.³¹

Figure 5: Average Monthly Residential Electricity Bills³⁰



Ontario Wind and Solar Power

Ontario also has a large potential supply of wind and solar energy that could be developed to help phase-out Ontario's gas-fired power plants. For example, a report prepared for the Ontario Power Authority identified 64 potential off-shore wind power sites in the Great Lakes that could produce 111.5 billion kWh of electricity per year.³² This is equivalent to 82% of Ontario's total electricity consumption in 2019.³³

However, since the wind doesn't always blow and the sun doesn't always shine, these intermittent renewable energy resources must be combined with storage systems if they are to displace gas-fired generation during every hour of the year.

According to a recent Massachusetts Institute of Technology (MIT) report, Hydro Quebec's existing hydro-electric reservoirs are the best storage (load balancing) option for wind and solar power in New England and New York State. For example, when wind power production is above average in the U.S northeast, the surplus wind energy could be exported to Quebec to keep the lights on in Montreal, and as a consequence Hydro Quebec could store more water in its reservoirs. Conversely when U.S. wind power generation is below average, Hydro Quebec could use the extra water in its reservoirs to produce hydro-electricity for export to the U.S.

"Two-way trading of electricity with Quebec helps Northeastern states balance renewable intermittency at multiple time scales, mitigating the daily mismatch between solar and evening peak demand, the synoptic (multi-daily) mismatch between demand and wind output, and the seasonal mismatch between high summer demand and low summer wind output."³⁴

According to the MIT report, an extra 4,000 megawatts of electricity transmission capacity needs to be built between Quebec and New England to enable New England to take full advantage of Quebec's hydro-electric reservoirs to balance its intermittent wind and solar generation.

This extra transmission capacity would permit New England to fully decarbonize its electricity grid and it would lower New England's and Quebec's costs of achieving a zero-emissions power system by 17 to 28%.³⁵

It is reasonable to assume that Hydro Quebec's reservoirs are also the lowest-cost storage option for Ontario's wind and solar generation.³⁶

The good news is that Hydro Quebec wants to expand its transmission links with Ontario and the U.S. northeast so that its hydro-electric reservoirs can provide load balancing for wind and solar power in Ontario, New York and New England.

“

"To step up our exports and help decarbonize northeastern North America, we need to build new transmission infrastructure and promote the load balancing capability of our hydroelectric generating fleet as a means of supporting the growth of intermittent renewables such as wind and solar power."³⁷

- Hydro Quebec

Stopping Gas-Fired Electricity Exports

In 2019 Ontario exported approximately 3.4 billion kWh of gas-fired electricity.³⁸ This represents 35% of the total output of Ontario's gas plants in 2019. Ontario can reduce its greenhouse gas pollution by curtailing its exports of gas-fired electricity.

Ontario's 2030 Climate Target

The Government of Ontario has promised to reduce Ontario's greenhouse gas pollution by 30% by 2030 relative to the 2005 level. But according to the Ontario's Auditor General, the province does not have a plan that will achieve even this modest goal. Specifically, according to the Auditor General, Ontario needs to implement measures that will reduce Ontario's GHG pollution by an additional 7.3 to 14 million tonnes per year to meet its 2030 climate target.³⁹

As Table 3 shows the forecast GHG pollution from Ontario's gas-fired power plants in 2030 is 11 million tonnes. Therefore, a phase-out of Ontario's gas plants would provide our province with all or virtually all of the incremental GHG pollution reductions that it needs to achieve its 2030 climate target.

Table 3: Historic and Forecast GHG Pollution and Electricity Generation from Ontario's Gas-Fired Power Plants⁴⁰

Year	2017	2018	2019	2020	2025	2030	2040
GHG Pollution (Million Tonnes)	2.5	4.0	4.1	5.4	10.7	11.0	14.2
Electricity Generation (Billion kWh)	5.9	9.6	9.5	13.6	28.0	28.6	37.0



Phasing-Out Ontario's Gas-Fired Power Plants

Ontario can phase-out its gas plants and lower its electricity costs by aggressively pursuing all of our energy efficiency and renewable energy options that can keep our lights on at a lower cost than continuing to operate the Pickering Nuclear Station and re-building 10 of the Darlington and Bruce Nuclear Stations' aging reactors.

Therefore, we recommend that the Government of Ontario take the following actions to achieve: i) a complete gas plant phase-out by 2030; and ii) an interim 2.5 million tonne per year cap on the gas plants' GHG pollution as soon as possible.

