FACING CLIMATE CHANGE

EXECUTIVE SUMMARY

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Executive Summary

Greenhouse gas (GHG) emissions by humans are changing the climate.

In Ontario, climate change is already contributing to many impacts. Coldwater fish are losing habitat. Heat is stressing moose populations, which are already in decline. Invasive species are flourishing. Wildfire risk is increasing. Disease-carrying pests are spreading. Northern communities’ ice roads are becoming less reliable. The season for ice fishing and snow sports is shrinking. Heat waves are posing health risks for vulnerable populations. Cities like Toronto, Burlington, Windsor, Thunder Bay and Sault Ste. Marie have suffered extreme storms and devastating floods. Severe heat and drought have crimped water supplies, and damaged crops.

Why we must dramatically reduce our GHG emissions.

The Environmental Commissioner of Ontario (ECO) reports annually to the Legislature, and the public, on Ontario’s progress reducing GHG emissions. In the first chapter of this year’s report, the ECO reviews the science of climate change, its impacts on our planet and why Ontario must dramatically reduce its GHG emissions. The following chapters report on what Ontario’s emissions are now, and what the government is doing to reduce them. The government has taken great steps towards GHG reductions this year; the ECO’s recommendations should help it avoid some major pitfalls.

The focus of this report is on climate change mitigation, i.e., reducing GHG emissions. Ontario must also get ready to adapt to the impacts of climate change. The ECO will examine climate change adaptation in a future report.

Why Act Now? (Chapter 1)

Climate change is one of the greatest threats of our generation.

Ontario’s climate is changing because Earth’s climate is changing. The weather has always fluctuated, and it will continue to do so. But the long-term average, the climate, is getting warmer and the weather is getting wilder. Effects on the natural environment, human health and the economy are accelerating.

Human activity is causing climate change (sometimes called global warming) by putting more GHGs into the atmosphere. As these gases accumulate, GHGs form a powerful, invisible blanket around Earth, trapping additional heat from the sun. This blanket is already dangerously thick and growing faster than ever. Past emissions will continue to trap heat for many years.

The most common GHG is carbon dioxide. In 2015, carbon dioxide levels in the atmosphere were the highest they have been for at least 800,000 years. Carbon dioxide also makes the oceans more acidic.

Where does the trapped heat go? Most of it (~93%) warms the oceans. Warmer water expands, raising sea levels, and fuels wilder storms. Some heat is melting ice and permafrost and warming land. About 1% of the extra heat has pushed up the world’s average air temperature.

Is it as bad as we thought? It’s worse

The flow and storage of energy in Earth’s climate system. The global ocean is absorbing ~93 per cent of the additional heat.


What used to be “normal” weather is gone.

As a result, 2016 has continued to break all temperature records. January to August had the highest land and ocean temperatures ever recorded.

While not all impacts are harmful, on balance, climate change will bring more extreme weather, ecological damage, financial loss and human misery.

Ontario will not suffer as much from climate change as many other places. We are a relatively cold province, blessed with fresh water, and most of us live well above sea level. Still, warmer and wilder weather is already affecting the province, and much more lies ahead. Ontario is warming faster than the world average, especially in the north.

It is too late to avoid some disruptive and expensive changes to our environment and economy. But we still can influence how destructive those changes will be. By working together, we can still protect much of what we love, by reducing the GHGs that we emit, and by preparing for the changes ahead.

Note that blue (cool) areas near Greenland and Antarctica may represent meltwater and may indicate a slowing of ocean circulation currents.

Climate change does not mean that everywhere will be warmer all the time. Natural cycles, and disruption of those cycles, will sometimes make some places colder. But what used to be normal weather is gone, and not likely to return.
Ontario’s Carbon Footprint – Beyond the Reported Numbers (Chapter 3)

Ontarians have high emissions per person, compared to most people around the world, even those in other rich northern countries.

Ontario’s per capita GHG emission footprint (12.6 tonnes) compared to Sweden (5.8 tonnes), the UK (8.1 tonnes), Norway (10.6) and worldwide (4.9 tonnes).

Source: Figure created by the ECO using information from the Conference Board of Canada and the World Bank.

Cap and Trade (Chapter 4)

To do our fair share, Ontario is joining a worldwide movement to put a price on GHG pollution. Ontario’s new Climate Change Mitigation and Low-carbon Economy Act, 2016, creates a cap and trade program that covers 82 per cent of Ontario’s direct emissions. The first compliance period begins January 1, 2017, and is to be linked with California and Quebec in 2018.

Chapter 4 focuses on the key design choices that Ontario has made, and how these choices may affect the success of the program in reducing emissions. In general, the cap and trade program is reasonable and well-designed, balancing the urgent need for GHG reductions with the cost to Ontario citizens and businesses, and the need to build public and non-partisan support. The types of changes that will reduce GHG emissions can also have many benefits for Ontario’s environment and economy.
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Spending the Money Well (Chapter 5)

Ontario has chosen a cap and invest approach to carbon pricing. The government will put the proceeds from its quarterly cap and trade allowance auctions into a Greenhouse Gas Reduction Account (GGRA) that it controls. Its justification: it needs the money to drive emissions reductions that would not otherwise occur.

