# An Analysis of EPA's Proposed Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards

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California Attorney General

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**Applied Economics Clinic**

The Applied Economics Clinic is a 501(c)(3) non-profit consulting group based in Arlington, Massachusetts. The Clinic provides expert testimony, analysis, modeling, policy briefs, and reports for public interest groups on the topics of energy, environment, consumer protection, and equity, while providing on-the-job training to a new generation of technical experts. For more information on the clinic: www.aeclinic.org. Clinic Research Assistant Gabriel Lewis and Researcher Chirag Lala contributed to this white paper under the supervision of Clinic Senior Economist Elizabeth A. Stanton, PhD.

**Elizabeth A. Stanton, PhD**

Dr. Elizabeth A. Stanton is the founder and Director of the Applied Economics Clinic. She has worked for two decades as an environmental economist, and has authored more than 150 reports, policy studies, white papers, journal articles, and book chapters on topics related to energy, the economy, and the environment. She has submitted expert testimony and comments in Minnesota, Louisiana, Indiana, Illinois, Vermont, New Hampshire, Massachusetts, Michigan, Puerto Rico and several federal dockets. Her recent work includes extensive analysis of energy and efficiency planning, testimony related to greenhouse gas regulatory compliance, and analysis of the need for new gas pipelines. Dr. Stanton's articles have been published in Ecological Economics, Renewable Climatic Change, Environmental and Resource Economics, Environmental Science & Technology, and other journals. Dr. Stanton is the primary author of this report and the opinions and conclusions in the report are hers.

## Introduction

In August 2021, the U.S. Environmental Protection Agency (EPA) released its proposed Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards to replace the 2020 Safer Affordable Fuel-Efficient (SAFE) Vehicles rule, approximately returning emissions to the path set in the 2012 National Program for controlling light-duty vehicle greenhouse gas emissions.[1, 2] In this white paper, the Applied Economics Clinic (AEC) discusses the benefits estimated in EPA's 2021 Draft Regulatory Impact Analysis (DRIA) of the proposal giving particular attention to energy security benefits. EPA's 2021 DRIA provides a robust benefit-cost analysis showing positive net benefits to its proposed emission standards on the basis of a conservative estimation of these standards' potential benefits. Benefits that were not included in EPA's benefit-cost comparison—for want of sufficient supporting information and data—would, if included, raise EPA's net benefits and provide support for stricter emission standards.

AEC also compared the 2021 DRIA to the Final Regulatory Impact Assessment (FRIA) of the 2020 SAFE final rule. While the net benefit values of these two rules are not comparable (they are based on very different emission standards), an examination of the methodologies of these documents reveals the 2021 DRIA to be more reliable than the 2020 SAFE FRIA. In particular, EPA's 2021 DRIA avoids several errors found in the 2020 FRIA, including an assumption of U.S. oil self-sufficiency and a disregard of uncertainty in benefit estimates.

## Energy Security Benefits in EPA DRIA 2021

EPA estimates that its proposal will reduce total U.S. oil consumption and oil imports, in turn lowering some costs to U.S. consumers and producers caused by fluctuating oil supply and prices.[3] EPA's DRIA includes an oil security premium in the monetized benefits that it compares to costs of the proposed rule and discusses other potential security benefits that are not monetized, primarily for lack of information or data. Our assessment shows that the agency's 2021 DRIA represents a conservative estimate of the likely energy security benefits of the proposed rule: That is, benefits are at least this high and perhaps higher. Additional benefits that could have been added include limiting the United States'

[1] 86 Fed. Reg. 43,726, Aug. 10, 2021, U.S. EPA, Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards.

[2] As a comparison, for 2025, the related 2012 rule fleet-wide emission standard was approximately 178 grams of carbon dioxide per mile (g/mi), the 2020 rule was 209 g/mi and the 2021 proposed rule is 180 g/mi. EPA Draft RIA August 2021, Figure 2-3

[3] EPA Draft RIA August 2021 pp. 88-89, 94

exposure to global petroleum market instability, reduction to the global price of oil, and U.S. military and foreign policy benefits of reducing U.S. dependency on imported oil. EPA's relatively conservative assessment of benefits suggests both that its cost-benefit assessment and related conclusions are robust and that a broader monetization of energy security benefits would justify stricter emission standards for vehicles.