1. **Direct the IESO to maximize its spot market purchases of Quebec water power before it dispatches gas-fired generation.**
2. **Direct the IESO to stop its spot market gas-fired electricity exports (except for emergency exports).**
3. **Direct the IESO to pay residential, commercial, institutional and industrial consumers up to the price of nuclear electricity (e.g., 9.5 cents per kWh in 2020) for each kWh they save by investing in energy efficiency.**
4. **Direct Hydro One to build a new 20 km transmission line in Ottawa, to increase our ability to import Quebec power by 17.5 billion kWh per year, at a cost of approximately \$80 million.**
5. **Direct the IESO to seek to negotiate long-term electricity supply and storage (load balancing) contracts with Hydro Quebec to help phase-out our gas plants and to meet our electricity needs at a lower cost than re-building up to 10 nuclear reactors.**
6. **Put a moratorium on the re-building of our aging nuclear reactors while the IESO seeks to negotiate long-term electricity supply and storage contracts with Hydro Quebec.**
7. **Direct the IESO to purchase Made-in-Ontario wind and solar power that can keep our lights on at a cost that is less than the price of nuclear electricity (e.g., 9.5 cents per kWh in 2020).**



Endnotes

- 1 IESO, *Annual Planning Outlook*, (January 2020), page 32.
- 2 *Annual Planning Outlook*, page 2.
- 3 *Annual Planning Outlook*, page 10.
- 4 *Annual Planning Outlook*, page 21.
- 5 *Annual Planning Outlook*, page 21.
- 6 *Annual Planning Outlook*, page 11; and *Ontario's Long-Term Energy Plan 2017*, pages 45 & 46.
- 7 Government of Ontario, Newsroom, "Premier Ford, Premier Higgs and Premier Moe Sign Agreement on the Development of Small Modular Reactors", (December 1, 2019).
- 8 Hydro One's forecast cost of this upgrade is \$23.4 million. Email to Jack Gibbons from Leonard Kula, Chief Operating Officer, IESO, (February 14, 2019); and Ontario Energy Board Docket No. EB-2019-0082, ISD SS-06, pages 1 – 4.
- 9 *Annual Planning Outlook*, pages 2 and 8.
- 10 Ontario Clean Air Alliance Research, *Enbridge's Hamilton Pipeline: More Greenhouse Gas Pollution and Higher Gas Rates*, (February 4, 2020).
- 11 Bloomberg New Energy Finance, *New Energy Outlook 2019: Executive Summary*.
- 12 Navigant Consulting Ltd., *2019 Integrated Ontario Electricity and Natural Gas Achievable Potential Study*, (September 13, 2019), page v.
- 13 Financial Accountability Office of Ontario, *Electricity Trade Agreement: An Assessment of the Ontario-Quebec Electricity Trade Agreement*, (Spring 2018), page 4.
- 14 IESO, *IESO Response to Questions from the Ontario Clean Air Alliance*, (November 2014).
- 15 In 2019 Ontario's total imports from Quebec were 5.9 billion kWh, however 0.5 billion kWh were re-exported to the U.S. Email to Jack Gibbons from David Barrett, Supervisor, Customer Relations, Independent Electricity System Operator, (February 12, 2020).
- 16 The IESO is forecasting that Ontario's total gas-fired electricity generation in 2030 will be 28.6 billion kWh. Email to Jack Gibbons from David Barrett, Supervisor, Customer Relations, Independent Electricity System Operator, (February 6, 2020).
- 17 According to the IESO report, the 350 km transmission line option could cost up to \$1.4 billion, we have estimated the cost of the other two transmission options by assuming that their costs per km would be the same as the 350 km option. IESO, *Ontario-Quebec Interconnection Capability: A Technical Review*, (May 2017), pages 24 to 27.
- 18 IESO, *Ontario-Quebec Interconnection Capability: A Technical Review*, (May 2017), pages 25 to 27.
- 19 The IESO is forecasting that Ontario's total gas-fired electricity generation in 2030 will be 28.6 billion kWh. Email to Jack Gibbons from David Barrett, Supervisor, Customer Relations, Independent Electricity System Operator, (February 6, 2020).
- 20 IESO, *Ontario-Quebec Interconnection Capability: A Technical Review*, (May 2017), page 10.
- 21 Hydro Quebec, *Annual Report 2019*, page 97.
- 22 Jean-Thomas Bernard & Jean-Yves Duclos, *Quebec's Green Future: The Lowest-Cost Route to Greenhouse Gas Reductions*, C.D. Howe Institute Background No. 118, (October 2009), page 2.
- 23 Chaire de gestion du secteur de l'énergie, HEC Montreal, *2016 Etat De L'Energie Au Quebec*, page 28.
- 24 Equiterre and Ontario Clean Air Alliance Research, *Higher Profits and Lower Bills: A New Electricity Strategy for Hydro Quebec*, (July 14, 2010), pages 2 and 3; and Hydro Quebec, *Press Release*, "Calls for tenders for the purchase of 450 MW of wind power: Hydro-Quebec Distribution accepts 3 bids totaling 446.4 MW", (December 16, 2014).
- 25 Quebec has the potential to produce 299 billion kWh of wind energy per year from sites that are within 25 km of Hydro Quebec's existing transmission lines. In 2014 Hydro Quebec contracted for wind energy at an average cost of 6.3 cents per kWh. Since 2014, due to technological improvements, the cost of wind energy has fallen significantly and in 2019 Bloomberg New Energy Finance forecast that the cost of wind power will fall by an additional 48% by 2050. See: Helimax Energie Inc., *Etude Sur L'Evaluation Du Potential Eolien, De Son Prix De Revient Et Des Retombees Economiques Pouvant En Decouler Au Quebec*, (2004), page vi; Hydro Quebec, *Press Release*, "Calls for tenders for the purchase of 450 MW of wind power: Hydro Quebec Distribution accepts 3 bids totalling 446.4 MW", (December 16, 2014); and Bloomberg New Energy Finance, *New Energy Outlook 2019: Executive Summary*.
- 26 Taylor McKenna, "Don't overlook Ontario's nuclear advantage", *Hamilton Spectator*, (February 6, 2020).
- 27 Pierre-Olivier Pineau, Professor, HEC Montreal, "Can Ontario and Quebec benefit from more electricity market integration? A long-term perspective", Power Point Presentation for York University Conference, January 9, 2015.
- 28 Hydro Quebec, *Annual Report 2019*, page 11.
- 29 Ontario Energy Board Docket No. EB-2013-0321, Undertaking J14.3.

