

Ontario: Designing Climate Policy to Complement the Federal Plan

Clean Prosperity | March 2022



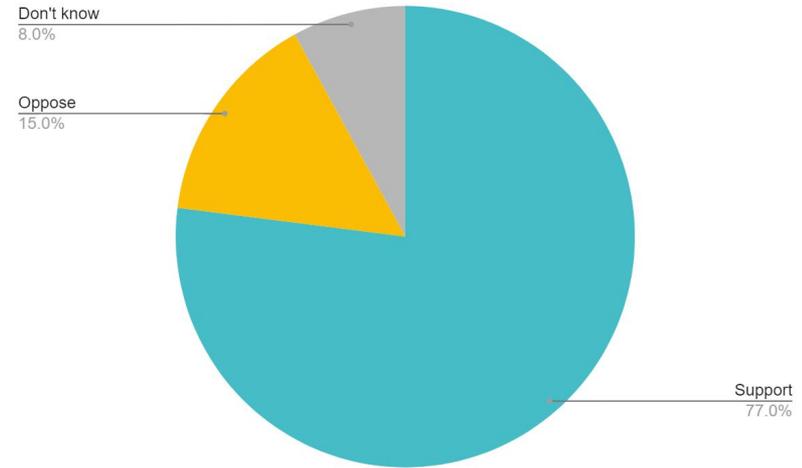
Our goal is to inform smart climate policy that complements federal action

- The **purpose of this presentation is to show how Ontario can build on the federal climate plan**, reducing its greenhouse gas emissions cost-effectively, while creating benefits for Ontarians.
- **Our September 2021 report showed** that all provincial and federal climate policies combined could cut Ontario's greenhouse gas emissions by 80 to 83 Mt/year, by 2030. That represents **a reduction of 39% to 40%** below 2005 emission levels.
- The rest of this presentation examines **how Ontario can raise its ambition further** for 2030, while also laying the groundwork to meet the 2050 net-zero goal.

Ontario should do more to reduce emissions

- Current policy is out of step with **the net-zero emissions target for 2050**, a target **supported by more than three-quarters of Ontarians**.
- Increasing climate ambition presents economic opportunities — like creating **good-paying jobs**, reducing **long-term costs** for consumers and businesses, and **positioning the province to remain competitive** in the global low-carbon economy of the future.
- Accelerating climate action will **help Canada minimize total carbon emissions before we reach net-zero**. Reducing cumulative emissions is critical if we want to avoid the worst impacts of climate change.

Do you support or oppose the goal of Canada achieving net-zero carbon emissions by 2050?



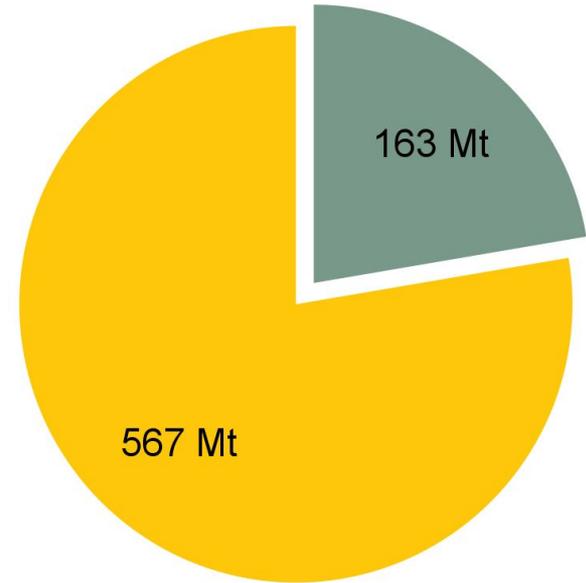
Source: Clean Prosperity, September 2021;
n=1920 Ontarians

Ontario is key to reaching net-zero

Federal climate policy proposes to achieve net-zero emissions in Canada by 2050, but **provincial action will be key** to meeting this goal.

Ontario can increase its ambition through provincial policy choices that **fill gaps** left by the current federal climate policy, and through policies that **complement** planned federal climate action.

Ontario GHG emissions (2019)



● Ontario ● rest of Canada

Ontario should focus on 3 priority sectors

1. Transport (49 Mt)

Supporting the adoption of zero-emission cars, trucks, buses, and other vehicles.

