January 5, 2017

VIA ELECTRONIC SUBMISSION

The Honorable Scott Pruitt
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., N.W.
Washington, DC 20460

Attn: EPA-HQ-OAR-2014-0827

RE: Comments of Environmental Defense Fund, the Environmental Law & Policy Center, and West Harlem Environmental Action (WE ACT for Environmental Justice) on the Environmental Protection Agency's Proposed Rule, Repeal of Emission Requirements for Glider Vehicles, Glider Engines, and Glider Kits, 82 Fed. Reg. 53,442 (November 16, 2017)

The Environmental Defense Fund ("EDF"), Environmental Law & Policy Center ("ELPC"), and WE ACT for Environmental Justice ("WE ACT") respectfully submit these comments on the Environmental Protection Agency ("EPA")'s Proposed Rule, *Repeal of Emission Requirements for Glider Vehicles, Glider Engines, and Glider Kits*, 82 Fed. Reg. 53,442 (November 16, 2017) ("Proposed Rule"), addressing provisions contained in the agency's 2016 final rule, *Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2*, 81 Fed. Reg. 73478 (October 25, 2016) ("Phase 2 Standards").

EDF is a national nonprofit organization representing over two million members and supporters. Since 1967, EDF has linked science, economics, and law to create innovative, equitable, and cost-effective solutions to urgent environmental problems.

ELPC is the Midwest's leading public interest environmental legal advocacy and eco-business innovation organization working to improve environmental quality and protect our natural resources. ELPC's separate comments submitted into the docket detail how emissions from trucks will particularly affect people in the Midwest, which experiences some of the most intense freight truck traffic in the country.

WE ACT mobilizes low-income communities of color to make environmental change through advocacy, planning, and research. WE ACT's mission is to build healthy communities by ensuring that people of color and low income residents participate meaningfully in the creation of sound and fair environmental health and protection policies and practices.

EDF, ELPC, and WE ACT join the public health and environmental community, as well as major industry voices, in strongly opposing EPA's proposed repeal of these vital health safeguards. The comments below lay out the key factual issues related to the proposal and then articulate the numerous reasons why this proposed rule is unlawful. In particular, these comments demonstrate that:

- The proposed repeal would undermine overwhelmingly beneficial freight truck pollution standards, resulting in thousands of premature deaths from entirely avoidable exposure to glider vehicle pollution. New modeling detailed in these comments indicates that the Proposed Rule could lead to as many as 4,100 premature deaths in 2025 alone.
- Adopting an indefensible reading of the statute, the Proposed Rule fails to address the severe public health impacts from increased pollution from glider vehicles, the disproportionate risks to environmental justice communities, and the added burden states will face in achieving air quality standards in light of increased pollution from glider vehicles, among numerous other unexplored, pernicious implications.
- The proposal would advantage a narrow slice of the freight truck manufacturing industry by exempting them from vital safeguards—at the expense of public health in communities across the country as well as freight truck industry members that have responsibly invested in pollution controls.
- The proposal unlawfully violates both the agency's substantive duties under the Clean Air Act ("CAA" or the "Act") and minimum procedural requirements.

The comments below lay out the key factual issues related to the proposal and then articulate the numerous reasons why this proposed rule is unlawful. In particular, these comments demonstrate that:

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I. EPA's Proposed Rule Will Have Severe Public Health Impacts.

EPA's proposal to roll back the glider provisions of the Phase 2 Standards fails to consider the public health impacts of these highly polluting vehicles. Without common sense provisions ensuring that glider trucks achieve the same pollution standards that all other new freight trucks must achieve, these vehicles can use the "oldest, dirtiest, and deadliest" engines.[1] The Proposed Rule fails to mention, let alone consider, the substantial volume of criteria pollutant emissions from unregulated glider vehicles, and fails to consider the severe impacts to public health, including thousands of premature deaths, which would result were the proposal adopted. Indeed, the proposal was published before EPA could finish its own updated emissions testing that now further confirms the pollution burden posed by these vehicles.[2]

a. The Proposed Rule allows for an unlimited increase in high-polluting, uncontrolled glider vehicles.

Glider vehicles are diesel freight trucks manufactured by adding a donor engine and powertrain to a new truck chassis. A glider kit is the chassis, front axle, and body of the truck, before the engine and drivetrain are installed. EPA's 2016 Phase 2 Standards required that glider vehicles meet the same pollution standards as all other new diesel freight trucks,[3] in order to address the growing practice of using essentially uncontrolled, high-polluting pre-2002 model year engines as the donor engines in these vehicles.[4]

The practice of building a glider vehicle originated as a means of salvaging useful engines from otherwise wrecked vehicles. Before 2010, a few hundred of these glider vehicles were produced nationwide every year, commensurate with this traditional salvage type of use.[5] That same year, 2010, marked the advent of more protective EPA standards for heavy-duty diesel engines requiring emissions reductions of criteria pollutants, notably oxides of nitrogen (NOx) and particulate matter ($PM_{2.5}$), by 90% over earlier model year engines.[6] These standards reflect the improved performance of emissions control technology – including exhaust aftertreatment devices such as selective catalytic reduction and particle traps.[7] As EPA noted at the time, these new pollution reduction technologies "allow[ed] a major advancement in diesel emissions

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[1] Statement by the Hon. Jamie Raskin (D. Md.), EPA public hearing on Proposed Rule (Dec. 4, 2017) https://raskin.house.gov/media/press-releases/rep-raskin-s-remarks-epa-public-hearing.

[2] As noted in Section VII below, EPA's failure to consider the public health and environmental impacts of the proposal render the proposal both substantively and procedurally unlawful.

[3] With certain tailored provisions and flexibilities, as discussed in greater detail in Section XI.

[4] See generally Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2; Final Rule, 81 Fed. Reg. 73,478, 73,517 (October 25, 2016) [Hereinafter "HDP2 Rule" or "Phase 2 Standards"].).

[5] *See id*., at 73,941-43; 73,942 (Oct. 25, 2016).

[6] Control of Air Pollution From New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements; Final Rule, 66 Fed. Reg. 5001, 5002 (Jan. 18, 2001) ("This program will reduce particulate matter and oxides of nitrogen emissions from heavy duty engines by 90 percent and 95 percent below current standard levels, respectively.")

[7] *See* 66 Fed. Reg. at 5009, 5036 (Jan. 18, 2001).

control of a magnitude comparable to that ushered in by the automotive catalytic converter in the 1970's."[8]

Glider vehicle production increased significantly beginning in 2010, with glider vehicles typically using engines manufactured in 2002 and earlier,[9] taking advantage of a loophole that determined applicable emission standards based on the year the *engine* was manufactured rather than the vehicle, allowing new glider vehicles to be sold that failed to meet the current health-protective standards.

Glider vehicle production soared from a few hundred a year prior to 2010 to an estimated over 10,000 in 2016.[10] Current glider vehicle production rates appear to be even greater.[11] Glider vehicles sold with engines manufactured prior to EPA's more protective emission standards are dramatically more polluting than new trucks with modern engines, with significantly higher emissions of diesel particulate matter, $PM_{2.5}$, and ozone-forming NOx.

EPA addressed this loophole in the 2016 Phase 2 Standards by making freight truck pollution standards equally applicable to all freight trucks, based on the year the new freight truck is manufactured, regardless of the engine year.[12] EPA now proposes to repeal these provisions.

b. Untreated emissions from diesel engines seriously harm public health and the environment.

The exhaust emitted from diesel engines is among the most dangerous and pervasive sources of air pollution. It is a complex mixture of both gaseous and solid materials. The solid material is known as diesel particulate matter, most of which is fine particles or $PM_{2.5}$, and leads to a host of respiratory problems and thousands of premature deaths every year. Diesel particulate matter is typically comprised of carbon particles (soot) and cancer-causing toxic chemicals. Diesel exhaust also contains gaseous pollutants including smog-forming oxides of nitrogen as well as sulfur dioxide, which forms harmful fine particles and falls back to earth as acid rain.

a. Diesel exhaust is classified as a probable and known human carcinogen, like asbestos, benzene, and cigarette smoke. The National Institute for Occupational Safety and Health, International Agency for Research on Cancer, Health Effects Institute, U.S. Department of Health and Human Services National Toxicology Program, and the U.S. Environmental Protection Agency have all determined that diesel exhaust is a probable or likely human carcinogen.[13] The California EPA

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[8] *Id.* at 5009.
[9] HDP2 Rule, 81 Fed. Reg. at 73,518 n.93.
[10] *Id.* at 73,943.73943
[11] Testimony by Nuss Motors, EPA public hearing on glider proposal (December 4, 2017). See detailed discussion in Section I(i) below.
[12] HDP2 Rule, 81 Fed. Reg. at 73,941-47. With certain tailored provisions and flexibilities, as discussed in greater detail in Section XI.
[13] U.S. Environmental Protection Agency. 2002. Health Assessment Document For Diesel Engine Exhaust. May 2002. National Center for Environmental Assessment - Office of Research and Development. Washington, DC. EPA/600/8-90/057F (citing sources).

and the World Health Organization classify diesel exhaust as a known human carcinogen.[14]

b. In addition to these assessments of the carcinogenic nature of diesel exhaust as a mixture of pollutants, many of the individual components of diesel exhaust have also been linked to cancer: for example, diesel constituents benzene and 1,3-butadiene are well-characterized human carcinogens, associated with increased risk of leukemia and lymphoma.[15] The American Cancer Society cohort study has identified an association between exposure to fine particles, sulfates and lung cancer.[16] Several chemicals present in diesel exhaust are known or suspected to increase breast cancer risk, particularly polycyclic aromatic hydrocarbons (PAHs).[17]

c. Diesel air pollution adds to cancer risk all around the country. In many counties across the country, diesel emissions are the air toxic with the highest contribution to cancer risk. For example, a 2003 assessment in the Seattle area found that diesel soot (a component of diesel particulate matter, or PM) accounts for somewhere between 70-85 percent of the total cancer risk from all air toxics.[18] And in the South Coast Air Basin, which includes Los Angeles, diesel exhaust has accounted for about 84 percent of the cancer risk from air toxics, according to a 2008 study.[19] In 2011, New Jersey ranked diesel exhaust particulate matter as having the greatest relative cancer risk statewide among air toxics.[20] In California's San Joaquin Valley alone, one report estimated that diesel pollution caused more than 250 premature deaths in 2004.[21]

d. Because diesel air pollution is a complex mixture of chemicals, exposure to diesel air pollution is considered to contribute to a wide range of non-cancer health effects, including adverse pulmonary effects,[22] pulmonary disease, cardiovascular

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[14] World Health Organization, Public health round-up, 90 Bulletin of the World Health Organization 477-556. (July 2012), http://www.who.int/bulletin/volumes/90/7/12-010712/en/; International Agency for Research on Cancer, IARC: Diesel Engine Exhaust Carcinogenic (Jun. 12, 2012), *available at* https://www.iarc.fr/en/media-centre/pr/2012/pdfs/pr213_E.pdf; CARB, Overview: Diesel Exhaust and Health (last reviewed Apr. 12, 2016), https://www.arb.ca.gov/research/diesel/diesel-health.htm.

[15] Melnick RL, Huff JE. 1993. 1,3-Butadiene induces cancer in experimental animals at all concentrations from 6.25 to 8000 parts per million. IARC Sci. Publ. 309-322; National Toxicology Program (NTP). 1993. NTP Toxicology and Carcinogenesis Studies of 1,3-Butadiene (CAS No. 106-99-0) in B6C3F1 Mice (Inhalation Studies). 434:1-389; Snyder R. 2002. Benzene and leukemia. Crit. Rev. Toxicol. 32:155-210; Smith MT, Jones RM, Smith AH. 2007. Benzene exposure and risk of non-Hodgkin lymphoma. Cancer Epidem. Biomark. Prev. 16:385-391.

[16] Pope CA 3rd, Burnett RT, Thun MJ, Calle EE, Krewski D, Ito K, Thurston GD. 2002. Lung cancer, cardiopulmonary mortality, and long-term exposure to fine particulate air pollution. JAMA. 287(9):1132-41.

[17] Brody JG, Moysich KB, Humblet O, Attfield KR, Beehler GP, Rudel RA. 2007. Environmental pollutants and breast cancer: epidemiologic studies. Cancer. 109:2667-2771.

[18] Puget Sound Clean Air Agency, Final Report: Puget Sound Air Toxics Evaluation (Oct. 2003) at ES-4, http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.398.5739&rep=rep1&type=pdf.

[19] South Coast Air Quality Management District, Final Report: MATES III (Sep. 2008) at ES-3, http://www.aqmd.gov/home/library/air-quality-data-studies/health-studies/mates-iii/mates-iii-final-report.

[20] New Jersey Department of Environmental Protection, Air Toxics in New Jersey: Diesel Emissions (2011), http://www.nj.gov/dep/airtoxics/diesemis.htm.

[21] Anair, D. and P. Monahan. 2004. Sick of Soot: Reducing the Health Impacts of Diesel Pollution in California. Cambridge, MA: Union of Concerned Scientists. June.

[22] Peden DB. 2002. Pollutants and asthma: role of air toxics. Environ. Health Perspect. 110:565-568.

effects, neurotoxicity, low birth weight in infants, premature births, congenital abnormalities, and elevated infant mortality rates.[23]

e. Diesel air pollution is a major source of harmful fine particles, also known as $PM_{2.5}$, both from direct emission as well as through PM formed in the atmosphere from gaseous diesel emissions. Particulate matter, or soot, can aggravate respiratory conditions such as asthma and chronic bronchitis and has been associated with cardiac arrhythmias (heartbeat irregularities), heart attacks and premature mortality. People with heart or lung disease, the elderly, and children are at highest risk from exposure to particulate pollution.[24] Current ambient concentrations of particulate matter are a health risk in many locations throughout the country. As with other diesel engines, heavy-duty vehicles emit substantial quantities of $PM_{2.5}$, which contribute to these significant health risks.

f. Diesel air pollution contributes to harmful smog levels. Diesel air pollution components—particularly oxides of nitrogen, or NOx—are major precursors to ozone formation, commonly known as smog.[25] The mobile source sector as a whole is responsible for more than half of all NOx emissions in the U.S.[26]

g. High ozone levels cause acute respiratory problems, aggravated asthma, decreased lung function, inflammation of lung tissue, an increase in hospital admissions and emergency room visits for respiratory causes. Children with asthma are most at risk. Ozone is also associated with premature death.[27]

h. Diesel air pollution impairs visibility.[28] The same fine particles that have adverse health effects cause the haze that pollutes scenic vistas in our National Parks, which more than 330 million people visited in 2016.[29]

i. Diesel air pollution threatens ecosystems across the country. The constituents of diesel exhaust contribute to the acid rain that continues to harm sensitive

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Delfino RJ. 2002. Epidemiologic evidence for asthma and exposure to air toxics: linkages between occupational, indoor, and community air pollution research. 110:573-589.

[23] Krivoshto IN, Richards JR, Albertson TE, Derlet RW. 2008. The Toxicity of Diesel Exhaust: Implications for Primary Care. J Am Board Fam Med. 21:55– 62.

[24] American Lung Association, Particle Pollution, http://www.lung.org/our-initiatives/healthy-air/outdoor/air-pollution/particle-pollution.html (last accessed Jan. 4, 2018).
.http://www.lungusa.org/site/pp.asp?c=dvLUK9O0E&b=35356

[25] U.S. Environmental Protection Agency, Air Emission Sources, Jun. 2, 2017, https://www.epa.gov/air-emissions-inventories/air-emissions-sources (accessed Dec. 30, 2017)..

[26] U.S. Environmental Protection Agency, Air Emission Sources: National Summary of Nitrogen Oxides Emissions, Feb. 10, 2017, https://www3.epa.gov/cgi-bin/broker?polchoice=NOX&_debug=0&_service=data&_program=dataprog.national_1.sas (accessed Dec. 30, 2017)..

[27] Bell ML, Peng RD, Dominici F. 2006. The exposure-response curve for ozone and risk of mortality and the adequacy of current ozone regulations. Environ Health Perspect. 114(4):532-536.
Bell ML, McDermott A, Zeger SL, Samet JM, Dominici F. 2004. Ozone and short-term mortality in 95 US urban communities, 1987-2000. JAMA. 292(19):2372-2378.
Levy JI, Chemerynski SM, Sarnat JA. 2005. Ozone exposure and mortality: an empiric bayes metaregression analysis," Epidemiol. 16(4):458-468.

[28] *See, e.g.*, Hyslop, Nicole Pauly. 2009. Impaired visibility: the air pollution people see. Atmospheric Environment 43:182-195.

[29] National Park Service, Frequently Asked Questions, https://www.nps.gov/aboutus/faqs.htm (last accessed Jan. 4, 2018).

ecosystems, including those in the Adirondack Mountains, southern Appalachians and high elevation ecosystems in the western United States.[30]

c. *In its 2016 Final Rule, EPA found that glider vehicles emit extremely high amounts of NOx, $PM_{2.5}$, and diesel particulate matter, putting public health at risk.*

Multiple presidential administrations have repeatedly updated and advanced heavy duty truck emission standards, a reflection of the urgent need for these standards and overwhelming evidence of their significant public health benefits.[31] Today's new heavy-duty trucks are at least 90 percent cleaner than those manufactured just a decade ago thanks to more protective emissions standards adopted by EPA in 2000 and phased in from 2007 to 2010.[32] These improvements have had dramatic benefits for air quality. According to experts from the International Council on Clean Transportation:

> In just the past 10 years, EPA's actions have led to a greater than 50% drop in PM2.5 and NOx emissions from the country's on-road vehicle fleet. Put that a different way: about a third of the total PM2.5 reduction across all pollution sources since 2007, and more than half of the total NOx reduction, have come from cleaning up heavy truck exhaust. As a result, air quality in the US has improved substantially: average concentrations of PM2.5 and ozone have dropped by 35% and 13% over that same time frame.[33]

This progress is at risk from the pollution emitted by glider vehicles, as EPA found in its 2016 Phase 2 Standards, and which new evidence further underscores.

The old engines installed in typical glider vehicles lack basic emission controls. For example, Fitzgerald Glider Kits, one of the largest manufacturers of glider vehicles in the country,[34] predominantly uses engines that were manufactured before 2002,[35] and thus lack both exhaust gas recirculation (EGR) and exhaust aftertreatment. EPA included this factual finding in its 2016

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[30] EPA, About Diesel Fuels, https://www.epa.gov/diesel-fuel-standards/about-diesel-fuels (last accessed Jan. 4, 2018).

[31] *See, e.g.*, Control of Emissions of Hazardous Air Pollutants from Mobile Sources, 65 Fed. Reg. 48,057 (Aug. 4, 2000); Control of Emissions of Hazardous Air Pollutants From Mobile Sources, 66 Fed. Reg. 5001 (Jan. 18, 2001); Control of Hazardous Air Pollutants From Mobile Sources, 72 Fed. Reg. 8427 (Feb. 26, 2007); HDP2 Rule, 81 Fed. Reg. 73,478 (Oct. 25, 2016).

[32] Control of Air Pollution From New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements; Final Rule, 66 Fed. Reg. 5001, 5002 (Jan. 18, 2001); *see also* HDP2 Rule, 81 Fed. Reg. at 73,942 (Oct. 25, 2016).

[33] Rachel Muncrief and Josh Miller, Scott Pruitt's EPA wants to resurrect the dirty diesel, ICCT Blog (Dec. 1, 2017), https://www.theicct.org/blog/staff/glider-proposal-means-resurrecting-dirty-diesel.

[34] Fitzgerald Glider Kits, *About Fitzgerald*, https://www.fitzgeraldgliderkits.com/about-fitzgerald (last accessed Dec. 29, 2017); Tom Berg, *The Return of the Glider*, Truckinginfo, Apr. 2013, http://www.truckinginfo.com/channel/equipment/article/story/2013/04/the-return-of-the-glider.aspx.

[35] See, e.g. Tom Berg, The Return of the Glider, TruckingInfo.com, Apr. 2013, http://www.truckinginfo.com/article/story/2013/04/the-return-of-the-glider.aspx (describing the engines used by Fitzgerald as Detroit's 12.7-liter Series 60 from the 1999 to 2002 era, as well as "pre-EGR 14-liter Cummins and 15-liter Caterpillar diesels.").

Final Rule;[36] more recently, it similarly concluded in a November 2017 memo in the record that "[n]early all engines for recent glider production are 1998-2002 pre-EGR engines."[37]

As a result, EPA estimated in the 2016 Phase 2 Standards that glider vehicles can have NOx and PM emissions 20–40 times higher than current engines.[38] EPA also estimated in the 2016 Phase 2 Standards that if left unregulated, by 2025, glider vehicles would emit nearly 300,000 tons of NOx and nearly 8,000 tons of PM annually.[39] Assuming 10,000 uncontrolled glider vehicles are sold annually between 2017 and 2025, glider vehicles would comprise only 5% of the heavy trucks on the road but would account for one third of all NOx and PM emissions from the heavy truck fleet.[40]

The additional pollution that EPA's proposed rescission of glider protections would enable is substantial. For comparison, based on EPA's 2016 estimates, the amount of NOx pollution emitted over the life of just one year of sales of glider vehicles is ten times greater than all of the NOx emitted by all the "defeat device" Volkswagen vehicles in the U.S. combined.[41] One of the most significant recent programs to address NOx emissions, the Cross State Air Pollution Rule Update, is expected to reduce 75,000 tons of NOx every year; EPA estimated that without glider vehicle pollution standards, glider NOx emissions in 2025 would be four times that amount.[42] These massive quantities of NOx emissions translate to more frequent and more serious smog incidences around the country—aggravating asthma and other serious respiratory conditions.

Table XX shows EPA's 2016 estimate of the annual volume of glider vehicle emissions in comparison to other major regulations and events.

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[36] HDP2 Rule, at 942-43.
[37] Redacted Letter from Charles Moulis to William Charmley, Nov. 15, 2017, EPA-HQ-OAR-2014-0827-2379, available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2379.
[38] HDP2 Rule, 81 Fed. Reg. at 73,943.
[39] HDP2 Rule, 81 Fed. Reg. at 73,943; see also HDP2 Response to Comments Section 14 Appendix A.
[40] HDP2 Rule, 81 Fed. Reg. at 73,943; see also HDP2 Response to Comments Section 14 Appendix A.
[41] Compare HDP2 Response to Comments at 1964, https://nepis.epa.gov/Exe/ZyPDF.cgi/P100P8IS.PDF?Dockey=P100P8IS.PDF (1,000 MY 2017 glider vehicles would emit 41,500 more tons of NOx over their lifetime compared to vehicles with new engines) with Guillaume P Chossière et al. 2017. Public health impacts of excess NOx emissions from Volkswagen diesel passenger vehicles in Germany. Environ. Res. Lett. 12 034014 (estimating 36.7 million kg in excess NOx emissions from Volkswagen vehicles in the U.S. between 2008 and 2015, converted to 41,000 tons of NOx).
[42] Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS, 81 Fed. Reg. 74,504, 74,573, (Oct. 26, 2016), available at https://www.gpo.gov/fdsys/pkg/FR-2016-10-26/pdf/2016-22240.pdf; HDP2 Rule, 81 Fed. Reg. at 73,943.

Table XX. Comparison of Annual NOx Emissions

	NO_x EMISSIONS REDUCTIONS [TPY]
FLEETWIDE GLIDER VEHICLE EMISSIONS ABOVE CONTROL LEVELS	190,231 TONS IN 2025[1] 318,615 TONS IN 2040[1]
EPA CROSS-STATE AIR POLLUTION RULE UPDATE	75,000 IN 2017 (ANNUAL)[2] 61,000 IN 2017 (OZONE SEASON)[2]
EPA TIER 3 MOTOR VEHICLE EMISSION AND FUEL STANDARDS	264,369 TONS IN 2018[3] 328,509 TONS IN 2030[3]
VW NO_x EXCESS	11,200 TONS IN 2015[4]

TABLE NOTES:

[1] EPA Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles - Phase 2 Response to Comments for Joint Rulemaking, Aug 2016, Appendix A, p. 1962

[2] EPA Regulatory Impact Analysis of the Cross-State Air Pollution Rule (CSAPR) Update for the 2008 National Ambient Air Quality Standards for Ground-Level Ozone, September 2016, p. ES-8

[3] EPA Control of Air Pollution from Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards Final Rule RIA, EPA-420-R-14-005, March 2014, p. ES-7

[4] S.R.H. Barrett et al., Envtl. Res. Lett. 10 (2015) doi:10.1088/1748-9326/10/11/114005

Based on its 2016 estimates, EPA performed a risk analysis that found that each model year of glider vehicle sales would be associated with up to 1,600 premature mortalities over the lifetime of the vehicles.[43] EPA recognized that the assessment was conservative because it considered only the health impacts of fine particulate emissions — not the carcinogenic diesel particulate – and does not consider health effects of ozone formation attributable to these vehicles' high NOx

[43] HDP2 Response to Comments Section 14 Appendix A.

emissions. It also assumes production of 10,000 glider vehicles per year but states that this number is probably low, based on public comments to EPA.[44]

d. EPA's latest testing demonstrates that glider vehicle emissions are even greater than previously estimated.

EPA recently undertook more emission testing at EPA's National Vehicle Fuel and Emissions Laboratory (NVFEL) to refine its data on glider emissions. EPA's newly released updated testing data, which the Proposed Rule fails to acknowledge, indicate that the threat to human health posed by glider trucks is even more serious than EPA found in its 2016 Final Rule.[45]

The test program was comprehensively documented in a November 20, 2017, 40-page test report that included detailed information and data on the test vehicles, test cycles, emission measurement procedures, test fuels, test conditions, quality control and assurance measures, and emission test results.[46] The results of EPA's full chassis dynamometer testing of two glider vehicles and two compliant tractors manufactured in 2014 and 2015 showed that NOx emissions from the glider vehicles were as much as 43 times higher than the compliant vehicles. Particulate emissions ranged as much as 450 times higher than modern, compliant freight trucks.[47] In fact, while testing glider trucks for particulate emissions, EPA had to adjust the flow of exhaust through their system because the levels were so high that the sensor could not effectively measure them.[48]

Figure 9: PM Filters from Glider #1 testing over the Super Cycle Test[2]

Source: EPA. One visible indication of the pollution burden associated with glider vehicles: the PM filters used to measure emissions from one of the glider vehicles that EPA tested show filters

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[44] HDP2 Response to Comments at 1877. Glider truck annual sales figures are discussed in greater detail in Section 1(i) below.
[45] U.S. Environmental Protection Agency, Chassis Dynamometer Testing of Two Recent Model Year Heavy-Duty On-Highway Diesel Glider Vehicles, Nov. 20, 2017, Docket No. EPA-HQ-OAR-2014-0827-2417, https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2417.
[46] *Id.*
[47] *Id.* at 3.
[48] *Id.* at 14-15, Figure 9.

blackened from PM. According to EPA's report, "[t]he PM sampling equipment shut down at phase 2" because the filters were "overloaded with PM" so filters A3 and A4 were not used.[49]

The testing applied a variety of testing cycles in order to mirror actual use patterns for these vehicles. These are the same test cycles used for certification testing. While the level of disparity between emissions from glider vehicles versus from recent model year freight trucks varied based on the pollutant and test cycle, EPA found that "criteria pollutant emissions (NOx, PM, HC, CO) from the … glider vehicles were consistently higher than those of the conventionally manufactured 2014 and 2015 tractors."[50]

The International Council on Clean Transportation (ICCT) evaluated the health implications from these updated pollution figures. ICCT found that if the sales of glider trucks continue to grow, even at a moderate level,[51] they would emit an additional 1.5 million tons of NOx and 16,000 tons of PM emissions, equivalent to more than $12 billion in health damages over the next decade.[52] Estimated premature mortalities and other health effects would thus be correspondingly higher.

These findings underscore that thousands of Americans will die prematurely due to entirely avoidable exposure to glider vehicle emissions should this damaging Proposed Rule be finalized.

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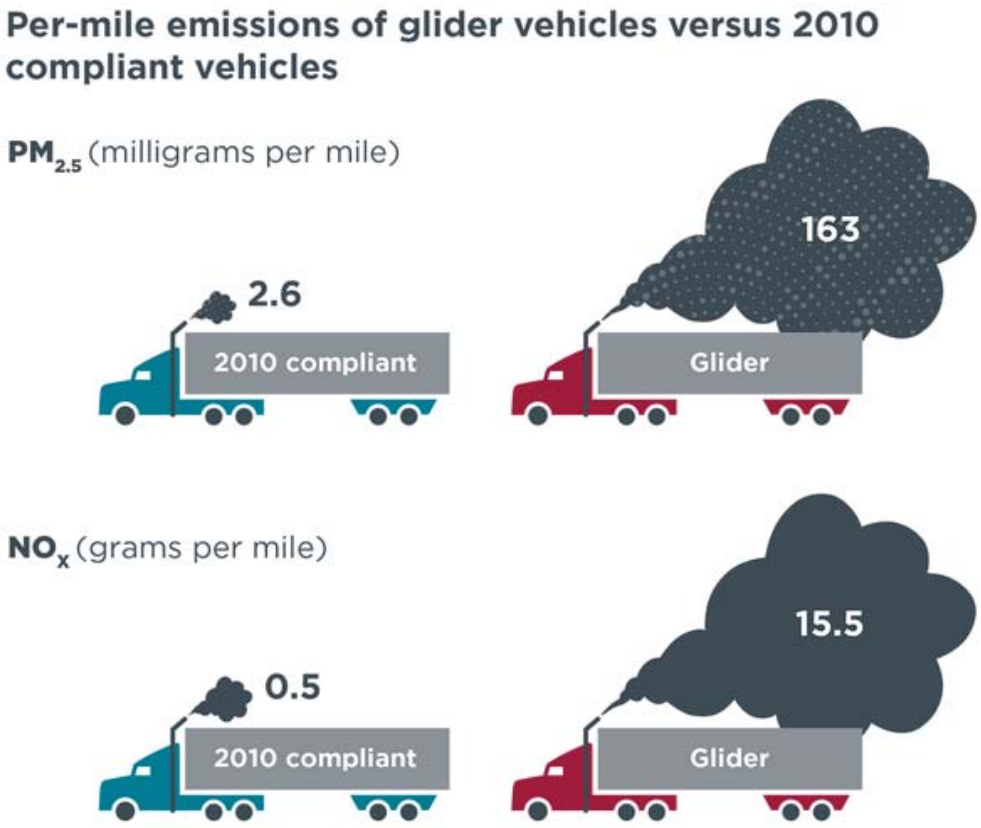
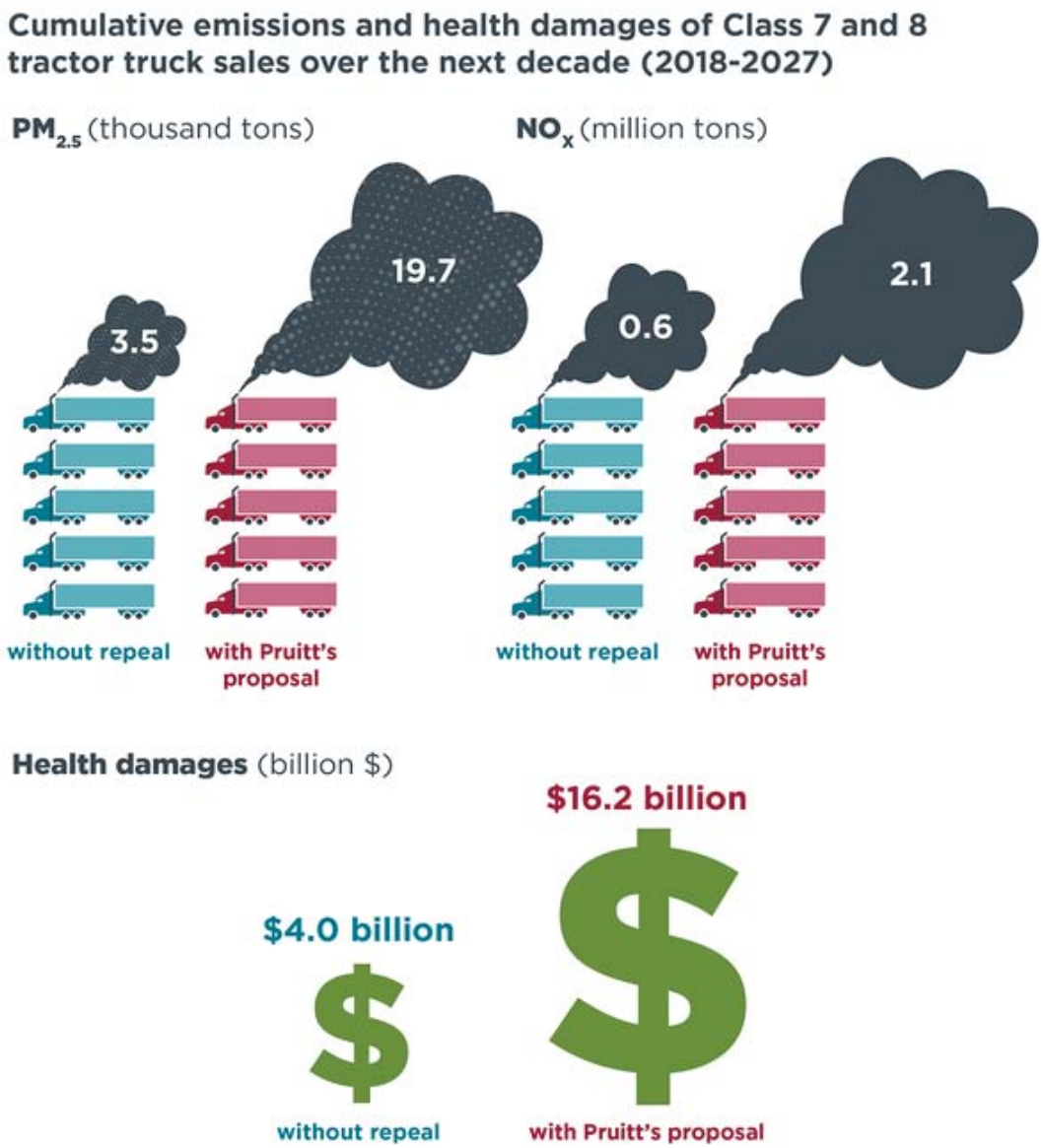
[49] *Id.* at 14, 15, Figure 9.
[50] *Id.* at 3.
[51] As discussed in greater detail in Section 1(i), record evidence indicates the strong likelihood that glider sales could indeed continue to grow.
[52] Rachel Muncrief and Josh Miller, Scott Pruitt's EPA wants to resurrect the dirty diesel, ICCT Blog, Dec. 1, 2017, https://www.theicct.org/blog/staff/glider-proposal-means-resurrecting-dirty-diesel (accessed Dec. 30, 2017).



