Testimony of

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before the

U.S. House of Representatives Committee on Science, Space, and Technology
Subcommittee on Environment
and
Subcommittee on Oversight

Hearing:
"Examining the Underlying Science and Impacts of Glider Truck Regulations"

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Good morning Chairmen Biggs and Abraham, Ranking Members Bonamici and Beyer, and Members of the Subcommittees:

I appreciate the opportunity to testify today concerning work I conducted in May for Fitzgerald Glider Kits, LLC. It is a strawman Regulatory Impact Analysis for EPA's regulation rescinding the glider provisions in the joint EPA and NHTSA regulation titled "Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2."[1] For parsimony I will refer to this as the "Phase 2 Rule."

This work product is my own; I performed it from start to finish in about two weeks; and Fitzgerald did not have the right to approve it. It is published as a working paper on my website.[2]

I performed the strawman RIA to inform decision-makers and the public about what needed to be done to prepare quantitative estimates of benefits and costs. Normally, one would look to the RIA for the Phase 2 Rule for these estimates,[3] but as I will explain in a moment, that is a dead end.

I have four key points to make, summarized on Slide 2.

1. EPA's RIA for the 2016 heavy-duty truck GHG regulation has material errors.

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[1] **U.S. Environmental Protection Agency and National Highway Traffic Safety Administration.** 2016a. "Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2; Final Rule." *Federal Register*, 81(206), 73478-74274.

[2] **Belzer, Richard B.** 2018. "Regulatory Impact Analysis for Repeal of Emission Requirements for Glider Vehicles, Glider Engines, and Glider Kits," Mount Vernon VA, May 15. Available at http://bit.ly/2oTz4ES.

[3] **U.S. Environmental Protection Agency and National Highway Traffic Safety Administration.** 2016b. "Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles; Phase 2; Regulatory Impact Analysis," Washington DC: USEPA/NHTSA, August.

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To obtain its estimate of $238 billion in present value net social benefits, EPA had to commit several material errors. I will mention just two.

First, EPA assumed that companies that buy trucks are unable to rationally account for fuel economy in their purchase decisions. This is an astounding claim. Fuel is the largest cost of operating a heavy-duty truck – higher than driver labor, and higher than lease payments on the truck itself. When truck buyers make mistakes, the market punishes them ruthlessly. Even more remarkable is EPA's extraordinary confidence that it knows better than truck buyers, despite the fact that the Agency suffers no consequences at all when it makes mistakes. This assumption yielded $170 billion in imaginary present value benefits.

Second, EPA estimated the Phase 2 Rule would send $66 billion in U.S. wealth to other countries and counted these wealth transfers as benefits to Americans. This is an elementary violation of accepted practice in benefit-cost analysis.

When these two errors are removed, the Phase 2 Rule has $26 billion in net present value costs. This is shown on Slide 3.

2. EPA did not analyze the incremental benefits and costs of banning gliders from the heavy-duty truck market.

The RIA for the Phase 2 Rule is 1,115 pages long. There are hundreds of references, which if printed could yield a stack of paper several feet tall. But in that 1,115-page RIA, there is no analysis of the incremental benefits and costs of banning gliders.

In the preamble to the Phase 2 Rule, EPA claims that the glider ban yields incremental benefits of $6-16 billion per year, as shown on Slide 4. EPA did not show its work, however, so no one outside the Agency can reproduce these results. This is a clear violation of long-established information quality guidelines.[4]

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[4] **Office of Management and Budget.** 2002. "Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies; Notice; Republication." *Federal Register*, 67(36), 8452-60; **U.S. Environmental Protection Agency.** 2002. "Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Environmental Protection Agency." (EPA/260r-02-008).

3. EPA appears to have incorrectly assumed that gliders are perfect substitutes for new trucks.

To obtain the $6-16 billion per year benefit estimate in the preamble, EPA needed to know what glider purchasers would do once gliders were banned. It appears that EPA assumed that every glider removed from the market would be replaced by a new heavy-duty truck, as shown on the left side of Slide 5. This makes no sense.

Those who would have purchased gliders, but under the Phase 2 Rule cannot do so, have three options, not one, as shown on the right side of Slide 5:

- Buy a new truck.
- Buy a used truck on the secondary market.
- Retain an existing truck in service beyond its planned lifetime.

Let's assume that new trucks have lower emissions than gliders. But it's likely that used trucks and existing trucks retained in service have higher emissions than gliders. So, banning gliders could result in a net increase in environmental damage, not $6-16 billion per year in emission reductions.

