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A Distributional Analysis of the
Federal Fuel Charge – Update

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Federal carbon pricing in Canada

- Federal carbon pricing since 2019
 - National minimum stringency standards – the benchmark
 - Federal system applied to provinces/territories at request or to bring their system up to the benchmark – the backstop
- 2-part federal carbon pricing system
 - Regulatory charge on fossil fuels – fuel charge
 - Regulatory system for large emitters – output-based pricing system (OBPS)
 - Price per tonne of CO₂e – rising from \$20 in 2019, to \$50 in 2022 and \$170 in 2030
- Return of proceeds from federal carbon pricing
 - Proceeds returned to province/territory where it is collected
 - 93% of fuel charge revenue collected returned to households (per capita adjusted for family size); 5% to SMEs; and 2% to Indigenous governments
 - OBPS proceeds returned to provincial/territorial governments or used to fund decarbonization/ clean electricity projects
- Current application of federal carbon pricing
 - Federal fuel charge applies in 8/10 provinces and 2/3 territories
 - Federal OBPS applies in 2/10 provinces and 2/3 territories

PBO carbon pricing analysis – previous reports

- CGE analysis of economic and GHG emissions impacts of carbon pricing
 - [June 2019](#) – estimated additional carbon pricing required to achieve Canada’s 2030 emissions target under Paris agreement (using broad-based fuel charge)
 - [October 2020](#) – update of June 2019 analysis to include OBPS variants (national application)
 - [June 2021](#) – estimated impact of announced increase in carbon price and OBPS, as well as the economic impact of achieving the Canada’s new emissions target
- Distributional analysis of federal carbon pricing (without CGE impact)
 - Net cost for average household across income quintiles and backstop provinces
 - [April 2019](#) – estimated the household distributional (fiscal) impact of federal fuel charge and budgetary impact of federal carbon pricing system
 - [February 2020](#) – update of April 2019 analysis and included GST impact

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PBO distributional analysis of the federal fuel charge

- Distributional analysis of the federal fuel charge without and with CGE economic impact
 - [March 2022](#) – federal fuel charge without and with economic impact
 - [March 2023](#) – update of March 2022 report
- April 2024: in reviewing March 2022 CGE analysis we discovered an error (counterfactual scenario included removal of fuel charge and OBPS)
- Committed to update our analysis to incorporate the economic impact of the fuel charge only, along with new projections and policy changes
 - Consulted with Finance Canada on calculating the fiscal impact of the fuel charge
 - Updated projections and CGE estimates from Environment and Climate Change Canada (ECCC)
 - External review of methodology and assumptions by U.S. Congressional Budget Office and CPB Netherlands Bureau for Economic Policy Analysis

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Key limitations of PBO's carbon pricing analysis

- **Comparative policy analysis**
 - PBO does not provide economic, fiscal or climate policy recommendations to parliamentarians; nor does PBO provide comparative policy or cost-benefit analyses
- **Counterfactual scenarios**
 - PBO's counterfactual scenario without carbon pricing/fuel charge should not be seen as an alternative policy option of "doing nothing"
- **Benefits of reducing Canada's GHG emissions**
 - Canada's primary means of limiting the economic costs of climate change are through participation in a globally coordinated emissions reduction regime
 - This does not mean that Canada should be a "free rider" and "do nothing" to reduce its own emissions—by significantly reducing its own emissions, Canada will actively contribute to the collective effort to limit the impacts of climate change
 - PBO November 2022 report estimated the impact on Canada's real GDP over the long term (to 2100) if current changes in weather patterns persisted, as well as future changes to weather patterns (higher-still temperature and precipitation)

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ECCC GHG emissions projection and CGE estimates

- Emissions by industrial sector and province/territory from December 2023 [ECCC Greenhouse gas and air pollutant emissions projections](#)
- Additional Measures scenario – all announced policies and measures included
- 2030: 30% reduction in GHG relative to 2005 levels (512Mt vs. 732Mt) (36% reduction including LULUCF+)
- ECCC projections of fuel charge revenues by province/territory and industrial sector
- ECCC CGE model (EC-PRO) estimates of the economic impact of the fuel charge

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Household net cost – fiscal impact (use-side)

For households in provinces where the federal fuel charge applies:

Net cost = direct cost + indirect cost + GST impact – carbon rebates

Direct cost: household direct energy use (private transportation, heating)

Indirect cost: fuel charge embedded in non-energy products consumed

GST impact: 5% federal Goods and Services Tax applied to most consumer goods and services

Carbon rebates: 93% of federal fuel charge revenue collected returned to households (per capita basis adjusted for family size)

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Household net cost – economic impact (source-side)

Use ECCC's CGE model (EC-PRO) estimates of the impact of the fuel charge on employment and capital income as an additional cost to households

Household net cost with fiscal and economic impacts:

Net cost = fiscal impact + **economic impact**

Net cost = fiscal impact + **factor income loss – income tax reduction (PIT)**

Net cost = direct cost + indirect cost + GST impact – carbon rebates
+ **factor income loss – income tax reduction (PIT)**

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Household net cost of the federal fuel charge in 2030-31 (fiscal impact only)

1. In 2030-31, we estimate that the average household in each income quintile will see a net gain—except for the average household in the highest income quintile in Prince Edward Island, Nova Scotia and New Brunswick
2. Relative to household disposable income, the fiscal-only impact of the federal fuel charge is progressive, reflecting the per capita nature of the carbon rebate
3. We estimate that the largest net gain in 2030-31 is for the average household in the lowest income quintile in Saskatchewan (4.5% of disposable income); the largest net cost in 2030-31 is for the average household in the top income quintile in Prince Edward Island (0.1% of disposable income)

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ECCC estimates of the economic impacts of the fuel charge in 2030

Backstop province	Real GDP	Labour income	Capital income
Newfoundland and Labrador	-0.9	-1.8	-2.0
Prince Edward Island	-0.5	-1.2	-2.1
Nova Scotia	-0.5	-1.5	-2.4
New Brunswick	-0.5	-1.2	-2.1
Ontario	-0.7	-1.3	-2.1
Manitoba	-0.5	-1.6	-2.5
Saskatchewan	-0.5	-2.2	-3.3
Alberta	-0.6	-1.3	-2.4
Total – backstop provinces	-0.6	-1.4	-2.3

Impacts are measured as the percentage difference between the projected level of the economic indicator in 2030 under a scenario with the fuel charge and its projected level in 2030 under a scenario without the fuel charge. Labour income and capital income are expressed in real (inflation-adjusted) terms.

