

**Response to Environmental Petition No. 390-B concerning
the quantification of Canada's total carbon dioxide (CO₂) emissions
from exported fossil fuels**

Question 1: In response to Petition # 390, the Minister of the Environment and Climate Change responded noting that Canada's National Inventory Report of Greenhouse Gas Sources and Sinks ("NIR") did not include emission reporting from the combustion of exported fuels. Has NIR amended its reporting requirements to include such emissions?

Response: The official account of Canada's emissions of greenhouse gases is provided by Canada's National Inventory of Greenhouse Gas Sources and Sinks (the "NIR"), which is submitted annually to the United Nations Framework Convention on Climate Change (UNFCCC). Carbon dioxide (CO₂) emissions arising from the combustion of fossil fuels exported from Canada are not accounted for in the NIR.

The NIR reports the domestic greenhouse gas emissions arising from the production, processing and transportation of fossil fuels destined for export, but not the emissions arising from the end-use combustion of exported fuels, which occur outside of Canada.

The NIR is developed in accordance with the revised "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual inventories" (UNFCCC Reporting Guidelines), adopted through Decision 24/CP.19 in 2013. These guidelines have not been updated since Petition #390. For more information, please visit <https://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf#page=2>.

Question 2: If Canada does not have any accounting, inventory or other quantitative or qualitative assessment or evaluation of CO₂ emissions arising from the combustion of exported fossil fuels, why does the Government of Canada not estimate and/or calculate CO₂ emissions from these products? In responding to this question please note any changes in the Government of Canada's approach from when it responded to question 1 of Petition # 390.

Response: As indicated in Environment and Climate Change Canada's response to question 1, national greenhouse gas inventories are prepared in accordance with the UNFCCC Reporting Guidelines, which do not require countries to estimate the emissions resulting from the combustion of exported fuels. This approach has not changed since the Department's response to Environmental Petition No. 390.

Question 5: What is the estimated aggregate amount of CO₂ emissions from the combustion of the quantities for export of each of fossil fuels identified in response to question 3?

Response: Table 1 (see below) shows the amount of CO₂ emissions due to combustion of the exported fossil fuels identified in the response to question 3. These were estimated by applying average Canadian CO₂ emission factors as determined for each type of exported fuel. The average CO₂ emission factor for crude oil was based on the carbon content of refined products (e.g., heavy fuel oil, diesel and gasoline). The CO₂ emission factor for coal is based on the carbon content of bituminous coal, the only rank (type) of coal (metallurgical or thermal) that is exported. All emission factors are available in Annex 6 of the NIR.

Table 1. Estimated CO₂ Emissions from the Combustion of Exported Fossil Fuels, 2016–2020

	Metallurgical Coal	Thermal Coal	Crude Oil	Natural Gas	NGL* **	TOTAL
	Mt CO ₂					
2016	61.3	5.6	577.0	158.4	12.0	814.3
2017	63.3	5.2	601.5	160.0	15.2	845.2
2018	71.7	2.8	682.4	149.8	17.6	924.3
2019	76.2	4.6	706.9	144.4	22.2	954.3
2020	69.1	10.8	651.5	134.0	17.7	883.0

* Includes propane and butane

** NGL: Natural gas liquids

Question 8: Has Canada undertaken any estimates or modelling as to what Canada’s projected export of the different fossil fuels identified in the previous questions in future years? Is so please provide those estimates.

Response: In its report entitled *Canada’s Energy Future 2020: Energy Supply and Demand Projections to 2050*, the Canada Energy Regulator provided a long-term outlook on the future of Canada’s energy supply and demand until 2050, including forecasts of future oil and gas production and price (www.cer-rec.gc.ca/en/data-analysis/canada-energy-future/2020/index.html). These production and price forecasts were then used by Environment and Climate Change Canada to produce the *Canada’s Greenhouse Gas and Air Pollutant Emissions Projections 2020* report, which provides projections until 2030 (www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/projections.html).

The projected levels of fossil fuel exports from the Canada Energy Regulator’s 2020 Reference Case Scenario for natural gas liquids are available at <https://apps.recer.gc.ca/ftrppndc/dflt.aspx?GoCTemplateCulture&GoCTemplateCulture=en-CA> (select each type of natural gas liquids under “Select Appendices”), while the projected levels

of fossil fuel exports from Environment and Climate Change Canada's 2020 Reference Case for crude oil and natural gas are available at <https://data.ec.gc.ca/data/substances/monitor/canada-s-greenhouse-gas-emissions-projections/Current-Projections-Actuelles/Energy-Energie/?lang=en> (select "Crude-Oil-Supply-Approvisionnement-en-pétrole-brut/" and "Natural-Gas-Supply-Approvisionnement-en-gaz-naturel/"). Projected levels of coal exports from the Department's 2020 Reference Case were 856 petajoules in 2025 and 910 petajoules in 2030.

Question 9: If Canada has not undertaken the type of estimates or modelling described in question 8, what does the Minister of Environment and Climate Change or the Minister of Natural Resources project will be Canada's exports of the fossil fuels set out in question 4 to be by 2025 and 2030?

Response: Please see the response provided for question 8 for fossil fuel export projections.