

January 5, 2018

U.S. Environmental Protection Agency  
Air and Radiation Docket and Information Center  
EPA Docket Center  
Attention: Docket ID No. EPA-HQ-OAR-2014-0827  
William Jefferson Clinton West Building  
1301 Constitution Avenue, NW  
Room 3334  
Washington, DC

To Whom It May Concern:

The National Association of Clean Air Agencies (NACAA) appreciates this opportunity to comment on the U.S. Environmental Protection Agency's (EPA) Notice of Proposed Rulemaking (NPRM), *Repeal of Emission Requirements for Glider Vehicles, Glider Engines, and Glider Kits*, as published in the *Federal Register* on November 16, 2017 (82 Fed. Reg. 53,422). NACAA is the national, non-partisan, non-profit association of 156 local and state air pollution control agencies in 41 states, the District of Columbia and four territories. The air quality professionals in our member agencies have vast experience dedicated to improving air quality in the U.S. These comments are based upon that experience. The views expressed in these comments do not represent the positions of every state and local air pollution control agency in the country.

As primary implementers of the Clean Air Act, states and localities have the statutory responsibility for "air pollution prevention (that is, the reduction or elimination, through any measures, of the amount of pollutants produced or created at the source) and air pollution control at its source."<sup>1</sup> To carry out this responsibility, our member agencies must, among other important obligations, establish and implement strategies to attain and maintain health- and welfare-based National Ambient Air Quality Standards (NAAQS).

Among other issues, in its NPRM, EPA seeks comment on:

- the emission impacts of repealing the glider requirements versus leaving them in place (including consideration of the emission profile of glider vehicles versus the older vehicles they would replace),
- raising the annual cap on the number of gliders allowed under the existing requirements,
- delaying the compliance date of the existing requirements and
- its authority to regulate gliders.

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<sup>1</sup> Clean Air Act §101(a)(3)

EPA requests “comment on the relative expected emissions impacts if the regulatory requirements at issue here were to be repealed or were to be left in place.”<sup>2</sup>

The emission standards and other requirements applicable to heavy-duty gliders included in the final Phase 2 truck rule close a “loophole” for glider vehicles and glider kits beginning in January 2018. This loophole allows used diesel engines, with no limit on age, to be installed into new glider kits without meeting the current engine standards. Closing this loophole will prevent hundreds of thousands of tons of nitrogen oxides (NO<sub>x</sub>) and diesel particulate matter (PM) from being emitted into the air each year, the latter of which EPA has recognized as a toxic air contaminant. The proposed rule would allow that loophole to remain open and result in increased air pollution in every part of the country.

According to EPA data from a July 2016 sensitivity analysis of glider impacts, because the current emission standards for NO<sub>x</sub> and PM are at least 90 percent lower than the most stringent previous standards, NO<sub>x</sub> and PM emissions from any glider vehicle equipped with a pre-2007 engine are at least 10 times higher than emissions from any equivalent vehicle that is produced with a brand new engine. The agency has noted, however, that most gliders now being produced use engines originally manufactured before 2002, with neither exhaust gas recirculation nor exhaust aftertreatment, and, therefore, with NO<sub>x</sub> and PM emissions 20 to 40 times higher than current engines, and even greater if the engine is miscalibrated or malmaintained. These adverse emission impacts are further exacerbated by increasing sales of glider vehicles, which have been estimated to have grown by an order of magnitude since the 2004-to-2006 timeframe, from a few hundred such vehicles a year to an estimated 10,000 or more per year in 2016.<sup>3</sup> Further, the results of recent testing by EPA released on November 20, 2017 not only underscore the emission impacts estimated by the agency in 2016, but also show that glider emissions could be even greater than estimated last year.<sup>4</sup>

Based on the July 2016 sensitivity analysis, assuming glider vehicle production does not exceed 10,000 per year, EPA has also estimated that, as promulgated, the glider provisions of the Phase 2 rule will yield, in 2025, NO<sub>x</sub> reductions of over 190,000 tons per year (tpy) and PM reductions of over 5,000 tpy.<sup>5</sup> In 2040, this benefit is expected to increase to over 318,000 tpy of NO<sub>x</sub> reductions and 8,500 tpy of PM reductions.<sup>6</sup> To put the magnitude of these annual emission projections into perspective, Volkswagen’s use of “defeat devices” on certain diesel-fueled light-duty vehicles – an action that resulted in a \$14.7-billion settlement agreement – is estimated to have caused approximately 37,000 tons of excess NO<sub>x</sub> emissions during the period between 2008 and 2015.

