Climate Protection & Restoration Initiative

September 22, 2025

Lee Zeldin, Administrator
Environmental Protection Agency

Docket ID No. *EPA–HQ–OAR–2025–0194; FRL–12715–01–OAR*:
Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards

Regarding: Comment of Dr. Donn J Viviani, James E. Hansen, John Fitzgerald, Dr. John Birks, Dr. Lise Van Susteran, Dr. Eelco Rohling, Mike Schauer, Rabbi Dev Noily, Richard Heede, Stephanie Herrington, Randolph Nelson Bonner, and Climate Protection and Restoration Initiative

Dear Mr. Administrator,

This comment is on behalf of CPR Initiative and eleven members of its Boards of Directors and Advisors pertaining to your August 1, 2025, Federal Register Notice (FRN) to reconsider EPA's 2009 endangerment finding and repeal vehicle greenhouse gas standards (hereafter, FRN).

Specifically, pursuant to your FRN, you propose to:

- repeal all greenhouse gas (GHG) emission standards for light-duty, medium-duty, and heavy-duty vehicles and engines,
- interpret CAA section 202(a) as no longer authorizing you to prescribe emission standards to address global climate change concerns and, on that basis, rescind the Administrator's prior findings in 2009 that GHG emissions from new motor vehicles and engines contribute to air pollution which may endanger public health or welfare,
- rescind the Administrator's prior findings in 2009 on the alternative ground that the EPA unreasonably analyzed the scientific record and because developments cast significant doubt on the reliability of the findings,
- repeal all GHG emission standards on the alternative bases that no requisite technology for vehicle and engine emission control can address the global climate change concerns identified in the findings without risking greater harms to public health and welfare.

In summary response here, the undersigned aver that you have misread the 2009 Endangerment Finding as well as Clean Air Act §202(a), that your assessment of the scientific record is without foundation, that you have thereby misapprehended the nature of the climate crisis, and that your decision to eliminate existing emissions restrictions, rather than replace them with equally or more effective tools is directly contrary to your fundamental duties under domestic and international law.

Below we turn, first, to the cumulative nature of the problem of the climate crisis. Second, we examine the relative contribution to that problem that is specifically at issue in Clean Air Act §202(a) and consider your novel immeasurability assertion. Third, we turn to consider whether your new interpretation of §202(a) – as to the type of pollutants that are the proper object of that provision's regulatory concern – amounts to an intolerable distortion of the law.

We conclude with a request that you reconsider your present proposal until and unless the nation is by other means well-embarked on a comprehensive decarbonization pathway that meets our fundamental moral and legal obligations.

I. Every Additional Ton of GHG Emissions Matters

As an initial and overarching matter, it is critically important to point out that the climate crisis is a notable instance – indeed, in light of its high stakes, perhaps **the** most notable instance – of a collective action problem, one that neither can be resolved by the United States alone, nor without our nation's full and effective engagement.

And yet, by your FRN, you essentially throw in the towel, urging withdrawal of the nation from the global battle to arrest dangerous climate change on the ground that US GHG emissions from Clean Air Act-regulable sectors are "well below the scientific threshold for measurability."[1]

Construed charitably, your argument proceeds as follows:

(i) Section §202(a) sources of GHG emissions (on-road vehicles and engines), even if eliminated by future regulation, would "correspond" only to "an approximate 3 percent reduction in predicted warming trends,"

(ii) But "[g]lobal warming trends from 1979 to 2023, the period with the best available data, were determined to a precision (or margin of error) of plus or minus 15 percent total,"

[1] 90 FR 36311.

(iii) Accordingly, "even when considered together, the impact of reducing all GHG emissions from motor vehicles and motor vehicle engines to zero would not result in a measurable impact on trends in climate change."[2] And any regulatory effort that results in no "more than *de minimis* impact on trends in climate change [] would not demonstrate a requisite technology for regulatory purposes."[3]

There are formal and practical problems with your argument. On the formal side, you confuse statistical variance in global warming trends with the concept of a quantity of GHG whose emission will make no difference. But in the context of our present circumstance, wherein humanity's profligate use of fossil fuels has caused us already substantially to overshoot the safe level of atmospheric CO_2,[4] there is really no *de minimis* additional contribution from a major source[5] – unless, perhaps, one is considering a quantity that is truly undetectable by any pertinent instrument or sensor. As the National Academy of Sciences recently pointed out, "[c]ontinued emissions of greenhouse gases from human activities will lead to more climate changes in the United States, with the severity of expected change increasing **with every ton of greenhouse gases emitted**."[6]

II. Clean Air Act §202 (a) sectoral contribution to dangerous climate change

The practical problem with your threshold approach arises with the fact that every Clean Air Act regulable sector of GHG emissions in the United States is well below your asserted ± 15 percent of global emissions "scientific threshold for measurability." Indeed, that is also true for all US fossil fuel CO_2 emissions sources *combined*, since 2023 US fossil fuel emissions from industrial sources amount "only" to 12 percent of total global emissions – while US on-road emissions account for only 3.6% of that total.