Source: ICCT[53]

[53] *Id.* (Note: "Per-mile emissions of glider vehicles versus 2010 compliant vehicles. Results are derived from chassis dynamometer testing conducted by US EPA's National Vehicle & Fuel Emissions Laboratory (November 20, 2017). Results reflect a 95% weighting of highway activity (55 and 65 mph cycles) and 5% weighting of transient activity (ARB transient) for a test vehicle with a combined weight of 60,000 pounds (including the tractor, trailer, and payload)."); U.S. Environmental Protection Agency, Chassis Dynamometer Testing of Two Recent Model Year Heavy-Duty On-Highway Diesel Glider Vehicles, Nov. 20, 2017, Docket No. EPA-HQ-OAR-2014-0827-2417, https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2417.).



Source: ICCT.[54]

[54] *Id.* (Note: "Cumulative emissions and health damages of Class 7 and 8 tractor truck sales over the next decade (2018-2027). Estimates without repeal assume glider vehicle sales without 2010 emissions compliant engines drop to 1,000 units per year from 2018 to 2020 and to zero starting in 2021. Estimates with Pruitt's proposal assume sales of glider vehicles with pre-2002 engines are permitted to grow from approximately 10,000 units per year in 2015 to 17,400 units per year in 2027 (10.4% of total sales). Annual total sales and vehicle-miles traveled by tractor-trailers are sourced from US EPA's Motor Vehicle Emission Simulator (MOVES2014). Monetized health damages (in billion 2017 $) are equal to ICCT estimates of direct PM2.5 and NOX emissions from Class 7 and 8 tractor trucks sold in 2018 and later, multiplied by US EPA estimates of damages per ton of direct emissions from on-road mobile sources in 2016. Damages in future years are converted to present value terms using a discount rate of 5% per year.").

e. EPA issued its proposal before its new testing was even complete.

EPA issued the Proposed Rule on November 16, 2017, before the agency published its own testing on November 20, 2017.[55] The Proposed Rule does not refer to, rely on, or explain the agency's own latest findings with respect to glider vehicle emissions.

The Proposed Rule arbitrarily and unlawfully moves towards repealing these common sense protections without meaningfully considering the potential emissions impact. Instead of considering EPA's latest testing, which underscores the serious pollution impacts from this proposal, or engaging with EPA's considered conclusions in the 2016 Phase 2 Standards, the Proposed Rule's only mentions of emission impacts or pollution levels are references to an unsupported and flawed letter from Tennessee Technological University ("Tennessee Tech" or "TTU"), discussed in further detail in Section 1(f) below.

These aspects of the proposal demonstrate EPA has failed to consider properly supported technical data, science and expertise that show these actions put the health of American families at risk. This and numerous other omissions render the proposal arbitrary, capricious and unlawful, as discussed further in Section VII.

f. The TTU study that EPA invokes is unsupported and flawed.

Tennessee Tech conducted a research project from September 2016 to November 2016 to assess "the environmental and economic impact" of EPA's emission requirements for glider vehicles, glider engines, and glider kits.[56] The project and its results were summarized in a June 15, 2017, letter from TTU to U. S. Congressman Diane Black of Tennessee.[57] The letter was authored by Philip B. Oldham and Thomas Brewer, President and Associate Vice President of TTU, respectively. In turn, this study was cited in a July 10, 2017 petition from several glider vehicle manufacturers as a basis for requesting EPA to reconsider its recently finalized rules affecting glider vehicles and their engines.[58]

In its proposal to repeal the emission requirements for glider vehicles, glider engines, and glider kits, EPA explicitly discussed the TTU study and summarized the study's conclusions verbatim without presenting its own independent assessment and critique of the study.[59] The agency's Proposed Rule fails to mention an EPA memo to the docket that summarizes a telephone meeting that EPA staff members had with TTU representatives to discuss testing methodologies, facilities, and test equipment used to generate the data summarized in the July 10, 2017

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[55] U.S. Environmental Protection Agency, Chassis Dynamometer Testing of Two Recent Model Year Heavy-Duty On-Highway Diesel Glider Vehicles, Nov. 20, 2017 at 3, Docket No. EPA-HQ-OAR-2014-0827-2417.
[56] July 10, 2017 Petition for Reconsideration of Application of the Final Rule Entitled "Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2 Final Rule" to Gliders, from Fitzgerald Glider Kits, LLC; Harrison Truck Centers, Inc.; and Indiana Phoenix, Inc. (July 10, 2017), EPA–HQ–OAR–2014–0827, Exhibit 1, *available at* https://www.epa.gov/sites/production/files/2017-07/documents/hd-ghg-fr-fitzgerald-recons-petition-2017-07-10.pdf (hereinafter "Reconsideration Petition").
[57] Reconsideration Petition, Exhibit 1.
[58] Reconsideration Petition.
[59] 82 Fed. Reg. 53,444.

petition[60]--even though this memo raises serious concerns about how the study was conducted that bear directly on the rigor and credibility of the study's conclusions. Furthermore, EPA indicated in this memo to the docket that the agency had requested additional information via email from TTU as a follow-up to the meeting.[61] No mention of this request is included in the Proposed Rule nor is there any documentation of TTU's response to this request, if any, in the docket. Similarly, an email from EPA Office of Transportation and Air Quality Director William Charmley to TTU Associate Vice President Tom Brewer dated December 1, 2017 was posted to the regulatory docket on December 29, 2017.[62] The email indicates that EPA possesses "more detailed emissions data that [TTU] provided in the excel spreadsheet on November 17." This information is neither referenced in the Proposed Rule nor available in the docket.

In contrast, the Agency arbitrarily ignored its own testing of two glider vehicles, discussed in detail above. The EPA test program represents the most comprehensive and rigorous assessment of the emission impacts of glider vehicles performed to date and available in the record. It was conducted on modern equipment, using certification test protocols and appropriate test cycles, with documented test conditions, results, and all other relevant information. Not only does this study confirm and expand EPA's analysis of the harmful glider vehicle emission impacts included in the heavy-duty Phase 2 Standards -- indicating that emission levels of diesel particulate may be even higher than EPA initially estimated in the 2016 Final Rule -- it also directly contradicts the results of the TTU study.[63]

The TTU study and its conclusions raise a number of serious concerns, such that any reliance on this study would constitute legal error.[64] First, the TTU study documentation that is available to the public fails to provide sufficient detail to determine the veracity of its conclusions. Second, the results do not support the conclusions presented in the glider manufacturers' petition for reconsideration or in EPA's Proposed Rule. Finally, a comparison with the Agency's own studies contradicts TTU's findings, further undermining its credibility. We discuss these concerns in more detail below.

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[60] Memorandum, EPA Teleconference with Tennessee Tech University Regarding Glider Test Report Summarized in June 2017 Letter; Tennessee Tech University – Summary of Heavy Duty Truck Study and Evaluation of the Phase II Heavy Duty Truck Rule, Nov. 13, 2007, Docket No. EPA-HQ-OAR-2014-0827-2416, *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2416 (hereinafter "EPA TTU Memo").

[61] *Id.* at 4. On November 29, 2017, EDF submitted a Freedom of Information Act request to EPA for records related to the TTU testing data and other emissions testing of glider vehicles, EPA-HQ-2018-002121. Our request for expedited processing was denied. On December 15, 2017, EDF appealed the denial. We have not yet received a determination on our appeal. EPA has not yet produced any records responsive to the request. EDF has also partnered with the Southern Environmental Law Center ("SELC") to seek relevant testing data from TTU. SELC submitted a public records request pursuant to the Tennessee Public Records Act, Tenn. Code Ann. § 10-7-503, on December 4, 2017. TTU denied the request on the grounds that disclosure of the requested records was prohibited under a state law that provides that sponsored research shall not be open for public inspection unless released by the sponsor, Tenn. Code Ann. § 49-7-120(b)(5).

[62] Email from William Charmley to Tom Brewer, Doc. ID: EPA-HQ-OAR-2014-0827-4272, available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4272.

[63] Phase 2 Standards, Appendix A to Section 14 of the Response to Comments for Joint Rulemaking, Pgs 1960-1968

[64] *See Sierra Club v. U.S. Army Corps of* Engineers, F.2d 1011 (2d Cir. 1983) (invalidating an EIS for "bad faith" reliance on faulty data).

i. The TTU study fails to follow well established EPA emission measurement and testing protocols.

TTU claimed in a 4-page summary test report that it tested "thirteen heavy-duty trucks on a common chassis dynamometer at a common site; eight trucks were remanufactured engines and five were OEM 'certified' engines, all with low mileage." This short statement represents all that is said by TTU to describe its testing. The report presents (1) no details on the specifics of the test vehicles (e.g., model year, mileage, and condition), (2) no information on test cycles, test conditions, test loads, and test fuels, (3) no information on the testing facilities (e.g., test equipment, calibration and maintenance practices, and quality assurance procedures), (4) no information on emission test protocols, and (5) no meaningful data on the pollutants of interest, such as NOx and PM.

The TTU test summary does not conform to standard engineering and scientific operating practices in reporting results from vehicle and engine emission testing. Any use of the report's conclusions based on the deficient and incomplete information that is publicly available would be arbitrary and capricious. Yet the Proposed Rule cites and includes its conclusions.

The only numeric data presented by TTU are carbon monoxide levels for the 13 trucks it tested.[65] The test data show that the test vehicles in all cases have CO levels substantially below the standard for that pollutant. This result is what would have been expected since diesel engines have inherently low CO emission levels. Notably, these results—the only real data described by TTU from the study—are irrelevant to claims that TTU made with regards to NOx and PM emissions.[66] Nonetheless these claims were subsequently quoted in the glider manufacturers' petition for reconsideration to EPA.[67]

Regarding PM levels from glider vehicles, TTU's letter indicated that the PM levels for all 13 test vehicles were "below the threshold detection point" and, consequently, no test data were presented.[68] This is a misleading statement. In fact, TTU did not measure PM at all. EPA staff confirmed in a recent discussion with TTU representatives (including Thomas Brewer, one of the authors of the TTU June 15, 2017 test summary letter), that TTU had not measured PM levels.[69] Instead, TTU had attempted to draw conclusions concerning PM levels via visual inspection and collected no PM emission data.[70] The report's conclusion that "[a]ll vehicles met the standard" for PM[71] is simply not supported by TTU's testing because TTU conceded (only after follow-up inquiry) that it did not even measure PM emission levels for any of the test vehicles.

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[65] Reconsideration Petition, Exhibit 1 Appendix A.
[66] *Id.* at Exhibit 1 pg 2, (concluding that "glider kit HDVs would emit less than 12% of the total NOx and PM emissions, not 50%, for all Class 8 HDVs," without providing any underlying analysis).
[67] *Id.* at pg. 5 (quoting the TTU finding on NOx and PM).
[68] *Id.* at Exhibit 1 Appendix A.
[69] EPA TTU Memo at 3 ("TTU stated that no particulate matter samples were collected during testing. The sample probe filter used with the Enerac M500 was visibly inspected for particulate matter. Particulate quantification was subjective in that it was visual only. TTU stated that they performed a smoke test but did not elaborate.").
[70] Id.
[71] Reconsideration Petition at Exhibit 1 pg 1.

Finally, the TTU letter indicated that for NOx, "all tested engines were higher than the standard and ranged from a low of 0.44 to a high of 6.45."[72] Without explanation, TTU omitted any vehicle-specific NOx emission results; the only exception is a brief mention that a proprietary Fitzgerald engine design and set up had the lowest tested NOx emissions, without any detail on the nature of the engine design or set up, most notably whether it included modern pollution controls, or what test cycles and procedures were used. One would expect that the higher NOx levels would be associated with the Detroit Diesel Series 60 and CAT CT13 engines (no longer produced) as opposed to the more recently introduced Detroit Diesel DD15, but there is no way of knowing, since TTU did not report individual vehicle test values. Furthermore, NOx levels would be highly dependent on test cycle and load conditions, and given that TTU did not provide this type of information, there is no way of evaluating their results. Accordingly, the TTU conclusion that "none of the vehicles met the standards" cannot be independently verified, and the degree to which any tested emissions exceeded the standards cannot be calculated, from the wholly inadequate information it has provided.

ii. The TTU Study's Conclusions are Not Supported by Its Own Test Results

TTU reached the following conclusions: (1) "optimized and remanufactured 2002-2007 engines and OEM 'certified' engines performed equally as well and in some instances out-performed the OEM engines," (2) "a glider remanufactured engine achieved the best result of any engine tested (see Appendix A)," and (3) " remanufactured and OEM engines experience parallel decline in emissions efficiency with increased mileage."[73] Subsequently the glider industry cited these same conclusions in their reconsideration petition as support for their request for EPA to repeal glider provisions included in the heavy-duty Phase 2 final rule.[74] These conclusions, however, are not supported by the data supplied in the summary of the test program prepared by TTU.

First, TTU has not provided sufficient description of its test program to allow an independent assessment of their conclusions. As noted in the preceding section, the only vehicle specific numeric data provided were CO emission levels.[75] But CO emissions are not the pollutant of concern for EPA for the purpose of the Phase 2 Standards or this Proposed Rule. The pollutants of concern — the ones creating the manifest public health hazard — are NOx and PM. Thus, TTU's proffered conclusion that a glider vehicle achieved "the best result"—if based on the CO emission results, which is never clarified—is entirely misleading.

Second, the implication of conclusion (1) above is that the MY2002-2006 glider vehicles have the same NOx and PM emissions as late model, fully compliant vehicles.[76] The publicly

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[72] *Id.* at Exhibit 1 Appendix A,.
[73] *Id.*
[74] *Id.* at 5,.
[75] *Id.* at Exhibit 1 App. A.
[76] EPA TTU Memo. All of the OEM trucks listed in Appendix A of TTU's memo are equipped with Detroit Diesel's DD15 engine. *Id.* Since this engine was first introduced in 2007, *see* Detroit Diesel Corporation, *World-Class in Every Respect: Detroit Diesel DD15 Debuts* (Oct. 19, 2007) *available at* https://demanddetroit.com/our-company/media/press-releases/detroit-diesel-corporation-ddc-to-manufacture-2005-02-23, all of these trucks should be installed in post-MY2007 trucks. Essentially all trucks after MY2007 are equipped with particulate traps which reduce PM emissions by more than 90%compared to pre-2007 trucks. *See* U.S. EPA, Memorandum in Reponse to

available information provides no evidence to substantiate this claim. As described above, TTU did not measure PM emission levels from any of the trucks and conceded that any inspection was "subjective"; accordingly, it is not possible for TTU to draw any conclusions regarding PM. Meanwhile, TTU inexplicably did not report any individual vehicle NOx emission test values. More generally, the summary report omits vital information on testing conditions that are essential to interpret and verify the report. Given that post-MY2007 trucks are equipped with exhaust aftertreatment, which inherently reduces NOx and PM emissions substantially compared to pre-MY2007 engines, it is not possible for this implied conclusion to be true unless the aftertreatment device was malfunctioning. The publicly available information provides no information to substantiate the implied claim that MY2002-2006 glider vehicles have the same NOx and PM emissions as late model, fully compliant vehicles.

Third, NOx and PM emissions levels are heavily impacted by test cycles and because of this EPA has carefully developed representative engine and vehicle test cycles and conditions to ensure accurate characterization of in-use emissions from heavy-duty vehicles and engines.[77] The test points and procedures that TTU used and later provided to the EPA by TTU are clearly inappropriate for use in assessing the in-use emissions from glider vehicles.[78] Their test points are clearly not representative of real truck operation: transient operation testing was not conducted; vehicle preconditioning is not appropriate; and the load and speed test points are arbitrary. Based on what TTU reported, it appears that they simply sampled emissions under a series of steady state test points, that even if measured properly, cannot be used to reach conclusions on engine/vehicle in-use emission performance.

Conclusion (3) also claims that emissions from both glider vehicles and "OEM" vehicles "decline in emission efficiency" with mileage. It appears that TTU is making the point that emissions performance deteriorates with increased mileage. This observation is irrelevant to the question of the emission impact of glider vehicles. This observation is irrelevant to the question of the emission impact of glider vehicles vis a vis trucks equipped with modern pollution controls. It is well established that emission levels generally increase with use not only for trucks but for all other mobile source categories. Furthermore, the design of the TTU test program does not allow an accurate assessment of in-use deterioration. To do so would have required the testing of the same vehicle over time or the testing of multiple vehicles of the same configuration with different accumulated mileages. The publicly available information on TTU's study provides no indication that TTU performed this type of testing.[79]

The record thus demonstrates that the TTU study does not support any conclusions related to the NOx and PM emission impacts of glider vehicles and engines. Its summary of the testing does not provide a sufficient level of detail to allow an independent review and validation of TTU's

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Petition for Rulemaking to Adopt Ultra-Low NOx Standards for On-Highway Heavy-Duty Trucks and Engines at 12 (Dec. 2016) *available at* https://www.epa.gov/sites/production/files/2016-12/documents/nox-memorandum-nox-petition-response-2016-12-20.pdf. Similarly, MY2010 and later trucks are equipped with NOx aftertreatment which reduces NOx emissions by 90% or more compared to pre-2007 trucks. *Id.*

[77] *See* 40 CFR part 86; 40 CFR part 1065; 40 CFR part 1036. *See also* EPA, Vehicle and Fuel Emissions Testing, Dynamometer Drive Schedules, https://www.epa.gov/vehicle-and-fuel-emissions-testing/dynamometer-drive-schedules (last visited Jan. 5, 2018).

[78] EPA TTU memo at 3 and Attachment B.

[79] *Id.* at p. 3 and Attachment B.

conclusions. The evidence in the record demonstrates that TTU's test program did not conform to well-established and standardized testing protocols and methods, TTU did not measure PM emissions, and the conclusions were presented in an inappropriate manner. As discussed in Section 1(f)(iii) below, subsequent follow up with TTU demonstrated that the Fitzgerald test facility is not properly configured to enable compliance with official EPA heavy-duty test procedures. Also, the fact that TTU's study was funded by a glider manufacturer, Fitzgerald Glider Kits, and TTU used a Fitzgerald test facility raises a clear appearance of conflict of interest, as discussed further below in Section 1(f)(iv). For these reasons, it would be arbitrary and capricious for the Agency to rely on the TTU report to support its Proposed Rule or any future deliberations regarding glider vehicles and engines.

iii. EPA's Own Memorandum and Study Further Contradict TTU's Conclusions

EPA included in the docket a memo from agency staff which described a telephone meeting with representatives from TTU to discuss the TTU test program.[80] The memo indicates that the testing was conducted at a Fitzgerald facility located in Rickman, Tennessee and performed by TTU staff and students. Based on Fitzgerald's website, this facility is a "collision and repair facility."[81] Based on publicly available information, this facility does not appear to be equipped to conduct testing in conformity with EPA established and standardized test methods and procedures for emission testing heavy-duty trucks, which were developed to mirror true in-use operation.[82] EPA's memo indicates that the facility, test equipment, and test procedures used by TTU were not consistent with what would be required to comply with EPA's well-established certification quality emission testing protocols, which are in widespread use in the emission characterization testing and evaluation field.[83] For example, the handheld emission analyzer, Enerac 500, used by TTU to measure emissions, is not an approved analytical technique under EPA's regulations and the resolution and accuracy specifications listed in the Enerac's own documentation does not meet the requirements as specified in EPA's testing regulations.[84] The EPA staff memo further confirms that TTU did not even measure one of the critical pollutants in question: particulate matter. The EPA memo provides additional evidence that the TTU work is inadequate and highlights some of the above described deficiencies of the TTU study.

As described above, EPA also included in the docket a staff technical report that summarized in detail the results from EPA's own emission testing of two glider vehicles equipped with remanufactured diesel engines originally certified in model years 1998 to 2002.[85] In contrast to

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[80] EPA TTU Memo.
[81] https://fitzgeraldcollision.com/freightliner-facility/
[82] *See* 40 CFR part 86; 40 CFR part 1065; 40 CFR part 1036. *See also* EPA, Vehicle and Fuel Emissions Testing, Dynamometer Drive Schedules, https://www.epa.gov/vehicle-and-fuel-emissions-testing/dynamometer-drive-schedules (last visited Jan. 5, 2018); National Renewable Energy Laboratory, Drive Cycle Analysis Tool – DriveCAT, https://www.nrel.gov/transportation/drive-cycle-tool/ (last visited Jan. 5, 2018).
[83] See 40 CFR part 1065; 40 CFR part 1036.
[84] See 40 CFR part 1065; EPA TTU memo Attachment on Enerac 500.
[85] U.S. Environmental Protection Agency, Chassis Dynamometer Testing of Two Recent Model Year Heavy-Duty On-Highway Diesel Glider Vehicles, Nov. 20, 2017, Docket No. EPA-HQ-OAR-2014-0827-2417, https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2417.

TTU's less than four-page letter, EPA's 40-page test report carefully described all aspects of testing and provided all relevant emission data collected as part of the test program. The EPA test program confirmed earlier estimates of glider vehicle emissions included in the heavy-duty Phase 2 Standards and found that results were "consistent with expected emissions performance of heavy-duty diesel engines manufactured in the 1998-2002 timeframe." EPA also found that both glider vehicles tested had emission levels that were "consistently higher than those of conventionally manufactured 2014 and 2015 tractors." In fact, EPA's testing found that glider vehicles had (1) NOx emissions that were as much as 43 times higher than 2014 and 2015 tractors under cruise conditions, (2) PM emissions that were as much as 55 times higher than 2014 and 2015 tractors under cruise conditions, and (3) PM emissions that were 50 to 450 times higher than 2014 and 2015 tractors under transient conditions.[86]

EPA inexplicably failed to consider both documents in its Proposed Rule even though both the staff memo and the test report were available at the time or shortly after the Proposed Rule was issued. Instead, EPA presented the results of the TTU test program unchallenged even though the Agency had information that demonstrated that the TTU study was flawed and also possessed EPA test data that refuted it. Going forward, EPA must fully reflect this information and data in its glider vehicle deliberations.

iv. TTU's relationship with Fitzgerald Glider Kits raises further concerns about the objectivity of the TTU study.

The TTU study was funded by Fitzgerald Glider Kits, which has also recently entered into a new partnership with TTU.

TTU's financial reports show that in June, 2016, Fitzgerald Glider Kits gave a grant of $70,056 for the study,[87] and then later in September, 2016, Fitzgerald Glider Kits gave an additional grant of $12,500.[88] As discussed above, an EPA memo to the record indicates that the testing took place at a Fitzgerald facility.[89]

Additionally, in August 2017, Philip Oldham and Thomas Brewer announced TTU's "new partnership" with the Fitzgerald companies and another higher education institution.[90] As part of this partnership, the new Fitzgerald Technology Complex will be constructed in the Fitzgerald Industrial Park, in White County, Tennessee.[91] The Complex will house TTU's Center for

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[86] *Id.* at 3.
[87] Tenn. Tech. University Office of Research, *Tennessee Technological University Annual Report 2015-16 (Volume 2)* 42 (2016), *available at* https://www.tntech.edu/assets/userfiles/resourcefiles/13847/1476976572_2015-16%20Annual%20Report_FINAL.pdf.
[88] Tenn. Tech. University, *Grants Rewarded Report* (09/01/2016 – 09/30/2016), *available at* https://www.tntech.edu/assets/userfiles/resourcefiles/9512/1481215150_Grants%20Awarded%20Sept%202016.pdf; *see also* Tenn. Tech. University, *Academic Affairs Highlights* 25 (2017), *available at* https://www.tntech.edu/assets/usermedia/provost/12546/2017_End_of_the_Year_Statement.pdf.
[89] EPA TTU Memo at 2.
[90] https://www.tntech.edu/news/releases/tennessee-tech,-tcat-livingston,-fitzgerald-companies-announce-new-partnership.
[91] *Id.*

Intelligent Mobility[92] The 80,000 square foot Center will be completed in 2018.[93] Fitzgerald Collision & Repair also announced a new vocational program that will offer students from the partnership "training in commercial fleet truck maintenance and repair." [94] The cost of the new facility in White County and how much money each entity in the partnership will contribute to the project was not announced.

EPA must base its decision-making on its expert judgment, relying on the best available science and evidence.[95] TTU's materials fall far short, providing insufficient rigor or transparency to substantiate the conclusions they claim. EPA's invocation of this information as support for this rulemaking is legal error.

Errata: EDF modeling based on revised sales estimates, not revised emission factors

g. EDF modeling using revised emission factors based on EPA's recently published data indicates NOx and PM emissions from glider vehicles could exceed the emission inventory for all other heavy-duty vehicles in 2025.

As described above, EPA included in its 2016 Phase 2 Standards an analysis of the environmental impacts of glider vehicles.[96] EPA found that glider vehicles would have NOx and PM emissions 20-40 times higher than current vehicles and that these excess emissions would result in numerous and significant adverse health effects including premature mortality.[97] EPA projected the excess emissions and adverse health impacts associated with glider vehicles assuming glider sales would reach and then plateau at 10,000 units per year (about 5% of sales of Class 8 trucks[98]). EPA thus assumed that if glider vehicles continued to be exempted from pollution standards, sales volumes would not increase from current levels.

However, in the Phase 2 Standards, EPA acknowledged that glider vehicle sales could be greater than the 10,000 unit estimate,[99] and several stakeholders who testified at EPA's December 4, 2017 hearing indicated that if the glider provisions were repealed, sales would be much higher.[100] In fact, several truck dealers and truck repair facilities testified that gliders sales could reach 25 to 30% of annual truck sales.[101]

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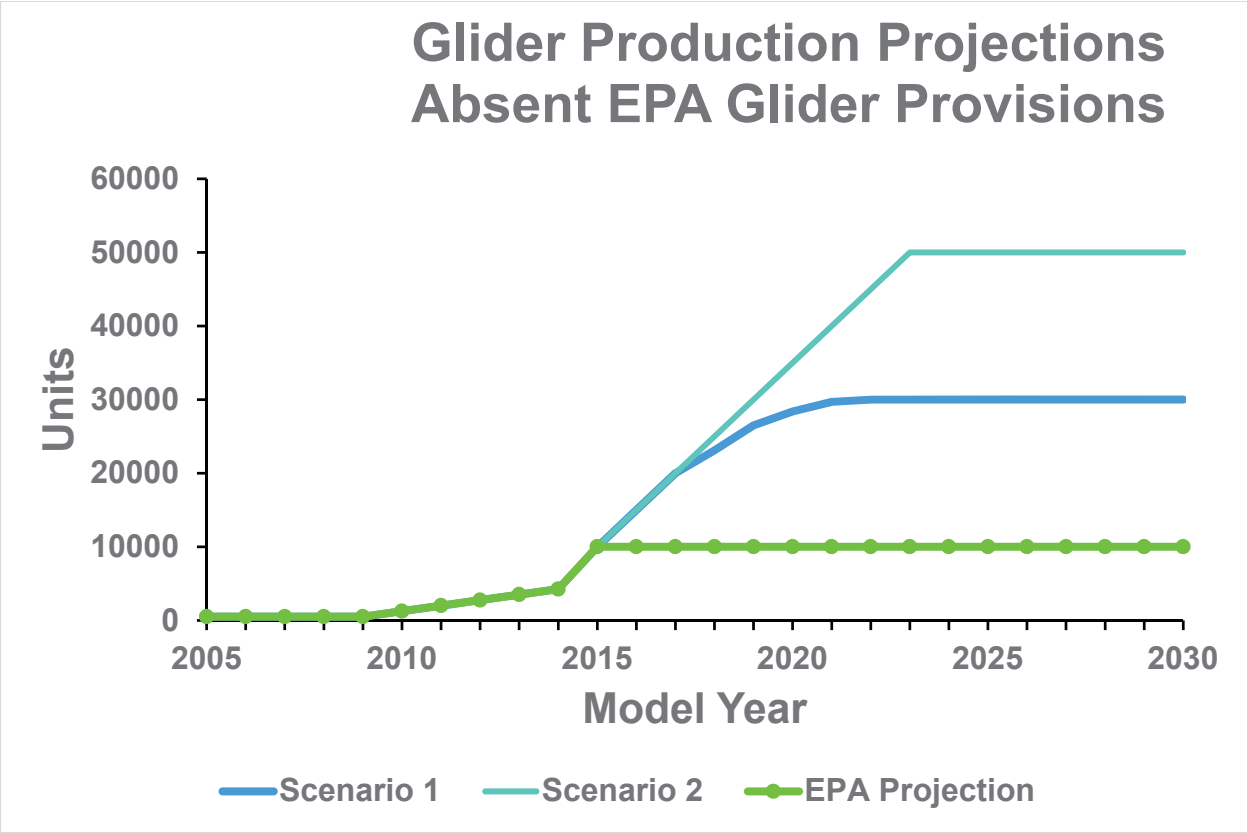
[92] *Id*.
[93] Laura Militana, *Tennessee Tech Center for Intelligent Mobility Announced*, Cookeville Herald Citizen (Jan. 5, 2018), *available at* http://herald-citizen.com/stories/tennessee-tech-center-for-intelligent-mobility-announced,22605.
[94] *Id*.
[95] *Motor Vehicles Manufacturers Ass'n v. State Farm*, 463 U.S. 29, 43 (1983).
[96] HDP2 Response to Comments pp. 1960-1968.
[97] HDP2 Rule, 81 Fed. Reg. at 73,943.
[98] Statista, U.S. Class 8 truck sales fro m2007 to 2016, by brand (in 1,000s), https://www.statista.com/statistics/245369/class-8-truck-sales-by-manfuacturer/ (last visited Jan. 5, 2018); FleetOwner, Class 8 orders continue to roll (Aug. 3, 2017), available at http://www.fleetowner.com/trucks/class-8-orders-continue-roll.
[99] HDP2 Rule, 81 Fed. Reg. at 73,943; HDP2 Response to Comments pg. 1960.
[100] Testimony of John C. Doub, TMI Truck and Equipment, Docket ID No. EPA-HQ-OAR-2014-0827-4285 (Dec. 4, 2017), available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4285 ("If [EPA repeals the glider provisions], our lost sales to Glider Kits each Month could grow from the 10% it is today to what could be 30+%.").
[101] *See, e.g.*, Testimony of Michael P. McMahon, McMahon Truck Centers, Docket ID No. EPA-HQ-OAR-2014-0827-4300 (Dec. 4, 2017), available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4300 ("We estimate losing approximately 25% of our annual New Truck retail volume to Glider Kits.").

EDF has conducted an analysis to ascertain the emission and health impact of higher glider vehicles sales projections. As we show below, these deleterious impacts are substantial. NOx and PM emissions from glider vehicles could approach or exceed the entire NOx and PM emission inventory for all other heavy-duty vehicles in 2025. The results of this analysis are summarized below and presented in detail in Appendix X.

Consistent with the testimony presented at the hearing, we analyzed two additional sales scenarios, peaking at 30,000 and 50,000 units per year respectively. The record suggests that the on-road heavy-duty diesel fleet has not even reached equilibrium with respect to any of the sale scenarios analyzed above including EPA's—underscoring that glider vehicles could continue to increase as a fraction of the on-road fleet for decades. The graph below shows these two sales scenarios compared with the projection used by EPA.



In analyzing the impact of the above scenarios, we followed EPA's methodology including the use of EPA's per vehicle emission estimates for gliders described in Appendix A to the Response to Comments to the extent possible.[102] Our methodology and assumptions are described in detail in Appendix X which is attached to our comments. The table below presents the NOx and PM impacts for both Scenario 1 (30,000 glider units produced per year by 2022) and Scenario 2

[102] HDP2 Response to Comments pp. 1960-1968.

(50,000 glider units produced per year by 2023). The EPA emission impacts for 10,000 units is also presented for comparison purposes.