- 30 Cornwall Electric's residential rate schedule is posted on the CornwallElectric.com web site. We used the OEB.ca bill calculator to calculate the typical residential bills in Hamilton and Toronto.
- 31 The August 2003 blackout began on August 14th at 4:11 p.m. Ontario's power emergency did not end until 8 p.m. on August 22nd. Independent Electricity Market Operator, *Participant News*, "IMO Says Ontario Residents Deserve Special Thanks", (August 22, 2003); and Ontario Ministry of Energy, *August 14, 2003 Outage Report*.
- 32 Ontario Power Authority, *Integrated Power System Plan*, Exhibit D, Tab 5, Schedule 2, Attachment 1, pages 4, 23 & 25.
- 33 In 2019 Ontario consumed 135.1 billion kWh. See IESO, *News Release*, "2019 Year in Review", (January 30, 2020).
- 34 Emil Dimanchev, Joshua Hodge and John Parsons, *Two-Way Trade in Green Electrons: Deep Decarbonization of the Northeastern U.S. and the Role of Canadian Hydropower*, Massachusetts Institute of Technology Center for Energy and Environmental Policy Research, (February 2020), page 53.
- 35 *Two-Way Trade in Green Electrons: Deep Decarbonization of the Northeastern U.S. and the Role of Canadian Hydropower*, page 1.
- 36 Paul Burke, *Post-Pickering Technical Discussion Paper*, Pollution Probe, (January 2020), pages 17 and 18.
- 37 Hydro Quebec, *Annual Report 2019*, page 31.
- 38 <https://www.cleanairalliance.org/wp-content/uploads/2020/04/OCAA-2019-GFG-Export-Est-Apr-2020-v4.pdf>
- 39 Auditor General of Ontario, *Climate Change: Ontario's Plan to Reduce Greenhouse Gas Emissions*, (2019), page 123.
- 40 *Annual Planning Outlook*, page 32; IESO, *News Release*, "2019 Year in Review", (January 30, 2020) and email to Jack Gibbons from David Barrett, Supervisor, Customer Relations, IESO, (February 6, 2020).

Figure 2 notes

Energy efficiency: In 2017 the Independent Electricity System Operator's (IESO) average levelized unit energy cost (LUEC) of procuring a kWh of electricity savings was 1.69 cents. Independent Electricity System Operator, *2017 Report on Energy-Efficiency Activities*, page 8.

Quebec water power – spot market price: In 2017 the average price of Ontario's spot market electricity purchases from Quebec was 2.2 cents per kWh. Financial Accountability Office of Ontario, *Electricity Trade Agreement: An Assessment of the Ontario-Quebec Electricity Trade Agreement*, (Spring 2018), page 7.

Quebec water power – firm contract: On June 22, 2017 Hydro Quebec offered to sell Ontario 8 billion kWh per year, for 20 years, at a price of 6.12 cents per kWh. In August 2017 Hydro Quebec lowered its proposed price to 5 cents per kWh, but the Government of Ontario still refused to accept the offer. Letter from Steve Demers, Vice President, Hydro Quebec to Peter Gregg, CEO, Independent Electricity System Operator, (June 22, 2017); and Pierre Couture, "Hydro Quebec l'Ontario en ligne de mire", *Journal de Montreal*, (August 16, 2017). In 2017 the average price of Hydro Quebec's short and long-term electricity exports was 4.7 cents per kWh. Hydro Quebec, *Annual Report 2017*, page 76.

Quebec wind power: In 2014 Hydro Quebec used a competitive procurement process to contract for wind power at an average generation cost of 6.3 cents per kWh. Hydro Quebec, *Press Release*, "Calls for tenders for the purchase of 450 MW of wind power: Hydro-Quebec Distribution accepts 3 bids totalling 446.4 MW", (December 16, 2014).

Ontario wind power: IESO, *News Release*, "IESO Announces Results of Competitive Bids for Large Renewable Projects," (March 10, 2016).

Price of Nuclear Power in 2020: Ontario Power Generation, *Management's Discussion and Analysis: 2019 Third Quarter Report*, page 15.

Ontario solar power: IESO, *News Release*, "IESO Announces Results of Competitive Bids for Large Renewable Projects," (March 10, 2016).