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[2] 90 FR 36312.

[3] 90 FR 36303.

[4] Hansen, J., M. Sato, P. Kharecha, D. Beerling, R. Berner, V. Masson-Delmotte, M. Pagani, M. Raymo, D.L. Royer, and J.C. Zachos, 2008: *Target atmospheric* CO_2*: Where should humanity aim?* Open Atmos. Sci. J., 2, 217-231, doi:10.2174/1874282300802010217.

[5] A similar point was made recently by the scholar and undersigned Commenter Richard Heede in his recently co-published work, with Quilcaille, Y., Gudmundsson, L., Schumacher, D.L., et al. *Systematic attribution of heatwaves to the emissions of carbon majors*. Nature 645, 392–398 (2025). https://doi.org/10.1038/s41586-025-09450-9: "We, therefore, establish that the influence of climate change on heatwaves has increased, and that all carbon majors, even the smaller ones, contributed substantially to the occurrence of heatwaves."

[6] National Academies of Sciences, Engineering, and Medicine. 2025. *Effects of Human-Caused Greenhouse Gas Emissions on U.S. Climate, Health, and Welfare* at 2, https://doi.org/10.17226/29239. [Emphasis added.]

Indeed, US on-road sector CO_2 emissions – stemming from light-duty, medium-duty, and heavy-duty vehicles and engines -- are by far the largest of any nation's on-road sector.

As we illustrate in Figure 1 below, if fossil fuel CO_2 emissions stemming from the US on-road sector were that of a nation, as illustrated in the pie chart below, then such "US On-Road Nation" would rank as the fifth largest current annual contributor of fossil fuel CO_2 emissions globally. Accounting for all industrials sources, the US On-Road Nation would lag behind only China CO_2 emissions as a whole, United States CO_2 emissions as a whole, India CO_2 emissions as a whole, and the Russian Federation CO_2 emissions as a whole.