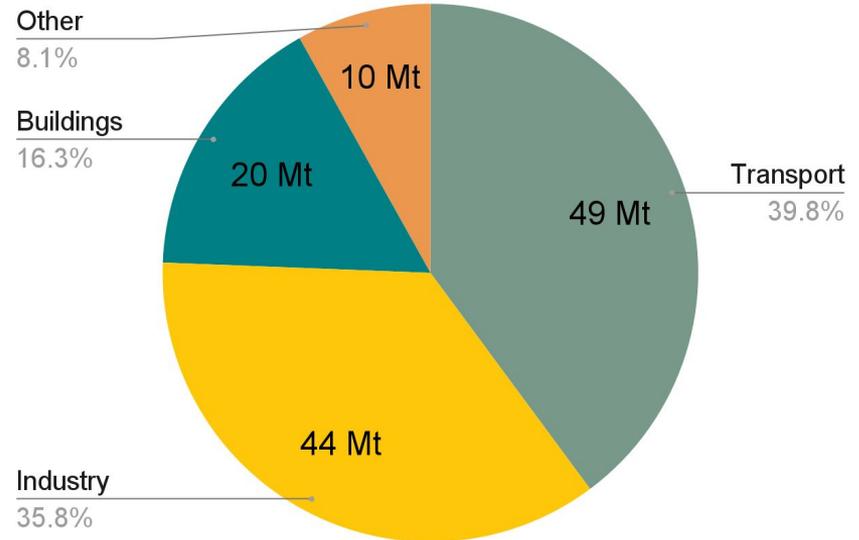
2. Buildings (20 Mt)

Retrofitting residential and commercial buildings for low-carbon energy and improved efficiency.

3. Industry (44 Mt)

Reducing emissions from industrial combustion and industrial processes.

Remaining Ontario emissions in 2030, with all federal climate policy implemented



Note: All federal climate policy pledges, such as the 50% ZEV sales mandate for light-duty vehicles for 2030 and the Clean Electricity Standard, are included in the chart. Emissions shown above are those remaining net of those policies

Transport: New policies for road/off-road needed, especially heavy-diesel trucks

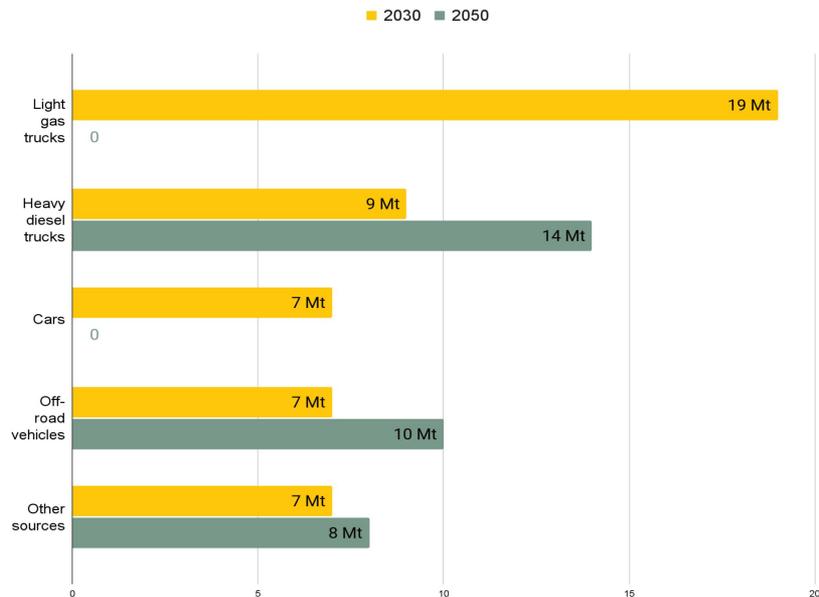
In 2030, **94% of transport emissions in Ontario originate with road and off-road vehicles.**

Federal climate policy initiatives, like the ZEV mandate, will yield some emissions reductions in transport, especially for cars.