### 1. Exposure to oil market instabilities

U.S. oil consumption is expected to fall as vehicle producers shift production towards vehicles with features and designs that meet EPA's greenhouse gas emissions standards.[4] The resulting fuel saved per mile under these standards means lower total fuel consumption, even if total miles driven stay steady or increase slightly.[5]

EPA's DRIA estimates that its proposed rule would ultimately decrease crude oil imports by about 0.6 million barrels per day (MMBD); imports currently average 7.8 MMBD. EPA notes that the resulting energy security benefits are difficult to quantify, but it does tentatively estimate a $12.5 billion present value (3 percent discount, 2023-2050)[6] of energy security benefits. EPA's estimated oil security premium—the extra cost due to global oil market instability—is $5.57 (2018 dollars) per gallon in 2050,[7] which appears to underestimate the benefits of reducing U.S. dependency on oil as discussed below.

EPA's estimates of energy security premia have varied greatly between successive vehicle emissions PRIAs and FRIAs since 2009 (compared here using their estimated premia for 2025):[8]

- The **2009** EPA-NHTSA National Program NPRM: **$9.67** with error bounds of $4.64 to $15.53.[9]
- In the **2015** EPA-NHTSA National Program PRIA this was lowered to **$8.04** ($3.94 to $12.87).[10]

[4] EPA Draft RIA August 2021, pp. 14, 19.

[5] EPA Draft RIA August 2021, pp. 20

[6] EPA Draft RIA August 2021, p. 100

[7] EPA Draft RIA August 2021 p. 100.

[8] 2025 energy security premium converted to 2018 dollars using the GDP Implicit Price Deflator. Federal Reserve Economic Data, series USAGDPDEFAISMEI (GDP Implicit Price Deflator in United States, Index 2015=100, Annual, Not Seasonally Adjusted). https://fred.stlouisfed.org

[9] EPA-NHTSA National Program NPRM 2012 - 2009, p. 170. We use estimate for year 2030, since 2025 is not given.

- Under the subsequent administration, the **2018** EPA-NHTSA SAFE PRIA[11] initially estimated **$6.97** ($3.24 to $11.31).

- The **2020** EPA-NHTSA SAFE Final RIA, however, estimated a much lower **$1.50**, with no error margin presented.[12] This reduced value may be a result of the 2020 RIA's reliance on a 2016 paper by Beccue et al.,[13] rather than the Oak Ridge National Laboratory (ORNL) and Annual Energy Outlook (AEO) studies cited in all other documents mentioned here.

- The present **2021** EPA Draft RIA estimate is still comparatively low: **$3.72** ($1.18 to $6.27),[14] reflecting the agency's recent judgments (discussed later in this section) that the United States is less exposed to oil shocks than previously anticipated.

It is becoming increasingly apparent that climate change caused by fossil fuel consumption has a destabilizing effect on oil and energy production and distribution, as well as on global fossil fuel prices. As one example, extreme weather—exacerbated by climate change—can cause supply shortage and price spikes. August 2021's Hurricane Ida, for example, caused a temporary disruption of nine-tenths of crude oil production in the Gulf of Mexico[15] resulting in Gulf Coast gasoline prices rising 49 percent higher than during the same time the previous year.[16] EIA projects that it will take several months for U.S. oil production to make a full recovery; related power outages are expected to persist for several hundred thousand people until the end of September.[17] The most recent report from the Intergovernmental Panel on Climate Change (IPCC)—the world's foremost authority on climate change science—concluded that the frequency and intensity of extreme weather events will increase over the coming decades, particularly if greenhouse gas emissions do not fall quickly and drastically.[18] Overall, oil production and consumption have a destabilizing effect on world oil prices, and lax emissions standards

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[10] EPA-NHTSA National Program PRIA 2015, p. 721.
[11] EPA-NHTSA SAFE PRIA 2018 p. 1073.

[12] EPA-NHTSA SAFE Final RIA 2020, p. 1050.

[13] Cited as Beccue, Phillip C. and Hillard G. Huntington, An Updated Assessment of Oil Market Disruption Risks - Final, 2016. in EPA-NHTSA SAFE Final RIA 2020, p. 1049.
[14] EPA Draft RIA August 2021, p. 100.

[15] EIA STEO Sept 3 20201, https://www.eia.gov/outlooks/steo/

[16] EIA Today's Energy Report 09/14/21 https://www.eia.gov/todayinenergy/detail.php?id=49416

[17] https://www.brproud.com/hurricane-ida/hurricane-ida-power-outages-misery-persist-9-days-later/

[18] https://www.washingtonpost.com/weather/2021/08/09/ipcc-2021-extreme-weather-climate/.

increase oil production and consumption, causing more greenhouse gas emissions, more climate change, and an increased frequency of extreme weather events that disrupt foreign and domestic energy supplies.