Glider Kit Emission Impacts Under Three Sales Scenarios (in US tons per year of sales)						
	EPA Sales Scenario		Sales Scenario 1		Sales Scenario 2	
2025	NOx	PM	NOx	PM	NOx	PM
Without Controls	295,000	7800	727,723	19,241	1,004,698	26,565
With Controls	104,800	2750	131,766	3,458	131,766	3,458
Difference	190,200	5050	595,957	15,784	872,933	23,107
2040						
Without Controls	371,100	9960	1,078,731	28,952	1,745,242	46,841
With Controls	52,600	1410	64,406	1,726	64,406	1,726
Difference	318,600	8550	1,014,325	27,226	1,680,836	45,114

The emission impacts as estimated by EPA's modeling, assuming static glider sales, are already extremely consequential. The deleterious NOx and PM impacts associated with EPA's Proposed Rule if glider sales grow, as they are expected to do, are even more substantial. If sales grow to 30,000 units by 2022 (or about 15% of tractor sales), the NOx impacts from glider vehicles will be larger than the entire NOx inventory for all heavy-duty vehicles in 2025. By 2040, the impacts will be more than double the entire heavy-duty inventory in 2040.[103] The NOx increases from glider vehicles will offset, in the 2025 to 2040 timeframe, about a third of the total reductions expected to occur due to the application of aftertreatment to heavy-duty diesel vehicles.[104]

The PM increase due to glider vehicles will represent about 60% and more than 80% and of the entire PM inventory for all heavy-duty vehicles in 2025 and 2040, respectively.[105] Similarly, the expected PM increases will offset, in the 2025 to 2040 timeframe, about 25% of the reductions expected from EPA's 2007/2010 aftertreatment standards for heavy-duty vehicles.[106] For Scenario 2 (50,000 units by 2023 or about 25% of total tractor sales) results are even more damaging. The impacts are at least 50% larger in all cases compared to Scenario 1 impacts. Overall, in 2025, the benefits that would accrue from ensuring glider vehicles achieve modern pollution standards increase 3.1 to 4.6 times depending on the scenario and compared to EPA's final rule benefit estimates. In 2040, the benefits increase 3.2 to 5.3 times.

[103] Regulatory Impact Analysis: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Sulfur Control Requirements, December 2000, EPA420-R-00-026, pg II-136.
[104] Control of Air Pollution From New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements; Final Rule, 66 Fed. Reg. 5031 (Jan. 18, 2001).
[105] Regulatory Impact Analysis: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Sulfur Control Requirements, December 2000, EPA420-R-00-026, pg II-126.
[106] Control of Air Pollution From New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements; Final Rule, 66 Fed. Reg. 5032 (Jan. 18, 2001).

Our modeling also assessed the health impacts associated with these emissions. In the Phase 2 Standards, EPA estimated that ensuring 5,000 to 10,000 2017 glider vehicles meet modern pollution standards would prevent 350-1,600 premature mortalities over the lifetime of the vehicles, leading to $PM_{2.5}$-related health benefits valued at $1.5 to 11.0 billion.[107]

EPA's estimates were based on a relationship between annual emissions from 17 distinct emission sources and PM-related health impacts (and their monetary benefits).[108] These relationships were developed using a three-step process, described as follows in EPA's report[109]:

1) Use source apportionment photochemical modeling to predict ambient concentrations of primary PM2.5, nitrate and sulfate attributable to each of 17 emission sectors across the Continental U.S. (On-road emission sources are one of the 17 sectors addressed by the modeling);
2) For each sector, estimate the health impacts, and the economic value of these impacts, associated with the attributable ambient concentrations of primary PM2.5, sulfate and nitrate PM2.5 using the environmental Benefits Mapping and Analysis Program (BenMAP v4.0.66);
3) For each sector, divide the PM2.5-related health impacts attributable to each type of PM2.5, and the monetary value of these impacts, by the level of associated precursor emissions. That is, primary PM2.5 benefits are divided by direct PM2.5 emissions, sulfate benefits are divided by SO_2 emissions, and nitrate benefits are divided by NOx emissions.

This modeling tool was developed for use in support of various actions being considered or taken by EPA.[110] It provides mid-range health effects and benefits, as opposed to worse-case estimates (e.g., 90th or 95th percentile effects).[111] According to EPA, this methodology does not account for cancer due to diesel PM exposure (a likely human carcinogen) nor does it account for reductions in premature mortality and other benefits resulting from exposure to other criteria pollutants (e.g. ozone).[112] The unquantified ozone related benefits are likely significant given the large NOx impacts from glider vehicles.[113] For a detailed discussion of the methodology please refer to Appendix X and EPA's Response to Comments.[114]

The table below shows the results of applying EPA's above-described methodology to the alternative glider sale scenarios in calendar year 2025. This analysis represents the impact on

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[107] HDP2 Response to Comments pg. 1965.
[108] Technical Support Document, "Estimating the Benefit per Ton of Reducing PM2.5 Precursors from 17 Sectors," U.S. Environmental Protection Agency, Office of Air and Radiation, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711, January 2013.
[109] *Id*. At 3.
[110] HDP2 RTC pg. 1968.
[111] Technical Support Document, "Estimating the Benefit per Ton of Reducing PM2.5 Precursors from 17 Sectors," U.S. Environmental Protection Agency, Office of Air and Radiation, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711, January 2013, pg 3.
[112] HDP2 RTC pg. 1968.
[113] *Id*.
[114] HDP2 Response to Comments pp. 1960-1968.

2025 emissions and their related health effects from ensuring that 2018 and later glider vehicles meet existing pollution standards. We also performed this analysis using an alternative, comparable EPA model referred to as COBRA.[115] The results of this analysis produced health impacts that were very similar to EPA's methodology described above. The detailed results can be found in Table 8 of Appendix X to these comments.

Health Benefits and Health Improvements from Glider Kit Controls in 2025			
Glider Kit Sales Scenario	EPA	Scenario 1	Scenario 2
Emission Reductions due to Controls: NOx	190,200	596,497	873,960
(U.S. tons per year) PM	5,050	15,798	23,134
Monetized NOx+PM Benefits ($2013 billion)	3.2-8.0	10.0-24.9	14.6-36.5
Premature Mortality	396-914	1240-2862	1816-4162
Morbidity			
Respiratory emergency room visits	228	715	1,047
Acute bronchitis	630	1,973	2,889
Lower respiratory symptoms	8,070	25,271	37,015
Upper respiratory symptoms	11,700	36,643	53,672
Minor Restricted Activity Days	321,892	1,008,045	1,476,488
Work loss days	54,134	169,528	248,309
Asthma exacerbation	29,028	90,906	133,151
Cardiovascular hospital admissions	151	471	690
Respiratory hospital admissions	124	388	569
Non-fatal heart attacks (Peters)	477	1,493	2,187
Non-fatal heart attacks (All others)	52	162	237

Under EPA's 10,000-per-year sales projections, the health benefits from the Phase 2 glider provisions are valued at $3.2-8.0 billion in 2025. Under Scenario 1 and Scenario 2, the $PM_{2.5}$ health benefits of ensuring glider vehicles achieve modern pollution standards are even more substantial, at least $10 billion to nearly $40 billion per year.

Even though EPA's sales projection of 10,000 glider vehicles is probably conservative, it still shows health impacts that are very substantial. If the Proposed Rule is finalized, evidence suggests that glider vehicle sales would likely grow beyond current levels (10,000 units). For these higher sales scenarios, our analysis shows that the NOx impacts will be greater than the entire NOx inventory for heavy-duty vehicles and excess PM emissions will be 60 to 80% of the entire inventory in the 2025 to 2040 timeframe. The estimated monetized health costs (from

[115] COBRA was developed specifically for use in local and state assessments of energy and environmental programs. The steps used in its development are very similar to those listed above for the regulatory impact analysis tool used by EPA. One relevant aspect of COBRA is that on-road mobile sources are broken down into several categories, including heavy-duty diesel vehicles. *See* User's Manual for the Co-Benefits Risk Assessment Health Impacts Screening and Mapping Tool (COBRA), Version: 3.0, U.S. EPA, September 2017.

$PM_{2.5}$ reductions alone) that would come from of ensuring glider vehicles achieve modern pollution standards ranges from at least $10 to $40 billion in calendar year 2025. It is arbitrary and unlawful for the agency to be considering rolling back the regulations on glider vehicles without considering these dramatic public health implications, as discussed further in Section VII.

h. Glider vehicles are not comparable to older, higher emitting vehicles.

The Agency solicits comment on the issue of whether glider vehicles are "less polluting than the older trucks they would replace" and also solicits comment on whether "a glider vehicle is … a suitable option for those small businesses and independent operators who cannot afford to purchase a new vehicle, but who wish to replace an older vehicle with a vehicle that is equipped with up-to-date safety features."[116] This solicitation rests on multiple flawed premises.

First of all, Section 202 requires EPA to reduce pollution from new motor vehicles, as discussed in detail in Section V below. The agency cannot discharge that duty by simply asserting that new vehicles are less polluting than old vehicles, regardless of which classes of vehicles are in direct competition. In any event, the factual circumstances here make clear that equating new glider vehicles to used, highly polluting freight trucks is not an appropriate comparison.

Warrantees that are offered for glider vehicles are comparable to those for other model year 2017 class 8 trucks, covering hundreds of thousands of miles and several years.[117] By comparison, used, end of life freight trucks would not offer the same possibility for guaranteed additional miles of use. Taking old, ready-to-retire trucks off the road and replacing them with glider vehicles would yield significant additional mileage of operation and therefore substantial additional volumes of PM and NOx.

Glider vehicles are advertised as "brand new trucks."[118] The website of one glider company states: "The advantages really stack up to make a glider kit a great option when purchasing a new truck."[119] The fully built trucks listed for sale on the same company's website are listed as "NEW."[120] A different glider company's website states that a "Glider Kit comes to you as a

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[116] HDP2 Rule, 82 Fed. Reg. 53447-448.

[117] Appendix C; Fitzgerald Glider Kits, Warranty Options, https://www.fitzgeraldgliderkits.com/warranty (last accessed Jan. 3, 2018) (offering warranties of 3 years/300,000 miles or 5 years/500,000 miles for glider vehicles); Peterbilt Cummins, Every Coverage: North American Truck Coverages For 2017 X15™ And ISX12 Engines (Jan. 2017), https://peterbilt.cummins.com/brochure-download.aspx?brochureid=1443 (indicating a base warranty of 2 years/250,000 miles, plus additional protection plans for 3-6 years/100,000-600,000 miles, for new freight trucks); *see also* Peterbilt Cummins, List of Warranties and Extended Coverage, https://peterbilt.cummins.com/warranty (last accessed Jan. 3, 2018); National Truck Protection, Warranty Plans – NTP Standard Plans, http://www.ntpwarranty.com/warranty-plans (last accessed Jan. 3, 2018) (offering a 3 years/300,000 miles independent warranty for new or used freight trucks).

[118] *See* Appendix D, E; *See* HDP2 Rule, 81 Fed. Reg. at 73514 (quoting Fitzgerald website at the time of the rulemaking in 2016).

[119] Appendix E; Fitzgerald Glider Kits, *What is a Glider Kit?*, https://www.fitzgeraldgliderkits.com/what-is-a-glider-kit (last accessed Jan. 3, 2018).

[120] Appendix D; Fitzgerald Glider Kits, Sales inventory page, http://trucks.fitzgeraldgliderkits.com (last accessed Jan. 3, 2018).

brand-new, complete assembly."[121] Glider vehicles are newly titled in the state of purchase, and come with new ID numbers.[122]

It is inaccurate to assert that replacing an older freight truck with a glider vehicle would provide "up-to-date safety features." Glider vehicles lack the essential safety features found in modern trucks. Because these engines lack modern electronic capacity, they lack all of the safety features enabled by those electronics. These features include electronic stability control (to prevent rollover), collision avoidance, automatic emergency brakes, and excess speed control.[123] Moreover, pre-2002 engines are exempt from the requirement to keep an electronic log book (e-log). The e-log provides real time monitoring of drivers' hours travelled and rest time. The lack of an e-log enables vehicle operation for longer periods than allowed by safety standards.[124] For these and other reasons, NHTSA articulated concerns about glider vehicle safety.[125] So in addition to emitting significantly more pollution than other new trucks, glider vehicles are also less safe to operate.

Glider vehicles are regularly sold at prices that are comparable to new freight trucks with modern emission control equipment. On the website of one glider company, the majority of fully built daycab model year 2017 year glider vehicles are advertised for above $150,000 to as much as $369,000.[126] Online freight truck listings similarly include numerous listings for new glider vehicles in this price range.[127] These prices are comparable to, or even higher than, the price of a 2017 model year class 8 tractor that meets modern emission standards.[128] Meanwhile, there are

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[121] Harrison Truck Centers, Glider Kits, http://www.htctrucks.com/index.php/sales/harrison-truck-centers-glider-kits (last accessed Jan. 3, 2018).
[122] 81 Fed. Reg. 73514 n. 83.
[123] See NHTSA, Electronic Stability Control Systems on Heavy Vehicles at III-1 (May 2012) (explaining that an ESC system "utilizes computers to control individual wheel brake torque and assists the driver in maintaining control of the vehicle"), https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/136_esc_hvy_veh_pria.pdf; Testimony of Robert Nuss, Nuss Truck & Equipment, Docket ID No. EPA-HQ-OAR-2014-0827-4307 (Dec. 4, 2017), available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4307 ("Glider kits do not meet the current diesel engine emissions standards, nor do they typically include the latest advanced truck safety enhancements, including roll stability, adaptive cruise control and lane departure warnings to better assure public safety.")
[124] *See also* 80 Fed. Reg. 40530 (July 13, 2015).
[125] Id.
[126] Fitzgerald Glider Kits, Sales inventory page, trucks.fitzgeraldgliderkits.com/ (last accessed January 5, 2018).
[127] Truck Paper, Glider Kit Trucks for Sale, https://www.truckpaper.com/listings/trucks/for-sale/list/category/15101/heavy-duty-trucks-glider-kit-trucks?sortorder=9&SCF=False (last accessed Jan. 3, 2018); *see also* https://www.commercialtrucktrader.com/Glider...Trucks.../search-results?.
[128] *See* Truck Paper, Peterbilt Conventional Trucks w/o Sleeper for Sale, https://www.truckpaper.com/listings/trucks/for-sale/list/category/211/heavy-duty-trucks-conventional-trucks-w-o-sleeper/manufacturer/peterbilt?sortorder=9&SCF=False (last accessed Jan. 3, 2018); Truck Paper, Volvo Conventional Trucks w/o Sleeper for Sale, https://www.truckpaper.com/listings/trucks/for-sale/list/category/211/heavy-duty-trucks-conventional-trucks-w-o-sleeper/manufacturer/volvo?sortorder=9&SCF=False (last accessed Jan. 3, 2018); Commercial Truck Trader, New Standard Cab Class 8 Heavy Duty Trucks For Sale, https://www.commercialtrucktrader.com/New-Standard-Cab-Class-8-Heavy-Duty-Trucks-For-Sale/search-results?condition=N&cabtype=STANDARD+CAB&make=FREIGHTLINER|2310628,INTERNATIONAL|2311614,PETERBILT|2313546,VOLVO|2314540&type=class8 (last accessed Jan. 3, 2018); Jason Cannon, *What does a Class 8 truck really cost?*, Commercial Carrier Journal (Jan. 25, 2016) https://www.ccjdigital.com/what-does-a-class-8-truck-really-cost/, (discussing the cost of Model Year 2016 class 8 freight trucks).

readily available, cheaper and safer alternatives for buyers who cannot afford a current model year vehicle. Numerous used model year 2014, 2015, and 2016 class 8 trucks are advertised in public listings with prices well below $100,000.[129] These model year 2014 and later used trucks come with modern pollution controls and safety features, so are at least 90% less polluting than glider vehicles and safer to operate.

Accordingly, the agency's request for comment on these issues is misdirected. The appropriate comparison of emissions impact should be with the other new trucks, not to older, used trucks. The agency's Proposed Rule included no evaluation supporting these assertions in its Proposed Rule, and accordingly the agency has no reasonable basis to reject factual conclusions reached in the Phase 2 Standards on the basis of these unsupported claims.[130] Were the agency to prepare any such analysis, EPA would need to issue a new proposal to allow the public a full opportunity to review and respond to such material, as well as respond to the public's input.[131]

i. Record evidence demonstrates that glider vehicle sales are at least 10,000 per year, if not higher, with potential for further growth.

EPA's 2016 Final Rule estimated that glider vehicle annual sales were approximately 10,000 per year. No record evidence contradicted this finding. More recently, EPA included a Nov. 15, 2017 redacted memo in the record on glider vehicle sales showing that glider vehicles reached a peak of "significantly over 10,000" sales in a year.[132] At the Dec. 4, 2017 public hearing that EPA held on the proposed repeal, industry representatives testified to their personal experience with the growing glider industry and provided assessments of glider vehicle market share in line with the data showing sales significantly over 10,000 per year.[133] Meanwhile, additional evidence suggests that EPA's 2016 estimate of 10,000 sales per year may have been an underestimate.[134] At minimum, EPA has not provided any evidence to justify its assumption that glider vehicle sales would stop growing and flatline at 10,000 vehicles per year—a key assumption employed as part of developing the agency's 2016 glider pollution estimates.

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[129] https://www.kenworthsalesco.com/class-8-trucks-for-sale/ (accessed December 23, 2017).
[130] See Section VII.
[131] See Section VII(d).
[132] Redacted Letter from Charles Moulis to William Charmley, Nov. 15, 2017, EPA-HQ-OAR-2014-0827-2379, available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2379.
[133] See, e.g., Testimony of Michael P. McMahon, McMahon Truck Centers, Docket ID No. EPA-HQ-OAR-2014-0827-4300 (Dec. 4, 2017), available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4300 ("We estimate losing approximately 25% of our annual New Truck retail volume to Glider Kits."); Testimony of Robert Nuss, Nuss Truck & Equipment, Docket ID No. EPA-HQ-OAR-2014-0827-4307 (Dec. 4, 2017), available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4307 ("The glider kit market today is about 5% of the new heavy duty truck market.").
[134] Adding additional cites/appendix. See, e.g., Fitzgerald Glider Kits, What Is A Glider Kit, available at https://www.fitzgeraldgliderkits.com/what-is-a-glider-kit ("THE FUTURE OF GLIDER KITS: Looking into the future, most manufactures are making newer model trucks available as a Glider. The most recent offering is from Peterbilt with the introduction of the Peterbilt 579 as a Glider Kit. We are also constantly working to offer different engine platforms in our Glider Kits. Year after year Fitzgerald Glider Kits as a company continues to grow giving our customers more options in glider kits, better services, and an ever growing warranty network across the U.S.").

Furthermore, testimony at the Dec. 4 public hearing also indicated that glider sales may continue to expand further if pollution standards are rolled back, both due to production level from glider vehicle manufacturers, and from truck manufacturers who do not primarily manufacturer glider vehicles, but will be compelled to join the glider market in order to maintain competitiveness.[135]

Additional growth in glider vehicle sales would undermine--on an even larger scale--the common sense pollution reductions gained through heavy-duty standards. Yet EPA did not consider the potential for further, unlimited expansion of glider vehicle sales in its proposal. The potential for an even greater magnitude of growth in gliders, with the potential for even more substantial emission consequences and greater jeopardy to heavy-duty emissions controls, presents a severe threat to public health. Given the considerable evidence in the record suggesting that such growth is possible and in fact likely, EPA's failure to consider or evaluate this grave possibility is unlawful.[136]

II. The benefits of freight truck pollution standards substantially exceed the costs.

In the agency's 2016 Phase 2 Standards, EPA's monetary evaluation of the benefits of closing the glider loophole, using PM-related benefit-per-ton values, found that removing all unrestricted glider vehicle emissions would yield between $6 to $14 billion in annual benefits (2013$).[137] Again, this analysis is conservative because it does not include the benefits of reducing carcinogenic diesel particulates or ozone formation attributable to gliders' high NOx emissions.

As EPA noted in that rulemaking, the agency has long since justified the reasonableness of pollution control standards for heavy-duty freight trucks.[138] The benefits of reducing pollution from freight trucks far outweigh the costs, as indicated by the value of the diesel criteria pollution standards issued by EPA in 2000 and early 2001.[139] The 2000 and 2001 heavy duty diesel criteria pollution rules have a benefit to cost ratio of nearly 17 to 1—providing over $70.4 billion in monetized benefits, in addition to considerable un-monetized public value.[140] The agency identified the tangible impacts of those benefits as reductions in premature deaths, chronic bronchitis, hospital and ER visits, and asthma attacks, among other benefits.[141] As EPA concluded in the Phase 2 Standards, the costs of the glider provisions have already been duly

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[135] See, e.g. Testimony of John C. Doub, TMI Truck and Equipment, Docket ID No. EPA-HQ-OAR-2014-0827-4285 (Dec. 4, 2017), available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4285 ("If [EPA repeals the glider provisions], our lost sales to Glider Kits each Month could grow from the 10% it is today to what could be 30+%.")
[136] See discussion in Section VII.
[137] 81 Fed. Reg. at 73943 (October 25, 2016).
[138] Proposed HDP2 Rule, 80 Fed. Reg. 40,137, 40,528-29 (July 13, 2015).
[139] EPA, Final Rule: Emissions Control, Air Pollution From 2004 and Later Model Year Heavy-Duty Highway Engines and Vehicles, 65 Fed. Reg. 59,895 (Oct. 6, 2000); EPA, Final Rule: Control of Air Pollution From New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements, 66 Fed. Reg. 5,001 (Jan. 18, 2001).
[140] 66 Fed. Reg. 5,001, 5,107-08 (Jan. 18, 2001); EPA, Regulatory Impact Analysis: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements at xvi (Dec. 2000).
[141] EPA, RIA for Heavy-Duty Standards at Ch. VII (D) (Dec. 2000).

justified, in both the criteria pollution rule and the Phase 1 fuel economy and greenhouse gas (GHG) rule.[142]

EPA carefully considered impacts to small businesses including glider manufacturers as part of the Phase 2 rulemaking, and the final Phase 2 Standards include provisions arising from these efforts. See Section XI(b). While glider vehicle manufacturers and purchasers will incur the cost associated with current model year engines, as noted above, these are the same costs EPA has long-since found reasonable for all other manufacturers and purchasers of new heavy duty diesel engines.[143]

III. The Proposal has particularly harmful implications for communities already overburdened by diesel truck pollution.

EPA's Proposed Rule fails to address the requirement imposed by Executive Order 12,898[144] to analyze the environmental justice ("EJ") impacts of its actions. The proposal concedes: "We have not evaluated the impacts on minority, low-income or indigenous populations that may occur as a result of the proposed action to rescind emissions requirements for heavy-duty glider vehicles and engines."[145]

This omission is deeply concerning as the proposal will increase diesel freight truck pollution, which harms all communities, but which is known to have disproportionately high and adverse human health and environmental impacts on the low-income communities of color that are often located near roadways, ports, and facilities that bring high flows of freight truck traffic through these communities.[146] Moreover, the latest EPA emission testing suggests that the glider vehicle PM emissions are at their most disproportionate under transient (non-highway) conditions—the likely conditions when driving through communities.[147] The exclusion of the required environmental justice analysis is just one of a number of omissions in this rulemaking process that demonstrate the agency is acting arbitrarily without giving proper consideration to key issues. See Section VII.

a. Environmental justice communities face barriers to public participation

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[142] HDP2 Rule, 81 Fed. Reg. at 73,518; *see also* Proposed HDP2 Rule, 80 Fed. Reg. at 40,528-29.
[143] See 80 FR 405294052940528.
[144] Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 Fed. Reg. 7,629 (Feb. 16, 1994).
[145] 82 Fed. Reg. 53,442, 53,448.
[146] *See, e.g.,* Douglas Houston, Margaret Krudysz, and Arthur Winer, *Diesel Truck Traffic in Low-Income and Minority Communities Adjacent to Ports*, Transportation Research Record: Journal of the Transportation Research Board, No. 2067, Transportation Research Board of the National Academies, Washington, D.C., 2008, pp. 38–46 at 39, https://escholarship.org/uc/item/0pk400m7 ("Minority and high-poverty neighbor-hoods in Southern California bear more than twice the level of traffic density as the rest of the region, suggesting that these communities may be disproportionately exposed to concentrated near-roadway air pollution. Such exposures often occur in the context of structural inequalities, including racial segregation, a lack of economic opportunity, disinvestment, and declining property values.")
[147] U.S. Environmental Protection Agency, Chassis Dynamometer Testing of Two Recent Model Year Heavy-Duty On-Highway Diesel Glider Vehicles, Nov. 20, 2017, pg. 3, Docket No. EPA-HQ-OAR-2014-0827-2417.

By omitting any analysis from the Proposed Rule, not only is EPA failing to properly consider the adverse consequences of its action, but it also is impeding the public's ability to understand the impacts of this proposed rule and their ability to provide informed comment during the rulemaking process. The Office of Management and Budget has explained that the purpose of a regulatory analysis is "to anticipate and evaluate the likely consequences of rules" and that "[a] good regulatory analysis is designed to inform the public and other parts of the Government (as well as the agency conducting the analysis) of the effects of alternative actions."[148]

As explained in EPA technical guidance, at minimum, a sufficient environmental justice assessment from EPA would ask and address: (1) "Are there potential EJ concerns associated with environmental stressors affected by the regulatory action for population groups of concern in the baseline?" (2) "Are there potential EJ concerns associated with environmental stressors affected by the regulatory action for population groups of concern for the regulatory option(s) under consideration?" and (3) "For the regulatory option(s) under consideration, are potential EJ concerns created or mitigated compared to the baseline?"[149] The Proposal Rule concedes that EPA has not evaluated this type of clearly relevant information.

Environmental justice communities already face additional barriers to participating in agency rulemaking processes—such as facing language and cultural differences, lacking notice about their role as stakeholders in agency actions, and lacking technical knowledge and assistance to participate effectively—that make agency analysis and notice of environmental justice impacts that much more critical to alerting these overburdened communities to the impacts of federal actions on their health and environment.[150] By not providing this analysis, EPA has shifted the burden of collecting and analyzing this information onto these communities and created an additional barrier to their ability to participate meaningfully in this process. Communities cannot provide informed comment when basic information about the impacts of EPA's actions is missing. This omission hampers the fulfillment of the goals of the public comment period as well as attainment of the environmental justice goal of meaningful involvement of all people, which EPA has explained means: "People have an opportunity to participate in decisions about activities that may affect their environment and/or health," "[t]he public's contribution can influence the regulatory agency's decision," "[c]ommunity concerns will be considered in the decision making process," and "[d]ecision makers will seek out and facilitate the involvement of those potentially affected."[151]

These barriers to participation are exacerbated by the limited window that the agency has provided for public input on this proposal. See Section VIII.

b. The Proposal will disproportionately impact environmental justice communities and children.

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[148] OMB, Circular A-4 (Sept. 17, 2003).
[149] EPA, *Technical Guidance for Assessing Environmental Justice in Regulatory Actions* (2016) at 1112, https://www.epa.gov/sites/production/files/2016-06/documents/ejtg_5_6_16_v5.1.pdf.
[150] *See*, NEJAC, *Model Guidelines for Public Participation* (2013) at 2-4, https://www.epa.gov/sites/production/files/2015-02/documents/recommendations-model-guide-pp-2013.pdf.
[151] EPA, *Learn About Environmental Justice*, https://www.epa.gov/environmentaljustice/learn-about-environmental-justice.

Significant evidence suggests that the Proposed Rule raises serious environmental justice concerns that demand attention and mitigation. Communities that are overburdened by freight truck traffic, most often environmental justice communities, are the communities who will be most impacted by this rule, which will worsen freight truck pollution in their immediate environments. Low-income communities of color are more likely to be situated near roadways and ports with high flows of heavy-duty diesel freight truck traffic.[152]

In the Phase 2 Standards, EPA noted that "homes with a nonwhite householder were 22–34 percent more likely to be located within 300 feet of these large transportation facilities than homes with white householders," "[h]omes with a Hispanic householder were 17–33 percent more likely to be located within 300 feet of these large transportation facilities than homes with non-Hispanic householders," and additionally "[h]ouseholds near large transportation facilities were, on average, lower in income and educational attainment."[153]

This proposal also seriously impacts school children, with disproportionate adverse impacts to low-income students and students of color. Out of a total of about 50 million students attending K-12 school, 10 million students attend school within 200 meters of a primary or secondary roadway and nearly 1 million students attend school within 200 meters of a primary roadway.[154] EPA has found that "minority students were overrepresented at schools within 200 meters of the largest roadways, and that schools within 200 meters of the largest roadways also had higher than expected numbers of students eligible for free or reduced-price lunches."[155]

EPA concluded in the Phase 2 Standards that "there is substantial evidence that people who live or attend school near major roadways are more likely to be of a minority race, Hispanic ethnicity, and/or low SES [socioeconomic status]. The emission reductions from these final rules will likely result in widespread air quality improvements, but the impact on pollution levels in close proximity to roadways will be most direct. Thus, these final rules will likely help in mitigating the disparity in racial, ethnic, and economically based exposures."[156] This language supports the notion that the proposal to repeal the requirements for glider vehicles will contribute to the disparities that the Phase 2 Standards would have alleviated, if left intact.

Low-income communities and communities of color sited near roadways and ports are thus disproportionately exposed to harmful diesel pollutants for which this proposal will undo protections. People who live, work, or attend school near high-traffic roadways are more

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[152] EPA, *Draft Environmental Justice Primer for Ports* (2016) at 7, https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100OYGB.pdf; EPA, *National Air Toxics Program: The Second Integrated Urban Air Toxics Report to Congress* (2014) at 2-8, 2-9 ("Over twenty million U.S. homes are near large roads, railroads and airports. . . . Populations in close proximity to major roads are higher in minority and low-income composition.")

[153] HDP2 Rule, 81 Fed. Reg. at 73,847.

[154] EPA, "Schools Near Roads Analysis for the Tier 3 NPRM Docket," Docket ID No. EPA-HQ-OAR-2011-0135-0488; *see also* Alexandra S. Appatova et al., *Proximal exposure of public schools and students to major roadways: a nationwide US survey*, J. Envtl. Plan. & Mgmt., 51 (5), 2008, p.631.

[155] HDP2 Rule, 81 Fed. Reg. at 73,847.

[156] *Id.*

susceptible to adverse health effects than people who do not spend significant amounts of time around major roads.[157] According to EPA's Urban Air Toxics Report to Congress, "concentrations of benzene, aldehydes, PM and many other compounds are elevated in ambient air within approximately 300-600 meters (about 1,000-2,000 feet) of major roadways" due to motor vehicle emissions.[158] The health impacts from air pollution in port communities include "(1) aggravation of respiratory and cardiovascular disease; (2) decreased lung function; (3) increased frequency and severity of respiratory symptoms such as difficulty breathing and chronic coughing; (4) increased susceptibility to respiratory infections; (5) effects on the nervous system, including the brain, such as IQ loss and impacts on learning, memory and behavior; (6) cancer; and (7) premature death."[159]

Exposure to pollution from heavy-duty vehicles has been linked by numerous studies to respiratory conditions[160], heart attacks[161], cancer[162], adverse pregnancy and birth outcomes[163], premature mortality[164], and reduced cognitive function[165]. One study found "significant evidence of adverse effects related to exposure to $PM_{2.5}$ and ozone at concentrations below current

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[157] Control of Air Pollution From Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards; Proposed Rule, 78 Fed. Reg. 29,816, 29,837 (May 21, 2013).

[158] EPA, *National Air Toxics Program: The Second Integrated Urban Air Toxics Report to Congress* (2014) at 2-8, 2-9.

[159] EPA, *Draft Environmental Justice Primer for Ports* (2016) at 6, https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100OYGB.pdf.

[160] Gauderman, W.J., Vora, H., McConnell, R., Berhane, K., Gilliland, F., Thomas, D., Lurmann, F., Avol, E., Kunzli, N. & M. Jerrett, et al. (2007). Effect of exposure to traffic on lung development from 10 to 18 years of age: a cohort study. Lancet, 369, 571-577; McConnell, R., Berhane, K., Yao, L., Jerrett, M., Lurmann, F., Gilliland, F., Kunzli, N., Gauderman, J., Avol, E., Thomas, D., & Peters, J. (2006). Traffic, susceptibility, and childhood asthma. Environmental Health Perspectives, 766-772; McConnell, R., Islam, T., Shankardass, K., Jerrett, M., Lurmann, F., Gilliland, F., Gauderman, J., Avol, E., Kunzli, N., Yao, L., Peters, J. & Berhane, K. (2010). Childhood incident asthma and traffic-related air pollution at home and school. Environmental Health Perspectives, 118, 1021-1026.

[161] Peters, A., von Klot, S., Mittleman, M.A., Meisinger, C., Hormann, A., Kuch, B. & Wichmann, H.E. (2013). Triggering of acute myocardial infarction by different means of transportation. European Journal of Preventive Cardiology, 20, 750-758.

[162] Vermeulen R, Silverman DT, Garshick E, Vlaanderen J, Portengen L, Steenland K. 2014. Exposure-response estimates for diesel engine exhaust and lung cancer mortality based on data from three occupational cohorts. Environ Health Perspect 122:172–177; http://dx.doi.org/10.1289/ehp.1306880; World Health Organization, International Agency for Research on Cancer (IARC). (2012). Diesel engine exhaust carcinogenic. Retrieved from https://www.iarc.fr/en/media-centre/pr/2012/pdfs/pr213_E.pdf.

[163] Wu, J., Ren, C., Delfino, R.J., Chung, J., Wilhelm, M. & Ritz, B. (2009). Association between local traffic-generated air pollution and preeclampsia and preterm delivery in the South Coast air basin of California. Environmental Health Perspectives, 117, 1773-1779; Green, R.S., Malig, B., Windham, G., Fenster, L., Ostro, B. & Swan, S. (2009). Residential exposure to traffic and spontaneous abortion. Environmental Health Perspectives, 117, 1939-1944.