But **light gas-powered trucks, heavy diesel trucks, cars, and off-road vehicles still produce 42 Mt of emissions in 2030.**

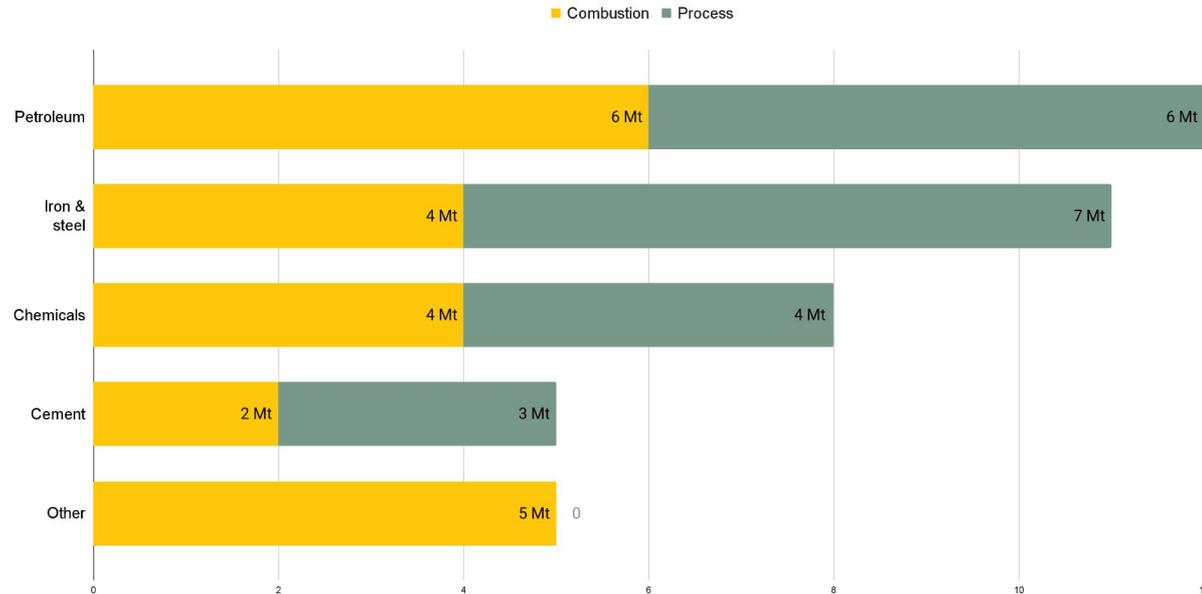
And without new policy, **emissions from heavy diesel trucks and off-road vehicles keep going up through 2050.**

Ontario transport emissions in 2030 and 2050



More than a third of 2030 emissions come from industrial combustion and processes

Ontario industrial emissions by sector (2030)



In 2030, 36% of emissions come from industry.

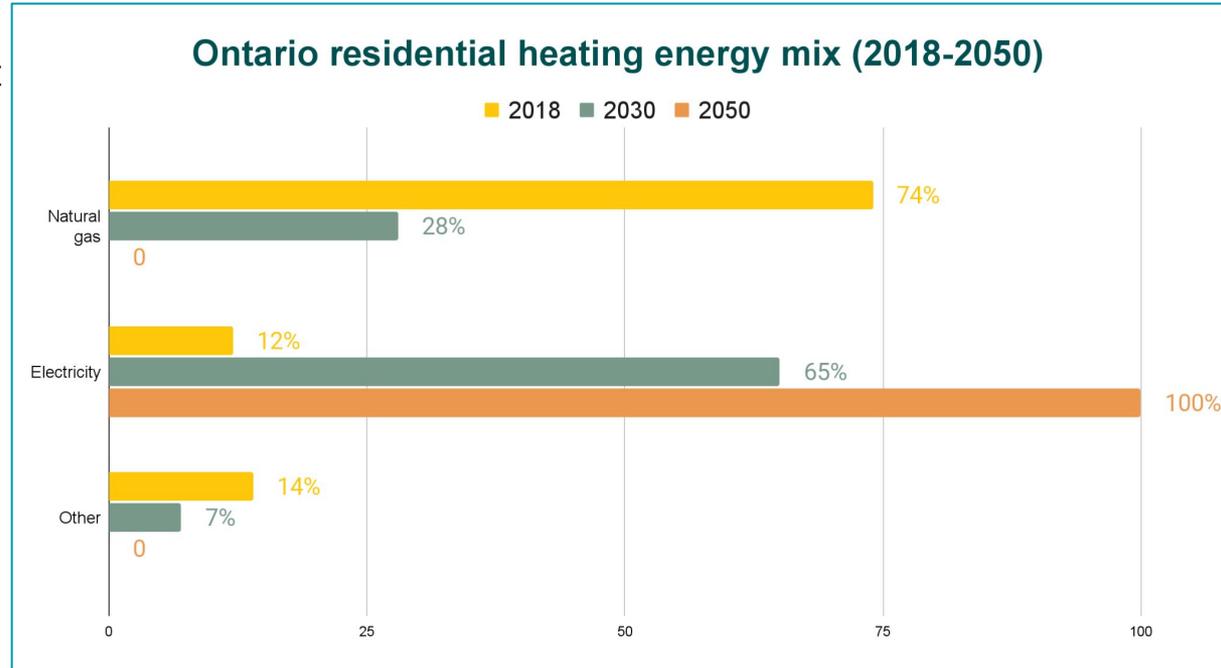
Significant contributors to industrial combustion and process emissions include the **petroleum sector**, **iron and steel**, **chemicals**, and **cement**.