4. My strawman RIA shows how to estimate the environmental benefits or costs from gliders.

I developed formulas for determining the minimum proportion of gliders that must be replaced by new trucks for environmental benefits to be greater than zero. These formulas are shown on Slide 6. If policy-makers believe that the actual proportion is likely to be less than p_n, then the net environmental benefits of banning gliders will be negative. And even if net environmental benefits are positive, it does not follow that net social benefits are greater than zero. We have not begun to consider the opportunity costs of banning gliders, which EPA did not estimate, and which are likely to be substantial.

Estimating these equations requires, among other things, objective data on greenhouse gas and pollutant emissions from gliders, new trucks, used trucks, and existing trucks retained in service beyond their planned lifetimes. Obtaining good emissions data is challenging, because it's easy to get bad data – by tweaking emissions tests, for example, or even more easily, by selecting trucks likely to test the way you want them to. The right way to go about this is to establish a test protocol that everyone agrees to in advance, and jointly conduct the tests to ensure that everyone agrees that the protocol was strictly followed.

Finally, it is important to have samples large enough to extrapolate to the market. I don't know how big these samples must be, but I do know that sampling a couple trucks isn't

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enough. There are statistical methods that can be used to determine minimum sample sizes, and the test protocol should take account of this knowledge.

Thank you for the opportunity to testify. I welcome any questions that you may have pertaining to my work.

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Draft Strawman Regulatory Impact Analysis for Repeal of Emission Requirements for Glider Vehicles, Glider Engines, and Glider Kits

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House Science Committee

September 13, 2018

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Key points

1. EPA's RIA for the 2016 heavy-duty truck GHG regulation has material errors.
2. EPA did not analyze the incremental benefits and costs of banning gliders from the heavy-duty truck market.
3. EPA appears to have incorrectly assumed that gliders are perfect substitutes for new trucks.
4. My strawman RIA shows how to estimate the environmental benefits or costs from gliders.

1. EPA's RIA for the 2016 heavy-duty truck GHG regulation has material errors.

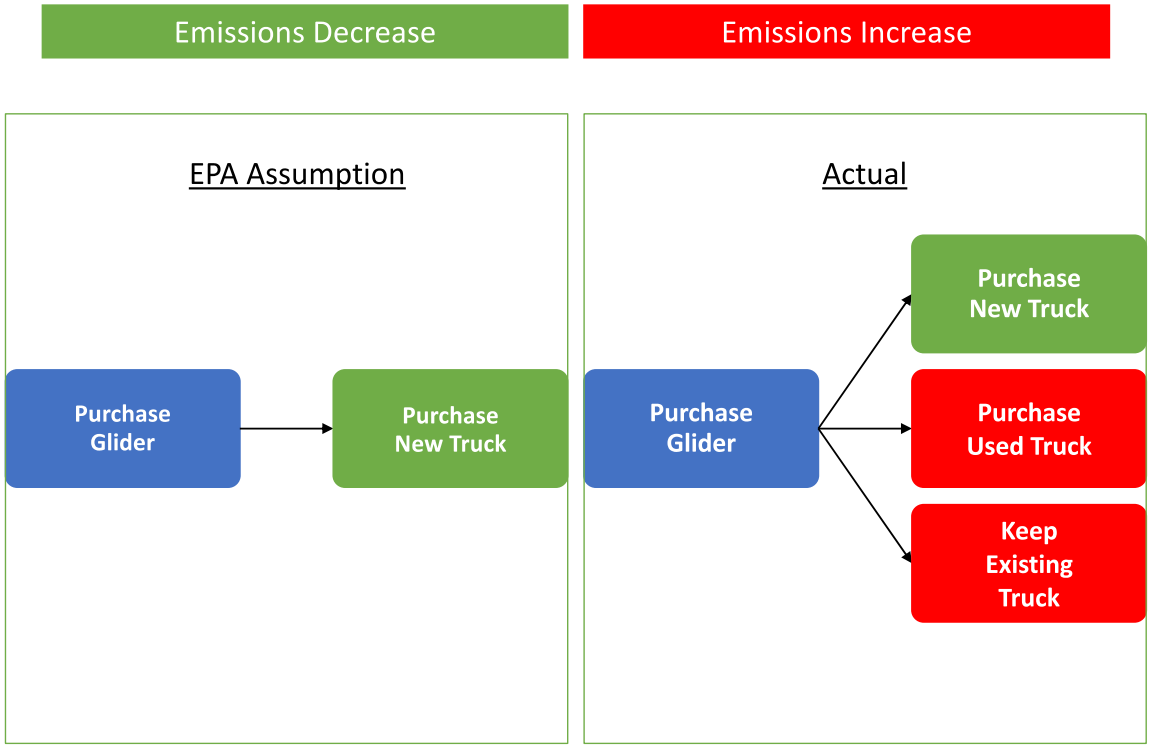
	Lifetime Present Value in $ Billions (3% Discount Rate)	Lifetime Present Value in $ Billions (7% Discount Rate)
Vehicle program	-$ 25	-$ 17
Maintenance	-$ 1	-$ 1
Fuel savings from buyer irrationality	$170	$92
Climate benefits	$ 94	$66
NET BENEFITS	$238	$140
Less speculative fuel savings	-$170	-$ 92
Less transfers to non-US entities	-$94	-$ 60
REVISED NET BENEFITS	-$26	-$ 12