[164] Fann, N., Fulcher, C.M., & Baker, K. (2013). The recent and future health burden of air pollution apportioned across U.S. sectors. Environmental Science & Technology, 47(8), 3580-3589; Chambliss, S.E., Silva, R., West, J.J., Zeinali, M., & Minjares, R. (2014). Estimating source-attributable health impacts of ambient fine particulate matter exposure: global premature mortality from surface transportation in 2005. Environmental Research Letters, 9, 1-10; Vermeulen R, Silverman DT, Garshick E, Vlaanderen J, Portengen L, Steenland K. 2014. Exposure-response estimates for diesel engine exhaust and lung cancer mortality based on data from three occupational cohorts. Environ Health Perspect 122:172–177; http://dx.doi.org/10.1289/ehp.1306880.

[165] Ranft, U., Schikowski, T., Sugiri, D., Krutmann, J. and U. Kramer. 2009. Long-term exposure to traffic-related particulate matter impairs cognitive function in the elderly. Environ. Res. 109: 1004-1011.

national standards," an effect "most pronounced among self-identified racial minorities and people with low income."[166] The modern pollution controls that this proposal repeals make a real difference to health outcomes–with one study finding that "emissions from 2007- and 2010-compliant HHDDE [Heavy Heavy-Duty Diesel Vehicles] have been reduced dramatically and that exhaust from a 2007-compliant engine produced no tumors or precancerous effects in rats exposed over their lifetime."[167]

Not only are low-income populations and populations of color more exposed to these toxic air pollutants, but these exposures pose greater health risks to them as well. With regard to particulate matter, for example, low-income populations "have been generally found to have a higher prevalence of pre-existing diseases, limited access to medical treatment, and increased nutritional deficiencies, which can increase their risk of particle pollution-related effects."[168] The impact of these cumulative risks must be taken into account to fully appreciate the impact of this proposal on environmental justice communities.

Take for instance, just two environmental justice communities that are burdened by freight truck pollution, for which the Proposed Repeal would have significant adverse health impacts:

South Bronx, New York

The South Bronx experiences significant amounts of freight truck traffic from multiple expressways cutting through the area, more than a dozen waste transfer stations, a sewage-treatment plant, and as the site of the Hunts Point Food Market, which supplies 60% of New York City's food. According to a study conducted by the City of New York, the South Bronx neighborhood of Hunts Point has 15,000 freight trucks entering and exiting the peninsula on a daily basis.[169] These freight trucks often utilize routes going through residential areas of the community to connect from the Food Market to the highway.[170] A study by New York University researchers found that children in the South Bronx were twice as likely to attend school near a major highway as children in other parts of the city.[171] This community comprises an environmental justice community—43% of Hunts Point and Longwood residents live below the Federal Poverty Line, and 76% of residents are Hispanic.[172] This community also suffers significant health disparities as a result of the environmental burdens including freight truck

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[166] Di et al., 2017, *Air Pollution and Mortality in the Medicare Population.*

[167] Constantini et al. (ACES), 2016, *The Advanced Collaborative Emissions Study (ACES) of 2007- and 2010-Emissions Compliant Heavy-Duty Diesel Engines: Characterization of Emissions and Health Effects*.

[168] EPA, *EJ 2020 Action Agenda* (2016) at 51, https://www.epa.gov/sites/production/files/2016-05/documents/052216_ej_2020_strategic_plan_final_0.pdf; *see also* HDP2 Rule, 81 Fed. Reg. at 73,846 ("several studies find stronger associations between air pollution and health in locations with . . . chronic neighborhood stress, suggesting that [low socioeconomic] populations in these areas may be more susceptible to the effects of air pollution").

[169] City of New York Hunts Point Task Force, Hunts Point Vision Plan at 20, https://www.nycedc.com/sites/default/files/filemanager/Projects/Hunts_Point_Vision_Plan/HPVisionPlan_ImprovementTraffic.PDF.

[170] Id.

[171] Manny Fernandez, *A Study Links Trucks' Exhaust to Bronx Schoolchildren's Asthma*, N.Y. Times (Oct. 29, 2006), http://www.nytimes.com/2006/10/29/nyregion/29asthma.html.

[172] NYC Health, Bronx Community District 2: Hunts Point and Longwood (2015), https://www1.nyc.gov/assets/doh/downloads/pdf/data/2015chp-bx2.pdf.

pollution—the rate of hospitalization for asthma for adults and children in this area is more than twice the New York City-wide rate.[173]

West Oakland, California
The Port of Oakland on the San Francisco Bay serves as a major container ship facility, and brings in heavy amounts of freight truck traffic to the surrounding communities. A study of West Oakland, which lies adjacent to the Port of Oakland, found that 7,200 freight trucks travel down West Oakland streets daily from 7:00am to 6:00pm.[174] A study of air quality in the area found that the West Oakland community experiences rates of diesel PM ambient concentrations three times those of the Bay Area generally. [175] According to U.S. Census data for the zip code comprising West Oakland, 73% of residents are of color[176] and 30% of residents live below the Federal Poverty Line.[177]

IV. The Proposed Rule will impact other clean air programs, including states' ability to comply with the National Ambient Air Quality Standards

EPA asserts that the proposal, if finalized, will "not affect the level of public health and environmental protection already being provided" by other Clean Air Act mechanisms, including National Ambient Air Quality Standards (NAAQSs), or local and state air quality programs.[178] This argument is not supported by any reasoning or analysis in the record, and is clearly incorrect.

The Clean Air Act lays out a carefully structured mechanism for addressing harmful air pollution. EPA has a duty to address harmful emissions from heavy duty freight trucks. Meanwhile, state officials are responsible for ensuring achievement of the NAAQS air quality standards.

EPA's proposed action is antithetical to the goals of attaining and maintaining the national ambient air quality standards because it would allow unlimited, uncontrolled numbers of heavy duty vehicles emitting NOx and PM at rates as much as 40 to 450 times higher than modern engines. In the 2016 phase 2 rule for heavy-duty vehicles, EPA analyzed the effects of closing the gliders loophole and estimated that these provisions are associated with annual reductions of 6,800 tons of PM and 415,000 tons of NOx.[179] New analysis of the pollution impacts from glider

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[173] *Id.* at 12.
[174] Bay Area Air Quality Management District, West Oakland Truck Survey (2009) at ES-2, http://www.baaqmd.gov/~/media/files/planning-and-research/care-program/final-west-oakland-truck-survey-report-dec-2009.pdf.
[175] *Id.* at 2.
[176] U.S. Census Bureau, Selected Social Characteristics in the United States, 2012-2016 American Community Survey 5-Year Estimates data for ZCTA5 94607.
[177] U.S. Census Bureau, Selected Economic Characteristics, 2012-2016 American Community Survey 5-Year Estimates data for ZCTA5 94607.
[178] 82 Fed. Reg. at 53,448.
[179] HDP2 Response to Comments at 1880.

vehicles,[180] as well as indications that glider sales may be even higher than EPA assumed,[181] indicate that these enormous quantities may be significant underestimates.

These additional emissions will upset states' ability to meet and maintain NAAQS compliance and jeopardize healthy air quality. As various States and Air Quality Districts stated at the public hearing, States factored in the reduction of glider vehicle emissions into their NOx and PM budgets; the Proposed Rule, if enacted, would harm efforts to attain or maintain the ozone and PM NAAQS.[182] For example, one California official testified that if gliders were to make up only 7% of California's trucking fleet, meeting the State's SIP obligation's would be "impossible."[183] Another organization estimated that, by 2040, "excess NOx emissions from [gliders] . . . could rival the entire 2018 NOx budget for fossil fuel power plants in 22 states covered by the Cross-State Air Pollution Rule Update."[184]

Table XX provides a comparison between the emissions reduced by the Phase 2 glider provisions and EPA's Tier 3 motor vehicles emissions standards, as well as an approximation of the cost of compliance per ton to reduce NOx emissions from glider vehicles with the cost per ton to reduce these emissions under EPA's Tier 3 standards.

Table XX. Comparison - Phase 2 Glider Provisions and Tier 3 Motor Vehicle Emission Standards

	NO_x EMISSIONS REDUCTIONS [TPY]	$PM_{2.5}$ **EMISSIONS REDUCTIONS [TPY]**	**ESTIMATED COSTS [$ PER TON]**
FLEETWIDE GLIDER VEHICLE EMISSIONS ABOVE CONTROL LEVELS	190,231 TONS IN 2025[1] 318,615 TONS IN 2040[1]	5,064 TONS IN 2025[1] 8,546 TONS IN 2040[1]	$1,621/TON NO_X + NMHC (1999$)[2]

[180] *See* Section I.
[181] *See* Section I. i.
[182] Testimony of Miles Keogh on behalf of the National Association of Clean Air Agencies, Docket ID No. EPA-HQ-OAR-2014-0827-4293 (Dec. 4, 2017) *available at* http://www.4cleanair.org/sites/default/files/Documents/NACAA_Testimony-EPA_Gliders_NPRM-010417.pdf; *see also* Testimony of Paul Farrell on behalf of Connecticut Department of Environmental Protection, Docket ID No. EPA-HQ-OAR-2014-0827-4287 (Dec. 4, 2017) ("allowing this repeal will frustrate Connecticut's ability to meet federal air quality standards") *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4287; *and* Testimony of Wayne Nastri on behalf of the South Coast Air Quality Management District, Docket ID No. EPA-HQ-OAR-2014-0827-4305 (Dec. 4, 2017), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4305 ("repealing the Phase 2 rule for gliders will significantly hamper our ability to clean up the air and attain national ambient air quality standards").
[183] Testimony of Steve Cliff on behalf of the California Air Resources Board, Docket ID No. EPA-HQ-OAR-2014-0827-4282 (Dec. 4, 2017) *available at* https://ww2.arb.ca.gov/testimony-opposing-epas-proposed-repeal-emission-requirements-glider-vehicles-glider-engines-and.
[184] Testimony of Matt Solomon on behalf of the Northeast States for Coordinated Air Use Management, Docket ID No. EPA-HQ-OAR-2014-0827-4319 (Dec. 4, 2017) *available at* http://www.nescaum.org/items-of-interest.

EPA TIER 3 MOTOR VEHICLE EMISSION AND FUEL STANDARDS	264,369 TONS IN 2018[3] 328,509 TONS IN 2030[3]	130 TONS IN 2018[3] 7,892 TONS IN 2030[3]	$5,349/TON NO_X IN 2018 (2011$)[4] $4,435/TON NO_X IN 2030 (2011$)[4]

TABLE NOTES:

[1] EPA Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles - Phase 2 Response to Comments for Joint Rulemaking, Aug 2016, Appendix A, p. 1962

[2] Long-term discounted lifetime cost effectiveness per ton for Heavy-HDV engine control technology for MY2007+. *See* 66 Fed. Reg. 5102 January 18, 2001 Table V.E-1 and EPA RIA: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements, December 2000, p. VI-17.

[3] EPA Control of Air Pollution from Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards Final Rule RIA, EPA-420-R-14-005, March 2014, p. ES-7

[4] EPA Control of Air Pollution from Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards Final Rule RIA, March 2014, p. 8-4

The agency's suggestion that the proposal will not jeopardize children's health because the NAAQS still apply,[185] fails to consider that unrestricted glider vehicle emissions will seriously undermine the ability of States to attain and maintain the NAAQS; moreover, EPA has no basis for such a conclusion because it not analyzed or evaluated this impact. It also fails to reflect that there are no NAAQS for the toxic air pollutants that comprise diesel exhaust, or for diesel exhaust itself—and thus the NAAQS are inherently incapable of protecting against the full slate of health risks posed by diesel emissions.[186]

In any case, Title 2 stands as evidence that Congress did not regard the NAAQS as an excuse not to curb dangerous vehicular emissions, but saw control of motor vehicle pollution as a critical element of an overall program to address harmful air pollution.[187]

State air quality officials will face additional pollution from EPA's Proposed Rule that will make it more challenging for states to meet health-based ozone and PM standards, and more costly. EPA has failed to consider many important issues associated with NAAQS compliance, much less address them in a meaningful way, rendering the proposal both substantively and procedurally unlawful.[188]

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[185] Proposed Rule, 82 Fed. Reg. at 53,448.

[186] *See supra* Section III.

[187] *See, e.g.*, S. Rep. No. 192 at 3 ("The committee believes that this legislation is essential if we are to successfully combat the air pollution problems present at this time and those which inevitably occur unless early corrective action is taken. Automotive exhausts are not the only source of air pollution, but they are a major problem and they are increasing rapidly.").

[188] See Sections V and VII.

V. EPA has Clear Legal Authority under the CAA to Regulate Glider Vehicles.

EPA's proposal rests entirely on the deeply mistaken legal argument that glider vehicles are not "new motor vehicles" under the Act, and that therefore EPA lacks authority to address their disproportionate, enormous levels of air pollution emissions. In fact, EPA has clear independent legal authority to regulate glider vehicles, both under section 202(a)(1) of the CAA, which tasks EPA with setting emission standards for new motor vehicles, and under section 202(a)(3)(D) of the Act, which authorizes EPA to regulate rebuilt heavy-duty engines. EPA relied on both of these authorities in promulgating the glider vehicle provisions of the Phase 2 Standards. In proposing to repeal the glider vehicle provisions, EPA has put forth an untenable interpretation of its authority under section 202(a)(1) and has wholly failed to address its authorities under section 202(a)(3)(D). The Proposed Rule's assessment of its statutory authorities abandons reasoned statutory construction and ignores the health-protective purpose of the CAA.

a. EPA Clearly Has Authority to Regulate Glider Vehicles as New Motor Vehicles.

The Proposed Rule, despite obviously significant public health and environmental impacts, is grounded not on an analysis of glider vehicle emissions, but instead is based solely on a new legal interpretation of the statute concluding that glider vehicles are not "new motor vehicles" for purposes of Section 202(a)(1) of the CAA and that therefore EPA is without authority to control pollutant emissions from the vehicles or their engines. The argument to reinterpret the Act to say that glider vehicles are not new motor vehicles is devoid of legal merit. The interpretation is at odds with the clear statutory language; it is based on a palpable end-run around the standard tenets of statutory construction; it is impermissibly and diametrically at odds with statutory goals and purposes; and it leads to adverse and absurd results.

i. Glider Vehicles are "New Motor Vehicles" under the Unambiguous Terms of the Statute

The only reasonable interpretation of Section 202(a)(1) of the CAA is that glider vehicles are "new" motor vehicles. EPA therefore unquestionably has both the authority and the responsibility to regulate them. Section 202(a)(1) mandates that EPA:

> by regulation prescribe (and from time to time revise) in accordance with the provisions of this section, standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare.[189]

Section 216(3) of the Act defines "new motor vehicle" as "a motor vehicle the equitable or legal title to which has never been transferred to an ultimate purchaser."[190] A glider vehicle clearly meets this definition, as EPA concluded in the Phase 2 Standards: it is a motor vehicle; the purchaser takes initial title; glider vehicles are explicitly advertised as "brand new" trucks,

[189] 42 U.S.C. § 7521.(a)(1).
[190] 42 U.S.C. § 7550.(3).

together with complementary features like warranties.[191] In the Proposed Rule, the agency offers no substantiation to rebut any of the agency's prior factual findings and accordingly fails to justify its new interpretation.[192]

Section 216(3) also defines "new motor vehicle engine" as "*an engine in a new motor vehicle* **or** a motor vehicle engine the equitable or legal title to which has never been transferred to the ultimate purchaser."[193] The definition is clear that a new motor vehicle may include a used engine.[194] Section 216(3) also makes clear that the definitions of "new motor vehicle" and "new motor vehicle engine" cover all imported vehicles and engines without distinguishing between new and used vehicles, and accordingly clearly includes used vehicles. On its face the definition of new motor vehicle is consequently not limited to vehicles that have only new components and no used components.

This straightforward application of the definitions of new motor vehicle and new motor vehicle engine to glider vehicles and glider vehicle engines is the only correct interpretation. Nothing in Section 216(3)'s criterion regarding passage of title to the ultimate consumer makes any reference to whether the components of the vehicle are new or used. The criterion is simply passage of title, with no other limitation on the history of the components prior to passage of title. Where no ultimate consumer has ever had title to the vehicle—as is the case for glider vehicles—the vehicle is a "new motor vehicle" under the clear terms of the Clean Air Act. In its Proposed Rule, EPA itself admits that the plain language of the statute supports regulation of gliders as new vehicles.[195]

This interpretation accords with commercial reality. Glider vehicles are marketed as "brand new trucks." Comparable warranties and prices are offered for glider vehicles. They are titled as new vehicles, and come with new vehicle ID numbers. They are advertised under the name of the kit builder — and so bear the new truck name. See section 1(h) above.

Moreover, this interpretation of section 202(a)(1)'s application to glider vehicles clearly promotes the purposes of the Clean Air Act and its Title 2 provisions. The Clean Air Act's purpose is the "reduction or elimination" of pollutants at the source.[196] Under Title 2, Congress authorized EPA to establish a national motor vehicle control program to protect the public from the serious and widespread problems of motor vehicle air pollution. Congress recognized motor vehicles as major contributors to the Nation's air pollution problems,[197] and provided broad, flexible, and comprehensive authorities to EPA to develop a national program to address air

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[191] HDP2 Rule, 81 Fed. Reg. at 73,514 and n.83; *see also* Section 1(h).
[192] *Cf. FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009) (When an agency's "new policy rests upon factual findings that contradict those which underlay its prior policy," the agency must "provide a more detailed justification than what would suffice for a new policy created on a blank slate.").
[193] 42 U.S.C. § 7550(3) (emphasis added).
[194] EPA's current arguments to the contrary, articulated in the 2017 Proposed Rule, are without merit as discussed below in Section V.b.
[195] 82 Fed. Reg. at 53,445 ("Focusing solely on . . . the statutory definition . . . a glider vehicle would appear to quality as 'new.'").
[196] 42 U.S.C. § 7401(a)(3).
[197] 42 U.S.C. § 7401(a)(2).

pollution from vehicles. Section 202(a)(1) mandates that the EPA Administrator "shall" promulgate standards applicable to the emission of "*any* air pollutant" from new motor vehicles and engines, which "cause, *or contribute to*" air pollution which "*may reasonably be anticipated* to endanger public health or welfare."[198] The text of the definition of new motor vehicle reflects the broad scope of vehicles subject to EPA standard setting, and the standard setting provisions of section 202 reflect the flexibility provided to EPA to develop appropriate solutions to this diverse and multi-faceted source of air pollution. EPA's 2016 Phase 2 Standards recognizes the very serious air pollution problem specifically attributable to glider vehicles and applies the definition of new motor vehicle in direct accord with the text of the definition, mandating EPA to address this dangerous pollution source. In contrast, the Proposed Rule fails to acknowledge or consider the purposes of the Clean Air Act, or to discuss how the Proposed Rule would further those purposes.

In the 2016 Phase 2 Standards, EPA properly interpreted the statutory language to mean exactly what it says, finding that glider vehicles are new motor vehicles subject to standards under section 202(a)(1) of the Act.[199] The statutory interpretation contained in the Phase 2 Standards reflects the only reasonable interpretation, and is consistent with Congress' clear intention and furthers the purposes of the Act. Therefore, EPA has a duty to establish pollution control limits for glider vehicles under section 202(a)(1) of the Act.

b. The Proposed Rule's new interpretation of section 202(a)(1) is unreasonable and impermissible.

Even if the statutory text did not completely resolve the issue, EPA's proposed interpretation is unreasonable and impermissible. The interpretation flies in the face of clear statutory text, structure, and purpose; attempts to manufacture ambiguity where there is none; and is unlawful.

EPA's new interpretation of the statutory text—that glider kits do not qualify as "new motor vehicles"— is fundamentally at odds with the clear text of pertinent provisions and with the purpose of the statute as well as the Clean Air Act's purposes and structure. While disregarding the statute's purpose and structure, EPA relies on unfounded and illogical statutory interpretation arguments, attempting to justify the Proposed Rule with two theories: (1) Congress, in defining "new motor vehicle" for purposes of Title 2 did not have "a specific intent to include within the statutory definition such a thing as a glider vehicle";[200] and (2) in adopting a definition of "new motor vehicle" for purposes of the Clean Air Act, Congress drew on the approach it had taken with the Automobile Information Disclosure Act of 1958 ("AIDA"), suggesting Congress intended, for purposes of Title 2, that "new motor vehicle" would mean only a "showroom new"

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[198] 42 U.S.C. § 7521(a)(1); *see also Coal. for Responsible Regulation, Inc. v. Envtl. Prot. Agency*, 684 F.3d 102, 126 (D.C. Cir. 2012) ("If EPA makes a finding of endangerment, the Clean Air Act requires the [a]gency to regulate emissions of the deleterious pollutant from new motor vehicles." (quoting *Mass. v. Envtl. Prot. Agency*, 549 U.S. 497, 533 (2007)).

[199] *See, e.g., Council for Urological Interests v. Burwell*, 790 F.3d 212, 219 (D.C. Cir. 2015) (2015) ("We begin, as always, with the plain language of the statute in question."); *NRDC v. Browner*, 57 F.3d 1121122, 1127 (D.C. Cir. 1995) ("Where the terms of a statute are unambiguous, further judicial inquiry into the intent of the drafters is generally unnecessary.").

[200] Proposed Rule, 82 Fed. Reg. at 53,445.

vehicle.[201] These notions are unsubstantiated and fail to rationalize EPA's interpretation of Section 202(a)(1) to exclude glider vehicles.

i. EPA's new interpretation is at odds with the statutory definition of "new motor vehicle"

The Proposed Rule concludes that the phrase "new motor vehicle" as applied under section 202(a)(1) does not include glider vehicles because it contains an engine and power train that are previously owned, and that a glider engine is not a "new motor vehicle engine" because it is installed in a glider kit to form the glider vehicle, which is not a "new motor vehicle."[202] But this interpretation is not reasonable. This logic merely reiterates the agency's *a priori* belief that a glider vehicle cannot be new, and suffers from the very circular thinking it accuses the prior administration of adopting in promulgating the Phase 2 Standards' glider provisions.

The definition of "new motor vehicle engine" is clear under the terms of Section 216(3): a new motor vehicle engine can be an engine whose title has already been transferred to the ultimate purchaser.[203] The proposal indeed concedes this very point — as it must—affirming that "[p]rior to the time a completed glider vehicle is sold, it can be said that the vehicle's 'equitable or legal title' has yet to be 'transferred to an ultimate purchaser.'"[204]

The agency nonetheless asserts that since a glider vehicle cannot be a "new motor vehicle", a used engine installed in it cannot make a used engine a new one, dismissing the contrary position as "circular thinking".[205]

EPA's position is unreasonable for the additional reason that, if the Proposed Rule's interpretation that a vehicle with a previously used engine cannot be a new motor vehicle were correct, it would render part of the statutory definition of "new motor vehicle engine" superfluous—contrary to canons of statutory construction.[206] The Proposed Rule's interpretation is premised in part on the claim that a vehicle with a previously used engine cannot be a new motor vehicle.[207] The statute defines a "new motor vehicle engine" as "an engine in a new motor vehicle or a motor vehicle engine the equitable or legal title to which has never been transferred to the ultimate purchaser."[208] But EPA proposes to interpret the statute to mean that a vehicle with a used engine cannot be a "new motor vehicle." If that were so, then the first prong in the

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[201] Proposed Rule, 82 Fed. Reg. at 53,446.
[202] *Id*.
[203] *See* 42 U.S.C. § 7550(3) and HDP2 Rule, 81 Fed. Reg. at 73,514, 73,518.
[204] Proposed Rule, 82 Fed. Reg. at 53,444.
[205] *Id*. at 53,446.
[206] *See, e.g.*, *TRW Inc. v. Andrews,* 534 U.S. 19, 31 (2001) (refusing to adopt interpretation of a statute that would render some statutory text "insignificant, if not wholly superfluous");" (quotation marks omitted)); *see also Board of Trustees of Leland Stanford Junior Univ. v. Roche Molecular Systems*, Inc., 563 U.S. 776, 787 (2011); *Duncan v. Walker,* 533 U.S. 167, 174 (2001); *Bailey v. United States,* 516 U.S. 137, 146 (1995) ("We assume that Congress used two terms because it intended each term to have a particular, nonsuperfluous meaning.").
[207] *See* 82 Fed. Reg. at 53,446 ("Based on that structure and history, it seems likely that Congress understood a 'new motor vehicle,' as defined in CAA § 216(3), to be a vehicle comprised entirely of new parts *and certainly not a vehicle with a used engine*.").
[208] 42 U.S.C. § 7550(3).

disjunctive definition of "new motor vehicle engine" would be superfluous. If *every* "new motor vehicle" must have a "never-titled-new" engine, then every engine qualifying as new under the first prong of section 216(3) would likewise qualify as new under the second prong, rendering the first prong superfluous. This reading is unreasonable and impermissible. The phrase "an engine in a new motor vehicle," and its juxtaposition with the phrase, "equitable and legal title [to engine] has not passed," make clear that Congress understood some new motor vehicles that would have engines that would not independently meet the "equitable or legal title never passed" definition. And these textual features indicate that EPA now badly misunderstands the statute when it proposes to describe a "never-titled-new engine" as a *sine qua non* of a new motor vehicle.

To dismiss the first prong of the definition of new motor vehicle engine, "an engine in a new motor vehicle," EPA relies, *ipse dixit*, on its own assertion that glider vehicles are not new.[209] In other words, EPA has decided that a glider vehicle engine cannot be a "new motor vehicle engine" because it is not in a new motor vehicle, and that the motor vehicle it is in is not a new motor vehicle only because the motor vehicle has a used engine in it. It is the proposal's analysis which is circular.

ii. EPA's Proposed New Interpretation is Impermissibly at Odds with the Statutory Purpose and Structure

This proposal not only fails to take into consideration the statutory text and commercial reality, it also fails to reflect – and severely undermines – Congress's core purpose in Clean Air Act Section 202 to reduce emissions of air pollution that endanger public health and welfare.[210] First, EPA's construction exempts extremely high-emitting vehicles whose emissions would seriously harm public health. See Section 1. Second, by providing a competitive advantage for high-emitting vehicles, EPA's construction would seriously undermine the efficacy of pollution standards for other new freight trucks. See Section XI. The fact that EPA has not examined the harms its interpretation would cause to public health, and to the overall integrity of an entire vital statutory pollution control regime, means that EPA has acted arbitrarily and capriciously under 42 U.S.C. 7607(d)(9)(A) and *State Farm* and progeny; but the fact that EPA has not explained, and cannot rationally explain, how its circular interpretation makes sense given the serious

[209] Need cite to Proposed Rule

[210] *See UC Health v. NLRB,* 803 F.3d 669, 675 (D.C. Cir. 2015) (holding that an agency construction must be "reasonable and consistent with the statute's purpose"); *Coal Employment Project v. Dole*, 889 F.2d 1127, 1131 (D.C. Cir. 1989) (stating that to be reasonable, an interpretation must be "consistent with the statutory purpose"); *Abbott Laboratories v. Young*, 920 F.2d 984, 988 (D.C. Cir. 1990) ("The 'reasonableness' of an agency's construction depends on the construction's 'fit' with the statutory language as well as its conformity to statutory purposes."); *Cont'l Air Lines, Inc. v. DOT,* 843 F.2d 1444, 1449 (D.C. Cir. 1988) (explaining that *Chevron* step two is determined "by reference both to the agency's textual analysis (broadly defined, including where appropriate resort to legislative history) and to the compatibility of that interpretation with the Congressional purposes informing the measure"); *Bozwich v. Mathews*, 558 F.2d 475, 480 (8th Cir. 1977) (rejecting as unreasonable an agency's reading of statute because it "conflicts with the clear legislative purpose"); *see also United States v. Gordon*, 875 F.3d 26, 35–36 (1st Cir. 2017) (rejecting interpretation that "conflicts with the clear congressional purpose animating th[e] statute").

damage it would cause to core statutory objectives and mechanics renders the interpretation impermissible as an exercise in statutory construction as well.[211]

The Proposed Rule maintains that the interpretation is "permissible" since "[a]t a minimum, ambiguity exists" in the statute.[212] As explained above, there is no ambiguity with respect to the relevant question and the statute plainly contemplates that new motor vehicles can include used components, including non-new engines. But even assuming that this statutory language in isolation does not compel EPA's reading in the 2016 Phase 2 Standards, the Proposed Rule fails to justify that the reinterpretation is "permissible" in terms of the statute's structure or purposes.

Title 2 of the Act creates a mandate to control dangerous vehicular emissions, with special emphasis on controlling emissions from heavy duty diesel engines. It provides a dual "engine" definition which makes clear that a new motor vehicle can include an old engine. It provides authority over rebuilt heavy duty diesel engines.[213] It provides that only new motor vehicles and engines certified to EPA standards can be introduced into commerce, and provides severe penalties for tampering with air pollution controls. Into this comprehensive design, intending a seamless protective program, EPA now proposes to open up a major loophole.

A reasonable interpretation must be consistent with the statutory purposes of the provision and the statute being interpreted.[214] Yet EPA makes no attempt to even consider much less justify its proposed interpretation in terms of furthering the purposes of the Act and Title 2. Most glaringly, EPA fails to consider or explain how a congressional purpose of protecting the public health and welfare is promoted by exempting these ultra-high-polluting vehicles from live-saving pollution safeguards.[215]

"[R]easonable statutory interpretation must account for both the specific context in which language is used and the broader context of the statute as a whole."[216] "Thus, an agency interpretation that is inconsistent with the design and structure of the statute as a whole does not merit deference."[217] The fact that Congress in Section 202 targeted pollution that endangers

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[211] "Whether a statute is unreasonably interpreted is close analytically to the issue whether an agency's actions under a statute are unreasonable." *Gen. Instrument Corp. v. Fed. Commc'ns*, 213 F.3d 724, 732 (D.C. Cir. 2000); *see also Am. Fed'n of Gov't Employees v. Nicholson*, 475 F.3d 341, 345–46 (D.C. Cir. 2007) (explaining that the Court's inquiry under the second step of Chevron "overlaps with [the Court's] inquiry under the arbitrary and capricious standard").
[212] Proposed Rule, 82 Fed. Reg. at 53,446.
[213] *See infra* Section V(c).
[214] *See, e.g. Council for Urological Interests*, 790 F.3d 212, 222 (D.C. Cir. 2015) (stating that an interpretation is permissible under *Chevron* step 2 if "it is a reasonable explanation of how an interpretation serves the statute's objectives"); *Northpoint Tech Ltd. v. FCC*, 412 F.3d 145, 151 (D.C. Cir. 2005).
[215] *Northpoint Tech., Ltd. v. FCC*, 412 F.3d 145, 151 ("A 'reasonable' explanation of how an agency's interpretation serves the statute's objectives is the stuff of which a 'permissible' construction is made; an explanation that is 'arbitrary, capricious, or manifestly contrary to the statute,' however, is not." (citing *Chevron*, 467 U.S. at 844, 863); *see also Humane Society of U.S. v. Zinke*, 868865 F.3d 585, 595 (D.C. Cir. 2017) ("Accordingly, this court must determine whether the [agency] 'has advanced a reasonable explanation for its conclusion that the regulations serve . . . [the Act'sAct's] objectives,' *Chevron*, 467 U.S. at 863, and whether that 'interpretation . . . is at least reasonable in light of any ambiguities in the statute")..'").
[216] *Utility Air Regulatory Grp. v. EPA*, 134 S. Ct. 2427, 2442 (2014).
[217] *Id*.

public health and welfare; employed a broad definition of "new motor vehicles," and also provided for regulation of emissions from rebuilt engines, shows that Congress did not intend EPA to create such a health-damaging, market-skewing regulatory loophole.[218] EPA's proposed interpretation is flatly inconsistent with the statutes "design and structure" and is unreasonable.

iii. EPA's proposed interpretation of section 202(a)(1) would have drastic, adverse consequences for the whole mobile source program, a consequence that EPA has not examined

Further, EPA's proposal ignores the broader adverse consequences of its proposed reinterpretation. If a "new motor vehicle" is limited to vehicles that consist entirely of new parts, as EPA determines, then simply installing one or more used parts on an otherwise new motor vehicle would allow manufacturers to avoid all Title 2 requirements.[219] In addition to ending limits on pollution from glider vehicles under the Clean Air Act, the proposal could undermine the remainder of Title 2 motor vehicle controls as well.

EPA has not even considered or evaluated this dramatically harmful result. This result further demonstrates the impermissibility of the proposed reinterpretation: EPA's interpretation is manifestly inconsistent with the statutory text, structure, and purpose; arbitrarily ignores negative implications for EPA's heavy duty program as a whole; and invites absurd results.

iv. The Proposal's Account of Congress's Intent is a Speculative Invention and Ignores the Structure and Purposes of the CAA.

EPA relies on the claim that there was limited use of glider kits at the time Congress enacted Section 202(a)(1), and that therefore Congress could not have had them in mind when it adopted the definition of new motor vehicle. This is not discussed anywhere in the legislative history; the suggestion provides no basis to reject the straightforward evidence of Congressional intent provided by the actual statutory text and structure.

Disregarding its own concession that the statutory text encompasses glider kits, and ignoring its own acknowledgement that contextual statutory interpretation looks to "the purpose and context of the statute" as well as the "object and policy" of the law,[220] EPA asks only whether, at the time of enactment, Congress specifically had glider kits and vehicles in mind when it adopted the definition of new motor vehicle.[221]

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[218] *See United States v. Northeastern Pharmaceutical & Chemical Co., Inc.*, 810 F.2d 726, 743 (8th Cir. 1986) (rejecting interpretation that "would open an enormous, and clearly unintended, loophole in the statutory scheme").

[219] Among others, the Engine Manufacturers Association noted this drastic consequence of the proposal in its December 4, 2017 public hearing testimony opposing the proposal. *See* Testimony of Engine Manufacturers Association, at EPA Hearing (Dec. 4, 2017), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4299.

[220] Proposed Rule, 82 Fed. Reg. at 53,445.