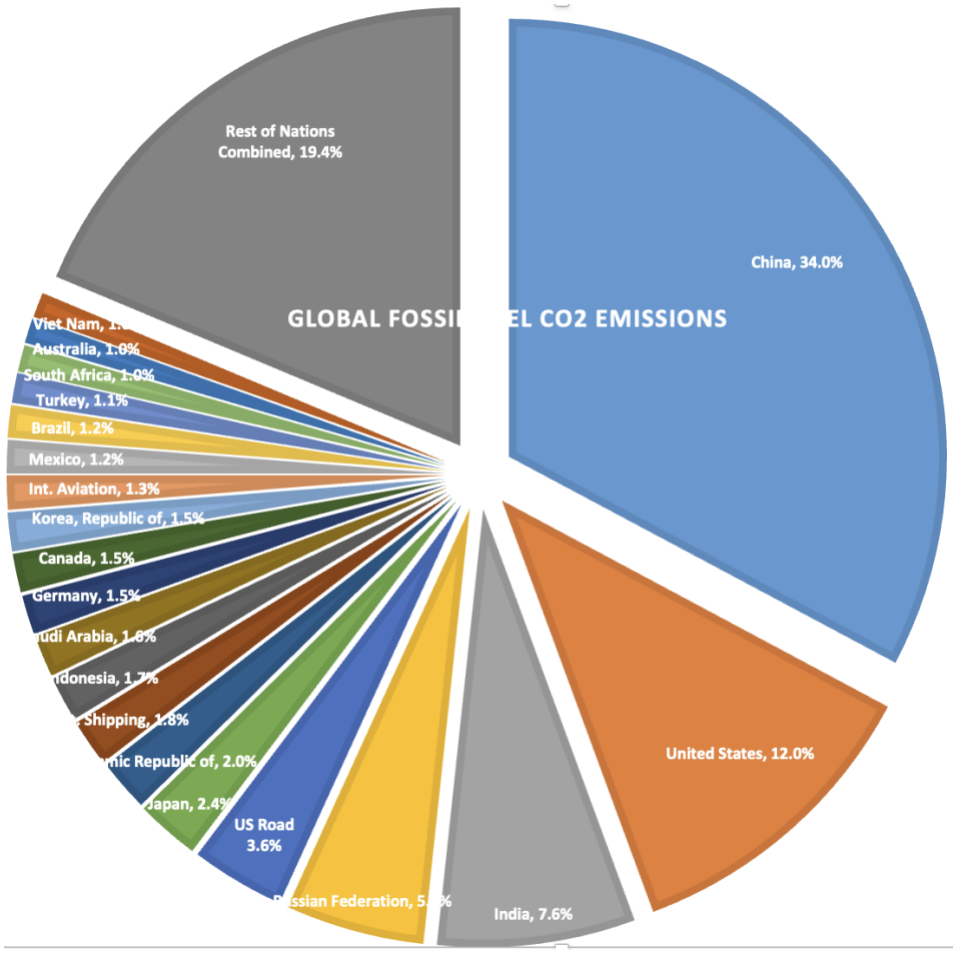

Figure 1: CPR Initiative calculations based on 2023 fossil fuel CO2 emissions, using THE European Commission, Emissions Database for Global Atmospheric Research (EDGAR) Global Greenhouse Gas Emissions Annual totals by sector and country (1970-2023), IEA-EDGAR CO_2 spreadsheet.

Indeed, your Agency made a similar point in its 2009 Endangerment Finding.[7]

Accordingly, if your postulated 15 percent of global emissions "scientific regulatory measurability threshold" were universalized, it would inoculate the emissions of every nation except for China – even where the entirety of each nation's fossil fuel CO_2 emissions were considered as from one sector subject to that nation's regulatory jurisdiction. Wide adoption of your approach, then, would entirely defeat the existing commitment of the United States, as well as nearly every nation, to "protect the climate system."[8]

Moreover, in accordance with its common but differentiated responsibility and respective capability, we find that the United States retains a signal moral and legal duty to combat dangerous climate change. This is rendered clear by the following graphic, made available by undersigned Commenter James E. Hansen.

Figure 2 (a) illustrates per capita emissions in 2022, with the left scale indicating the amount of CO_2 emissions in terms of weighted carbon emissions per person per year; in turn, the right scale indicates the approximate cost to undertake removal of each such person's emissions. Global warming impacts, however, are a function, in large part, of accumulated GHG emissions, and so per capita cumulative emissions and removal costs are depicted in Figure 2 (b). Whether on an annual or cumulative basis, the US per capita contribution to elevated atmospheric CO_2 vastly exceeds that of China, India, and the global average.

[7] 74 FR 66496, 66539, stating as follows: "If CAA section 202(a) source categories' emissions of well-mixed greenhouse gas were ranked against total well-mixed greenhouse gas emissions for entire countries, CAA section 202(a) source category emissions would rank behind only China, the United States as a whole, Russia, and India, and would rank ahead of Japan, Brazil, Germany and every other country in the world. Indeed, countries with lower emissions than the CAA section 202(a) source categories are members of the 17 "major economies'' "that meet to advance the exploration of concrete initiatives and joint ventures that increase the supply of clean energy while cutting greenhouse gas emissions.'' See http://www.state.gov/g/oes/climate/mem/. It would be anomalous, to say the least, to consider Japan and these other countries as major players in the global climate change community and an integral part of the solution, but not find that CAA section 202(a) source category emissions contribute to the global problem. Thus, the Administrator finds that emission of well-mixed greenhouse gases from CAA section 202(a) source categories contribute to the air pollution of well mixed greenhouse gases."

[8] United Nations Framework Convention on Climate Change (1992) Article 3, Principle 1 (committing each nation to ""protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities."

