

Lynda Collins

Ecojustice Environmental Law Clinic
at the University of Ottawa
216-1 Stewart Street
Ottawa ON K1N 6N5
T: 613-612-8880 / F: 613-562-5319
lcollins@ecojustice.ca

Ali Naraghi

1910-777 Bay Street, PO Box 106
Toronto, ON M5G 2C8
Tel: 416-368-7533 / Fax: 416-363-2746
anaraghi@ecojustice.ca
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Sent via e-mail to: petitions@oag-bvg.gc.ca

Jerry V. DeMarco
Commissioner of the Environment and Sustainable Development
Office of the Auditor General of Canada
Attention: Environmental Petitions
240 Sparks Street
Ottawa, ON K1A 0G6

Dear Commissioner DeMarco:

**Re: Petition to the Commissioner of the Environment and Sustainable Development:
Canadians have the right to breathe clean air – A call for federal action on heavy
truck pollution**

Summary: Air pollution is the greatest environmental threat to health in Canada. In particular, heavy truck emissions represent one of the most dangerous – and preventable – kinds of air pollution. Unfortunately, the federal government has grand-parented old, highly polluting diesel trucks that are putting Canadian lives and livelihoods at risk. However, multiple solutions exist to reduce truck-related pollution and clean up air quality in Canadian communities. We call on the federal government to take urgent action to reduce dangerous emissions from heavy trucks.

1. Clean air is a human right

As noted by United Nations Special Rapporteur on Human Rights and the Environment, clean air is a human right since it is “essential to life, health, dignity and well-being.”ⁱ Moreover, “[t]he foreseeable adverse effects of poor air quality on the enjoyment of human rights give rise to extensive duties of States to take immediate actions to protect against those effects.”ⁱⁱ Canada also has an obligation to clean up air pollution in order to protect the rights to life, security of the person and equality under the *Canadian Charter of Rights and Freedoms*. Fortunately, technical

and policy solutions exist to clean up heavy truck emissions, improve Canada's air quality and increase longevity, health, productivity and prosperity in the process.

2. Diesel emissions from heavy trucks are dangerous to human health

Air pollution causes approximately 15,300 premature deaths in Canada every year.ⁱⁱⁱ (To put this into perspective, that is greater than the number of Canadians who died from COVID in 2020).^{iv} As Health Canada explains, “[a]ir pollution is recognized globally as a major health risk. Exposure to ambient air pollution, for example, increases the risk of premature mortality from heart disease, stroke and lung cancer. *Air pollution represents the largest environmental risk to health.*”^v

More specifically, traffic-related air pollution is known to cause serious health damage, especially for vulnerable people who live near roadways.

- Health effects that have been associated with proximity to roads include asthma onset and aggravation, cardiovascular disease, reduced lung function, impaired lung development in children, pre-term and low-birthweight infants, childhood leukemia, and premature death.^{vi}
- Children, older adults, people with pre-existing cardiopulmonary disease, and people of low socioeconomic status are among those at higher risk for health impacts from air pollution near roadways.^{vii}
- Research findings indicate that roadways generally influence air quality within a few hundred meters downwind from the vicinity of heavily traveled roadways **or along corridors with significant trucking traffic.**^{viii}

Health Canada observes that “the total annual monetary value of the health burden [of traffic-related air pollution] was estimated at \$9.5 billion (CAD 2015), with \$9 billion being associated with premature deaths. *Analysis also found that...heavy-duty vehicles (e.g., commercial trucks and buses) contributed to approximately 63% of premature deaths.*”^{ix} Furthermore:

Annual counts for some non-fatal outcomes are much higher than for premature deaths, including 2,700,000 acute respiratory symptom days, 1,100,000 restricted activity days and 210,000 asthma symptom days. Estimates for more severe non-fatal outcomes include 610 emergency room visits and 170 hospital admissions per year. The economic costs for non-fatal outcomes total \$470 million per year (CAD 2015).^x

Within the broader mix of traffic-related air emissions, large diesel trucks are the worst offenders and older large trucks are the worst of the worst. Health Canada confirms that diesel emissions can cause (among other things) cancer, respiratory inflammation, and asthma.^{xi} Moreover, diesel

emissions from heavy trucks disproportionately impact vulnerable people including low income and racialized communities, children, elders and people living with respiratory disabilities.^{xii}

The leading Canadian study on near-road air pollution, which analyzed emissions from 200 million vehicles over approximately 400 days, describes the problem as follows:

Highly polluting diesel trucks are making a disproportionate contribution and they represent the major source of key pollutants such as nitrogen oxides and black carbon...*[E]xcessive exposure to diesel exhaust can occur near roads with a significant proportion of truck traffic.*^{xiii}