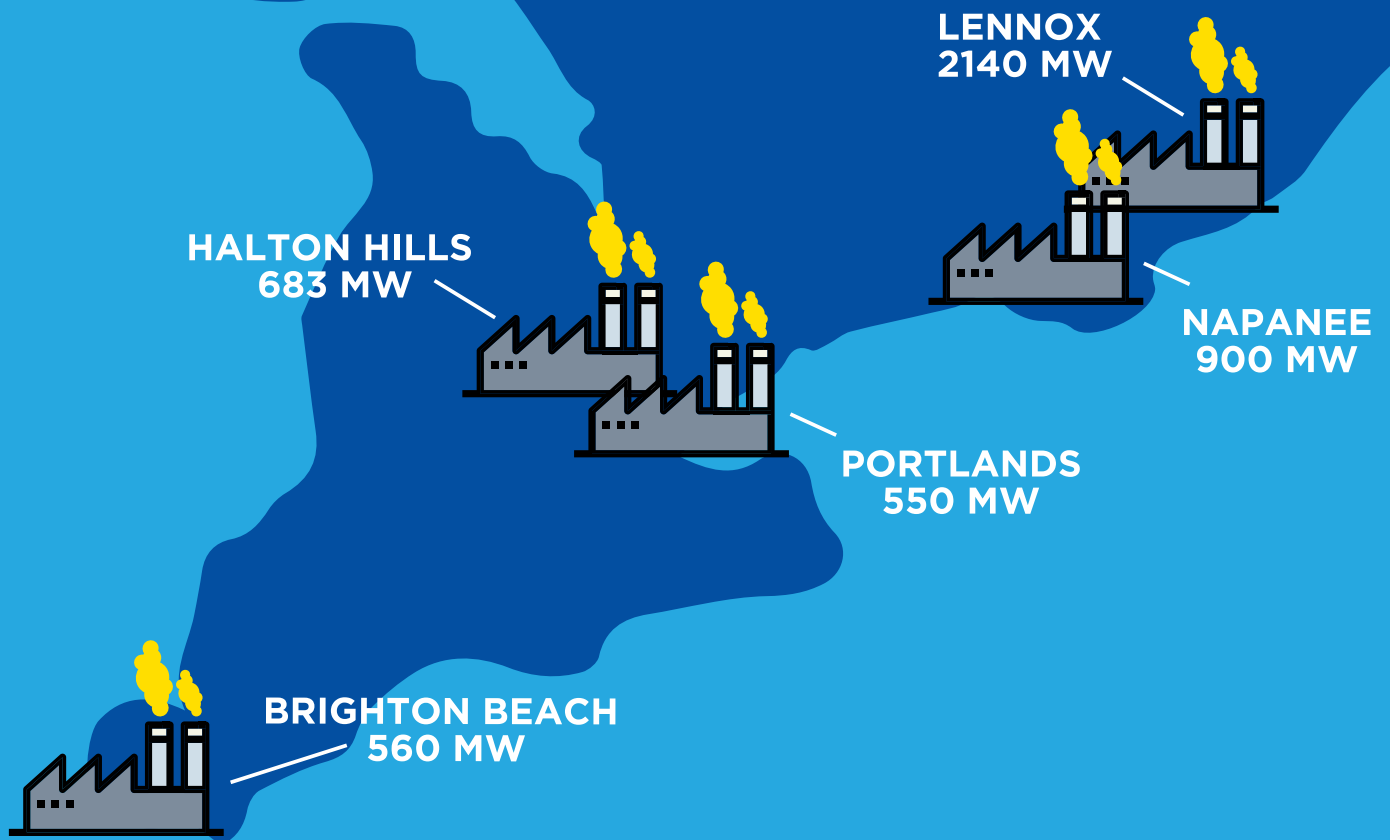
Small Modular Reactor: The Canadian nuclear industry is forecasting that the cost of electricity from a small modular reactor (SMR) will be 16.3 cents per kWh; however they note that if there is a 3% capital cost overrun the cost will rise to 21.5 cents per kWh. They are hoping that the first commercial SMR will be in-service by 2030. Canadian Small Modular Reactor Roadmap Steering Committee (2018), *A Call to Action: A Canadian Roadmap for Small Modular Reactors*, pages 35 and 54.

Price of Nuclear Power in 2025: Ontario Power Generation has told the Ontario Energy Board that it will need to raise its price of nuclear power to 16.5 cents per kWh in 2025 to pay for the re-building of the Darlington Nuclear Station. Ontario Energy Board Docket No. EB-2016-0152, Exhibit N3, Tab 1, Schedule 1, Attachment 2, Table 14.

Alberta wind power: In 2018, the Government of Alberta used a competitive bidding process to obtain 763 megawatts (MW) of wind power at an average price of 3.9 cents per kWh. Government of Alberta, *News Release*, "Wind projects create jobs, Indigenous partnerships", (December 17, 2018).

Alberta solar power: In 2019, the Government of Alberta used a competitive bidding process to obtain up to 146,000 megawatt-hours of solar electricity per year at an average price of 4.8 cents per kWh. Government of Alberta, *News Release*, "Alberta-based solar power on the rise", (February 15, 2019).