Provincial support needed to achieve transformation in buildings

Residential and commercial buildings remain highly dependent on natural gas heating in 2030, producing 20 Mt of emissions.

The **federal government has pledged to ensure the building sector reaches net-zero** by 2050, but the policies to achieve the target are still in development.

The **level of transformation needed to reach net-zero will be a massive undertaking**, requiring additional federal and provincial policy.



Electricity demand will double by 2050

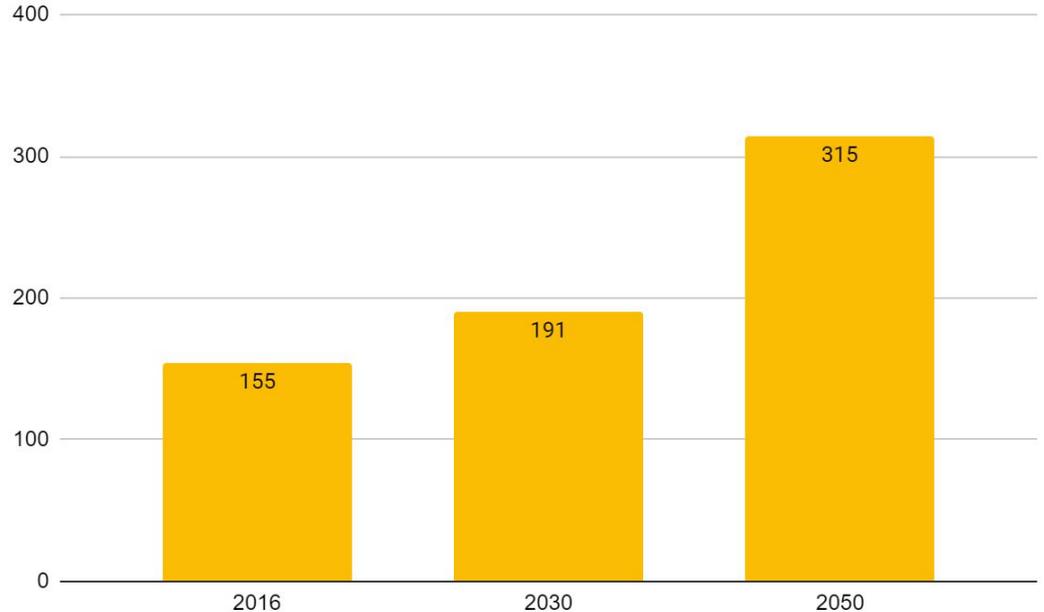
Existing federal climate policy targets a net-zero grid by 2035.

And as we transition to a low-carbon economy, demand for electricity will increase significantly.

Our modelling shows that **Ontario will need to double electricity generation by 2050** in order to meet the demands associated with decarbonization.

This is consistent with forecasting by the International Energy Agency and other experts.

Total electrical generation needed (TWh)