The authors of this study also note that “a small portion of the trucks and cars were responsible for the majority of emissions. *Policies and programs implemented to remove this small fraction of highest emitting vehicles from populated areas could yield large benefits.*”^{xiv}

3. It is time to close the federal loophole for old, highly polluting heavy trucks

Canada’s leading study on near-road air pollution states as its number one recommendation that governments should “reduce near-road diesel exhaust concentrations”.^{xv} In particular, the researchers underlined the importance of removing highly polluting trucks from the roadway:

Targeting the most highly polluting trucks likely offers the most effective opportunity to achieve rapid reductions in diesel emissions.^{xvi}

Federal vehicle emissions standards were updated for truck model years 2007 and newer. However, these newer, more health-protective standards do not apply to older heavy trucks, resulting in unsafe levels of diesel emissions in communities where there is heavy truck traffic. As Health Canada explains: “Some jurisdictions have undertaken additional initiatives to mitigate in-use diesel engine emissions and human exposure to them, such as inspection and maintenance programs, retrofit and scrappage programs and idling restrictions. *However, the Canadian in-use diesel fleet is still dominated by engines pre-dating the most recent emission standards.*”^{xvii}

Indeed, older heavy duty diesel engines are legally permitted to emit *ten times* more particulate pollution than their newer counterparts. This is a dramatic departure from health-based emissions regulation. The following table summarizes federal emissions standards for heavy duty trucks, depending on model year:

Table 1. Canadian exhaust emission standards for heavy duty diesel engines (applicable to vehicles approximately greater than 14 000lb) for various model years, as presented in the *On-Road Vehicle and Engine Emission Regulations (ORVEER)*.^{xviii}

| Model year | Emission types | | | | | | | | |
|---------------------------|-----------------------------------------|-------------------------------------|-----------------|------|----------------------------|----------------------------|--------------------------------|---------------------|----------------------|
| | NO _x (g/bhp-hr) ^c | | | | CO (g/bhp-hr) ^f | PM (g/bhp-hr) ^g | Opacity of smoke emissions (%) | | |
| | NO _x +NMHC ^d | NO _x +NMHCE ^e | NO _x | NMHC | | | Engine acceleration mode | Engine lugging mode | Peaks in either mode |
| 2004-2006 ^a | 2.4 | 2.4 | - | - | 15.5 | 0.10 | 20 | 15 | 50 |
| 2007-onwards ^b | - ^h | - | 0.20 | 0.14 | 15.5 | 0.01 | - | - | - |

- a. CFR 86.004-11
- b. CFR 86.007-11
- c. Oxides of Nitrogen (NO_x) and grams per brake horsepower-hour (g/bhp-hr)
- d. Non-methane Hydrocarbons (NMHC)
- e. Non-methane Hydrocarbon Equivalent (NMHCE)
- f. Carbon monoxide
- g. Particulate matter
- h. No standard available for this compound

Given recent amendments to the *Canadian Environmental Protection Act*, the federal government is obligated to consider the cumulative impacts of heavy-duty vehicle emissions, their impact on disadvantaged communities, and how to reduce such emissions in order to protect all Canadians' right to a healthy environment.

4. Multiple solutions exist to support the trucking industry to clean up emissions

Retrofit technologies are available to reduce dangerous air pollution from heavy trucks,^{xix} but there is currently no legal requirement to take advantage of these technologies. All-electric heavy trucks have also become available,^{xx} but again there is currently no regulatory requirement or incentive for Canadian truck companies to invest in electrifying their fleets. Moreover, trucking currently plays an important role in Canada's economy and trucking companies may require assistance to retrofit or replace older, highly polluting vehicles. Given the very high costs of air pollution (in healthcare, premature mortality, morbidity, and lost productivity), it makes economic sense for the federal government to invest in assisting trucking companies to reduce their emissions of dangerous air pollutants. Moreover, federal leadership is needed to assess the scope and severity of truck-related air pollution, warn exposed populations, and help municipalities to establish health-protective mechanisms for addressing the issue. In particular, we submit that the federal government should:

- a. Establish and fund a national near-road air quality monitoring network, as recommended in the leading national study on near-road air pollution.**

As noted by Evans *et al.*:

Long-term near-road monitoring stations should be established in Canada's largest cities. This foundation of permanent stations should be supplemented by smaller and more easily deployable technologies to allow shorter term investigations at locations of specific concern, *such as sites with high truck traffic*; new neighbourhoods, schools and daycares; or developments near populations that will substantially increase vehicle traffic.^{xxi}

- b. Provide financial, legal and technical assistance to Canadian municipalities to help them establish low-emission zones (or "clean air zones") in which all vehicles are required to meet health protective emissions standards or pay fines.**