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Household net cost of the federal fuel charge in 2030-31 (fiscal and economic impacts)

4. In 2030-31, accounting for both fiscal and economic impacts, for all backstop provinces, we estimate that the average household in each of the top three income quintiles will face a net cost
5. Relative to household disposable income, our estimates of household net cost (fiscal and economic impacts) show a more progressive impact compared to the fiscal-only impact estimates
6. Considering both fiscal and economic impacts, the largest net gain in 2030-31 is for the average household in the lowest income quintile in Saskatchewan (4.0% of disposable income); the largest net cost is for the average household in the top income quintile in Saskatchewan (1.8% of disposable income)

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ECCC estimates of GHG emissions reductions and real GDP impacts in 2030

Canada	Emissions reduction in 2030 (Mt)	Impact on real GDP in 2030 (%)
Fuel charge only (ECCC, March 2024)	15	-0.7
Fuel charge and large-emitter trading systems (ECCC, March 2024)	62	-0.9
Fuel charge and large-emitter trading systems (ECCC, Fall 2023)	78	-0.9

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Additional tables

Average household net cost in 2030-31 in dollars and % of disposable income (fiscal impact only)

Backstop province	1 st quintile	2 nd quintile	3 rd quintile	4 th quintile	5 th quintile	Average
Newfoundland and Labrador	-\$893	-\$971	-\$642	-\$606	-\$467	-\$713
	-2.8%	-1.8%	-0.8%	-0.5%	-0.2%	-0.7%
Prince Edward Island	-\$491	-\$404	-\$317	-\$123	\$302	-\$204
	-1.6%	-0.7%	-0.4%	-0.1%	0.1%	-0.2%
Nova Scotia	-\$598	-\$549	-\$222	-\$249	\$50	-\$313
	-2.0%	-1.0%	-0.3%	-0.2%	0.0%	-0.3%
New Brunswick	-\$472	-\$336	-\$240	-\$178	\$22	-\$241
	-1.5%	-0.6%	-0.3%	-0.2%	0.0%	-0.2%
Ontario	-\$642	-\$472	-\$243	-\$277	-\$28	-\$331
	-1.9%	-0.7%	-0.2%	-0.2%	-0.0%	-0.3%
Manitoba	-\$793	-\$636	-\$611	-\$537	-\$126	-\$537
	-2.5%	-1.1%	-0.7%	-0.4%	-0.1%	-0.5%
Saskatchewan	-\$1,424	-\$1,385	-\$1,298	-\$1,185	-\$733	-\$1,205
	-4.5%	-2.2%	-1.4%	-0.9%	-0.3%	-1.0%
Alberta	-\$768	-\$888	-\$856	-\$339	-\$782	-\$725
	-2.1%	-1.3%	-0.8%	-0.2%	-0.2%	-0.5%

Average household net cost in 2030-31 in dollars and % of disposable income (fiscal and economic impacts)

Backstop province	1 st quintile	2 nd quintile	3 rd quintile	4 th quintile	5 th quintile	Average
Newfoundland and Labrador	-\$798	-\$612	\$183	\$1,164	\$3,314	\$652
	-2.5%	-1.1%	0.2%	1.0%	1.5%	0.6%
Prince Edward Island	-\$443	-\$137	\$202	\$753	\$2,488	\$575
	-1.5%	-0.2%	0.2%	0.6%	1.1%	0.6%
Nova Scotia	-\$500	-\$218	\$370	\$654	\$2,593	\$580
	-1.6%	-0.4%	0.5%	0.6%	1.2%	0.6%
New Brunswick	-\$410	-\$120	\$214	\$609	\$1,991	\$457
	-1.3%	-0.2%	0.3%	0.5%	0.9%	0.5%
Ontario	-\$540	-\$87	\$588	\$1,085	\$3,467	\$903
	-1.6%	-0.1%	0.6%	0.7%	1.1%	0.7%
Manitoba	-\$670	-\$211	\$218	\$817	\$3,295	\$693
	-2.1%	-0.4%	0.3%	0.7%	1.3%	0.6%
Saskatchewan	-\$1,275	-\$698	\$155	\$1,316	\$4,970	\$894
	-4.0%	-1.1%	0.2%	1.0%	1.8%	0.7%
Alberta	-\$641	-\$400	\$130	\$1,265	\$3,122	\$697
	-1.8%	-0.6%	0.1%	0.8%	1.0%	0.5%

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Budgetary impacts of the federal fuel charge, \$ billions

	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031
Fuel charge proceeds	13.0	15.2	17.2	19.3	21.1	22.9	24.4
Goods and Services Tax	0.4	0.5	0.5	0.6	0.6	0.7	0.7
Net personal income tax*	-1.9	-2.3	-2.8	-3.3	-3.8	-4.4	-4.8
Fuel charge proceeds returned	-13.0	-15.2	-17.2	-19.3	-21.1	-22.9	-24.4
Budgetary balance	-1.5	-1.9	-2.3	-2.7	-3.2	-3.7	-4.0

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