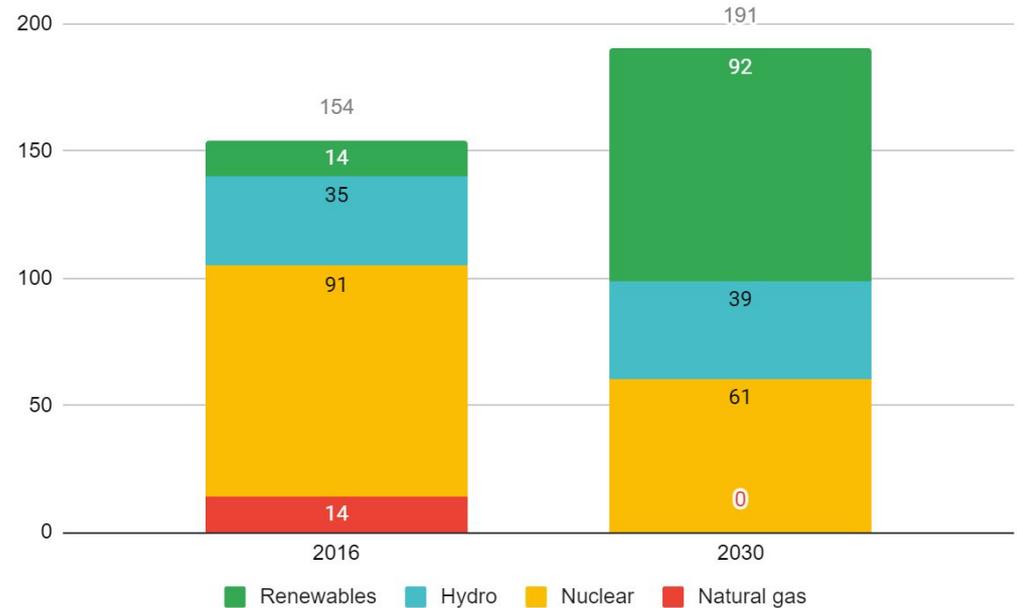
Decarbonizing the grid will be challenging

Ontario has to grow electricity capacity while decarbonizing the grid.

Doing this will **require a massive scale-up of renewable energy** and/or major investments in new interties and demand-side management.

Building **new natural gas generation is hard to reconcile with the federal government's Clean Electricity Standard**. Any new fossil-fuel based electricity infrastructure should factor in the potential costs of adding carbon capture and/or early retirement to comply with the net-zero 2035 target.

Potential grid evolution — 2030 vs. 2016



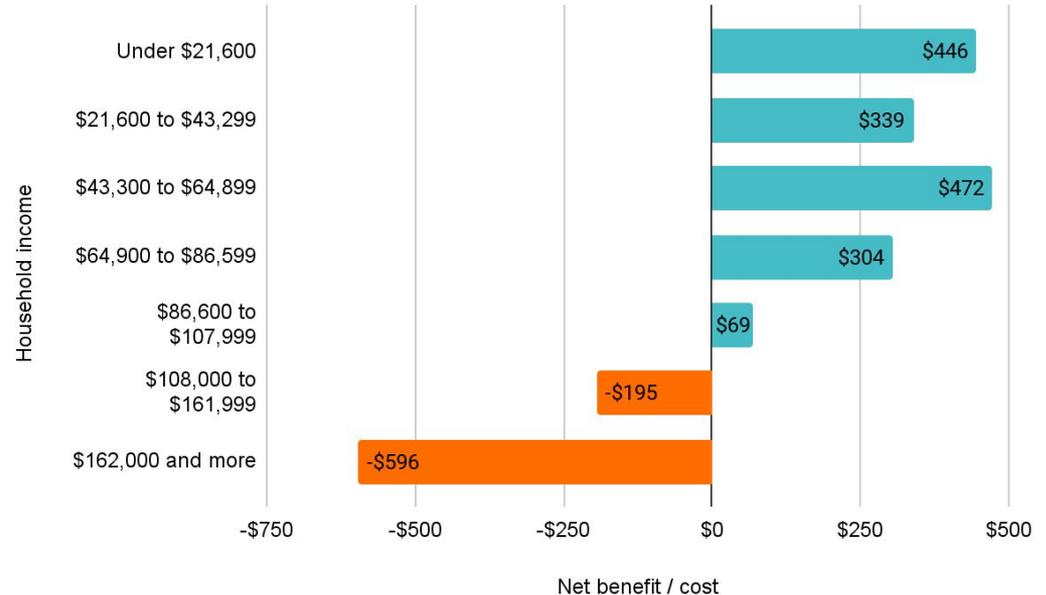
Note: 2030 generation mix is an illustrative scenario from Clean Prosperity / ESMIA modelling, to demonstrate the scale of the challenge to decarbonize Ontario's grid. In this scenario, renewable generation grows by more than six times.

Carbon tax rebates leave most Ontarians better off

In 2030 a typical Ontario household making less than \$108,000 comes out financially ahead, because the carbon tax rebates exceed the costs of all climate policy

Low-income households fare the best under this system. For example, an average Ontario household earning less than \$21,600 comes out **\$446 ahead**.

Benefits/costs from climate policy, net of rebates (2030)



Note: Rebates from the carbon tax exceed the costs of all climate policies (including the carbon tax) in 2030 for the average household in Ontario earning under \$108,000.