Municipalities in Europe, China and Japan (eg London^{xxii} and Paris^{xxiii}) have established Low Emissions Zones in their downtown areas where they prohibit or impose fees for high-polluting vehicles.^{xxiv} As noted on the website of the Métropole de Grand Paris, "The purpose of a Low Emissions Zone is to protect populations in the most polluted, high-density areas. This concept has already been adopted by 230 European cities and has been recognised as particularly effective."^{xxv} Such Low- or Zero Emissions Zones have produced "dramatic improvement in air quality, show[ing] the effectiveness of using regulatory authority and fees to encourage clean transportation choices."^{xxvi} With funding and assistance from the federal government, Canadian cities could begin to implement such zones incrementally, refining the regulatory approach and

tightening emissions standards as time passes. Low emissions zones are a highly effective way to rapidly reduce emissions in areas that are particularly vulnerable to the harmful effects of heavy truck emissions.

c. Amend the federal Green Freight Program to create new grants specifically targeted at health-based retrofits for older, highly polluting trucks.

The Government of Canada’s Green Freight Program represents an unprecedented and progressive investment in climate-proofing Canada’s trucking fleet. The program is designed to “help fleets reduce their fuel consumption and greenhouse gas emissions through fleet energy assessments, fleet retrofits, engine repowers, logistical best-practice implementation and the purchase of low carbon vehicles.”^{xxvii} While interventions to increase fuel efficiency and reduce GHG emissions will sometimes have incidental benefits for air quality, they do not provide a meaningful solution to the harmful health effects of truck emissions in populated areas. The federal government should create a new stream of grants specifically for health-related retrofits to reduce contaminants of concern such as particulate matter, nitrogen oxides, carbon monoxide, black carbon etc.

d. Provide tax incentives to trucking companies to install health-protective retrofits to reduce harmful emissions.

As a complement or alternative to grants, the federal government should consider providing tax incentives to improve the economic feasibility of scrapping or retrofitting older, highly polluting trucks. The Government of Canada has already recognized the utility of tax mechanisms for incentivizing green transitions, through programs such as the Clean Tech Credit and the Clean Tech Incentives. Tax incentives to reduce truck emissions could be added to either of these or a separate program could be created.

QUESTIONS:

Questions to the Ministers of Health, NRCAN and ECCC

1. The 2019 Near-Road Air Pollution Pilot Study, Final Report from the Southern Ontario Centre for the Atmospheric Aerosol Research University of Toronto recommended that “Much more traffic data should be collected and disseminated for major roadways in large urban areas. Traffic counts, fleet composition, and other traffic-related information are important determinants of population exposure to traffic-related air pollution. Traffic data are typically collected by municipalities in Canada but are difficult to obtain in standardized and systematic formats for large geographic areas. A standardized approach to collecting traffic data—truck data in particular—would provide valuable information that can be used to extrapolate results from near road measurement sites across areas impacted by traffic and support traffic models.”

Since 2019, what work have your departments undertaken or funded to assess and develop a national near-road air quality monitoring program?

Please provide details and copies of any such assessments or design work.

2. What reviews and assessments have your departments undertaken or funded on Low Emission Zones in downtown areas of municipalities in Europe (for example, London and Paris), China and Japan where prohibitions or fees for high polluting vehicles have been implemented. What assessments have been prepared or funded for similar Low Emission Zones in Canada including assessment of financing necessary for implementation.

Please provide details and copies of any such reviews or assessments.

Questions to the Ministers of NRCAN and ECCC

3. What consideration has been given and/or assessments developed for the revision of Natural Resources Canada's Green Freight Program in order to create a stream of funding for retrofits aimed at reducing hazardous air pollutants? Please provide details and copies of any assessments including any summary report on the achievement of Green Freight Program to-date and recommendations for further action.

4. Given that targeting the most highly polluting trucks likely offers the most effective opportunity to achieve rapid reductions in diesel emissions and that the Canadian in-use diesel fleet is still dominated by engines pre-dating the most recent emission standard, what assessments and/or plans have the two departments developed for progressively applying the 2007 vehicle emissions standards to older vehicles? Please provide details and copies of any assessments or plans.

5. What enforcement measures are in place for the federal vehicle emissions standards for truck model years 2007 and newer. Please provide reports from the last five years on enforcement activities including compliance promotion, inspections, warnings and prosecutions.

Question to the Minister of Finance

6. Will the federal government provide financing for

- pilot projects on Low- and No-Emissions Zones which could be, for example, delivered through the Federation of Canadian Municipalities' Green Municipal Fund?
- a national near-road air quality monitoring program?
- a revised Green Freight Program with a stream of funding for retrofits aimed at reducing hazardous air pollutants?
- tax incentives to support Canadian trucking companies to transition to cleaner vehicles?