Regarding how a decrease in U.S. domestic fuel consumption would affect crude oil imports, EPA estimates that—for a given 100-unit decrease in domestic fuel consumption due to stronger emissions standards, U.S. crude oil imports would decrease by 91 units.[19] By assuming that the United States is well-insulated from global oil price shocks and supply disruptions, EPA may be underestimating the benefits of decreasing U.S. dependency on global oil markets.

EPA expects U.S. gross crude oil imports to remain between 6.9 and 7.8 MMBD through 2050[20] without the proposed emissions standards, in line with the 2021 U.S. Energy Information Administration's Annual Energy Outlook forecast.[21] Regardless of whether exports equal or even exceed imports, as EPA notes, global supply shocks are still expected to impose costs on U.S. refiners, downstream industries, and consumers. Stricter emission standards and lower fuel consumption could decrease the magnitude of these costs.[22]

In addition, EPA assumes that the U.S. Strategic Petroleum Reserve (SPR) will be used to smooth supply shocks at no additional cost.[23] This assumption is based on the observation that "historically [SPR maintenance] costs have not varied in response to changes in U.S. oil import levels".[24] However, by statute the SPR cannot be used to mitigate routine fluctuations in oil imports; drawdowns or sales are allowed only in case of "severe energy supply interruption."[25] The more relevant question is whether SPR maintenance costs would increase with the repeated large-scale use of SPR to mitigate major U.S.

[19] EPA Draft RIA August 2021 p. 97.

[20] EPA Draft RIA August 2021 p. 97.

[21] U.S. Energy Information Administration. Annual Energy Outlook 2021. Appendix D. Table D.1 https://www.eia.gov/outlooks/aeo/pdf/appd.pdf

[22] EPA Draft RIA August 2021 p. 100.

[23] EPA Draft RIA August 2021 p. 94.

[24] EPA Draft RIA August 2021 p. 94.

[25] The Energy Policy and Conservation Act, Sec 161. States: " Drawdown and sale of petroleum products from the Strategic Petroleum Reserve may not be made unless the President has found drawdown and sale are required by a severe energy supply interruption..." . A definition of "severe energy supply interruption" is provided in Sec 3. of same. From The Office of Fossil Energy and Carbon Management: https://www.energy.gov/fe/services/petroleum-reserves/strategic-petroleum-reserve/strategic-petroleum-reserve

oil shortages in the future, and how these costs might decrease on average if U.S. dependency on imported oil were diminished. EPA's DRIA does not address these questions.

Overall, EPA appears to conservatively understate the costs of global oil market instabilities, omitting costs of managing oil market volatility and likely underestimating U.S. exposure to global oil markets.

**2. Monopsony and distributional effects of U.S. oil demand**

Because U.S. consumption of petroleum and other liquid fuels amount to 21 percent of global consumption (20.0 MMBD / 96.7 MMBD in Q2 2021),[26] a decrease in U.S. oil demand could lower global oil prices, known as a monopsony effect. EPA discusses but does not include monopsony effects in the cost-benefit analyses presented in its August 2021 DRIA.[27] EPA assumes that changing oil prices results only in a "transfer"[28] of benefits and has no net impact on the U.S. economy, an approach that ignores the distribution of costs and benefits across income groups (or other communities) and related social welfare impacts. These omitted benefits could be large: in 2015, the EPA-NHTSA PRIA estimated that monopsony transfers from oil producers to U.S. oil consumers would amount to $5.60 per barrel.[29]

EPA's argument is that monopsony effects should be omitted because lower oil prices are a transfer from oil producers to oil consumers, and therefore have no net effect on the U.S. economy. This reasoning is faulty: Even if net global transfers do not change as a result of price changes, net transfers to the United States need not remain constant. The United States is expected to be a net importer at times and a net exporter of oil at other times.[30] Net transfers to the United States, therefore, will be nonzero and changing over time meriting inclusion in a formal benefit-cost calculation. Similarly, net transfers within the United States need not be zero just because global net transfers are zero.

Moreover, the idea that transfers cause no meaningful changes in total societal benefits provides support to a value judgment that the total welfare lost by oil company shareholders (through decreased share prices and dividends) would be greater than or equal to the total welfare gained by poor and

[26] U.S. Energy Information Administration. Short-Term Outlook August 2021. p. 35.

[27] EPA Draft RIA August 2021 p. 100.