[221] *See* 82 Fed. Reg. at 53,445 (asking "whether or not Congress, in defining 'new motor vehicle' for purposes of Title 2, had a specific intent to include within the statutory definition such a thing as a glider vehicle" and stating that it is "likely that Congress did not have in mind that the definition would be construed as applying to a vehicle comprised of new body parts and a previously owned powertrain"); *id.* at 53,446 ("[I]t is implausible that Congress would have had in mind that a 'new motor vehicle' might also include a vehicle comprised of new body parts and a previously owned powertrain").

This is not a proper approach to statutory interpretation. The question for purposes of interpreting a statute is not whether, at the time of enactment, Congress was consciously thinking about one fact-specific, future application of a statutory definition designed to address potentially hundreds or more fact- specific applications over many decades of implementation. Rather than engaging in such speculative adventures, the task is to interpret the language of the statute, in light of its context and the statute's purposes, structure and history.

The appropriate question is whether Congress expressed a clear intention on the broader issue of whether a new motor vehicle could include used components. The statute indicates clearly – explicitly -- that Congress specifically intended that new motor vehicles could include used components.[222] As discussed above, the criterion of first transfer of title draws no distinction with respect to the kinds of *components* in the vehicle, the definition expressly states that used engines can be in a new motor vehicle, and used imported vehicles are not distinguished from new.

EPA's effort to defeat the application of a statute whose plain language readily covers a given set of circumstances, based upon EPA's thoroughly speculative claim that Congress did not specifically contemplate application to those circumstances, is patently unfaithful to the Clean Air Act's intended mission to protect the public health and welfare from existing and yet-to-manifest air pollution hazards. The Clean Air Act was drafted in broad terms to allow EPA to deal with new hazards emerging from changing economic activities, ecological conditions, and scientific information.[223] EPA's approach here ignores all that, gratuitously creating loopholes in the Act's comprehensive scheme. As the Supreme Court put it in a discussion of the same Clean Air Act section in *Massachusetts*:

> While the Congresses that drafted § 202(a)(1) might not have appreciated the possibility that burning fossil fuels could lead to global warming, they did understand that without regulatory flexibility, changing circumstances and scientific developments would soon render the Clean Air Act obsolete. The broad language of § 202(a)(1) reflects an intentional effort to confer the flexibility necessary to forestall such obsolescence. See *Pennsylvania Dept. of Corrections v. Yeskey,* 524 U.S. 206, 212 (1998) ("[T]he fact that a statute can be applied in situations not expressly anticipated by Congress does not demonstrate ambiguity. It demonstrates breadth" (internal quotation marks omitted)). Because greenhouse gases fit well within the Clean Air Act's capacious definition of "air pollutant," we

[222] Indeed, the way the definition was written actually indicates specific Congressional intent that a new motor vehicle, as defined by the statute, with a used engine, would fall under the regulatory authority. See Section V(a) and (b).

[223] The 1979 Clean Air Act's central purpose was to "establish that the air is a public resource" and to provide an "intensive and comprehensive attack on air pollution". S. Rept. 91-1196 at 4; *see also* 42 U.S.C. § 1017401(b)(1)-(4); *Union Elec. Co. v. EPA*, 427 U.S. 246, 256 (1976) (Act was "a drastic remedy to what was perceived as a serious and otherwise uncheckable problem of air pollution."); *Whitman v. American Trucking Assns., Inc.*, 531 U.S. 457, 465-66 (2001).

> hold that EPA has the statutory authority to regulate the emission of such gases from new motor vehicles.

549 U.S. 497, 532 (2007).[224] The definition of new motor vehicle reflects similar flexibility and breadth.[225] The claim that Congress needs to have specifically contemplated regulation of glider vehicles is untenable: many cases, besides *Massachusetts*, have confirmed that the CAA is crafted in broad terms to capture changing technologies and new pollution problems. EPA notably fails to explain *why* a Congress so manifestly and consistently concerned about dangers to health and welfare would have wanted to leave these the significant pollution from these vehicles unaddressed.[226]

Furthermore, EPA reaches its conclusion without any reference to or reliance on legislative history, other than statutory provisions or the Clean Air Act's statutory purposes—which each call for a different meaning.[227] Excluding glider vehicles would produce the very harms that Congress legislated against in Section 202. Congress could have, but did not, impose the sort of limitations EPA seeks to impose on it. And putting the broad language concerning new vehicles together with the provisions on rebuilding authority, it is manifest that Congress did not intend to

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[224] *See Cablevision Systems Corp. v. F.C.C.*, 649 F.3d 695, 707 (D.C. Cir. 2011) ("When Congress delegates broad authority to an agency to achieve a particular objective, agency action pursuant to that delegated authority may extend beyond the specific manifestations of the problem that prompted Congress to legislate in the first place. *See Consumer Elecs. Ass'n v. FCC,* 347 F.3d 291, 297–99 (D.C. Cir. 2003) (rejecting a *Chevron* step one challenge contending that the Commission's statutory authority was limited to only the immediate concern Congress empowered the Commission to address and indicating that the use of "broad language" to solve a relatively specific problem "militates strongly in favor of giving [the statute] broad application").

[225] If the agency is suggesting that it lacks authority over glider vehicles unless Congress specifically states that glider vehicles are to be regulated, that approach is palpably wrong. *Chevron* itself rejects the notion that Congress must evince a specific intent in order for it to delegate authority, since the Court in that case found that Congress had expressed no intent as to whether the 'bubble concept' at issue, and ultimately sustained by the Court, was authorized by the Act. *See* 467 U.S. at 845 ("Once it determined, after its own examination of the legislation, that Congress did not actually have an intent regarding the applicability of the bubble concept to the permit program, the question before it was not whether in its view the concept is 'inappropriate' in the general context of a program designed to improve air quality, but whether the Administrator's view that it is appropriate in the context of this particular program is a reasonable one.").

[226] *See Northpoint Tech., Ltd. v. FCC*, 412 F.3d 145, 151 (D.C. Cir. 2005) ("A 'reasonable' explanation of how an agency's interpretation serves the statute's objectives is the stuff of which a 'permissible' construction is made.") (citing *Chevron*, 467 U.S. at 863). "[A]n explanation that is 'arbitrary, capricious, or manifestly contrary to the statute,' however, is not." *Id.* (quoting *Chevron,* 467 U.S. at 844); *see also Humane Society of United States v. Zinke*, 865 F.3d 585, 595 (D.C. Cir. 2017) ("Accordingly, this court must determine whether the Service 'has advanced a reasonable explanation for its conclusion that the regulations serve . . . [the Act's] objectives,' *Chevron*, 467 U.S. at 863, and whether that 'interpretation . . . is at least reasonable in light of any ambiguities in the statute.").

[227] *See UC Health v. NLRB,* 803 F.3d 669, 675 (D.C. Cir. 2015) (an agency construction must be "reasonable and consistent with the statute's purpose"); *Coal Employment Project v. Dole*, 889 F.2d 1127, 1131 (D.C. Cir. 1989) (to be reasonable, an interpretation must be "consistent with the statutory purpose"); *Abbott Laboratories v. Young*, 920 F.2d 984, 988 (D.C. Cir. 1990) ("The 'reasonableness' of an agency's construction depends on the construction's 'fit' with the statutory language as well as its conformity to statutory purposes."). Notably, in the preamble to the proposed rule, in describing the "Statutory and Regulatory Context," 82 Fed. Reg. at 53,443, EPA leaves out language that indicates the protective purpose of the provision: to control "air pollution which may reasonably be anticipated to endanger public health or welfare." 42 U.S.C. § 7521(a)(1).

create the kind of perverse regulatory gap in the statute's protections. EPA must abandon its proposed efforts to read its own responsibilities to the public out of the statute.

Though speculating about whether the 1970 Congress specifically contemplated modern glider vehicles is not the proper way to interpret a statute, these speculations are very likely wrong. The contemporaneous understanding at the time of passage of the Clean Air Act, even if relevant, was that glider vehicles were considered new vehicles. The Internal Revenue Service treated a glider vehicle as a new vehicle for federal excise tax purposes, which position was upheld on judicial review. *See Boise National Leasing, Inc. v. United States*, 389 F.2d 634, 636-37 (9th Cir. 1968).[228] If anything, this indicates that, contrary to EPA's supposition in the proposal, Congress considered glider vehicles to be new motor vehicles when it enacted the CAA's definitions.

v. EPA's Reliance on AIDA is Unavailing

Compounding this misunderstanding, EPA next argues that similarity in the definitions used in the CAA and the Automobile Information Disclosure Act of 1958 (AIDA)[229] shows that "Congress intended … that a 'new motor vehicle' would be understood to mean something equivalent to a 'new automobile'—i.e., a true 'showroom new' vehicle."[230] EPA's argument relies on flawed logic,[231] and its analysis is superficial and incomplete. It runs directly counter to the established canons of statutory construction to ignore the clear language of the relevant statute while consulting the language in an entirely separate and unrelated statute. Even if AIDA is relevant here, the proposal ignores the other textual provisions of AIDA and how they interact, and does not consider the critical differences between the CAA and AIDA in text and Congressional purpose. A detailed analysis demonstrates that in Title II of the CAA, Congress did not adopt AIDA's narrow and limited approach, and instead adopted a broader more expansive legislative solution.

Conceding that the legislative history lacks any evidence to support its new theory, EPA asserts that Congress drew from AIDA's definition of "new automobile" in defining "new motor vehicle" for Title 2 of the CAA. AIDA defines "new automobile" as "an automobile the equitable or legal title to which has never been transferred by a manufacturer, distributor, or dealer to an ultimate purchaser."[232] Citing this definition, EPA asserts that Congress intended

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[228] *See Boise National Leasing, Inc. v. United States*, 389 F.2d 634, 636-37 (9th Cir. 1968). The Internal Revenue Service imposed an excise tax on manufacturers of new trucks made from glider kits. This tax applied when a "taxpayer purchased … in packaged or "glider kit" form, all the necessary new elements, including frame, cab, brake system, etc. … and then had the structuring and assembling processes done by a third party." The glider kit process resulted in a "new truck entity having been produced, and not a repairing or reconditioning of the old truck," and the manufacturer of the new truck entity was subject to the excise tax.

[229] 15 U.S.C. § 1231 et seq.

[230] Proposed Rule, 82 Fed. Reg. at 53,446.

[231] "'The tendency to assume that a word that appears in two or more legal rules, and so in connection with more than one purpose, has and should have precisely the same scope in all of them, runs through legal discussions. It has all the tenacity of original sin and must be constantly guarded against.'" *General Dynamics Land Systems v. Cline*, 540 U.S. 581, 595 n. 8 (2004) (quoting Cook, "Substance" and "Procedure" in the Conflict of Laws, 42 Yale L. J. 333, 337 (1933)).

[232] 15 U.S.C. § 1231.

"new motor vehicle" under Title 2 of the CAA to mean "a true 'showroom new' vehicle."[233] First, EPA's reference to "showroom new" presumably refers to the showroom of a new car dealer. AIDA's legislative history indicates that this is the focus of AIDA.[234] The problem Congress addressed in AIDA was fraud and deception occurring in the showroom of new car dealers, and it crafted a narrow solution to address it.[235] The result was a requirement for a window label for new cars shown by new car dealers in their showrooms. However, this focus on dealers and their showrooms was driven not by AIDA's definition of "new automobile," but by other provisions of that law. That focus derives from a separate section, the requirement that manufacturers affix the window label to a new car prior to delivery of the vehicle to a dealer.[236]

In effect, Congress defined new automobile somewhat broadly in AIDA, but then narrowed the labeling requirement by limiting it to only those new automobiles delivered to new car dealers. For example, a new car sold directly by a manufacturer would not be subject to the labeling requirement.[237] While that kind of distribution would not typically occur, this example makes clear that the definition of new automobile is not what ties AIDA to "showroom new" cars; a different section of the law achieves this result. The text of AIDA does not support EPA's reasoning and conclusion, which relies on the AIDA definition by itself.

In the CAA Congress did not take the narrow approach used in AIDA and did not focus on the subset of vehicles presented for show in new car dealer's showrooms:

> (1) The CAA's Title 2 provisions address a much broader societal problem – air pollution, reaching broadly across the country - while AIDA addresses a specific consumer information problem involving only new car dealers.[238]
>
> (2) Unlike AIDA, the CAA's definition of new motor vehicle covers many kinds of vehiclesin addition to passenger cars. The CAA covers all kinds of cars and trucks, from the smallest passenger car to the largest commercial tractor-trailer. It covers many more kinds of manufacturers and their distribution networks – the ways in which new cars or trucks are sold to their buyers. The vehicles and their manufacturing and distribution

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[233] 82 Fed. Reg. 53,446.

[234] *See Baltimore Luggage Company v. FTC*, 296 F.2d 608 (4th Cir. 1961),) (decided several years before adoption of the CAA).

[235] *See Baltimore Luggage Co,* 296 F.2d at 612 ("[T]he legislative history of this Act, 2 U.S.C. Congressional and Administrative News, 85th Congress 1958, p. 2902, in speaking of the purpose of the bill and the need for the legislation, sets out (pp. 2903, 2904, 2905): 'The primary purpose of the bill is to disclose the manufacturer's suggested retail price of the new automobile (passenger car or station wagon) so that the buyer will know what it is. This information is not available now.'").

[236] "Every manufacturer of new automobiles distributed in commerce shall, prior to the delivery of any new automobile to any dealer, or at or prior to the introduction date of new models delivered to a dealer prior to such introduction date, securely affix to the windshield, or side window of such automobile a label on which such manufacturer shall endorse clearly, distinctly and legibly true and correct entries disclosing the following information concerning such automobile" (emphasis supplied) 15 U.S.C. § 1232. The enforcement for this labeling requirement is addressed in 15 U.S.C. § 1233.

[237] 15 U.S.C. § 1232.

[238] Need cite – leg hist? Act has no purpose/intro section

networks are more varied than the limited world of manufacturer deliveries of passenger cars to new car dealers.

(3) Unlike AIDA, the definition of new motor vehicle under Title 2 is not limited to an automobile the title to which has never been transferred to an ultimate purchaser. As explained above, the definition of new motor vehicle under Title 2 is broader in scope, and it is clear that a new motor vehicle may include an engine whose title has already passed to an ultimate purchaser, that is, a new motor vehicle may include a used engine.[239] In addition, it includes all imported vehicles, new and used.[240] Thus, on its face the definition of new motor vehicle is not limited to the kind of "showroom new" vehicles shown by new passenger car dealers.

(4) It is AIDA's manufacturer requirement that focuses AIDA on new car dealers' showrooms, not AIDA's definition of new automobile. The parallel manufacturer provision in the CAA, section 203(a), requires that a manufacturer obtain an EPA certificate of conformity before selling, offering for sale, introducing into commerce or delivering a new motor vehicle for introduction into commerce.[241] Nothing narrows this prohibition or somehow limits Title 2 to vehicles delivered to a dealer for presentation in "showroom new" condition in their showroom. The CAA prohibition is much broader in scope than the labeling requirement in AIDA, properly reflecting the broader scope of the industries involved and the air pollution problem Congress was trying to solve.

Thus, even assuming without evidence that Congress was informed by AIDA, it is clear that Congress rejected the narrow AIDA approach and instead chose a broader and more expansive approach for the CAA. EPA's grasping at AIDA in the proposal is disconnected from the purpose and structure of the CAA itself.

In any case, there is no justification for EPA's proposal. It not only does not further the statutory purposes of the CAA, it negates them. This proposal is antithetical to the core statutory objective of protecting public health and the environment from exposure to harmful emissions from motor vehicles, including from heavy duty vehicles and engines.[242]

The purpose of Title II is to broadly empower EPA to address harmful motor vehicle air pollution, calling for EPA to control it at its source. The broad scope of the kinds of vehicles covered is matched with clear discretion to adopt reasonable controls that are appropriate under the specific circumstances. EPA's proposed interpretation does the opposite – it would require EPA to ignore a very large and growing source of harmful air pollution from motor vehicles, and would eliminate EPA's ability to protect the public from this pollution. Whether or not one agrees with the specific controls adopted by EPA in the 2016 Rule is not the issue. The issue is whether the purposes of section 202(a)(1) of the Act are promoted by totally precluding EPA from addressing in any fashion a major and growing source of motor vehicle air pollution, where the vehicles clearly meet the terms of the definition adopted by Congress. EPA's 2016 Phase 2

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[239] 42 U.S.C. § 7550.
[240] *Id*.
[241] 42 U.S.C. § 7522.
[242] *See, e.g.*, CAA §§ 202(a)(1),); 202(a)(3)(A)), (B); 202(a)(3)(D); 213.

Standards properly promoted the purposes of the Act, but the Agency's proposed interpretation does just the opposite.

c. EPA has explicit authority to regulate emissions from rebuilt heavy-duty engines.

EPA has explicit authority under Section 202(a)(3)(D) of the CAA to adopt regulations to control emissions from rebuilt heavy-duty engines.[243] This authority independently supports the provisions EPA proposes to repeal, as EPA acknowledged in the Phase 2 Standards themselves.[244] Yet EPA does not even address this authority in the Proposed Rule. EPA may not disclaim authority to regulate glider vehicles without explaining how this authority fails to support the standards.

There is no dispute that glider vehicles use exclusively rebuilt heavy-duty diesel engines.[245] The Phase 2 Standards explicitly relied on this authority as a separate and stand-alone basis for the glider vehicle provisions.[246] Section 202(a)(3)(D) of the Act provides that,

> "[t]he Administrator shall study the practice of rebuilding heavy-duty engines and the impact rebuilding has on engine emissions. On the basis of that study and other information available to the Administrator, the Administrator may prescribe requirements to control rebuilding practices, including standards applicable to emission from any rebuilt heavy-duty engines … which in the Administrator's judgment cause, or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare taking costs into account."

EPA must give "appropriate consideration to the cost of compliance within the period and energy and safety factors."[247]

As EPA notes in the Proposed Rule, the Agency has previously adopted controls under section 202(a)(3)(D).[248] In 2016, EPA again properly exercised its authority under the rebuild authority. EPA has studied the emissions impact of rebuilt engines and of the glider vehicles in which they are placed, and in promulgating regulations implementing the authority, acted on "other information available to the Administrator" in the form of many decades of research confirming

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[243] 42 U.S.C. § 7521.
[244] *See* HDP2 Rule 81 Fed. Reg. at 73,518 (listing § 202(a)(3)(D) as among the "multiple authorities" supporting the rule).
[245] *See, e.g.* 81 Fed. Reg. 73,518 n.93; HDP2 Response to Comments at 1879-1880; *see also* Fitzgerald Glider Kits, About Fitzgerald, https://www.fitzgeraldgliderkits.com/about-fitzgerald/ ("Fitzgerald Glider Kits specializes in installing the remanufactured main components (engine, transmission and/or rear ends) from a donor truck that was either wrecked or unsafe for the road, into a new cab and chassis built by the OEM.") (last accessed Jan. 1, 2018).
[246] *See, e.g.,* 81 Fed. Reg. 73,518 n.94 ("The engine rebuilding authority of section 202(a)(3)(D) includes removal of an engine from the donor vehicle . . . [and] EPA interprets this language as including installation of the removed engine into a glider kit, thereby assembling a glider vehicle."); *id.* at 73,519/1-2; *id.* at 73,944 n.991; 73,945/3; 73,946 ("EPA has broad authority to control all pollutant emissions from 'any' rebuilt heavy duty engines (including engines beyond their statutory useful life))" (citing § 202(a)(3)(D)); HDP2 Response to Comments at 1879.
[247] 42 U.S.C. § 7521.
[248] Proposed Rule, 82 Fed. Reg. 53,443 and n.2, citing 40 CFR § 1068.120; *see also* 40 CFR § 86.004-40.

the health harms from air pollution caused by the types of engines used in glider vehicles.[249] EPA has long found that diesel exhaust contains air pollutants that endanger public health and welfare.[250] Likewise, it is well understood that the rebuilt diesel engines in glider vehicles contribute to the air pollution that endangers public health and welfare.[251] In promulgating the glider provisions of the Phase 2 Standards, EPA conducted the requisite assessments ofcost,[252] energy,[253] safety,[254] and lead time.[255]

The 2017 Proposed Rule acknowledges EPA's "authority to address heavy-duty engine rebuilding practices under CAA section 202(a)(3)(D)."[256] The Proposed Rule's failure to explain why, in light of all the relevant factors, it chooses not to exercise this conceded authority—indeed, the agency's failure to even articulate that it has chosen not to exercise this authority—renders this rulemaking unlawful.

i. The Agency has not attempted to, and cannot, justify revocation of its exercise of rebuild authority

The proposal ignores that EPA exercised its rebuild authority as a separate basis for the 2016 Phase 2 Standards on glider vehicle engines.[257] While the reason for this omission is opaque, the agency is wrong to the extent that it considers its arguments against EPA's authority under Section 202(a)(1) sufficient to repeal the glider provisions. A new proposal would be required todisclaim the rebuild rationale, which was and is an independent and sufficient basis for the 2016 glider provisions. EPA has not indicated that it is revoking this prior exercise of the rebuild authority, and has failed to explain or justify such an action, a fatal substantive and procedural

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[249] HDP2 Rule, 81 Fed Reg. 73,942-43; 61 Fed. Reg. 33,449 (June 27, 1996). Regulation under section 202(a)(3)(D) is not required to be based exclusively on the rebuilding study. Even if it were, EPA may consider factors other than the study in exercising the delegated authority. *See Sierra Club v. EPA*, 323 F.3d 377 (D.C. Cir. 2003).
[250] *See, e.g..,* Control of Air Pollution From New Motor Vehicles and New Motor Vehicle Engines; Regulations Requiring Onboard Diagnostic Systems on 2010 and Later Heavy-Duty Engines Used in Highway Applications Over 14,000 Pounds; Revisions to Onboard Diagnostic Requirements for Diesel Highway Heavy-Duty Vehicles Under 14,000 Pounds, 72 Fed. Reg. 3200, 3204/2-3 (Jan. 24. 2007);), https://www.gpo.gov/fdsys/pkg/FR-2007-01-24/pdf/07-110.pdf; *see also Nat'l Petrochemical and Refiners Assn v. EPA*, 287 F. 3d 1160, 1164 (D.C. Cir. 2002); *see also* 80 40528Fed. Reg. 40,528/3 (July 15, 2015) (EPA has long since justified the standards for control of criteria pollutant emissions from heavy duty diesel engines).
[251] *See* HDP2 Rule 81 73943Fed. Reg. 73,943 (glider vehicles will account for 33% of the NOx heavy duty inventory if current production rates continue several more model years, even though only 5% of trucks would be glider vehicles).
[252] *See, e.g..,* HDP2 Rule, 81 Fed. Reg. at 73,943/2 (annual monetized benefit of control from $6-$14 billion for PM control alone); 80 Fed. Reg. 40,529/1 (July 13, 2015) (low compliance costs); and HDP2 Response to Comments at 1882 (EPA notes that Fitzgerald Glider Kits, the leading manufacturer, states publicly that it can be profitable at 300 glider vehicles annually).
[253] *See, e.g..*, 81 Fed. Reg. 73,517; HDP2 Response to Comments at 1877, -79.
[254] *See* 80 Fed. Reg. 40,529/1 (July 13, 2015).
[255] *See, e.g.* 81 Fed. Reg. 73,518-19 and HDP2 Response to Comment at 1880 (engines certified to current engine model year are available to glider vehicle assemblers at any time).
[256] Proposed Rule, 82 Fed. Reg. at 53,443.
[257] *See e.g.* 81 FR 73518/1; 73519/1-2; 73944 n. 991; 73945/3; Response to Comment Background Document ("RTC") p. 1879.

deficiency.[258] The Supreme Court has "frequently reiterated that an agency must cogently explain why it has exercised its discretion in a given manner."[259]

EPA's failure to revoke its authority renders this proposal unlawful—but even if the agency had attempted to revoke its exercise of the authority, no reasoned explanation for doing so exists. As discussed in Section 1 above, the threats posed to public health of these engines' unregulated emissions was substantial even on the basis of the risk estimates in the 2016 final rule, and more recent information indicates that those threats were significantly underestimated.

The Proposed Rule references earlier exercises of the rebuild authority – though omits some significant examples[260]— and asserts that "[i]f the interpretation being proposed here were to be finalized, EPA's authority to address heavy-duty engine rebuilding practices under CAA section 202(a)(3)(D) would not be affected."[261] The agency has neither acknowledged that it is changing position regarding its exercise of authority under the engine rebuilding provision[262] — indeed, it outright misstates the issue at 82 Fed. Reg. 53,443— andhas not offered any explanation for its unacknowledged and unjustifiable change.

EPA independently supported the gliders provisions in its Phase 2 Standards with a compelling justification under section 202(a)(3)(D).[263] EPA has not revoked this separate, stand-alone authority for the glider provisions, and there is no basis for EPA to revoke this exercise of authority over the dangerous and disproportionate pollution from rebuilt diesel engines in glider vehicles. EPA's failure to consider this issue necessitates a reproposal should the agency still seek to amend any feature of the Phase 2 Standards to alter their substantive terms.

VI. EPA has clear authority to regulate glider kits.

In the Phase 2 Standards, EPA provided that glider kit manufacturers are "incomplete vehicle manufacturers," and thus responsible for complying with the emission standards established for glider vehicles.

EPA proposes to eliminate the provisions regarding glider kits, offering two grounds: (1) if glider vehicles are not new motor vehicles, then the glider kits cannot be regulated as incomplete new motor vehicles, and (2) a glider kit may not itself meet the definition of "motor vehicle"

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[258] *See State Farm*, 463 U.S. at 42 ("[A]n agency changing course must supply a reasoned explanation for the change beyond that which may be required when an agency does not act in the first instance"); *id.* at 43 (stating that an agency acts arbitrarily when it "entirely failed to consider an important aspect of the problem").
[259] *State Farm*, 467 U.S. at 48.
[260] EPA has regulated the emissions from remanufactured engines in locomotives and marine vessels as new engines. *See* 40 CFR Part 1042 subpart I (marine engines) and 40 CFR § 92.1(a). These rules are based on the statutory provision that "new motor vehicle engines" can include a used engine. *See* 63 Fed. Reg. 18980 (April 16, 1998) (applying that definition to non-road engines by analogy),); 40 CFR § 92.2 (definition of "new locomotive engine").
[261] Proposed Rule, 82 Fed. Reg. at 53,443.
[262] *See Encino Motorcars LLC v. Navarro*, 136 S. Ct. 2117, 2126 (2016) (stating that when an agency changes position it must at a minimum acknowledge the change and offer a reasoned explanation for it).
[263] *See* HDP2 Rule 81 Fed. Reg. at 73,518 (listing § 202(a)(3)(D) as among the "multiple authorities" supporting the rule).

because, lacking a powertrain, it is not self-propelled.[264] The Proposal misapprehends the traditional regulatory policy of delegated assembly, which allows that when a motor vehicle has multiple manufacturers, these manufacturers may agree among themselves which is to certify compliance. The Proposal's new interpretation of glider kits as not meeting the definition of "motor vehicle" is in irreconcilable tension with the Agency's well-established exercise of authority over emissions from heavy-duty vehicles, which typically have multiple manufacturers.

In addressing its authority over glider kits in the Phase 2 Standards, EPA explained that it "has the authority to regulate incomplete motor vehicles and manufacturers thereof, including unmotorized chassis," and "considers glider kits to be incomplete motor vehicles and entities manufacturing gliders to be manufacturers of those vehicles."[265] EPA correctly concluded that, for purposes of Title 2 of the CAA, a glider kit manufacturer, which controls the vehicle's chassis, cab, tires, body, and brakes, is a "manufacturer of a motor vehicle."[266] And, indeed, it makes practical sense for the glider kit manufacturer to be included "as an entity responsible for assuring that glider vehicles meet the Phase 2 vehicle emission standards" because the glider kit manufacturer "control[s] critical elements of the ultimate vehicle's greenhouse gas emissions, in particular, all aerodynamic features and all emissions related to steer tire type."[267]

In the Phase 2 Standards, EPA did not set separate emission standards for glider kits but indicated that either the glider kit manufacturer or the glider vehicle manufacturer could certify compliance with the greenhouse gas vehicle standards.[268] EPA indicated that this was a routine application of the 'delegated assembly' regulatory provisions, a compliance flexibility which provides that when a new motor vehicle has multiple manufacturers, any of those manufacturers may certify compliance with applicable standards provided certain conditions are satisfied.[269] If the glider kit manufacturer chooses not to certify, it must send certain information to the downstream manufacturer of the glider vehicle, including a fuel map for each engine used, or a default map consistent with good engineering judgment should a manufacturer be unable to generate or obtain a fuel map for the actual engine.[270] Glider kit manufacturers are also responsible for generating test data with respect to aerodynamics and tires.

As explained in section V above, it is clear that glider vehicles are new motor vehicles. In light of this, it is equally clear that EPA has ample authority to promulgate the various provisions concerning glider kits in the Final Rule. First, EPA has obvious authority to promulgate GHG standards for new motor vehicles, which as discussed above includes glider vehicles. The issue then becomes which entity involved in manufacture of the vehicle must certify compliance with those standards. As EPA explained in the preamble to the Phase 2 Standards, the Act

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[264] Proposed Rule, 82 Fed. Reg. at 53,446.
[265] HDP2 Rule, 81 Fed. Reg. at 73,945.
[266] HDP2 Rule, 81 Fed. Reg. at 73,516.
[267] 81 Fed. Reg. at 73,516-17.
[268] 81 Fed. Reg. at 73,517-18.
[269] *Id*. at 73,518 and 73,945 referring to the regulations at 40 CFR part 1037.620 through 1037.622; *see also* RTC p. 1884.
[270] 81 Fed. Reg. at 73,942.

contemplates that there can be multiple manufacturers of a motor vehicle.[271] Indeed, this is routine for heavy-duty vehicles, where one entity typically manufactures a tractor, another the engine, a third manufactures the trailer, and a fourth assembles the tractor trailer.[272] Since any manufacturer may certify under section 206 of the CAA, EPA rules have long provided provisions allowing manufacturers to choose which manufacturer certifies and what obligations the non-certifying manufacturer(s) assume.[273] The provisions provide a needed measure of flexibility to the certification process by allowing manufacturers themselves to determine which entity is most appropriate to certify in a given instance, and allows an upstream manufacturer to introduce a vehicle into commerce before it is in certified condition when a downstream manufacturer certifies. As EPA explained in the Phase 2 Standards, the provisions regarding glider kit manufacturers are simply an application of these long-standing provisions.[274] They allow, but do not compel, the glider kit manufacturer to certify compliance. In the Proposed Rule, EPA does not provide any considerations to justify eliminating this useful flexibility, intended to ease compliance with the provisions.

Moreover, section 208(a) of the Act provides EPA with authority to regulate manufacturers of "new motor vehicle … parts or components", including authority to "perform tests where such testing is not otherwise reasonably available under this part". This provision provides additional authority to require glider kit manufacturers to generate engine maps and conduct aerodynamic and tire testing.

Further, CAA Section 203(a)(3)(B) prohibits the use of "defeat" devices and therefore requires the regulation of glider kits under the Act.[275] Title II of the CAA defines "defeat" devices to include "any part or component intended for use with, or as part of, any motor vehicle . . . where a principal effect of the part or component is to . . . defeat . . . any . . . element of design installed . . . in a motor vehicle… in compliance with regulations under this subchapter."[276] As EPA explained in the Phase 2 Standards, "a glider kit manufacturer furnishing a glider kit in a configuration that would not meet the *tractor* standard when the specified engine, transmission, and axle are installed would likewise *cause a violation of the tractor emission standard*."[277]

EPA, therefore, concluded that, "the glider kit would be a defeat device with respect to the tractor vehicle standard, not the separate engine standard. A non-conforming glider kit would adversely affect compliance with the vehicle standard."[278] This logic still holds. A glider vehicle is assembled with defeat device "components" for which a "principal effect" is to duck compliance with EPA regulations for new motor vehicles.

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[271] See 81 Fed. Reg. at 73,515-16, explaining that the definition of manufacturer in section 216(1) contemplates multiple entities since it includes entities engaged in either manufacturing or assembling a new motor vehicle.
[272] *Id*. at 73516.
[273] *See* provisions relating to delegated assembly in sections 1037.620-.622.
[274] 81 Fed. Reg. 73,517.
[275] 42 U.S.C. § 7522(a)(3)(B).
[276] *Id*. § 7522(a)(3)(B).
[277] 81 Fed. Reg. at 73,517 (emphasis added).
[278] *Id.* at 73,517.

In short, the proposal misidentifies the issue, compromises long-standing and useful delegated assembly regulatory provisions, and is in any case without merit.

VII. EPA's Proposed Repeal is Procedurally Deficient and Arbitrary and Capricious

In any rulemaking, an agency must support all of its decisions by reasoned explanation, comprehensively examining the relevant data and clearly articulating a well-reasoned and complete explanation for its action.[279] Whether writing on a clean slate or changing policy previously on the books, an agency acts arbitrarily when it entirely fails to consider an important aspect of the problem it is addressing.[280] And where an agency reverses its position, its decision must also be rigorously supported,[281] including explanations for changes in policy and a "rational connection between the facts found and the choice made."[282] EPA has failed to provide a reasoned explanation for the proposed repeal and has failed to adequately explain the agency's change in position, making the proposed action procedurally deficient and quintessentially arbitrary and capricious. EPA's blinkered analysis is a clear violation of the agency's duty to explain its decision-making, as articulated in *State Farm* and subsequent case law.[283]

a. Agencies must justify reversing the course of policy by addressing the existing record.