The ECO agrees that putting a price on carbon, by itself, would not be enough to achieve Ontario’s reduction targets, unless the price were very high. But will the GGRA fund (up to $2 billion per year) be genuinely used to reduce Ontario’s GHG emissions, or will it leak away into other government priorities? The government should build public confidence by ensuring that the money is being spent only on new GHG reductions, with clear spending rules and transparent, timely reporting.

Climate Change Action Plan (Chapter 6)

The cap and trade program alone is predicted to provide only 2.8 Mt of the 18.5 GHG reductions needed to meet Ontario’s 2020 GHG target. The government estimates that 9.8 Mt of additional reductions will come from its Climate Change Action Plan, to be funded from the GGRA.

Subsidizing electricity rates is not an acceptable use of GGRA funds.

The Action Plan contains some excellent proposals, which should, over time, reduce Ontario’s emissions. For example, the ECO supports the Action Plan’s proposed investments in low-carbon transportation and in clean technology innovations. The proposed green bank could improve energy efficiency in buildings, and be a helpful intermediary between building owners/operators and energy efficiency service providers.

However, the Action Plan is not likely to produce 9.8 Mt in new reductions by 2020. The ECO found no evidence to support emission reduction claims for the key proposal to subsidize electricity prices, or the claim that technology adoption by industry can produce 2.5 Mt in additional reductions by 2020. This means that subsidizing electricity rates is not an acceptable use of GGRA funds. It also means that, for the 2017-2020 compliance period, the gap to be filled by offset credits and/or California allowances may be larger than the government predicts.

Knowledge + Action = Hope (Chapter 7)

This has been an important year, with much progress on climate action in Ontario and around the world. Ontario has punched above its weight, and deserves kudos for its active role in national and international co-operation. Putting a price on GHG pollution is long overdue. But there remains a chasm between the facts and what the public understands, and between government rhetoric and action. If the government doesn’t treat climate change as an emergency, then many people feel that they don’t need to either. To earn public support for serious climate action, the whole government must consistently show that it takes climate change seriously.

At the same time, climate change action cannot be left entirely to governments. As proud Ontarians who care about each other and the beautiful province in which we live, there is much we can each do. No one can do everything, but everyone can do something. It’s not too late.

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Recommendations

Summary of recommendations from the ECO’s 2016 Greenhouse Gas Progress Report

Ontario’s Greenhouse Gas Emissions (Chapter 3)

The government should report regularly on Ontario’s entire climate change footprint, not only on Ontario’s direct GHG emissions as calculated pursuant to international guidelines.

The government should give a higher priority to reducing Ontario’s methane and black carbon emissions.

Cap and Trade (Chapter 4)

The government should be more transparent about who receives free allowances, and why.

The government needs to plan for the possibility that California’s cap and trade system may not continue to operate in its present form and/or may not be reauthorized after 2020.

The government should set legally binding carbon budgets well in advance, within which a cap and trade system would operate.

The government must prioritize the approval of offset protocols to enable the creation of a timely and ample supply of high-quality Ontario offsets.

The Greenhouse Gas Reduction Account (Chapter 5)

The government should publicly adopt a complete set of evaluation criteria for proposed GGRA expenditures and an explicit policy on how to allocate GGRA funds between competing objectives.

The GGRA should only be used to pay for new or expanded initiatives that will directly produce emission reductions on top of those that will be created by existing systems, by the cap and trade system and by initiatives already funded through the GGRA.

The government should keep detailed records of the justification for each GGRA expenditure, in a form that can readily be provided to the Legislative Officers, and should be summarized in the Minister of the Environment and Climate Change’s annual public report.

The Climate Change Action Plan (Chapter 6)

In developing the green bank, the government should:
• follow the four OECD principles,
• require the green bank to achieve additional emission reductions in Ontario, and
• ensure accountability and transparency for its financial and emissions reduction results.

The government should do more to discourage, and to make unnecessary, travel by petroleum-fueled vehicles. It should also prioritize funding for projects and transit that support dense, complete communities.

Government support for clean tech from the GGRA should have a direct, substantial and transparent connection to additional GHG reductions.

The government should reduce approval and procurement barriers to the use of low-carbon clean tech innovations within Ontario, especially those that have been developed with public funds.

Subsidizing electricity rates should not be considered an acceptable use of GGRA funds.

A Renewable Fuel Standard regulation should include a low carbon performance standard. It should only incent the production of biofuels that are grown sustainably, without damaging natural ecosystems or biodiversity, and while building up soil carbon.

The government should make public all data necessary to assess the effectiveness and cost-effectiveness of its GHG reduction systems.