[28] EPA Draft RIA August 2021 p. 98.

[29] EPA-NHTSA PRIA 2015, pp. 726. As elsewhere, we convert the 2025 projection (originally in 2012 dollars) to 2018 dollars using the GDP Implicit Price Deflator. Federal Reserve Economic Data, series USAGDPDEFAISMEI (GDP Implicit Price Deflator in United States, Index 2015=100, Annual, Not Seasonally Adjusted). https://fred.stlouisfed.org

[30] U.S. Energy Information Administration. Short-Term Outlook August 2021. p. 35.

working-class families (through more affordable transportation); or alternatively, the judgment that the distribution of income and expenditure in the United States simply does not matter. In either case, the argument is equivalent to saying that all else being equal, doubling of the price of bread or milk would have no important economic effect, because consumers lose but producers gain by the same total dollar amount.

EPA does not defend such a proposition in its DRIA. Even if net transfers remain constant, transfer of revenue from U.S. oil producers to U.S. oil consumers could have substantial benefits for the most economically disadvantaged, reducing income inequality and—therefore—reducing government expenditures on welfare programs and other transfers. EPA omits monopsony effects from their cost-benefit analyses but could include them, which would strengthen its benefit-cost assessment and even provide grounds for stronger standards.

### 3. Military and foreign policy costs and benefits

Reducing emissions, and consequently reducing dependence on imported oil, has the potential to lower U.S. military and foreign policy costs of safeguarding the U.S. oil supply and reduce revenue to regimes that are considered inimical to U.S. interests. In its 2021 DRIA, EPA reviews the literature on these possible benefits but does not include military and foreign policy costs in its benefit-cost analysis, stating that the agency is "unaware of a robust methodology"[31] for estimating them.

EPA's DRIA describes two related obstacles to quantifying military and foreign policy benefits of reducing oil dependency. The first is the "attribution problem": Which costs are attributable to securing oil, versus other objectives? The second is the "incremental analysis" problem: How would costs of securing oil change were oil imports diminished?[32]

For total costs attributable to securing U.S. oil, EPA's DRIA presents estimates ranging from near zero,[33] to "$75–$91 billion, or 12–15 percent of the current U.S. defense budget",[34] to estimates 4-10 times

[31] EPA Draft RIA August 2021 p. 96.

[32] EPA Draft RIA August 2021 p. 94.

[33] EPA Draft RIA August 2021 p. 95, citing Moore, 1997.

[34] EPA Draft RIA August 2021 p. 95, citing Crane et al, 2009.

higher.[35] These costs are unlikely to scale proportionally with U.S. oil imports or consumption, so incremental analysis would be difficult and is not presented by EPA.

Still, U.S. wars since 9/11 have imposed a total of $5.4 trillion in U.S. budgetary costs alone—an average of $284 billion per year between 2001 and 2020.[36] If a hypothetical emission policy that reduced U.S. oil demand had a mere 1 percent chance of diminishing such yearly military expenditures by just 1 percent, then the resulting expected budget savings would be $28 million per year. Even seemingly small probabilities of apparently negligible decreases in military expenditure can yield large expected benefits.

EPA does not discuss the expense of non-military foreign policy in detail, but securing other nations' cooperation with U.S. oil-securing policies is not without cost. EPA has not included the benefits of avoiding costs to support (or refraining from opposing) regimes that are deemed crucial to securing oil, but which otherwise tend to oppose U.S. interests. Military and foreign policy costs are hard to estimate with any precision. Yet to omit them is to estimate that they are precisely zero. Given the extremely high cost of U.S. military and foreign policy ventures, the aims of which include safeguarding the U.S. oil supply, such an omission results in a conservative underestimate of the net of the benefits of the proposed emission standards.

## Comparing 2020 SAFE Rule and the 2021 Proposed Rule Energy Security Benefits

In April 2020, EPA and National Highway Traffic Safety Administration (NHTSA) jointly issued the SAFE final rule. Broadly speaking, the 2020 SAFE rule reduced the stringency of vehicle emissions standards compared to the agencies' 2012 final rule, raising total U.S. oil consumption and oil imports, in turn raising costs to U.S. consumers and producers caused by fluctuating oil supply and prices.[37]

Although the 2020 FRIA and 2021 DRIA considered similar categories of benefits, the 2020 analysis omitted benefits included in 2021 (see Table 1). In addition, the 2020 analysis was structured in an unusual way that made comparison to the 2021 DRIA and to pre-2020 RIAs difficult.