As the basis for reversing course, the agencies may not offer a justification "that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise."[284] Where EPA makes factual findings to support a new policy, and those findings contradict the prior record, it must also provide "a more detailed justification" in demonstrating that the change is reasoned.[285] An agency may not "disregard contrary or inconvenient factual determinations that it made in the past, any more than it can ignore inconvenient facts when it writes on a blank slate."[286] In particular, more detailed explanations would be necessary here if a new final determination relies on "factual findings that contradict those which underlay. . . prior policy."[287] No judicial deference is provided to an agency's purported exercise of its technical expertise when that explanation lacks coherence.[288]

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[279] *See Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.,* 463 U.S. 29, 43-44 (1983).
[280] *State Farm*, 463. U.S. at 43.
[281] *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009); *See also State Farm*, 463 U.S. 29 (1983).
[282] *State Farm*, 463 U.S. at 43 (citation omitted).
[283] *See id.* at 51.
[284] *Id*. at 43.
[285] *FCC*, 556 U.S. at 515 (When an agency's "new policy rests upon factual findings that contradict those which underlay its prior policy," the agency must "provide a more detailed justification than what would suffice for a new policy created on a blank slate.").
[286] *Id*. at 537 (Kennedy, J. concurring).
[287] *Id.* at 515.
[288] *Tripoli Rocketry Ass'n v. BATFE,* 437 F. 3d 75, 77 (D.C. Cir. 2006) ("The problem in this case is that ATFE's explanation for its determination that APCP deflagrates lacks any coherence. We therefore owe no deference to ATFE's purported expertise because we cannot discern it."); *Coburn v. McHugh*, 679 F. 3d 924, 926, 934 (D.C. Cir. 2012) ("Because the ABCMR's decisions are largely incomprehensible on these points, they are unworthy of any

In particular, the Supreme Court has emphasized that more detailed explanations may be necessary in the case of rules that involve "serious reliance interests."[289] In this case, freight truck manufacturers have made significant investments in modern pollution controls in reliance on a level playing field,[290] one that the glider truck pollution standards rollback would seriously undermine. Moreover, local air quality jurisdictions and regulations across the country rely on federal vehicle standards as part of complex, multi-step deliberations and planning to achieve air quality goals, such as nitrogen oxides reductions in California; these reliance interests will be seriously impacted should EPA move ahead and finalize this proposal.[291] Under such circumstances, agencies must provide "a more detailed justification" than what is required for a new regulation created on a blank slate.[292]

Rulemaking under the Clean Air Act is subject to the general requirements of statutory conformity and reasoned decision-making derived from the Administrative Procedure Act and basic principles of administrative law.[293] Among other requirements, Clean Air Act rules cannot be "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law," "in excess of statutory jurisdiction, authority, or limitations, or short of statutory right," or "without observance of procedure required by law."[294]

These requirements fully apply to decisions to modify or repeal existing regulations.[295] Agencies, including EPA, must adhere to basic standards of reasoned decision-making when they propose to change existing policy by repealing regulations. Although agencies generally enjoy latitude to change their policies, they cannot ignore the policies they propose to abandon, disregard the factual record underlying those policies, adopt new policies that violate the law, or leave changes in policy direction inadequately explained.

Agencies must justify changes in course – with the particular burden of justification depending upon the circumstances. Among other things, an agency seeking to repeal existing policy must:

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deference."); *see also Haselwander v. McHugh*, 774 F. 3d 990, 996 (D.C. Cir. 2014); *Global Tel*Link v. FCC,* 859 F.3d 39, 56 (D.C. Cir. 2017).

[289] *FCC*, 556 U.S. at 515; *see also Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2126 (2016).

[290] *See, e.g.*, Testimony of Glen Kedzie, American Trucking Associations, EPA public hearing on Proposed Rule (December 4, 2017) ("ATA members buy a tremendous amount of new equipment and pay a premium price investing in clean engine technologies.").

[291] *See, e.g.*, Testimony of Steve Cliff, Deputy Executive Officer, California Air Resources Board, EPA public hearing on Proposed Rule (December 4, 2017) ("Gliders are so much higher emitting than modern trucks that even if only a small number of them operate in California, California's overall air quality progress will be impeded.").

[292] *FCC*, 556 U.S. at 515-16.

[293] See 42 U.S.C. 7607(d)(9); see *also* 5 U.S.C. 706(1); *Catawba County v. EPA*, 571 F.3d 20, 41 (D.C. Cir. 2009) (discussing CAA and APA review standards).

[294] 42 U.S.C. 7607(d)(9)(A, C, D).

[295] See *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 514-15 (2009); *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43-44 (1983); *see Nat'l Ass'n of Home Builders v. EPA*, 682 F.3d 1032, 1038 (D.C. Cir. 2012).

(1) Acknowledge the change in policy;[296]
(2) Provide a "reasoned explanation" for changing course;[297]
(3) Demonstrate that the new policy is itself consistent with the governing statute;[298]
(4) Ensure that the new policy is itself supported by the record, "based on consideration of the relevant factors," and supported with "rational connection[s] between the facts found and the choice made";[299]

(5) Explain why the agency is rejecting policy judgments or factual determinations underlying the prior rule;[300]
(6) Consider relevant alternatives reflected in the prior rule's record, and explain why agency is not adopting them in the new rule;[301]
(7) Address "serious reliance interests" grounded on the prior policy.[302]

When changing regulations by amendment, agencies must provide a "reasoned explanation for the change."[303] They must "of course. . . show that there are good reasons for the new policy," and they must acknowledge and address ways in which the "new policy rests upon factual

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[296] See *FCC*, 556 U.S. at 514-15 (to change course an agency must "display awareness that it is changing position," and "show that there are good reasons for the new policy"). See *Verizon v. FCC*, 740 F.3d 623, 636 (D.C. Cir. 2014) (agency must "acknowledge" and "explain the reasons for a changed interpretation").
[297] *State Farm*, 463 U.S. at 42. See also *AMB Onsite Services-West v. NLRB*, 849 F.3d 1137, 1146 (D.C. Cir. 2017) ("It is well-settled that NRLB. . . cannot 'turn[] its back on its own precedent and policy without reasoned explanation.'") (quoting *Dupuy v. NLRB*, 806 F.3d 556, 563 (D.C. Cir. 2015)); *see Public Citizen v. Steed*, 733 F.2d 93, 98 (D.C. Cir. 1984); *see also*; *Verizon v. FCC*, 740 F.3d 623, 636 (D.C. Cir. 2014).
[298] See *FCC*, 556 U.S. at 514-15 (new policy must be "permissible under the statute"); *see also Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967, 981 (2005); *Chevron USA v. NRDC*, 467 U.S. 837, 865-66 (1984); *see Public Citizen v. Fed. Motor Carrier Safety Admin.*, 374 F.3d 1209, 1216 (D.C. Cir. 2004).
[299] See *State Farm*, 463 U.S. at 43 (agency decision must be "'based on a consideration of the relevant factors" and agency cannot have "relied on factors which Congress has not intended it to consider") (quoting *Burlington Truck Lines v. United States,* 371 U.S. 156, 168 (1962))); *Pub. Citizen v. Fed. Motor Carrier Safety Admin.*, 374 F.3d 1209, 1216 (D.C. Cir. 2004); 42 U.S.C. 7607(d)(9).
[300] *FCC*, 556 U.S. at 516 ("when . . . [a] new policy rests upon factual findings that contradict those which underlay its prior policy" agency must provide "a more detailed justification than what would suffice for a new policy created on a blank slate"; agency must supply adequate grounds "for disregarding facts and circumstances that underlay or were engendered by" prior rule); *Pub. Citizen*, 733 F.2d at 98 (agency must "'cogently explain'" basis for suspending rule) (quoting *State Farm*, 463 U.S. at 48); *Organized Village of Kake v. U.S. Dep't off Agric.,* 795 F.3d 956, 968-969 (9th Cir. 2015); *AMB Onsite Services-West v. NLRB*, 849 F.3d 1137, 1146 (D.C. Cir. 2017); *see also, Humane Soc'y v. Locke*, 626 F.3d 1040, 1051 (9th Cir. 2010).
[301] *State Farm*, 463 U.S. at 51 (finding that NHTSA had arbitrarily failed to explain its rejection of option of requiring airbags despite its prior finding "that airbags are an effective and cost-beneficial life-saving technology"); *Pub.Citizen v. Steed*, 733 F.2d 93, 100 (D.C. Cir. 1984) (setting aside suspension of rule because NHTSA "failed to explain why alternatives, which the rulemaking record indicates were available to the agency, could not correct" problem agency relied on as basis for suspending rule); *Int'l Ladies' Garment Workers' Union v. Donovan*, 722 F.2d 795, 816 (D.C. Cir. 1983) (agency impermissibly failed to consider alternatives to repeal "raised in [the] original notice and the comments").
[302] *See, e.g.*, *Encino Motorcars v. Navarro*, 136 S. Ct. 2117, 2126 (2016) (quoting *FCC,* 566 U.S., at 515); *see also Smiley v. Citibank South Dakota*, 517 U.S. 735, 742 (1996); *U.S. Telecom Ass'n v. FCC*, 825 F.3d 674, 708 (D.C. Cir. 2016).
[303] *Encino Motorcars v. Navarro*, 136 S. Ct. at 2125 (citing *Nat'l Cable & Telecomms. Assn. v. Brand X Internet Serv.*, 545 U.S. 967, 981–982 (2005) and *NRDC v. Chevron*, 467 U.S. 837, 863–864 (1984)).

findings that contradict those which underlay its prior policy."[304] As *State Farm* explains, an agency proposing to change policy must squarely address the legal and record bases of the policy it proposes to repeal and must explain why it is changing course.[305] An agency proposing a regulatory change must openly address and analyze the *substance* of the old and new policies, including both their evidentiary bases and the relation to the relevant statute.[306] It must also provide a reasoned explanation for rejecting or discounting the importance of facts that it had previously relied upon.[307]

b. EPA has utterly failed to address the existing record for the glider provisions, failing to properly justify the Proposed Repeal.

EPA's failure to consider any of the myriad factual and policy issues implicated by revoking the glider truck pollution limits violates bedrock principles of reasoned decision-making. These principles require that agencies consider all relevant factors, provide a rational explanation for their policy choices, address relevant factual issues, and respond to significant issues and concerns raised in the public comments.

EPA's proposal to exempt glider vehicles from pollution limits disregards these constraints. As in *State Farm*,[308] the agency's casual approach to deregulation has included scant consideration of the urgent public hazard its proposal would create. EPA is proposing to excuse glider trucks entirely from any modern pollution limits, so that there will be no federal protections in place against the dangerous pollutants from this growing source. That lack of protection is in direct conflict with EPA's findings concerning the growing pollution burden from glider trucks, and EPA's own statutory obligation to address these pollutants and protect public health. If EPA is to finalize the Proposed Rule, the agency has an obligation to explain why it is departing from the well-documented determinations made in the 2016 Phase 2 Standards. Yet, in the proposal, EPA fails to address the factual record.

EPA's Proposed Rule is devoid of any real acknowledgment of major health risks from glider vehicles' disproportionate pollution. So far as the Proposed Rule reveals, EPA has given no considerationto the impact of glider truck emissions and the proposed repeal on public health and welfare; indeed, the agency's new report on glider vehicle emissions goes unmentioned even though it shows the pollution from glider vehicles is even worse than the agency anticipated in the Phase 2 Standards. The central health- and welfare-protective purpose of Clean Air Act Section 202 is missing from EPA's statutory analysis, which is driven instead by an effort to shrink and avoid EPA's obligations to control pollution from heavy-duty diesel engines and vehicles. Numerous additional consequential factors that EPA has failed to address, including environmental justice concerns, the effect on heavy-duty industry investments in emission controls, the effects on small business dealers, impacts on states' ability to meet NAAQS, and

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[304] *FCC*, 556 U.S. 502, 515 (2009).
[305] *State Farm*, 463 U.S. at 41-42.
[306] *See id.* at 46-49.
[307] *FCC*, 556 U.S. 502, 515-16.
[308] *State Farm*, 463 U.S. at 52-53 (noting undisputed evidence that use of seat belts would save many lives).

the implications of the proposed interpretation of the statute on other vehicle standards, are itemized in Section 7(e) below.

EPA may not avoid its obligation to confront its own findings by claiming that the Proposed Rule is exclusively statutory in nature.[309] The statute is centrally concerned with pollution control, and EPA's proposal would cause dramatic increases in pollution, while also undermining emissions standards for other heavy-duty vehicles whose sales are directly impacted by the proliferation of glider vehicles. EPA may not avoid (either as a matter of reasoned statutory construction under *Chevron* or as "reasoned decisionmaking" under *State Farm*) analysis of how its proposed action relates to these factors.

Similarly, EPA cannot rationally choose among alternative interpretations of the Clean Air Act without considering the practical consequences of the alternative interpretations. EPA's proposal does not meaningfully address any of the underlying factual and policy judgments. Nor does EPA's proposal demonstrate why EPA's new interpretation is preferable in light of the purposes set out in the statute.

EPA cannot reasonably claim that this statute is so clear that it eliminates the need to consider facts and evidence.[310] Furthermore, the agency makes clear in the proposal that it does not believe the proposed course of action is commanded by the statute (as it clearly cannot), using clearly discretionary language such as "EPA is now proposing to find that the most reasonable reading of the relevant provisions"[311] is its new interpretation, and noting that the agency "is entitled to assess administrative records and evaluate priorities in light of the philosophy of the administration."[312]

c. EPA has failed to justify the Proposed Repeal in light of the heavy-duty industry's reliance interests in maintaining the Phase 2 glider provisions.

EPA also has given no consideration to the substantial reliance interests that would be undone were EPA to finalize its repeal as proposed.[313] A diverse array of heavy duty freight industry constituents — tractor manufacturers, engine manufacturers, pollution control equipment

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[309] 82 Fed. Reg. 53,442, 53,444-46 (Nov. 16, 2017).

[310] See *Peter Pan Bus Lines v. Fed. Motor Carrier Safety Admin.,* 471 F.3d 1350, 1354 (D.C.Cir.2006) (" 'deference to an agency's interpretation of a statute is not appropriate when the agency wrongly believes that interpretation is compelled by Congress'") (quoting *PDK Laboratories v. DEA,* 362 F.3d 786, 798 (D.C.Cir. 2004) (other citations omitted)); *Peter Pan,* 471 F.3d at 1354 ("As we explained in *PDK, Chevron* step 2 deference is reserved for those instances when an agency recognizes that the Congress's intent is not plain from the statute's face. 'In precisely those kinds of cases, it is incumbent upon the agency not to rest simply on its parsing of the statutory language'— '[language"—"[i]t must bring its experience and expertise to bear in light of competing interests at stake.' ").") (quoting *PDK,* 362 F.3d at 797–98 (citing *Chevron v. NRDC,* 467 U.S. 837, 865–66 (1984)));); *Prill v. NLRB*, 755 F.2d 941, 947–48 (D.C. Cir. 1985) (agency commits reversible error when agency erroneously concludes that particular regulatory action is mandated by statute, rather than based on its "own judgment").

[311] 82 Fed. Reg. at 53,447.

[312] 82 Fed. Reg. at 53,443.

[313] See *Mexichem Flour v. EPA,* 866 F.3d 451, 462 (D. C. Cir. 2017) ("to the extent that EPA's prior approach had 'engendered serious reliance interests,' EPA would need to provide a 'more detailed justification' for its change") (quoting", *FCC v. Fox Television Stations*, 566 U.S. 502, 515 (2009)).).

manufacturers, large fleet operators, and truck dealers— travelled to the December 4 public hearing to underscore that this proposal will undercut to their settled expectations and investment in modern pollution control of heavy duty trucks. EPA's failure to address this issue is itself fatal legal error.[314]

d. EPA has failed to provide adequate notice of key issues.

EPA fails to provide adequate notice of any of the key issues involved, much less how the agency evaluates and intends to address those issues. The critical issues on which the agency has failed to provide notice are many. Among these are:

1. any discussion of the proposal's environmental and public health consequences;
2. any discussion of the impacts the proposal would have on environmental justice and near-road communities, which will be disproportionately exposed to the diesel exhaust from glider vehicles;
3. any discussion of the impacts on manufacturers and dealers (many of them small businesses) of current engines and trucks;
4. any discussion of the implications for attainment and maintenance of PM and ozone NAAQS;
5. any discussion of the safety of glider vehicles;
6. any discussion of why—or even whether—having exercised its section 202 (a)(3)(D) authority over rebuilt diesel engines in the Phase 2 Standards, EPA now is choosing to revoke its exercise of that authority;
7. and most fundamentally, any discussion of how the proposal is consistent with the goals and objectives of the Clean Air Act.

To provide adequate notice, an agency must "make its views known to the public in a concrete and focused form so as to make criticism or formulation of alternatives possible".[315] This is impossible here given the agency's failure even to mention, much less rationally discuss, the host of issues essential to the question of whether unregulated operation of the high-polluting glider vehicles should be allowed.

Moreover, the obligation to provide adequate notice "is especially important in light of Congress' intent, expressed in Section 307(d) [of the CAA], that EPA provide a detailed proposal for interested parties to focus their comments on."[316] Section 307(d)(3) of the Act requires that EPA provide notice in the proposed rule of "the factual data on which the proposed rule is based", "the methodology used in obtaining the data and in analyzing the data", and the "major … policy considerations underlying the proposed rule." All these data and documents are to be included in the docket on the date of proposal. Section 307(d)(6) provides that a regulation "may not be based (in part or whole) on any information or data which has not been placed in the docket as of the date of promulgation."[317] EPA has failed to comply with these

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[314] See Section V above.
[315] *Home Box Office v. FCC*, 567 F.2d 9, 36 (D.C.Cir. 1977).
[316] *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F. 2d 506, 546 (D.C. Cir. 1983).
[317] 42 U.S.C. § 7607. *See also Small Refiner Lead Phase-Down Task Force*, 705 F.2d 506, 519 ("The final rule must be based entirely on material that has 'been placed in the docket as of the date of ... promulgation'").

requirements. EPA invokes the Tennessee Technical University letter on glider vehicle emissions without disclosing any relevant information, such as the study's test conditions and methodology, or the discussion between EPA technical staff and TTU discussed above.[318] Nor has EPA made available the emissions data supporting the TTU study conclusions it references in the proposal,[319] undermining the public's ability to meaningfully comment upon it.[320]

The proposal also fails to disclose that the agency had conducted its own emission tests in 2017, which not only confirm the magnitude of glider vehicle emissions but indicate that those emissions are even higher than initially estimated. Documentation of EPA's own emissions testing and of EPA's teleconference with TTU on TTU's testing methodology was not posted to the rule docket until November 22, 2017,[321] several days after publication of the proposal, limiting stakeholders' ability to assess and comment on it.[322] The proposal also makes no mention of the meeting between Fitzgerald and Administrator Pruitt, which likely influenced the reopening of the 2016 final rule and hence is "information … on which the proposed rule relies".[323] These omissions and delayed availability of centrally relevant data are and in clear violation of section 307(d)(3), section 307(d)(6), and basic administrative due process.[324] Indeed, Congress intended notice and opportunity for comment to be particularly extensive under section 307(d)(3) the CAA.[325]

Without any indication from the agency of its views on any of the relevant and vital issues on which EPA failed to provide notice, no final action in this proceeding is possible unless and until adequate notice and opportunity to comment are provided by the agency.[326] In light of the agency's failure to provide notice of any number of key facts upon which the proposed repeal is

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[318] *See* Section I above.
[319] *See* Email from William Charmley to Tom Brewer, Doc. ID: EPA-HQ-OAR-2014-0827-4272, available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4272.
[320] *Kennecott Corp. v. EPA*, 684 F.2d 1007, 1019 (D.C. Cir. 1982) (documents which "form a basis for the regulations . . . should properly have been included in the docket" and "EPA's failure to include such documents constitutes reversible error"); "Integral to an agency's notice requirement is its duty to "identify and make available technical studies and data that it has employed in reaching the decisions to propose particular rules. *Kern Cty. Farm Bureau v. Allen*, 450 F.3d 1072, 1076 (9th Cir. 2006) ("An agency commits serious procedural error when it fails to reveal portions of the technical basis for a proposed rule in time to allow for meaningful commentary.'") (quoting Solite Corp. v. EPA, 952 F.2d 473, 484 (D.C. Cir. 1991)).
[321] The date that the memo was posted to the docket is indicated at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2417.
[322] See Section VIII.
[323] 42 U.S.C. § 7607; *see* Section IX below.)
[324] *Sierra Club v. Costle*, 657 F.2d 298, 398 (D.C. Cir. 1981) ("If . . . documents of central importance upon which EPA intended to rely had been entered on the docket too late for any meaningful public comment prior to promulgation, then both the structure and spirit of section 307 would have been violated.").
[325] *See, e.g.*, H.R. Rep. at 319, 4 Leg. Hist. 2786, 1977 U.S. Code Cong. & Ad. News at 1398 (the new procedures will "insure an effective opportunity for public participation in the rulemaking process"); 123 Cong. Rec. 27,075 (1977), 3 Leg. Hist. 333 (statement of Rep. Broyhill) (the new procedures "will assure the opportunity for more extensive public participation in the rulemaking process").
[326] *Ne. Maryland Waste Disposal Auth. v. EPA*, 358 F.3d 936, 949 (D.C. Cir. 2004) ("Without a readily accessible statement of the agency's rationale, interested parties cannot comment meaningfully during the rulemaking process.")

based,[327] or of major legal interpretations underlying the proposed rule,[328] EPA must issue a reproposal should the agency still seek to substantively amend any feature of the Phase 2 Standards.[329]

Not only must EPA rely on docketed information in promulgating a rulemaking, the agency is required under section 307(d)(6)(B) to respond to significant comments.[330] Failure to do so constitutes a procedural failure.[331]

e. The Proposal Fails to Consider, Let Alone Reasonably Address, an Array of the Factors Relevant to EPA's Decision.

An agency acts arbitrarily when it "entirely failed to consider an important aspect of the problem."[332] The proposal fails to consider a host of critical issues:

— *Any consideration of environmental consequences.* EPA estimated in the 2016 Final Rule that each model year of glider vehicle production at an estimated 10,000 vehicles per year would result in from 700-1600 premature mortalities.[333] This estimate is for exposure to PM2.5 alone, and does not account for cancers caused by exposure to the unfiltered diesel exhaust or from exposure to ozone. It now appears that these estimates are too low — measured PM emissions from a Fitzgerald glider truck were up to 10 times higher than EPA estimated in its risk assessment.[334] EDF's own modeling indicates that, with the likely increase in glider vehicle sales, pollution burdens from this Proposed Rule may be even more significant than EPA's 2016 evaluation.[335] The Proposal ignores the issue, except for an offhand statement (after noting that health benefits to children from the 2016 Final Rule would be lost) that NAAQS protections remain.[336] There is no NAAQS for diesel exhaust, and EPA says nothing whatever about what means, if any, could be available to the States to address the additional NAAQS pollution. And if Congress intended that the NAAQS would be sufficient protection from vehicular air pollution, it would not have enacted Title 2 of the Clean Air Act. This glaring omission itself renders the proposal fatally arbitrary.

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[327] 42 U.S.C. § 7607.
[328] *Id*.
[329] *Kennecott Corp. v. EPA.*, 684 F.2d 1007, 1019–20 (D.C. Cir. 1982) (where data of central relevance to the rulemaking was not placed in the docket until shortly before promulgation, "EPA's refusal to convene a new round of public comment proceedings constitute[ed] reversible error under s 307(d)(9)"); Union Oil Co. of California v. U.S. E.P.A., 821 F.2d 678, 682-83 (D.C. Cir. 1987) (The "docket must provide the entire basis for the final rule . . . failure to docket data and analysis relied upon in formulating a final rule violates § 307(d)(6)(C) of the Clean Air Act").
[330] 42 U.S.C. § 7607.
[331] Ne. Maryland Waste Disposal Auth. v. EPA, 358 F.3d 936, 950 (D.C. Cir. 2004).
[332] *State Farm*, 463 U.S. at 43.
[333] *See* HDP2 Response to Comments at 1965 & 1963.
[334] U.S. Environmental Protection Agency, Chassis Dynamometer Testing of Two Recent Model Year Heavy-Duty On-Highway Diesel Glider Vehicles, Nov. 20, 2017, Docket No. EPA-HQ-OAR-2014-0827-2417.
[335] See Section 1(g).
[336] 82 Fed. Reg. 53,442; 53,448.

While EPA's failure to consider the impact of increased emissions on human health is a core error, it is hardly the only important consideration that EPA has failed to consider in the proposed rule:

— *Any consideration of the proposal's implications.* As explained at above[337], the proposal rests on a theory that threatens to undermine all Title 2 vehicular controls: put a used part on an otherwise new motor vehicle and Title 2 no longer applies. The proposal could also undermine existing standards for remanufactured marine and locomotive engines. The agency has failed to address these implications.

— *Any consideration of environmental justice issues.* Near-roadway communities will be exposed to additional harmful pollution from glider vehicles under this Proposed Rule.[338] These communities are disproportionately low-income communities of color. Under Executive Order 12,898, EPA has a responsibility to evaluate these impacts—yet the proposal provides no analysis or consideration of this issue.

—*Effects on trucking and engine manufacturing industries.* By sanctioning unlimited pollution emissions from glider vehicles, the proposal leads to a unlevel playing field, putting at risk investments and jobs in protective vehicular and engine emission controls.[339] An unlevel playing field will also adversely impact dealers of new trucks meeting current emission standards.[340] The proposal fails to address these impacts, or otherwise consider them.

— *Existence and exercise of authority over rebuilt diesel engines.* As explained above[341], section 202(a)(3)(D) of the Act not only provides explicit authority over rebuilt diesel engines, but EPA exercised that authority in the 2016 Final Rule to control emissions from rebuilt diesel engines in glider vehicles. The proposal unlawfully fails to explain why it is choosing to revoke its exercise of that authority.

— *Implications for attaining and maintaining PM and Ozone NAAQS.* Several states testified at the public hearing that states have factored in the restrictions on uncontrolled glider vehicular emissions into PM and NOx budgets. The proposal undermines these efforts and fails to address the issue. The proposal also fails to address the implications for stationary sources. The additional NOx and PM emissions will need to be made up out of stationary source emissions. The proposal again fails to address this issue.

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[337] *See* Section V above.
[338] See, e.g. Testimony of David Friedman, Consumers Union, , EPA public hearing on Proposed Rule (December 4, 2017); Testimony of Blanca Iris Verduzco, East Yard Communities for Environmental Justice, EPA public hearing on Proposed Rule (December 4, 2017).
[339] See, e.g., Testimony of Glen Kedzie, American Trucking Association, EPA public hearing on Proposed Rule (December 4, 2017); Testimony of Volvo, EPA public hearing on Proposed Rule (December 4, 2017); Testimony of Heavy Duty Fuel Efficiency Group, EPA public hearing on Proposed Rule (December 4, 2017).
[340] *See, e.g.*, Testimony of Robert Nuss, Nuss Trucks & Equipment, EPA public hearing on Proposed Rule (Dec. 4, 2017), ID No. EPA-HQ-OAR-2014-0827-4307 *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4307.
[341] Section V above.

— *Cost Benefit*. The 2016 Phase 2 Standards are conservatively estimated to yield monetized benefits of $3 to $11 billion each model year — and just for PM2.5 reductions.[342] The proposal fails to address why, given the explicit authority over emissions from new and rebuilt diesel engines, it would forgo these benefits. Indeed, the Proposed Rule does not include a cost-benefit analysis of the proposed course of action, just a brief and high-level economic assessment[343]-- even though the Proposed Rule acknowledges that it is a "significant regulatory action" under Executive Order 12,866.[344]

— *EPA Tests of Glider Vehicle Emissions.* Tests of glider vehicular emissions conducted at the EPA lab showed NOx and PM emissions at or higher than EPA initially estimated. The proposal omits mention of these tests and otherwise fails to account for this test information. Instead, it refers to a study conducted by Tennessee Tech University, ignoring this study's many deficiencies.[345] By failing to address the most relevant technical information, the Proposed Rule is again impermissibly arbitrary.

These serious omissions are only a partial list of critical issues which the proposal outright misses or otherwise fails to address sufficiently, rendering the proposal fatally arbitrary. As explained in the preceding section, these omissions also constitute impermissible lack of notice as to critical issues, necessitating a reproposal should EPA decide to proceed with this matter.

VIII. EPA's process has been inappropriately rushed.

EPA's rulemaking process has been inappropriately rushed, providing inadequate opportunity to comment on the numerous complex and troubling aspects of this rulemaking.

EPA's proposed rule was published on November 16, 2017.[346] After a short comment period, encompassing three separate federal holidays, comments are due on January 5, 2018.[347] EPA summarily rejected two reasonable and well-supported requests for additional time to comment from the American Lung Association (ALA) and the Northeast States for Coordinated Air Use Management (NESCAUM). As ALA noted, it requested additional time for comment in light of the significant public health ramifications of the proposal, the new information added to the docket and the challenge of the brief comment period:

> EPA added an important analysis of glider truck emissions to the docket on November 22, 2017 that requires more time for review than is currently available. … Further, on November 22, 2017, EPA added a memorandum to the docket: "EPA Teleconference with Tennessee Tech University Regarding Glider Test Report Summarized in June 2017 Letter." The proposed repeal cites the analysis from

[342] HDP2 Response to Comments at 1965.
[343] U.S. Environmental Protection Agency, Memorandum: Assessment of Economic Factors Associated with the Proposed Repeal of Emission Requirements for Glider Vehicles, Glider Engines, and Glider Kits, Nov. 16, 2017, EPA-HQ-OAR-2014-0827-2407.
[344] Proposed Rule, 82 Fed. Reg. at 53,447.
[345] *See* Section I above.
[346] 82 Fed. Reg. at 53,442.
[347] Id.

> Tennessee Technological University as justification for the proposal; however, the EPA memorandum raises many questions about the University's analysis, the test procedures followed and the results presented. The memorandum indicates that EPA will request additional information about "each of the test articles regarding engine and vehicle mileage and age" and "NOx emission levels associated with each test article." However, as of December 19, 2017, no additional information has been posted to the docket.[348]

Meanwhile, NESCAUM specifically noted that

> The US EPA's test results indicate significant burdens will be placed upon our state air quality programs by allowing for a large increase of NOx and fine particulate emissions from on-road heavy-duty trucks that had not previously been expected or accounted for by state air quality planners. The obvious implications of the US EPA study for public health protection deserve a fuller consideration than currently provided by the January 5, 2018 comment deadline.[349]

EPA summarily rejected these two well-founded requests in essentially identical letters that emphasized concern about making a timely decision before the January 1, 2018 provisions take effect.[350] But the only interests desiring the upheaval of the status quo provisions are those of the glider industry. In keeping with the inappropriate bias that has colored this process,[351] EPA did not acknowledge the numerous other important stakeholder interests at risk due to the agency's unduly rushed process.

This rush is particularly notable when compared with the multiple opportunities for input on glider industry issues provided for as part of the development of the Phase 2 Standards. EPA and NHTSA's Phase 2 proposed rule was published on July 13, 2015, with comments due on September 11, 2015;[352] EPA and NHTSA subsequently extended the comment period to October 1, 2015.[353] EPA offered an additional opportunity to comment on glider vehicle-related issues when it published a Notice of Data Availability on March 2, 2016, with comments due on April 1, 2016.[354] As discussed below in Section XI(b), as part of the Phase 2 Rulemaking EPA

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[348] American Lung Association, Request for Extension, *available at* https://www.epa.gov/sites/production/files/2017-12/documents/ala-glider-nprm-extension-request-2017-12-20_0.pdf.

[349] Northeast States for Coordinated Air Use Management, Request for Extension, *available at* https://www.epa.gov/sites/production/files/2017-12/documents/nescaum-glider-nprm-extension-request-2017-12-14.pdf

[350] See, e.g., Letter from EPA to American Lung Association Denying Request to Extend Comment Deadline, *available at* https://www.epa.gov/sites/production/files/2017-12/documents/ala-glider-response-letter-2017-12-21.pdf.

[351] See Section XI.

[352] Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2 Proposed Rule, 80 Fed. Reg. 40,138 (July 13, 2015).

[353] Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles - Phase 2; Extension of the Comment Period, available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-0921.

[354] Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2—Notice of Data Availability, 81 Fed. Reg. 10,822 (Mar. 2, 2016).

convened a small business panel and published a proposed and final regulatory flexibility analysis, all with specific portions focused on considering and soliciting input on glider industry issues.

IX. The circumstances of this proposal strongly suggest that it was based on improper factors.

The circumstances under which EPA issued the Proposed Rule strongly suggest a decision that was made on considerations other than the legal and factual merits. First, although multiple parties sought review of the 2016 Phase 2 Standards in the U.S. Court of Appeals for the D.C. Circuit, no party raised claims against the glider provisions before the court. Not one glider vehicle manufacturer petitioned for review of the rule – nor did any other party challenge EPA's authority to regulate glider vehicles in court. Furthermore, as EPA noted in the Phase 2 rulemaking, even as raised in the public comments in the Phase 2 rulemaking, the argument that EPA lacked authority to regulate glider vehicles "appears to be untimely" because the Phase 1 rule had included an interim exemption for gliders which rested on the position that gliders were subject to regulation under Section 202.[355] EPA thus is attempting to revisit a decision that was settled twice over, based upon an impermissible statutory interpretation that the glider industry had not deemed sufficiently strong to present to the court.