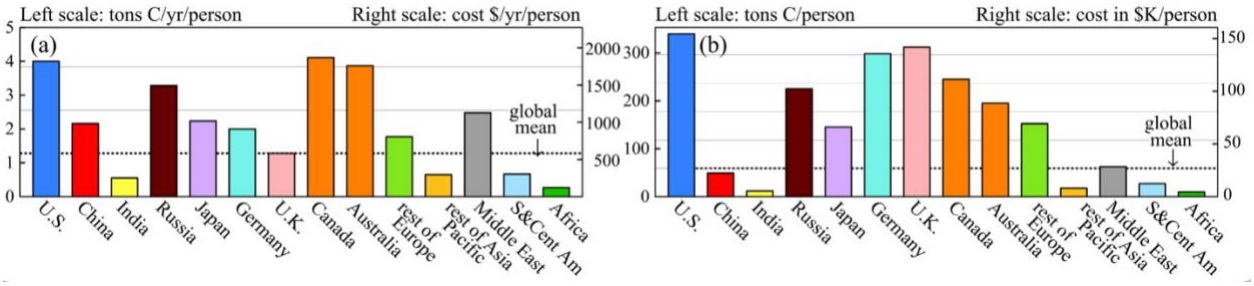

Figure 2: CO_2 emissions per capita in 2022 (left) and 1750-2022 (right). Used with permission from the Columbia University Earth Institute's Climate Science, Awareness and Solutions program. From source denoted at footnote 12 below.

The sad irony of your position here is that, by your proposal, you are seeking to insulate mobile sources of GHG emissions at the very time that advances in clean energy generation and battery technology render it more possible than ever before to zero out such emissions in succeeding fleets of light-, medium-, and heavy duty vehicles and engines.

III. EPA's 2009 Finding was well-supported and is reinforced by the record of more recent years

In 2009, your Agency found that "the mix of six long-lived and directly-emitted greenhouse gases: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6) in the atmosphere may reasonably be anticipated both to endanger public health and to endanger public welfare," 74 FR 66496, 66497, and also that GHG "from the transportation sources covered under CAA section 202(a) contribute to the total greenhouse gas air pollution, and thus to the climate change problem, which is reasonably anticipated to endanger public health and welfare." *Id.* at 66499.

In your FRN, you express concern about the soundness of the 2009 Endangerment Finding, and relatedly whether the relevant record since that time continues to support that Finding. In our review, two prominent documents already in the record allay those concerns, from considerations for brevity and convenience we here, by reference, adopt their central conclusions and analyses. They are the National Academies of Sciences report that we have cited already,[9] and a report by Dessler, Kopp et al. that roundly criticizes a Department of Energy, Climate Working Group report on which you have heavily and intemperately relied in your instant FRN.[10]

[9] *See* Op. Cit nte 5.

[10] Dessler, A.E. and R.E. Kopp (Ed.). (2025). Climate Experts' Review of the DOE Climate Working Group Report. DOI: 10.22541/essoar.175745244.41950365/v2

We need to pause here to especially attend to your suggestion, in the instant FRN, that "the Endangerment Finding was unduly pessimistic in attributing health risks from heat waves to increases in global temperature." In support of this statement, you assert that "the data suggest that domestic temperatures peaked in the 1930s and have remained more or less stable, in relative terms, since those highs."[11] This is, simply put, incorrect, as Dessler, McKinnon, Sanchez, and Zeppetello show in their review of Section 6.3 of the DOE CWG report on which you relied for your assertion.[12] The average number of heat wave days have been increasing across the US since 1980 and have been higher in number than in any prior period in the instrumental record since 2005.[13]

Moreover, rising median temperatures and associated other results – increasingly severe heatwaves, wildfire, sea level rise, superstorms – are fully anticipated in light of continued high emissions. The climate forcing rate is now increasing by ~0.5W/m^2 per decade, a result of increasing atmospheric concentrations of human-caused emissions of CO_2, Methane, and Nitrous Oxide. *See* Figure 3 below. This has been described, and illustrated, James E. Hansen, who is among the undersigned, and his colleagues in their recent work, *Global Warming Has Accelerated: Are the United Nations and the Public Well-Informed?*

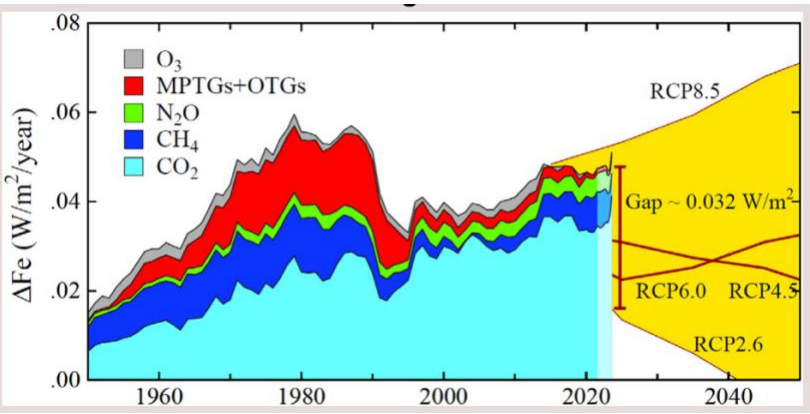

Figure 3: Annual growth of greenhouse gas forcing and various IPCC climate forcing scenarios. Used with permission from the Columbia University Earth Institute's Climate Science, Awareness and Solutions program. Showing several IPCC Representative Concentration Pathways or Scenarios.[14]

[11] 90 FR at 36208.