2. EPA did not analyze the incremental benefits and costs of banning gliders from the heavy-duty truck market.

1. Regulatory Impact Analysis
   a. 1,115 pages, plus secondary documents
   b. No incremental analysis of glider ban
2. Preamble to 2016 Final Rule
   a. Ban said to yield incremental benefits of $6-16 billion/yr (2013$) (81 FR 73943), but analysis is not disclosed
   b. No incremental opportunity costs (e.g., diminished reliability, highway safety risks, lost producers' and consumers' surplus, forced capital retirement)
   c. 'No significant impact on small entities' (81 FR 73962)

3. EPA appears to have incorrectly assumed that gliders are perfect substitutes for new trucks.

Fig. 1: Buyer Behavior if Glider Market is Prohibited



4. My strawman RIA shows how to estimate the environmental benefits or costs from gliders.

For GHG Emissions	For Pollutant Emissions
$p_n = \frac{G_g - G_u}{G_n - G_u}$,	$p_n = \frac{E_g - E_u}{E_n - E_u}$,
where	*where*
$G_n = GHGs\ from\ new\ trucks$	$E_n = pollutants\ from\ new\ trucks$
$G_g = GHGs\ from\ gliders$	$E_g = pollutants\ from\ gliders$
$G_u = GHGs\ from\ used/existing\ trucks$	$E_u = pollutants\ from\ used/existingtrucks$
$p_n = \%\ gliders\ supplanted\ by\ new\ trucks$	$p_n = \%\ gliders\ supplanted\ by\ new\ trucks$

Notes

1. *Assumes emissions from used trucks retained in service are identical..*
2. *Gliders provide net benefits if subsititution of new trucks for gliders is less than* p_n.
3. p_n *approaches zero as the difference in emission between new and used trucks approaches zero.*
4. *Opportunity costs* $(i.e, benefits\ foregone)$ *must be deducted from environmental benefits to obtain net social benefits.*

Questions?

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Since 2001, Dr. Richard Belzer has been an independent consultant in regulation, risk, economics and information quality. Previously he was a visiting professor of public policy at Washington University in St. Louis and staff economist in the Office of Information and Regulatory Affairs in the Office of Management and Budget. He received his Ph.D. in public policy from Harvard University (1989), Master's in Public Policy (MPP) from the John F. Kennedy School of Government (now Harvard Kennedy School) (1982), and MS and BS degrees in agricultural economics from the University of California at Davis (1979, 1980). Current original research areas include the measurement and estimation of Type I and Type II errors in the identification, placement, and discipline of children with disabilities; the analysis of benefits and costs from banning glider vehicles from the heavy-duty truck market; the development of statutorily appropriate measures of economic feasibility under the Safe Drinking Water Act; the analysis of variability in pulmonary function testing; the development of objective economic indicators to identify adverse human health effects; the improved use of human health risk assessments as inputs to benefit-cost analysis; the analysis of environmental justice ranking schemes; the analysis of patent law and examination practices; the estimation of potential cost reductions to state Medicaid programs from the substitution of electronic for tobacco cigarettes; and the economic value of subjective quality information in U.S. wine markets. Recent consulting projects have included a benefit-cost analysis of rescinding the ban on gliders from the heavy-duty truck market; reviews of California's proposed drinking water standards for hexavalent chromium and 1, 2, 3-trichloropropane; and the critique of predicted human health impacts and monetized risks attributable to air emissions from new facilities designed to achieve federal regulatory standards. Dr. Belzer is a regular contributor to scholarly professions through journal peer review and service to professional societies. He was elected Treasurer of the Society for Risk Analysis (1998, 2000) and elected Secretary-Treasurer of the Society for Benefit-Cost Analysis (2008, 2010). He earned multiple awards for exemplary performance at OMB, given the SRA's Distinguished Service Award (2003), and named a Fellow of the Cecil and Ida Green Center for the Study of Science and Society (1995). He has not received any grants from EPA, any other government agency, or any private entity. He has conducted independent research on behalf of clients or through self-funding; some projects are jointly funded. His clients since 2015 include: Fitzgerald Glider Kits LLC, the American Chemistry Council, the California Manufacturing Technology Association, the R Street Institute, and Exxon Mobil Biomedical Sciences, Inc.