EPA's decision to revisit its decision in both the Phase 1 and Phase 2 rulemakings that gliders are "new motor vehicles" under Title 22 of the CAA came only after a non-docketed May meeting between EPA Administrator Pruitt and representatives of glider company Fitzgerald Glider Kits at EPA headquarters.[356] That meeting was followed two months later by a petition for reconsideration filed by Fitzgerald and others on July 10, 2017, long after the time for judicial review had run, and months after litigation had commenced.

The May 2017 private meeting appears to have played a major role in the agency's decision to reinitiate rulemaking, yet no information about the meeting is listed in the docket. EPA should address the role of the May meeting with Fitzgerald in its rulemaking. The facts and circumstances surrounding that meeting and any commitments made by EPA should be publicly docketed.[357]

Nor is the May 2017 meeting the only aspect of the procedures leading to the proposal that raise serious concerns about the integrity of the rulemaking process. Without detailing its substance or vouching for its accuracy, EPA in its proposed repeal cited to an industry-sponsored study performed by Tennessee Technological University at Fitzgerald's facility using Fitzgerald

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[355] See 81 Fed. Reg. at 73,513.

[356] See, e.g., Steve Mufson and Juliet Eilperin, EPA chief Pruitt met with many corporate execs. Then he made decisions in their favor. Washington Post (Sept. 23, 2017), https://www.washingtonpost.com/news/energy-environment/wp/2017/09/22/epa-chief-pruitt-met-with-many-corporate-execs-shortly-before-making-decisions-in-their-favor/?utm_term=.77cbee5cf92f; see also EPA, Calendar for Scott Pruitt, Administrator, available at https://www.epa.gov/senior-leaders-calendars/calendar-scott-pruitt-administrator.

[357] *See* CAA section 307(d)(3) ("[a]ll data [and] information … on which the proposed rule relies shall be included in the docket on the date of publication of the proposed rule").

equipment.[358] Based upon what is known, those tests departed egregiously from proper testing protocols, and simply do not support the conclusion.[359] see pp. --, Infra. But EPA has also failed to release basic information about the test, even though EPA invoked it in the proposal as ostensibly having called into question EPA's extensive prior finding that harmful emissions from glider vehicles, including emissions of NOx and PM, are extremely high, and many times the rate of emissions from new trucks meeting current emissions standards. This failure to produce all information concerning the Tennessee Tech study and EPA's analyses of it is unlawful,[360] and precludes the public from having a full and fair opportunity to comment on the proposed repeal.[361]

At the same time, EPA's NVFEL laboratory itself has tested two of Fitzgerald's glider vehicles.[362] The test results indicate that EPA's initial estimates of emissions — that emissions of glider vehicles would 20-40 times greater than freight trucks with new engines — in fact underestimated glider emissions. Based on the testing, measured PM emissions were as much as 450 times higher than those of current engines.[363] . Yet EPA issued the proposal invoking the dubious Tennessee Tech results, without awaiting the results of its own renewed testing.

The unusual circumstances of this rulemaking show the extreme irregularity of EPA's process. The belated disinterment of an issue that no party even sought to raise in the D.C. Circuit challenges to the Phase 2 Standards; the non-docketed meeting between the Administrator and a private company that is the Proposed Rule's principal beneficiary, followed months later by an extremely late "reconsideration" request; EPA's invocation in the proposal of a facially dubious, methodologically opaque, industry-funded study to propose repeal even before awaiting the results of EPA's own emissions tests; and the agency's failure even to consider the impact of the decision for public health or the integrity of the entire program for heavy-duty vehicles, all strongly suggest that this is not a decision being made on the merits. The basic irrationality of the proposed action – rolling back settled (and judicially unchallenged) regulations which rest upon EPA's clear statutory authority, addressing vehicles that present almost unequalled hazards to human health among all mobile sources, further suggests that this decision is not based upon the statutory and evidentiary merits. These circumstances instead paint a picture of an agency rewarding a particular private interest after successful lobbying of the Administrator in a private meeting.[364] That is not a valid basis for administrative action. Nor is Administrator Pruitt's

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[358] 82 Fed. Reg. 53,444.
[359] See Section 1(f)
[360] See 42 U.S.C. 7607(d)(3) provides that the statement of basis and purpose for a proposed rule "shall include" among other things "**(A)** the factual data on which the proposed rule is based," and "**(B)** the methodology used in obtaining the data and in analyzing the data" and requires that "All data, information, and documents referred to in this paragraph on which the proposed rule relies shall be included in the docket on the date of publication of the proposed rule."

[361] See Section VII.
[362] See Section XX.
[363] See EPA testing memo (operations under transient conditions).
[364] See, e.g., *Natural Res. Def. Council, Inc. v. Sec. Exch. Comm'n.,* 606 F.2d 1031, 1049 n. 23 (D.C.Cir.1979) (noting that "presumption of agency regularity ... is rebutted," when "the agency has demonstrated undue bias towards particular private interests") (citing *Central Florida Enterprises, Inc. v. FCC*, 598 F.2d 37 (1978)).

interest in reversing policies of the prior administration, standing alone, a valid rationale for creating a major public health risk from unlimited glider vehicle pollution.[365]

X. Claims of GHG and recycling benefits are unsupported and incorrect

The proposal requests comments on purported GHG and recycling benefits from glider vehicles—backhandedly suggesting that glider vehicles have GHG benefits as compared to new, modern vehicles because of greater fuel efficiency.[366] First, any claimed benefits are minor in scale to the enormous public health consequences of this proposal, which properly should be the main focus in this rulemaking. Moreover, these claimed benefits are not supported by any record evidence—and in many cases are clearly contradicted by the record.

First of all, the primary issue here is criteria pollutant emissions. The record demonstrates that criteria pollution emissions from glider vehicles are many multiple times higher than freight trucks with modern controls.[367] Assertions that glider vehicles have GHG or recycling benefits have only been made generally in the record; no claim has been made, let alone with substantiation, that these alleged benefits would counterbalance the health harms from glider vehicles' criteria emissions.[368]

EPA's most recent memo into the record appropriately rejects these asserted benefits. EPA's economic analysis for this proposal notes that "EPA has not verified these claims" with respect to fuel efficiency of uncontrolled gliders.[369] The agency further noted that, if the proposal is finalized, glider manufacturers will no longer need to incorporate Phase 2 fuel saving technologies, such that any alleged fuel efficiency benefit would be offset.[370] The agency concluded that "[t]o the extent glider engines may have a fuel efficiency advantage over current newly manufactured engines, any such advantage for glider vehicles is likely to decrease in the future."[371]

EPA also properly rejected these assertions in the 2016 Phase 2 rulemaking: EPA concluded that glider vehicles are likely less fuel efficient as compared to trucks with engines meeting the Phase 1 MY 2017 engine standard,[372] and freight trucks, which will meet the Phase 2 Standards in 2021, will necessarily provide even greater fuel efficiency advantages.[373] More recently, EPA's new test results found that the two glider vehicles had marginally lower CO_2 emissions as

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[365] See *N.C. Growers, Inc. v. United Farm Workers*, 702 F.3d 755, xxx (4th Cir. 2012) (Wilkinson, J., concurring) ("Changes in course … cannot be solely a matter of political winds and currents. … Otherwise, government becomes a matter of whim and caprice of the bureaucracy, and regulated entities will have no assurances that business planning on today's rules will not be arbitrarily upset tomorrow.").
[366] 82 Fed. Reg. 53,444, referring to the petition for reconsideration
[367] See Section I.
[368] See, e.g., HDP2 Response to Comments pg. 1843.
[369] U.S. Environmental Protection Agency, Memorandum: Assessment of Economic Factors Associated with the Proposed Repeal of Emission Requirements for Glider Vehicles, Glider Engines, and Glider Kits, Nov. 16, 2017, pg. 2, EPA-HQ-OAR-2014-0827-2407.
[370] Id.
[371] Id. at 3.
[372]HDP2 Response to Comments pg. 1878-79, 1885.
[373] HDP2 Response to Comments pp. 1878-79.

compared to the tested new 2014 and 2015 vehicles.[374] To the extent that glider vehicles currently offer any fuel efficiency or GHG benefits, these benefits will erode and disappear because gliders, under this proposal, would not be mandated to achieve the current and upcoming GHG improvements under the Phase 1 and 2 Standards. MY 2017 and later wholly new vehicles will continue to be more efficient thanks to EPA's Phase 1 and 2 Standards. These GHG standards will lead to significant per-vehicle fuel savings and GHG reductions. The Phase 2 Standards for tractors are projected to reduce fuel consumption and GHG emissions by 13% in MY2021, 20% in MY2024, and 25% in MY 2027 compared to 2017 tractors, with corresponding, incremental increases in intervening years.[375]
Finally, any alleged GHG benefit is also outweighed by the concern EPA noted in its 2016 Final Rule, that glider vehicles would not have important emission controls for hydrofluorocarbons, a highly potent category of greenhouse gases—specifically, gliders would not comply with air conditioning leakage controls included in the Phase 1 rules.[376]

The proposal also includes assertions that glider vehicles are more fuel-efficient than the old trucks they are replacing because they have improved aerodynamics and low rolling resistance tires. Again, the ability to make glider vehicles with these efficiency improvements is not impacted by the current provisions. The phase 2 final rule simply requires that the engines installed in these more efficient glider vehicles be held to modern emissions standards to protect public health and the environment. And as discussed above, glider vehicles are purchased as an alternative to new, compliant freight trucks, not as alternative to purchasing old vehicles that have already reached the end of their useful life.[377]

In sum, in its new proposal, EPA provides no meaningful consideration, evidence, or analysis to justify setting aside its 2016 findings or its new testing, all of which firmly rebuts any meaningful GHG benefits from glider vehicles.

Arguments related to the recycling benefits of gliders are similarly unsubstantiated and unconvincing. EPA noted in its 2016 rulemaking that commenters "did not provide an analysis for EPA to evaluate" to substantiate general claims that remanufacturing required less energy as compared to new freight truck manufacturing[378]; in its new proposal, EPA now includes a similarly unsubstantiated claim that glider vehicles reuse approximately 4,000 pounds of cast steel, which may avoid NOx emissions.[379] Neither the agency nor the petition for reconsideration

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[374] EPA, "Chassis Dynamometer Testing of Two Recent Model Year Heavy-Duty On-Highway Diesel Glider Vehicles," (November 20, 2017). *See:* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2417
[375] 81 Fed. Reg. at 73,482. The Phase 1 program when fully implemented by 2017, will result in approximately a 15-32% improvement in fuel consumption for Class 7 and 8 combination tractors compared to a 2010 tractor. 81 Fed. Reg. at 73,503-04. In addition, the Phase 2 standards will provide an improvement in fuel efficiency of 19% - 24% relative to a 2017 tractor, yielding a total combined improvement of 34 to 57 percent relative to a 2010 tractor. *Id.* As manufacturers continue to meet the Phase 1 and 2 standards, covered freight trucks will continue to gain improvements in aerodynamics, low rolling resistant tires, weight reduction, improved transmissions, improved air handling, and other improvements. Greenhouse Gas Emission Standards and Fuel Efficiency for Medium- and Heavy-Duty Engines and Vehicles, 78 Fed. Reg. at 57201-57221 (September 15, 2011).
[376] HDP2 Response to Comments pg. 1877.
[377] See Section XX.
[378] HDP2 Response to Comments, pg. 1877.
[379] 82 Fed. Reg. 53,444.

provides documentation or quantification of the alleged NOx emissions avoided or any other pollution benefit—let alone any documentation that the emissions avoided would match the enormous scale of NOx pollution that would certainly be emitted by continued unlimited sale of uncontrolled glider vehicles. Nor do they grapple with important context indicating that if engines were not reused in gliders, they would be recycled.: steel is already the most recycled material in the U.S.[380]; steel recycling rates as of 2012 stood at 88% overall, with a 92.5% recycling rate for automobiles.[381] The unsubstantiated claim regarding gliders' recycling benefits is not a valid reason to also allow these vehicles to pollute indiscriminately.

XI. The Proposed Rule creates an unlevel playing field, allowing a subset of the freight industry to market their exemption from life-saving pollution protections.

The Proposed Rule will create a market distortion in the freight truck industry, establishing a pollution loophole at the expense of public health in communities across the country as well as truck manufacturers and dealers that have responsibly invested in selling trucks equipped with modern pollution controls.

The Phase 2 Standards do not unfairly burden the glider industry; in that rulemaking, EPA analyzed and considered the effect the gliders provision would have on small glider-producing businesses.[382] In contrast, EPA performed no such small business analysis with respect to the impact of this Proposed Rule, and accordingly failed to consider its negative potential impacts for small businesses that have invested in pollution-controlled freight truck sales and maintenance.

There is no substantiation in the record demonstrating that sales of new glider vehicles and wholly new trucks will decrease overall if the Phase 2 glider provisions go into effect; even if there was, the benefits of the Phase 2 glider provisions dramatically outweigh any costs, and the program carefully considered and accommodated small business concerns.

Administrator Pruitt has stated repeatedly that EPA should not be in the position of picking winners and losers in regulating pollution.[383] This proposal would do just that: allowing the unrestricted use of highly polluting diesel engines to benefit a chosen few glider producers, at the expense of Americans' health and safety, and at the further expense of the heavy-duty truck and engine industry, supply chain, and employees.

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[380] Institute of Scrap Recycling Industries, The Scrap Recycling Industry: Iron and Steel, 2016 (accessed Dec. 30, 2017), http://www.isri.org/docs/default-source/recycling-industry/fact-sheet---iron-and-steel.pdf.
[381] SteelWorks, Steel is the World's Most Recycled Material, 2017 (accessed Dec. 30, 2017), http://www.steel.org/sustainability/steel-recycling.aspx.
[382] *See* HDP2 Rule, 81 Fed. Reg. at 73,941-42.
[383] See e.g. Energywire: Friday, April 21, 2017 (recounting Administrator Pruitt's speech at Thomas Hill Missouri facility). *See e.g.*, Tom DiChristopher, *New EPA chief plans 'humble' approach to regulating CO2 emissions*, CNBC (Mar. 28, 2017), https://www.cnbc.com/2017/03/28/epa-chief-scott-pruitt-signals-less-aggressive-response-to-emissions.html ("Pruitt said the EPA would not issue rules that pick winners and losers."); Jeffrey Tomich, *Pruitt says Trump's EPA won't pick 'winners and losers,'* E&E NEWS (Apr. 21, 2017), https://www.eenews.net/stories/1060053390; Daniella Diaz, *Pruitt announces withdrawal of Clean Power Plan*, CNN (Oct. 10, 2017), http://www.cnn.com/2017/10/09/politics/environmental-protection-agency-scott-pruitt-clean-power-plan/index.html.

a. The proposal will disadvantage mainstream truck dealers and manufacturers that are installing pollution controls, creating a competitive advantage for glider manufacturers based upon their ability to impose the costs of their vehicles' operations on the public.

This Proposed Rule would unfairly advantage the glider industry by exempting them from Clean Air Act safeguards that have enormous benefits for public health. The glider industry would reap all the upside, while communities across the country would bear the burden of substantially increased pollution.

Glider vehicles compete with new trucks. EPA's economic assessment for this Proposed Rule concluded that "EPA agrees that either strengthening or weakening the requirements for glider vehicles could potentially impact the competitive balance in the heavy-duty truck market, both advantaging and disadvantaging small businesses."[384] As discussed in greater detail in section 1(h), the notion that the alternative to glider vehicles is an old freight truck is misplaced. Furthermore, any alleged price advantage for gliders would be a classic externality: the cost of pollution control is externalized to those exposed to glider vehicle pollution. This type of externalizing of vehicular pollution costs is precisely what Title 2 of the Act is designed to end.[385] This externality—this loophole—creates a windfall for the glider industry that Americans all pay for by undermining the tremendous progress that has been achieved in addressing freight truck pollution.

Moreover, because glider sales compete against sales of fully compliant new trucks, the result would be a zero-sum impact on the overall freight truck industry, with increased sales and jobs in the glider industry coming at the expense of businesses all along the value chain of the industry that have responsibly invested in pollution control.[386] EPA acknowledged as much in the economic analysis that the agency included in the record as part of this rulemaking.[387] The record indicates that new and used truck dealers and truck parts sellers are losing business to glider sellers and if EPA adopts the proposal, it could drive those dealers to enter the glider market just to remain competitive.[388] This, in turn, would result in even more drastic increases in air

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[384] U.S. Environmental Protection Agency, Memorandum: Assessment of Economic Factors Associated with the Proposed Repeal of Emission Requirements for Glider Vehicles, Glider Engines, and Glider Kits, at 2, EPA-HQ-OAR-2014-0827-2407 (Nov. 16, 2017).

[385] *See supra* Section XX.

[386] Indeed, evidence of the jobs at risk from the Proposed Rule suggest that, if anything, the Proposed Rule would result in net job *losses*; EPA has arbitrarily failed to consider this possibility. See Section XI(a)(iii).

[387] U.S. Environmental Protection Agency, Assessment of Economic Factors Associated with the Proposed Repeal of Emission Requirements for Glider Vehicles, Glider Engines, and Glider Kits, (Nov. 16, 2017,), EPA-HQ-OAR-2014-0827 -2407 ("EPA agrees that either strengthening or weakening the requirements for glider vehicles could potentially impact the competitive balance in the heavy-duty truck market, both advantaging and disadvantaging certain small businesses."), https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2407.

[388] Testimony of John Calvin Doub, TMI Truck & Equipment, at EPA Hearing (Dec. 4, 2017) (explaining that the profit margin is so big on gliders, if you change the rule, you can expect to see other industry players jumping in), https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4285. See also Testimony of Ken Davis, Bruckner Truck Sales, EPA-HQ-OAR-2014-0827-4327 (Nov. 5, 2017), available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4327 ("I have lost sales to glider vehicles and

pollution, resulting in further increases in the negative health effects described in Part I of this comment, and seriously undermining Clean Air Act emissions standards for all heavy-duty vehicles.

i. The glider industry has dramatically expanded due to a pollution loophole.

Dramatic growth in glider vehicle production occurred due to a loophole in pollution safeguards, which glider manufacturers have taken advantage of to sell vehicles not in compliance with current pollution safeguards.[389] The failure to meet modern pollution standards is advertised as an advantage for these freight trucks. One glider company's website advertises several advantages of a glider vehicle "compared to a factory truck," as including "[n]o DEF or EGR.".[390] Another advertises that its glider vehicles contain "EPA 98-04 engines only," meaning that the engines lack the most current pollution control technology.[391] A trade press article describes some of the advantages of a glider vehicle as follows:

> The tractor's Detroit Reliabilt Series 60 diesel doesn't have exhaust-gas recirculation, because the engine must meet EPA emissions limits for the period it was originally built, 1998-2002, not the '02/'04 regulations where EGR began. And its exhaust system doesn't need a bulky diesel particulate filter or the diesel exhaust fluid required with selective catalytic reduction, which debuted in 2007 and 2010, respectively.[392]

Any claims that uncontrolled glider vehicles provide lower maintenance costs are speculative and not substantiated in the record. EPA noted in its economic analysis of the Proposed Rule that "EPA has not verified these claims" and further that "to the extent engine manufacturers will

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it negatively impacts my business. As an example in the Tulsa area, we have a fleet running nationwide that is currently operating eight glider kit trucks with engines that don't meet current emissions standards. Our new trucks were considered for purchase by company ownership but we ultimately lost the sales due to the above referenced negative factors."); Testimony of Justin Keck, Grande Truck Center, EPA-HQ-OAR-2014-0827-4384 (Jan. 2, 2018), available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4384 (Citing a customer who had purchased 40 trucks over the past 5 years but plans to switch to buying gliders as long as EPA regulations allow it); Testimony of Matthew E. Niebauer, Legacy Truck Centers, Inc., EPA-HQ-OAR-2014-0827-4378 (Jan. 2, 2018), available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4378 ("We have numerous customers that had previously purchased new trucks from us but have switched to buying 'Glider kits' in recent years for the sole purpose of avoiding current emissions technology.).

[389] *See* Int'l Council on Clean Transportation, Comment on HDP2 Proposed Rule at 13 (Oct. 1, 2015), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-1180.; FLEETOWNER, *Schneider offers glider kit trucks for sale* (Oct. 29, 2015), http://www.fleetowner.com/equipment/schneider-offers-glider-kit-trucks-sale.

[390] Fitzgerald Glider Kits, *What is a Glider Kit?*, https://www.fitzgeraldgliderkits.com/what-is-a-glider-kit (last accessed Jan. 3, 2018). DEF is diesel exhaust fluid, which is used in control technology that removes harmful NOx emissions from diesel engines and is required by 2010 emissions standards; and exhaust gas recirculation ("EGR") is another NOx reduction technology. *See* Discover DEF, *What is DEF?*, http://www.discoverdef.com/def-overview (last accessed Jan. 3, 2018).

[391] Harrison Truck Centers, Glider Kits, http://www.htctrucks.com/index.php/sales/harrison-truck-centers-glider-kits (last accessed Jan. 3, 2018).

[392] Tom Berg, *Test Drive: Clarke-APG Dual-Fuel Glider*, Truckinginfo (Apr. 2014), http://www.truckinginfo.com/article/story/2014/05/test-drive-clarke-apg-dual-fuel-glider.aspx.

continue to improve the reliability…of their engines, as might be expected, any operating cost advantage for glider vehicles would likely decrease in the future."[393]

Separately, the record indicates that glider vehicle buyers in some cases avoid a 12% federal excise tax, which is used to fund the maintenance of our national highway system.[394]

ii. Expanding sales of glider vehicles heightens the public health threat posed by this proposal.

Record evidence supports the conclusion that glider sales are eating into sales of fully compliant freight trucks that meet modern pollution standards—indicating that even more serious pollution burdens could stem from finalizing this proposal. One freight truck dealership group—consisting of seven locations across five states—estimates that it loses approximately 25% of annual new truck retail sales volume to glider kits.[395] Another truck dealer, testifying at the December 4, 2017 EPA hearing on this proposal, expressed concern that an unintended consequence of this rule could be a major increase in the gliders market share compared to fully compliant new and used trucks.[396] He estimated that gliders could grow to occupy 30% of the freight truck market.[397] This, of course, would mean that 30% of freight trucks on our roads and highways would be able to emit unlimited amounts of pollution, and would in fact emit far in excess of modern pollution control standards.

Robert Nuss of Nuss Truck and Equipment, a truck and equipment dealership that sells freight trucks equipped with modern pollution controls from eight locations in Minnesota and Wisconsin, summarized the problem as follows:

> We have lost new truck sales to glider kits and it negatively impacts our business. We have quoted new trucks to small fleets in our markets that have elected to purchase glider kits to avoid emissions standards. They are not furnishing the components from their own worn out or wrecked trucks, they are just avoiding emissions. We know that these trucks owners are within their right to purchase

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[393] U.S. Environmental Protection Agency, Memorandum: Assessment of Economic Factors Associated with the Proposed Repeal of Emission Requirements for Glider Vehicles, Glider Engines, and Glider Kits at 2 (Nov. 16, 2017), EPA-HQ-OAR-2014-0827-2407, https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2407.

[394] Allstate Peterbilt Group, *Why are commercial truck glider kits popular?* (June 29, 2017), http://www.allstatepeterbilt.com/blog/why-are-commercial-truck-glider-kits-popular; *see* Testimony of Michael McMahon, McMahon Truck Centers, at EPA Hearing (Dec. 4, 2017), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2464 (explaining that "[t]he topic of FET [federal excise tax] on Glider Kits is murky at best. . . . As Glider Kits replace New Truck sales, that's all the less income going toward the repair of our aging US highway infrastructure.").

[395] Testimony of Michael McMahon, McMahon Truck Centers, at EPA Hearing (Dec. 4, 2017), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2464.

[396] Testimony of John Calvin Doub, TMI Truck & Equipment, at EPA Hearing (Dec. 4, 2017).), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4285.

[397] *Id.*

> glider kits today, but we just want to level the playing field so that we can fairly compete.[398]

Glider vehicle sales have already been stretched beyond their original engine salvage intent, and with this proposal they have the potential to increasingly overtake the market—further exacerbating harmful pollution impacts, at the expense of public health and freight truck industry members that are complying with modern pollution control standards.

iii. The Proposed Rule puts jobs and economic activity at risk.

EPA does not point to any record evidence indicating that the advantages for the glider industry lead to an overall increase in economic activity; instead, ample record evidence suggests that this loophole for glider vehicles comes at the expense of jobs and sales related to fully compliant freight trucks.

The record suggests that sales of glider vehicles have harmed job growth in sales and maintenance of modern, fully compliant freight trucks. New trucks contain more advanced technology than glider trucks—including, of course, pollution control technology, superior fuel efficiency technology, as well as advanced safety features—which support well-paying jobs in freight truck maintenance and repair.[399] Those jobs need highly skilled, highly trained workers, helping provide stability for American families through good and bad economic conditions.[400] To the extent that glider assemblers increase their hiring, the record indicates they are taking jobs away from manufacturers and dealers of fully compliant new trucks.[401]

In addition to the jobs affected directly through truck sales and manufacturing, the emission control technologies that keep our air clean also create domestic jobs, which are negatively affected by the burgeoning, minimal-technology glider vehicle market. The mobile source emission control industry as a whole is a major industry, responsible for nearly 300,000 jobs across North America, including jobs in nearly every state in the U.S.[402]

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[398] Comment of Robert Nuss, Nuss Truck & Equipment, on EPA Proposed Rule Repeal of Emissions Requirements for Glider Vehicles (Oct. 14, 2017), https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2388.
[399] *See* Testimony of John Calvin Doub, TMI Truck & Equipment, at EPA Hearing (Dec. 4, 2017) (explaining that new truck technicians are being hurt by the glider business, because "glider kits are so behind the times that it is cheap and easy to fix them"), https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4285; Comment of Robert Nuss, Nuss Truck & Equipment, on EPA Proposed Rule Repeal of Emissions Requirements for Glider Vehicles (Oct. 14, 2017), https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2388.
[400] Testimony of Michael McMahon, McMahon Truck Centers, at EPA Hearing (Dec. 4, 2017), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2464 ("Highly skilled, highly trained positions like these are good in both good and bad economies. In an upturn, these techs would command higher wages. In a downturn, their high level of training may translate across industries, if needed.").
[401] *See* Comment of Robert Nuss, Nuss Truck & Equipment, on EPA Proposed Rule Repeal of Emissions Requirements for Glider Vehicles (Oct. 14, 2017), https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2388; see also HDP2 Rule RTC p. 1883 where EPA found that "jobs in the glider industry come at the expense of other jobs in the heavy duty industry."
[402] Comment of Manufacturers of Emission Controls Association, on EPA Proposed Rule Repeal of Emissions Requirements for Glider Vehicles (Sept. 5, 2017), available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2374.

The proposed rule at issue here is also problematic for truck and engine manufacturers and fleets because it creates instability and uncertainty. Industry leaders are concerned that repealing the 2016 glider provision and reopening the loophole "could lead to an inconsistent patchwork of federal and state requirements."[403] Such instability makes it challenging for companies in the truck industry to make investment decisions.

Claims that overall negative economic impacts will occur if the Phase 2 gliders provision go into effect are unsubstantiated. The minimal economic assessment that EPA submitted into the record reached no conclusion on this topic, noting only that "EPA agrees that either strengthening or weakening the requirements for glider vehicles could potentially impact the competitive balance in the heavy-duty truck market, both advantaging and disadvantaging certain small businesses."[404]

All of these problems are unaddressed in the proposal. This is legal error for failure to consider issues of direct relevance, as discussed in Section VII above.

iv. The freight truck industry predominately supports the Phase 2 Standards and has expressed concerns about this Proposed Rule.

During the public comment period leading up to the 2016 Phase 2 Standards, a broad range of freight truck industry stakeholders clearly expressed to EPA that they supported the gliders provisions. A compilation of their comments into the record is available in Appendix A. For example, GATR Truck Center, a truck dealership located in Iowa and Minnesota, stated: "The market availability of these noncompliant engines and vehicles poses an unfair competitive disadvantage to manufacturers that have undertaken the enormous effort and investment necessary to comply with all applicable emissions, fuel efficiency, and safety standards, and likewise an unfair competitive advantage to the dealer network representing those OEM's."[405] Nuss Truck and Equipment similarly noted that, "The original intent of selling gilder kits has moved from a rebuilding mechanism to now mainly evading diesel emissions EPA mandates."[406] Navistar, a truck manufacturer, expressed its support for the gliders provision of the rule, and even suggested that "the allowance is too high, and that gliders should either be limited to 200 per year or eliminated completely."[407] The freight truck industry engaged with EPA throughout

[403] Testimony of Pat Quinn, Heavy Duty Leadership Group, at EPA Hearing (Dec. 4, 2017), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2468.
[404] U.S. Environmental Protection Agency, Memorandum: Assessment of Economic Factors Associated with the Proposed Repeal of Emission Requirements for Glider Vehicles, Glider Engines, and Glider Kits at 2 (Nov. 16, 2017), EPA-HQ-OAR-2014-0827-2407.
[405] HDP2 Response to Comments at 1888; GATR Truck Center, Comment on HDP2 Proposed Rule (Sept. 8, 2015), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-1010.
[406] Nuss Truck & Equipment, Comment on HDP2 Proposed Rule, (Aug. 31, 2015), available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-0922.
[407] HDP2 Response to Comments at 1897; Navistar, Inc., Comment on HDP2 Proposed Rule (Oct. 1, 2015), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-1218.

the rulemaking and was ultimately supportive of the 2016 Phase 2 Standards, including the gliders provisions.[408]

Meanwhile, many key leaders in the freight truck industry have already expressed concerns about the Proposed Rule. The American Trucking Association, Engine Manufacturers Association, Manufacturers of Emission Controls Association, Heavy Duty Fuel Efficiency Leadership Group (a consortium of the largest fleet owners), and Volvo all expressed concerns in their December 4, 2017 Public Hearing statements.[409]

b. EPA carefully considered the impact to the glider industry and small businesses in the Phase 2 Standards.

In the 2016 Phase 2 Standards, EPA carefully analyzed how the glider industry and small businesses would be affected by a rule requiring glider vehicles to meet the same pollution standards as all other Class 8 freight trucks: it assessed the history of the glider industry; convened a Small Business Advocacy Review Panel;[410] prepared a proposed and final regulatory flexibility analysis;[411] received extensive public input; and responded with modifications to the final rule to take into account the concerns of small businesses and the glider industry, while appropriately weighing the need to protect public health.[412] Under the 2016 Final Phase 2 Standards, glider vehicles must contain engines meeting the same pollution standards Congress mandated for all other heavy duty diesel engines — standards reflecting "the greatest degree of emission reduction achievable" through the application of available, cost-effective technology—

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[408] *See, e.g.*, Testimony of Pat Quinn, Heavy Duty Leadership Group, at EPA Hearing (Dec. 4, 2017), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2468, ("The Leadership Group's members worked very closely with EPA in the development of the Phase 2 Rule, providing technical input which we believe helped to craft a sound rule which the Group strongly endorsed in its final form."); *see also* Appendix A (listing supportive comments specific to the gliders provisions); Environmental Defense Fund, Broad Support Across America: Phase II Greenhouse Gas and Fuel Economy Standards for Freight Trucks and Buses (listing supportive comments related to the Phase 2 standards in general) (last accessed Dec. 30, 2017), available at https://www.edf.org/sites/default/files/content/positive_quotes_on_final_hd_phase_2_rulemaking_10.24.16_final.pdf.

[409] Testimony of Kedzie Glen, American Trucking Association, at EPA Hearing (Dec. 4, 2017), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4292; Testimony of Jed Mandel, Truck and Engine Manufacturers Association, at EPA Hearing (Dec. 4, 2017), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4299; Testimony of Michael Geller, Manufacturers of Emission Controls Association, at EPA Hearing (Dec. 4, 2017), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4288; Testimony of Pat Quinn, Heavy-Duty Fuel Efficiency Leadership Group, at EPA Hearing (Dec. 4, 2017), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4310; Testimony of Susan Alt, Volvo Group North America, at EPA Hearing (Dec. 4, 2017), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4273.

[410] HDP2 Rule, 81 Fed. Reg. at 73,962.

[411] HDP2 Rule, 81 Fed. Reg. at 73,962; HDP2 Rule Regulatory Impact Analysis, Chapter 12, EPA-HQ-OAR-2014-0827.

[412] HDP2 Rule, 81 Fed. Reg. at 73,941-42.

with certain limited exceptions and flexibilities.[413] The agency's thorough process carefully considered and included provisions in the Phase 2 Standards that were responsive to concerns raised.

Historically, the glider vehicle industry existed primarily to reclaim powertrains from wrecked truck bodies. But the industry expanded rapidly after new pollution standards were phased in[414] as a method to avoid compliance with the health-protective standards.[415] In the early 2000s, just a few hundred glider vehicles were produced annually, but EPA estimates that production surged to over 10,000 per year by 2016.[416] As glider production has scaled up, glider vehicles for the most part are no longer made from powertrains salvaged from wrecked trucks, but rather are mass-produced with donor components from any possible source.[417] EPA distinguished between these two eras of gliders in the final 2016 rule, explaining that the glider provisions sought a "transition to a long-term program in which manufacture of glider vehicles better reflects the original reason manufacturers began to offer these vehicles—to allow the reuse of relatively new powertrains from damaged vehicles."[418]

The Phase 2 Standards built in a number of flexibilities for glider vehicle manufacturers, with a particular focus on accommodating small businesses. For the year 2017, the rule allowed small businesses to produce glider vehicles up to a production limit, set at "the manufacturer's highest annual production of glider kits and glider vehicles for any year from 2010 to 2014."[419] The long-term program begins on January 1, 2018, and contains multiple "transitional flexibilities." Small businesses may produce up to 300 glider vehicles—or are capped at their highest annual production from 2010 to 2014, if that amount is less than 300—that are not in compliance with the engine and vehicle standards.[420] Model year 2010 and later engines installed in glider vehicles do not have to satisfy the Phase 1 GHG engine standards.[421] Finally, as mentioned previously, rebuilt engines may be installed without meeting the standards for the year of glider vehicle assembly if the engines are "within their regulatory useful life."[422] These modifications and flexibilities were responsive to and reflected the input the agency received through its small business panel and regulatory flexibility analysis.