Ontario Power Generation's Gas Plants



ONTARIO
CLEAN AIR
ALLIANCE
RESEARCH

DRAFT MOTION FOR CONSIDERATION AT SCCAC MEETING OF DEC 2, 2020

WHEREAS the Ontario Clean Air Alliance is asking the Town of Cobourg to request the Government of Ontario to place an interim cap of 2.5 megatonnes per year on the greenhouse gas pollution from our gas-fired power plants and to develop and implement a plan to phase-out all of our gas-fired electricity generation by 2030 to help Ontario and the Town of Cobourg meet their climate targets; and

WHEREAS Cobourg acknowledged in declaring a Climate Emergency on December 2, 2019 that we are facing an unprecedented climate crisis requiring unprecedented climate mitigation measures; and

WHEREAS if we are to reduce greenhouse gas emissions at the rate necessary to protect human civilization we cannot afford to invest in infrastructure supporting the use of GHG emitting fossil fuel but instead must direct these resources to maximizing energy efficiency and the use of renewable energy; and

WHEREAS the Provincial Auditor in her recent *2000 Value-for-Money Audit: Reducing Greenhouse Gas Emissions from Energy Use in Buildings* report states the Ontario risks not meeting its GHG emission reduction targets in part because it is not reducing the use of natural gas through better initiatives to increase energy efficiency in buildings, and through developing renewable energy. The auditor general notes that in the Province buildings are the third highest source of GHG emissions after transportation and industry; and

WHEREAS the Auditor in the same report states that “According to research from the University of Oxford, building energy retrofits are one of the most cost-effective measures to deliver both economic and climate goals during the post-COVID recovery. Research by a global management consulting company has found that, following the 2008 recession, three times as many jobs were created by stimulus investments in low-carbon projects, such as building retrofits, compared to fossil-fuel projects (on a per-dollar basis)”.

NOW THEREFORE BE IT RESOLVED THAT the Sustainability and Climate Change Advisory Committee strongly recommends to the Committee of the Whole that they make such request of the Government of Ontario as proposed by the Ontario Clean Air Alliance.

DRAFT (for Review by SCCAC at Mar 5/20 Mtg)

Presentation to the Parks and Recreation Advisory Committee – Carrying out Mandate Through a Climate Emergency Lens

By the Sustainability and Climate
Change Advisory Committee (SCCAC)

We are facing a Climate Crisis



Why 60% Below 2005 Levels?

- Canada 9th highest in CO2 emissions (from fuel combustion)
- 4th highest per capita (per person)
- –14.9T compared to 1.6T for India; or to colder climates Germany 8.9T; Poland 7.7T
- Ontario 2nd highest emitter of Canadian provinces: 159Mt CO2 eq. vs. Quebec (3rd highest) at 78 Mt CO2 eq.
- Canada's Paris Agreement – 30% below 2005 levels by 2030- signed on by FCM members including Cobourg
- Won't achieve GHG reduction levels required to stay within 1.5 degrees C increase

Thinking globally, acting locally

- Global warming is affecting all communities, perhaps especially small communities, and we all share responsibility for tackling the problem at its source: greenhouse gas emissions.
- Cities have long been recognized as necessary partners in any effective response to global warming, but small and rural communities also have a unique and critically important role to play.
- Local actions to reduce greenhouse gas emissions almost always reinforce community aspirations and objectives for social and economic development.
- There is no “one size fits all” for small community action on climate change –local circumstances define the opportunities for reducing emissions while growing and improving your community.

Judy Smith, September 2019

Local government investments

- Local government fuel and electricity consumption for their own buildings, vehicles and operations makes a significant contribution to community greenhouse gas emissions –this is especially true for smaller communities where local government facilities represent a larger share of community energy use than they do in cities.
- Ownership, control or influence over utilities, hospitals, schools, social housing, retirement homes, libraries, community centres, and other agencies extends the local government's impact on community greenhouse gas emissions well beyond its own immediate operations.
- Local government investment in public transit and infrastructure for walking and cycling can go a long way to reducing automobile dependence and the associated energy use and greenhouse gas emissions.

Judy Smith, September 2019

Opportunities to lead community climate mitigation

- The permitting process for new buildings and renovations provides an opening for local government to promote energy efficiency and renewable energy.
- Land use plans and zoning influence the number and length of trips citizens make, and the level of automobile dependence. Regulation and planning of land use and the built environment also influences the potential for renewable energy, district energy and microgrids, all of which contribute to lower greenhouse gas emissions.
- Organic waste management affects landfill gas emissions, the recovery of clean energy from landfill gas or anaerobic digestors. Waste reduction, reuse and recycling of paper, metals, plastics, and glass saves large amounts of manufacturing energy consumption and greenhouse gas emissions.
- Water supply and sewage treatment infrastructure is a significant energy use in the community, and the facilities provide opportunities for clean energy recovery.