Particularly with respect to NO<sub>x</sub>, these are very substantial reductions and ones upon which many state and local air agencies in every part of the nation are now relying to help fulfill their clean air obligations – not only for the ozone and PM NAAQS, but also for toxic air pollution and regional haze. In its August 2016 *Response to Comments* on the final Phase 2 rule EPA estimates that the NO<sub>x</sub> and PM emission reductions associated with the applicability of the regulatory requirements to MY 2017 glider

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<sup>2</sup> EPA NPRM, [Repeal of Emission Requirements for Glider Vehicles, Glider Engines, and Glider Kits](#), p. 53,447 (November 16, 2017)

<sup>3</sup> EPA and NHTSA’s [Response to Comments for Joint Rulemaking](#), pp. 1960-1961 (August 2016)

<sup>4</sup> EPA’s [Chassis Dynamometer Testing of Two Recent Model Year Heavy-Duty On-Highway Diesel Glider Vehicles](#) (November 20, 2017)

<sup>5</sup> EPA and NHTSA’s [Response to Comments for Joint Rulemaking](#), p. 1962, Table A-1 (August 2016)

<sup>6</sup> EPA and NHTSA’s [Response to Comments for Joint Rulemaking](#), p. 1962, Table A-1 (August 2016)

vehicles would prevent between 350 and 1,600 premature deaths over the lifetime of those vehicles.<sup>7</sup> If the regulatory requirements that will result in these reductions are repealed, those emissions will be allowed to go into the air to the detriment of clean air and public health across America.

Every single state in the country will benefit environmentally and from a public health perspective from the emission reductions to result from the glider requirements in the Phase 2 rule. Every single state in the country will accrue more polluting emissions if these requirements are repealed. Those seeking to reduce emissions in order to fulfill their statutory obligations to attain and maintain the NAAQS, or to remain in good stead, may be forced to seek reductions elsewhere.

EPA acknowledges in the NPRM that states will be required to make up for the lost reductions when it explains how the NPRM comports with various relevant Executive Orders, in this case E.O. 13045 on the Protection of Children from Environmental Health Risks and Safety Risks: “Areas that need to reduce criteria air pollution to meet the NAAQS will still need to rely on control strategies to reduce emissions. To the extent that states use other mechanisms in order to comply with the NAAQS, and still achieve the criteria pollutant reductions that would have occurred under the [glider provisions of the Phase 2 rule], this proposed rescission will not have a disproportionate adverse effect on children’s health.”<sup>8</sup>

For agencies seeking to reduce criteria pollutant emissions for purposes of fulfilling a statutory obligation to attain and maintain the NAAQS, foregoing reductions from one source category may mean seeking reductions from another. Reducing emissions from mobile sources – particularly those, like gliders, that are uncontrolled or under-controlled – offers the most cost-effective opportunities for NO<sub>x</sub> and PM reductions. The glider requirements promulgated in the Phase 2 rule would not only eliminate substantial emissions of NO<sub>x</sub> and PM, they would do so very cost effectively. If these requirements are repealed or amended, it will be difficult for those states seeking reductions to cost-effectively compensate for the magnitude of the emissions that will occur and could potentially mean more regulation and higher costs for stationary sources, possibly power plants, manufacturing facilities and small businesses, among others.