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[413] CAA § 202(a)(3)(A).
[414] *See* HDP2 Rule, 81 Fed. Reg. at 73,941-43.
[415] Tom Berg, *The Return of the Glider*, TRUCKINGINFO, Apr. 2013, http://www.truckinginfo.com/channel/equipment/article/story/2013/04/the-return-of-the-glider.aspx ("Growth in gliders in recent years was due to the FET avoidance, poor fuel economy with EPA 2007-spec engines, and then the high cost of EPA 2010 emissions requirements, Hames says.").
[416] HDP2 Rule, 81 Fed. Reg. at 73,943.
[417] *See* Testimony of Susan Alt, Volvo, at EPA Hearing (Dec. 4, 2017), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2462; Jim Park, *Is There A Glider Kit in Your Future?*, TRUCKINGINFO (July 2011), http://www.truckinginfo.com/channel/equipment/article/story/2011/07/is-there-a-glider-kit-in-your-future.aspx (explaining that two out of three major powertrain components must come from the same donor truck, which means glider manufacturers can just substitute parts, such as a rebuilt engine, from another truck).
[418] HDP2 Rule, 81 Fed. Reg. at 73,941.
[419] HDP2 Rule, 81 Fed. Reg. at 73,941-42.
[420] HDP2 Rule, 81 Fed. Reg. at 73,942.
[421] HDP2 Rule, 81 Fed. Reg. at 73,942.
[422] HDP2 Rule, 81 Fed. Reg. at 73,942.

Accordingly, the premise of the Proposed Rule is misplaced because the standards and production cap in the gliders provision of the Phase 2 Standards do not unduly burden the glider industry, particularly when compared to the disproportionate public health threat posed by uncontrolled glider vehicle emissions. Tommy Fitzgerald, Jr. of Fitzgerald Glider Kits, the largest glider vehicle producer in the country, has stated that his company is "set up to make a profit at 300 [glider vehicles] a year."[423] As EPA explained: "It is important to emphasize that EPA is not banning gliders. Rather, as described below, EPA is requiring that glider vehicles meet the standards that all other new trucks are required to meet, unless eligible for certain limited exemptions that provide flexibility for small businesses and for certain other specific applications."[424] The 2016 rule restores glider production standards and volume to levels "consistent with the original purpose of glider kits and vehicles."[425]

Moreover, as EPA noted in the Phase 2 Standards, many truck dealers and manufacturers submitted comments to the agency to state their support for the glider provisions.[426]

Meanwhile, EPA performed no small business regulatory flexibility analysis and convened no small business panel with respect to the impact of this Proposed Rule, another absence that renders this rulemaking arbitrary and capricious.[427] In fact, its proposal did not include any discussion or consideration related to this rulemaking's negative potential impacts for small businesses like freight truck dealerships that have properly invested in emission-controlling freight truck sales and maintenance.[428]

XII. EPA Should Not Otherwise Weaken the Glider Provisions

As discussed in detail above, the use of each glider vehicle with a noncompliant, uncontrolled engine threatens public health. Accordingly, EPA's request for comment on options to weaken the Phase 2 glider provisions is wrongheaded: the agency should reject any increase in the cap on sale of uncontrolled glider vehicles as well as any delay in implementation of these protections. As we describe below, neither option can be justified in light of EPA's duty to protect the public and the extensive record of health harms from uncontrolled glider vehicles.

Furthermore, EPA cannot move ahead with finalizing any such action without first issuing a new proposal that would lay out any reasoning and analysis used to justify any such action. EPA has a duty under the law to provide notice to the public and opportunity to comment on the reasoning

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[423] Tom Berg, *The Return of the Glider*, TRUCKINGINFO (AprilApr. 2013), http://www.truckinginfo.com/channel/equipment/article/story/2013/04/the-return-of-the-glider.aspx.
[424] HDP2 Rule, 81 Fed. Reg. at 73,942.
[425] HDP2 Rule, 81 Fed. Reg. at 73,942.
[426] *See* HDP2 Response to Comments at 1872, 1897, 1899 (summarizing comments of Cummins, Navistar, Nuss); *see also* Appendix A .(summarizing freight industry comments).
[427] 82 Fed. Reg. at 53,448.
[428] *See* Testimony of Robert Nuss, Nuss Truck & Equipment, at EPA Hearing (Dec. 4, 2017), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4307; Testimony of Michael McMahon, McMahon Truck Centers, at EPA Hearing (Dec. 4, 2017), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2464.

and basis for a rulemaking.[429] EPA's current Proposed Rule mentions the options for weakening the glider provisions in four sparse sentences, without any justification, reasoning, or analysis to support either option.[430] EPA's Proposed Rule does not provide sufficient notice, such that any effort to finalize either action without a new proposal would be unlawful.

a. EPA Must Maintain the Current Compliance Date for Glider Vehicles

The glider vehicle provisions of the Phase 2 Standards include a transitional program for the 2017 calendar year and a long-term program that went into effect on January 1, 2018, with certain built-in transitional flexibilities to accommodate small businesses.[431]

EPA must maintain the January 1, 2018 compliance date for the long-term program. EPA concluded in the Phase 2 rulemaking that any delay in the compliance date could result in significant pre-buys of highly polluting glider vehicles, which would have detrimental consequences for public health.[432] A pre-buy occurs when market participants—here, fleets and independent drivers—purchase a significant volume of a product that will imminently be subject to a new regulation, shortly before that regulation is implemented.[433] EPA acted in the Phase 2 Standards to address this serious concern by requiring transitional compliance starting January 1, 2017, and full compliance starting January 1, 2018. This carefully considered decision is well supported by the record and should not be undone.

During the Phase 2 rulemaking, freight truck manufacturers emphasized their concern that a pre-buy would occur since EPA was looking to close the gliders loophole. Volvo Trucking North America stated during the notice and comment period that because "pre-buys are a known consequence of new regulatory requirements . . . EPA need not exacerbate them by providing a window for the unfettered manufacture of non-compliant vehicles."[434] The company further urged EPA to "adopt additional stringent measures to prevent the stockpiling of glider vehicles after new standards take effect."[435]

EPA addressed these concerns in the Phase 2 Standards by initially production of uncontrolled glider vehicles beginning on January 1, 2017, with longer-term limits becoming effective January 1, 2018. The agency stated "that by finalizing restrictions for 2018 in this rule we risk causing a pre-buy scenario where production surges further in 2017. This would be both very harmful to the environment and disruptive to the market. To avoid these problems . . . we are

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[429] See Section VII(d).
[430] Proposed Rule, 82 Fed. Reg. at 53,447.
[431] HDP2 Rule, 81 Fed. Reg. at 73518.
[432] EPA RTC Section 14, Appendix A, pg. 1960-68.
[433] *See* Katherine Rittenhouse & Matthew Zaragoza-Watkins, "Anticipation and Environmental Regulation," MIT Center for Energy and Environmental Policy Research, Working Paper, CEEPR WP 2017-004 at 2 (February 2017), *available at* http://ceepr.mit.edu/files/papers/2017-004.pdf.
[434] HDP2 RTC at 1870-71.
[435] HDP2 RTC at 1870-71.

finalizing a glider kit and glider vehicle production limit for calendar year 2017 for glider vehicles using high polluting engines."[436]

Recognizing the need to avoid pre-buys of super-polluting glider vehicles, EPA took responsible action by moving up the compliance deadline, which benefits the industry as a whole.[437] There is no justification for the agency to back away from this decision now: the record shows that the public health consequences would be even more severe.

b. If Any Changes Are Made, EPA Should Lower the Glider Vehicle Production Limit

EPA should not increase the glider vehicle production cap for small businesses that was implemented in the Phase 2 Standards. That rule, which generally requires all glider vehicles to comply with the same pollution protections as other new heavy-duty vehicles, contains a provision allowing each glider manufacturer to produce a limited number of gliders—300 or their 2010-2014 highest annual production volume, whichever is smaller—without meeting engine or vehicle standards.[438] This cap was intended to help small businesses transition into full compliance with the new standards.

The production cap on uncontrolled glider vehicles is amply supported by the record, the product of a multi-faceted small business engagement effort, and not overly burdensome for gliders producers. EPA carefully analyzed how glider dealers would be affected by a rule limiting glider production: it assessed the history of the glider industry, received extensive public input, and responded with modifications to the final rule to ensure fairness to small businesses. The 2016 Phase 2 Standards set a cap on uncontrolled glider vehicle production in order to "transition to a long-term program in which manufacture of glider vehicles better reflects the original reason manufacturers began to offer these vehicles—to allow the reuse of relatively new powertrains from damaged vehicles."[439] Thus, the rule is targeted to limit exploitation of a loophole to avoid installing health-saving technology on new freight trucks.

An increase in the cap on production of uncontrolled glider vehicles would be deeply damaging for public health. In the Phase 2 Standards, EPA limited the number of glider vehicles that can be produced with the understanding that an enormous amount of pollution could be avoided by limiting "even a fraction of these glider vehicles."[440] EPA estimated in the Phase 2 Standards that glider vehicles "have NOx and PM emissions 20–40 times higher than current engines," resulting in "significantly higher in-use emissions of air pollutants associated with a host of adverse human health effects, including premature mortality."[441] The results of EPA's more

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[436] HDP2 Rule, 81 Fed. Reg. at 73942.
[437] *See* HDP2 RTC at 1881 ("[A] one-year delay that allowed 10,000 additional glider vehicles to be produced with high polluting engines would result in the following impacts: 415,000 tons of addition NOx emissions, 6,800 tons of additional PM emissions, 700 to 1,600 premature deaths, $3 to $11 billion in PM-related monetized disbenefits.").
[438] HDP2 Rule, 81 Fed. Reg. at 73,942.
[439] HDP2 Rule, 81 Fed. Reg. at 73,941.
[440] HDP2 Rule, 81 Fed. Reg. at 73,883, 73,943 ("[I]t is clear that removing even a fraction of glider kit vehicles from the road will yield substantial health-related benefits.").
[441] HDP2 Rule, 81 Fed. Reg. at 73,943.

recent analysis—a study conducted in 2017—show that in fact, EPA *underestimated* the criteria pollutant emissions from glider vehicles in the Phase 2 Standards.[442]

Most glider producers were already operating within the range of the cap, so their businesses will not be adversely affected,[443] and the public health benefits of keeping as many glider vehicles off the road as possible are immense.

EPA has not and cannot justify an increase in the cap on production of uncontrolled glider vehicles. Given the extensive evidence of public health risks from uncontrolled vehicles, if the agency considers any change to the cap, it should consider lowering the maximum number of uncontrolled vehicles allowed.

XIII. Conclusion

EPA is proposing to revoke important safeguards against glider truck pollution based on an impermissible reading of the statute, without properly considering any of the most important and alarming consequences of this regulatory change for public health or a host of other vital considerations. For the foregoing reasons, EDF respectfully urges that EPA withdraw the Proposed Rule.

Respectfully submitted,

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[442] Chassis Dynamometer Testing 22-27. EPA, "Chassis Dynamometer Testing of Two Recent Model Year Heavy-Duty On-Highway Diesel Glider Vehicles" at 22-27 (Nov. 20, 2017), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-2417.

[443] As noted above, the one company known to produce more than 300 vehicles per year has publicly stated that its business can remain profitable at 300 vehicles per year. See Section 11(b).

Comment on EPA Proposed Glider Vehicles Rule, Docket ID EPA-HQ-OAR-2014-0827, submitted January 5, 2018

Appendix B

Potential Emission and Health Impacts of Glider Kits

EPA is proposing to allow glider kits to be sold without meeting the emission standards currently applicable to new heavy-duty engines. Glider kits are new heavy-duty diesel vehicles equipped with rebuilt older engines. EPA testing of glider kits shows that their emissions are more than an order of magnitude higher than those of other new vehicles with engines meeting current standards.[1] In its Phase 2 medium- and heavy-duty truck rule, EPA projected the excess emissions and increased health impacts should glider sales remain at the current estimated sales level of 10,000 units per year. This report extends EPA's analysis by considering the impact of even greater annual sales of glider kits to 30,000 and 50,000 units per year. In the 2016 Phase 2 final rule, EPA acknowledged that glider vehicle sales could be greater than the 10,000 unit estimate,[2] and several stakeholders who testified at EPA's December 4, 2016 hearing indicated that if the glider provisions were repealed, sales would be much higher.[3] In fact, several truck dealers and truck repair facilities testified that gliders sales could reach 25 to 30% of annual truck sales or up to 60,000 units.[4]

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[1] Chassis Dynamometer Testing of Two Recent Model Year Heavy-Duty On-Highway Diesel Glider Vehicles, November 20, 2017, National Vehicle & Fuel Emissions Laboratory, U.S. Environmental Protection Agency, Ann Arbor, Michigan.

[2] 81 Fed. Reg. at 73,943; HDP2 RTC pg. 1960.

[3] Testimony of John C. Doub, TMI Truck and Equipment, Docket ID No. EPA-HQ-OAR-2014-0827-4285 (Dec. 4, 2017), available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4285 ("If [EPA repeals the glider provisions], our lost sales to Glider Kits each Month could grow from the 10% it is today to what could be 30+%.").

[4] See id. See also Testimony of Michael P. McMahon, McMahon Truck Centers, Docket ID No. EPA-HQ-OAR-2014-0827-4300 (Dec. 4, 2017), available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0827-4300 ("We estimate losing approximately 25% of our annual New Truck retail volume to Glider Kits.").

Table 1 shows historic and projected future sales under EPA's 2016 estimate and two scenarios reflecting higher sales of glider kits.

Table 1: Glider Sales			
Calendar Year	EPA Projection	Scenario 1	Scenario 2
2009 and earlier	500	500	500
2010	1250	1250	1250
2011	2000	2000	2000
2012	2750	2750	2750
2013	3500	3500	3500
2014	4250	4250	4250
2015	10000	10000	10000
2016	10000	15000	15000
2017	10000	20000	20000
2018	10000	23100	25000
2019	10000	26500	30000
2020	10000	28400	35000
2021	10000	29700	40000
2022	10000	30000	45000
2023 and beyond	10000	30000	50000

As can be seen from Table 1, EPA's projection reaches 10,000 units in 2015 and remains constant thereafter. This scenario implicitly assumes that granting the petition to allow unabated glider kit sales will not result in higher sales of glider kits than has already occurred. The two other sales scenarios shown in Table 1 assume that allowing unregulated glider kit sales will result in greater sales. Scenario 1 projects that sales increase to 30,000 units by 2022. Scenario 2 projects that sales increase to 50,000 units by 2023.

EPA made two kinds of emission estimates that would result from their projection of increased glider sales. The first estimated incremental emissions over the life of a glider vehicle relative to those of a vehicle powered by an engine meeting current emission standards. The second estimated the total emissions from glider kit vehicles in 2025 and 2040 if they were unregulated and if their sales were limited to roughly 1000 units per year. All types of emissions from glider vehicles increase relative to vehicles equipped with new engines: hydrocarbons (HC), carbon monoxide (CO), nitrogen oxide (NOx), and particulate matter (PM). This analysis will focus on NOx and PM emissions, as these are the most serious from a health and welfare point of view.

Table 2 shows the vehicle lifetime NOx and PM emissions from 2017 glider vehicles and vehicles with new engines.

Table 2: EPA Projections of Excess Emissions from Glider Vehicle Sales		
	NOx	PM
Lifetime Emissions (U.S. tons per 1000 vehicles)		
Glider Vehicles	43,800	710
Vehicles equipped with New Engines	2,300	30
Difference	41,500	680

As can be seen in Table 2, lifetime NOx and PM emissions from glider vehicles ae roughly 20 times those of vehicles with new engines. Since these emission estimates pertain to a specific number of vehicle sales, they apply regardless of whether glider kit sales reach 10,000 units per year or 30,000-50,000 units per year.

Table 3 shows the impact of limiting unregulated glider vehicle sales to 1,000 units per year.

Table 3: Nationwide Emissions From Glider Vehicles with and without Control (U.S. tons per year)		
2025	NOx	PM
Without Controls	295,000	7,800
With Controls	104,800	2,750
Difference	190,200	5,050
2040		
Without Controls	371,100	9,960
With Controls	52,600	1,410
Difference	318,600	8,550

As can be seen, regulation reduces the NOx and PM emissions impact of glider vehicles by roughly 65% in 2025 and roughly 85% in 2040.

The emissions of a specified set of vehicles in a calendar year has traditionally been estimated by determining the number of vehicles on the road, their annual mileage, and the emission rate per mile (the emission factor). More recent and advanced models, like EPA's MOVES model, estimates emissions based on specific vehicle operating conditions, such as acceleration rate.

The number of vehicles on the road is estimated from the number of new vehicles sold in each of the current and previous 29 model years coupled with estimates of the scrappage rate of these vehicles by age. Annual mileage is also a function of age, being highest when the vehicles are newer and decreasing with age. The emission factor is affected by a wide range of factors, ranging from ambient conditions, the vehicle's driving cycle, vehicle age, and others. For the purposes of this analysis, the two more aggressive glider vehicle sales scenarios primarily affect the first factor listed above: the number of glider vehicles on the road. Mileage per year is affected to a small degree, since the average age of glider vehicles changes slightly under the

three scenarios. The two more aggressive sales scenarios increase glider sales in the later years more than earlier years, so the average age of glider vehicles decreases and the average mileage of glider vehicles in any specific calendar year increases. Emissions from glider vehicles at any of the operating conditions modeled in MOVES are not affected.

In MOVES, the simplest factor to reproduce outside of the model is the vehicle scrappage rate. MOVES uses the same scrappage rate by age for all heavy-duty vehicles (Table 7-2).[5] We obtained the annual vehicle miles travelled for heavy-duty vehicles by age and the fraction of heavy-duty vehicles still on the road by age (Table 7-2) used in MOVES. EPA stated that their glider kit sales projection would result in 128,750 glider vehicles being on the road in 2025. When we combine the scrappage fractions in MOVES with the glider kit sales shown in Table 1, the result is 127,828 vehicles being on the road in 2025, which is within 1% of the MOVES-based estimate. This is strong confirmation that we have the appropriate rate of scrappage for glider vehicles.

A very good first order estimate of the impact of higher glider vehicle sales on emissions results from estimating the number of glider vehicles on the road in 2025 and 2040 under the three sales scenarios and scaling the EPA emission impacts accordingly. These would be conservative estimates, however. As mentioned above, the average age of glider vehicles decreases slightly under the two more aggressive sales projections, increasing average mileage per year and thus, emissions.

In order to include the impact of higher annual mileage, we estimated the degree to which annual mileage changes with age. This relative change in annual mileage with age is coupled with the distribution of glider vehicles on the road in 2025 and 2040 to estimate the degree to which the more aggressive projections of glider vehicle sales increases total glider vehicle emissions in these years. Implicit in this methodology is the assumption that glider vehicle emissions are not affected by vehicle age. Vehicular emissions often increase with age due to inadequate maintenance and deterioration in the efficiency of emission control equipment. However, deterioration in emissions from heavy-duty diesel vehicle is very low, especially from vehicles without aftertreatment equipment, which is the case for glider vehicles. Thus, the assumption of similar emission rates over the slight differences in vehicle age seen here is reasonable.

MOVES uses discrete estimates of annual vehicle miles travelled by age for seven different categories of heavy-duty vehicles. However, EPA stated in their glider analysis that they assumed that glider vehicles were used in tractor-trailers. Two of the seven heavy-duty vehicle categories apply to tractor trailers: short-haul combination (tractor-trailer) trucks and long-haul combination trucks. In MOVES, the annual mileage of new vehicles ranges from 61,000 for short-haul combination trucks to 117,000 for long-haul combination trucks. From the MOVES input files published with the consideration of this petition, EPA spread glider kit sales across short and long-haul combination trucks according to their presence in the on-road fleet. From Table 17-1 of the above cited MOVES population and activity report, long-haul combination

[5] "Population and Activity for On-Road Vehicles in MOVES2014," Assessment and Standards Division, Office of Transportation Air Quality, U.S. EPA, EPA-420-R-20-16-003, January 2016.

trucks represent 56.4% and 56.5% of all combination trucks on the road in 2025 and 2040, respectively. (Short haul combination trucks therefore represent 43.6% and 43.5% of all combination trucks on the road in 2025 and 2040, respectively.)

We then proceeded to estimate total glider vehicle mileage in the on-road fleet in 2025 and 2040 for the three glider vehicle sales projections shown in Table 1. Glider vehicle sales were taken from Table 1. (For example, for the 2025 analysis, this meant glider vehicle sales from 2025 back to 1995.) Vehicle scrappage by age was taken from Table 7-2 of the MOVES population and activity report. Vehicle mileage by age was a weighted average of the mileages by age for short- and long-haul combination trucks shown in Tables 7-5 and 7-7 of the MOVES population and activity report. The number of glider vehicles estimated to be on the road and their mileage under the three sales projections are shown in Table 4.

Table 4: Relative Emission Impacts of Uncontrolled Glider Kit Emissions			
	EPA Sales	Sales Scenario 1	Sales Scenario 2
	2025		
Vehicle on the road	127,828	288,790	385,728
Ratio to EPA Sales	---	2.3	3.0
Million Vehicle Miles Travelled	9,311	22,968	31,710
Ratio to EPA Sales		2.5	3.4
	2040		
Vehicle on the road	259,178	702,381	1,085,628
Ratio to EPA Sales	---	2.7	4.2
Million Vehicle Miles Travelled	12,688	37,071	60,257
Ratio to EPA Sales		2.9	4.7

As can be seen, the impact of the more aggressive glider vehicle sales scenarios has a growing impact on the number of glider vehicles on the road over time. In 2025, the number of glider vehicles on the road are 2.3-3.0 times that under the EPA sales scenarios. Note that these factors are well below the ratios of ultimate maximum sales of glider vehicles in these two scenarios of 3 and 5, respectively, because the maximum sales of glider vehicles has only been occurring for 2-3 years. The impact of more aggressive glider vehicle sales grows further by 2040, to factors of 2.7-4.2 over that of the EPA sales scenario. It will take another 10 years for the full impact of the maximum projected glider vehicle sales to be fully felt in the on-road fleet.

As also shown in Table 4, the impact of increased glider vehicle sales on vehicle miles travelled is slightly larger than on sales due to the higher mileage of new vehicles. However, the ratio of vehicle miles travelled under the two more aggressive glider kit sales scenarios are still below the long-term sales ratios of 3-5.

Table 5 shows total NOx and PM emissions from uncontrolled glider vehicles in 2025 and 2040 under the three sales scenarios. Emissions for the two more aggressive glider vehicle sales scenarios are simply those under the EPA scenario multiplied by the ratios of vehicle miles travelled, shown in Table 4. Table 5 also shows emissions should these glider vehicles be controlled starting in 2018. In this latter case, the emission levels are nearly the same under all three scenarios, as EPA's controls would limit glider vehicle sales to roughly 1,000 vehicles per year. However, in 2015-17, glider vehicle sales are higher under the more aggressive sales scenarios than under EPA's sales projection. Thus, we again estimated the relative level of total vehicle miles travelled by glider vehicles in 2025 and 2040 using the sales up to 2017 from Table 1 and then limited sales to 1,000 per year thereafter. We found that vehicle miles travelled under the two more aggressive sales scenarios were 30% higher than under EPA's scenario in 2025 and 22% higher in 2040. We adjusted EPA's emission projections for controlled glider vehicles accordingly.

Table 5: Glider Vehicle Emission Impacts Under Three Sales Scenarios						
	EPA Sales		Sales Scenario 1		Sales Scenario 2	
2025	NOx	PM	NOx	PM	NOx	PM
Without Controls	295,000	7800	727,723	19,241	1,004,698	26,565
With Controls	104,800	2750	131,766	3,458	131,766	3,458
Difference	190,200	5050	595,957	15,784	872,933	23,107
2040						
Without Controls	371,100	9960	1,078,731	28,952	1,745,242	46,841
With Controls	52,600	1410	64,406	1,726	64,406	1,726
Difference	318,600	8550	1,014,325	27,226	1,680,836	45,114

As can be seen in Table 5, the benefits of glider vehicle control increase 3.1-4.6 times under the more aggressive sales scenarios in 2025. In 2040, the benefits of control increase 3.2-5.3 times under the more aggressive sales scenarios.

Moving to health effects and monetized health benefits, EPA estimated the monetized health benefits and reduction in premature mortality associated with the control of glider vehicle emissions. EPA specifically estimated these benefits over the lifetime of 1000 2017 glider vehicles. EPA found that controlling the emissions of these vehicles would reduce 70-160 premature deaths and generate $0.3-1.1 billion worth of health benefits. (Health benefits are valued in $2013. The range shown includes two distinct methodologies, as well as two societal discount rates (3% per year and 7% per year)). EPA notes that these estimates do not include all of the health-related benefits associated with glider vehicle control. EPA points out that the regulation of glider vehicles would reduce sales by 5000-10,000 units per year and produce health benefits having a value of $1.5-11 billion ($2013).

EPA's estimates were based on a relationship between annual emissions from 17 distinct emission sources and PM-related health impacts (and their monetary benefits).[6] These relationships were developed using a three-step process (cited directly from the EPA report):

1) Use source apportionment photochemical modeling to predict ambient concentrations of primary PM2.5, nitrate and sulfate attributable to each of 17 emission sectors across the Continental U.S. (On-road emission sources are one of the 17 sectors addressing by the modeling);
2) For each sector, estimate the health impacts, and the economic value of these impacts, associated with the attributable ambient concentrations of primary PM2.5, sulfate and nitrate PM2.5 using the environmental Benefits Mapping and Analysis Program (BenMAP v4.0.66);
3) For each sector, divide the PM2.5-related health impacts attributable to each type of PM2.5, and the monetary value of these impacts, by the level of associated precursor emissions. That is, primary PM2.5 benefits are divided by direct PM2.5 emissions, sulfate benefits are divided by SO2 emissions, and nitrate benefits are divided by NOx emissions.

This modeling tool was developed for use in support of various regulatory actions being considered or taken by EPA. It provides mid-range health effects and benefits, as opposed to worse-case estimates (e.g., 90th or 95th percentile effects).

As part of this health assessment, EPA found that glider vehicle controls would reduce 70-160 premature deaths per 1000 glider vehicles. This represents a reduction of 350-1600 premature deaths across the 5000-10000 glider vehicle sales projected to be affected by regulatory controls per year. Put another way, EPA's proposal would result in the death of one person in the U.S. for every 10 glider vehicles sold (over the lifetime of their use). Also, as mentioned above, EPA only presented two of the many health effects generated from the national regulatory assessment tool. Table 6 presents the complete set of health effects generated by this tool. Again, this is not a complete list of the known health effects of PM and NOx emissions, nor does it include any health effects of other pollutants which differ with the sale of uncontrolled of glider vehicles. As can be seen, many of these health effects occur at significant levels. Finally, EPA presented only the monetized health impact of the increase in PM emissions.

[6] Technical Support Document, "Estimating the Benefit per Ton of Reducing PM2.5 Precursors from 17 Sectors," U.S. Environmental Protection Agency, Office of Air and Radiation, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711, January 2013.

Table 6 shows the monetized health costs of the increase in both PM and NOx emissions. This basically doubles the health costs of allowing glider vehicles to go unregulated.

Table 6: Lifetime Health Impacts From 1000 2017 Glider vehicle Sales: EPA Methodology	
Emissions (U.S. tons): NOx	41,500
PM	680
Monetized Health Costs ($2013 billion)	0.6-1.3
Premature Mortality[7]	68-156
Morbidity	
Respiratory emergency room visits	39
Acute bronchitis	107
Lower respiratory symptoms	1373
Upper respiratory symptoms	2005
Minor Restricted Activity Days	54625
Work loss days	9196
Asthma exacerbation	4942
Cardiovascular hospital admissions	26
Respiratory hospital admissions	21
Non-fatal heart attacks (Peters)	82
Non-fatal heart attacks (All others)	9

Table 7 shows the results of extending this methodology to the impact of controlling glider vehicle sales in calendar year 2025 under the EPA and more aggressive sales scenarios. (The EPA report presented the value of health effects in 2010 dollars. We converted $2010 to $2013 using a conversion factor of 0.9467, which was taken from EPA's costing methodology for its recent Final Determination on the appropriateness of the 2022-2025 light-duty greenhouse gas emission standards.) Benefits are presented for the reductions in both NOx and PM emissions. We only present such estimates for the 2025 calendar year. It should be noted that these 2025 estimates represent the impact of not regulating 2018 and later glider vehicle sales through 2025 emissions and their related health effects. They do not include the impact of the use of these glider vehicles over their entire vehicle life. EPA presented the emission impacts of glider vehicles on emissions in 2040, as shown in Table 5 above. However, the health effects tool only includes health effect factors through calendar year 2030. We did not project health impacts for 2030, as EPA did not present emission impacts for this year, which we would have used for the basis of our estimates of the emission impacts for the two more aggressive glider vehicle sales scenarios.

[7] Note that EPA found slightly higher levels of premature mortality of 70-160 deaths. It is not clear whether this is due to simple round off, or a slight difference in methodology. In any event, the similarity of these projections indicates a high degree of similarity in methodology between EPA's and that used here.

Table 7: Health Benefits and Health Improvements From Glider Vehicle Controls in 2025: EPA Methodology			
Glider Vehicle Sales Scenario	EPA	Scenario 1	Scenario 2
Emission Reductions due to Controls: NOx	190,200	596,497	873,960
(U.S. tons per year) PM	5,050	15,798	23,134
Monetized NOx+PM Benefits ($2013 billion)	3.2-8.0	10.0-24.9	14.6-36.5
Premature Mortality	396-914	1240-2862	1816-4162
Morbidity			
Respiratory emergency room visits	228	715	1,047
Acute bronchitis	630	1,973	2,889
Lower respiratory symptoms	8,070	25,271	37,015
Upper respiratory symptoms	11,700	36,643	53,672
Minor Restricted Activity Days	321,892	1,008,045	1,476,488
Work loss days	54,134	169,528	248,309
Asthma exacerbation	29,028	90,906	133,151
Cardiovascular hospital admissions	151	471	690
Respiratory hospital admissions	124	388	569
Non-fatal heart attacks (Peters)	477	1,493	2,187
Non-fatal heart attacks (All others)	52	162	237

As can be seen, all the projected health impacts increase dramatically compared to the impact of simply selling 1000 uncontrolled glider vehicles. Under EPA's sales projections, the partial set of health benefits are valued at $3.2-8.0 billion per year in 2025. It is important to note that the on-road heavy-duty diesel fleet has not even reached equilibrium with respect to the peak sales of 10,000 glider kits, as these sales just reached 10,000 units in 2015. Glider vehicles will continue to increase as a fraction of the on-road fleet for another 20 years. Under the two more aggressive sales scenarios, the health benefits of control increase even further to at least $10 billion to nearly $40 billion per year.

The same trends are seen in the reduction of premature deaths. With peak sales of 10,000 units, premature deaths range from 400-900, but increase to 1200-4200 with peak sales of 30,000-50,000 units. Again, in all these cases, the on-road fleet in 2025 is far from its equilibrium point with respect to the emissions and health impact of glider vehicles.

Another similar tool, which has been developed for screening the impact of changes in emissions on health effects is an EPA model referred as COBRA.[8] COBRA was developed specifically for use in local and state assessments of energy and environmental programs. The steps used in its development are very similar to those listed above for the regulatory impact analysis tool used by EPA. One advantage of COBRA over the modeling tool used by EPA in its glider vehicle

[8] User's Manual for the Co-Benefits Risk Assessment Health Impacts Screening and Mapping Tool (COBRA), Version: 3.0, U.S. EPA, September 2017.

analysis is that on-road mobile sources are broken down into several finer categories, including heavy-duty diesel vehicles.

Table 8 presents the estimated health impacts of the increases in emissions that could occur should glider vehicles go unregulated. As can be seen from a comparison of the figures in Table 7 and Table 8, the projected health impacts are very similar and substantial. EPA should complete even more sophisticated atmospheric and health effects modeling to elucidate the full extent of harm associated with the agency's Proposed Rule, but these results indicate that the proposal is flawed, will result in substantial harm, and should be abandoned.

Table 8: Health Benefits and Health Improvements From Glider Vehicle Controls in 2025: EPA COBRA Model			
Glider Kit Sales Scenario	EPA	Scenario 1	Scenario 2
Emission Reductions due to Controls: NOx	190,200	596,497	873,960
(U.S. tons per year) PM	5,050	15,798	23,134
Monetized NOx+PM Benefits ($2013 billion)	3.5-7.8	9.7-24.6	14.2-36.0
Premature Mortality	386-874	1210-2740	1771-4012
Morbidity			
Respiratory emergency room visits	210	659	964
Acute bronchitis	588	1,845	2,703
Lower respiratory symptoms	7,500	23,515	34,443
Upper respiratory symptoms	10,711	33,563	49,138
Minor Restricted Activity Days	293,263	919,127	1,345,794
Work loss days	49,595	155,422	227,556
Asthma exacerbation	11,050	34,627	50,697
Cardiovascular hospital admissions	138	433	634
Respiratory hospital admissions	114	356	521
Non-fatal heart attacks	47-441	149-1382	218-2025