Judy Smith, September 2019

Municipalities Key Areas

- Federation of Canadian Municipalities (FCM) – municipalities have influence over approx. 50% of GHG emissions in Canada.
 - Land use/site planning and densities
 - Buildings
 - Local transportation
 - Water and wastewater service

SCCAC Recommendations

- Council declare a climate emergency
- Set GHG emission reduction target of minimum 60% below 2005 levels by 2030; net zero by 2050
- Communicate declaration to Cobourg Community
- Develop a Green Development Standard (GDS)
- Develop a Community Improvement Plan (CIP)
- Ensure sufficient funds and staff for GDS and CIP
- Provide allowance for Climate Change Action Plan in 2020 budget
- Update Cobourg's Strategic Plan

Sustainability Definition

“Sustainability is environmental, economic, social and cultural actions that meet the needs of the present without compromising the ability of future generations to meet their own needs”.



The Corporation of the
Town of Cobourg

Resolution

Moved By

Last Name Printed

Bureau
Bureau

Resolution No.:

Seconded By

Last Name Printed

Beatty
Beatty

Council Date:

January 13, 2020

WHEREAS at the Committee of the Whole Meeting on January 6, 2020, Council considered a Memo from the Secretary of the Sustainability and Climate Change Advisory Committee, regarding the definition of Sustainability;

NOW THEREFORE BE IT RESOLVED THAT Council endorse the definition of 'Sustainability' from the Sustainability and Climate Change Advisory Committee, as follows:

"Sustainability is environmental, economic, social and cultural actions that meet the needs of the present without compromising the ability of future generations to meet their own needs".

Climate Emergency Declaration



The Corporation of the
Town of Cobourg

Resolution

Moved By

Last Name Printed

Bureau

Resolution No.:

Seconded By

Last Name Printed

DARLING

Council Date:

December 2, 2019

WHEREAS at the Committee of the Whole Meeting on November 25, 2019, Council considered a Memo from the Secretary of the Sustainability and Climate Change Advisory Committee, regarding a Motion to Declare a Climate Emergency and Accelerate GHG Reduction Actions in the Town of Cobourg;

WHEREAS Municipalities have a significant role to help change and mitigate the contributions to climate change through responsible planning and budgeting; and

WHEREAS 462 Canadian Municipalities have declared a Climate Emergency including many in Ontario, with some setting ambitious emission reduction targets such as net zero emissions by 2030; and

WHEREAS in Council's Strategic Plan it states: "the Town of Cobourg will be good stewards and practice sustainable actions"; and

WHEREAS the Town of Cobourg's Official Plan provides a general policy framework for the conservation of water, air quality, energy and other resources and for the reduction of waste, as well as environmental stewardship, monitoring and education, and for the development of a "culture of conservation" which reflects the principle of sustainable development (Bruntland Commission); and

WHEREAS the Cobourg's Official Plan specifies that the Town of Cobourg shall develop an Integrated Community Sustainability Plan (ICSP) which will be designed with specific achievable actions for the community and will build on existing initiatives; and

NOW THEREFORE BE IT RESOLVED THAT Council of the Town of Cobourg declare a Climate Emergency conveying its recognition that we are facing an unprecedented crisis requiring unprecedented climate mitigation measures; and

FURTHER THAT, in response to this Climate Emergency, Council deem the need to reduce the effects that the Town of Cobourg is contributing to the climate crisis by way of the following actions:

1. That Council create a staff position on a one (1) year contract basis, under the supervision of the Chief Administrative Officer to develop a Request for Proposal (RFP) for the Integrated Community Sustainable Plan (ICSP) and Green Design Standards and manage the project through to completion;

2. Refer all costs associated with the contract position and Integrated Community Sustainability Plan (ICSP) to the 2020 budget deliberations and have Staff prepare a budget estimate for the January 2020 budget meeting; and
3. Update Council's Strategic Plan to allow Staff to reprioritize other work commitments to ensure that staff resources will be sufficient to commence work on the Integrated Community Sustainability Plan prior to the scheduled start of 2021 as outlined in Council's current, approved Strategic Plan.

Initial Suggestions

1. Increase number of trees planted

The tree planting program currently plants trees on town property where they have been cut down to accommodate service wires. Could these trees be planted on the owners property instead, away from overhead wires?

Plant more native species of trees such as Black Ash, Black Oak, Eastern Black Walnut.

Suggestions - continued

2. Assets

Replace machinery, tools, and appliances used by Public Works and Parks and Recreation with electric ones.

For example, a battery powered John Deere 590 54" riding lawnmower can be converted to a snow removal machine with the attachment of a plow.

Suggestions - continued

3. Parkland

Replace lawn that is not in repeat high traffic areas with white clover. In these areas, the clover can be mixed in with high traffic grass.

Suggestions - continued

4. Venues in Cobourg

The town of Cobourg should move to 0 waste at these events. When a venue application is made, the applicant must demonstrate how they will produce 0 waste. Guidelines on how this can be achieved could be developed and attached to the venue application.

Suggestions - continued

5. Electric Outlets

Ensure the installment for more outlets for electric cars in parking areas near parklands.

Questions and Next Steps

Questions?