[12] Op. Cit nte 8 at 177-191

[13] *Id*. at 183.

[14] Source: James E. Hansen, Pushker Kharecha, Makiko Sato, George Tselioudis, Joseph Kelly, Susanne E. Bauer, Reto Ruedy, Eunbi Jeong, Qinjian Jin, Eric Rignot, Isabella Velicogna, Mark R. Schoeberl, Karina von Schuckmann, Joshua Amponsem, Junji Cao, Anton Keskinen, Jing Li & Anni Pokela (2025) Global Warming

Moreover, the GHG emissions forcing gap[15] continues to grow between the reality of persistently high GHG emissions and the pathway (RCP 2.6: phase out of GHG emissions by 2100) indicated by the IPCC that would enable nations to stay within 2°C of warming over the preindustrial level.

As a result, Earth is far out of energy balance and global warming will increase -- even to points of no return including, in particular, potential shutdown of the Atlantic Meridional Overturning Circulation (AMOC) within the next 20-30 years – absent "extraordinary actions [] to affect that imbalance," including concerted emissions reductions and, probably, consideration of at least temporary efforts to dim or reflect incoming solar radiation.[16] A number of experts, including the aforementioned Hansen along with numerous economists,[17] also deem an across-the-board carbon fee – likely accompanied by dividends to households to maintain affordability and blunt special-interest rejectionism – to be essential to substantially jump-start emissions reductions, particularly in jurisdictions, including in the US, with no carbon price and minimal regulatory restrictions.[18] But by your FRN you are recommending sharp movement in the opposite direction, that is, a lifting of present (albeit inadequate) restrictions to encourage an accelerated use of unabated fossil fuels in the transportation sector and beyond. That directional push, in our view, is untenable.

IV. **The Law Can Not Countenance This Rollback**

In your present Notice, you urge that §202(a) cannot be read to require EPA to restrict GHG emissions because, you assert, your Agency is able only to address pollutants that

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Has Accelerated: Are the United Nations and the Public Well-Informed?, Environment: Science and Policy for Sustainable Development, 67:1, 6-44, DOI: 10.1080/00139157.2025.2434494.

MPTGs + OTGs = Montreal Protocol Trace Gases and Other Trace Gases.: RCP2.6 requires CO_2 emissions start declining by 2020 and go to zero by 2100; RCP 4.5 is a "moderate" scenario in which emissions peak around 2040 and then decline; RCP 8.5 is a worst-case scenario in which emissions continue to rise throughout the twenty-first century.

[15] *See also*, UN Environment Program, *Emissions Gap Report 2024* (October 24, 2024) at https://www.unep.org/resources/emissions-gap-report-2024.

[16] *Id*. Supplementary Material at 13.

[17] Op. Cit at 40 ("more than 3,500 economists came out in favor of carbon fee-and-dividend, as well as 28 Nobel Prize-winning economists, all living [former] federal reserve chairs, and 15 former Chairs of the President's Council of Economic Advisers").

[18] *Id*. at 29-31. *See also* Op. Cit Climate Experts' Review of the DOE Climate Working Group Report at 390.

endanger health or welfare via local or regional exposure but not "air pollution raising global climate change concerns."[19]

But your new reading of the statute conflicts directly with that of the Supreme Court in *Massachusetts v EPA*. There the Court had no problem understanding that climate-change risks, even if "widely shared," threaten local and regional interests as well as global ones, so that, for instance, "rising seas have already begun to swallow Massachusetts' coastal land."[20] And, indeed, §202(a) nowhere immunizes from your Agency's regulatory reach pollutants that "contribute to air pollution which may reasonably be anticipated to endanger public health or welfare" simply because those pollutants or that pollution also impose global risks.

Moreover, of course, your Agency has not at all been impeded in promulgating restrictions on SOx and NOx, even though such air emissions can travel hundreds of miles across state and international borders to impose widely dispersed as well as local and regional damage.