Conclusion

Truck-related air pollution is a major public health concern and federal interventions to address this issue present an unparalleled opportunity to save lives, improve quality of life and reduce healthcare costs in Canada. Investments to clean up air quality should also find broad support among Canadians from all walks of life. No matter who we are, where we live, or what we believe, all Canadians want safe air for themselves, their children, their neighbours and their communities. It is time for federal action on heavy truck pollution.

Sincerely,



Lynda Collins
uOttawa-Ecojustice Environmental Law Clinic



Ali Naraghi
Ecojustice Canada

ⁱ “Issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment: Report of the Special Rapporteur” (8 January 2019) A/HRC/40/55 at para 44.

ⁱⁱ *Ibid* at para 57.

ⁱⁱⁱ Health Canada, Health Impacts of Air Pollution in Canada: Estimates of morbidity and premature mortality outcomes – 2021 Report, on-line: <https://www.canada.ca/en/health-canada/services/publications/healthy-living/2021-health-effects-indoor-air-pollution.html>

^{iv} See “Cases, deaths and hospitalizations: Comparing Canada's two years of COVID-19” <https://www.ctvnews.ca/health/coronavirus/cases-deaths-and-hospitalizations-comparing-canada-s-two-years-of-covid-19-1.5722463>.

^v *Ibid* at 5.

^{vi} United States Environmental Protection Agency, “Near Roadway Air Pollution and Health: Frequently Asked Questions” on-line https://www.epa.gov/sites/default/files/2015-11/documents/420f14044_0.pdf

^{vii} *Ibid* at 3.

^{viii} *Ibid* at 2.

^{ix} Health Canada, Health Burdens of Traffic-Related Air Pollution in Canada https://publications.gc.ca/collections/collection_2022/sc-hc/H144-91-2022-eng.pdf at 3.

^x *Ibid* at 33.

^{xi} Health Canada, *Human Health Risk Assessment for Diesel Exhaust – Summary* <https://www.canada.ca/en/health-canada/services/publications/healthy-living/human-health-risk-assessment-diesel-exhaust-summary.html>

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- ^{xii} See Canadian Association of Physicians for the Environment, *Mobilizing Evidence: Activating Change on Traffic Related Air Pollution (TRAP) Health Impacts* (2022) <https://cape.ca/wp-content/uploads/2022/05/CAPE-TRAP-2022-2.pdf>.
- ^{xiii} Southern Ontario Centre for Atmospheric Aerosol Research – University of Toronto, *Near-Road Air Pollution Pilot Study – Final Report* (2019) Abstract <https://tspace.library.utoronto.ca/handle/1807/96917>; full report: <https://tspace.library.utoronto.ca/bitstream/1807/96917/4/Near%20Road%20Study%20Report.pdf>.
- ^{xiv} *Ibid* at 2 (emphasis added).
- ^{xv} Southern Ontario Centre for Atmospheric Aerosol Research – University of Toronto, *Near-Road Air Pollution Pilot Study – Summary Report* at 14.
- ^{xvi} *Ibid*.
- ^{xvii} *Ibid*.
- ^{xviii} SOR/2003-2. [ORVEER]
- ^{xix} NRDC, *Cleaning Up Today's Dirty Diesels* <https://www.nrdc.org/sites/default/files/retrofit.pdf>.
- ^{xx} International Energy Agency, “Trends in electric heavy duty vehicles” <https://www.iea.org/reports/global-ev-outlook-2023/trends-in-electric-heavy-duty-vehicles>.
- ^{xxi} Southern Ontario Centre for Atmospheric Aerosol Research – University of Toronto, *Near-Road Air Pollution Pilot Study – Summary Report* at 14 at 16.
- ^{xxii} London’s Ultra-Low Emissions Zone has now expanded to an area 18 times the size of central London and protects more than 3 million people from the health hazards of highly polluting vehicles. See <https://www.london.gov.uk/programmes-and-strategies/environment-and-climate-change/pollution-and-air-quality/mayors-ultra-low-emission-zone-london>.
- ^{xxiii} Métropole de Grand Paris, “Metropolitan Low Emissions Zones” <https://www.metropolegrandparis.fr/en/ZFE>.
- ^{xxiv} Pembina Institute, *Building Healthy Cities in the Doorstep-Delivery Era* at 14-16.
- ^{xxv} See <https://www.metropolegrandparis.fr/en/ZFE>.
- ^{xxvi} David Miller, *Solved: How the World's Great Cities are Fixing the Climate Crisis* (2020: University of Toronto Press) at 119.
- ^{xxvii} Natural Resources Canada, “Green Freight Program” <https://natural-resources.canada.ca/energy-efficiency/transportation-alternative-fuels/greening-freight-programs/green-freight-program/20893>.