To put this in perspective, for a glider equipped with a compliant engine the cost per ton of NO<sub>x</sub> removed is approximately \$670, based on heavy heavy-duty engine control technology required to meet MY 2012 and later standards. By comparison, the cost of various emission control technologies currently being, or already, implemented in various parts of the country is considerably higher – for industrial, commercial and institutional boilers, the cost effectiveness of low-NO<sub>x</sub> burners is \$750 to \$7,500 per ton of NO<sub>x</sub>, of selective non-catalytic reduction \$1,300 to \$3,700 per ton and of selective catalytic reduction (SCR) \$2,000 to \$14,000 per ton; for SCR for combustion turbines, \$2,010 to \$19,120 per ton; for Tier 2 light-duty vehicle emission and gasoline sulfur standards, \$2,100 per ton; and for 10-parts-per-million sulfur gasoline, \$4,500 per ton.<sup>9</sup>

In some cases, though, there are no alternatives for making up those lost reductions at any cost, either because there are no industries to regulate or because even if every stationary source in an area

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<sup>7</sup> EPA and NHTSA’s [Response to Comments for Joint Rulemaking](#), p. 1965 (August 2016)

<sup>8</sup> EPA NPRM, [Repeal of Emission Requirements for Glider Vehicles, Glider Engines, and Glider Kits](#), p. 53,448 (November 16, 2017)

<sup>9</sup> Figures provided by the Northeast States for Coordinated Air Use Management, from or based on EPA Regulatory Impact Analyses and other data

were controlled down to zero emissions there would still be a need to reduce mobile source emissions in the area in order to attain and maintain the NAAQS.

In addition, over the past decade, the U.S. Congress has appropriated hundreds of millions of dollars under the Diesel Emissions Reduction Act (DERA) to fund projects to reduce diesel exhaust from older engines. Further, states across the country have put their own funds toward DERA projects under a voluntary matching program. EPA has estimated that the DERA program is responsible for total lifetime emission reductions of 335,200 tons of NO<sub>x</sub> and 14,700 tons of PM. A repeal of the glider requirements would result in NO<sub>x</sub> and PM emissions that would eclipse the reductions achieved to date under the DERA program and undo millions of dollars of protections that come from federal and state investments.

NACAA would also like to offer some technical observations regarding the glider emissions testing conducted by Tennessee Technological University (TTU) from September to November 2016 and summarized in a June 15, 2017 letter that accompanied the *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*, submitted by Fitzgerald Glider Kits, LLC, Harrison Truck Centers, Inc. and Indiana Phoenix, Inc. to EPA Administrator Scott Pruitt on July 10, 2017.<sup>10</sup> On November 7, 2017, staff of EPA’s Office of Transportation and Air Quality held a teleconference with representatives of TTU to discuss the testing methodology, facilities and equipment used to generate the glider data provided in the June 15, 2017 TTU letter. EPA staff subsequently prepared a memorandum, dated November 13, 2017, documenting that teleconference and entered the memorandum into the EPA docket.<sup>11</sup>

NACAA members have reviewed these technical documents and drawn the following conclusions. In general, TTU’s testing lacked the rigor of testing conducted for purposes of certification and did not comport with valid heavy-duty diesel emissions testing. In particular, TTU did not use a chassis dynamometer of the sort used for emissions or certification testing. Instead, it used an eddy current absorber type dynamometer typically used by repair shops for repair and maintenance diagnostic testing. This type of dynamometer cannot capture all operations of a vehicle. Based on EPA’s memorandum, it appears that TTU did not use an accepted test procedure that relates to certification standards.

The drive cycle and test procedure followed were unique to TTU rather than known procedures, such as those specified by the Society of Automotive Engineers or the International Standards Organization or used by EPA. The procedure operated only in a steady state, with no transient testing, and did not simulate all real-world driving conditions such as hills, coasting and wind resistance. There was no cold-start testing and no standard repeatable cycle and no conventional road-load coefficients were used. Significantly, no individual tests were repeated. Although TTU reported that all the vehicles tested met the PM standard,<sup>12</sup> TTU did not collect any PM samples. Instead, TTU relied on visual inspection of a sample probe filter used with a handheld combustion analyzer – intended for diagnostic use by repair shops – and reported that no PM was detected.