[35] EPA Draft RIA August 2021 p. 95, citing Stern et al, 2010.

[36] United States Budgetary Costs and Obligations of Post-9/11 Wars through FY2020: $6.4 Trillion. Neta C. Crawford. Watson Institute for International and Public Affairs at Brown University, 2019. p. 3.

[37] EPA Draft RIA August 2021 pp. xiv, 88-89, 94.

**Table 1. Benefits comparison 2020 FRIA and 2021 DRIA**

| 2020 | Fuel/Driving Benefits | Global Markets & Geopolitics | Other Emissions & Environmental Effects | Greenhouse Gas Reduction |
|---|---|---|---|---|
| | Retail Fuel Savings | Petroleum Market Externality | Nox Damage Reduction Benefit | $CO_2$ Damage Reduction Benefit |
| | Refueling Time Benefit | | VOC Damage Reduction Benefit | |
| | Rebound Fuel Consumer Surplus | | PM Damage Reduction Benefit | |
| | Rebound Fatality Benefit | | $SO_2$ Damage Reduction Benefit | |
| | Rebound Non-Fatal Crash Benefit | | | |
| **2021** | **Fuel/Driving Benefits** | **Global Markets & Geopolitics** | **Other Emissions & Environmental Effects** | **Greenhouse Gas Reduction** |
| | Retail Fuel Savings | Monopsony | PM2.5-related benefits | Reductions in $CO_2$ |
| | Refueling Time Savings | Oil Market Instability | Premature mortality and nonfatal morbidity from exposure to PM2.5, ozone, $NO_2$ | Reductions in $N_20$ |
| | Fuel Tax Savings | Military Costs | Reduced visibility impairment (non-monetized) | Reductions in $CH_4$ |
| | Drive Value | | Reduced effects on materials (non-monetized) | |
| | | | Reduced effects from PM and acid deposition (metals and organics) (non-monetized) | |
| | | | Reduced effects from nutrient enrichment | |
| | | | Reduced vegetation effects from ambient exposure to ozone, $SO_2$ and Nox (non-monetized) | |

Broadly speaking, the 2020 EPA-NHTSA SAFE FRIA calculated the benefits of loosening 2012 emissions standards, while the 2021 EPA DRIA calculates the benefits of nearly the same change, but in the opposite direction: returning from the 2020 standards to emissions standards that are similar to the 2012 ones, at least in terms of overall emissions targets.[38]

**Energy Security Benefits**

Both the 2020 FRIA and 2021 DRIA exclude important energy security benefits that, had those benefits been included, would lead to positive assessment of more stringent emissions standards. In their cost-benefit analyses, neither document includes monetized benefits arising from monopsony price and distributional effects or decreases in military spending.

Both analyses assume that the United States is well insulated from oil market shocks, but 2021 DRIA's assumptions are more plausible. In contrast, the 2020 FRIA went so far as to declare that the United States is "self-sufficient" [39] in petroleum production, which is simply not the case. Importantly, the 2021

[38] EPA Draft RIA August 2021 pp. xiv.

[39] EPA-NHTSA SAFE Final RIA 2020, p. 1043.

DRIA conveys appropriate degrees of uncertainty concerning estimates based on uncertain inputs, where the 2020 FRIA presented estimates and conclusions with a certainty that the data simply cannot support.

Exposure to oil market instabilities

The 2020 FRIA is consistent with the 2021 DRIA: Looser emission standards increase U.S. exposure to oil market instability. However, the 2020 FRIA anticipated substantially smaller effects on oil imports than those forecast in the 2021 DRIA, is generally more optimistic than the 2021 DRIA concerning U.S. exposure to oil market instabilities, and seems to conflate an (erroneous) claim of self-sufficiency with positive net exports. Furthermore, the 2020 FRIA admits to little uncertainty. EPA's 2021 DRIA does not claim that the United States is self-sufficient in gasoline supply and correctly admits uncertainty where appropriate—a substantial improvement over the 2020 FRIA.

The 2020 FRIA estimated that loosening emissions standards would ultimately increase crude oil imports and notes that the resulting energy security costs "can be significant,"[40] but later contradicted itself by arguing that such costs are "small, and perhaps trivial".[41] The 2020 FRIA concluded that an oil security premium—the extra cost of a barrel of oil due to global oil market instability—of only $1.50 per gallon was appropriate in 2025 and $2.61 per gallon in 2050 (both 2018 dollars),[42] implying a considerably lower estimated benefit of reducing oil dependence than the 2021 DRIA provides (for reference, $3.72 and $5.57, respectively).