In point of fact, your Agency issued its initial GHG emissions Endangerment Finding on the basis not only of the risk such emissions impose on the global, but also in light of their impact to the public health and welfare of the United States.

Specifically, Administrator Jackson, in 2009, "reached her determination by considering both observed and projected effects of greenhouse gases in the atmosphere, their effect on climate, and the public health and welfare risks and impacts associated with such climate change. **The Administrator's assessment focused on public health and public welfare impacts within the United States. She also examined the evidence with respect to impacts in other world regions, and she concluded that these impacts strengthen the case for endangerment to public health and welfare because impacts in other world regions can in turn adversely affect the United States**." 74 FR 66496, 66497. [Emphasis added.]

In your FRN, you also attempt to distinguish your reading of §202(a) from that of your predecessor in the 2009 Endangerment Finding, which you depict as an arrogation of discretion to restrict GHG emissions from motor vehicles and engines that contribute only to "elevated global concentrations of GHGs in the upper atmosphere."[21]

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[19] 90 FR 36301

[20] *Massachusetts v. EPA*, 549 U.S. 497, 522, 127 S. Ct. 1438, 1456 (2007)

[21] 90 FR at 36290, 36292, 36300, 36301, 36304, and 36311.

Once again, there are both formal and practical problems with your attempted statutory construction. On the formal side, §202(a) does not at all restrict its reach to pollutants that endanger health or welfare by their concentration in the lower atmosphere. If Congress intended that particular limitation, it could have written that in – but Congress did not do that.

On the practical side, it is simply not true that the 2009 EF sought only to restrict GHG emissions because of their impact on GHG concentrations in the upper atmosphere.

According to the National Oceanic and Atmospheric Administration, the term "upper atmosphere" refers to the thermosphere—the portion of the atmosphere lying "[b]etween about 53 miles (85 km) to 375 miles (600 km)" above Earth's surface. The thermosphere lies above what is considered the middle atmosphere—the mesosphere (31 miles (50 km) to 53 miles (85 km) above Earth's surface) and the stratosphere (4 -12 miles (6-20 km) to "around" 31 miles (50 km) above the planet)

But the terms "thermosphere," and "upper atmosphere" do not at all appear in the 2009 Endangerment Finding. Moreover, as the atmospheric chemist/ undersigned Commenter John Birks recently observed:

> About 90% of air molecules and thus CO_2 is within the troposphere (below about 15 km at midlatitudes and where weather occurs). Infrared radiation absorbed by CO_2 from Earth's IR emission is re-emitted and reabsorbed by these low-lying CO_2 molecules. As you go higher in altitude, the concentration declines to the point that emitted IR can escape being absorbed by CO_2 (and water vapor and other GHGs) and be lost to space. This occurs in the upper troposphere/lower stratosphere.
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> As for the "upper atmosphere," using the U.S. Standard Atmosphere (1976) tables, the pressure at 85 km is 0.373 Pa ($\approx 3.73\times10^{-3}$ hPa). Sea-level pressure is 101325 Pa. So, the fraction of air molecules (and thus, atmospheric CO_2) above 85 km is 0.373/101325 = 3.68 e-6. [Accordingly] more than 99.999% of CO_2 emitted to the atmosphere remains below the upper atmosphere.

V. **Conclusion**

Nearly 50 years ago, the DC Circuit Court of Appeals recognized that "regulation may be premised on a determination that an air pollutant emitted from a new automobile is likely to contribute to air pollution which endangers the public health."[22] There simply can be no reasonable doubt that the transportation sources covered under CAA section 202(a), including "passenger cars, heavy-, medium and light-duty trucks, motorcycles, and buses,"[23] "contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." Clean Air Act §202(a).

Until or unless the United States is otherwise embarked on a sufficient, firm and binding decarbonization pathway, our present painstakingly derived set of regulatory restrictions on mobile source GHG emissions should not be repealed.

As for your proposed reconsideration of your agency's initial Endangerment Finding: EPA's 2009 determinations remain sound, that

(a) "six greenhouse gases taken in combination endanger both the public health and the public welfare of current and future generations," and

(b) "the combined emissions of these greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas air pollution that endangers public health and welfare under CAA section 202(a)."

If anything, a fair reading of the relevant recent evidence provides even stronger support for the 2009 Endangerment Finding than was available to your Agency at that time.

[22] *Ethyl Corp. v. EPA*, 176 U.S. App. D.C. 373, 541 F.2d 1, 16 (1976).

[23] 74 FR 66496, 66499, nte. 3.