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<sup>10</sup> [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 Rule” to Gliders](#) (July 10, 2017)

<sup>11</sup> EPA memorandum, [EPA Tennessee Tech Glider Emissions Testing Discussion 11072017](#) (November 13, 2017)

<sup>12</sup> [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 Rule” to Gliders](#), p. 9 (July 10, 2017)

EPA also conducted glider testing, which took place in October and November 2017, and summarized the results in a November 20, 2017 report, *Chassis Dynamometer Testing of Two Recent Model Year Heavy-Duty On-Highway Diesel Glider Vehicles*, which was entered into the EPA docket.<sup>13</sup> In its report, EPA described, in detail, all parameters of its comprehensive testing and documented its rigorous quality assurance and quality control. With respect to PM, EPA measured emissions in triplicate to provide replicate samples for analysis and stated in its report that “[t]he glider vehicles emitted significantly more particulate matter than the typical heavy-duty diesel vehicles tested in the laboratory. Therefore, using our typical dilution rates and filter face velocity settings, the filters were overloaded with particulate matter during our initial testing with Glider #1. This caused a PM equipment alarm during phase 2 of the Super Cycle and therefore phases 3 and 4 were not sampled.”<sup>14</sup>

Under highway cruise conditions, EPA found NO<sub>x</sub> emissions from the two gliders tested to be approximately 43 times as high, and PM emissions approximately 55 times as high, as those of the conventionally manufactured model year 2014 and 2015 tractors that underwent equivalent testing. Under transient operations, absolute NO<sub>x</sub> and PM emissions were higher for both gliders tested on all duty cycles. On a relative basis, the gliders’ NO<sub>x</sub> emissions were four to five times higher than the conventionally manufactured tractors and the PM emissions were 50 to 450 times higher.<sup>15</sup> These results are reasonable given the increasingly more stringent engine standards that have evolved through three federal heavy-duty diesel rulemakings – in 2004, 2007 and 2010.

In its NPRM, EPA also seeks comment on “whether, if the Agency were to determine not to adopt the interpretation of CAA sections 202(a)(1) and 216(3) being proposed here, EPA should nevertheless revise the ‘interim provisions’ of [the] Phase 2 rule, 40 CFR 1037.150(t)(1)(ii), to increase the exemption available for small manufacturers above the current limit of 300 glider vehicles per year.” EPA further seeks comment on “whether, if the Agency were to determine not to adopt the statutory interpretation being proposed here, EPA should nevertheless extend by some period of time the date for compliance for glider vehicles, glider engines, and glider kits set for in 40 CFR 1037.635.”<sup>16</sup> NACAA notes that any increase above the 300-gliders-per-year allowance provided for in the Phase 2 rule, or any delay in implementation of the glider requirements, will result in an increase in NO<sub>x</sub> that, for the reasons stated above, many states and localities can ill afford. We are concerned about the adverse public health impacts that would occur, and the depleted ability of areas to attain and maintain the NAAQS, if the annual cap on gliders is increased or the date of compliance with the promulgated glider requirements is extended.

Finally, these NACAA comments do not offer information on whether EPA has legal authority under the Clean Air Act to regulate glider vehicles, glider engines or glider kits. However, if EPA’s legal authority does not extend to the regulation of glider vehicles, glider engines and glider kits, then state and local agencies are not preempted from regulating them and may do so. Given the magnitude of emissions at stake states and localities may avail themselves of this authority if the federal glider requirements are repealed, potentially resulting in dozens, if not hundreds, of individual and varied state and local requirements.

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<sup>13</sup> EPA’s [HD Chassis Glider Final Report 11292917](#) (November 20, 2017)

<sup>14</sup> EPA’s [HD Chassis Glider Final Report 11292917](#), p. 14 (November 20, 2017)

<sup>15</sup> EPA’s [HD Chassis Glider Final Report 11292917](#), p. 3 (November 20, 2017)

<sup>16</sup> EPA NPRM, [Repeal of Emission Requirements for Glider Vehicles, Glider Engines, and Glider Kits](#), p. 53,447 (November 16, 2017)

Once again, NACAA appreciates the opportunity to provide comments on this NPRM. If you have any questions, please do not hesitate to contact either of us or Nancy Kruger, Deputy Director of NACAA.

Sincerely,



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