Policy Recommendations



Top policy recommendations (1/2)

1. **Leverage carbon pricing to ensure affordability.** Carbon pricing is the lowest-cost policy for reducing emissions, both for heavy industry and the rest of the economy.
 - a. **Maintain and improve retail carbon pricing.** Thanks to carbon tax rebates, most Ontarians receive more in rebates than they pay in carbon tax — and all other federal climate policy combined.

Carbon pricing could be further strengthened by providing direct support (e.g. tax cuts) to small businesses, increasing top-ups to rural and suburban residents, and offering support to farmers.

- b. **Strengthen the industrial carbon price.** Industrial emissions remain high in 2030. The most cost-effective and flexible way to encourage industry to decarbonize is by strengthening the industrial carbon price under Ontario's Emissions Performance Standard (EPS).

We recommend tightening the stringency of the EPS annually, beginning in 2022, by at least 2% per year, and ensuring that new gas-fired power plants face the same annual tightening as under the federal Output-Based Pricing System (i.e. the full carbon price by 2030).

Top policy recommendations (2/2)

2. **Invest in carbon management.** The Ontario government should support industry in capturing and permanently storing carbon emissions, beginning by investing in the identification/characterization of suitable carbon sequestration sites.

There is an excellent potential for carbon capture hubs in areas like southwestern Ontario, where much industrial activity is concentrated. The government should also consider how to support carbon dioxide removal technology including through direct procurement.

Additional recommendations (1/2)

- 3. Go big on retrofits.** By investing in commercial and residential building retrofits, Ontario can create thousands of well-paying jobs and deliver massive emissions reductions by 2030.

This is an area where federal policy is still relatively light and where provincial jurisdiction means that Ontario has a key role to play. Ontario should offer zero-interest retrofit loans — and grants for low-income households — to complement federal programs. It should also consider purchase incentives for low-carbon technology like heat pumps.

Equally importantly, Ontario should ensure that new construction is consistent with a net-zero buildings sector by regulating high-efficiency standards in retrofits and new builds, while updating the Ontario net-zero building code.

Additional recommendations (1/2)

4. **Accelerate transport decarbonization.** Although federal policy will induce a significant shift to zero-emission vehicles (ZEVs), Ontario should build on existing policy to accelerate decarbonization:
 - a. **Grow incentives for electric light-duty vehicles:** Consider adding additional purchase incentives for non-luxury ZEVs, ideally through a self-financing system of fees and rebates (“feebates”), and building out additional ZEV charging stations.
 - b. **ZEV mandate and support for zero-emission medium- and heavy-duty vehicles.** Too many medium- and heavy-duty vehicles remain diesel-powered in 2050 under existing policies. The province should consider a ZEV mandate for these vehicle classes as well as other supports (charging stations, hydrogen infrastructure) to help accelerate adoption.

Additional recommendations (2/2)

- 5. Prepare for a net-zero grid:** To harmonize with the federal government's Clean Electricity Standard, which plans to achieve a zero-emission Canadian grid by 2035, Ontario will need to ensure that it is not invested in generating assets that could be stranded in the short term.

Ontario's current plans for expanding natural gas generation should be revisited to determine if and how those investments will be viable in a net-zero electricity grid, and to investigate alternative options that may be more consistent with the net-zero target.

Cost comparisons should consider the potential risks and costs of early retirement of these assets, and/or additional investments in carbon capture and storage that will be required.

Extra credit

- 6. Reduce emissions from agriculture.** Agriculture is also a significant source of emissions in 2030 under existing climate policies: it yields 10 Mt of CO₂e, including the potent greenhouse gases methane and nitrous oxide in addition to carbon dioxide.

The Ontario government should seek to reduce emissions from this sector with policies to promote better soil and manure management, and by investing in R&D for innovative solutions to enteric fermentation.

Appendices



Appendix: Background on study that informs this analysis

Clean Prosperity and Energy Super Modelers and International Analysts (ESMIA) released independent modelling of the federal government's climate plan in October 2021.

Our modelling showed that the federal Liberal climate plan can achieve a 37% to 41% drop in Canada's greenhouse gas emissions, relative to 2005 levels, by 2030.

Oil and gas prices are the key factor in determining the extent of emissions reductions within that 37% to 41% range.

If fully implemented, federal climate policy has a reasonable chance of achieving Canada's 2030 climate targets under the Paris Agreement.

[Read the report on our modelling.](#)





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