Discussion:

- What can Parks and Recreation Advisory Committee do to apply climate emergency lens now
- How can the SCCAC help

DRAFT (for review by the SCCAC at March 5/20 Mtg)

Presentation to The Planning and Development Advisory Committee of Cobourg - Carrying out Mandate Through A Climate Emergency Lens

**By the Sustainability and Climate Change
Advisory Committee (SCCAC) (vs 5)**

Purpose: Support Committees to Apply Climate Emergency Lens

- SCCAC 2020 work plan approved by Council in 2019, contained an objective to support other Advisory Committees to carry out their mandate through a climate lens
- On Feb 3, 2020, Council approved a Motion to authorize the SCCAC and request other Advisory Committees to work with the SCCAC to discuss the climate emergency we are facing, and to develop guidance on measures the respective committees would consider when fulfilling their mandate

SPECIAL REPORT GLOBAL WARMING

TIME

BE
WORRIED.
BE **VERY**
WORRIED.

Climate change isn't some vague future problem—it's already damaging the planet at an alarming pace. Here's how it affects you, your kids and their kids as well

EARTH AT THE **TIPPING POINT**

HOW IT THREATENS YOUR **HEALTH**

HOW **CHINA & INDIA** CAN HELP
SAVE THE WORLD—OR DESTROY IT

THE CLIMATE **CRUSADERS**



Critical Four Years!

- Council & Advisory Committees are carrying out our mandate in one of the most critical periods in history since WWII
- IPCC: 10 years to retool society to stop increase above 1.5 degree C – start aggressive action now
- Implications if we fail: human survival at risk
- People already suffering and dying - primarily in poorer countries and poorer people – perpetuates existing inequity

(Jakarta, Indonesia)

(IPCC: International Panel on Climate Change)