Unlike the 2021 DRIA and all RIAs between 2012 and 2016, the 2020 FRIA's estimated oil security premium is presented without any measure of statistical uncertainty or confidence, even for the year 2050. Given the uncertainty of the inputs of such an estimate, the uncertainty of the estimate itself is substantial. Presenting its estimated oil security with appropriate error intervals is a major methodological improvement of the 2021 DRIA over the 2020 FRIA.

The 2020 FRIA assumed that oil imports will be much less responsive to domestic consumption than the 2021 DRIA; the former assumed that if domestic fuel consumption fell by 100 units due to stronger emissions standards, crude oil imports would fall by only 50 units[43] (for reference, the 2021 DRIA

[40] EPA-NHTSA SAFE Final RIA 2020, p. 1947.

[41] EPA-NHTSA SAFE Final RIA 2020, p. 1045.

[42] EPA-NHTSA SAFE Final RIA 2020, p. 1051.

[43] EPA-NHTSA SAFE Final RIA 2020, p. 1268.

assumes a 91-unit decline). With this assumption in effect, it is little wonder that the 2020 FRIA expected less benefit from reducing domestic oil consumption compared to the 2021 DRIA.

The 2020 FRIA also underestimated the benefits of reducing U.S. dependency on global oil markets by assuming—without adequate basis—that the United States is well-insulated from global price shocks and supply disruptions. To support its claim that the United States is insulated from supply shocks, the 2020 FRIA claimed that the United States is approaching self-sufficiency in petroleum production.[44] Here, the 2020 FRIA conflated self-sufficiency with (temporarily) positive net exports. While U.S. net oil product exports and net crude oil exports were indeed positive (+0.65 MMBD for total petroleum and other liquids) as of 2020, [45] this does not imply that the United States is self-sufficient. Net imports (adding imports and exports together) are not the same as gross imports (the total amount purchased in the global market and exposed to global price shocks). EPA's 2021 DRIA makes no such mistake.

The 2020 FRIA also argued that U.S. exposure to oil supply shocks is now "perhaps trivial"[46] in part because various strategies "are available" to U.S. business and consumers that would in principle "insure"[47] them against these shocks. However, this reasoning is backwards: Insurance against supply shocks represents an additional cost of supply shocks, not an argument that supply shocks are irrelevant. In contrast, the 2021 DRIA makes no such suppositions about how certain technologies may insure U.S. producers or consumers.

Military and foreign policy costs and benefits

The 2020 FRIA cited similar literature to that of the 2021 DRIA regarding military and foreign policy costs, mentioning (but not explicitly endorsing) an estimated cost of "$81 billion per year for protection of the global petroleum supply," which it calls "low."[48] Then, with puzzling certainty, the 2020 FRIA stated that absolutely no fraction of this cost would diminish as a consequence of the "incremental"[49] change in U.S. oil consumption caused by the 2020 change in emission standards. In this respect, the

[44] EPA-NHTSA SAFE Final RIA 2020, p. 1043.

[45] U.S. Energy Information Administration. Short-Term Outlook August 2021. p. 35.

[46] EPA-NHTSA SAFE Final RIA 2020, p. 1045.

[47] EPA-NHTSA SAFE Final RIA 2020, p. 1045.

[48] EPA-NHTSA SAFE Final RIA 2020 p.1052. Estimate from Crane, K., A. Goldthau, M. Toman, T. Light, S. E. Johnson, A. Nader, A. Rabasa, & H. Dogo, Imported Oil and U.S. National Security, Santa Monica, CA, The RAND Corporation (2009) available at https://www.rand.org/pubs/monographs/MG838.html.

[49] Ibid.

2021 DRIA analysis, which professes no such certainty about hypothetical future military expenditures, is a definitive improvement over the 2020 FRIA. As we have noted, allowing even a small probability that diminishing oil dependence would decrease total military expenditures by a small proportion would yield a large expected benefit of diminishing oil dependence.

To further its argument that U.S. military expenditures should not be expected to respond to U.S. oil consumption, the 2020 FRIA presented a graph of U.S. military spending and U.S. oil consumption over time. Claiming that it is difficult to visually discern a correlation, the FRIA concluded—apparently without actual analysis—that no causal relationship exists.[50] This qualitative approach does not provide statistical evidence that military costs of oil consumption are indeed zero. Here too, the 2021 DRIA judiciously refrains from such tenuous argumentation.

[50] EPA-NHTSA SAFE Final RIA 2020, p. 1054.