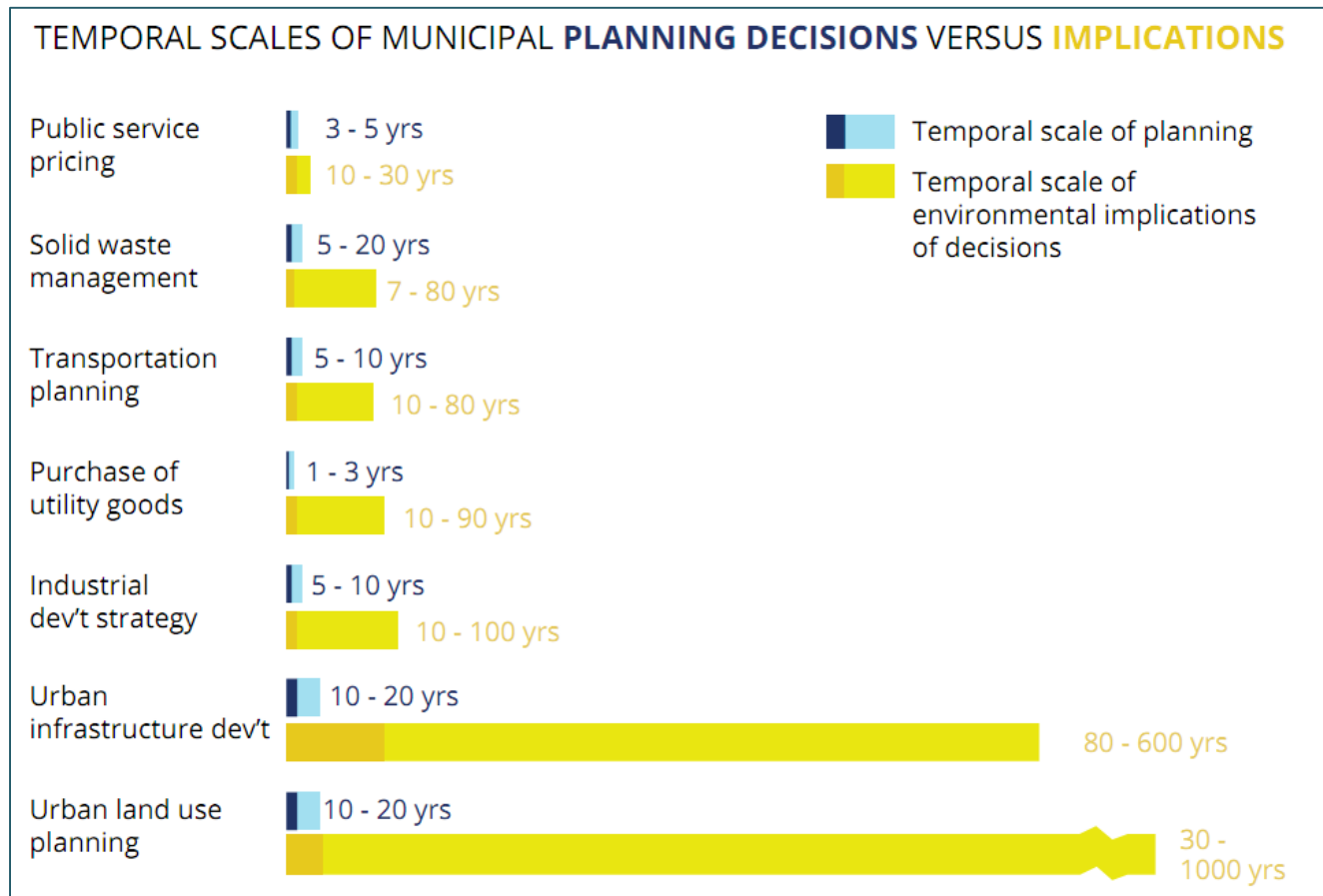
Canada Among Highest Emitters

- Canada has the 9th highest CO2 emissions of over 190 countries (from fuel combustion);
- It is the 4th highest in per capita emissions
 - 14.9T per person compared to 1.6T for India; or to colder climates Germany 8.9T per person; Poland 7.7T
- Ontario is the 2nd highest emitter of Canadian provinces & territories : 159Mt CO2 eq. vs. Quebec (3rd highest) at 78 Mt CO2 eq.

Municipalities Key

- Federation of Canadian Municipalities (FCM) – local gov't have influence over approx. 50% of GHG emissions in Canada.
 - Land use/site planning and densities
 - Buildings –account for highest GHG emissions within municipality
 - Local transportation
 - Water and wastewater service
- More economical to incorporate sustainable features at subdivision stage, than retrofit later. Also saves home dweller operating costs

Local government planning/spending decisions made today have consequences, including GHG emissions, that last for decades, even centuries... (source Judy Smith Presentation to Council)



Council Declared a Climate Emergency

- On Dec 2, 2019 Council declared a climate emergency conveying its recognition that we are facing an unprecedented crisis requiring unprecedented climate mitigation measures;
- In same motion Council approved the following:
 - The development of an Integrated Community Sustainability Plan (ICSP; Sustainability Master Plan); and a Green Development Standard.
 - A staff position to develop the RFP and manage the project to completion
 - Updating Cobourg's Strategic Plan to allow staff to reprioritize other work commitments
- To be completed in 2021.

Sustainable Development includes:

- Compact development/higher density:
 - Reduces the need for energy related to such things as roads (to construct and vehicles to travel); infrastructure related to water, sewage and data transmission (to build and to supply each service through longer systems), and district heating systems where applicable.
 - Supports active transportation – walking and biking
 - Reduces encroachment on green space which is needed for ecological health and the production of food
- Sections 4.8 Sustainability Strategy of the Official Plan, and Cobourg's Urban and Landscape Design Guidelines, 2010, provide some additional direction to achieve sustainable development and external building design

Sustainable Development cont...

- Zero GHG emissions buildings. Ways to get there:
 - Construct to the Passive House Standard and be certified
 - Use renewable technologies – solar, air to heat exchange, geothermal
 - Site layout with buildings oriented to the south to maximize solar generation
- Low-impact development (LID) storm water management:
 - Use of green streets: swales and vegetation between sidewalks and street and permeable pavement to slow, filter and clean storm water runoff
- Maximize the number of trees to provide shade canopy while minimizing shading of solar

Special Projects Underway

- **Comprehensive Zoning By-Law Review** to improve structure; update to reflect provincial policy changes; changes to use, parking; emerging issues and trends in sustainable community planning; etc.
- **Tannery District Sustainable Master Plan** is intended to move Cobourg toward a net-zero carbon, net-zero waste economy.
- **The Affordable Housing Community Improvement Plan** (CIP) which includes a second objective for sustainable development/redevelopment/retrofits. Should give Cobourg tools to provide incentives for sustainable development.
- **Climate Action Plan for Cobourg:** Under development; expected to be completed this year.

Special Projects cont....

- **Integrated Community Sustainability Plan:** a community driven master plan that includes the four pillars of a sustainability community with the focus on the environmental pillar- the other pillars are addressed around it. Other pillars are economic, social and cultural. Will integrate existing planning tools: Official Plan, existing Master Plans (e.g. Transportation, forestry, etc), Affordable Housing CIP, and Climate Action Plan.
- **The Green Development Standard** will set Cobourg's GHG/energy efficiency expectations- some mandated; some encouraged through incentives.

In The Meantime....

- Cobourg is facing many development applications now—in various stages of the approval process
- It is less costly to ensure they are sustainable now than to retrofit later. FCM: for every \$1 spent now, save \$6 in future costs
- What can we do now to move current development projects to be sustainable in interim of GDS and Affordable Housing CIP being implemented?

Suggestions for Climate Lens

- **Zoning By-Law Review:** review to determine whether it maximizes sustainable development provisions to the extent possible under Cobourg's Official Plan and Provincial governing documents such as the Planning Act, Provincial Policy Statement
- **Other Special Projects:** whether they include measures and requirements to achieve maximum sustainable development, redevelopment and retrofitting
- **All new government owned buildings** be built and certified to Passive Building Standard, and include renewable energy to make zero GHG emissions.

Questions & Next Steps

Questions?

Discussion

- What can the PDAC do to apply a climate emergency lens now
- How can the SCCAC help